



Rancho Suspension Systems **RS66455B**

2013 – 2009 4WD Dodge RAM 2500

READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION



WARNING

Carefully read, understand and follow the instructions provided in this manual, and keep it in a safe place for future reference. If you have any doubt whatsoever regarding the installation or maintenance of your Rancho suspension system, please see your retailer for assistance or advice. Failure to follow the warnings and instructions provided herein can result in the failure of the suspension system, or can cause you to lose control of your vehicle, resulting in an accident, severe personal injury or death.

These instructions should remain in the vehicle glove box for future reference.

⚠ WARNING: READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION. Failure to follow the warnings and instructions provided herein can result in an accident, severe personal injury or death.

PRELIMINARY

This manual presumes that all persons installing this suspension system have a high level of mechanical training and experience, and have available to them all necessary tools and safety equipment. This manual is not and should not be construed as an exhaustive list of all required safety measures. Personnel should rely primarily on their training and experience, as well as on their own common sense.

This Manual is to be read as a supplement to, and must not be construed as a substitute for, the owner's manual and/or shop manual that originally accompanied the vehicle. Refer to such use, operation, maintenance and safety manuals as necessary, and especially after installation is complete, to insure proper vehicle operation.

The following terminology has been used in this Manual:

ACCIDENT: Any event which could cause personal injury or death to anyone installing or using the suspension system, as well as to passengers and bystanders, or otherwise may result in property damage.

PRE-INSTALLATION WARNINGS and INSTRUCTIONS

⚠ 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. 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.

1) Service and repair tasks require specialized knowledge, training, tools, and experience. General mechanical aptitude may not be sufficient to properly install this suspension system. If you have any doubt whatsoever regarding your ability to properly install the suspension system, please consult a qualified mechanic.

2) Your brake lines and fuel lines should remain undisturbed during and after installation. If you think you need to modify these components in any way, you are mistaken. You are installing the lift improperly and will be creating a significant risk of an accident. In case of any doubt, consult a qualified mechanic.

3) If any component does not fit properly, something is wrong. You are installing the lift kit improperly and will be creating a significant risk of an accident. Never modify any component of the vehicle or suspension system, except as instructed herein. Do not continue with installation until you have identified the problem.

4) Several of the procedures described herein require at least two (2) persons to safely complete the task. If you have any doubt about your ability to complete any operation by yourself, always ask for help from a qualified assistant.

5) Before starting any operation, confirm that all personal safety devices and safety equipment are in proper condition and position.

6) Give your work undivided attention. Looking around, carrying on a conversation and "horse-play" are careless acts that can result in an error in installation and/or serious injury.

7) Install only tires approved by the United States Department of Transportation ("DOT approved"). Make sure the rim and tire size are properly matched.

8) If any components of the vehicle or suspension system are damaged in any way during installation, immediately replace the component.

9) During installation, carefully inspect all parts of the vehicle and replace anything that is worn or damaged.

10) Nip points present the risk of the catching, lacerating, crushing and/or amputating fingers, hands, limbs and other body parts during operations. Always keep clear. Wear protective gloves.

11) Oil and hydraulic fluids are poisonous, dangerous to health and are known to the State of California to cause cancer, birth defects or other reproductive harm. Do not inhale vapors or swallow. Do not allow contact with the eyes or skin. Should any oil or fluids be swallowed or inhaled or come into contact with the eyes, immediately follow the safety precautions on the label or call a poison control center immediately. Should any of the oil or fluids contact your skin, immediately wash thoroughly.

12) Never install the suspension system if you are under the effects of alcohol, medications and/or drugs. If you are taking prescription or over the counter medication, you must consult a medical professional regarding any side effects of the medication that could hinder your ability to work safely.

AFTER INSTALLATION WARNINGS AND INSTRUCTIONS

13) After installation is complete, drive the vehicle slowly in an area free from heavy traffic for at least three (3) miles. Likewise, before traveling on any highways or at a high rate of speed, drive the vehicle for ten (10) miles on side roads at moderate speed. If you hear any strange noise or feel unusual vibration, if a component of the suspension system is not operating properly, or if any warning lights illuminate or buzzers sound, stop the vehicle immediately. Identify the cause and take any necessary remedial action.

14) Confirm that all components of the vehicle, including all lights (headlights, turn signals, brake lights, etc.), linkages (accelerator, etc.), electrical switches and controls (windshield wipers and defoggers, etc.), and other warning devices (low tire pressure monitoring systems) are fully operational.

15) Your headlights will need to be readjusted before the vehicle is used on the roads. Consult the vehicle owners' manual.

16) The speedometer and odometer will need to be recalibrated after installation. See your dealer.

17) Confirm proper rear view and side view while seated in the driver seat. Install supplemental mirrors as necessary.

18) Your original low tire pressure monitoring system may be re-installed in your new wheels. However, if you choose to purchase a new system, see your dealer to have them properly calibrated. Proper tire pressure is critical to safe operation of the vehicle.

OPERATION

19) Because it has been modified, the vehicle will not handle, turn, accelerate or stop in the same manner as an unmodified vehicle. In addition, the crash protection systems designed in the vehicle may operate differently from an unmodified vehicle. For example, turning and evasive maneuvers must be executed at a slower rate of speed. Further, there is a greater risk that the vehicle could roll over. These differences could result in an increased possibility of an accident, personal injury or death. Learn the vehicle's operations and handling characterizes and drive accordingly.

