INSTALLATION INSTRUCTIONS

89113

Rev A

FOR RANCHO SUSPENSION SYSTEMS **RS66113B**:
2006 - 1997 Jeep Wrangler TJ / LJ 3.5-in. Short Arm System

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. Before installing this system, have the vehicle's alignment and frame checked at a state approved facility. The alignment must be within factory specifications and the frame must be sound (no cracks, damage, or corrosion).

B. Do not install a body lift kit with Rancho's suspension system or interchange parts from this system with components from another manufacturer. To obtain maximum rock crawling performance/articulation, use the following Rancho shock absorbers with this kit: RS5255, RS55255, RS7255 ,or RS999255 for the front & RS5256, RS55256, RS7256 or RS999256 for the rear.

C. Compare the contents of this system with the parts list in these instructions. If any parts are missing, including fasteners, contact the Rancho Technical Department at 1-734-384-7804. Each hardware kit in this system contains fasteners of high strength and specific size. Do not substitute a fastener of lesser strength or mix one hardware kit with another.

D. Apply THREAD LOCKING COMPOUND to all bolts during installation. One drop on the exposed threads of each bolt before installing the nut is sufficient to provide an adequate bond. CAUTION: Thread locking compound may irritate sensitive skin. Read warning label on container before use.

E. 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.

F. Unless otherwise specified, tighten all bolts to the standard torque specifications listed at the end of the note's section. Do not use an impact wrench to tighten any of these bolts. They tend to over tighten smaller bolts and under tighten larger bolts. USE A TORQUE WRENCH!!

G. Rancho parts come with a protective coating. Do not powder coat, chrome, cadmium, or zinc plate any of the components in this system. If you wish to change the appearance of components enamel paint can be applied over the original coating.

H. Do not weld anything to these components, and do not weld any of these components to the vehicle. If any component breaks or bends, contact your local Rancho dealer or Rancho for replacement parts.

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 kit. ☑

- ☐ Jeep Service Manual
- ☐ Spring Compressor
- ☐ Pitman Arm Puller C-4150-A
- ☐ Steering Linkage Puller C-3894-A
- ☐ Drill Motor
- ☐ Drill assortment (1/8" to 1/2")
- ☐ Torque Wrench (250 FT-LB capacity)
- ☐ Hammer
- ☐ 1/2" Drive Ratchet and Sockets
- ☐ Combination Wrenches
- ☐ Allen Wrenches
- ☐ Torx Key Sockets
- ☐ Hacksaw
- ☐ File
- ☐ Large "C" Clamps and/or Bench Vise
- ☐ Hydraulic Floor Jack
- ☐ Heavy Duty Jack stands
- ☐ Wheel Chocks (Wooden Blocks)
- ☐ Molybdenum Grease or Anti Seize Compound
- ☐ Synthetic Grease with Teflon
- ☐ Silicone Spray
- ☐ **Safety Glasses**--Wear safety glasses at all times

J. It is extremely important to replace torsion bars, CV flanges, and 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.

K. 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.

L. The required installation time for this system is approximately 5 to 6 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.

M. 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.

N. This suspension system was developed using the following tire and wheel combination: 33 x 12.50R-15 tire, 15" x 8" wheel with 3.75" of wheel backspacing. Before installing any other combination, consult your local tire and wheel specialist.

O. To reduce rear driveline vibration and/or to increase ground clearance, you may want to install a double-cardan driveshaft and not use the skid plate/crossmember spacers and shift relocating bracket. A double-cardan driveshaft for the Rubicon (Part No. 3394-0100) is available from: Powertrain Industries 7532 Anthony Avenue, Garden Grove, CA 92841 (714) 893-4583. Consult your local 4X4 shop for more information.

P. To achieve maximum articulation, **for rock crawling only,** disconnect the front sway bar end links. DO NOT OPERATE THIS VEHICLE ON PUBLIC ROADS OR AT SPEEDS GREATER THAN 15 MPH WITH THE SWAY BAR END LINKS DISCONNECTED.

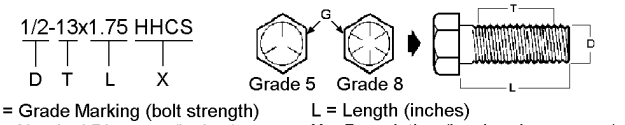
Q. Lubricate the end link swivels and the track bar end with molybdenum grease during installation and every 3000 miles.

R. 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 IS NOT RESPONSIBLE FOR DAMAGE OR FAILURE RESULTING FROM AN IMPROPER INSTALLATION.

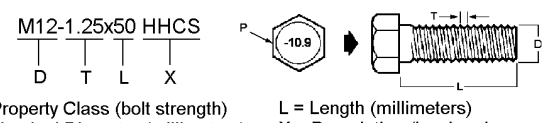
STANDARD BOLT TORQUE SPECIFICATIONS

INCH SYSTEM			METRIC SYSTEM			
Bolt Size	Grade 5	Grade 8	Bolt Size	Class 8.8	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	165FT-LB	210 FT-LB
3/4	185 FT-LB	280 FT-LB	M18	170 FT-LB	240FT-LB	290 FT-LB

BOLT IDENTIFICATION



G = Grade Marking (bolt strength)
D = Nominal Diameter (inches)
T = Thread Pitch (threads per inch)
L = Length (inches)
X = Description (hex head cap screw)



P = Property Class (bolt strength)
D = Nominal Diameter (millimeters)
T = Thread Pitch (thread width, mm)
L = Length (millimeters)
X = Description (hex head cap screw)

