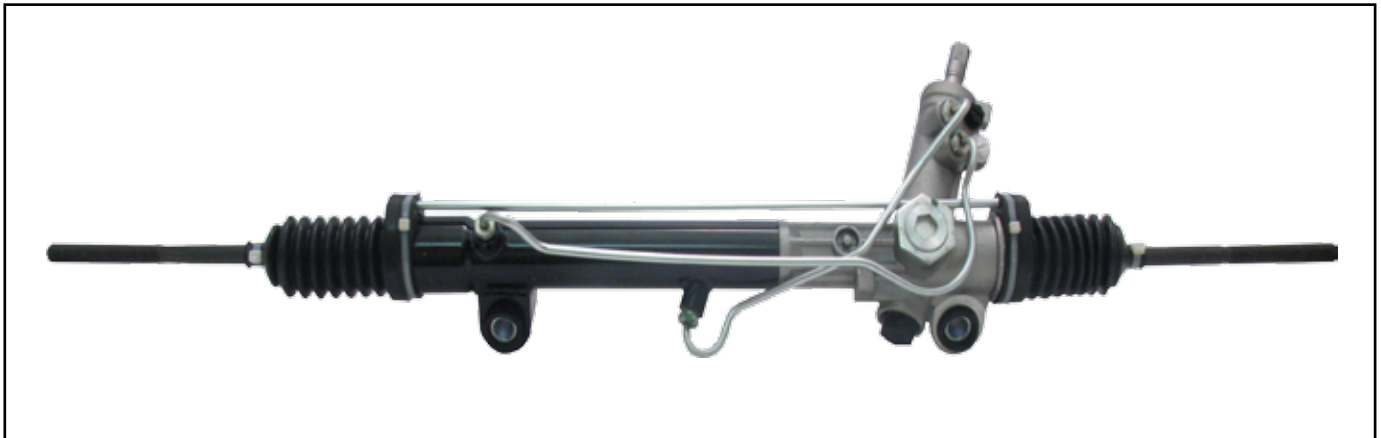




RPP7478

MUSTANG II POWER RACK AND PINION



94-up Mustang Style .750 Diameter
Steering Shaft Connection
15.5" Mounting Holes Center-to-Center
9/16-18 Tie Rod Ends
45" Overall Length

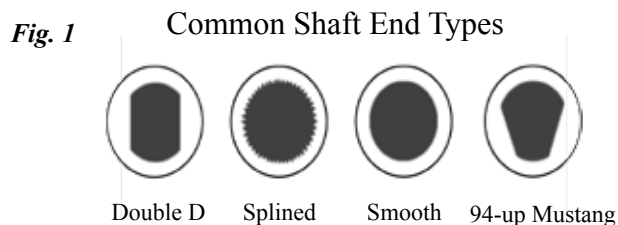
INSTALLATION INSTRUCTIONS

NOTE: ALWAYS REFER TO THE VEHICLE OWNER'S MANUAL FOR CORRECT TORQUE SPECIFICATIONS WHEN INSTALLING.

RACK & PINION PRE-INSTALLATION CHECKLIST

BEFORE YOU ATTEMPT TO INSTALL THE RACK, YOU MUST COMPLETE THIS CHECKLIST.

<input checked="" type="checkbox"/>	TASKS TO COMPLETE Check boxes off as you complete them.
<input type="checkbox"/>	1. Inspect the new rack assembly. Look for torn boots, damaged threads, and inspect splines Remove the plastic plugs and inspect the threads. Reinsert plugs.
<input type="checkbox"/>	2. Verify the spline count and configuration of your steering column shaft by disconnecting the flexible coupling from the input shaft of the steering column. You may need to order a different steering coupler and longer steering shaft material. Distances vary from body to body. <i>Use Fig. 1</i> to identify your spline and use <i>Fig. 2</i> to determine the steering coupler you will need.
<input type="checkbox"/>	3. Verify the thread sizes and condition of your tie rod ends. Replace as necessary.
<input type="checkbox"/>	4. Install tie rod ends on new rack in the identical position on the threads as the pre-existing rack if applicable.
<input type="checkbox"/>	5. Proceed to the fluid contamination section.



Coupler Planner	MBM Rack	Coupler
Diameter Inches		
Spline Count		
Shape		

Fig. 2

FLUID CONTAMINATION:

IMPORTANT USE ONLY NEW FLUID! DRAIN ALL FLUID FROM HOSES & PUMP. RINSE THOROUGHLY WITH POWER STEERING FLUID.

