

2015 Jeep Cherokee KL Trailhawk Lift Instructions

References:

- [1] Dave Thomas, <http://www.justaskdave.com.au/kl-cherokee-lift/>
 [2] Robert K. Emmons, Jr., <http://www.jeepforum.com/forum/f428/there-s-hope-off-shelf-cherokee-kl-lift-3655881/>
 [3] Group1 Auto Parts, <http://www.group1autoparts.com/auto-parts/2015/jeep/cherokee/trailhawk-trim/3-2l-v6-gas-engine>
 [4] Coil spring isolators, <http://autoplicity.com/466883-energy-suspension-coil-spring-isolator-set>
 [5] Coil spring compressor, http://www.autozone.com/loan-a-tools/strut-spring-compressor/oem-strut-spring-compressor/555557/?_requestid=101451

Updated 07-05-17 (rev. D)

After a Dobinsons Group Buy was posted on the Jeep Cherokee Club forum, it was a no brainer to do yet another suspension modification in preparation for the new Expedition One front bumper. This time the Dobinsons struts, springs and shocks provide a modest one lift, but more importantly more load capacity (i.e. for added weight of an after market bumper and winch, 150 lbs) and a slight increase in articulation. The Dobinsons kit will be combined with the Aussie Lift to provide additional clearance at the engine and gas tank skid plates.

Parts

The MOPAR online parts list [3] incorrectly lists the locking nut (6509401AA) used with the knuckle pinch bolt as does Reference [2]. The proper parts are listed below.

- | | |
|--|-------------------------------|
| • Bolt: PN 06509954AA; 6 Lobe, M12x1.25x8.00; Strut to Knuckle | Required: 2 (\$2.07 ea) |
| • Nut: PN 6510103AA; Hex Flange, Locking; M12x1.25; Pinch bolt | Required: 2 (\$1.75 ea) |
| • Bolt: PN 6510023AA; Brake Caliper to Knuckle | Required: 4 (\$1.09 ea) |
| • Nut: PN 6510655AA; Hex Flange, Locking; M12x1.50; outer tie rod | Required: 2 (\$3.48 ea) |
| • Nut: PN 6507676AA; Hex Flange, Locking; M12x1.50; LCA ball joint | Required: 2 (\$4.72 ea) |
| • Nut: PN 6509898AA; Hex Flange; M36; front axle | Required: 2 (\$2.13 ea) |
| • Upper Strut Clip: PN 5168088AA; front struts | Required: 4 (\$1.27 ea) |
| • Dobinsons Cherokee KL Suspension Kit: DSSKIT43 | Required: 1 kit (\$722.00 ea) |
| o GS29-430 LH, Gas Strut | 1 (\$125.00 ea) |
| o GS29-430 RH, Gas Strut | 1 (\$125.00 ea) |
| o GS29-431, Gas Shock | 2 (\$95.00 ea) |
| o GS29-150, Coil Springs, Rear, Pair | 1 (\$175.00 ea) |
| o GS29-151, Coil Springs, Front, Pair (high linear rate) | 1 (\$175.00 ea) |

The following parts are to be reclaimed and reused on the front suspension.

- | | |
|---|--------------------------|
| • Strut Mount: PN 68194317AC; front strut, left | Required: 1 (\$34.68 ea) |
| • Strut Mount: PN 68194316AC; front strut, right | Required: 1 (\$42.21 ea) |
| • Dust Shield: PN 5274537AB; front strut, left and right | Required: 2 (\$16.99 ea) |
| • Isolator: PN 68194692AB; front strut, lower, left and right | Required: 2 (\$6.67 ea) |
| • Isolator: PN 68194691AB; front strut, upper, left and right | Required: 2 (\$5.05 ea) |
| • Push Pin: PN 6508863AA; M6.5x17.50, wheel liner | As Required: (\$3.73 ea) |

Equipment

- Strut Nut removal/install tool: PN 9263, 18mm
- Tie Rod Puller tool: PN C-3894-A or no cost rental from AutoZone, OEM #27170
- Coil spring compressor: PN AZ512 or no cost rental from AutoZone, OEM #27036
- Sockets: 10mm, 11mm, 15mm, 16mm, 17mm, 18mm, 19mm, 21mm, 24mm, 27mm, 36mm
- Wrenches: 11mm, 18mm, ½" drive ratchet, ½" drive torque (10-150 ft-lb), 3/8" drive torque (10-200 in-lb)

- Drill w/ 12mm (or 15/32") bit
- Allen Wrenches: 5mm, 6mm
- Rubber mallet
- Jack stands
- Bottle or trolley floor jack

Tip: There is no reason to not have the proper tools. AutoZone does a no cost rental for all items necessary.