IMPORTANT NOTES

- A. 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). Have all suspension, steering and driveline components inspected and replaced if worn or damaged
- B. The components of Rancho's suspension system are designed as a single integrated system. To avoid compromises in terms of safety, performance, durability or function, do not install a body lift kit with Rancho's suspension system or interchange parts from this system with components from another manufacturer. Use of other components will result in the forfeiture of any type of warranty on the vehicle/suspension system.
- C. Some components required for the installation of this kit may need to be purchased separately. See "SPECIFICATIONS & REQUIREMENTS" on next page of this manual.
- D. 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.
- E. Do not powder-coat or plate any of the components in this system. To change the appearance of components, automotive paint can be applied over the original coating.
- F. 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 at end of instruction.
- 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 at end of instruction. USE A TORQUE WRENCH for accurate measurements.
- J. Do not weld anything to these components, and do not weld any of these components to the vehicle unless specifically stated in the instructions
- K. It is extremely important to replace coil springs, axle 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.
- L. Suspension components that use rubber or urethane bushings should be tightened with the vehicle at normal ride height unless otherwise specified. This will prevent premature failure of the bushing and maintain ride comfort.
- M. Some of the service procedures require the use of special tools designed for specific procedures. If you do not know how to safely use any of these tools, or do not have them, stop the project and consult a qualified mechanic. See "Tools and Supplies" on next page of this manual
- N. The required installation time for this system is approximately 8 hours for two people. 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. 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.
- P. The lifespan of Rancho products depends on many factors. Improper use, abuse or harsh use in general may compromise the integrity of the suspension system and significantly reduce its lifespan. The suspension system is also subject to wear over time. Have the suspension system regularly inspected and maintained by qualified mechanics. If the inspection reveals any damage or excessive wear, no matter how slight, immediately replace or repair the component. The suspension system must be regularly maintained in order to optimize its safe and efficient use. The more severe the conditions under which the suspension system is operated, the more often it must be inspected and maintained.
- Q. If any component breaks or bends, contact your local Rancho dealer or Rancho for replacement parts or, contact the Rancho Technical Department at 1-734-384-7804.

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

The driver of this suspension system recognizes and agrees that there are risks inherent in driving a vehicle with a lifted suspension system, including but not limited to the risk that you could be involved in an accident that would not occur in an unmodified vehicle. By his/her purchase and use of this suspension system, the user expressly, voluntarily and knowingly accepts and assumes these risks, and agrees to hold Tenneco, Inc. and its related companies harmless to the fullest extent permitted by law against any resulting damages.

SPECIFICATIONS & REQUIREMENTS

Shock Absorbers

New Rancho shock absorbers must be used with this kit, and must be purchased separately.

Do not reuse OE shock absorbers, except with front shock spacer RS176827

⚠ WARNING Use of the wrong shock absorbers can cause damage to vehicle without the damage being visible to you, resulting in loss of vehicle control and an accident

Required Rancho shock absorbers

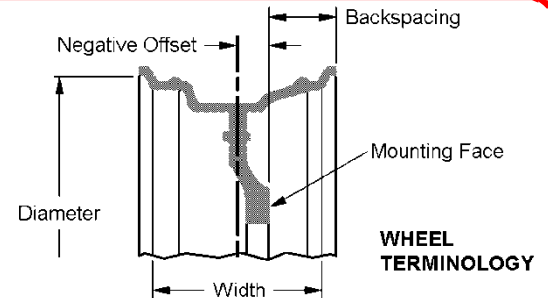
Front	Rear
RS5317	RS5056
RS55317	RS555056
RS7317	RS75056
RS999317	RS9995056

Wheels and Tires

The suspension system was developed using 37" x 12.5". Trimming is required when using this size. The maximum wheel backspacing is 6 inches on 17" wheels. Before installing any other combination, consult your local tire and wheel specialist

Compatible With OE Wheels	Recommended Tire Size (Actual)	Optional Tire Size* (Actual)	Wheel Size (Backspacing)
Yes 17" wheel and up only	35" x 12.5	37" x 12.5*	17x9 (5.5")

* Fitment of the optional tire size may require trimming to provide proper clearance.



Additional Components and Modifications — if applicable (MUST BE PURCHASED SEPARATELY)

Carrier Bearing Drop Bracket RS6608 (if applicable)

If rear driveline vibration is present after installing lift on vehicles with two-piece rear drive shaft purchase and install kit RS6608. See page 12 for installation instructions.

Exhaust Modification (if applicable)

Check for adequate clearance (1/8" minimum) between the front driveshaft and the exhaust crossover pipe at full droop after lift installation. If applicable, exhaust may require modification to clear driveshaft. See Illustration 25 on page 12. Contact your local muffler shop can for modification.

Tools and Supplies (BECAUSE OF VEHICLE VARIATIONS, THIS MAY NOT BE A COMPLETE LIST)

Dodge Service Manual	Drill motor	Hammer
Heavy Duty Jack Stands	Assorted Drills: 1/8" through 1/2"	Wire Brush (to clean bracket mounting surfaces)
Wheel Chocks (wooden blocks)	Torque Wrench (250 FT-LB capacity)	Silicone Spray Lubricant
Hydraulic Floor Jack	1/2" Drive Ratchet and Sockets	Grease Gun with NLGI 2 GC-LB Lithium Base Grease
Pitman Arm Puller	Assorted Combination Wrenches	Tape Measure
Coil Spring Compressor	Center punch	Safety Glasses--
Universal Gear Puller	File	Wear safety glasses at all times
Die Grinder	Reciprocating Saw (to modify frame)	



