

INSTALLATION INSTRUCTION

88585

Rev B

Rancho Suspension System **RS6585B** (2009 – March 2010) & **RS6578B** (April 2010 and up): 4WD Dodge 2500

READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION



IMPORTANT NOTES!

WARNING: This suspension system will enhance the off-road performance of your vehicle. It will handle differently, both on and off-road, from a factory equipped passenger car or truck. Extreme care must be used to prevent loss of control or vehicle rollover during abrupt maneuvers. Failure to drive this vehicle safely may result in serious injury or death to the driver and passengers. **ALWAYS WEAR** your seat belts, **REDUCE** your speed, and **AVOID** sharp turns and other abrupt maneuvers.

A. The RS6585B and RS6578B suspension system will only fit 2500 Dodge applications. **To install this system, coil springs, rear U-bolts, and a carrier bearing spacer (if applicable) must be purchased separately.** See application guide on page 11.

B. Before installing this system, have the vehicle's alignment and frame checked by a certified technician. The alignment must be within factory specifications and the frame of the vehicle must be sound (no cracks, damage or corrosion).

C. Do not install a body lift kit with this suspension system or interchange Rancho components with parts from another manufacturer. New Rancho shock absorbers are required and must be purchased separately. Front: RS999317 or RS5317; Rear: RS999056 or RS5056

D. Do not powdercoat or plate any of the components in this system. To change the appearance of components, automotive paint can be applied over the original coating.

E. Each hardware kit in this system contains fasteners of high strength and specific size. Do not mix hardware kits or substitute a fastener of lesser strength. See bolt identification table on page 2.

F. Compare the contents of this system with the parts list in these instructions. If any parts are missing, contact the Rancho Technical Department at 1-734-384-7804.

G. Install all nuts and bolts with a flat washer. When both SAE (small OD) and USS (large OD) washers are used in a fastener assembly, place the USS washer against the slotted hole and the SAE washer against the round hole.

H. Apply a drop of thread locking compound to all bolts during installation. **CAUTION:** Thread locking compound may irritate sensitive skin. Read warning label on container before use.

I. Unless otherwise specified, tighten all nuts and bolts to the standard torque specifications shown in the table on page two. USE A TORQUE WRENCH for accurate measurements.

J. Some of the service procedures require the use of special tools designed for specific procedures. The following tools and supplies are recommended for proper installation of this system:

- Dodge Service Manual
- Pitman Arm Puller
- Universal Gear Puller
- Coil Spring Compressor
- Bench Vise
- Drill motor
- Reciprocating Saw
- Assorted Drills: 1/8" through 1/2"
- Torque Wrench (250 FT-LB capacity)
- 1/2" Drive Ratchet and Sockets
- Assorted Combination Wrenches
- Heavy Duty Jack Stands
- Wheel Chocks (wooden blocks)
- Hydraulic Floor Jack
- Center punch
- File
- Hammer
- Wire Brush (to clean bracket mounting surfaces)
- Black Enamel Paint
- Silicone Spray Lubricant
- Tape Measure
- Safety Glasses** (wear safety glasses at all times)

K. It is extremely important to replace torsion bars, CV flanges, and front drive shaft/pinion relationships as original. Be sure to mark left/right, front/rear, and indexing of mating parts before disassembly. A paint marker or light colored nail polish is handy for this.

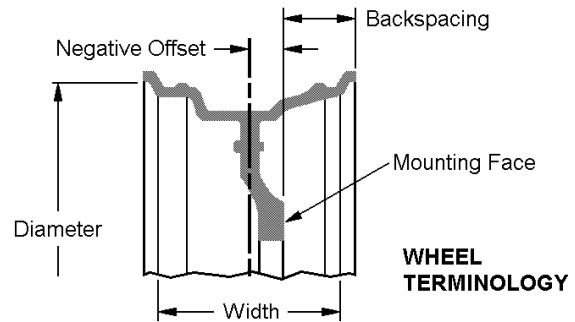
L. Suspension components that use rubber or urethane bushings should be tightened with the vehicle at normal ride height. This will prevent premature failure of the bushing and maintain ride comfort.

M. Welding on a car creates an electrical charge throughout the body and frame. Disconnect the vehicle's battery prior to any welding. Place welding ground clamps as near as

possible to the weld. Never use a vehicle suspension component as a welding ground point.

N. The required installation time for this system is approximately 6 to 8 hours. Check off the box () at the beginning of each step when you finish it. Then when you stop during the installation, it will be easier to find where you need to continue from.

O. The recommended tire size for this suspension system is 37" x 12.5". The maximum wheel backspacing is 6 inches on 17" wheels. Before installing any other combination, consult your local tire and wheel specialist.



WHEEL TERMINOLOGY

P. Important information for the end user is contained in the consumer/installer information pack. If you are installing this system for someone else, place the information pack on the driver's seat. Please include the installation instructions when you finish.

