

**Air Lift™**  
**PERFORMANCE**

# Kits 75546 and 75547

*BMW E46 (M Series & non-M)  
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 E46 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, tool 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.



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



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



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.



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



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

# Installation Diagram

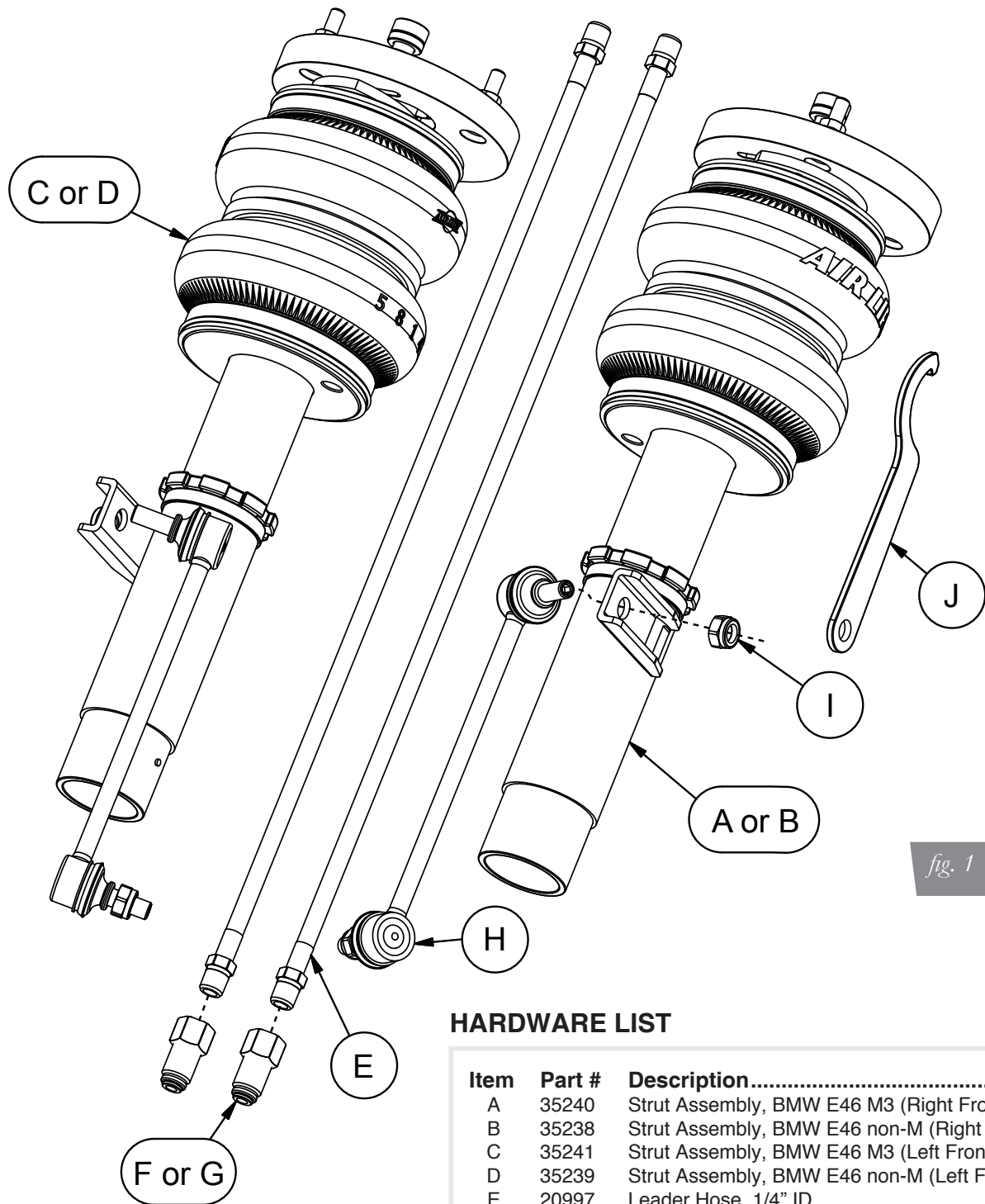


fig. 1

## HARDWARE LIST

Item	Part #	Description.....	Qty
A	35240	Strut Assembly, BMW E46 M3 (Right Front) .....	1
B	35238	Strut Assembly, BMW E46 non-M (Right Front)....	1
C	35241	Strut Assembly, BMW E46 M3 (Left Front) .....	1
D	35239	Strut Assembly, BMW E46 non-M (Left Front) .....	1
E	20997	Leader Hose, 1/4" ID .....	2