REAR SUSPENSION

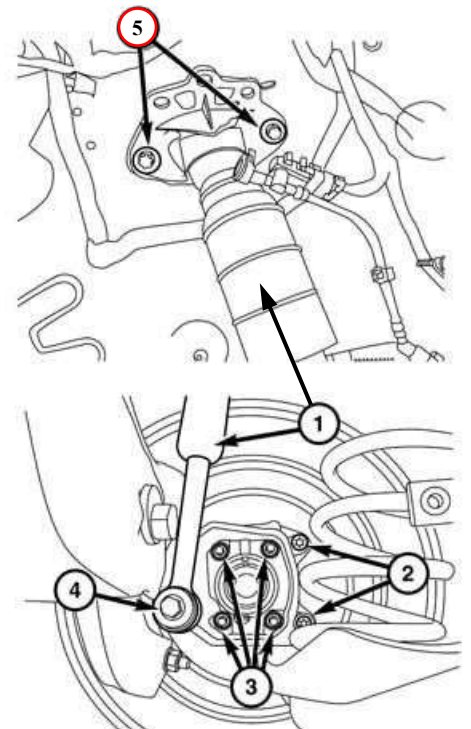
SPECIFICATIONS

DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.
Brake Tube Bracket Mounting Screw	12	-	106
Crossmember to Body Mounting Bolt	130	96	-
Hub And Bearing Mounting Bolt	95	70	-
Hub Nut	200	148	-
Spring Link to Knuckle Mounting Bolt	80 Plus 90°	59 Plus 90°	-
Spring Link Mounting to Cradle Nut	150	113	-
Toe Link to Cradle Mounting Nut	180	133	-
Toe Link to Knuckle Mounting Bolt (Steel Link)	155	116	-
Camber Link to Cradle Mounting Nut	60 Plus 90°	44 Plus 90°	-
Camber Link to Knuckle Mounting Nut	60 Plus 90°	44 Plus 90°	-
Shock to Knuckle Bolt (M14 bolt)	185	139	-
Shock Upper Mounting Nuts	49	37	-
Shock Rod Nut	30	22	-
Stabilizer Bar to Rear Crossmember Nut	60	44	-
Stabilizer Link Nut to Stabilizer Bar	55	41	-
Stabilizer Link Nut to Spring Link	55	41	-
Trailing Link to Body Mounting Bolts	105	79	-
Trailing Link to Knuckle Mounting Bolts	120	90	-
Wheel Mounting (Lug) Bolt - Aluminum Wheels	135	100	-

Rear Shock Absorber(s) Removal

Removal of the rear shock absorber is the same for both sides.

1. Raise and support the vehicle.
2. Remove the lug bolts, 19mm, and rear wheel assemblies.
3. Remove the wheel liner.
4. Support the rear suspension with a jack stand or bottle jack.
5. Remove the bolt [4], 21mm, securing the lower end of the shock assembly [1] to the lower knuckle assembly.
6. Remove the upper shock mounting bolts [5], 16mm, and remove the shock assembly [1] from the vehicle.



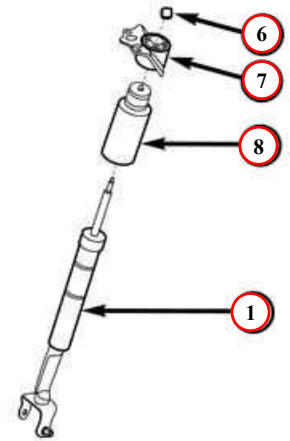
Rear Shock Absorber(s) Disassembly

CAUTION:

Do not use any type of pliers on the chrome machined surface of shock/strut rod to assist in the disassembly/assembly of shocks or struts. Use only tools designed to hold the shock/strut rod stationary when servicing shock or strut components.



1. Remove the retaining nut [6], 17mm, using the appropriate shock absorber tool kit.
2. Remove the upper shock mount [7].
3. Remove the dust shield [8] from the shock body [1].
4. Perform the inspection procedure below:
 - Inspect the shock absorber (damper) [1] for shaft binding over the full stroke of the shaft.
 - Inspect the dust shield [8] for cracks and tears.
 - Check the upper mounting bracket [7] for cracks and distortion
 - Replace necessary parts.

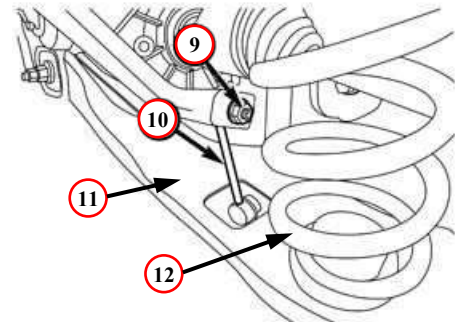


Rear Shock Absorber(s) Assembly

1. Place the dust shield [8] over the shock body [1].
2. Install the upper shock mount [7] and install the retaining nut [6]. Using the appropriate shock absorber tool kit, torque the nut to 30 N-m (22 ft-lb).

Rear Spring(s) Removal

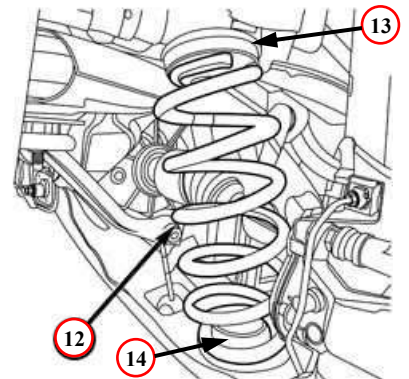
1. With the rear shock(s) removed, hold the upper stud stationary and remove the stabilizer link nut [9], 15mm and 5mm hex.
2. Separate the stabilizer link [10] from the stabilizer bar.
3. Support the lower control arm (LCA) [11] with a bottle jack or equivalent.
4. Raise the LCA to compress the spring [12].
5. Install spring compressors and continue to use bottle jack to compress the spring, adjusting the spring compressors as you go.
6. With the spring compressed, slowly lower the bottle jack and remove the coil spring [12].
7. If replacing the spring, remove the spring isolators from the top [13] and bottom [14] of the spring.
8. Remove spring compressors from spring [12].



Rear Spring(s) Installation

1. Install the spring compressors on the coil spring [12] following the manufacturer's instructions.

Tip: use cardstock or other suitable material to protect the spring paint; otherwise, the spring compressors may leave installation marks (metal on metal).
2. Compress the spring [12] to the same overall length as the removed spring.
3. Insert spring [12] onto LCA [11]. If adding spacers to the rear springs, place spacers below the bottom spring isolator [14] and above the top



isolator [13] before installing spring.

4. Support the LCA [11] with a bottle jack or equivalent.
5. Raise the LCA to compress the spring [12].
6. When spring compressors loose, remove spring compressors from spring.
7. Slowly lower the bottle jack.
8. Install the stabilizer link [10] to the stabilizer bar.
9. Hold the upper stud stationary, 5mm Allen wrench, and torque the stabilizer link nut [9], 15mm, to 55 N-m (41 ft-lb).

