

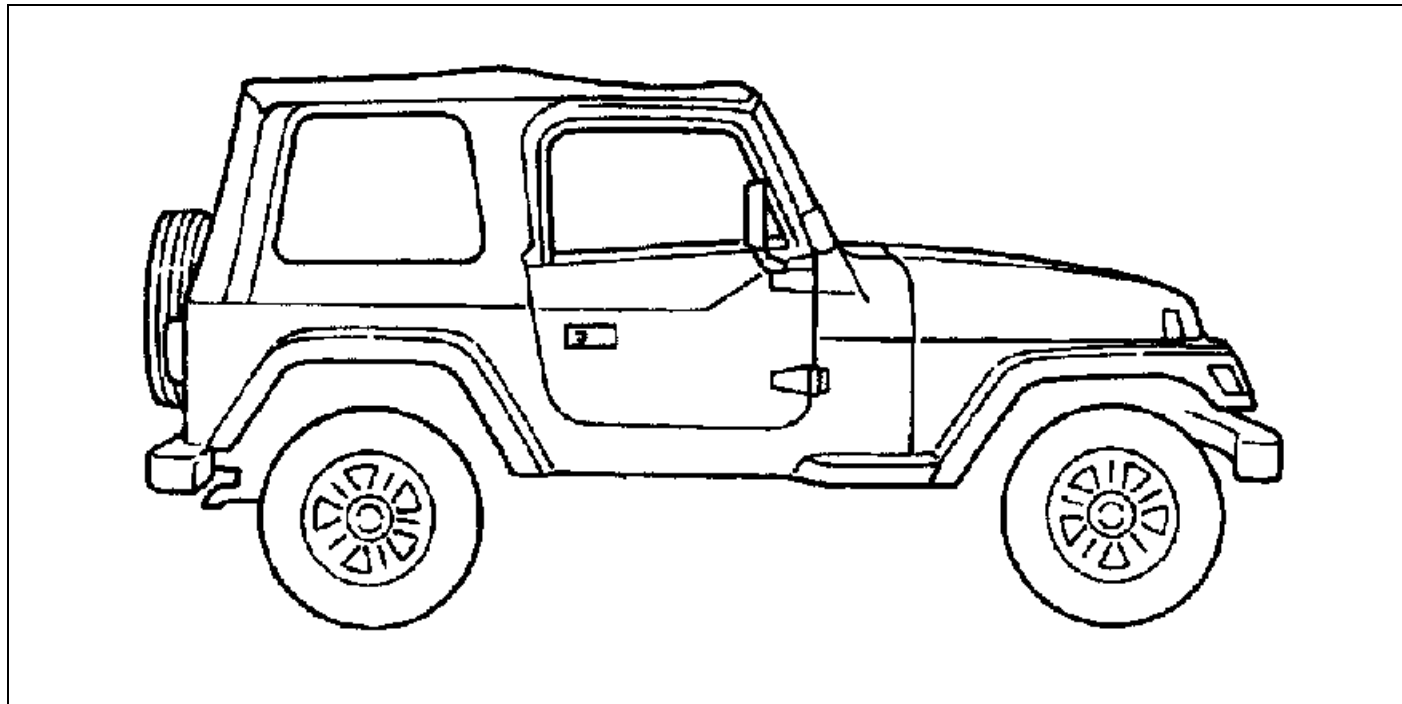
INSTALLATION INSTRUCTIONS

88029

REV B

FOR SUSPENSION SYSTEMS RS6502 & RS6503: JEEP WRANGLER (TJ)

READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION



IMPORTANT NOTES!

- A. The vehicle's alignment must be within factory specifications before installing this system. Have the alignment checked at a state approved facility.
- B. Check the frame of the vehicle for any damage or severe corrosion. If there is any structural damage, Do Not install this system
- C. Do not install a body lift kit with Rancho's suspension system or interchange parts from this system with components from another manufacturer. Use the appropriate Rancho shock absorbers. Contact your local Rancho representative for the correct application.
- D. 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 1-800-5SHOCKS. 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.
- E. 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.
- F. 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.

RANCHO
SUSPENSION®

PO BOX 5429 LONG BEACH, CA 90805
ə 1-800-574-6257 ə

G. 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!!!**

H. Rancho parts come with a protective coating. Do not chrome, cadmium, or zinc plate any of the components in this kit, or alter their original finish in any way. However, you may add a layer of Enamel paint over the original coating.

