

**Air Lift**<sup>™</sup>  
**PERFORMANCE**

# Kit 75573

BMW E30

(excludes AWD and M3)

**Front Application**



## INSTALLATION GUIDE

For maximum effectiveness and safety, please read these instructions completely before proceeding with installation.

*Failure to read these instructions can result in an incorrect installation.*

PERFORMANCE SUSPENSION PARTS

# Introduction

The purpose of this publication is to assist with the installation, maintenance and troubleshooting of this BMW E30 Performance kit.

It is important to read and understand the entire installation guide before beginning installation or performing any maintenance, service or repair. The information includes a hardware list, step-by-step installation information, maintenance tips, safety information and a troubleshooting guide.

## NOTATION EXPLANATION

Hazard notations appear in various locations in this publication. Information which is highlighted by one of these notations must be observed to help minimize risk of personal injury or possible improper installation which may render the vehicle unsafe. Notes are used to help emphasize areas of procedural importance and provide helpful suggestions. The following definitions explain the use of these notations as they appear throughout this guide.

 **DANGER**

INDICATES IMMEDIATE HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.

 **WARNING**

INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

 **CAUTION**

INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN DAMAGE TO THE MACHINE OR MINOR PERSONAL INJURY.

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## NOTE

*Indicates a procedure, practice or hint which is important to highlight.*

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## IMPORTANT SAFETY NOTICES

The installation of this kit does not alter the Gross Vehicle Weight Rating (GVWR) or payload of the vehicle. Check your vehicle's owner's manual and do not exceed the maximum load listed for your vehicle.

**Gross Vehicle Weight Rating:** The maximum allowable weight of the fully loaded vehicle (including passengers and cargo). This number — along with other weight limits, as well as tire, rim size and inflation pressure data — is shown on the vehicle's Safety Compliance Certification Label.

**Payload:** The combined, maximum allowable weight of cargo and passengers that the vehicle is designed to carry. Payload is GVWR minus the Base Curb Weight.

 **WARNING**

DO NOT INFLATE AIR SPRINGS WHILE OFF OF THE VEHICLE. DAMAGE TO ASSEMBLY MAY RESULT AND VOID WARRANTY.

