Rancho Rear Upgrade Kit – RS70902

Fits 2016-2007 Toyota Tundra 4WD

Excludes TRD PRO Models

Requires use of Rancho shock absorbers RS7331, RS999331 or RS55331 (must be purchased separately)

READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION

This suspension system was developed using 275/65/R20 tires. Before installing any other size tire, consult your local tire and wheel specialist.

Parts List

P/N	DESCRIPTION	QTY.
RS15112	Rear Block	2
RS8662	Sub Assy Pin	1
RS10500	Pin .562 X .875	2
RS740023	U-Bolt, 9/16-18X3.12X9.74	4
RS8102	Sub Assy 9/16 Nut	1
RS7737	Nut, 9/16-18 Nylock	8
RS7738	Washer, 9/16 SAE	8
RS860808	Sub Assy, Carrier Bearing	1
RS176690	Carrier Bearing Spacer	4

P/N	DESCRIPTION	QTY.
RS860809	Sub Assy, Rear Brake Spacer	1
RS176807	Rear Brake Line Spacer	4
RS770241	HHCS,M8-1.25X25MM	4
RS770128	Washer, M8	8
RS603112	Nut, M8-1.25 Nylock	4
RS89902-2	Instructions, RS70902	1
RS94180	Information Pack	1

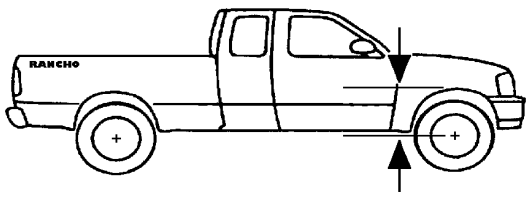
WARNING

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.

1) Park the vehicle on a level surface. Set the parking brake. Measure and record the distance from the center of each wheel to the top of the fender opening. Record these measurements in the space provided

2) Chock front wheels. Raise the rear of the vehicle and support the frame with jack stands. Remove the rear wheels.



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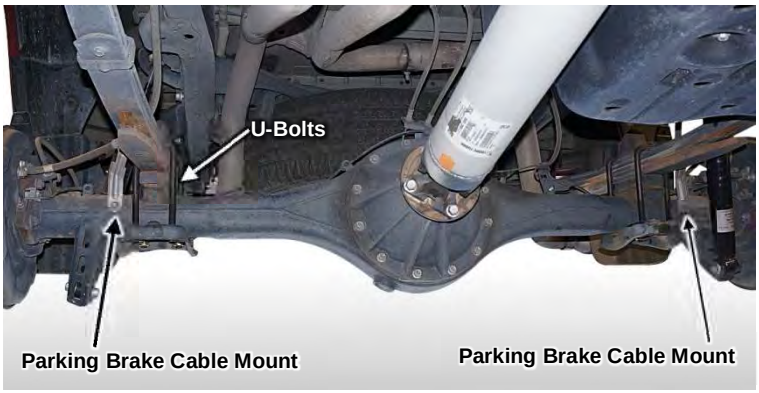


Illustration 1

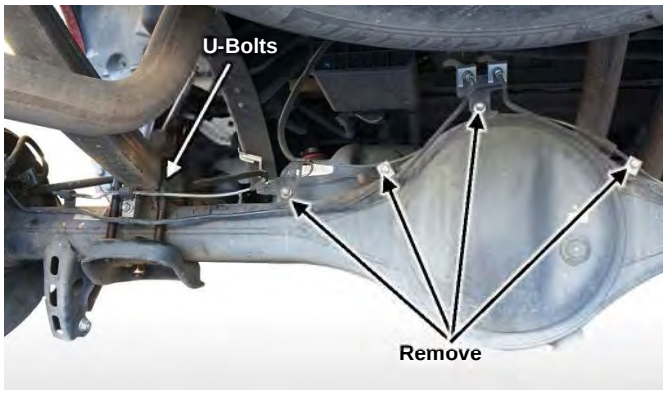


Illustration 2

3) Remove parking brake cable mounts on both sides of axle. See Illustration 1

4) Remove bolts holding brake hose mount to top of axle and two brake line mounts closest to the center of the axle. See Illustration 2

5) Remove bolt holding ABS wire mount to the top of axle. See Illustration 2

6) Support the rear axle assembly with a floor jack.

7) Remove both rear shock absorbers. Do not reuse OEM shock absorbers.

8) Lower axle until tension is removed from leaf spring.