I. 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. These special tools should be used when recommended.

K. The following tools and supplies are recommended for proper installation of this kit. P

- ☐ Jeep Service Manual
- ☐ Spring Compressor
- ☐ Drill Motor
- ☐ 23/64", 15/32", 13/32" and 9/32" Drills
- ☐ Torque Wrench (250 FT-LB capacity)
- ☐ 1/2" Drive Ratchet and Sockets
- ☐ Combination Wrenches
- ☐ Allen Wrenches
- ☐ Torx Key Sockets
- ☐ Heavy Duty Jack stands
- ☐ Wheel Chocks (Wooden Blocks)
- ☐ Hydraulic Floor Jack
- ☐ Large "C" Clamps and or Bench Vise
- ☐ Hammer

- ☐ Molybdenum Grease or Anti Seize Compound
- ☐ Silicone Spray
- ☐ **Safety Glasses**--Wear safety glasses at all times

L. 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.

M. 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.

N. The required installation time for this system is approximately 8 hours. Check off the box (P) 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.

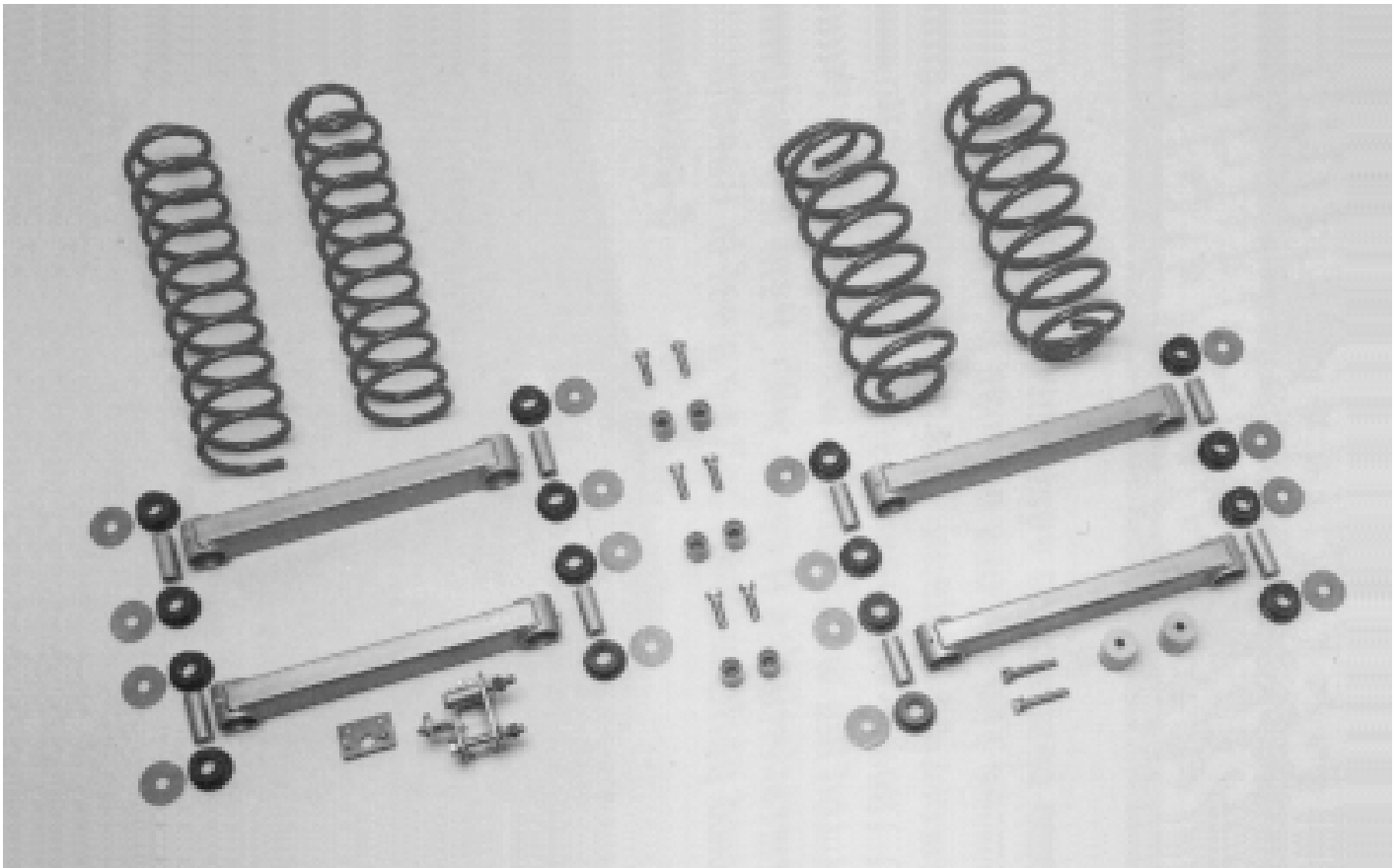
O. Important information for the end user is contained in the consumer information pack. If you are installing this system for someone else, display the information pack by hanging it from the rear view mirror.