IMPORTANT DO NOT USE BRAKE CLEANER, PARTS CLEANER, CARBURETOR CLEANER OR DEGREASER TO CLEAR YOUR LINES. USING THESE WILL DAMAGE THE SEALS AND VOID YOUR WARRANTY!



NO BRAKE CLEANER
NO CARBURETOR CLEANER
NO PARTS CLEANER
NO DEGREASER

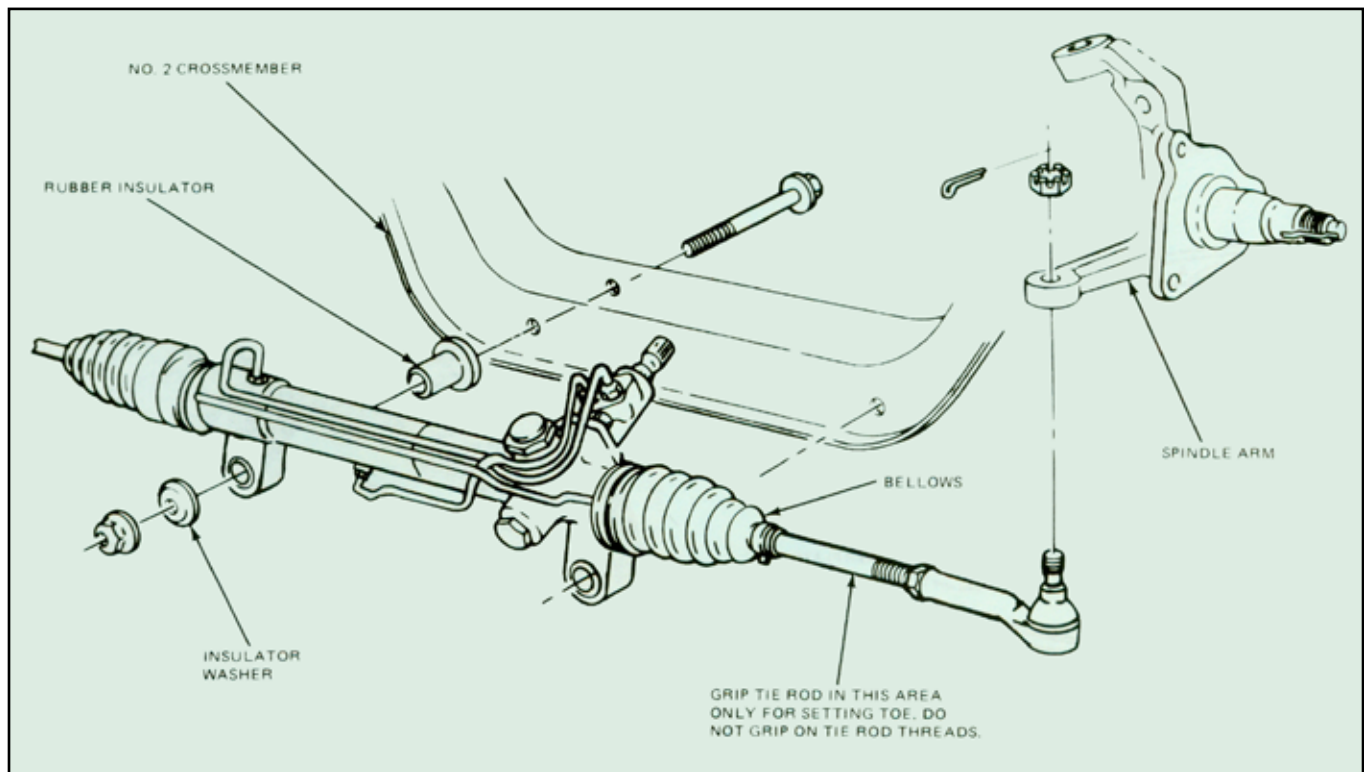
DID YOU KNOW?



THE NUMBER 1 CAUSE OF RACK & PINION FAILURE IS FLUID CONTAMINATION. THE SEALS USED ARE INTOLERANT OF ALL CHEMICALS BESIDES POWER STEERING FLUID AND WILL DETERIORATE IF EXPOSED.

INSTALLATION OF THE MANUAL RACK ON TO MUSTANG II CROSS MEMBER (RPP7478):

6. Position the wheels in a straight-ahead position. If your ignition key is on the steering column, lock the steering wheel by turning the key to the lock position.
7. Attach the new rack to the cross member and hand tighten the mounting bolts.
8. Connect the tie rods ends to the spindle and tighten the castle nuts to 35-47 ft-lbs and install cotter pins.
9. Verify the wheels are in a straight ahead position.
10. Center the steering wheel and reconnect the steering coupler. Tighten bolts to 20-37ft-lbs.
11. Torque the rack mounting bolts to 80-100 ft-lbs.



