## INSTALLATION INSTRUCTION





Jeep Wrangler JL 2" Rubicon, 3.5" NON-Rubicon Progressive Coil System **RS66124BR5** – Includes *RS5000X* Shocks **RS66124BR9** – Includes *RS9000XL* Shocks Fits 2020 – 2018 Jeep Wrangler JLU 4-Door Models

Jeep Gladiator JT Front Leveling Progressive Coil System **RS66127BR5** – Includes *RS5000X* Shocks **RS66127BR9** – Includes *RS9000XL* Shocks Fits 2020 Jeep Gladiator JT



Pictured with: Sendel S38 LOCKER 17" x 9" -12 wheels Milestar PATAGONIA M/T LT315/70R17 tires

#### **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. A CAUTION: Thread locking compound may irritate sensitive skin. Read warning label on container before use.
- 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 Welding on a vehicle creates an electrical charge throughout the body and frame. Disconnect the vehicle's battery prior to any welding. Place welding ground clamps as near as possible to the weld. Never use a vehicle suspension component as a welding ground point.
- 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 4 to 5 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 DRiV, Inc. and its related companies harmless to the fullest extent permitted by law against any resulting damages.

#### **SPECIFICATIONS & REQUIREMENTS**

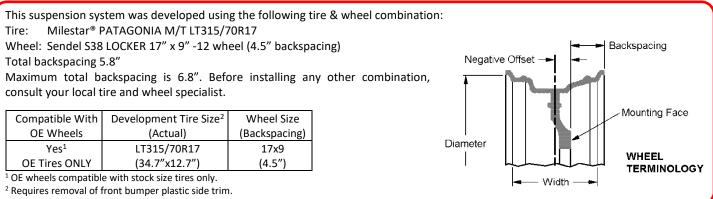
#### Shock Absorbers

New Rancho shock absorbers must be used and are included with this kit.

Do not reuse OE shock absorbers

AWARNING 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

#### Wheels and Tires



#### Recommended Components and Modifications (MUST BE PURCHASED SEPARATELY)

#### RS62118B Rancho Control Arm Geometry Correction Brackets

- Corrects control arm alignment geometry to factory specs eliminating the need for adjustable control arms or cam bolts for caster correction

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

Jeep Service Manual	Combination Wrenches	File
Hydraulic Floor Jack	(9/16" & METRIC: 10, 13, 15, 18, 19, 21, 24)	Red LocTite
Heavy Duty Jack stands	Metric Allen Wrenches	Penetrating Lube (to aid removal of
Wheel Chocks (Wooden Blocks)	Wire Brush (to clean mounting surfaces)	corroded and frozen hardware)
Torque Wrench (250 FT-LB capacity)	Body Clip Removal Tool	Safety Glasses
3/8" and 1/2" Drive Ratchet and Socket Sets	Hammer	Wear safety glasses at all times
	Pliers	

#### Required Rancho shock absorbers

Front	Rear	
RS55065	RS55066	
RS999065	RS999066	



Parts List

PART #

PART #	PART # DESCRIPTION		
RS66124BR5-1 RS66124BR9-1 RS66127BR5 RS66127BR9	Box 1 – Front Components	1	
RS865B	Coil Spring - Left Front	1	
RS866B	Coil Spring - Right Front	1	
RS176802	Bump Stop Spacer – 3" Front	2	
RS176443	Bump Stop Spacer – 2" Front	2	
RS860851	Sub Assy, Front Bump Stop	1	
RS603602	HHCS 3/8-16 X 1.75	2	
RS7604	Nut 3/8-16 Nylock	2	
RS603508	Washer 3/8 SAE	4	
RS176899	Sway Bar End Link, Front 7.4"	2	
RS860874	Sub Assy, USS Washer	1	
RS7719	Washer, ½" USS	1	
RS89122	Instructions	1	
RS94180	Information Pack	1	
RS94177	Rollover Warning Label	1	
RS94119	Consumer/Warranty Information	1	
R-RM0082-1112	Warranty Tag	1	
RS780281	Rancho Decal - Color	1	
RS780294	Red Rancho Die Cast Decal	1	
RS780294B	Black Rancho Die Cast Decal	1	

RS66124BR5-2	Box 2– Rear Components	
RS66124BR9-2	Box 2- Real components	-
RS867B	Coil Spring - Left Rear	1
RS868B	Coil Spring - Right Rear	1
RS176900	Sway Bar End Link, Rear 10.8"	2
RS176906B	Bump Stop Spacer - Rear	2
RS860830	Sub Assy - Rear Bump Stop	1
RS770127	HHCS M8-1.25X20MM	4
RS770128	Washer M8	8
RS603112	Nut M8-1.25 Nylock	4
RS860850	Sub Assy, E-Brake Bracket	1
RS176905	E-Brake Brkt	1
RS770304	HHCS, M12-1.50 X 25MM	1
RS7915	Washer M12	1
RS603112	Nut M8-1.25 Nylock	1
RS770128	Washer M8	1

DESCRIPTION

QTY

.