P. 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 IMPROPER INSTALLATION OF THIS SUSPENSION SYSTEM.**

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
BOLT IDENTIFICATION						
1/2-13x1.75 HHCS D T L X G = Grade Marking (bolt strength) D = Nominal Diameter (inches) T = Thread Pitch (threads per inch)			M12-1.25x50 HHCS D T L X P = Property Class (bolt strength) D = Nominal Diameter (millimeters) T = Thread Pitch (thread width, mm)			

PARTS LIST

P/N	DESCRIPTION	QTY.	P/N	DESCRIPTION	QTY.
130019	Right Track Bar Bracket	1	860072	Track Bar Relocation Kit	1
1335	Lower Suspension Arm	4		Sleeve	1
615	Front Coil Spring (RS6503 only)	2		7/16-14x1.0 HHCS	1
616	Rear Coil Spring	2		7/16-14 Stover Nut	1
618	Front Coil Spring (RS6502 only)	2		7/16 SAE Washer	2
8567	Rear Bump Stop Spacer Kit	1		M12-1.75x70 HHCS	2
	Spacer	2		M12-1.75 Nut	2
8597	Bushing/Sleeve Kit	1		SAE Washer	4
	Sleeve	8		3/8-16x1.0 HHCS	1
	Bushing	16		3/8-16 Stover Nut	1
860070	Shim Kit	1		3/8 SAE Washer	2
	Washer	16	860073	Skid Plate Spacer Kit	1
860071	Shift Relocation Kit	1		Skid Plate Spacer	6
	Bracket	1		1/2 Cone Washer	6
	1/4-20x.75 BHCS	4		1/2-13x2.5 FSHCS	6
	1/4 SAE Washer	4		M10-1.50x70 HHCS	2
	1/4-20 Nyloc Nut	4		10mm Lock Washer	2
	Thread Lock	2	88029	Instructions	1
			94140	Consumer Information Pack	1



LOWER SUSPENSION ARM ASSEMBLY

Bushing & Sleeve Installation

1. ≤ Lubricate the outside diameter of two red urethane bushings, from kit 8597, with a silicone spray or a mild solution of soap and water.
2. ≤ Press the bushings (Do Not Hammer) into one end of a new lower suspension arm. See figure 1.

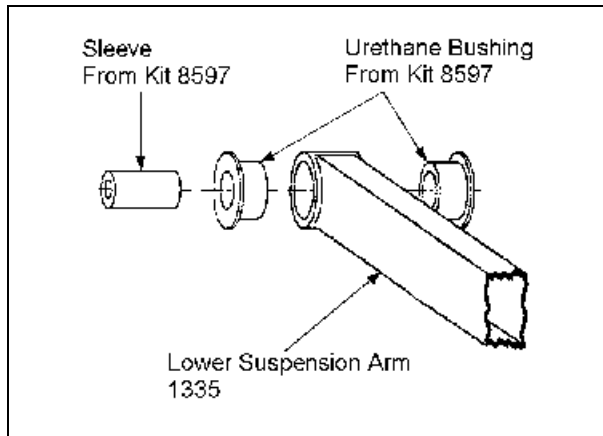


Figure 1

3. ≤ Lubricate the outside diameter of a sleeve, from kit 8597, and the inside diameter of the installed urethane bushings.
4. ≤ Press the sleeve into the bushings.

NOTE: If necessary, use a bench vise or C-clamp to press the bushings and sleeves into the suspension arm. Do not use a hammer.
5. ≤ Pre-grease arm assembly with a grease gun. Make sure not to blow the bushings out of the assembly. Stop when grease appears at the end of the bushing grooves.
6. ≤ Repeat steps 1 through 5 for the remaining suspension arm ends, bushings, and sleeves.

FRONT SUSPENSION

Shock & Spring Removal

1. ≤ Park vehicle on a level surface, set the parking brake and chock rear wheels.

2. ≤ From inside the engine compartment, remove the upper stud nut, retainer and grommet from both front shock absorbers.
3. ≤ Raise the front of the vehicle and support the frame with jack stands.
4. ≤ Remove the front wheels.
5. ≤ Position a hydraulic jack under the front axle for support. Remove the stabilizer link lower nut and bolt from both sides of the front axle. See Figure. 2

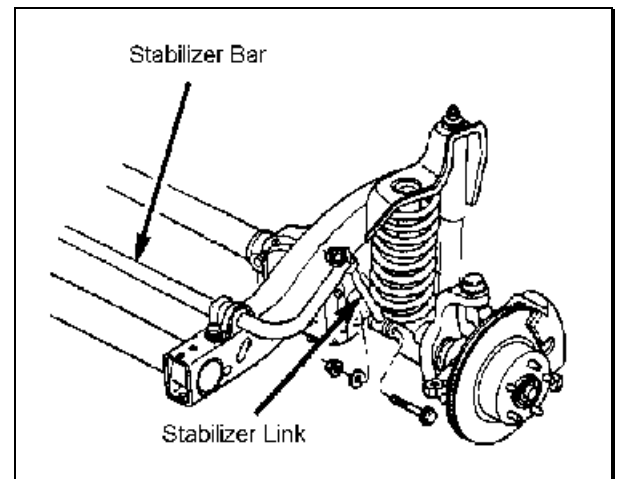


Figure 2

6. ≤ Remove the shock absorber lower nuts and bolts from the axle bracket. Remove both shocks and discard. DO NOT REUSE ORIGINAL SHOCK ABSORBERS.
7. ≤ Lower axle and remove hydraulic jack.
8. ≤ Remove the rubber bump stops and bump stop mounts.
9. ≤ Remove the coil spring retainer bolts and retainers.
10. ≤ Push down on the axle and remove each coil spring.