Rear Shock Absorber(s) Installation

1. Use a bottle jack or equivalent to raise the rear suspension into position.
2. Install the shock upper mount to the body and install the upper mounting bolts [5], 16mm and torque to 49 N-m (37 ft-lb).
3. Position the lower end of the shock [1] to the knuckle assembly.
4. Install the lower retaining bolt [4] and torque to 185 N-m (139 ft-lb).
5. Install the wheel liner.
6. Install the wheel assembly and lug bolts.
7. Lower the vehicle and torque lug bolts to 135 N-m (100 ft-lb).

If adjusting or replacing the front struts and/or springs, continue on; otherwise, perform a proper wheel alignment.

FRONT SUSPENSION

SPECIFICATIONS

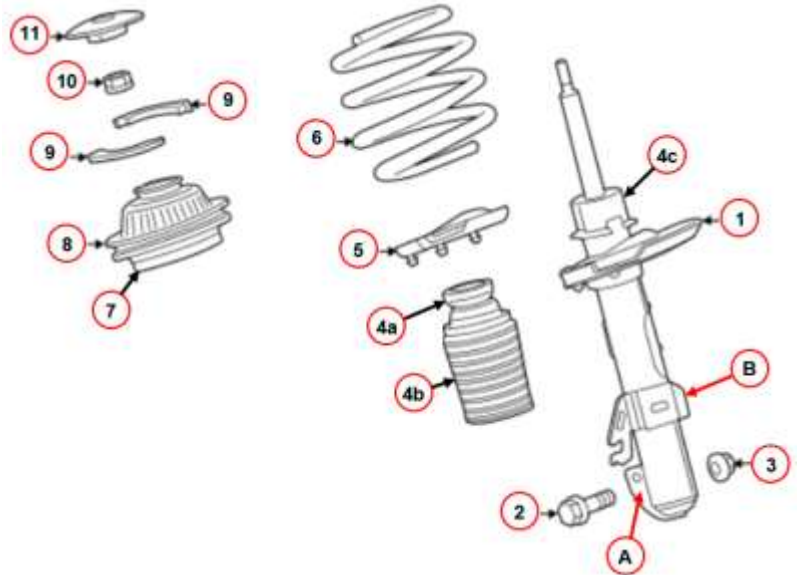
DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.
Brake Shield	8	-	71
Hub and Bearing to Knuckle Mounting Bolts	95	70	-
Hub Nut	200	148	-
Lower Ball Joint to Control Arm Nut	25 plus 175°	18 plus 175°	-
Lower Control Arm Front Horizontal Pivot Bolt	100 Plus 135°	74 Plus 135°	-
Lower Control Arm Rear Vertical Bolt	75 Plus 90°	55 Plus 90°	-
Stabilizer Bar to Cross-member Mounting Bolts	50	37	-
Stabilizer Bar Link to Stabilizer Bar	55	41	-
Stabilizer Bar Link to Strut	55	41	-
Strut-to-Knuckle Lower Retaining Bolt	110	81	-
Suspension Cross-member to Front Support Beams Bracket	95	70	-
Suspension Cross-member Mounting Bolts	126	93	-
Suspension Cross-member Mounting Bolts - Above Control Arms	120	89	-
Tie Rod Adjuster Jam Nut	80	59	-
Tie Rod End Knuckle Nut	30 Plus 90°	22 Plus 90°	-
Wheel Mounting (Lug) Bolts - Aluminum	130	96	-

A Macpherson type design strut assembly is used in place of the traditional front suspension upper control arm and upper ball joint. The bottom of the strut mounts directly to the steering knuckle using a "shark fin" and

pinch bolt going through the knuckle. The top of the strut mounts directly to the strut tower of the vehicle using a retaining clip on the strut assembly upper mount.

The front strut assembly includes the following components:

- Strut (damper) [1]
- Lower strut flange (shark fin) [A]
- Brake line flange [B]
- Strut screw (pinch bolt) [2]
- Strut screw nut [3]
- Jounce bumper [4a]
- Dust shield [4b]
- Dust shield skirt retainer [4c]
- Lower spring isolator [5]
- Coil spring [6]
- Upper spring isolator [7]
- Bearing seat [8]
- Upper strut clip [9]
- Strut rod nut [10]
- Dust cap [11]



Each component is serviced by removing the strut assembly from the vehicle and disassembling it. Coil springs are rated separately for each corner or side of the vehicle depending on optional equipment and type of vehicle service. If a coil spring requires replacement, be sure that it is replaced with a spring meeting the correct load rating for the vehicle and its specific options.

Front Strut Assembly Removal

1. Raise and support the vehicle.
2. Remove the lug bolts, 19mm, and front wheel assemblies.
3. Remove the wheel liner.
4. Using a suitable punch, lift the two staked areas [C] on the hub nut.

Use care not to damage the half shaft.

5. While a helper applies the brakes to keep the hub from rotating, remove the hub (axle) nut [12], 36mm, and discard it.

Do not reuse the axle nut.

Tip: If you don't have a helper, remove the center wheel cap and reinstall the wheel. Lower the vehicle.

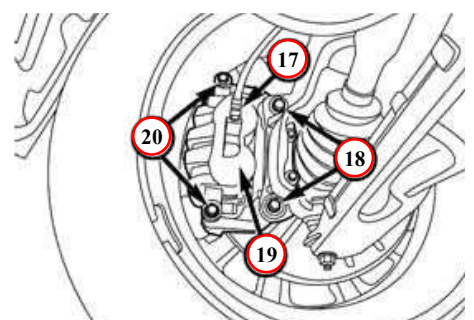
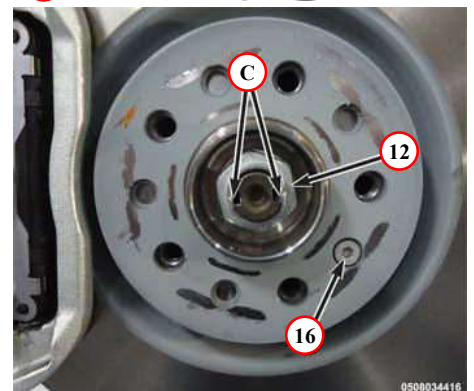
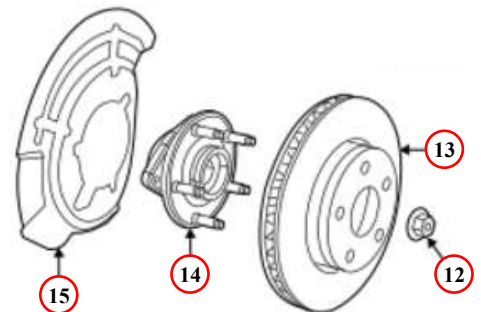
Use gravity and friction to apply resistance to the rotor while you loosen the axle nut.