Included with RS66124BR5			
RS55066 RS5000X Shock - Rear			
	Included with RS66124BR9		
RS999066	RS9000XL Shock - Rear	2	

Included with RS66124BR5, RS66127BR5

RS55065	RS55065 RS5000X Shock - Front			
Included with RS66124BR9, RS66127BR9				
RS999065	RS9000XL Shock - Front	2		

#### FRONT SUSPENSION

— ALL KITS

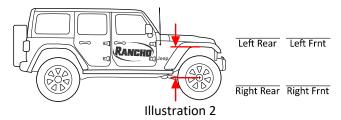


Illustration 1

#### SHOCK ABSORBER & COIL SPRING REMOVAL

1)  $\Box$  Park vehicle on a level surface. Set the parking brake and chock rear wheels. Disconnect the negative ground cable from the battery.

2)  $\Box$  Measure and record the distance from the center of each wheel to the top of the fender opening. See Illustration 2.



3)  $\Box$  Loosen, track bar bolt at axle. Remove track bar bolt at frame. See Illustration 1.

4)  $\Box$  Raise the front of the vehicle and support the frame with jack stands. Remove the front wheels and set them aside.

5)  $\Box$  Remove the sway bar end links. To avoid mixing the different thread pitches used, thread nuts back onto ball stud and mounting bolt and save bolt and nut for later use.

6)  $\Box$  Remove heat shields and loosen, but do not remove, upper and lower control arm bolts. See Illustration 4.



Illustration 3

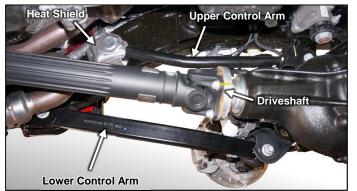


Illustration 4

7)  $\Box$  Remove nut and separate the brake hose brackets from the lower control arms. See Illustration 3.

8)  $\Box$  Remove bolt and separate the brake hose brackets from the axle. See Illustration 3.

9)  $\Box$  Disconnect any vent hoses.

10)  $\Box$  Disconnect any electrical wiring from the axle by sliding out the plug lock and pulling plug out. Detach wire clips from axle and upper control arms. See Illustration 5.

#### CAUTION: DO NOT PULL BY WIRES!

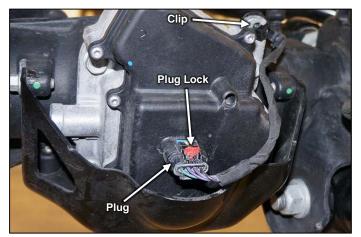


Illustration 5

11)  $\Box$  Reference mark the drive shaft to the front pinion flange (at axle). Disconnect the drive shaft from the pinion flange. Support drive shaft with a tie wrap or wire. See Illustration 4.

Take care not to damage driveshaft CV boot at transfer case.

12)  $\Box$  Support the front axle with a floor jack.

13)  $\Box$  Remove the shock absorber lower nut and bolt.

14)  $\Box$  Remove the shock absorber upper bolt. Remove the front shock absorber.

DO NOT REUSE ORIGINAL SHOCK ABSORBERS.

15)  $\Box$  Carefully lower the front axle and remove the coil springs. Push down on axle if necessary.

 $\triangle$  WARNING: Do not allow the axle to hang by any hoses or cables. You could damage the hose or cable, without this damage being visible to you, resulting in sudden and unexpected failure and an accident.

#### BUMP STOP SPACER, COIL SPRING & SHOCK ABSORBER INSTALLATION

NOTE: Use 3" bump stop RS176802 for NON-Rubicon models, and 2" bump stop RS176443 for Rubicon models or if using taller aftermarket fenders. Taller bump stop is to prevent tires rubbing on fenders.

1)  $\Box$  Install original rubber isolator in driver side upper coil mount. Align and insert the isolator's alignment pins into the holes in the mount.

Check that rubber pins are inserted by feeling top of upper spring mount. See Illustration 6.