Lower Arm Replacement

1. ≤ Support the front axle with a hydraulic jack.
2. ≤ Paint or scribe alignment marks on the adjustment cams and axle brackets for installation reference. See Figure 3.

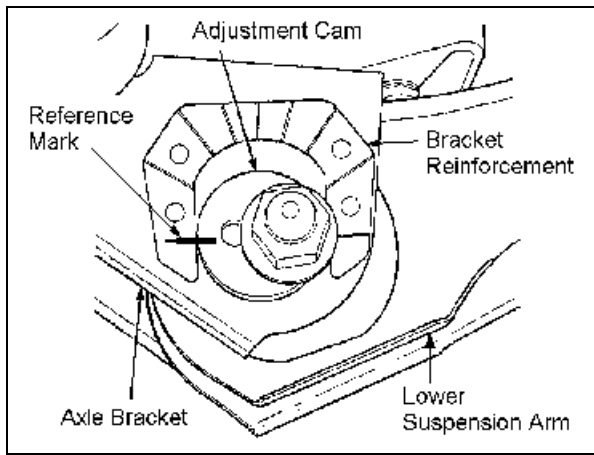


Figure 3

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. ≤ 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 Figure 4

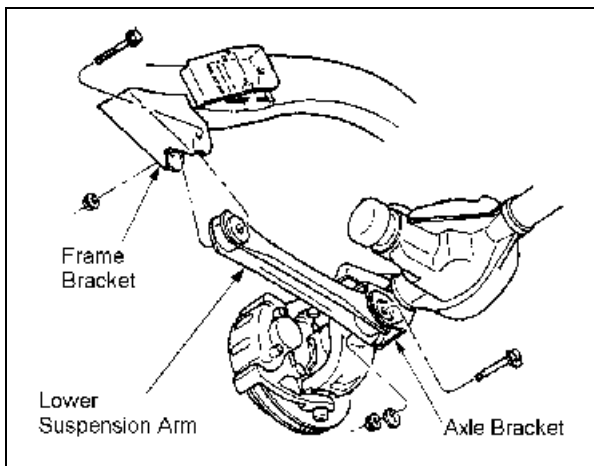


Figure 4

5. ≤ Install a new Rancho Lower Suspension Arm, along with four shims from kit 860070, to the frame and axle brackets. See figure 5. Use original hardware but do not tighten.

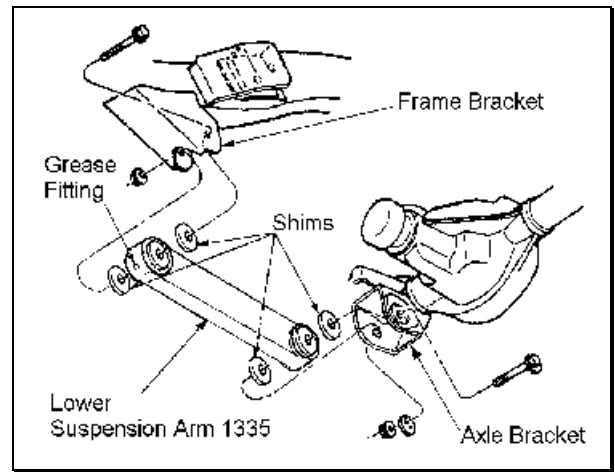


Figure 5

Note: Position the arm so that the grease fittings are accessible. Also, the cam adjuster bolt may have to be installed from the opposite way.

6. ≤ Repeat steps 4 and 5 for the other front suspension lower arm.
7. ≤ If applicable, drill a 23/64" hole into each lower arm and reinstall the ABS sensor wires. Use the original clamps.

Shock & Spring Installation

1. ≤ Lower the front axle and remove the hydraulic jack.
2. ≤ Compress a new coil spring (615 or 618) to 16" in length. Use a quality spring compressor like the one shown in figure 6.