⚠ **WARNING: Do not allow the axle to hang by any hoses or ABS cables. You could damage the hoses or ABS cables, without this damage being visible to you, resulting in sudden and unexpected failure of a hose or ABS system, and an accident.**

9) Remove the passenger side U-bolts only. Carefully lower the rear axle enough to insert riser block. See Illustration 1 and Illustration 2

10) Insert center pin from kit RS8662 into hole in axle pad. See Illustration 3

11) Place Rancho riser block on the axle pad and align on center pin. See Illustration 4

12) Align hole in block with leaf spring center bolt and raise rear axle until riser block contacts leaf spring.

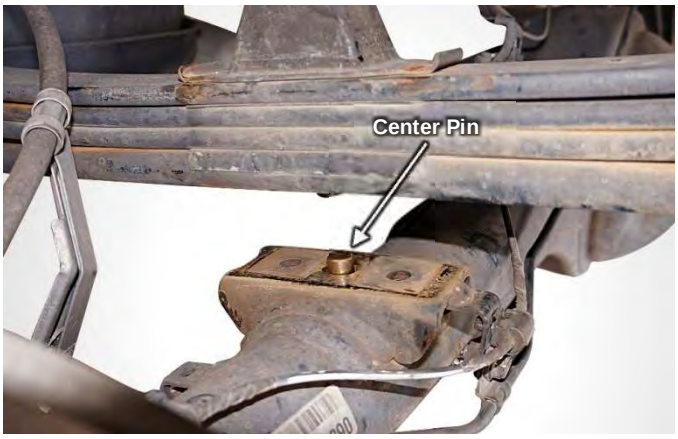


Illustration 3

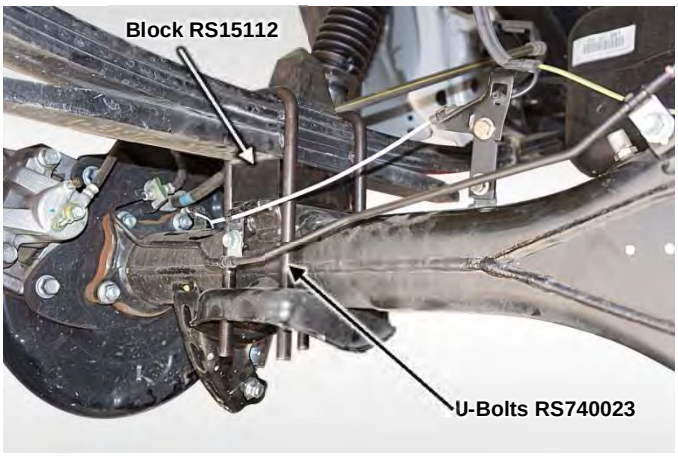


Illustration 4

13) Loosely attach the leaf spring to the axle with the new U-bolts and hardware from kit RS8102. See Illustration 4.

14) Repeat steps 9-13 for the driver side.

15) Cross tighten all U-bolt nuts evenly to 75 lb-ft.

16) Install new Rancho shock absorbers. Follow instructions and warnings supplied with shocks. Tighten upper mount until bushing swells larger than mounting washer. Torque lower mount to 66 lb-ft.

BRAKE LINE SPACER INSTALLATION

1) Attach brake line spacers RS176807 to parking brake cable brackets, ABS wire bracket and brake hose brackets using hardware included in sub assembly RS860809. Attach other end of brake line spacers to axle using OE hardware. Torque OE hardware to 10 lb-ft and supplied hardware to 18 lb-ft. See Illustration 5 and Illustration 6.