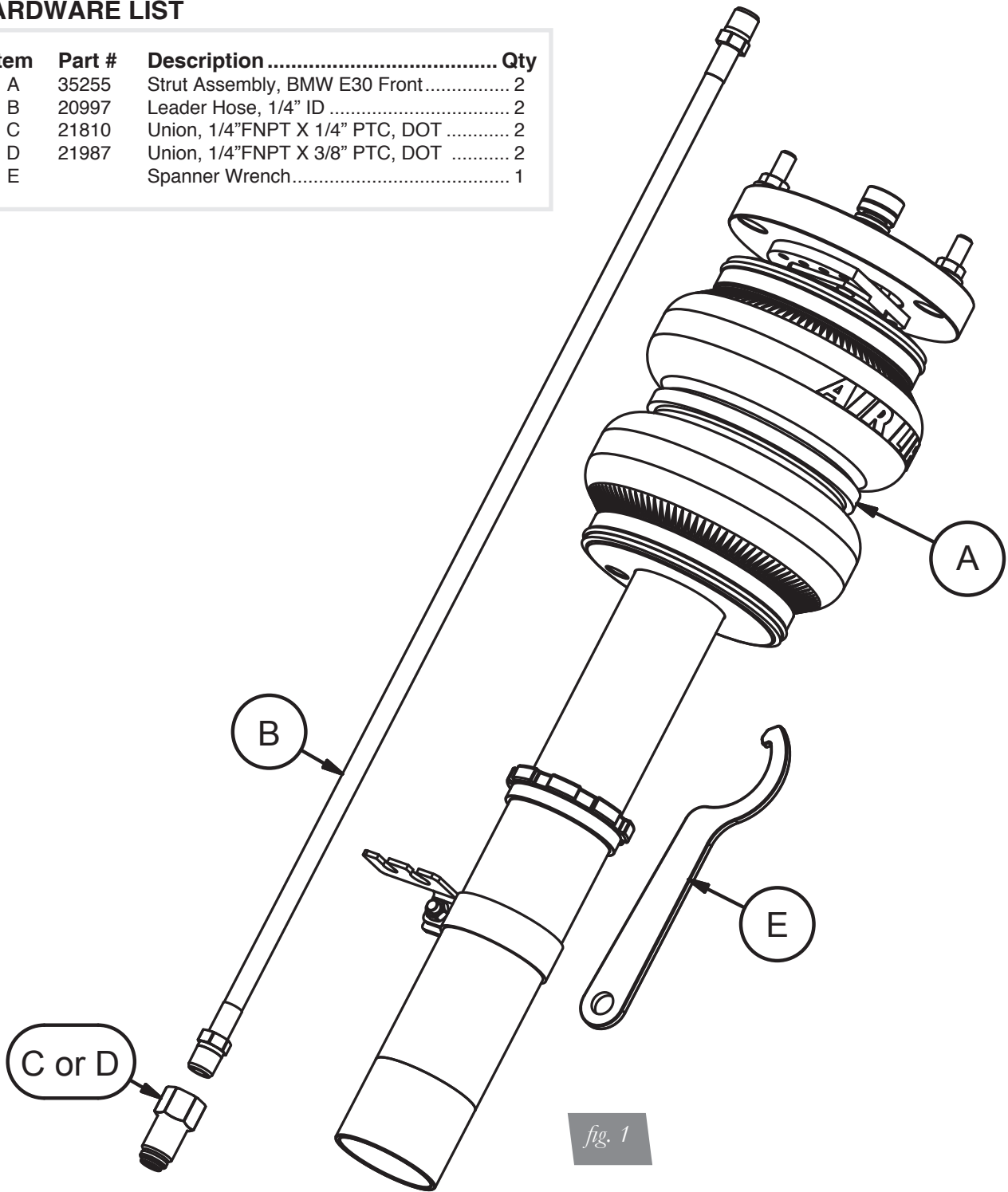
 **CAUTION**

DO NOT WELD TO, OR MODIFY PERFORMANCE STRUTS/SOCKS IN ANY WAY. DAMAGE TO UNIT MAY OCCUR AND WILL VOID WARRANTY.

# Installation Diagram

## HARDWARE LIST

Item	Part #	Description .....	Qty
A	35255	Strut Assembly, BMW E30 Front .....	2
B	20997	Leader Hose, 1/4" ID .....	2
C	21810	Union, 1/4" FNPT X 1/4" PTC, DOT .....	2
D	21987	Union, 1/4" FNPT X 3/8" PTC, DOT .....	2
E		Spanner Wrench .....	1



# Installing the Air Suspension

## PREPARING THE VEHICLE

1. Elevate and support the vehicle with a hoist or jack stands.
2. Remove the front wheel and support the hub assembly.

## REMOVING THE FRONT SUSPENSION

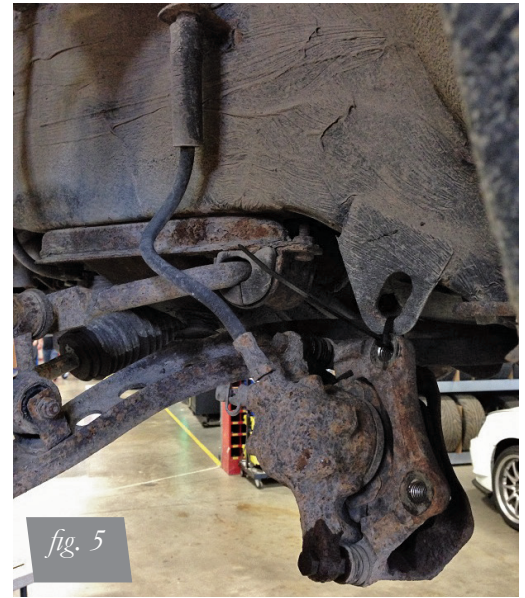
1. Disconnect the sensor wires from the strut (fig. 2).



