INSTALLATION INSTRUCTION RS88450

Rev A

RS80450B – 2.5" Lift Front Coil Springs

Fits: 2013-2003 Ram 2500/3500 4WD (DIESEL MODELS ONLY)

⚠ 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.

Do not install lifted coil springs without appropriate extended length shocks, brake lines, brake line brackets, bump stop extensions, sway bar end links, track bars, and drive shafts.

Failure to install these lifted height coil springs along with appropriate components 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.

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.

Parts List

P/N	DESCRIPTION	QTY.
RS824B	2.5" Progressive Coil	2
RS88450	Instructions	1

Extended length shocks required – Do not reuse OE shocks.

Recommended Rancho Shock Absorbers: (must be purchased separately)	RS55044 RS7044 RS999044

1) ☐ Park vehicle on a level surface. Set the parking brake and chock wheels.

2) ☐ Measure and record the distance from the center of each wheel to the top of the fender opening. Record measurements in space provided in Illustration 1.

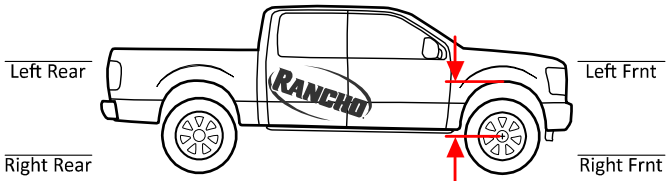


Illustration 1

3) ☐ If equipped, remove the front skid plate.

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

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

6) ☐ Support the front axle with a floor jack. Secure the axle to the jack to keep it from rotating.

7) ☐ Remove the sway bar upper nut, retainer and cushion as shown in Illustration 3.

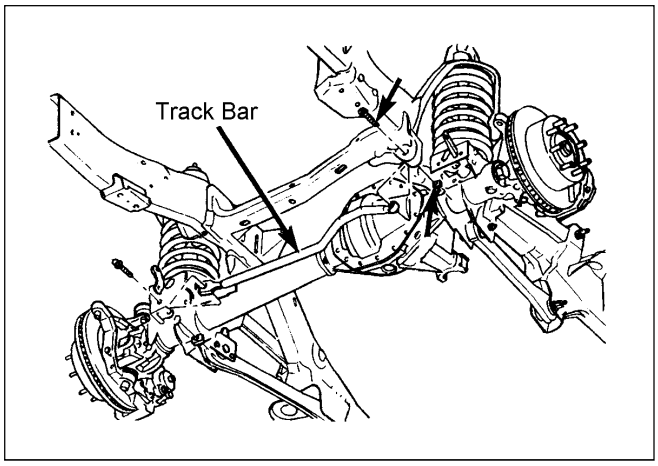


Illustration 2

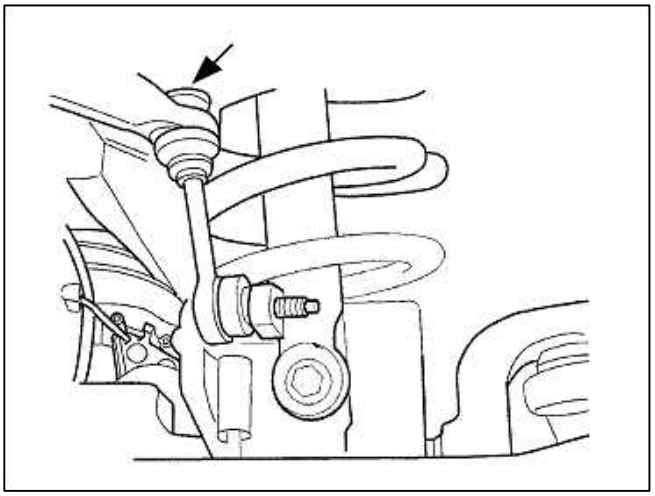


Illustration 3

9) ☐ Mark the front differential yoke and drive shaft for installation reference. Separate the drive shaft from the differential.

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

11) ☐ Remove the shock absorber lower bolt from the axle bracket. See Illustration 4.