F	21810	Union, 1/4"FNPT X 1/4" PTC, DOT .....	2
G	21987	Union, 1/4"FNPT X 3/8" PTC, DOT .....	2
H		End Link (215mm) .....	2
I		M10 X 1,25" Nyloc Nut .....	4
J		Spanner Wrench.....	1

# Installing the Air Suspension

## PREPARING THE VEHICLE

1. Support the vehicle with jack stands or a hoist at approved lifting points.
2. Remove the front wheels (fig. 2). Support the hub assembly before beginning work.

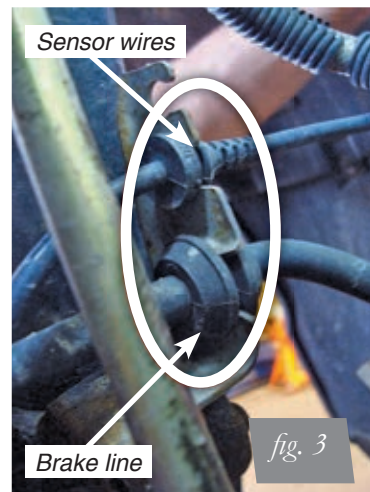


*fig. 2*

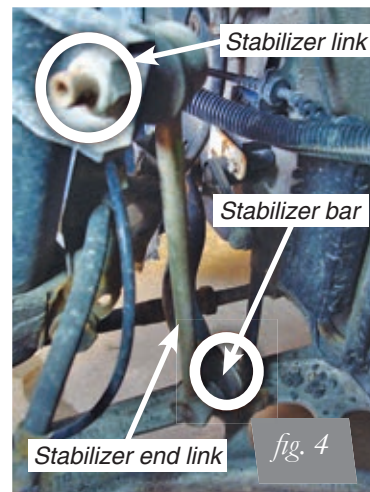
3. Disconnect the headlight alignment sensor linkage from the lower control arm.

## STOCK SUSPENSION REMOVAL

1. Detach the brake line and sensor wires from the supporting bracket (fig. 3).
2. Disconnect the stabilizer link from the strut body. Also disconnect the stabilizer end link from the stabilizer bar, removing from the vehicle (fig. 4).



*fig. 3*



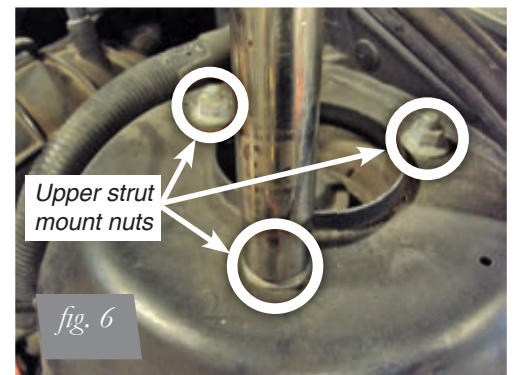
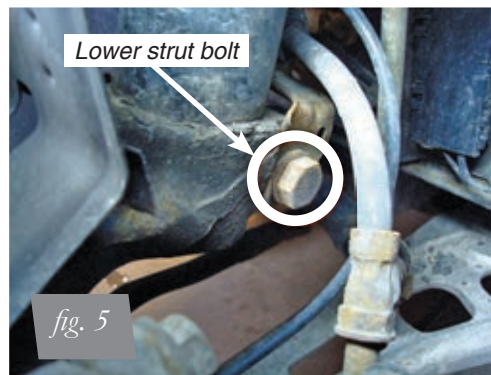
*fig. 4*