P/N	DESCRIPTION	QTY.
RS66455B-1	Box 1	1
RS94180	Information Pack	1
RS89455	Instructions	1
RS94177	Roller Warning Sticker	1
RS94119	Consumer Warranty Information	1
RS780281	Rancho Decal -	1
R-RM0082-1112	Warranty Tag	1
RS884501BL	Lower Control Arm - Left	1
	Sub Assy, LCA Sleeves	1
	Sleeve - 16MM	1
	Sleeve - 18MM	1
	Serrated Washer	2
RS884501BR	Lower Control Arm - Right	1
	Sub Assy, LCA Sleeves	1
	Sleeve - 16MM	1
	Sleeve - 18MM	1
	Serrated Washer	2
RS884502B	Upper Control Arm	2
RS176368B	Track Bar Bracket, Forward	1
RS176369B	Track Bar Bracket, Aft	1
RS7788	Pitman Arm	1
RS15106	Rear Riser Block	2
RS860538	Brake Line Hardware Kit	1
RS176379	Front Brake Line Bracket	2
RS770127	HHCS, M8-1.25X20	2
RS603112	Nut, M8-1.25 Nylock	2
RS770128	Washer, M8	4
RS176374	Brakeline Spacer	1
RS7755	Washer, 3/8 USS	1
RS176381	Parking Brake Hanger	1
RS770056	HHTS, 3/8-16X1.00	1

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.

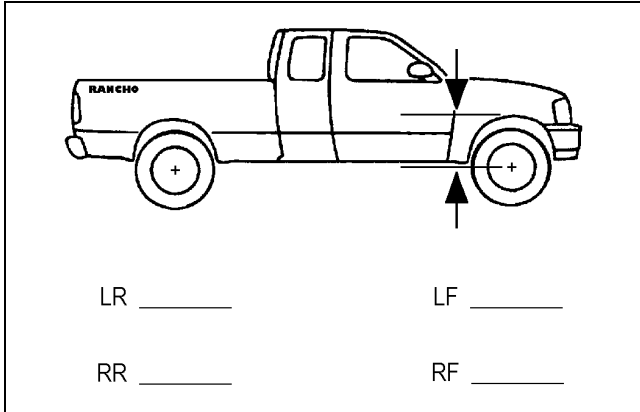


Illustration 1

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

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.

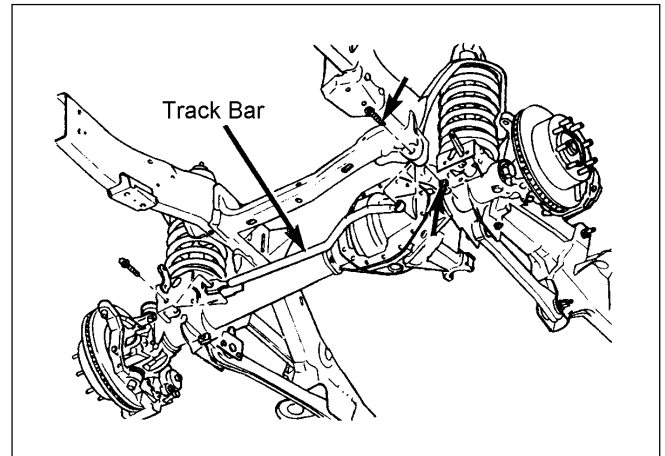


Illustration 2

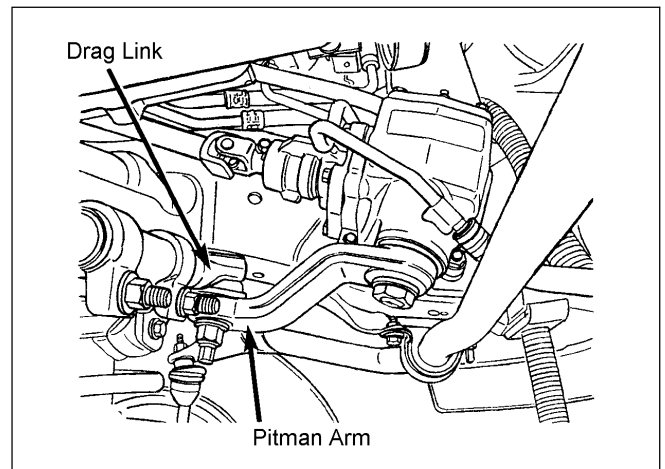


Illustration 3

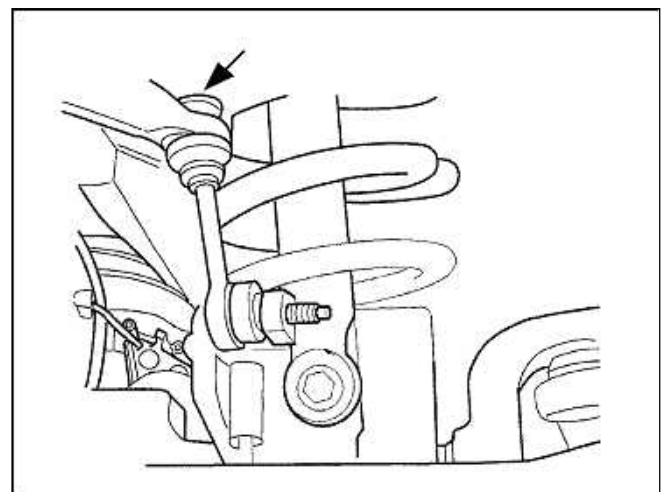


Illustration 4

4) ☐ Remove the mounting bolts holding the front brake hoses to the axle brackets. Disconnect the front differential vent hose.

5) ☐ 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.