Q. Thank you for purchasing the best suspension system available. For the best-installed system, follow these instructions. If you do not have the tools or are unsure of your abilities, have this system installed by a certified technician. RANCHO SUSPENSION IS NOT RESPONSIBLE FOR DAMAGE OR FAILURE RESULTING FROM AN IMPROPER OR MODIFIED INSTALLATION

R. Exhaust modification may be required if exhaust pipe routes underneath front driveshaft. See Illus. 23.

STANDARD BOLT TORQUE SPECIFICATIONS						
INCH SYSTEM			METRIC SYSTEM			
Bolt Size	Grade 5	Grade 8	Bolt Size	Class 9.8	Class 10.9	Class 12.9
5/16	15 FT-LB	20 FT-LB	M6	5 FT-LB	9 FT-LB	12 FT-LB
3/8	30 FT-LB	35 FT-LB	M8	18 FT-LB	23 FT-LB	27 FT-LB
7/16	45 FT-LB	60 FT-LB	M10	32 FT-LB	45 FT-LB	50 FT-LB
1/2	65 FT-LB	90 FT-LB	M12	55 FT-LB	75 FT-LB	90 FT-LB
9/16	95 FT-LB	130 FT-LB	M14	85 FT-LB	120 FT-LB	145 FT-LB
5/8	135 FT-LB	175 FT-LB	M16	130 FT-LB	165 FT-LB	210 FT-LB
3/4	185 FT-LB	280 FT-LB	M18	170 FT-LB	240 FT-LB	290 FT-LB

<p>1/2-13x1.75 HHCS</p> <p>D T L X</p> <p>G = Grade Marking (bolt strength) D = Nominal Diameter (inches) T = Thread Pitch (threads per inch)</p>	<p>Grade 5 Grade 8</p> <p>L = Length (inches) X = Description (hex head cap screw)</p>	<p>M12-1.25x50 HHCS</p> <p>D T L X</p> <p>P = Property Class (bolt strength) D = Nominal Diameter (millimeters) T = Thread Pitch (thread width, mm)</p>	<p>10.9</p> <p>L = Length (millimeters) X = Description (hex head cap screw)</p>
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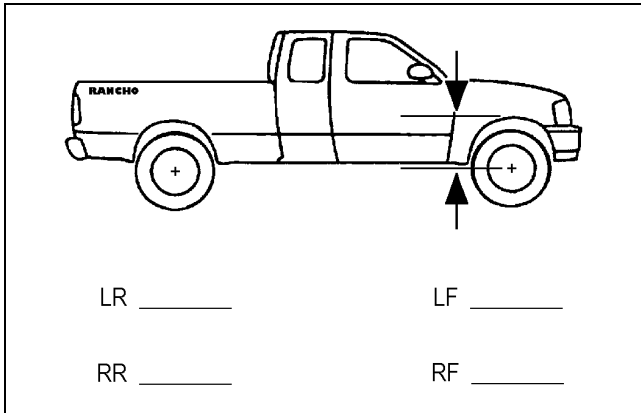
RS6585B / RS6578B PARTS LIST

<u>P/N</u>	<u>DESCRIPTION</u>	<u>QTY.</u>	<u>P/N</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
15106	Riser Block	2		M12-1.75 x 35 HHCS	2
176365B	Upper Link	2		M12 Washer	4
176366B	Lower Link	2		M12-1.75 Nylock Nut	2
176368B	Track Bar Bracket, Forward	1		M16-2.0 x 90 HHCS	2
176369B	Track Bar , Aft	1		M16-2.0 Top Lock Nut	2
176373	Bump Stop Bracket	2		M16 Washer	4
860534	Bump Stop Hardware Kit	1		Thread Lock	3
1417	Bump Stop	2	7788	Pitman Arm	1
	3/8-24 x 3.0 HHCS	4	94180	Consumer Information Pack	1
	3/8-24 Nylock Nut	4	780281	Rancho Decal	1
	3/8 SAE Washer	20	88585	Installation Instruction	1
	5/16-24 Nylock Nut	4	94119	Consumer Warranty Information	1
	5/16 SAE Washer	4	94177	Warning Sticker	1
860538	Brake Line Hardware Kit	1	176419	End Link Extension	2
176374	Spacer	1	860543	Link Bushing Kit	1
176379	Brake Hose Bracket	2		Bushing, Upper Link	8
176381	Parking Brake Hanger	1		Sleeve, Upper Link	4
	3/8-16 x 1.0 HHTS	1		Bushing, Lower Link	8
	M8-1.25 x 20 HHCS	2		Sleeve, Lower Link	4
	M8-1.25 Nylock Nut	2		Shim	16
	M8 Washer	4	OR		
	3/8 USS Washer	1	RS6578B		
860612	Hardware Kit	1	176603	End Link Extension	2
	M14-2.00 x 150 HHCS	2	860680	Link Bushing Kit	1
	M14 Washer	4		Bushing, Upper Link	8
860672	Track Bar Bracket Hardware Kit	1		Sleeve, Upper Link	4
176376	Sleeve	1		Bushing, Lower Link	8
	M14-2.0 x 80 HHCS	1		Sleeve, Lower Link - Aft	2
	M14 Washer	2		Shim	16
	M14-2.0 Top Lock Nut	1	860563	Lower Link, Forward Sleeve Kit	1
				Sleeve, Lower Link, Fore – 18mm	2