3. Remove the lower strut bolt (fig. 5). Spread the strut mounting knuckle and slide the knuckle off of the strut.

**CAUTION**

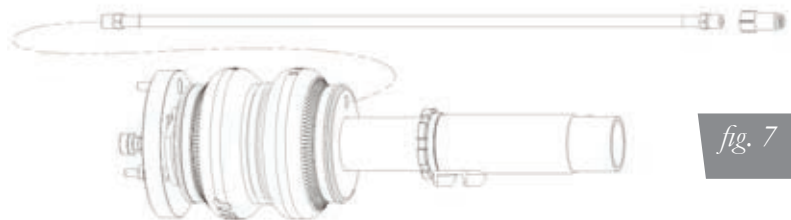
DO NOT ALLOW THE HUB ASSEMBLY TO HANG FROM THE BRAKE LINE.

4. Remove the three upper strut mount nuts (fig. 6) and remove the strut from the vehicle.



## AIR SUSPENSION INSTALLATION

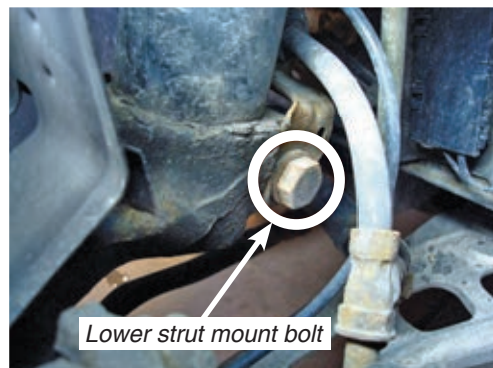
1. Apply thread sealant to the threads of the leader hose and install into the lower end cap 1 and 3/4 turns beyond hand tight. Install the appropriate fitting to the leader hose 1 and 3/4 turns beyond hand tight (fig. 7).



2. Attach the strut to the vehicle chassis (fig. 8) and torque upper bracket bolts to 24Nm (18lb-ft).



3. Raise the knuckle up to the strut lower mount and slide the mount into the knuckle. Re-install the lower strut mount bolt along with the brake line/sensor wire supporting bracket (fig. 9). Torque the lower strut mount bolt to 81Nm (60lb-ft).



- Clip the sensor wires and brake line onto the supporting bracket (fig. 10).

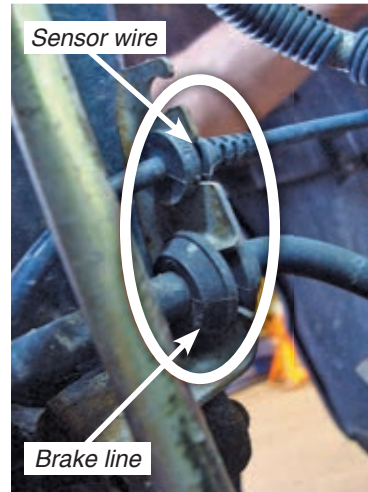


fig. 10

- Install the supplied stabilizer end link to the strut cartridge and stabilizer bar (figs. 11 & 12). Torque nuts to 65Nm (48lb-ft).