6. Remove the front brake rotor.

- Remove the wheel speed sensor [17], 10mm, and remove the wire harness from the strut bracket. Position the wire harness aside.
- Remove the two brake caliper adapter bolts [18], 16mm.
- Remove the disc brake caliper [19] and adapter as an assembly and hang it out of the way using wire or bungee cord.

Use care not to overextend the brake hose.

- Remove the rotor retaining bolt [16], 5mm hex.

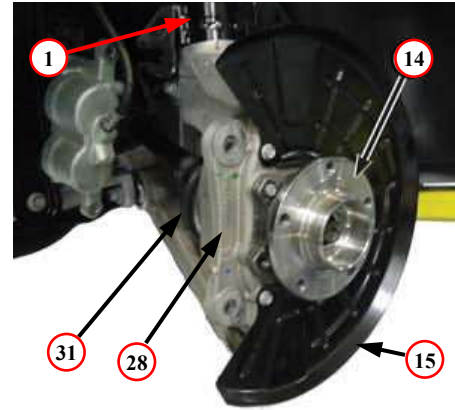
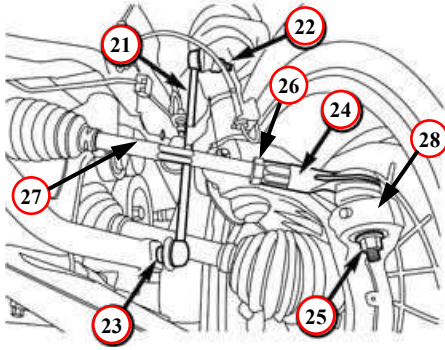


- Remove the rotor [13] from the hub [14] and bearing.
Tip: a couple of taps on the backside of the rotor with a rubber mallet will loosen the rotor from the hub.

- Remove the rotor shield [15] and bolts, 10mm.

7. Remove the stabilizer bar link [21].

- While holding the stabilizer bar link stud stationary, 5mm hex, remove the nut [22], 15mm.
- Secure the link [21] to the stabilizer bar [23].



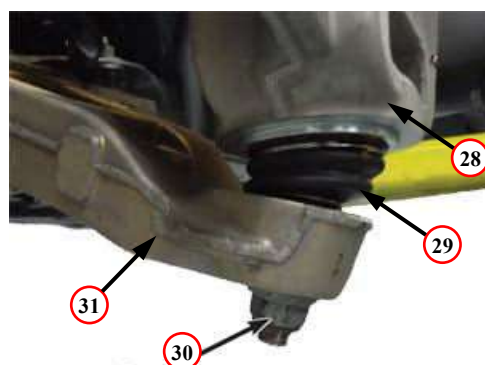
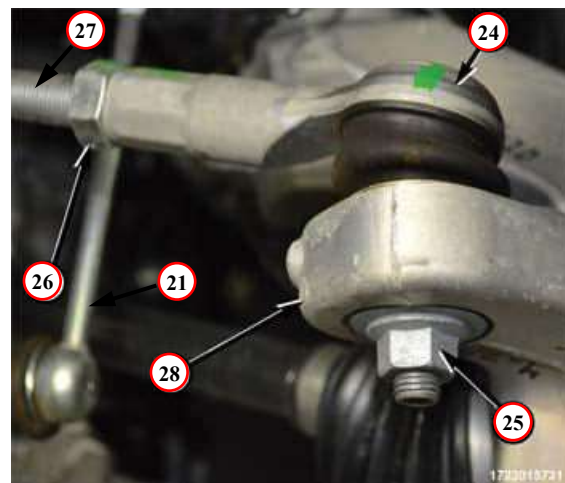
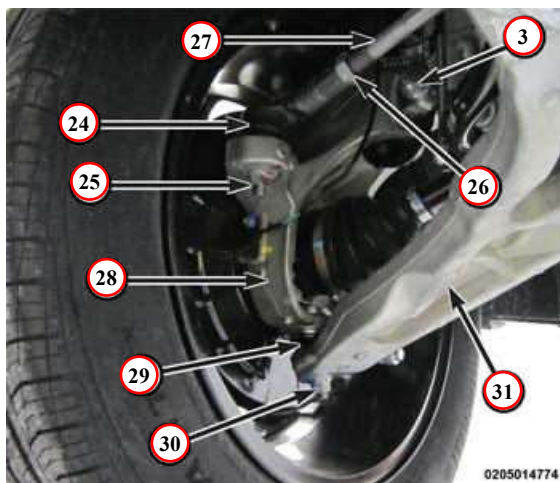
8. Remove the outer tie rod end from the knuckle [24].

Tip: Mark jam nut [26] location on inner tie rod [27] in case the jam nut and/or outer tie rod end need to be removed.

- Remove the retaining nut [25], 18mm, from the outer tie rod end [24] and discard. **Do not reuse nut.**
- Separate the outer tie rod end [24] from the knuckle [28] using a tie rod end puller.