PARTS LIST

Part Number	Description	Qty.
RS66113B-1	**Box 1 of 3**	**1**
RS881010B	TJ Adjustable Lower Control Arm	4
RS66113B-2	**Box 2 of 3**	**1**
RS176086	Front Track Bar	1
RS860217	Crawler Hardware Kit	1
RS7727	Pitman Arm	1
RS602612	Track Bar Rod End	1
RS170081	Front Right Brake Line	1
RS170082	Front Left Brake Line	1
RS176088B	Sway Bar End Link, Rear	2
RS176443	Front Bumpstop Spacer	2
RS860155	Sub Assy, Rear End	1
RS545	Bushing EB1 Hourglass	4
RS420088	Sleeve - .688 X .448 X 1.40	4
RS7629	HHCS, 7/16-20 X 2.50	4
RS7616	Nut, 7/16-20 Top Lock	4
RS7726	Washer, 7/16 SAE	4
RS7746	Washer, 7/16 USS	6
RS860157	Sub Assy, Front Track Bar	1
RS520086-10	Track Bar Bushing	2
RS420086	Sleeve - .75 X .406 X 1.60	1
RS770070	Jam Nut, 3/4-16	1
RS770114	Cotter Pin, 1/8" X 1.25	1
RS7713	HHTS, 3/8-16 X 1.5	2
RS860560	Quick Disconnect Endlink Kit	1
RS860561	Quick Disconnect Hardware	1
RS770057	Quick Pin	2
RS770071	Rubber Washer	4
RS545	Bushing EB1 Hourglass	2
RS420084	Sleeve - .688 X .522 X 1.40	2
RS7623	HHCS, 1/2-20 X 2.75	2
RS770020	HHCS, 1/2-20 X 1.75	2
RS7722	Nut, 1/2-20 Nylock	4
RS7719	Washer, 1/2 USS	4
RS7723	Washer, 1/2 SAEH	4
RS770064	Washer, M10	2
RS602615	End Link, Swivel	2
RS176083	End Link, Center	2
RS176084	End Link, Bottom	2
RS176085	End Link Bracket	2

Part Number	Description	Qty.
RS89113	Instructions	1
RS94180	Information Pack	1
RS94177	Rollover Warning Label	1
RS94119	Consumer/Warranty Information	1
RS780281	Rancho Decal	1
R-RM0082-1112	Warranty Tag	1
RS130019	Rear Trackbar Bracket	1
RS420027	Bumpstop Spacer, Rear	2
RS860160	Sub Assy, Shift Relocator	1
RS77032	BHCS, 1/4-20 X .75	4
RS7710	Nut, 1/4-20 Nylock	4
RS77841	Washer 1/4 SAE	4
RS176090	Shift Relocator	1
RS42702	.5 Cc Thread Lock	2
RS860072	Sub Assy, Track Bar	1
RS420026	Sleeve - .750 X .482 X 1.60	1
RS77033	HHCS, 7/16-14 X 1.	1
RS7726	Washer, 7/16 SAE	2
RS78371	Nut 7/16-14 Top Lock	1
RS770051	HHCS, 3/8-16 X 1.0	1
RS603508	Washer, 3/8 SAE	2
RS78391	Nut 3/8-16 Top Lock	1
RS77035	HHCS, 12MMX1.75X70	2
RS7723	Washer, 1/2 SAE	4
RS7911	Nut, 12MM-1.75 Top Lock	2
RS860161	Sub Assy, Skid Plate	1
RS77037	SHCS, 1/2-13 X 2.5	6
RS140320	Washer, 1/2 Cone	6
RS7691	HHCS, M10-1.50X70MM	2
RS603525	Lockwasher, M10	2
RS176091	Skid Plate Spacer	6
RS176092	Skid Plate Shim	6
RS860483	Sub Assy, Skid Plate	1
RS7914	HHCS, M12-1.75X65MM	6
RS7915	Washer, M12	6
RS66113B-3	**Box 3 of 3**	**1**
RS822B	Front Coil Spring	2
RS695B	Rear Coil Spring	2

FRONT SUSPENSION

TRACK BAR & COIL SPRING REMOVAL

1) ☐ Park vehicle on a level surface and set the parking brake. Center front wheels and chock rear wheels.

2) ☐ Utilizing a straight edge, measure the horizontal distance between the outer edge of each front tire and the vehicle body (at top edge of fender well).

Left Side:_____ Right Side:_____

3) ☐ Remove the cotter pin and nut from the ball stud end of the track bar at the frame rail bracket. Separate the ball stud from the bracket with the recommended puller tool. See Illustration 1.

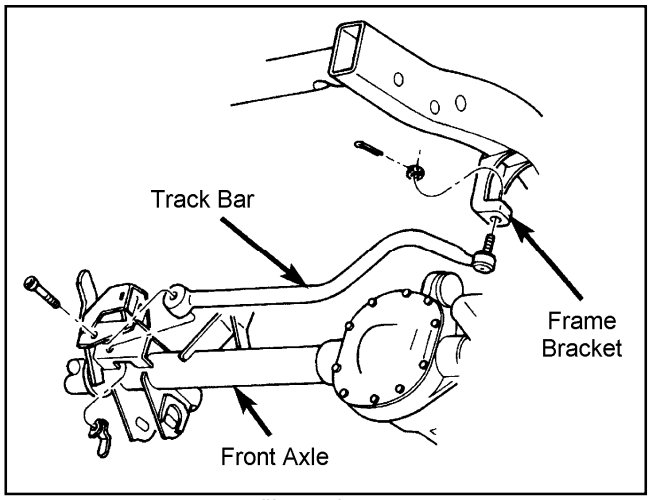


Illustration 1

4) ☐ Remove the bolt and flag nut from the axle bracket. Remove the track bar.

5) ☐ From inside the engine compartment, remove the upper stud nut, retainer and grommet from both front shock absorbers.

6) ☐ If applicable, remove the bolts attaching the automatic transmission skid plate to the frame rails and the transfer case cross member (Do not use an impact wrench). Remove the skid plate.

NOTE: To reinstall the automatic transmission skid plate, adapter kit RS904 must be purchased separately.

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

8) ☐ Position a floor jack under the front axle for support. Remove both front sway bar end links. See Illustration 2.

9) ☐ Remove the shock absorber lower nuts and bolts. Remove the front shock. DO NOT REUSE ORIGINAL SHOCK ABSORBERS.

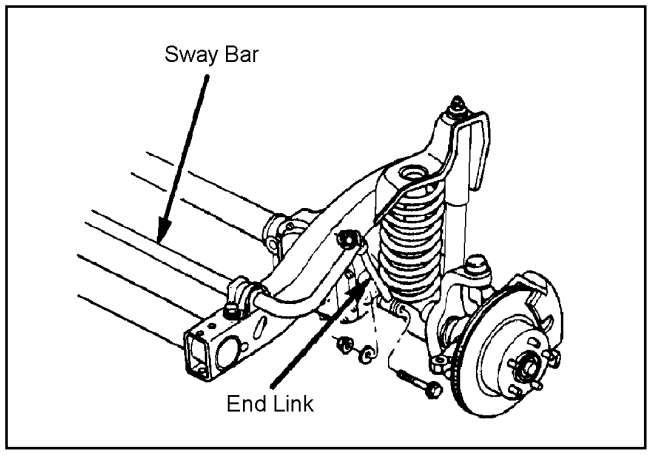


Illustration 2

10) ☐ Remove the rubber bump stop and bump stop mount from inside of the coil spring.