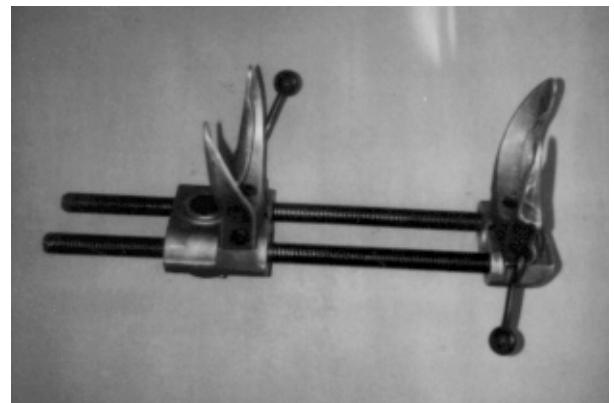


Figure 6

3. ≤ Place the rubber bump stop and bump stop mount inside the compressed spring. Install the spring into the upper and lower spring

- pockets. Carefully remove the spring compressor.
4. ≤ Rotate spring so pig tail end fits back in spring pocket. Install spring retainer and bolt. Tighten to 16 FT-LBS.
 5. ≤ Reinstall bump stop mount and rubber bump stop.
 6. ≤ Repeat steps 2 through 5 for other side.
 7. ≤ Install one retaining washer and grommet onto each new front shock absorber. Attach shocks to axle brackets. Tighten bolts to 23 FT-LBS.
 8. ≤ Install front wheels and lower vehicle to the ground. Tighten lug nuts to 80--110 FT-LBS.
 9. ≤ Position shock stud through upper mounting hole. Install upper shock grommet, retainer and nut. Tighten to 17 FT-LBS. Repeat for other side.
 10. ≤ Reconnect the stabilizer bar to the front axle. Tighten both lower link bolts to 70 FT-LBS.
 11. ≤ Tighten the lower suspension arm to frame bracket nut and bolt to 130 FT-LBS (both sides).
 12. ≤ Align the reference marks on the adjustment cams and lower arm axle brackets. Tighten nuts to 85 FT-LBS.
 13. ≤ Grease new lower suspension arms until you see a slight amount of grease coming out of bushings. DO NOT OVER GREASE!!!

REAR SUSPENSION

Shock & Spring Removal

1. ≤ Chock front wheels.
2. ≤ Disconnect the stabilizer bar links from the stabilizer bar.
3. ≤ Disconnect the track bar from the frame bracket. See figure 7.

4. ≤ Raise the rear of the vehicle and support the frame with jack stands. Remove the rear wheels.
5. ≤ Separate the track bar from the axle bracket. Remove the track Bar. See Figure 7.

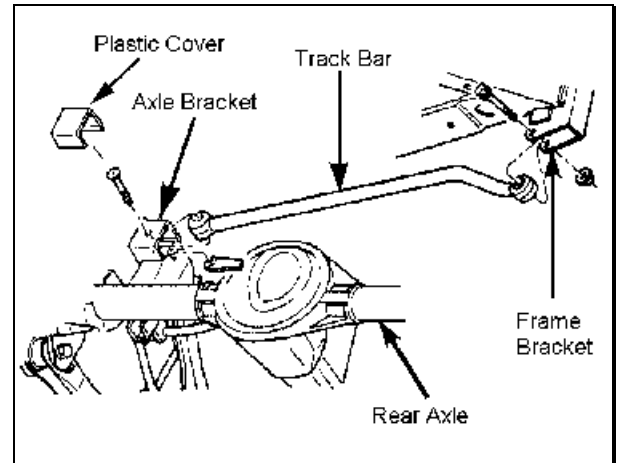


Figure 7

6. ≤ Support the rear axle with a floor jack and remove the shock absorbers.
7. ≤ 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 130019 on top of the axle bracket as shown in figure 8. Insert a 14mm bolt through both brackets. Using the new bracket as a template, mark the two additional holes on the axle bracket.

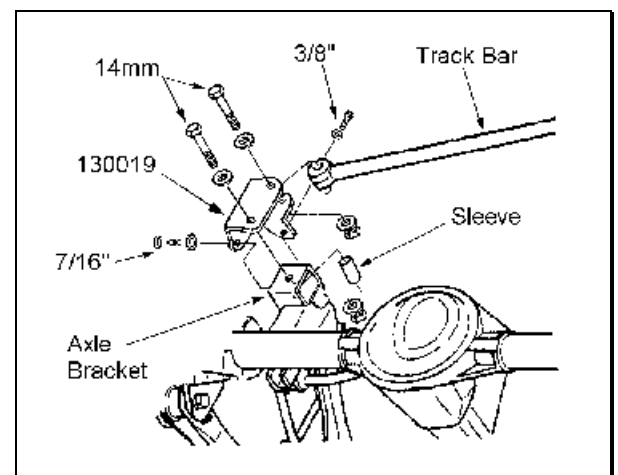


Figure 8

2. ≤ Remove bracket and drill holes. 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 860072. See Figure 8. Tighten to specifications.
4. ≤ Insert track bar into track bar bracket and install the 14mm hardware from kit 860072. Do not tighten.
5. ≤ Raise the rear axle and position the track bar into the frame bracket. Loosely install the original hardware.
6. ≤ Bend gas tank skid plate away from track bar if necessary.

assembly. Also, position the arm so that the grease fittings are accessible.