9. Remove lower ball joint nut [30], 18mm, from the LCA ball joint [29] and discard. **Do not reuse nut.**

10. Separate the ball joint [29] stud from the control arm [31] using a tie rod end puller.



11. Insert a pry bar [D] in the opening between the control arm [31] front mounting bolt [32] and the front fascia support beam [34].
Tip: Longer bar equals less effort. Placing a C-clamp on the LCA will help the pry bar from sliding down.
12. Pry down on the control arm [31] until the ball joint stud is clear of the control arm.

NOTE: Make sure the ball joint boot does not get cut when separating the control arm from the knuckle.

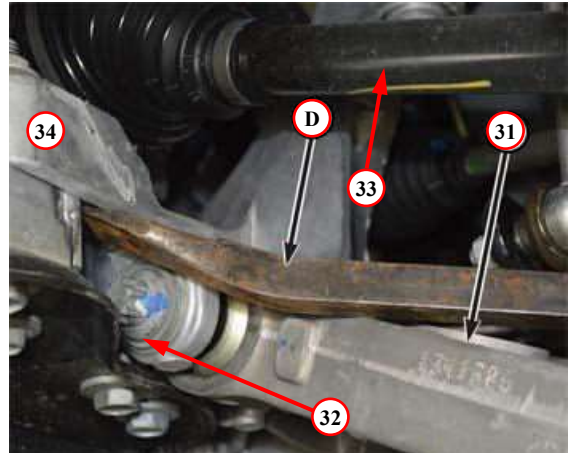
13. Push the knuckle assembly [28] to the side when it is clear of the ball joint [29] stud and slowly release the control arm [31].

NOTE: After separating the control arm from the knuckle, do not let it swing rapidly back up. This can tear the ball joint dust boot.

14. Separate the axle [33] from the knuckle [28]. Support the axle so it does not fall down.
Tip: It may be easier to just pull the entire half shaft axle out of the differential and set aside. A small crow bar on the inside of the inner CV joint (pry outward) will allow the retaining clip to compress and the axle to slide out of the differential.

NOTE: Do not allow the half shaft axle to hang by the inner CV joint. Support the half shaft to keep the joint from separating and tearing the boot.

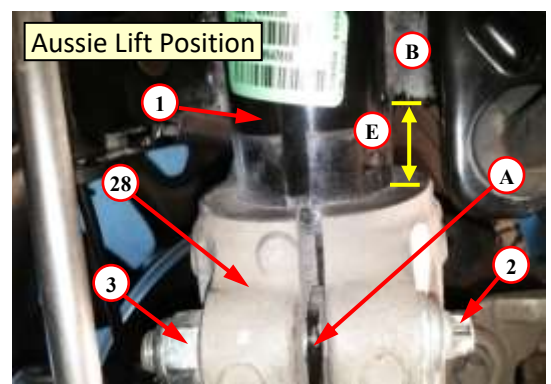
15. Insert the ball joint [29] back into the control arm [31] to support the strut [1].
16. Use a bottle jack or equivalent on the knuckle [28] to raise the strut [1] and help compress the coil spring [6].
17. Install spring compressors and continue to use bottle jack to compress the spring [6], tightening the spring compressors as you go.
18. When the coil spring [6] is fully compressed, there should be zero tension on the strut clips [9].
19. Remove dust cap [11] being careful not to damage the cap gasket.
20. Using two screwdrivers, pry the two ends of the strut clip [9] in opposite directions to separate and break apart the clip. **Discard the clips after removal; they are not to be reused.**



WARNING:

Do not remove the strut rod nut [8] before the coil spring is properly compressed. The coil spring is held under pressure. The coil spring must be compressed, removing spring tension from the upper mount and bearing, before the strut rod nut is removed.

21. Slowly lower the bottle jack to lower the strut assembly [1].
21. Remove the knuckle to strut pinch bolt [2], 11mm, and nut [3], 18mm. **Discard the nut and bolt; they are not to be reused.**
22. Remove the strut assembly [1] from the knuckle [28].
23. Remove the knuckle [28] from the LCA [31].



CAUTION:

Do not use any type of pliers on the chrome machined surface of shock/strut rod to assist in the disassembly/assembly of shocks or struts. Use only tools designed to hold the shock/strut rod stationary when servicing shock or strut components.

CAUTION:

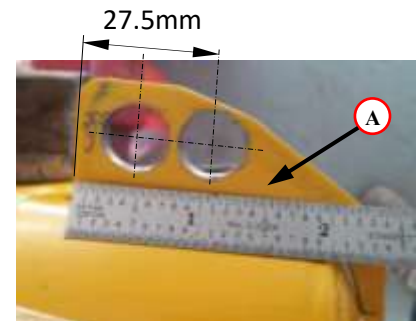
Never use impact or high speed tools to remove the strut rod nut. Damage to the strut internal bearings can occur.

**Front Strut Disassembly**

1. If both struts are being serviced at the same time, mark both the coil spring and strut assembly according to which side of the vehicle the strut is being removed from. Also take note of the orientation of the bearing [8] and upper spring isolator [7] with respect to the coil spring [6] and strut [1].
2. Once the spring is sufficiently compressed, install the strut nut wrench on the strut rod nut [10], 18mm.
3. Install a 6mm hex Allen wrench into the strut rod internal hex.
4. While holding the strut rod from turning with the Allen wrench, remove the strut nut [10].
Tip: unless you have 3-4 hands, install the Allen wrench in a vise, slide the strut nut wrench over the Allen wrench, install the strut rod onto the Allen wrench, and then remove the nut [10] using the strut nut wrench.
5. Remove the strut (damper) [1] out through the bottom of the coil spring [6].
6. Remove the jounce bumper [4a] and dust shield [4b].
7. Remove the dust shield skirt retainer [4c].
8. Remove the lower spring isolator [5] from the strut seat.
9. Remove the upper spring isolator [7], bearing and upper spring seat [8] from the top of the coil spring [6].
10. Release the compression on the coil spring by backing off the spring compressor bolts completely.
11. Remove the spring compressors from spring [6].
12. Inspect the strut assembly components for the following and replace as necessary:
 - Inspect the strut (damper) [1] for shaft binding over the full stroke of the shaft.
 - Inspect the jounce bumper [4a] for cracks and signs of deterioration.
 - Inspect the dust shield [4b] for cracks and tears.
 - Check the upper mount for cracks and distortion and its retaining studs for any sign of damage.
 - Check the bearing and upper spring seat [8] for any binding.
 - Inspect the upper and lower spring isolators [7, 5] for material deterioration and distortion.
 - Inspect the coil spring [6] for any sign of damage to the coating.