2)  $\Box$  Place bump stop spacer inside the coil spring 865B-B-LF.

3)  $\Box$  Lower axle if required and insert the spring with bump stop spacer into the upper pocket and onto the axle pad. Align pig tail with groove in axle pad. See Illustration 6.

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

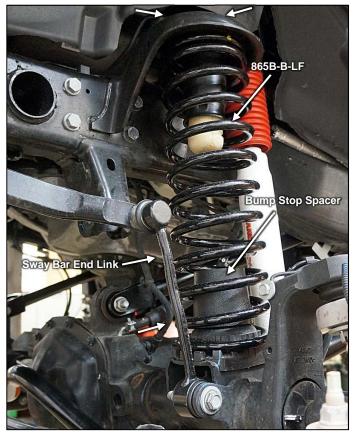


Illustration 6

5)  $\Box$  Attach the bump stop spacer to the axle pad with 3/16" hardware from bag RS860851. Torque to 20 lb-ft.

6)  $\Box$  Repeat steps 1 through 5 for the passenger side using spring 866B-B-RF.

7)  $\Box$  Install new Rancho shock absorber RS55065 or RS999065 on the upper mount using OE bolt. Torque to 80 lb-ft.

NOTE: Front shocks are the shorter shocks.

8)  $\Box$  Raise front axle and re-attach the brake line bracket to the axle using original hardware.

ATTENTION: Be careful when raising axle not to lift vehicle off jack stands. Because of the internal rebound bumper in the shock, the coils will have to be compressed several inches to attach shock.

9) Attach shock lower mounts to axle brackets with the original hardware. Torque to 75 lb-ft.

10)  $\Box$  Lower axle and allow to hang on shock absorbers.

11)  $\Box$  Align driveshaft and pinion flange using previously made marks, and reattach using OE hardware and blue Loctite. Torque to 81 lb-ft.

12)  $\Box$  Reattach vent hose and electrical wiring if necessary.

13)  $\Box$  Reattach brake line brackets to control arms.

14)  $\Box$  Bend bracket up about  $\frac{1}{2}$ -1" so avoid stretching brake and ABS lines. See Illustration 7.

#### SWAY BAR END LINK INSTALLATION.

End link ball stud and lower mounting bolt each use a different thread pitch. Be careful not to mix them!

1)  $\Box$  Attach sway bar end links RS176899 to sway bar using supplied nut. Torque to 60 lb-ft.

2)  $\Box$  Attach driver sway bar end link to axle bracket with the OE hardware and ½" USS washer (sub assy. RS860874) under the head of the bolt. Torque to 60 lb-ft. See Illustration 6 and Illustration 8.

3)  $\Box$  Attach passenger side sway bar end link to axle bracket with the OE hardware. Torque to 60 lb-ft.

#### **REMOVE BUMPER TRIM (IF REQUIRED)**

Remove the bumper side trim if installing larger than 33" tires.

1)  $\Box$  Remove the seven screws and one clip holding the trim to bumper. See Illustration 9 and Illustration 10.

2)  $\Box$  Repeat for other side.

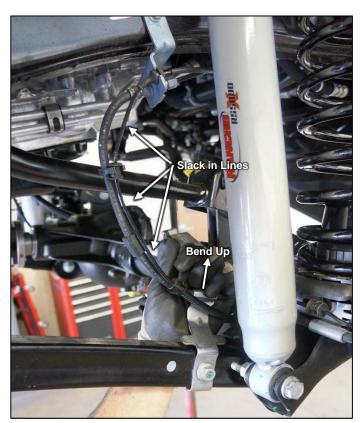


Illustration 7



**Illustration 8** 

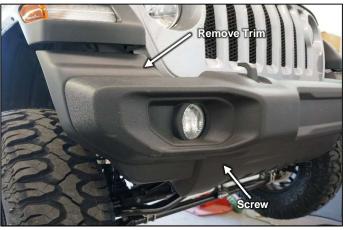


Illustration 9

#### LOWER VEHICLE

1) 
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.

2)  $\Box$  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) □ Install front wheels and lower vehicle to the ground. Tighten lug nuts to 130 lb-ft.

4)  $\Box$  Torque lower control arm mounting hardware to 190 lb-ft.

6)  $\Box$  Re-install heat shields to upper control arm frame mounts.