4. ≤ Repeat steps 2 and 3 for the other side.

Lower Arm Replacement

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

1. ≤ Support the rear axle with a hydraulic jack.
2. ≤ Remove the lower arm axle and frame mounting bolts. Remove the lower suspension arm.
3. ≤ Install a new Rancho lower suspension arm, along with four shims from kit 860070, to the frame and axle brackets. See figure 9. Use original hardware but do not tighten.

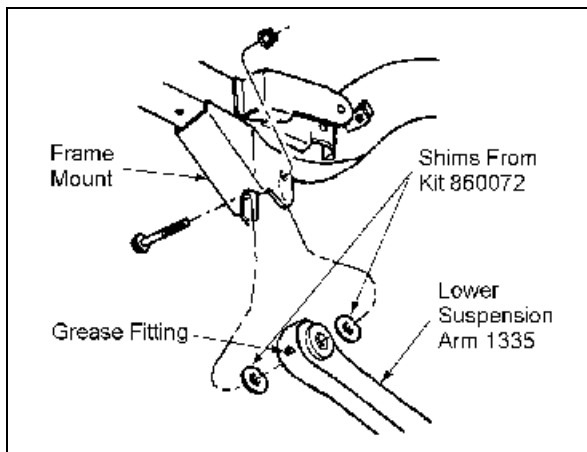


Figure 9

Note: Install two shims at each mounting point, one on either side of the bushing

Bump Stop Spacer & Coil Spring Installation

1. ≤ Remove the rubber bump stop and bump stop bracket from the upper spring mount.
2. ≤ Insert a Rancho spacer from kit 8567 and reinstall the bracket with the 10mm hardware from kit 860073. See figure 10.

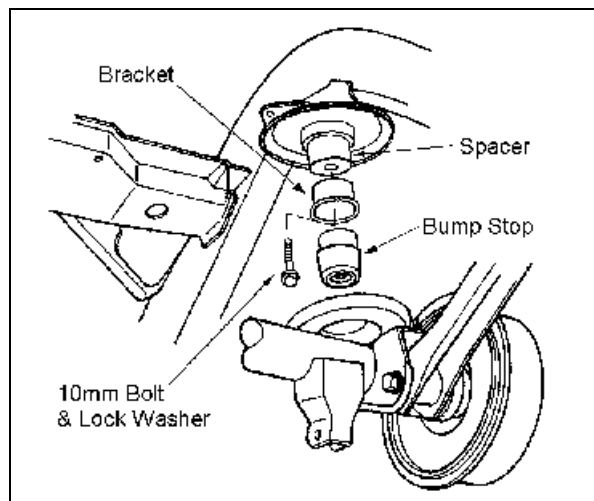


Figure 10

3. ≤ Insert the bump stop into the bump stop bracket. Repeat steps 1 through 3 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 seats in the upper mount.

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. ≤ Attach shocks to the axle brackets loosely.
7. ≤ Install wheels and lower vehicle to the ground. Do not remove wheel chocks. Tighten lug nuts to 80—110 FT-LBS.
8. ≤ Tighten the lower shock mounting bolts and the track bar mounting bolts to 74 FT-LBS.
9. ≤ Reconnect stabilizer bar links. Tighten nuts/bolts to 40 FT-LBS.

10. ≤ Tighten all lower arm mounting nuts to 130 FT-LBS.

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

TRANSMISSION & TRANSFER CASE

Crossmember 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 figure 11.

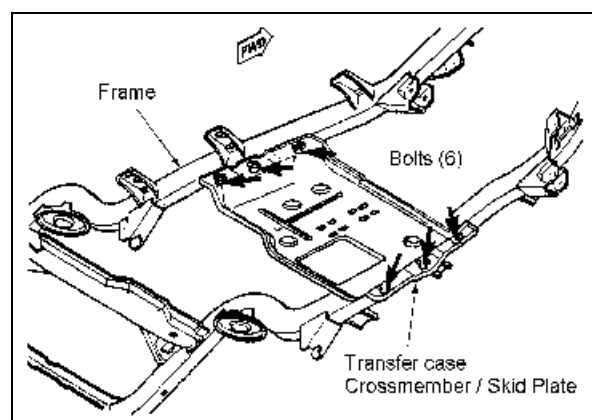


Figure 11

2. ≤ Remove the 3 bolts on one side and carefully lower the crossmember. Place 3 spacers from kit 860073 between the crossmember and the frame. The conical end of the spacer must fit over the mounting hole in the crossmember. See figure 12.