12. Inspect the rubber boots after the alignment. Make sure they are in their natural shape and not twisted. Spray the boots with silicone spray for protection.
13. Now that the rack is mounted and connected to the steering shaft, turn the steering wheel lock to lock and verify everything moves freely.
14. As a reminder, at the end of installation you will need an alignment.
15. Wipe down the rack and make sure port area is debris free. No chemicals! See Fig. 3
16. Proceed to the did you know tech tips.

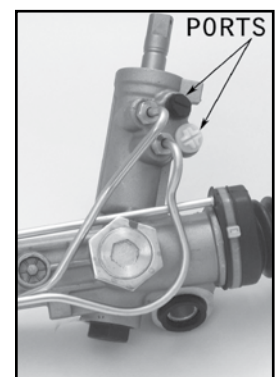







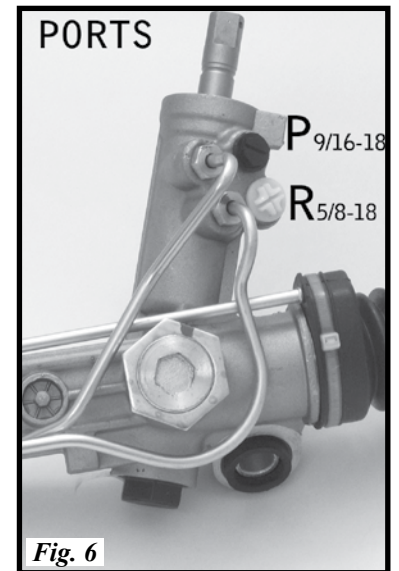
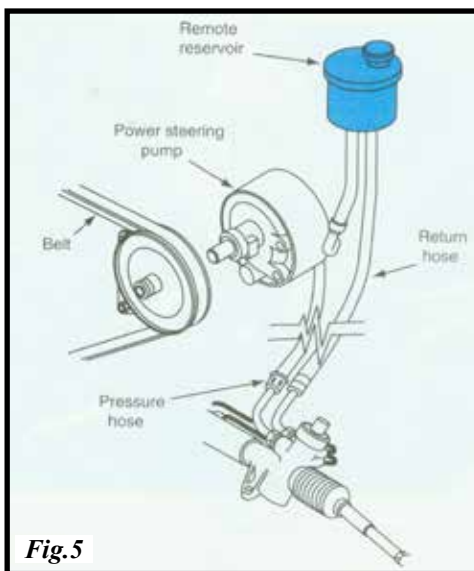
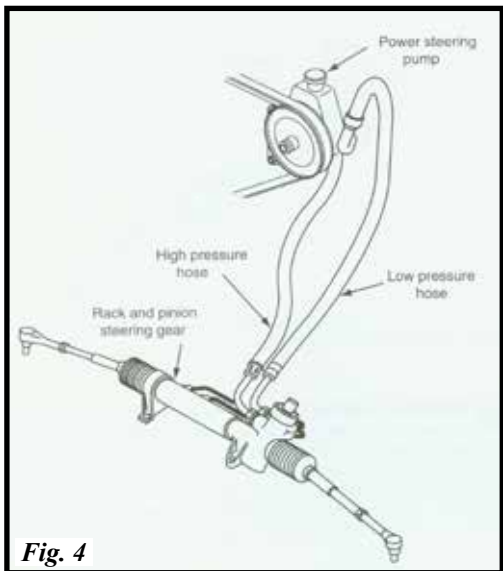
Fig. 3

DID YOU KNOW?

-  The number one cause of rack & pinion failure is fluid contamination. The seals used are intolerant of all chemicals besides power steering fluid and will deteriorate if exposed.
-  Ford specifies ESW-M2C128-B power steering fluid. Check your power steering pump manufacturers' fluid specifications. Make sure you use a premium fluid that meets both specifications.
-  Do not use any power steering hoses that are cracked, chafed, soft, or have bulges/damaged fittings
-  Different pumps have different operating pressures and flow ratings which can affect steering sensitivity.
-  Your pump selection, tire size, vehicle weight, & belt tension are critical and can effect steering response.

CONNECTING HYDRAULIC LINES TO THE RACK Check boxes off as you complete them.