11) ☐ If applicable, remove the coil spring retainer bolt and retainer. Push down on the axle and remove the coil spring.

12) ☐ Repeat steps 10 and 11 for other side.

LOWER ARM REMOVAL & LINK INSTALLATION

1) ☐ Support the front axle with a floor jack.

2) ☐ If applicable, paint or scribe alignment marks on the adjustment cams and axle brackets for installation reference. See Illustration 3.

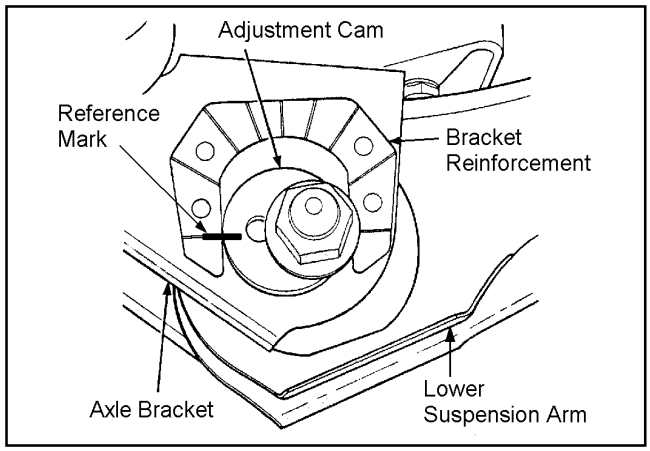


Illustration 3

3) ☐ If equipped with ABS brakes, remove sensor wires and clamps from the inboard side of the lower arms. Save clamps for reuse.

NOTE: Remove and replace one suspension arm at a time.

4) ☐ Adjust Rancho lower control arms RS881010B to 16.00"

CAUTION: Do not exceed maximum length of 16.32" Exposed thread must be 1-3/16" (1.188") or less. See Illustration 4

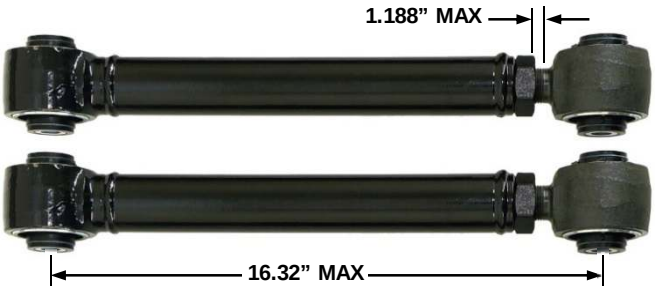


Illustration 4

5) ☐ Remove the nut, cam, and cam bolt from the axle bracket. Remove the nut and bolt from the frame bracket. Remove the lower suspension arm. See Illustration 5.

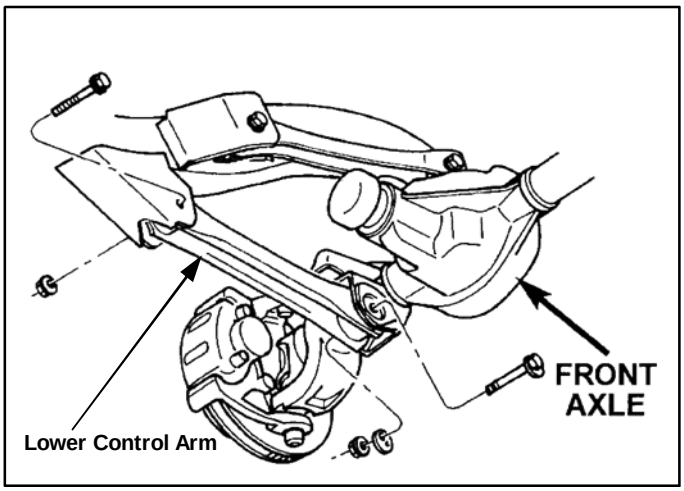


Illustration 5

6) ☐ Attach the adjustable end of the lower control arm R881010B to the frame bracket with original hardware. See Illustration 6.

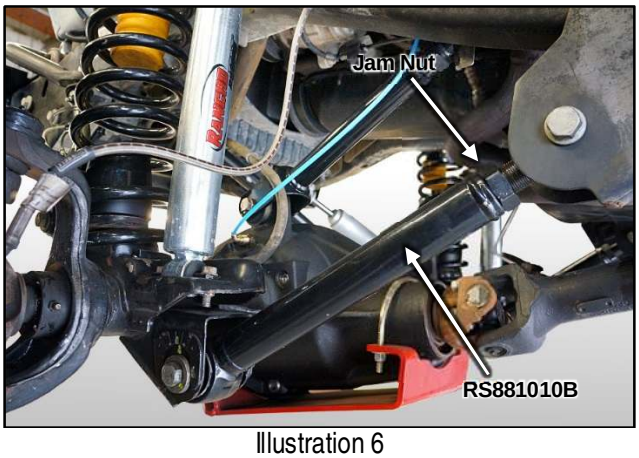


Illustration 6

7) ☐ Attach non-adjustable end of lower control arm to the axle bracket with the original hardware.

8) ☐ If control arms do not align with mounting holes, use a jack under the axle pinion housing or under the differential to slightly rotate axle the desired direction.

9) ☐ Repeat steps 2 through 5 to install control arm on the passenger side.

10) ☐ Torque lower control arm mounting hardware to 130 lb-ft. Tighten jam nut to 150 lb-ft.

PITMAN ARM REPLACEMENT

1) ☐ Remove the cotter pin and nut from the drag link at the pitman arm. Separate the drag link ball stud from the pitman arm with a puller tool. Do not use a pickle fork.

2) ☐ Center the steering wheel and mark the position of the original pitman arm. Remove the nut and washer from the steering gear shaft.