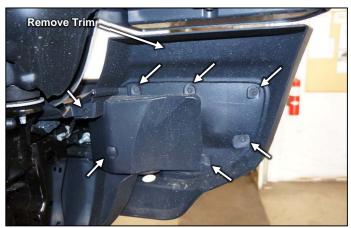


Illustration 10

7)  $\Box$  Install track bar bolt at frame. Torque upper and lower track bar bolts to 110 lb-ft.

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

#### REAR SUSPENSION — WRANGLER JL (RS66124BR5, RS66124BR9) ONLY —

#### SHOCK ABSORBER & COIL SPRING REMOVAL

1)  $\Box$  Loosen, but do not remove, track bar bolt at frame and axle.

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

3)  $\Box$  Remove bolts and separate the brake line brackets from the axle. See Illustration 11.

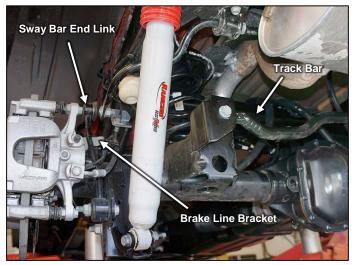


Illustration 11

4) Loosen, but do not remove, upper and lower control arm bolts.



Illustration 12



Illustration 13

ATTENTION: Do not push parking brake inner cable into housing. Doing so can cause the parking brake cable to become disconnected from the lever mechanism under the center console of the vehicle. Try to keep slight tension on the inner cable while performing steps 7-10.

If parking brake does not activate after reinstalling cable, repeat step 7, reattach cable to lever, then repeat step 10.

8)  $\Box$  Remove the parking brake cable housing from the axle. Squeeze the tabs on the end of the housing with pliers and pull housing from axle.

9)  $\Box$  Re-rout the parking brake cables under the fuel filler and evap lines, and under the frame cross member. See Illustration 15.

10)  $\Box$  Reattach the parking brake cable housing to the axle, then the cable hook to the loop at the brake. Use vise-grip pliers to pull loop out and a second pair of vise-grip pliers on cable hook.

11)  $\Box$  Remove plastic cover at rear of fender well to gain access to upper shock mount. See Illustration 14.



Illustration 14

12)  $\Box$  Support the rear axle with a floor jack.

13)  $\Box$  Remove the lower shock mounting nut and bolt from the axle bracket. Remove the shock absorber upper mounting bolt and remove the shock absorber.

14)  $\Box$  Remove the sway bar end links. To avoid mixing the different thread pitches used, thread nuts back onto ball stud and mounting bolt and save for later use.

15)  $\Box$  Carefully lower the rear axle until the coil springs are free from the upper mount seat. Remove the coil springs.

# ▲ WARNING: Do not allow the axle to hang by any hoses or cables. You could damage the hose or cable, without this damage being visible to you, resulting in sudden and unexpected failure and an accident.

#### COIL SPRING & SHOCK ABSORBER INSTALLATION

1)  $\Box$  Lower axle enough to fit coils into mounts.

2)  $\Box$  Place driver side OE isolator in upper mount with alignment pin inserted in hole of upper mount.

3) Align pigtail with groove in isolator and push coil RS867B-A-LR up into upper isolator. While still pushing up on coil, align bottom of coil over lower mount and raise axle to hold coil in place. Make sure coil is seated on upper isolator and upper isolator is aligned and seated in upper mount.

4) □ Repeat steps two and three for passenger side using coil RS868B-B-RR.

6)  $\Box$  Raise axle and attach shocks to the axle brackets with the original hardware. Torque the shock absorber lower mounting bolts to 75 lb-ft.

ATTENTION: Be careful when raising axle not to lift vehicle off jack stands. Because of the internal rebound bumper in the shock, the coils will have to be compressed several inches to attach shock.

- 7)  $\Box$  Reattach brake line brackets to axle.
- 8)  $\Box$  Reattach vent hose and electrical wiring if necessary.

10)  $\Box$  Reinstall plastic cover at rear of fender well. See Illustration 14.

#### PARKING BRAKE CABLE BRACKET INSTALLATION

1)  $\Box$  Attach parking brake cable drop bracket RS176905 to frame cross member using supplied M12 bolt and washer. See Illustration 15.

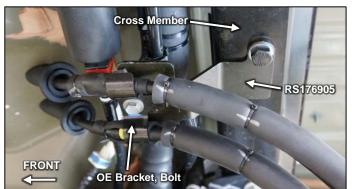


Illustration 15

Or, for vehicles equipped with 2.0-Liter Turbo eTorque Engine, remove OE bolt from battery skid plate, and attach parking brake cable drop bracket RS176905 to frame cross member using OE bolt and supplied M12 washer between drop bracket and skid plate. See Illustration 16.