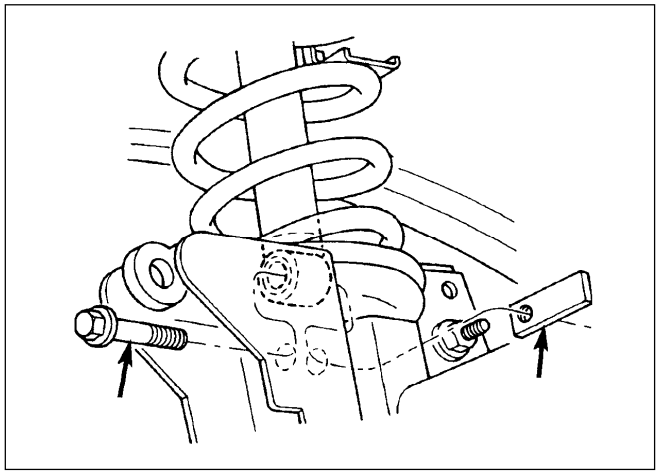


Illustration 4

NOTE: If a quality heavy duty spring compressor is available it may be used to remove OE and install Rancho springs. Otherwise the suspension arms must be removed to lower axle enough to complete installation (steps 12-17).

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

13) ☐ Loosen the upper control arm bolts.

14) ☐ Loosen lower control arm to frame mounting bolts

15) ☐ Confirm axle is securely supported by floor jack.

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

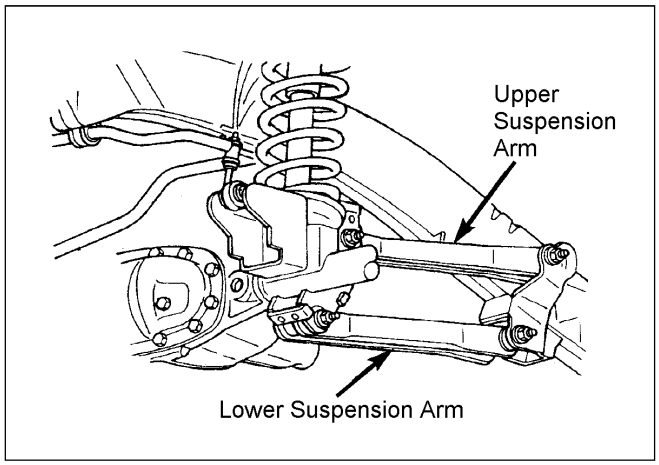


Illustration 5

16) ☐ Remove the upper suspension arm to axle mounting bolts. See Illustration 5.

CAUTION! Confirm axle is secure and will not flip or rotate.

17) ☐ Carefully remove lower suspension arm to frame mounting bolts, taking care that axle stays level and secure. See Illustration 5.

If axle wants to rotate, use another jack under the differential yoke or lower suspension arm.

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

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

⚠ 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.

20) ☐ Insert left coil spring between the driver side axle pad and upper mount. Carefully lower axle if required. Align spring with reference marks.

21) ☐ Insert right coil spring between the passenger side axle pad and upper mount. Align spring with reference marks. See Illustration 6.

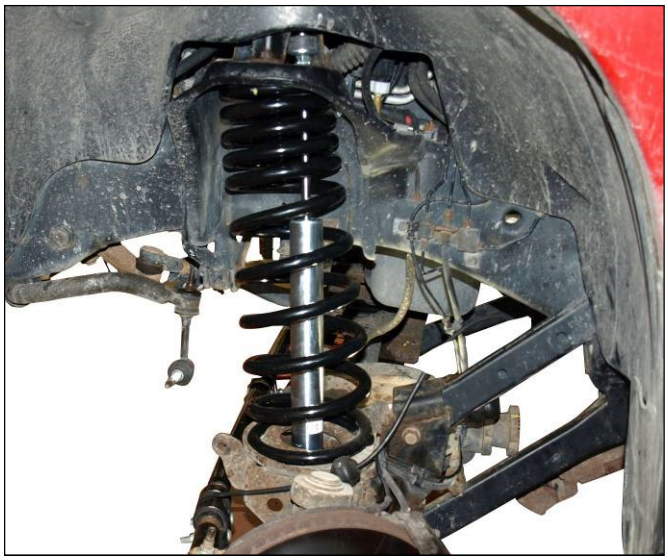


Illustration 6

22) ☐ Carefully raise front axle. Do not lift vehicle off frame supports.