3) ☐ Remove the pitman arm from the steering gear with pitman arm puller C-4150-A.

4) ☐ Align and install new pitman arm RS7727 on the steering gear shaft. Install the washer and nut. Tighten the nut to 185 ft. lbs.

5) ☐ Install the drag link ball stud to the pitman arm. Install the nut and tighten to 60 ft. lbs. Install a new cotter pin.

COIL SPRING INSTALLATION

1) ☐ Lower the front axle and remove the hydraulic floor jack.

2) ☐ Drill a 5/16" hole through the center of the coil spring axle pad. For ease of installation, tap the hole (3/8-16).

3) ☐ Reinstall the rubber bump stop.

4) ☐ Compress the new front coil spring to 16 inches in length. Use a quality spring compressor like the one shown in Illustration 7.

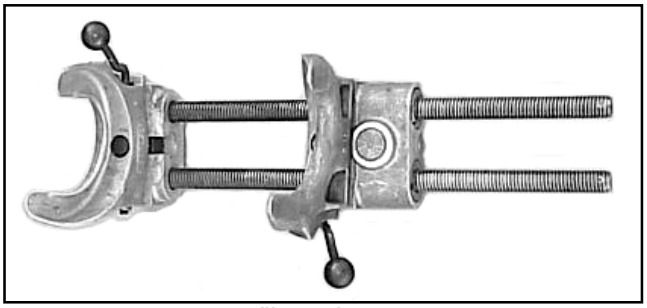


Illustration 7

5) ☐ Place bump stop spacer RS176089 inside the compressed spring as you install the spring into the upper and lower spring pockets. Carefully remove the spring compressor.

6) ☐ Rotate spring so pig tail end fits back in spring pocket.

7) ☐ Attach the bump stop spacer to the axle pad with the self-tapping screw from kit RS860710 and red Loctite. Torque to 20 ft-lbs..

8) ☐ Repeat steps 2 through 7 for other side.

BRAKE HOSE REPLACEMENT

NOTE: To keep the brake bleeding process to just the front calipers, do not allow the brake fluid to drain completely from the master cylinder reservoir.

1) ☐ Separate the left front brake hose from the brake tube and the frame rail. Plug tube to prevent brake fluid leakage.

2) ☐ Remove the brake hose from the caliper. Discard copper washers.

3) ☐ Attach left brake hose RS170082 to the caliper with NEW copper washers from kit RS860086, and the original bolt. See Illustration 8. Tighten the bolt to 23 ft.-lbs.

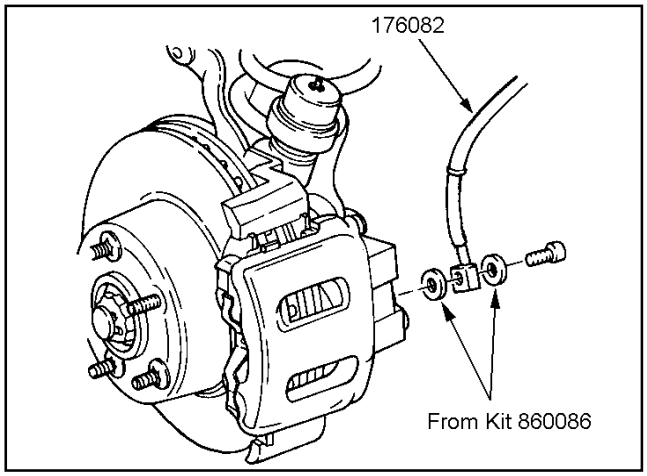


Illustration 8

4) ☐ Attach the new brake hose to the frame and brake tube. Tighten securely.

5) ☐ Repeat steps 1 through 4 to install right front brake hose RS170081.

6) ☐ Refill the master cylinder reservoir with approved brake fluid and bleed the front brakes as follows:

- Attach a clear hose to the right front caliper bleeder screw and immerse the other end into a container of clean brake fluid.
- Loosen the bleeder valve on the caliper.
- Have an assistant push the brake pedal down and then hold.
- Tighten the bleeder valve and slowly release the pedal.
- Repeat the procedure until all air is purged from the caliper.
- Attach the hose and container to the left front caliper and repeat the bleeding process. Refill the brake master cylinder reservoir as necessary.

SWAY BAR END LINK ASSEMBLY

1) ☐ Apply silicone lubricant and press a bushing from kit RS860561 into a front end link bottom socket (RS176084).

2) ☐ Apply silicone lubricant and press a sleeve from kit 860561 into the installed bushing.

3) ☐ Install a rubber washer from kit RS860561 onto each end of center section RS176083.

4) ☐ Connect the bottom socket assembly to a top swivel (RS602615) with the center section. Insert a set of locking pins (RS770057) as shown in Illustration 9.

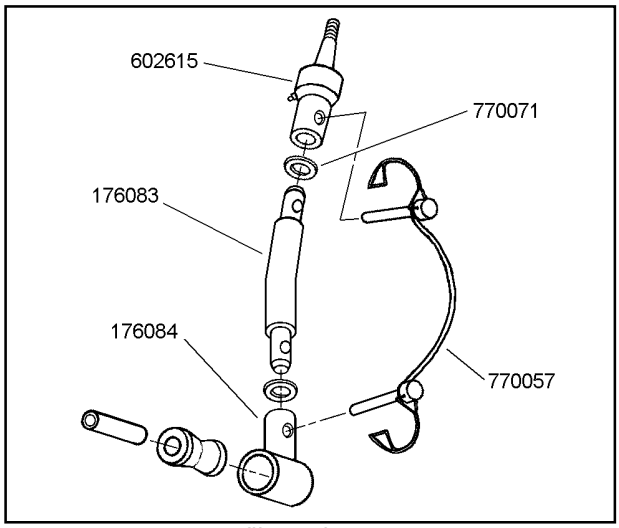


Illustration 9

5) ☐ Grease the top swivel. Push down on the ball stud when applying grease for the first time. Stop when grease flows past ball.

6) ☐ Repeat steps 1 through 5 to assemble the other end link.

SWAY BAR END LINK & SHOCK INSTALLATION

1) ☐ Support the front axle with a floor jack.

2) ☐ Loosely attach end link bracket RS176085 to the axle bracket with hardware from kit RS860561. See Illustration 10.