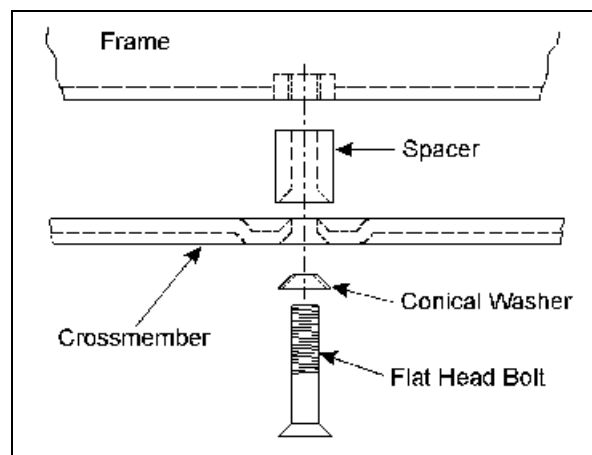


Figure 12

3. ≤ Install a conical washer and apply thread lock to 3 flat head bolts from kit 860073. Insert a bolt through the crossmember, each spacer, and into the frame. See figure 12.
4. ≤ Repeat steps 2 and 3 for the other side of the crossmember. Tighten all bolts to 45 FT-LBS.

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 figure 13.

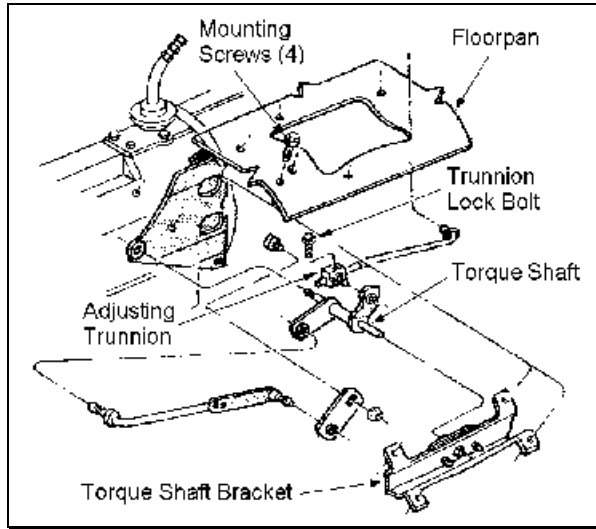


Figure 13

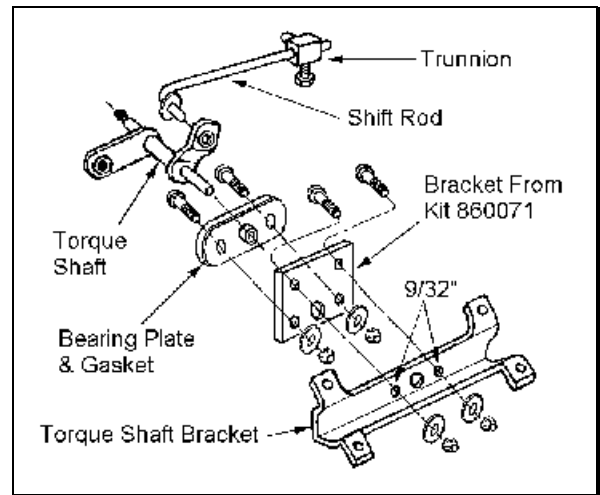


Figure 14

6. ≤ 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.
7. ≤ Shift transfer case into 4L position and loosen lock bolt on adjusting trunnion.

Note: Be sure shift rod slides freely in trunnion.

3. ≤ Slide the torque shaft bracket off the torque shaft, and remove the bearing plate & gasket. Drill out the two threaded holes in the torque shaft bracket to 9/32".
4. ≤ Attach the shift relocating bracket (from kit 860071) to the torque shaft bracket as shown in figure 14. Use the hardware from kit 860071.
5. ≤ Attach the bearing plate, with gasket, to the shift relocating bracket. See figure 14.

2. ≤ Readjust headlamps. Have vehicle Aligned to manufacturer's 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°

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.

[illegible]

RANCHO INDUSTRIES USA LIMITED WARRANTY

ABOUT OUR WARRANTY

Rancho Industries USA, warrants the listed products for the listed time period and/or mileage to the original retail purchaser against defect and wear-out when used on passenger cars and light trucks under normal operating conditions. The warranty does not apply to Rancho products which have been improperly applied or installed. The consumer will be responsible for removing from the vehicle and returning any defective item(s), transportation costs prepaid, to the dealer from which it was purchased or a Rancho Authorized Installer, and for reinstallation of the part upon return. A copy of the sales receipt is required for all warranty adjustments. Rancho Industries will, without charge, repair or replace at its option, defective products or component part(s).

In the case that the customer is unable to return to the original place of purchase or an Authorized Installer, the consumer may contact Rancho Industries at 1-800-5SHOCKS to obtain a Return Authorization Number prior to shipping. The consumer will be responsible for removing from the vehicle and returning any defective item(s), transportation cost pre-paid, to the following address: 6925 Atlantic Avenue, Long Beach, Ca 90805. A copy of the sales receipt is required for any warranty adjustments. Rancho Industries will, without charge, repair or replace at its option, defective products or component part(s). Such item(s) will be returned with transportation costs prepaid within the United States from Rancho Industries. The customer will be responsible for reinstallation.