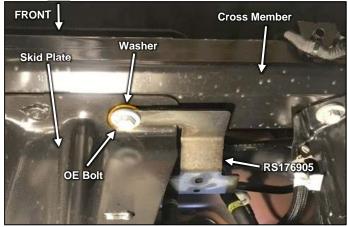


Illustration 16

2)  $\Box$  Attach parking brake cables to the drop bracket with OE bolt and cable bracket, and supplied M8 nut and washer.

#### SWAY BAR END LINK INSTALLATION.

End link ball stud and lower mounting bolt each use a different thread pitch. Be careful not to mix them!

1)  $\Box$  Attach ball stud of new end links RS176900 to sway bar with supplied nut. Torque to 60 lb-ft.

2)  $\Box$  Attach end links to axle brackets with OE hardware. Torque to 60 lb-ft.

#### LOWER VEHICLE

1)  $\Box$  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.

□ Install rear wheels and lower vehicle to the ground.
 Tighten lug nuts to 130 lb-ft.

3)  $\Box$  Torque the lower control arm bolts to 90 lb-ft.

4)  $\Box$  Torque the upper control arm bolts at frame to 120 lb-ft. and the axle mount to 95lb-ft.

5)  $\Box$  Torque track bar hardware at frame and axle bracket to 90 lb-ft.

6)  $\Box$  Reconnect the battery ground cable.

#### BUMP STOP BRACKET INSTALLATION

1)  $\Box$  Using the original holes on the axle pad, attach bump stop bracket RS176906B to the axle with supplied 8mm hardware. Torque to 20 lb-ft. See Illustration 17.

The holes in the bracket are offset to match the offset holes in the axle pad.



Illustration 17

#### **FINAL CHECKS & ADJUSTMENTS**

#### – ALL KITS —

1)  $\Box$  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.

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

- 3) 🗆 Readjust headlamps.
- 4)  $\Box$  Center steering wheel.

The steering wheel must be centered to ensure that the vehicles Electronic Stability Control (ESC) system operates correctly.

To center the steering wheel loosen drag link adjuster clamp bolt and turn the drag link adjuster in desired direction. See Illustration 18.

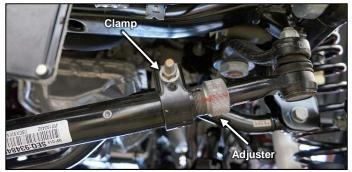


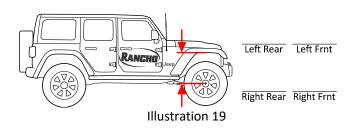
Illustration 18

5)  $\Box$  Have vehicle aligned to manufacturer's specifications.

Alignment Specifications:

3	
Caster	$4.8^{\circ}$ $\pm 1.0^{\circ}$
Camber (fixed angle)	-0.25° $\pm$ 0.37°
Toe-In, Each Wheel	0.0° – 0.12°
Toe-In, Total	$0.0^{\circ} - 0.20^{\circ}$
Thrust Angle	0°-0.25°

6)  $\Box$  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. See Illustration 19.



### **Torque Specs**

Front Components			
Upper Control Arm	80 lb-ft		
Lower Control Arm	190 lb-ft		
Brake Line Bracket to Lower Control Arm	15 lb-ft		
Control Arm Adjuster Jam Nut	150 lb-ft		
Front Bump Stop Spacer	20 lb-ft		
Shock Absorber Upper Mount	80 lb-ft		
Shock Absorber Lower Mount	75 lb-ft		
Front Drive Shaft to Pinion Flange	81 lb-ft		
Sway Bar End Link	60 lb-ft		
Track Bar	110 lb-ft		
Drag Link Adjustment Sleeve Clamp	26 lb-ft		
Wheels (Lug Nuts)	130 lb-ft.		

#### **Rear Components** Upper Control Arm to Axle 95 lb-ft Upper Control Arm to Frame 120 lb-ft Lower Control Arm (all) 90 lb-ft Rear Bump Stop Spacer 20 lb-ft Shock Absorber Upper Mount 80 lb-ft 75 lb-ft Shock Absorber Lower Mount Track Bar 90 lb-ft Sway Bar End Link 60 lb-ft Wheels (Lug Nuts) 130 lb-ft

#### STANDARD BOLT TORQUE AND IDENTIFICATION

STANDARD BOET TORGOE 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
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