Front Strut Assembly

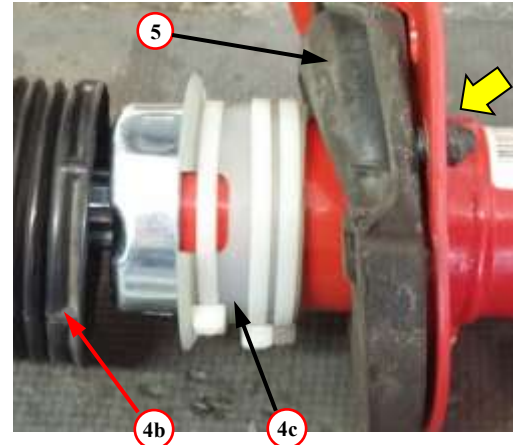
Before assembling the strut components, verify the hole in the shark fin [A] is 12mm. If not, pre-drill hole to proper size. If the Aussie+ lift is desired, now is a good time to pre-drill a second hole in the shark fin. Using a center punch set a drill point 27.5mm from top end of shark fin. This will provide a 35mm gap [E] between the strut brake line flange [34] and the top of the knuckle [28]. Repeat for both left and right struts.



If installing Dobinsons struts, GS29-430, verify there are three holes in the strut seat to receive the nubs on the lower spring isolator [5]. If not, locate the proper location using the lower spring isolator [5] as a guide and drill three 3/8" holes. Repeat for both left and right struts.

The OE dust cover skirt retainer [4c] will also have to be modified since it does not fit over the chrome strut top. Repeat for both left and right struts.

Before compressing the coil spring [6], rotate the spring so the end of the bottom coil is approximately at the 9 o'clock position as viewed above (or to where the spring was when removed from the compressor). This action will allow the strut (damper) [1] clevis bracket to be positioned outward, away from the compressor once installed.



2. Install the spring compressors on the coil spring [6] following the manufacturer's instructions.
Tip: use cardstock or other suitable material to protect the spring paint; otherwise, the spring compressors may leave installation marks (metal on metal).
3. Slowly compress the coil spring [6] to the same overall length as the removed spring or until enough room is available for strut assembly reassembly.
4. Install the lower spring isolator [5] onto the strut seat. Insert nubs into locating holes.
5. Install the dust shield skirt retainer onto the strut (damper) [1].
6. Install the jounce bumper and dust shield [4b] onto the strut rod.
7. Install the compressed coil spring [6] onto the strut (damper) [1] making sure the orientation (top and bottom) is correct.
8. Install the upper spring isolator [7], bearing and upper spring seat [8] onto the top of the coil spring [6].
9. Align bearing and upper spring seat [8] with respect to the coil spring [6] and strut [1] as marked during disassembly.
10. Install a **NEW** strut rod nut [10] to hand tight.

CAUTION:

Do not use any type of pliers on the chrome machined surface of shock/strut rod to assist in the disassembly/assembly of shocks or struts. Use only tools designed to hold the shock/strut rod stationary when servicing shock or strut components.

CAUTION:

Never use impact or high speed tools to remove the strut rod nut. Damage to the strut internal bearings can occur.



11. Install special strut nut wrench and a 6mm hex Allen wrench into the strut rod internal hex.
12. While holding the strut rod from turning with the Allen wrench, torque the **NEW** strut nut [10], 18mm, to 68 N-m (**50 ft-lb**) using the special strut nut wrench.
Tip: unless you have 3-4 hands, install the Allen wrench in a vise, slide the strut nut wrench over the Allen wrench, install the strut rod onto the Allen wrench, and then install the nut using the strut nut wrench.
13. Leave spring compressors in place until strut assembly is installed in vehicle.

Front Strut Assembly Installation

1. Install strut assembly [1] into the knuckle [28] to Normal position, [E] = 0mm.
2. Raise strut assembly [1] into strut tower.
Tip: use a bungie cord to help hold assembly in place.
3. Align bearing cap [8] with strut tower forward hole.

NOTE: When installing the strut assembly, align the slot in the strut mount [F] with the forward hole [G] in the body of the strut tower. *Tip: Use a 3/8" bolt in the forward hole to maintain alignment until spring compressors are removed.*



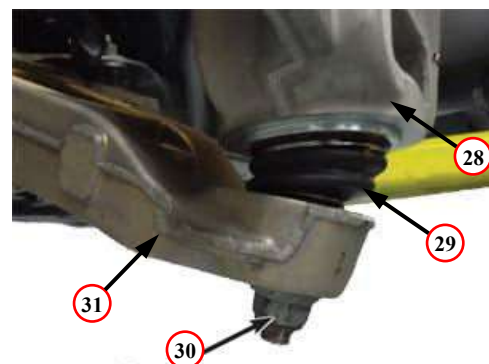
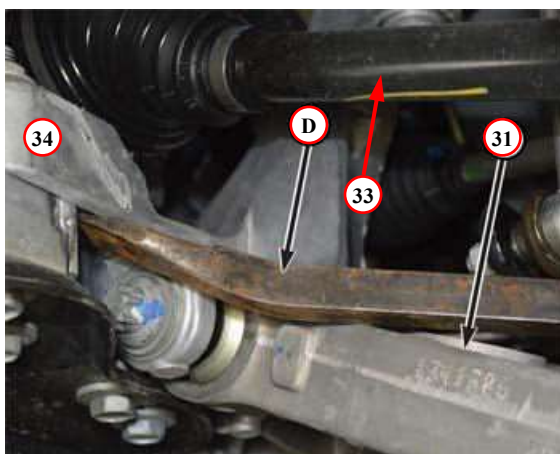
4. Install **NEW** strut retaining clips [9].