Exclusions from this warranty are sales outside of the United States, the finish, any condition(s) caused by abnormal use or service, and product-specific limitations, if any, listed below.

THE LOSS OF USE OF THE PRODUCT, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS OR CONSEQUENTIAL DAMAGES ARE NOT COVERED. RANCHO INDUSTRIES RESERVES THE RIGHT TO CHANGE THE DESIGN OF ANY PRODUCT WITHOUT ASSUMING ANY OBLIGATION TO MODIFY ANY PRODUCT PREVIOUSLY MANUFACTURED.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS, WHICH EXTEND BEYOND THIS WARRANTY PERIOD. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE FACE HEREOF. SELLER DISCLAIMS IMPLIED WARRANTY OF MERCHANTABILITY.

THIS WARRANTY SHALL NOT APPLY TO ANY RANCHO PRODUCT WHICH HAS BEEN MODIFIED, CUSTOMIZED OR IMPROPERLY INSTALLED. WARRANTY DOES NOT APPLY TO ANY RANCHO COMPONENTS USED FOR RACING PURPOSES, OR RACE TYPE ACTIVITIES. WARRANTY DOES NOT APPLY TO ANY RANCHO INDUSTRIES RACING PRODUCTS.

The product, time periods and/or mileage under this warranty are as follows:

RS1000 / RS5000 / RS5600 / RS7000 / RS9000 LIMITED LIFETIME WARRANTY

Limited lifetime warranty on these Rancho shock absorbers. Rancho Industries warrants each new shock against factory defects in material and workmanship (except for finish, including the shock boot) for as long as the original retail purchaser owns the vehicle on which the units were originally installed.

RS4000 / AIR RANCHO / RC9000 REMOTE CONTROL LIMITED 2 YEAR, 24,000 MILE WARRANTY

Limited 2 year, 24,000 mile warranty on these Rancho products. Rancho Industries warrants each new RS4000, Air Rancho shock and RC9000 Remote Control System against factory defects in material and workmanship (except for finish, including shock boot) for the first to occur of 2 years or 24,000 miles after the date of purchase.

SUSPENSION COMPONENTS LIMITED LIFETIME WARRANTY

Limited lifetime warranty on all of Rancho's suspension products. Rancho Industries warrants each new Suspension Component against factory defects in material and workmanship (except finish) for as long as the original retail purchaser owns the vehicle on which the products were originally installed.

PERFORMANCE BRAKES LIMITED LIFETIME WARRANTY

Limited lifetime warranty on all of Rancho's performance brake products. Rancho Industries warrants each of its new brake pad and lining or remanufactured shoe and lining against factory defects in material and workmanship (except finish) for as long as the original retail purchaser owns the vehicle on which the products were originally installed. In addition, if during the ownership of your vehicle the Rancho Performance Brake friction material lining thickness wears to less than 1/32" of usable life the product will be exchanged. THIS LIMITED WARRANTY DOES NOT COVER THE FOLLOWING:

- Brake pads or shoes subjected to misuse, accident, neglect or lack of brake maintenance
- Police or taxi vehicles, race vehicles, any trailer towing applications, or vehicles used for governmental or commercial purposes
- Light trucks or vans over 8000 pounds gross vehicle weight
- Any part that is obsolete and is no longer available or supplied by Rancho

POWERFLOW EXHAUST LIMITED LIFETIME WARRANTY

Limited lifetime warranty on all of Rancho's PowerFlow exhaust products. Rancho Industries warrants each of its exhaust products against factory defects in material and workmanship (except finish) for as long as the original retail purchaser owns the vehicle on which the products were originally installed. THIS LIMITED WARRANTY DOES NOT COVER THE FOLLOWING:

- Exhaust system parts that rust or are blown-out by faulty engine conditions
- Any component that has been modified, customized, or improperly installed
- Any part that is obsolete and is no longer available or supplied by Rancho

RIGHTS RESERVED

Rancho Industries reserves the right to make changes in design, material and specifications or to make product changes as deemed necessary without prior notice. Obligations or liabilities will not be assumed with respect to similar products previously advertised.

WARRANTY DOES NOT APPLY TO ANY RANCHO COMPONENTS USED FOR RACING PURPOSES, OR RACING TYPE ACTIVITIES. WARRANTY DOES NOT APPLY TO ANY RANCHO INDUSTRIES RACING PRODUCTS.

PRINTING ERRORS

Every effort has been made to avoid printing errors in our literature. However, if there are any specification or application errors, we must disclaim responsibility.

This document was created with Win2PDF available at <http://www.daneprairie.com>.
The unregistered version of Win2PDF is for evaluation or non-commercial use only.