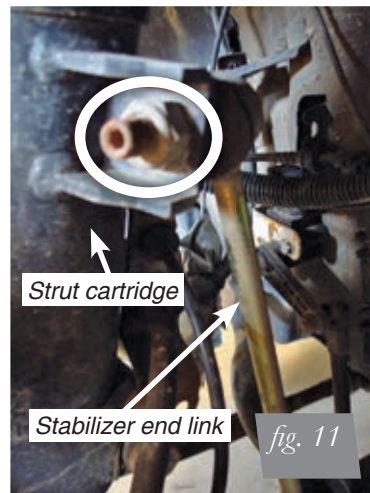


fig. 11

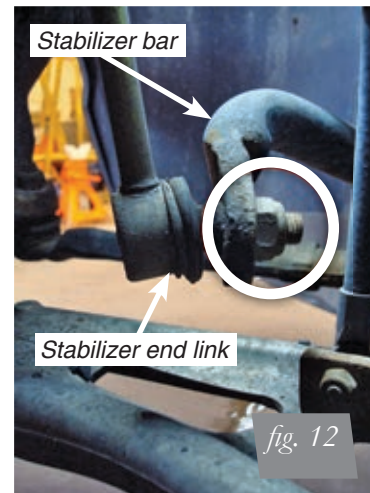


fig. 12

- Route the leader hose in a way that will not rub or kink as the suspension cycles and steers. Routing along the path of brake lines is generally a good place to start.
- With the suspension fully compressed, take a measurement from the fender to some reference point, typically the center of the axle. Record this as Max Compression (MC). Cycle the suspension to Max Extension (ME) and record the measurement from the same reference points. Take the difference between the two numbers and divide by two. Add that value to the Max Compression number and then set the suspension to that point (fig. 13). This position gives 50% stroke in either direction and is a great starting point for ride height. At this position torque the lower clevis bolt, lower control arm bolts to manufacturer's specifications (Table 1).

Formula for calculating ride height:

Step 1:	Step 2:	Step 3:	Answer:	fig. 13
$\frac{ME - MC}{X}$	$\frac{X}{2} = Y$	$\frac{Y + MC}{Z}$	$Z = \text{DESIGN HEIGHT}$	

Table 1

Torque Specifications		
Location	Nm	Lb-ft
Leader hose to air spring and fitting	1 and 3/4 turns beyond hand tight	
Upper strut mount to chassis	24	18
Lower strut mount to clevis bolt	81	60
Stablizer end link nut	65	48
Wheels	120	89

- Reinstall wheels; retake the Max Compression and Extension measurements from the fender to lower wheel lip. Recalculate the ride height at 50% stroke and set the vehicle to that height. Enjoy the new look and handling!

## DAMPING ADJUSTMENT

The struts in this kit have 30 settings “clicks” of adjustable compression and rebound damping characteristics. Damping is changed through the strut rod using the supplied adjuster 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 strut is preset to “-20 clicks”. This means that the strut is adjusted 20 clicks away from full stiff. Counting down from full stiff is the preferred method of keeping track/setting of damping. This setting was developed on a 2004 BMW 325i sedan and may need to be adjusted to the different vehicles and driving characteristics.



fig. 14



fig. 15

## 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:

- Support the vehicle with jack stands or a hoist at approved lifting points.
- Remove the wheel.
- Using the supplied spanner wrench, loosen the lower locking collar. (fig. 16)

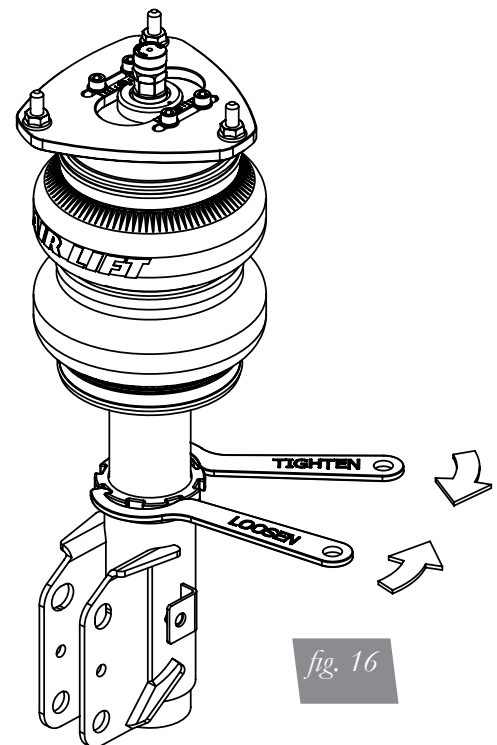


fig. 16