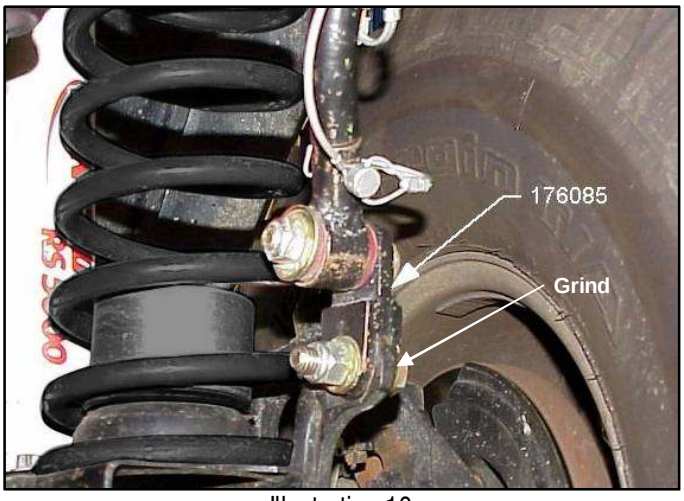


Illustration 10

3) ☐ Loosely attach a new end link assembly to the installed bracket with hardware from kit RS860561.

4) ☐ Insert the top swivel of the link assembly into the sway bar. Install a 10mm washer from kit RS860561 then the supplied nut. Tighten the nut to 45 ft. lbs.

CAUTION: Over tightening the nut on the end link swivel may damage the ball stud. **Do Not** use an impact wrench.

5) ☐ Drill a 17/64" hole in fender support as shown in Illustration 23.

6) ☐ Repeat steps 2 through 5 for other side.

7) ☐ Grind the passenger side axle bracket even with end link bracket RS176085. See Illustration 10.

8) ☐ Install one retaining washer and grommet onto each new front shock absorber. Attach shocks to axle brackets. Tighten bolts to 23 FT-LBS.

9) ☐ Install front wheels and lower vehicle to the ground. Tighten lug nuts to 80--110 FT-LBS.

10) ☐ Position shock stud through upper mounting hole. Install upper shock grommet, retainer and nut. Tighten to 17 FT-LBS. Repeat for other side.

11) ☐ Tighten the sway bar lower link bolts to 70 FT-LBS.

12) ☐ Align the reference marks on the adjustment cams and lower arm axle brackets. Tighten nuts to 85 FT-LBS.

13) ☐ Apply grease to the new lower suspension arms and the top swivel of the sway bar end links. DO NOT OVER GREASE!

TRACK BAR INSTALLATION

1) ☐ Install the jam nut from kit RS860157 on the new track bar end (RS602612). Thread the end assembly into the new track bar (RS176086) until only four threads are exposed. Do not tighten the jam nut.

2) ☐ Apply silicone spray and press the bushings and sleeve from kit RS860157 into the track bar assembly.

3) ☐ Loosely attach the new track bar to the axle bracket with the original bolt and flag nut.

4) ☐ Temporarily attach the track bar end to the frame rail bracket.

5) ☐ Repeat tire to fender well measurements (refer back to step 2 under **TRACK BAR REMOVAL**). If necessary, adjust the track bar end to duplicate the previously measured difference. Tighten the jam nut.

6) ☐ Tighten the track bar to axle bracket mounting bolt to 55 ft. lbs. and the ball stud nut to 65 ft. lbs. Install a new cotter pin.

REAR SUSPENSION

TRACK BAR & COIL SPRING REMOVAL

1) ☐ Chock front wheels. Disconnect and remove the rear sway bar end links.

2) ☐ Disconnect the track bar from the frame bracket. See Illustration 11.

3) ☐ Raise the rear of the vehicle and support the frame with jack stands. Remove the rear wheels.

4) ☐ Separate the track bar from the axle bracket. Remove the track Bar. See Illustration 11.

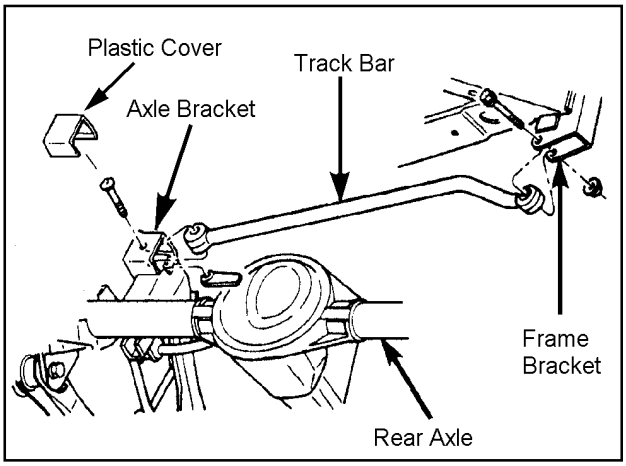


Illustration 11

5) ☐ Support the rear axle with a floor jack and remove the shock absorbers. DO NOT REUSE ORIGINAL SHOCK ABSORBERS.

6) ☐ Mark the orientation of the coil springs on the axle pads. Carefully lower the rear axle until the coil springs are free from the upper mount seat. Remove the coil springs.

TRACK BAR BRACKET INSTALLATION

1) ☐ Place track bar bracket RS130019 on top of the axle bracket as shown in figure 13. To properly align the bracket, insert a 12mm bolt from kit RS860072 through both brackets.

2) ☐ Using the new bracket as a template, mark the two additional mounting holes on the axle bracket. Remove bracket and drill a 13/32" hole through the top of the axle bracket and 15/32" hole through the side.

3) ☐ Reinstall the track bar bracket and attach it to the axle with the sleeve and hardware from kit RS860072. See Illustration 12. Tighten to specifications.