FRONT SUSPENSION

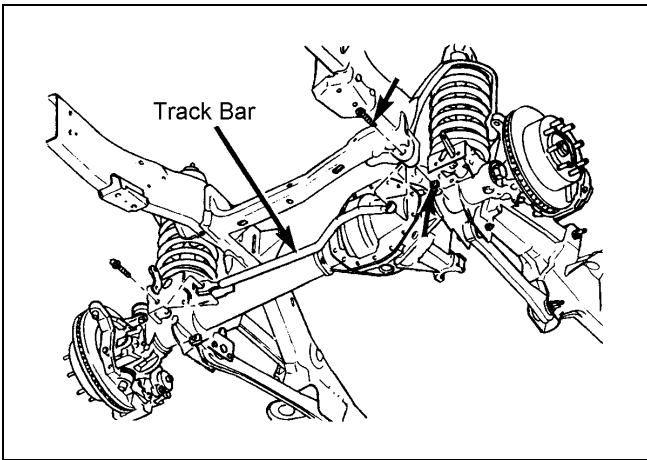
VEHICLE PREPARATION

1) Park the vehicle on a level surface. Set the parking brake and chock rear wheels. Measure and record the distance from the center of each wheel to the top of the fender opening. See illustration 1.



Illus. 1

- 2) If equipped, remove the front skid plate.
- 3) Disconnect the track bar from the frame bracket. See illustration 2.

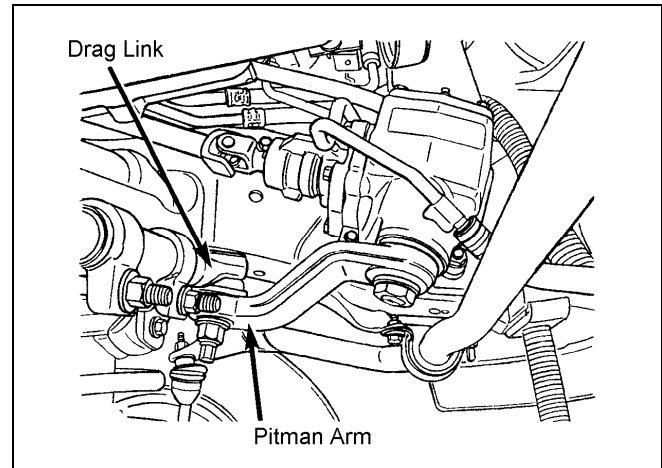


Illus. 2

4) Raise the front of the vehicle and support the frame with jack stands. Remove the front wheels and set them aside.

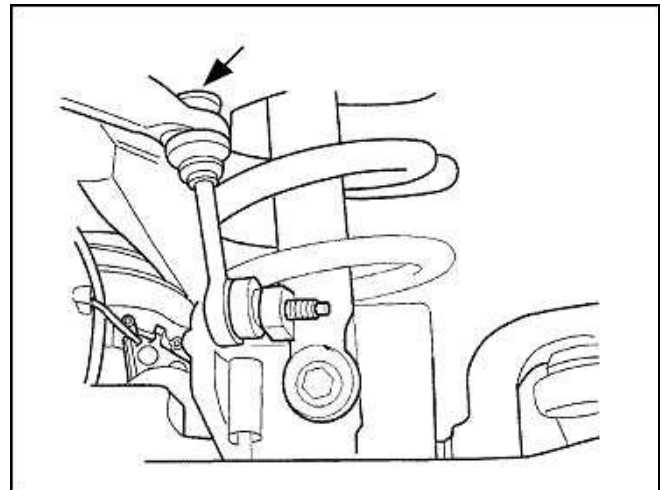
PITMAN ARM & SWAY BAR END LINK REMOVAL

- 1) Remove the drag link nut from the pitman arm.
- 2) Using a gear puller, separate the drag link from the pitman arm. See illustration 3.