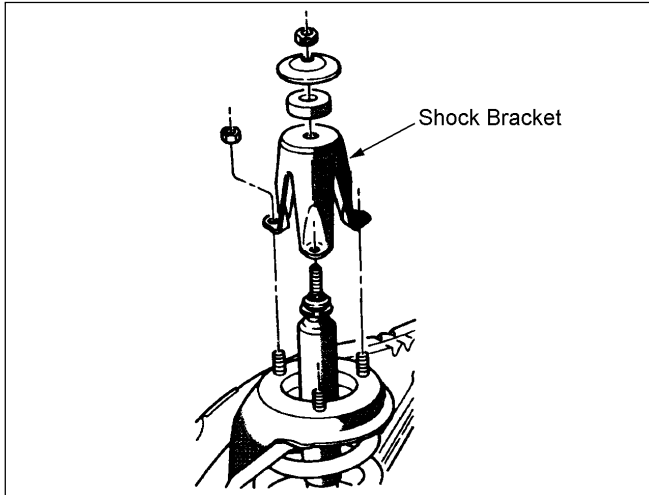


Illustration 5

6) ☐ Remove the lower bolt from the axle bracket. See Illustration 6. Remove the shock absorber from the engine compartment.

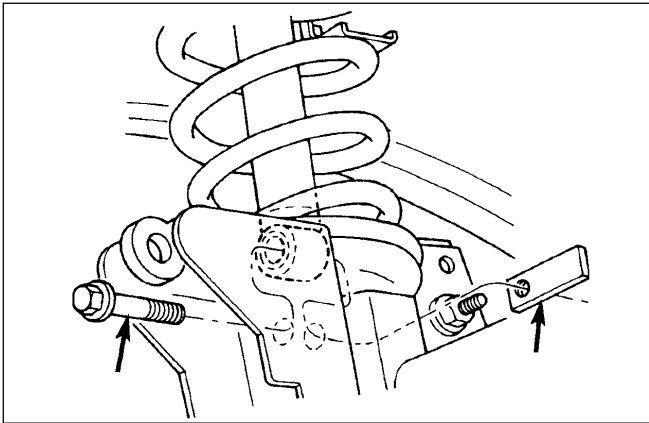


Illustration 6

7) ☐ Repeat steps 4 and 5 for the other side.

8) ☐ Mark the lower control arm cam adjusters and axle brackets for installation reference.

9) ☐ Loosen the lower control arm bolts.

10) ☐ Remove the upper control arms. See Illustration 7.

CAUTION! Axle may shift or rotate with control arms removed. Secure axle to jack or add support under pinion.

NOTE: The upper control 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 RS860612.

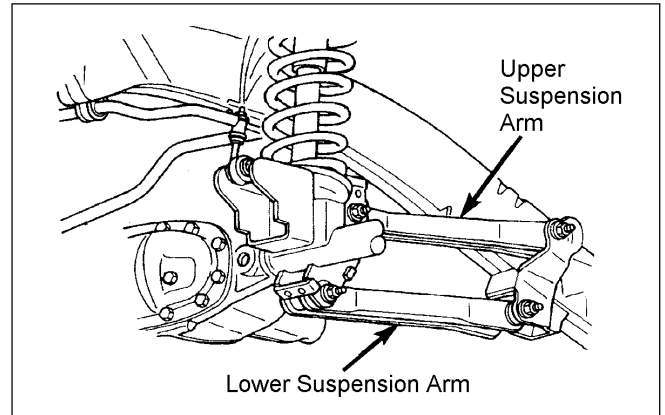


Illustration 7

11) ☐ Mark the coil spring and axle pad for installation reference.

12) ☐ 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.

CONTROL ARM PREPARATION

1) ☐ Choose appropriate sleeves for lower control arm axle mount depending on the OE bolt size (16mm or 18mm).

2) ☐ Using a bench vise, press serrated washers onto sleeve. See Illustration 8 and Illustration 9.

Note: if washer will not press all the way onto sleeve, chamfer the edge of the sleeve lightly (.02"-.03") and deburr with a file or grinder.