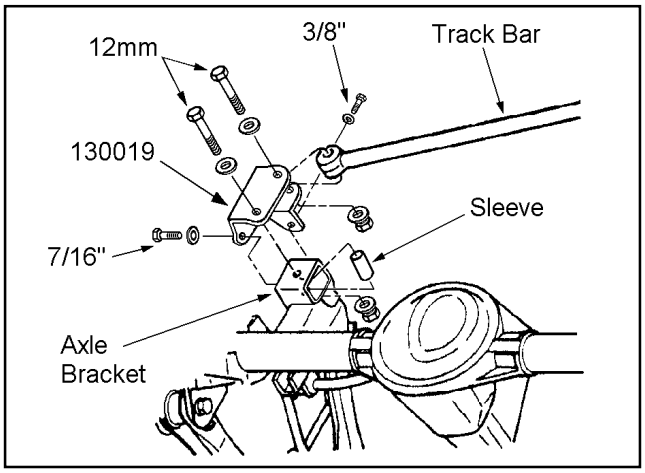


Illustration 12

4) ☐ Insert track bar into track bar bracket and install the 14mm hardware from kit RS860072.

NOTE: Do not attach the track bar to the frame bracket or tighten the mounting bolt at this time.

5) ☐ Bend gas tank skid plate away from track bar if necessary.

LOWER ARM REPLACEMENT

NOTE: Remove and replace one suspension arm at a time.

1) ☐ Support the rear axle with a hydraulic jack.

2) ☐ Adjust Rancho lower control arms RS881010B to 16".

CAUTION: Do not exceed maximum length of 16.32" Exposed thread must be 1-3/16" (1.188") or less. Refer back to Illustration 1.

3) ☐ Remove the lower arm axle and frame mounting bolts. Remove the lower suspension arm.

4) ☐ Attach the adjustable end of the lower control arm R881010B to the frame bracket with original hardware. See Illustration 13.

5) ☐ Attach non-adjustable end of lower control arm to the axle bracket with the original hardware.

If control arms do not align with mounting holes, use a jack under the axle pinion housing or under the differential to slightly rotate axle the desired direction.

6) ☐ Repeat steps 3 through 6 to install control arm on the passenger side.

7) ☐ Torque lower control arm mounting hardware to 130 lb-ft. Tighten jam nut to 150 lb-ft.

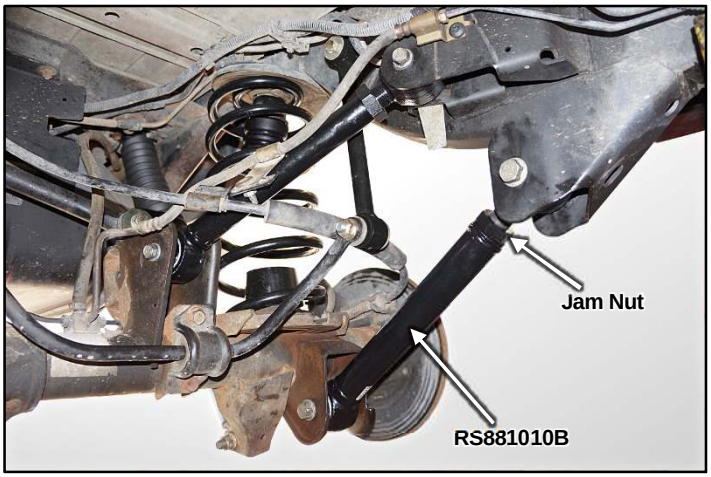


Illustration 13

BUMP STOP SPACER & COIL SPRING INSTALLATION

1) ☐ Remove the rubber bump stop and bump stop bracket from the upper spring mount.

2) ☐ Insert Rancho spacer RS420027 and reinstall the bracket with the 10mm hardware from kit RS860161. Insert the bump stop into the bump stop bracket. See Illustration 14.

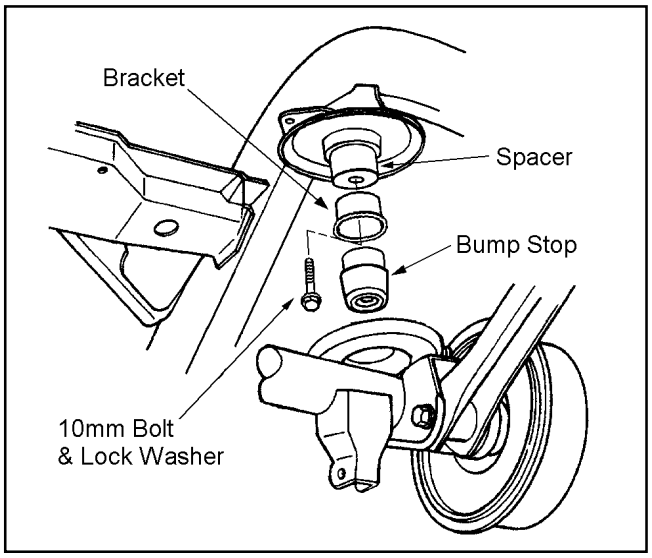


Illustration 14

3) ☐ Repeat steps 1 & 2 for other side.

4) ☐ Lower rear axle and position the new coil springs onto the axle pads. Align springs with reference marks. Raise the axle until the spring seat in the upper mounts.

NOTE: When installing coil springs, make sure that the rubber damper is positioned in the upper mount and the small egg-shaped coil end is at the top.

5) ☐ Install new Rancho rear shocks to the upper frame rail. Tighten mounting bolts to 23 FT-LBS.

6) ☐ Loosely attach shocks to the axle brackets.

7) ☐ Install wheels and lower vehicle to the ground. Do not remove wheel chocks. Tighten lug nuts to 80-110 FT-LBS.

SWAY BAR END LINK INSTALLATION

1) ☐ Apply silicone lubricant and press a bushing from kit RS860155 into a new rear end link (RS176088).

2) ☐ Apply silicone lubricant and press a sleeve from kit RS860155 into the installed bushing.

3) ☐ Repeat steps 1 and 2 to install the rest of the bushings and sleeves.

4) ☐ Attach the new end link assemblies to the frame brackets and rear sway bar with the hardware from kit RS860155. See Illustration 15. Tighten the end link mounting bolts to 40 ft. lbs.