Illus. 3

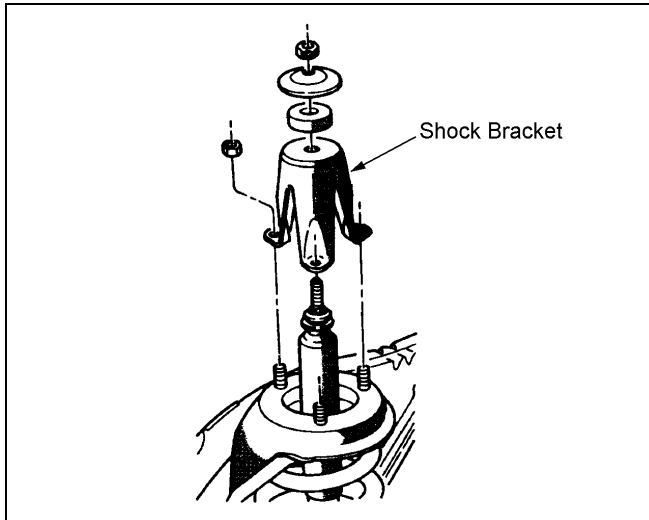
- 3) Mark the pitman arm and steering gear box shaft for installation reference. Remove the nut and washer from the pitman arm.
- 4) Using a pitman arm puller, remove the pitman arm.
- 5) Remove the sway bar upper nut, retainer and cushion as shown in illustration 4.



Illus. 4

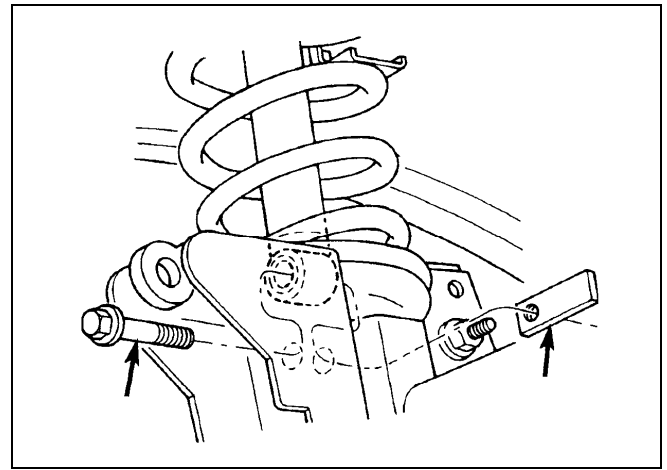
SHOCK ABSORBER & COIL SPRING REMOVAL

- 1) Support the front axle with a floor jack. Secure the axle to the jack to keep it from rotating.
- 2) Mark the front differential yoke and drive shaft for installation reference. Separate the drive shaft from the differential.
- 3) Remove the mounting bolts holding the front brake hoses to the axle brackets. Disconnect the front differential vent hose.
- 4) Remove the nut, retainer and bushing from the shock absorber stud in the engine compartment. Remove the three nuts from the shock bracket. See illustration 5. Remove shock bracket.



Illus. 5

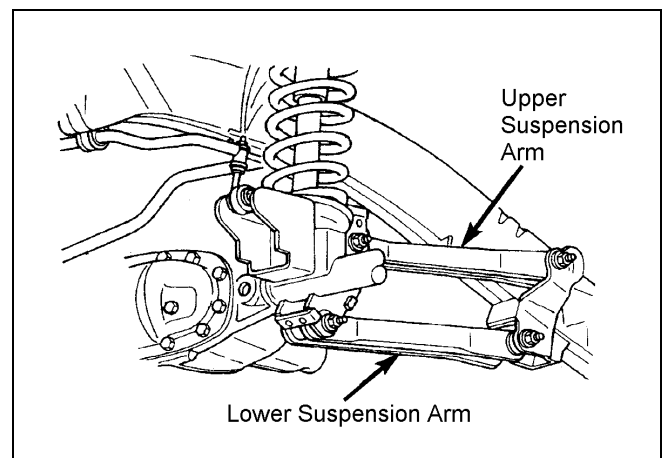
- 5) Remove the lower bolt from the axle bracket. See illustration 6. Remove the shock absorber from the engine compartment.



Illus. 6

- 6) Repeat steps 4 and 5 for the other side.
- 7) Mark the lower suspension arm cam adjusters and axle brackets for installation reference.
- 8) Loosen the lower suspension arm bolts. Remove the upper suspension arms. See illustration 7.

NOTE: The upper suspension arm bolts cannot be removed completely without removing the exhaust system on some applications. Sliding the bolts to one side or cutting off the bolt head may be an option. Two new bolts and 4 spacer washers (for the OE nut) are provided in kit 860612.



Illus. 7

- 9) Mark the coil spring and axle pad for installation reference.

10) Carefully lower the axle until the coil springs are free from the upper mounts. Remove the coil springs.

CAUTION: Do not allow the front axle assembly to hang from the brake hoses.

UPPER & LOWER LINK INSTALLATION

1) Insert the larger bushings from kit 860543 into the lower links (176366B).

2) Apply lithium grease to the outside of the 16mm sleeves from kit 860543. If the forward lower mounting bolt is 18mm, use 2 – 18mm sleeves from kit 860563. Using a bench vise, press the sleeves into the larger bushings.

3) Insert the smaller bushings into the upper links (176365B).

4) Apply lithium grease to the outside of the smaller sleeves from kit 860543. Using a bench vise, press the sleeves into the smaller bushings.