NOTE: The strut retaining clips must be fully closed and the serrations fully engaged after installation.

5. Install dust cap [11] being careful not to damage the cap gasket.
6. Install half shaft axle [33] into PTU, if removed. Support the axle so it does not fall down.
Tip: A couple of taps with a rubber mallet will allow the retaining clip to compress and the axle to seat in the differential.

NOTE: Do not allow the half shaft axle to hang by the inner CV joint. Support the half shaft to keep the joint from separating and tearing the boot.

7. Insert the half shaft axle [33] into the knuckle [28] and hub bearing [14].
8. Insert a pry bar [D] in the opening between the control arm [31] front mounting bolt [32] and the front fascia support beam [34].
Tip: Longer bar equals less effort. Placing a C-clamp on the LCA will help the pry bar from sliding down.
9. Pry down on the control arm [31] until the ball joint stud [29] can be inserted in the LCA.

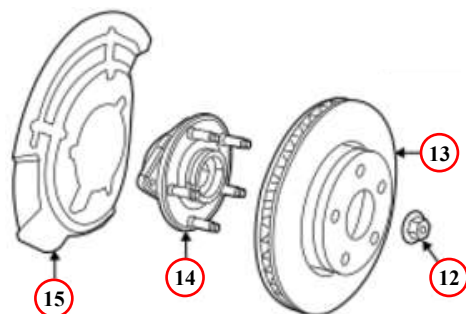
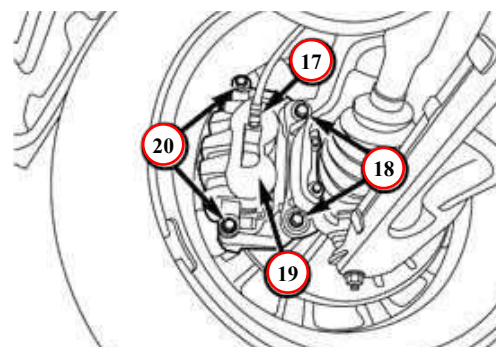
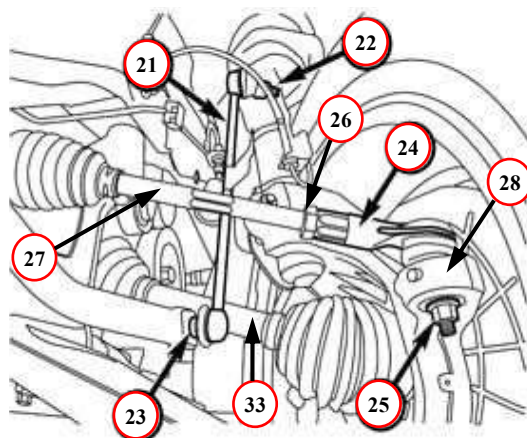
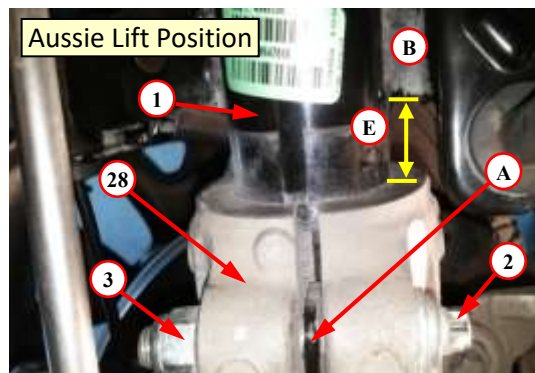


10. Determine which ride height is desired:

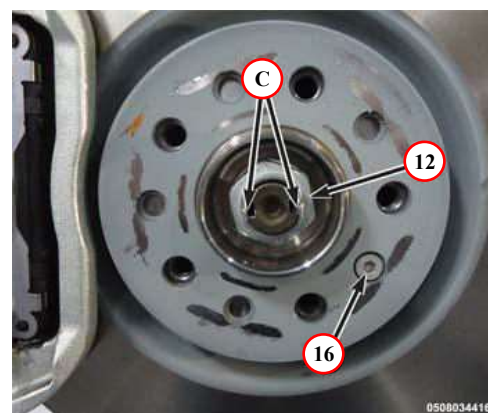
- **Normal:** Flange to Knuckle Gap [E] = 0mm
- **Aussie:** Flange to Knuckle Gap [E] = 20mm
- **Aussie+:** Flange to Knuckle Gap [E] = 36mm

set pinch bolt [2] above shark fin [A]
 set pinch bolt [2] in first shark fin [A] hole
 set pinch bolt [2] in second shark fin [A] hole

11. Install a **NEW** knuckle pinch bolt [2], 11mm, and torque a **NEW** nut [3], 18mm, to 110 N-m (81 ft-lb).
12. Install a **NEW** ball joint nut [30], 18mm, and torque to 25 N-m plus 175° (18 ft-lb plus 175°).
13. Use a bottle jack or equivalent on the knuckle [28] to raise the strut [1] and help compress the coil spring [6] as it seats in the strut tower.
14. When the coil spring [6] is fully compressed via the bottle jack, there should be little or no tension on the spring compressors.
15. Slowly lower bottle jack, loosening the spring compressors as you lower.
16. When sufficiently loose, remove spring compressors.
17. Install outer tie rod end [24] into knuckle [28].
18. Install a **NEW** retaining nut [25], 18mm, on the outer tie rod end [24] and torque to 30 N-m plus 90° (22 ft-lb plus 90°).
19. Install the stabilizer bar link [21] onto strut [1].
20. While holding the stabilizer bar link stud stationary, 5mm hex, install the nut [22], 15mm, and torque to 55 N-m (41 ft-lb).
21. Install the brake shield [15] and bolts, 10mm, and torque to 8 N-m (71 in-lb).