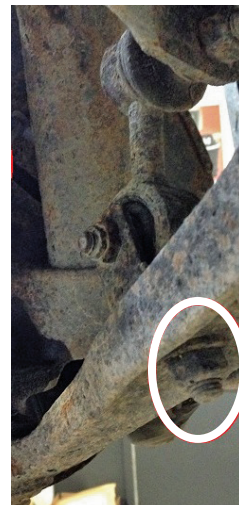
2. Unbolt the wheel speed sensor from hub assembly (fig. 3).



3. Unbolt and remove caliper bracket from the hub assembly (fig. 4). Do not hang the caliper from the brake hose (fig. 5).



4. Disconnect the stabilizer bar end link from the lower control arm (fig. 6).



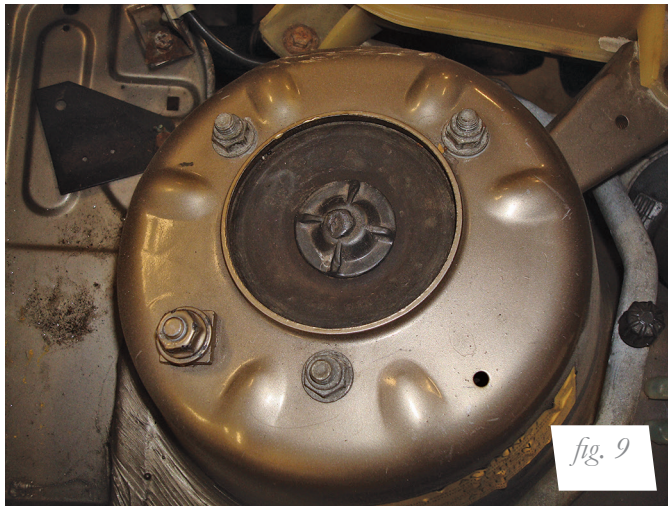
5. Unbolt the tie rod from the hub (fig. 7).



- Unbolt and remove the lower control arm ball joint from the hub (fig. 8).

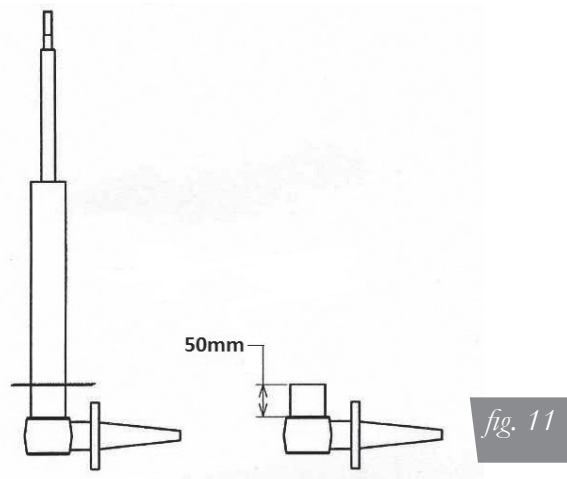


- Within the engine compartment, unthread the three upper mount nuts (fig. 9) and remove the strut assembly from the vehicle (fig. 10).



## PREPARING THE HUB

- Clean the rust and debris from the hub to strut tube.
- Scribe a line at 50mm from the hub to strut tube joint (fig. 11).



**CAUTION**

3. Cut squarely around the tube at this 50mm mark. You need only to cut through the outer tube material.  
CUTTING DEEPER WILL RESULT IN DAMAGE TO THE DAMPER CARTRIDGE WITHIN.
4. Remove the strut housing with damper from the hub (fig. 12). Remove the burrs, sharp edges, debris and rust (fig. 13).



*fig. 12*



*fig. 13*

## ASSEMBLING THE STRUT TO THE HUB

1. Loosen the lower locking collar and remove the lower mount from the new strut assembly (fig. 14). Do not lose the wave spring between the locking collar and adapter tube.