23) ☐ Reattach upper and lower suspension arms. Do not tighten until vehicle is on ground at ride height.

24) ☐ Attach shock to axle bracket with the original hardware. Tighten bolt to 100 lb-ft.

Extended length shocks required – Do not reuse OE shocks. Rancho RS999044, RS7044, or RS55044 recommended.

25) ☐ Align reference marks and reattach the front drive shaft with the original hardware. Apply thread lock and tighten bolts to 21 lb-ft.

26) ☐ Reattach the end links to the sway bar with the original retainers, bushings, and nut. Tighten to 20 lb-ft.

27) ☐ Reattach brake hose to the axle bracket with the original bolt. Reattach vent hose to axle.

28) ☐ Install front wheels.

29) ☐ With the suspension at maximum extension (full droop), inspect and rotate all axles and drive shafts. Check for binding and proper slip yoke insertion. Check for adequate length of any wires, hoses and links. Turn the front wheels completely left then right. Verify adequate tire, wheel, brake hose and ABS wire clearance. Inspect steering and suspension for tightness and proper operation.

30) ☐ Lower vehicle to ground. Tighten the lug nuts to 145 lb-ft.

31) ☐ Apply thread lock and tighten the upper link bolts to 120 lb-ft. Install thread lock, and tighten the lower link bolts to 160 lb-ft.

32) ☐ Apply thread lock and attach track bar to frame bracket. If holes to not align, have assistant slowly turn wheel to left or right to align. Tighten the track bar bolt to 165 lb-ft.

33) ☐ Repeat step 29 with suspension at ride height and full articulation.

34) ☐ Ensure that the vehicle brake system operates correctly. Verify that each hose and wire allows for full suspension movement.

35) ☐ Ensure that the vehicle brake system operates correctly. Verify that each hose and wire allows for full suspension movement.

36) ☐ Readjust headlamps and have vehicle aligned to manufacturer's specifications.

Recommended Alignment Specifications

	Preferred	Range
Caster (degrees)	4.0°	+.75°
Camber (not adjustable)	-0.25°	
Sum Toe In (degrees)	1°	±0.05°

37) ☐ Park the vehicle on a level surface. Measure and record the distance from the center of each wheel to the top of the fender opening. Record measurements in space provided in Illustration 7.

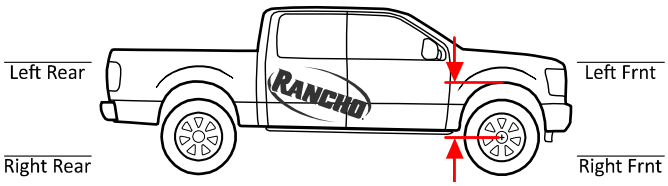


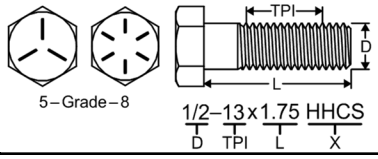
Illustration 7

Vehicle Torque Specifications

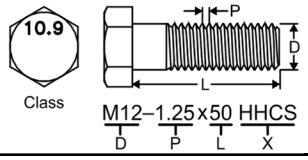
Upper Shock Mount	30 lb-ft.
Upper Shock Rod Nut	40 lb-ft
Lower Shock Mount	100 lb-ft.
Drive Shaft to Pinion Flange	21 lb-ft
Sway Bar End Links to Sway Bar	20 lb-ft.
Upper Control Arm	120 lb-ft
Lower Control Arm	160 lb-ft
Track Bar	165 lb-ft.
Wheel Lug Nuts	145 lb-ft.

STANDARD BOLT TORQUE AND 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



D = Nominal Diameter
TPI = Threads Per Inch
P = Pitch (Thread Width, mm)
L = Length
X = Decription (Hex Head Cap Screw)



www.gorancho.com

Rancho Technical Department 1-800-325-8886.