5) Remove the lower suspension arms.

6) Apply lithium grease to the outside of the lower link bushings. Place a shim from kit 860543 on each side of the bushings.

7) Loosely attach lower links (176366B) to the frame and axle brackets with the original hardware. See illustration 8.

NOTE: Clean bolts if grease inadvertently contacts threads. Do not apply grease to mounting hardware.



Illus. 8

8) Apply lithium grease to the outside of the upper link bushings. Place a shim from kit 860543 on each side of the bushings.

9) Loosely attach upper links (176365B) to the frame and axle brackets with the original hardware and supplied 14mm bolt if necessary.

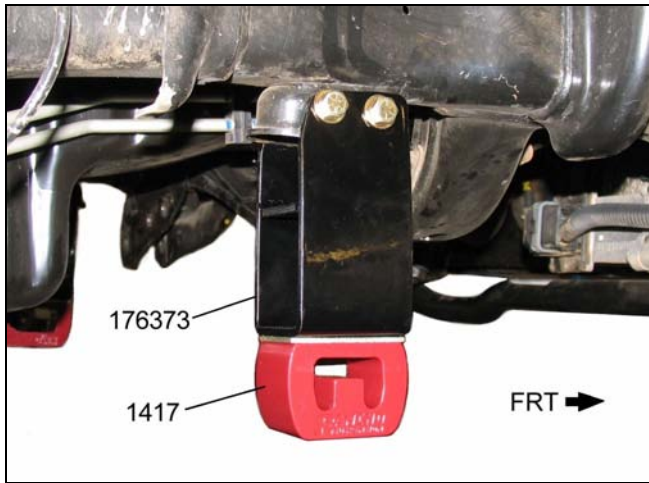
NOTE: To provide nut exposure for tightening, install two washers on the new upper link bolt then install the original nut.

10) Align reference marks and reattach the front drive shaft with the original hardware. Apply thread lock and tighten bolts to 21 ft. lbs.

BUMP STOP BRACKET INSTALLATION

1) Remove bump stops from frame brackets.

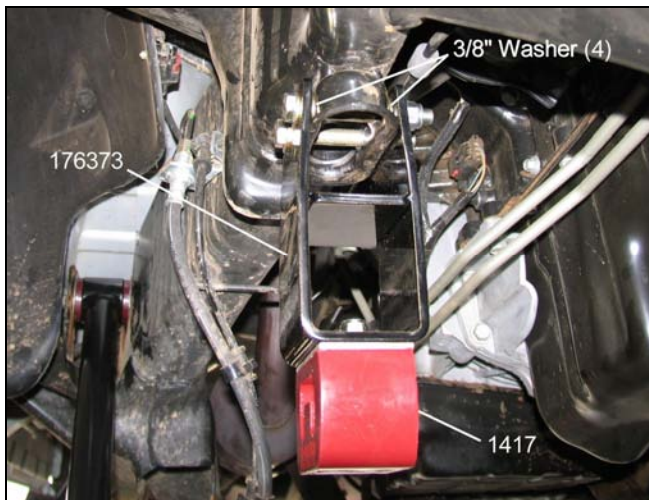
2) Place bump stop bracket 176373 over the frame bracket as shown in illustration 9. Keep the chamfered corner of the bracket toward the rear.



Illus. 9

- 3) Using the bracket as a template, mark and center punch the mounting hole locations. Drill a 13/32" hole through the frame bracket at each location.
- 4) Attach bump stop bracket 176373 to the frame bracket with the 3/8" hardware from kit 860534. Use the supplied 3/8" washers between the brackets. See illustration 10. Tighten nuts and bolts to 32 ft. lbs.

NOTE: The driver side frame bracket does not require 3/8" washers on the outboard side.



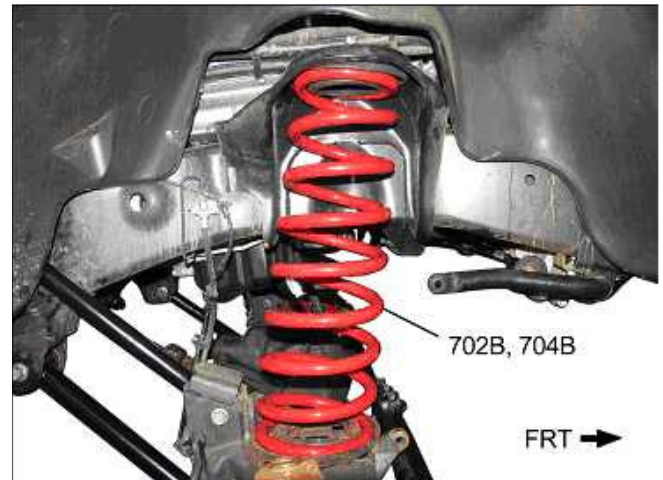
Illus. 10

- 5) Attach bump stop 1417 to bracket 176373 with the 5/16" hardware from kit 860534. Tighten nuts to 20 ft. lbs.
- 6) Repeat steps 2 through 5 for the other side.