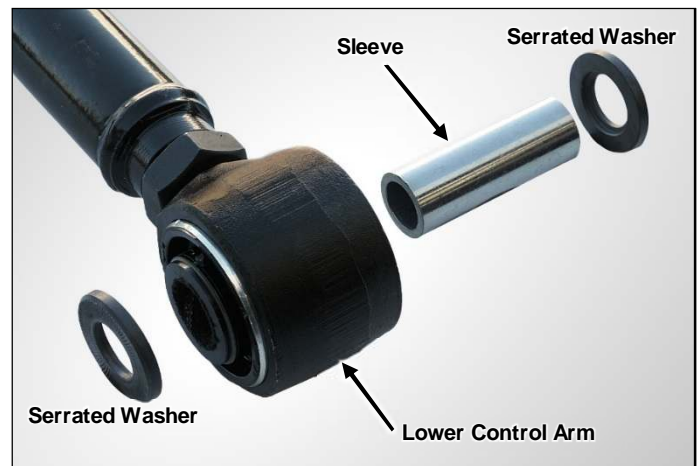


Illustration 8

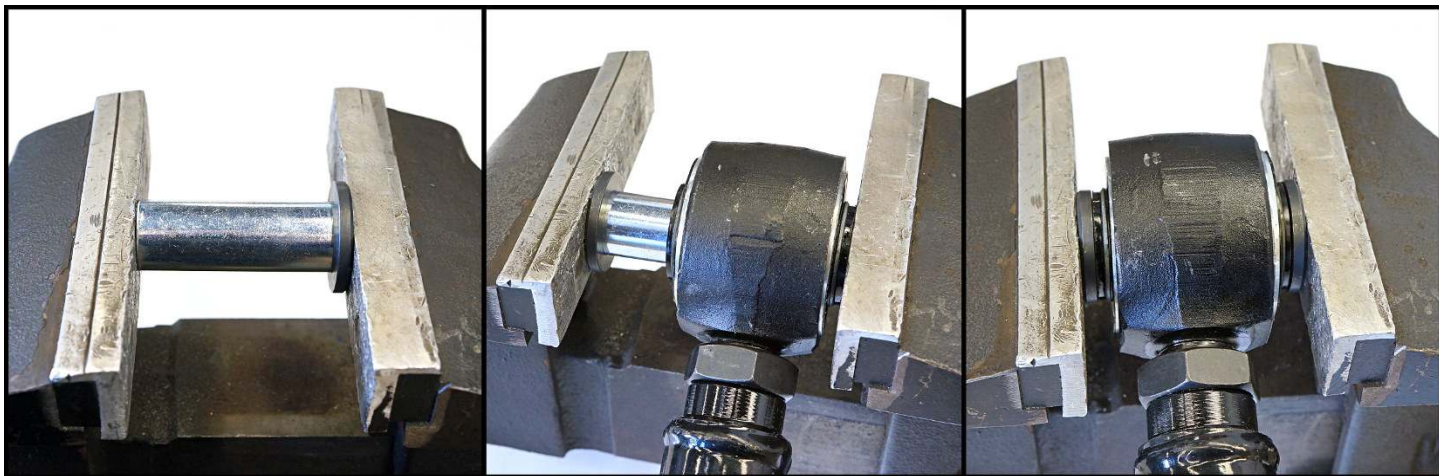


Illustration 9

- 3) ☐ Press sleeve into bushing of lower control arms RS884501BL and RS884501BR.
- 4) ☐ Press serrated washer onto other side of sleeve. See Illustration 8 and Illustration 9.
- 5) ☐ Adjust new lower control arms to 19.70" from center to center of sleeves.
- 6) ☐ Adjust new upper control arms to 17.85" from center to center of sleeves.

CONTROL ARM INSTALLATION

- 1) ☐ Remove the OE lower suspension arms.
- 2) ☐ Loosely attach new lower control arms to the frame and axle brackets with the original hardware. See Illustration 10.

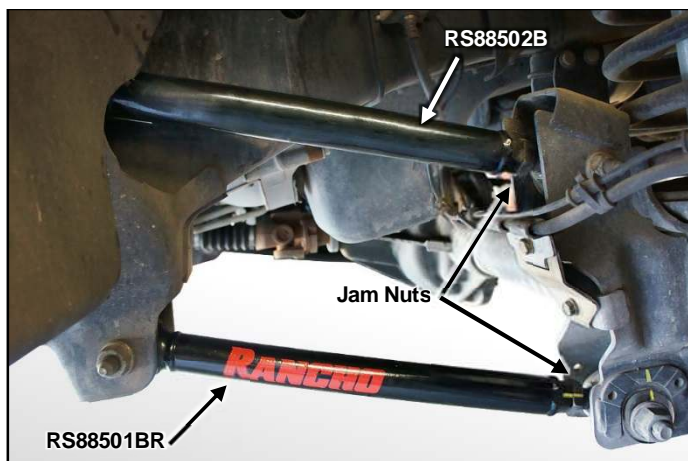


Illustration 10

- 3) ☐ Loosely attach upper links RS88502B to the frame and axle brackets with the original hardware and supplied 14mm hardware for kit RS860612 if necessary.

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

- 4) ☐ 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.
- 5) ☐ Tighten jam nuts to 150 ft. lbs
- 6) ☐ 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) ☐ If necessary, drill two 5/16" holes in frame using the holes in the OE bump stop bracket as a guide. See Illustration 11.

TIP: Use a 5/16" drill bit or transfer punch to mark center of hole, drill a 1/4" hole then enlarge to 5/16"

- 3) ☐ To ease installation, tap holes to 3/8-16

NOTE: If no tap is available, enlarge holes to 11/32 then pre-install supplied 3/8" self-tapping bolts using oil to form threads. Clean bolts and holes of oil.

- 4) ☐ Install bump stop spacer RS176764 with flat facing out using supplied 3/8" self-tapping bolt. Use red Loctite. Torque to 25 ft. lbs. See Illustration 11 and Illustration 12.
- 5) ☐ Attach bump stop RS176765 to spacer RS176764 with the 8mm hardware from kit RS860799. Use red Loctite. Tighten bolts to 15 ft. lbs. See Illustration 11 and Illustration 12.



Illustration 11

COIL SPRING & SHOCK ABSORBER INSTALLATION

- 1) ☐ Using a quality spring compressor, compress left coil spring RS702B.
- 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.
- 4) ☐ Insert right coil spring between the passenger side axle pad and upper mount. Align spring with reference marks. Remove spring compressor. See Illustration 13.
- 5) ☐ Carefully raise front axle. Do not lift vehicle off frame supports.
- 6) ☐ Fully extend new Rancho front shock absorber. Insert shock into coil spring from engine compartment.
- 7) ☐ Attach shock to axle bracket with the original hardware. Tighten bolt to 100 ft. lbs.