*fig. 14*

2. Remove the finish from the lower half inch of the mount.

- Slide the lower mount over the stub of the strut tube making sure it bottoms on the knuckle (fig. 15).



**WARNING**

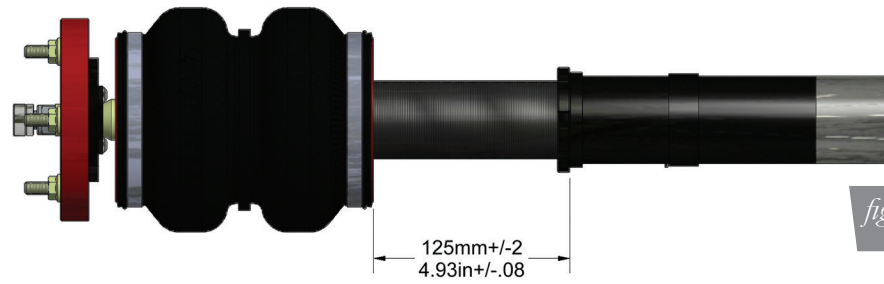
A QUALIFIED WELDER IS RECOMMENDED TO PERFORM THE FOLLOWING WELDS. PROPER WELD PENETRATION IS ESSENTIAL TO CREATING A STRONG ASSEMBLY. THIS IS NOT A GOOD OPPORTUNITY TO LEARN TO WELD!

- Weld the outside perimeter of the lower mount to the hub (fig. 16).



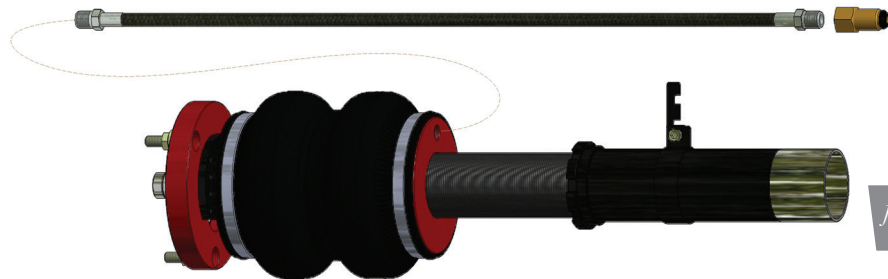
- Thread the damper into the lower mount. Measure from the bottom side of the locking collar to the underside of the air spring. Set to 125mm +/-2 mm (each full rotation of the cartridge is 1.5mm) (fig. 17). This is a good, initial setting that allows maximum drop and proper tire clearance but may need to be adjusted for different vehicles or wheels. Orient the air spring air-port furthest away from the hub. Torque the locking collar against the lower mount 45 degrees beyond hand tight.





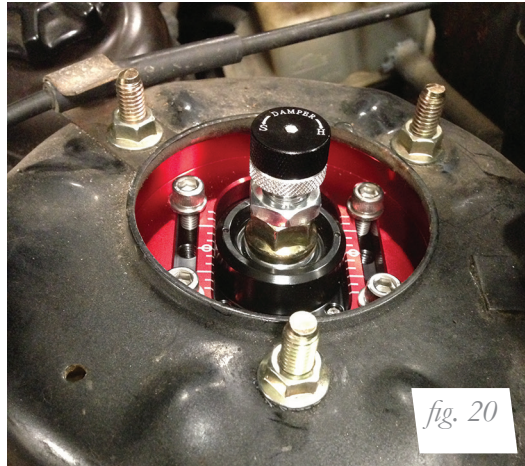
*fig. 17*

6. Install the braided air line into the air spring with thread sealant, torque 1 3/4 turns beyond hand tight. Attach the desired air fitting to the braided air line with thread sealant, torque 1 3/4 turns beyond hand tight (figs. 18 and 19).