COIL SPRING & SHOCK ABSORBER INSTALLATION

NOTE: The driver side coil spring may be taller than the passenger side on some applications. See application guide.

- 1) Using a quality spring compressor, compress left coil spring 702B, 708B.
- 2) Insert left coil spring between the driver side axle pad and upper mount. Align spring with reference marks. Remove spring compressor.
- 3) Compress right coil spring 702B, 704B.
- 4) Insert right coil spring between the passenger side axle pad and upper mount. Align spring with reference marks. Remove spring compressor. See illustration 11.



Illus. 11

- 5) Carefully raise front axle. Do not lift vehicle off frame supports.
- 6) Fully extend new Rancho front shock absorber RS999317 or RS5317. Insert shock into coil spring from engine compartment.
- 7) Attach shock to axle bracket with the original hardware. Tighten bolt to 100 ft. lbs.
- 8) Install lower retainer and bushing on shock. Install shock bracket and the three original nuts. Refer back to illustration 5. Tighten nuts to 55 ft. lbs.
- 9) Install upper bushing and retainer. Install shock absorber nut and tighten to 40 ft. lbs.

10) Repeat steps 6 through 9 for the other side.

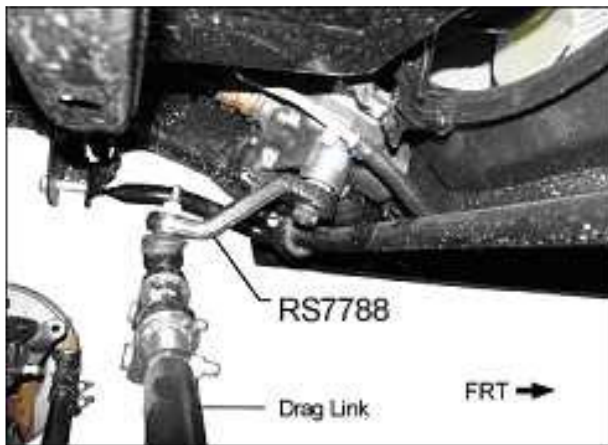
PITMAN ARM & TRACK BAR BRACKET INSTALLATION

1) Transfer reference marks from the original pitman arm to Rancho pitman arm RS7788. Align marks and attach pitman arm to the steering shaft with the original hardware. Tighten nut to 185 ft. lbs.

2) Loosen clamp bolts on the drag link adjustment sleeve. Rotate the ball stud on the drag link upward. Insert the drag link into the pitman arm. See illustration 12.

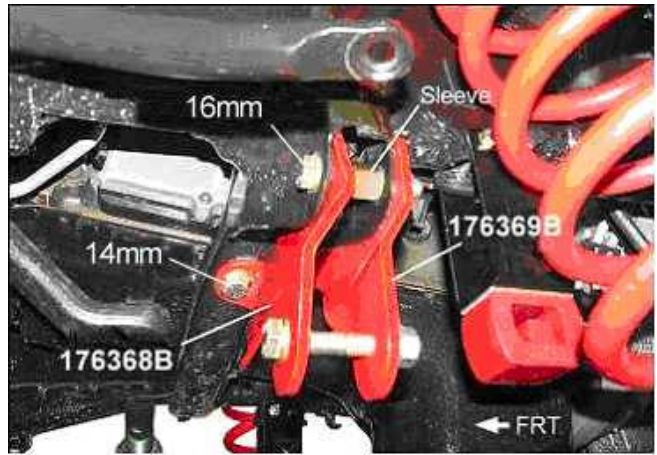
3) Attach the drag link to the pitman arm with the original nut. Tighten the nut to 40 ft. lbs. then an additional 1/4 turn.

4) Turn the adjustment sleeve two turns to increase the length of the drag link. Adjust the sleeve clamps until the retaining bolts are on the bottom. Tighten the bolts to 45 ft. lbs.



Illus. 12

5) Using the 16mm and 14mm hardware from kit 860672, temporarily attach the forward (176368B) and aft (176369B) track bar brackets to the original bracket and cross member. See illustration 13.



Illus. 13

6) Using the aft bracket as a template, mark the two mounting hole locations on the back of the cross member. See illustration 14.

7) Remove brackets. Drill a 31/64" hole through the cross member at each location.



Illus. 14

8) Attach track bar brackets to the frame and cross member with the hardware from kit 860672. Apply thread lock and snug down the 16mm sleeve bolt first, the 14mm cross member bolt second, and the 12mm bolts last.

9) Tighten the 16mm bolts to 165 ft. lbs., 14mm bolts to 120 ft. lbs., then the 12mm bolts to 75 ft. lbs.