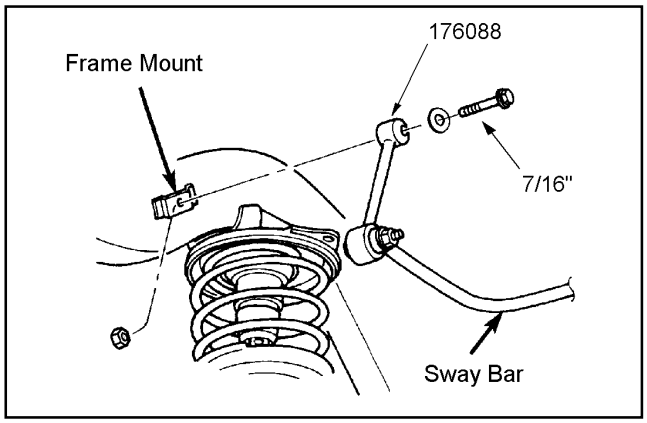


Illustration 15

NOTE: It may be necessary to enlarge the mounting holes in the sway bar and frame brackets to 7/16".

5) ☐ Place the track bar into the frame bracket and install the original hardware. Tighten the track bar mounting bolts to 74 ft. lbs.

6) ☐ Tighten all lower arm pivot bolts to 130 ft. lbs. and the shock absorber to axle bracket bolts to 74 ft. lbs.

7) ☐ Grease new lower suspension arms until you see a slight amount of grease coming out of bushings. DO NOT OVER GREASE!

TRANSMISSION & TRANSFER CASE

NOTE: See Important Note O before proceeding.

CROSS MEMBER RELOCATION

1) ☐ Place the transmission in neutral. Support the transfer case crossmember/skid plate with a hydraulic jack. Loosen the 6 bolts holding the crossmember to the frame. See Illustration 16. Do not use an impact gun.

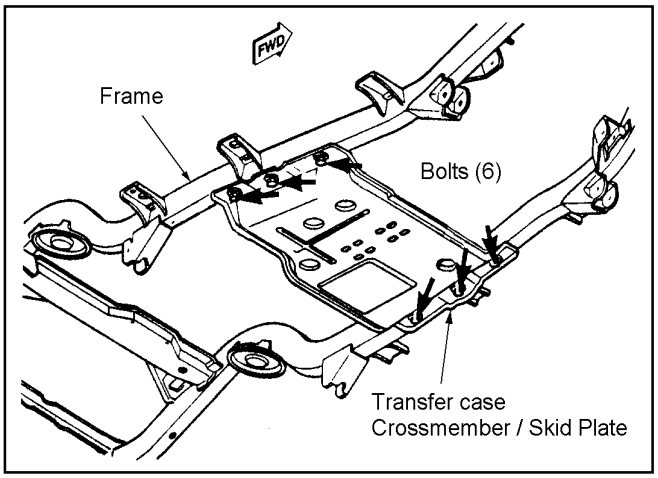


Illustration 16

2) ☐ Remove 3 bolts on one side and carefully lower the cross member/skid plate.

3) ☐ Place 3 spacers from kit RS860161 between the cross member and the frame with the conical end of the spacer facing down. See Illustration 17. For vehicles with an automatic transmission, add 3 shims.

4) ☐ If flat head screws were removed, install a conical washer and apply thread lock to 3 flat head screws from kit RS860161. Insert the screws through the crossmember, spacers, and into the frame. See Illustration 17.

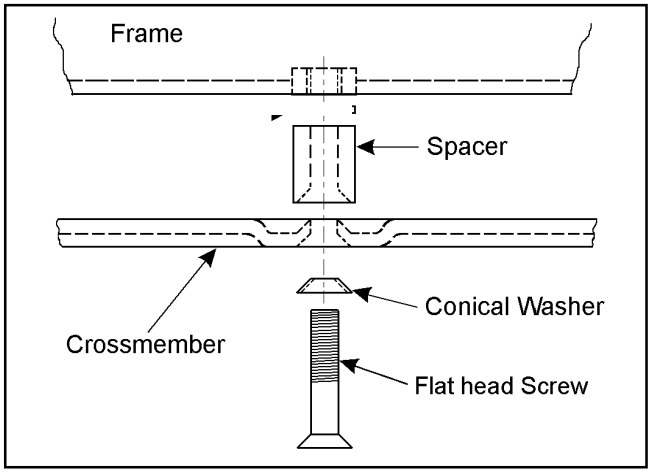


Illustration 17

5) ☐ If hex head screws were removed, install the hardware from kit RS860483. See Illustration 18.

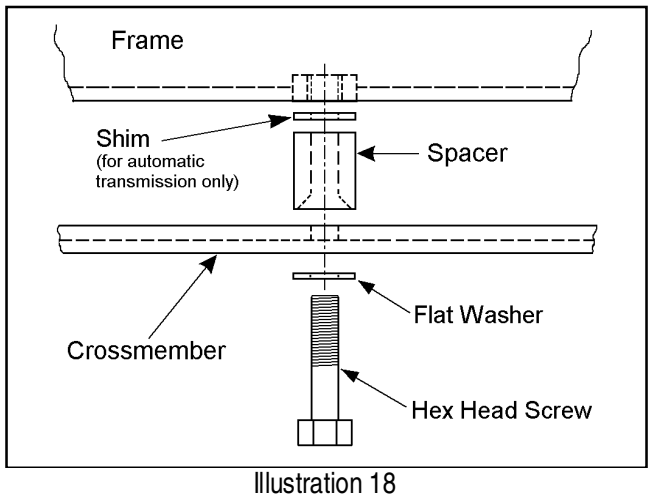


Illustration 18

6) ☐ Repeat steps 3 through 5 for the other side of the cross member. Tighten all bolts to 45 FT-LBS.

TRANSFER CASE LINKAGE RELOCATION & ADJUSTMENT

1) ☐ Pull back carpet/mat to gain access to torque shaft bracket mounting screws. If necessary, loosen the screws attaching the console to the floor panel.

2) ☐ Remove the four screws that attach the torque shaft bracket to the floor pan. See Illustration 19.

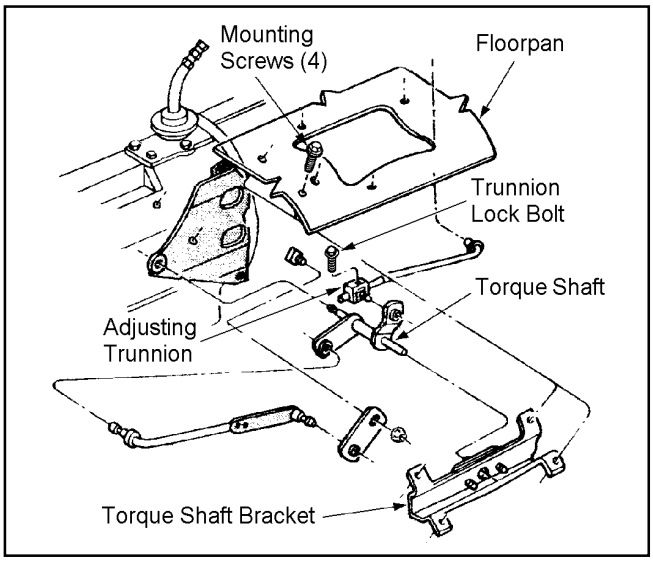


Illustration 19

3) ☐ Slide the torque shaft bracket off the torque shaft, and remove the bearing plate & gasket.