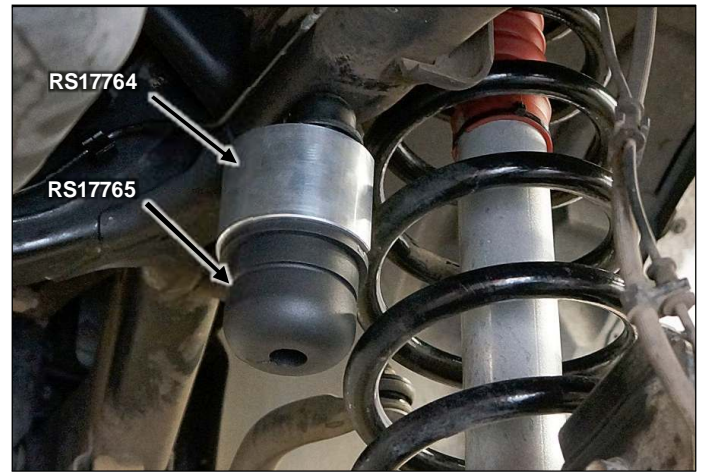


Illustration 12



Illustration 13

- 8) ☐ Install lower retainer and bushing on shock. Install shock bracket and the three original nuts. See to illustration 5, 6 and 13. 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 INSTALLATION

⚠ WARNING

PROPER INSTALLATION OF THE PITMAN ARM IS CRUCIAL

1. Use a calibrated torque wrench. Follow OEM torque requirement of 185 ft-lbs.
 2. Use of Red LocTite 271 or equivalent is required.
 3. Recheck the torque setting within 30 days.
 4. Do this procedure annually or after every off-road use.
- FAILURE TO FOLLOW ABOVE PROCEDURES WILL VOID ALL WARRANTIES.**

- 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 14.

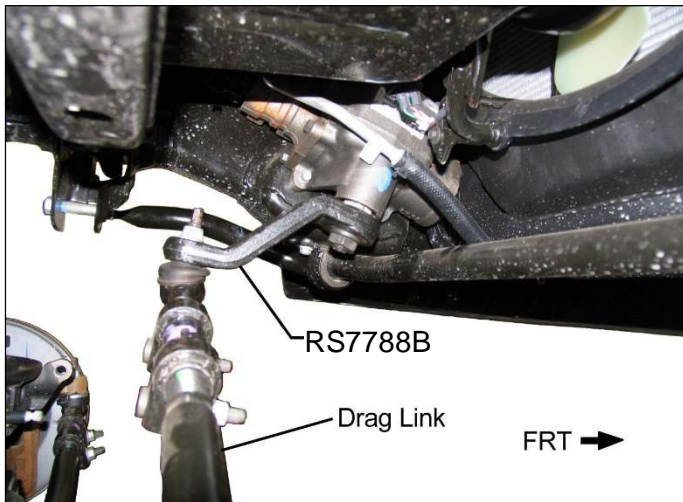


Illustration 14

- 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.

TRACK BAR BRACKET INSTALLATION

- 1) ☐ Using the 16mm and 14mm hardware from kit RS860672, temporarily attach the forward (RS176368B) and aft (RS176369B) track bar brackets to the original bracket and cross member. Illustration 15.

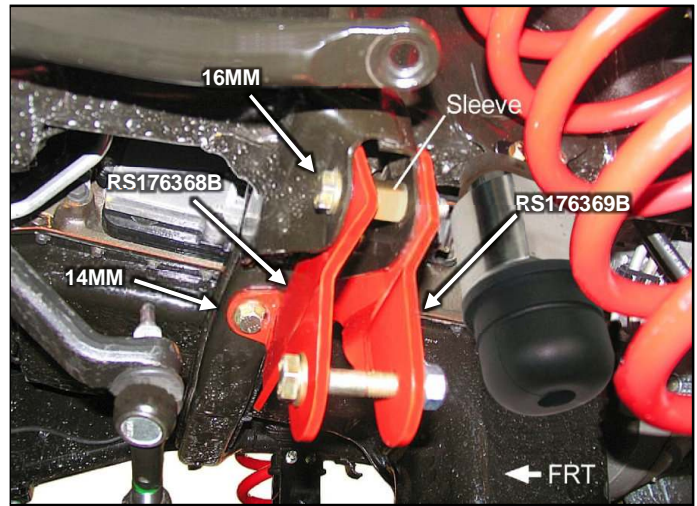


Illustration 15

- 2) ☐ Using the aft bracket as a template, mark the two mounting hole locations on the back of the cross member. See Illustration 16.



Illustration 16

- 3) ☐ Remove brackets. Drill a 31/64" hole through the cross member at each location.
- 4) ☐ Attach track bar brackets to the frame and cross member with the hardware from kit RS860672. Apply thread lock and snug down the 16mm sleeve bolt first, the 14mm cross member bolt second, and the 12mm bolts last.
- 5) ☐ 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 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 Illustration 17. Tighten extender securely.

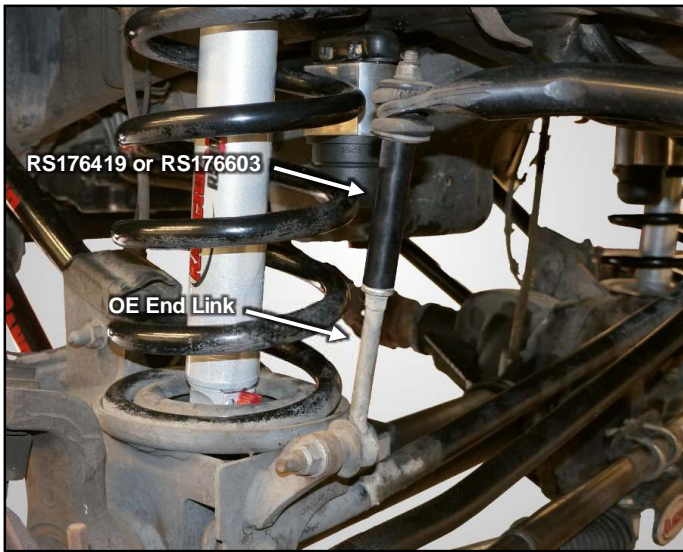


Illustration 17

- 2) ☐ Attach the end link assembly to the sway bar with the original retainers, bushings, and nut. Tighten to 20 ft. lbs.
- 3) ☐ Repeat steps 1 and 2 for the other side.