END LINK EXTENDER & BRAKE HOSE BRACKET INSTALLATION

1) Apply thread lock to the original end link stud. Attach end link extender RS176419 (10 mm end link stud) or RS176603 (12 mm end link stud)

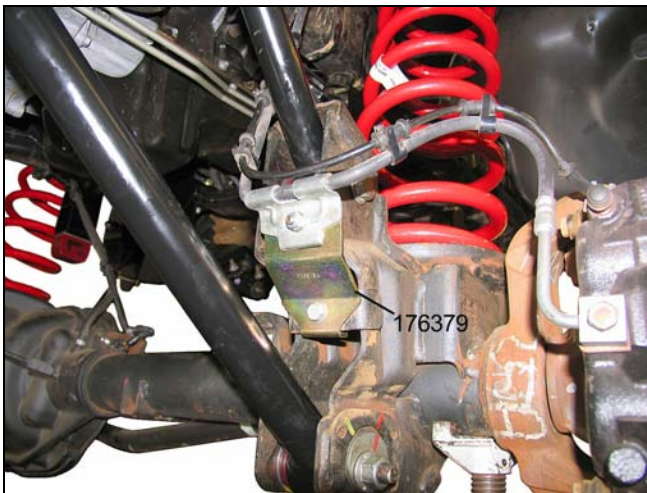
to end link. See Illus. 15. Tighten extender securely.

2) Attach the end link assembly to the sway bar with the original retainers, bushings, and nut. Tighten to 20 ft. lbs.



Illus. 15

3) Repeat steps 1 and 2 for the other side.
4) Attach brake hose bracket 176379 to the axle bracket with the original bolt. See illustration 16.



Illus. 16

5) Attach the original brake hose bracket to bracket 176379 with the 8mm hardware from kit 860538.
6) Repeat steps 7 and 8 for the other side.
7) Install front wheels and lower vehicle to ground. Tighten the lug nuts to 145 ft. lbs.

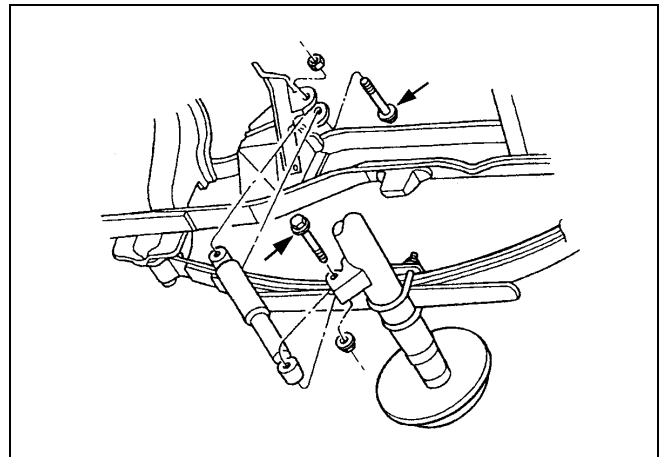
8) Install thread lock and tighten the upper link bolts to 120 ft. lbs. Install thread lock, align reference marks and tighten the lower link bolts to 160 ft. lbs.

9) Install thread lock and attach track bar to forward and aft brackets with the 16mm hardware from kit 860672. Tighten the track bar bolt to 165 ft. lbs.

REAR SUSPENSION

RISER BLOCK INSTALLATION

1) Chock front wheels. Raise the rear of the vehicle and support the frame with jack stands. Remove the rear wheels.
2) Support the rear axle assembly with a floor jack.
3) Remove the shock absorber upper and lower mounting bolts. See illustration 18. Remove the rear shock absorbers.



Illus. 17

4) Remove the u-bolts on one side only.

CAUTION: Do not allow the axle to hang by any hoses or cables.

5) Lower the axle about five inches. Remove the plastic center pin from the bottom of the spring.

6) Place riser block 15106 on the axle pad. Align pins and raise the axle until block is seated against the spring.

7) Attach leaf spring to axle with new Rancho u-bolts. See illustration 18. Tighten u-bolt nuts evenly to 110 ft. lbs.



Illus. 18

8) Install new Rancho shock absorbers RS999056 or RS5056. Tighten upper and lower mounting bolts to 100 ft. lbs.

9) Repeat steps 4 through 8 for the other side.

BRAKE LINE SPACER INSTALLATION

1) Disconnect the brake line junction block from the rear axle by removing the vent hose fitting.

2) Place the 3/8" washer from kit 860538 on brake line spacer 176374. Attach the spacer to the axle. See illustration 19.



Illus. 19

3) Attach the junction block to the spacer with the vent hose fitting.

PARKING BRAKE HANGER INSTALLATION

1) Release parking brake. Mark the location of the left cable adjuster nut. Loosen nut and disconnect the left rear parking brake cable.

2) Compress tabs and remove the left cable from the frame bracket and the brake hanger.

3) Remove the parking brake hanger from the driver side frame rail. Reattach the hanger using the lower hole and the original screw.

4) Using brake hanger 176381 as a template, mark the mounting hole location on the frame rail as shown in illustration 20. Drill a 1 1/32" hole.