## AIR SUSPENSION INSTALLATION

1. Attach the camber plate to the chassis with the supplied nuts (fig. 20). Torque to 22Nm (16lb-ft).



2. Reattach the lower control arm ball joint to the hub assembly (fig. 21). Torque to 65Nm (47lb-ft).



3. Insert and seat the tie rod ball joint to the hub (fig. 22). Torque 65Nm (47lb-ft).



4. Reinstall the caliper bracket to the hub (fig. 23). Torque to 65Nm (47lb-ft).



5. Reattach the wheel speed sensor to the hub (fig. 24). Torque to 5Nm (44lb-in).



6. Clip the sensor wires to the lower mount tab (fig. 25).

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**NOTE**

*Tab can be moved up, down or rotated to better accommodate sensor wires.*

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7. Reattach the stabilizer bar end link to the lower control arm (fig. 26). Torque to 22Nm (16lb-ft).



8. Fully compress the suspension using a jack. With the suspension compressed, review the best routing for the leader hose that is clear of all suspension components and axle. Routing should also allow for the suspension to extend without kinking or pulling the line tight or rubbing on other components. Following the brake line routing is often a good place to start. Check clearances to all other components.
9. With the suspension fully compressed, take a measurement from the fender to some reference point – typically the center of the axle. Record this measurement as Max Compression.
10. Cycle the suspension to Max Extension and record the measurement from the same reference points.
11. Add ME and MC then divide by 2. Set the suspension to this point. This position will give 50% stroke in either direction and is a starting point for ride height (fig. 27).

**Formula for Calculating Ride Height**

$$(ME+MC) \div 2 = \text{MID STROKE}$$

*fig. 27*

12. With the suspension at this position, loosen, then re-torque the lower control arm bolts to manufacturer's specifications (Table 1).

*Table 1*

Torque Specifications			
Location	Nm	lb-ft	lb-in
Brake caliper bracket bolts	86-110	63-81	
Stabilizer bar end link	22	16	
Tie rod to spindle	65	47	
Control arm to spindle	65	47	
Camber plate to chassis	22	16	
Wheel speed sensor bolt	5	-	44
Wheel bolts	120+/-10	89+/-1	
Strut rod nut (with blue loctite)	34	25	

## DAMPING ADJUSTMENT

The struts in this kit have 30 settings, or “clicks”, of adjustable compression and rebound damping characteristics. Damping is changed through the strut rod using the supplied adjuster (figs. 28 & 29) or a 3mm allen wrench.

Turn the adjuster clockwise and the damping settings are hardened. Turn the adjuster counterclockwise and the damping is softened.

Each shock is preset to “-20 clicks”. This means that the shock is adjusted 20 clicks away from full stiff. Counting down from full stiff is the preferred method of keeping track of, or setting, damping. This setting was developed on a 1986 BMW 325ES and may need to be adjusted to different vehicles and driving characteristics.



fig. 28

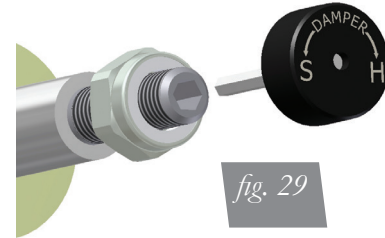


fig. 29

## ALIGNING THE VEHICLE

1. Using the control system, set the vehicle height to the new custom ride height.
2. If the custom ride height is lower than stock, we recommend loosening all pivot points (bolts, nuts) on any control arm, strut arm or radius rod that contains bushings. Once they have been loosened, re-torque to stock specifications.

### NOTE

*It may be necessary to cycle the suspension to loosen the bushing up from its mount. This will help re-orient the bushing at its new position and increase life of bushings based on the custom ride height.*

## ADJUSTING EXTENDED OR DROP HEIGHT USING LOWER MOUNT

Your struts have been pre-set at the factory to provide maximum drop height while maintaining adequate tire clearance to the air spring. If you wish to gain more extended height (lift), which is the same as reducing drop height, or want to lower the chassis further and there is still adjustment available at the lower mount, please use the following procedure:

1. Support the vehicle with jack stands or a hoist at approved lifting points.
2. Remove the wheel.
3. Using the supplied spanner wrench, loosen the lower locking collar (fig. 30).