22. Install rotor [13] onto the hub [14] and bearing.
23. Install rotor retaining bolt [16], 5mm hex, and torque to 20 N-m (177 in-lb).
24. Install disc brake caliper [19] and adapter as an assembly. Use care not to overextend the brake hose when doing this.
25. Install brake caliper adapter bolts [18], 16mm, and torque to 175 N-m (129 ft-lb).
26. Install the wheel speed sensor [17], 10mm, and torque to 8 N-m (71 in-lb).



27. Using special tool #10287 or hammer and punch, stake areas [C] on the hub nut. **Use care not to damage the half shaft.**

CAUTION:

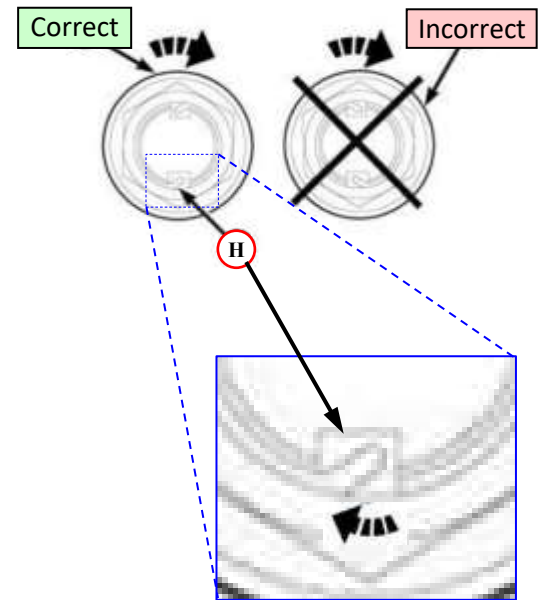
The hub nut must be staked as shown. Both edges must be split and bent into the key way [H]. The staking must be in the opposite direction from the forward rotation of the wheel.

NOTE: Do not use air tools on staking tool while staking hub nut.

28. While a helper applies the brakes to keep the hub from rotating, install a **NEW** hub (axle) nut [12], 36mm, and torque to 200 N-m (**148 ft-lb**).

Tip: If you don't have a helper, remove the center wheel cap and reinstall the wheel. Lower the vehicle. Use gravity and friction to apply resistance to the rotor while you torque the axle nut.

29. Install the wheel liner.
 30. Install the wheel assembly and lug bolts.
 31. Lower the vehicle and torque lug bolts to 135 N-m (**100 ft-lb**).
 32. Pump the brake pedal several times (before moving the vehicle) to set the pads to the brake rotor.
 33. Check and adjust the brake fluid level in the reservoir as necessary.
 34. Perform a road test, making several stops to seat the brake pads to the rotor.
 35. Take vehicle to a dealer or service center to perform a wheel alignment.



FRONT CAMBER AND CASTER

Front camber and caster settings on this vehicle are determined at the time the vehicle is designed, by the location of the vehicle's suspension components. This is referred to as Net Build. The result is no required adjustment of camber and caster after the vehicle is built or when servicing the suspension components. Thus, when performing a wheel alignment, caster and camber are not normally considered adjustable angles but some adjustment can be made. Camber and caster should be checked to ensure they meet vehicle specifications. If individual front camber or caster is found not to meet alignment specifications, the only adjustment available is shifting the front cross-member.

FRONT WHEEL ALIGNMENT SPECIFICATIONS

Front Wheel Alignment Specifications					
	Total Toe**	Caster*	Cross Caster*	Camber*	Cross Camber*
FWD	0.10° +/- 0.15°	3.51° +/- 0.40°	0.00° +/- 0.50°	-0.55° +/- 0.40°	0.00° +/- 0.50°
AWD	0.10° +/- 0.15°	3.83° +/- 0.40°	0.00° +/- 0.50°	-0.55° +/- 0.40°	0.00° +/- 0.50°
TH	0.10° +/- 0.15°	4.13° +/- 0.40°	0.00° +/- 0.50°	-0.45° +/- 0.40°	0.00° +/- 0.50°
Notes:					
* For reference only. These are nonadjustable angles.					
** TOTAL TOE is the sum of both the left and right wheel toe settings. TOTAL TOE should be equally split between each wheel on the same axle to ensure the steering wheel is centered after setting toe.					

Adjustment by Shifting Cross-Member

1. Loosen the bolts fastening the front cross-member to the frame just enough to allow movement of the cross-member.
2. Shift front cross-member as necessary to bring camber or caster into specifications. When shifting cross-member, use care not to move any other angles that are within specifications.

Front Camber*

- Left, Below SpecificationMove cross-member to the right
- Left, Above SpecificationMove cross-member to the left
- Right, Below SpecificationMove cross-member to the left
- Right, Above Specification.....Move cross-member to the right
- Cross, Below SpecificationMove cross-member to the right
- Cross, Above SpecificationMove cross-member to the left

* For every move to adjust one side of the vehicle, a countermove on the opposite side will occur.

Front Caster

- Left, Below SpecificationMove left side of cross-member forward
- Left, Above SpecificationMove left side of cross-member rearward
- Right, Below SpecificationMove right side of cross-member forward
- Right, Above SpecificationMove right side of cross-member rearward
- Cross, Below Specification.....Move left side of cross-member forward and right side rearward
- Cross, Above Specification.....Move left side of cross-member rearward and right side forward

3. Tighten all previously loosened fasteners (bolts) securing the cross-member to the vehicle to specifications.
4. Jounce the rear and then front of the vehicle an equal amount of times.
5. Measure camber and caster. If camber and caster are within specifications, proceed to TOE alignment. If camber and/or caster cannot be brought into specifications, check for bent or damaged components.