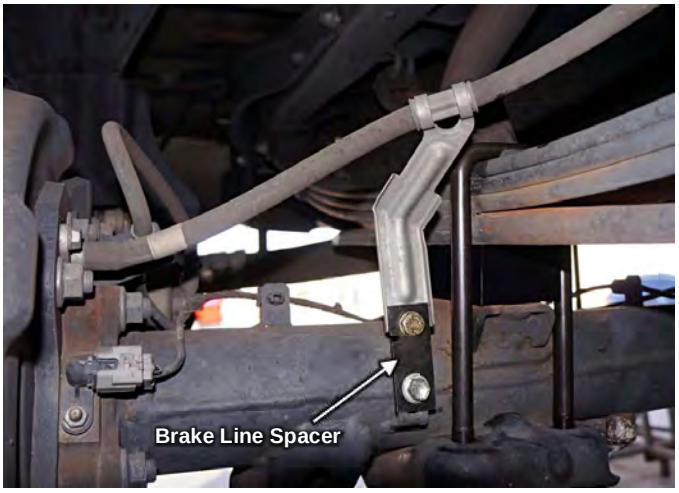


Illustration 5

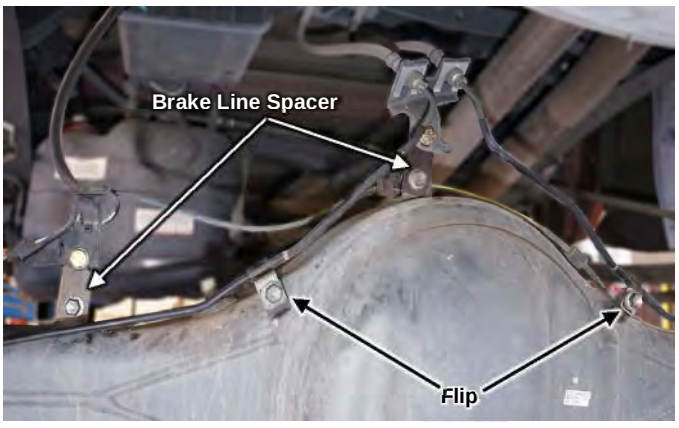


Illustration 6

2) Flip the two mounting taps on metal brake lines so mounting hole is under the line and reattach to axle using OE hardware. Torque to 10 lb-ft. See Illustration 6.

CARRIER BEARING SPACER INSTALLATION

1) Loosen and back out ONE bolt holding carrier bearing to cross member 3/4". DO NOT REMOVE BOLT. See Illustration 7

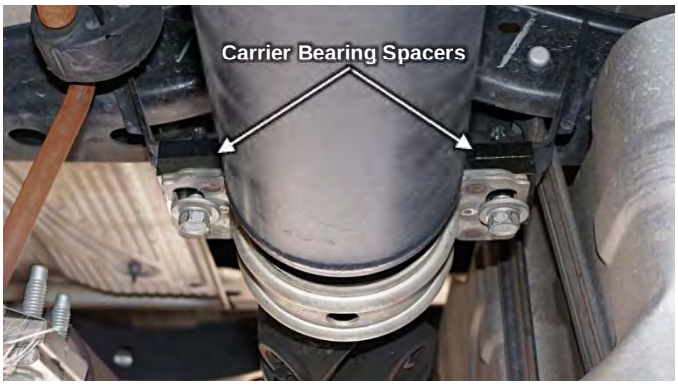


Illustration 7

2) Support axle and remove other carrier bearing mounting bolt.

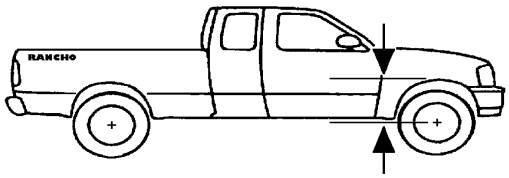
3) Insert two carrier bearing spacers between bearing and cross member and loosely reinstall OE bolt using red Loc-Tite.

4) Remove first bolt and insert two carrier bearing spacers between bearing and cross member. Loosely reinstall OE bolt using red Loc-Tite.

5) Align spacers and torque mounting bolts to 30 lb-ft.

6) Install rear wheels and lower vehicle to ground. Tighten lug nuts to 95 lb-ft.

7) Measure and record the distance from the center of each wheel to the top of the fender opening. Record these measurements in the space provided.



LR _____ LF _____

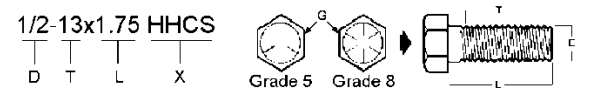
RR _____ RF _____

Torque Specs

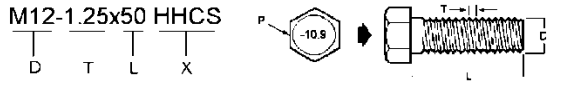
Strut Rod Nut	18 lb-ft.
U-Bolts (Rancho 9/16")	75 lb-ft.
Brake & ABS Brackets to Axle	10 lb-ft.

Lower Shock Mount	66 lb-ft.
Wheel Lug Nuts Aluminum Wheel	97 lb-ft.
Wheel Lug Nuts Steel Wheel	154 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



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)

Rancho Technical Department at 1-734-384-7804.

⚠ 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 kit 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 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 accordantly.

⚠The driver of this suspension system recognizes and agrees that there are risks inherent in driving a vehicle with a modified 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.