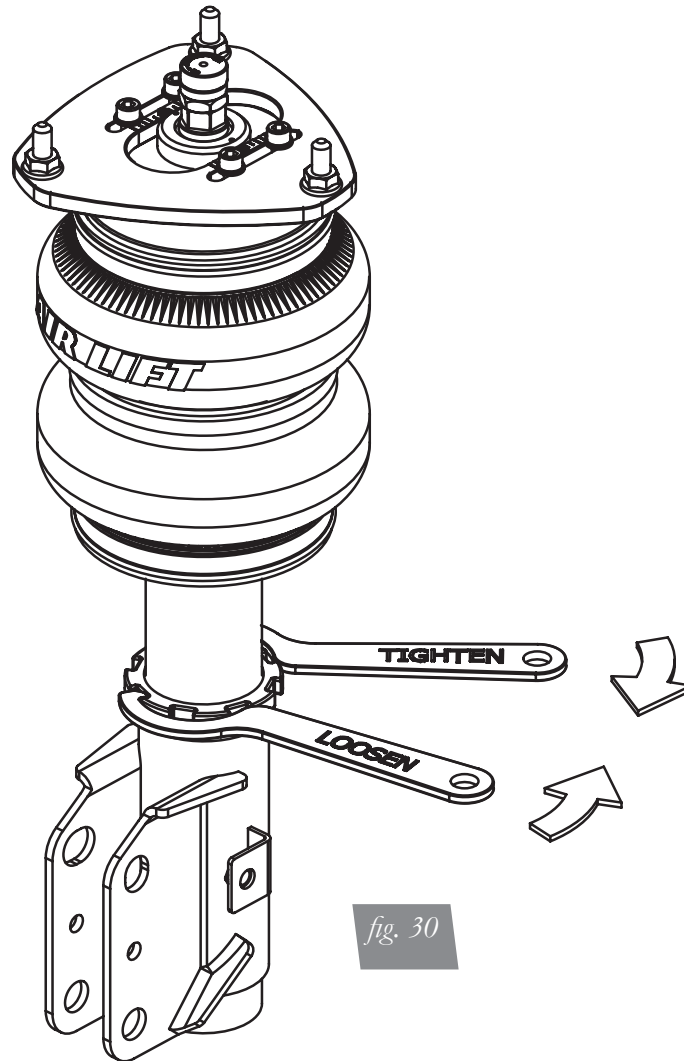


fig. 30

4. Deflate the air spring to 0 PSI on the corner you are adjusting and unlock the air line from the leader line fitting.
5. Spin the assembly to the desired height and air port location. **TIP:** If the assembly does not spin freely, loosen the rod nut and then adjust the damper height. Be certain to re-torque the rod nut to 34Nm (25lbs-ft) with application of Blue Loctite to the mating threads.

### NOTE

*Not all models will have further drop height available.*

6. Tighten the lower locking collar to the lower mount using significant force.
7. Re-torque the strut rod nut if necessary to 34Nm (25lb-ft).

## CAUTION

WHEN ADJUSTING HEIGHT UPWARDS, MAKE SURE THAT THE STRUT BODY ENGAGES ALL THE THREADS OF THE LOWER MOUNT (FIG. 31). WHEN ADJUSTING DOWNWARDS, MAKE SURE THERE IS ADEQUATE AIR SPRING CLEARANCE TO THE TIRE/WHEEL ASSEMBLY. CLEARANCE MUST BE CHECKED WITH SYSTEM FULLY DEFLATED AS WELL AS FULLY INFLATED TO ENSURE THAT NO RUBBING OCCURS. FAILURE TO MAINTAIN ADEQUATE CLEARANCE CAN RESULT IN AIR SPRING FAILURE AND WILL NOT BE COVERED UNDER WARRANTY.

## CAUTION

DO NOT ADJUST HEIGHT BY SPINNING AIR SPRING ON STRUT! DOING SO MAY CAUSE AN AIR LEAK AND COMPROMISE THE ASSEMBLY.

**FOR STRUTS:**

**FOR SHOCKS:**