5) Attach new brake hanger 176381 to the frame rail with the self-tapping screw from kit 860538 as shown in illustration 20.



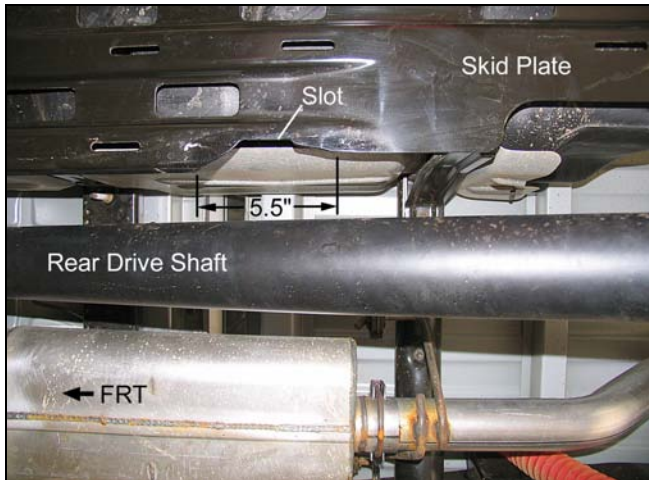
Illus. 20

6) Insert left brake cable through the new hanger, under the frame and through the original bracket hole. Lock the fitting tabs into the hole.

7) Reattach the brake cable. Set the adjuster nut to its original location.

GAS TANK SKID PLATE MODIFICATION- IF APPLICABLE

1) To prevent contact with the drive shaft, cut off a 5.5 inch long section from the gas tank skid plate with a reciprocating saw. See illustration 21.



Illus. 21

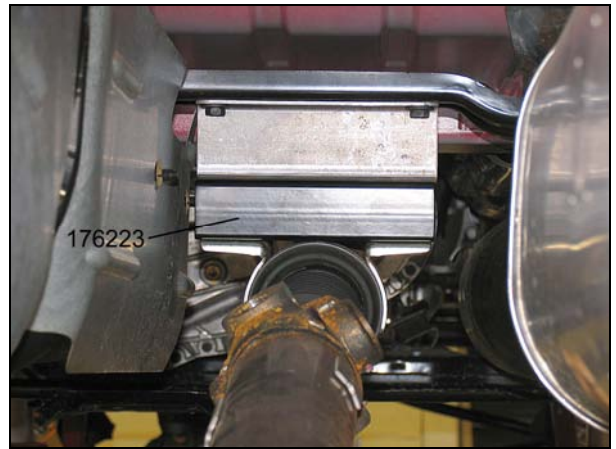
WARNING: Do not use a torch or grinding wheel when cutting near the gas tank.

- 2) File sharp edges and paint exposed metal.
- 3) Install rear wheels and lower vehicle to ground. Tighten lug nuts to 145 ft. lbs.

CARRIER BEARING DROP BRACKET INSTALLATION (IF APPLICABLE)

NOTE: See application guide for vehicles requiring carrier bearing drop bracket kit RS6608.

- 1) Support the drive shaft with a jack stand. Remove the bracket mounting bolts.
- 2) Lower drive shaft and place drop bracket 176223 between the carrier bearing and the original bracket. Raise drive shaft and align mounting holes. See illustration 22.



Illus. 22

- 3) Place sleeves from kit 6608 inside drop bracket 176223 over the mounting holes.
- 4) Attach carrier bearing to original bracket with the supplied 10mm hardware. Tighten bolts to 40 ft. lbs.

FINAL CHECKS & ADJUSTMENTS

- 1) Turn the front wheels completely left then right. Verify adequate tire, wheel, and brake hose clearance. Inspect steering and suspension for tightness and proper operation.
- 2) Check for adequate clearance (1/8" minimum) between the front driveshaft and the exhaust crossover pipe at full droop. If applicable, exhaust may require modification to clear driveshaft. See Illustration below.



Illus. 23

3) Readjust headlamps. Have vehicle aligned at a certified alignment facility.

Camber (degrees): .25° (not adjustable)
 Sum Toe In (degrees): .1° ± .05°

Recommended Alignment Specifications
 Caster (degrees): 4.0° min, +.75° max

**Please retain this publication for future reference.
 See Important Note P.**

Coil Spring Kit- RS80120B 704 (right) & 708 (left)	Coil Spring Kit- RS80121B 702B (qty- 2)	U-Bolt Kit- RS747	U-Bolt Kit- RS748	Carrier Bearing Kit- RS6608
2500 Mega Cab-Gas Engine	2500 Mega Cab- Diesel Engine	2500 Mega Cab- Diesel Engine	2500 Mega Cab- Gas Engine	All Vehicles Equipped with a Rear Driveshaft Carrier Bearing
2500 Gas Engine	2500 Diesel Engine	2500 Diesel Engine	2500 Gas Engine	