BRAKE HOSE BRACKET INSTALLATION

- 1) ☐ Attach brake hose bracket RS176379 to the axle bracket with the original bolt. See Illustration 18.



Illustration 18

- 2) ☐ Attach the original brake hose bracket to bracket RS176379 with the 8mm hardware from kit RS860538.
- 3) ☐ Repeat steps 1 and 2 for the other side.
- 4) ☐ Install front wheels and lower vehicle to ground. Tighten the lug nuts to 145 ft. lbs.
- 5) ☐ Install thread lock and attach track bar to forward and aft brackets with the 16mm hardware from kit RS860672. Tighten the track bar bolt to 165 ft. lbs.

Tip: If track bar does not align with bracket, have an assistant slowly turn steering wheel to align holes.

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 19. Remove the rear shock absorbers.
- 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 RS15106 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 20. Tighten U-bolt nuts evenly to 110 ft. lbs.

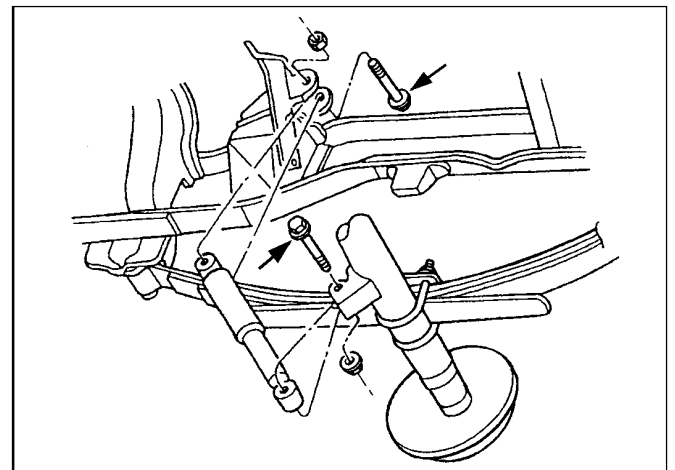


Illustration 19

- 8) ☐ Install new Rancho shock absorbers. Tighten upper and lower mounting bolts to 100 ft. lbs.
- 9) ☐ Repeat steps 4 through 8 for the other side



Illustration 20

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 RS860538 on brake line spacer RS176374. Attach the spacer to the axle. See Illustration 21.



Illustration 21

- 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.

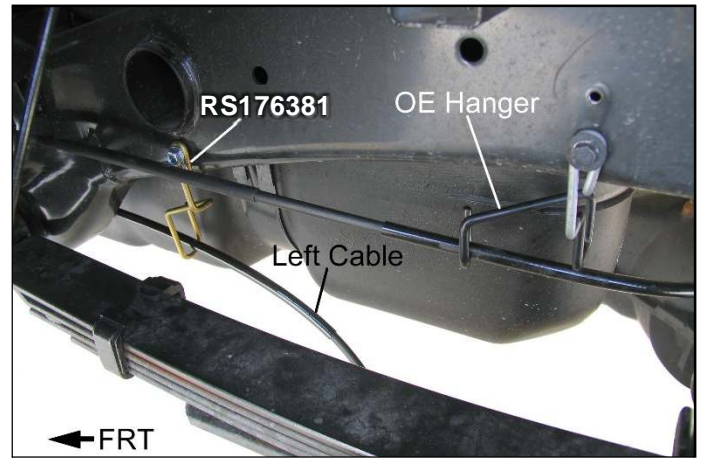


Illustration 22

- 4) ☐ Using brake hanger RS176381 as a template, mark the mounting hole location on the frame rail as shown in Illustration 22. Drill a 11/32" hole.
- 5) ☐ Attach new brake hanger RS176381 to the frame rail with the self-tapping screw from kit RS860538 as shown in Illustration 22.
- 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 23.

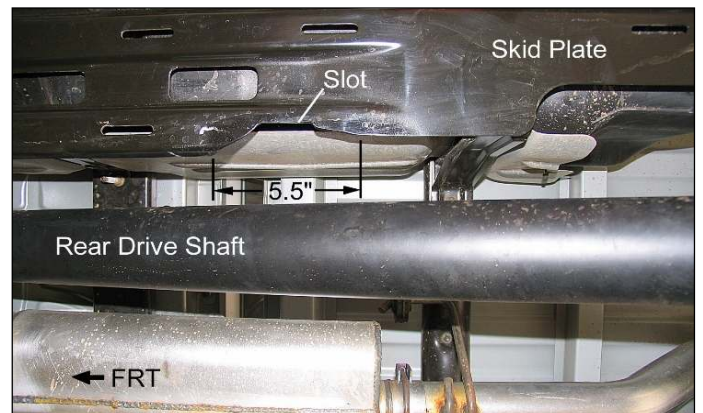


Illustration 23

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 RS176223 between the carrier bearing and the original bracket. Raise drive shaft and align mounting holes. See Illustration 24.
- 3) ☐ Place sleeves from kit RS6608 inside drop bracket RS176223 over the mounting holes.
- 4) ☐ Attach carrier bearing to original bracket with the supplied 10mm hardware. Tighten bolts to 40 ft. lbs.