4) ☐ Attach the bearing plate (with gasket) to shift relocating bracket RS176090 as shown in Illustration 20.

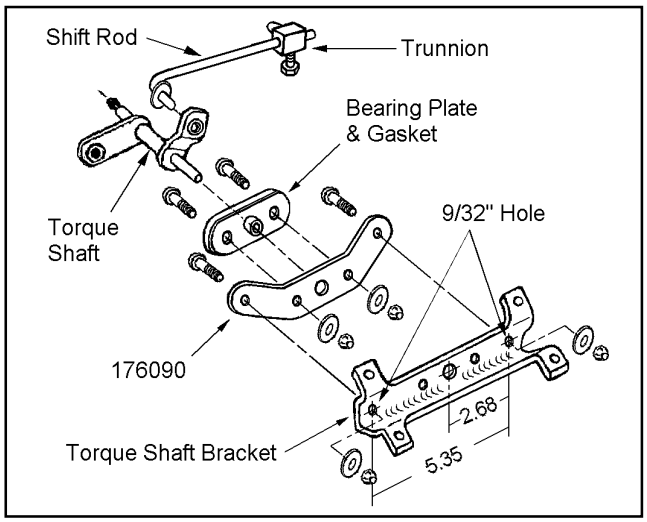


Illustration 20

5) ☐ Using bracket RS176090 as a template, mark the two mounting holes locations on the torque shaft bracket. See figure 20. Drill a 9/32" hole at each location.

6) ☐ Attach the shift relocating bracket RS176090 to the torque shaft bracket with the hardware from kit RS860160. See Illustration 20.

7) ☐ Insert the torque shaft into the bearing plate and reinstall the torque shaft bracket to the floor pan. Verify that the torque shaft is level and the shifting linkage moves without restriction. If necessary, file the end of the shift rod to provide adequate clearance.

8) ☐ Shift transfer case into 4L position and loosen lock bolt on adjusting trunnion.

NOTE: Be sure shift rod slides freely in trunnion.

9) ☐ Verify that transfer case range lever is fully engaged in 4L position. Tighten adjusting trunnion lock bolt.

10) ☐ Reinstall carpet/mat and tighten console mounting bolts.

FLOOR PAN MODIFICATION (MANUAL TRANS ONLY)

1) ☐ Move the seats to the full rearward position.

2) ☐ Pry up the shift boot and bezel from the floor console. See Illustration 21.

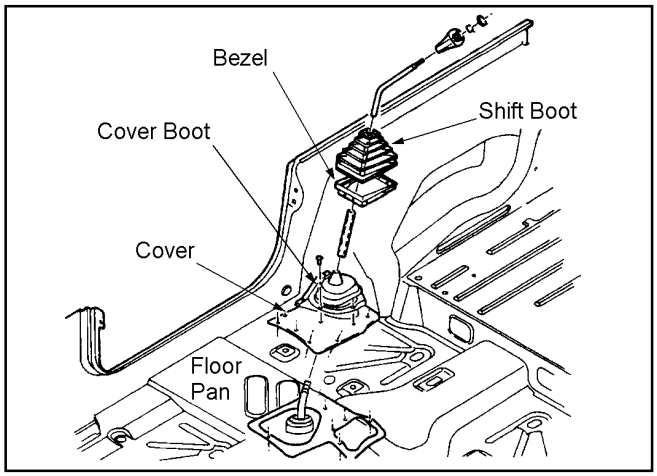


Illustration 21

3) ☐ Remove the bolts attaching the center console to the floor pan.

4) ☐ Lift the center console upward and remove through the passenger door.

5) ☐ Remove the 4 screws attaching the cover boot to the cover. Slide the boot upward to expose the opening in the cover and floor pan.

6) ☐ Shift the transmission into 2nd and reverse. Verify a minimum of 1/8" clearance between the shift lever and floor pan. If necessary, enlarge the opening in the floor pan with a half round file.

7) ☐ Reposition the cover boot. Install one screw on the left side or 9 o'clock position.

8) ☐ Rotate the boot clockwise to match the increased floor pan opening. Mark and drill the three new mounting holes. See Illustration 22.

Illustration 22

9) ☐ Reinstall the cover boot, console, and shift boot.

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) ☐ With the suspension at maximum extension (full droop), inspect and rotate all axles and drive shafts. Check for binding and proper slip yoke insertion. The slip yoke should be inserted a minimum of one inch into the transfer case and/or transmission.

3) ☐ Ensure that the vehicle brake system operates correctly. If new brake hoses were installed, verify that each hose allows for full suspension movement.

4) ☐ Readjust headlamps. Have vehicle Aligned to manufacturer's specifications.

Alignment Specifications

Adjustment	Preferred	Range
Caster	7°	±1.0°
Camber (fixed angle)	-0.25°	±0.63°
Toe-In (each wheel)	0.15°	±0.15°
Thrust Angle	0	±0.15°

END LINK DISCONNECT PROCEDURE (FOR ROCK CRAWLING ONLY)

1) ☐ Remove the hitch pins and center sections from the front sway bar end links. Place center sections inside vehicle for safe storage.

2) ☐ Rotate the sway bar upward.

3) ☐ Connect the sway bar to the inside of the fender wells as shown in Illustration 23.

Illustration 23

IMPORTANT NOTICE

WARNING: DO NOT OPERATE THIS VEHICLE ON PUBLIC ROADS OR AT SPEEDS GREATER THAN 15 MPH WITH THE SWAY BAR END LINKS DISCONNECTED.

Please retain this publication for future reference. See Important Note M.

Rancho Technical Department 1-734-384-7804.