- 17. With no lines connected to the rack or pump, flush the lines with power steering fluid and blow through them with air. Using fresh fluid, flush the power steering pump before connecting the hoses. Crank the pump by hand until fresh fluid runs out. See (Page 5) for flushing instructions.
- 18. Locate the pressure line from the power steering pump (it has metal fittings both ends) Attach the pressure hose to the pressure inlet port on the rack and pinion. See diagram. Finger-tighten the hose fittings before tightening to final torque. Use the chart to determine the proper torque specification. **DO NOT OVER-TIGHTEN THE THREADS!** See (Fig. 4-8)
- 19. Attach the return hose from the pump to the return port of the rack.



Flared Connector Fitting



Tighten 40-54 Nm
30-40 ft. lb.



O-Ring Fitting

Tighten 20-35 Nm
(15-26 pl. lb) After the nuts and beads have been firmly seated

Fig. 7

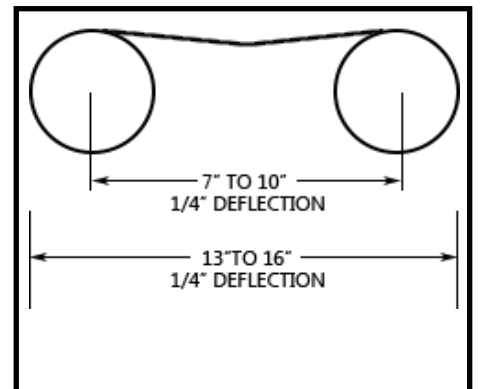


Fig. 8

- 20. Remove jack stands and lower the car.
- 21. Add fresh power steering fluid.
- 22. Start the car operating the steering in both directions.
- 23. Check for leaks at the pump, rack and hoses.
- 24. Bleed system & check for air bubbles in fluid reservoir. (See Page 5)
- 25. Fill the fluid reservoir to the recommended level and secure cap.
- 26. Get alignment.

PROCEDURES AND SPECIFICATIONS

SYMPTOM	POSSIBLE PROBLEM
Pump noise or groan	Restriction or trapped air or heat build up.
Foamy Fluid	Trapped air or leak in return hose drawing in air.
Cap blows off	Air in system building pressure-bleed out
No power assist after servicing	Contaminated fluid has restricted fluid in flow and bypass valves
Hard steering both directions	Insufficient pump flow/pressure, belt tension, leaking hoses, low fluid level, mismatched components ie: pump pressure doesn't match rack pressure needs. Check Tire pressure, or pulley diameter & alignment.

Caution: Flush system only with approved power steering fluid. Do not use a solvent.



How to Flush:

1. If the rack and pinion, pump and hoses are being replaced at the same time, it is not necessary to flush the system. Otherwise, follow the procedure below.
2. Disable engine from starting.
3. When only replacing the rack and pinion and not the pump, do not attach the hoses to the rack and pinion prior to flushing the system.
4. Disconnect the return hose from the pump and cap the reservoir return pipe.
5. Place the pressure hose into a suitable waste container such as an oil pan or bucket.
6. Fill the reservoir with power steering fluid.
7. Turn the engine over several times until the fluid being discharged from the pressure hose is free of contamination. Do not allow the pump to run out of fluid.
8. After the system is flushed, properly connect all hose fittings.



How to Bleed:

1. Raise the front wheels off the ground.
2. Turn the steering wheel to the full left lock.
3. Fill the pump reservoir to the "full Cold" level with new fluid. Leave cap off.
4. Turn steering wheel from full left lock to full right lock and back at least 20 times with engine off. Trapped air may cause fluid to overflow.
5. While turning wheel have an assistant check fluid level.
6. Start engine, be sure to maintain proper fluid level, reinstall cap.
7. Turn steering wheel from lock to lock at least 20 more times. Do not hold steering wheel at lock for more than three seconds.
8. Lower front wheels to the ground.
9. Turn the steering wheel in both directions and verify: Smooth power assist; Noiseless operation; Proper fluid level' No system leaks; and proper fluid condition.
10. If any problem remains, see "Special Conditions".



Special conditions:

- Fluid must be completely free of bubbles. Periodic bubbles could indicate a loose connection or leaky O-ring seal in either the return hose or pressure hose. Discolored fluid (milky, opaque, or tan color) switch ignition off, wait two minutes. Recheck hose connections. Repeat steps 4-9 from section above. If condition still exists, replace and check; the return hose clamps and o-rings; the pressure hose o-rings; and the rack cylinder line o-rings.



Noise-Pump whines or groans

- 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 the fluid.
- **Method 1:** Normal Cool Down. Switch engine off. Wait for system to cool.
- **Method 2:** Partial Fluid Replacement. Switch engine off. Use a suction device to remove fluid from reservoir. Refill with cool, Clean fluid.