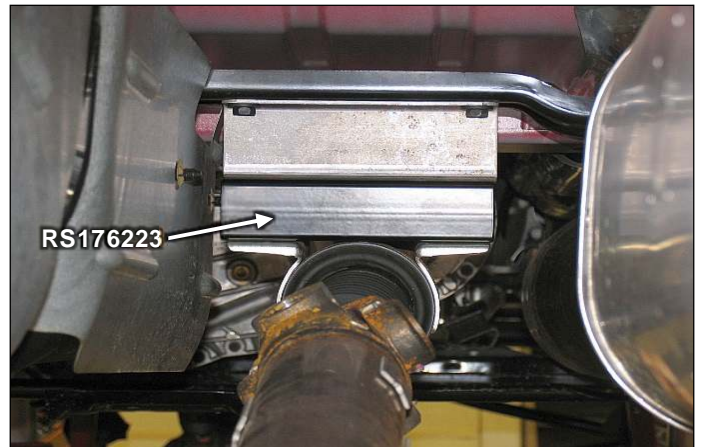


Illustration 24

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 25.



Illustration 25

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

Recommended Alignment Specifications

Caster (degrees): 4.0° min, +.75° max

Camber (degrees): .25° (not adjustable)

Sum Toe In (degrees): .1° ± .05°

- 4) ☐ Measure and record the distance from the center of each wheel to the top of the fender opening. See Illustration 1.

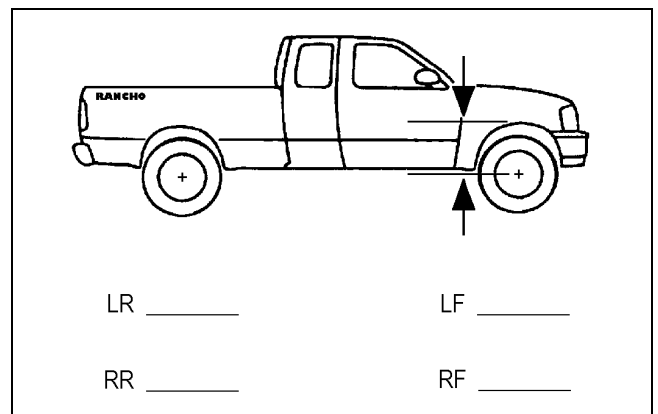


Illustration 26

Torque Specs

Front Components

Upper Control Arm	120 lb-ft
Lower Control Arm	160 lb-ft
Control Arm Jam Nuts	150 lb-ft
Front Drive Shaft Flange	21 lb-ft
Bump Stop Spacer to Frame	25 lb-ft
Bump Stop to Spacer	15 lb-ft
Lower Shock Mount	100 lb-ft
Upper Shock Mount Bracket	55 lb-ft
Upper Shock Mount (rod nut)	40 lb-ft
Pitman Arm Nut	185 lb-ft
Drag Link Ball Stud	40 lb-ft, + ¼ turn
Drag Link Adjuster Clamp	45 lb-ft
Track Bar Bracket 16mm Hardware	165 lb-ft
Track Bar Bracket 14mm Hardware	120 lb-ft
Track Bar Bracket 12mm Hardware	75 lb-ft
End Link Extender RS176603 (M12)	45 lb-ft
End Link Extender RS176419 (M10)	30 lb-ft
End Link Upper Mount	20 lb-ft
Brake Line RS176379 Bracket to Axle	15 lb-ft
OE Brake Line Bracket to RS176379	20 lb-ft
Track Bar	165 lb-ft.
Wheels (Lug Nuts)	145 lb-ft.

Rear Components

U-Bolts (Ranch 9/16")	110 lb-ft
Shock Absorber Upper Mount	100 lb-ft
Shock Absorber Lower Mount	100 lb-ft
Brake Line Spacer RS176374	30 lb-ft
Vent Hose Fitting	30 lb-ft
Parking Brake cable Hanger	25 lb-ft
Driveshaft Carrier Bearing	40 lb-ft
Wheels (Lug Nuts)	140 lb-ft

STANDARD BOLT TORQUE & IDENTIFICATION

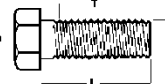
INCH SYSTEM			METRIC SYSTEM			
Bolt Size	Grade 5	Grade 8	Bolt Size	Class 8.8	Class 10.9	Class 12.9
5/16	15 LB-FT	20 LB-FT	M6	5 LB-FT	9 LB-FT	12 LB-FT
3/8	30 LB-FT	35 LB-FT	M8	18 LB-FT	23 LB-FT	27 LB-FT
7/16	45 LB-FT	60 LB-FT	M10	32 LB-FT	45 LB-FT	50 LB-FT
1/2	65 LB-FT	90 LB-FT	M12	55 LB-FT	75 LB-FT	90 LB-FT
9/16	95 LB-FT	130 LB-FT	M14	85 LB-FT	120 LB-FT	145 LB-FT
5/8	135 LB-FT	175 LB-FT	M16	130 LB-FT	165 LB-FT	210 LB-FT
3/4	185 LB-FT	280 LB-FT	M18	170 LB-FT	240 LB-FT	290 LB-FT

1/2-13x1.75 HHCS

D T L X



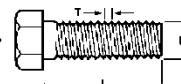
Grade 5 Grade 8



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

M12-1.25x50 HHCS

D T L X



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



www.gorancho.com

Rancho Technical Department 1-734-384-7804.