Kit 78610

BMW E8X/E9X
Non M series

Rear 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.

MN-907 • (072110) • ECR 9897

Protect your Air Lift Performance Purchase by Completing your Warranty Registration

Thank you for purchasing an Air Lift Performance product!

Take a photo of your sales receipt and then scan the QR code to complete your online warranty registration.

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Introduction

Air Lift Performance thanks you for purchasing the most complete, fully engineered high-performance air suspension made for the BMW E8X/E9X. Read these installation instructions to correctly and safely set up the vehicle for a #lifeonair.

Air Lift assumes that the installer has the mechanical knowledge and ability to work on vehicle suspension systems and has basic tools necessary to complete the project. Special tools needed to complete the installation are noted on the *Installation Diagram* page.

Air Lift reserves the right to make changes and improvements to its products and publications at any time. For the latest version of this manual, contact Air Lift Performance at **(800) 248-0892** or visit **www.airliftperformance.com**.

An Air Lift Performance air management system is highly recommended for this product. Learn more at **air-lift.co/productlines**.

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.

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

Important Safety Notices

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/SHOCKS IN ANY WAY. DAMAGE TO UNIT MAY OCCUR AND WILL VOID WARRANTY.

Installation Diagram

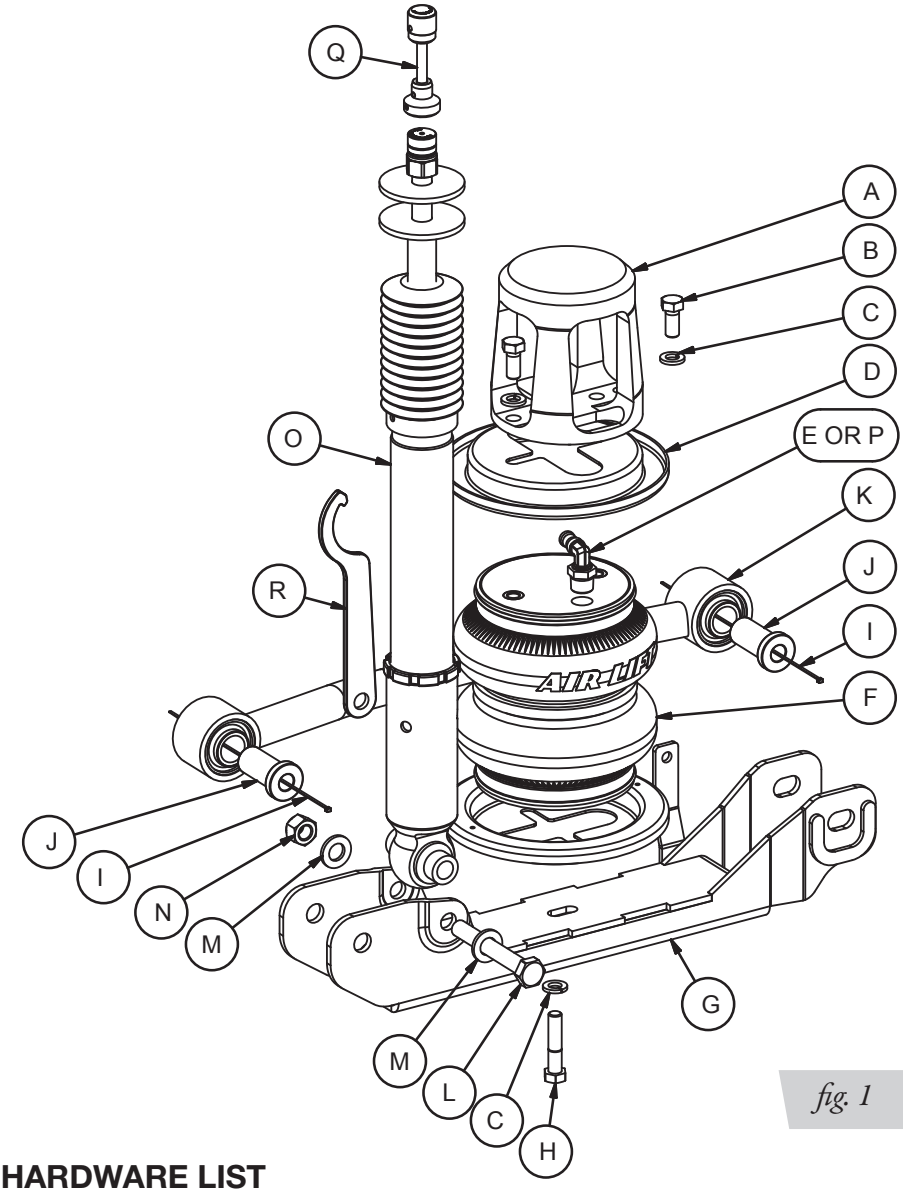
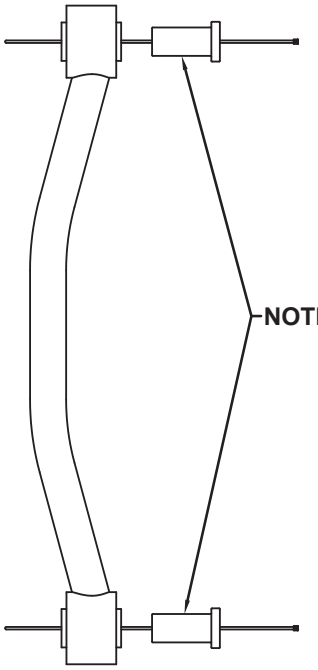


fig. 1



NOTE:
1) Remove the zip ties that hold the bushing spacers into the toe link before installation. The shoulder of the spacer is to be opposite the bend for air spring clearance purposes.

HARDWARE LIST

Item	Part #	Description	Qty	Item	Part #	Description	Qty
A	13314	Rear Upper Bracket	2	J	13988	Bushing, 20mm	4
B	17517	M10-1.5 X 25 Hex Bolt	4	K	11127	Toe Link	2
C	18628	M10 Lock Washer	6	L	17488	M12-1.75 X 90 Hex Cap Screw	2
D	11801	Roll Plate	4	M	18547	Flat Washer	4
E	21779	1/4" MNPT X 1/4" PTC, 90 Degree	2	N	18546	Nylon Lock Nut	2
F	58550	Air Spring	2	O	26749	Rear Shock, BMW E8X/E9X	2
G	11126	Control Arm, Rear	2	*P	21851	1/4" MNPT X 3/8" PTC, 90 Degree	2
H	17936	M10-1.5 X 50 Hex Cap Screw	2	Q		Flex Adjuster Extension	2
I	10466	8" Zip Tie	4	R	11289	Spanner Wrench	1

*1/4” MNPT X 3/8” PTC are NOT included in this kit, but are available as a special order.

STOP! Missing or damaged parts? Call Air Lift customer service at (800) 248-0892 for a replacement part.

Installing the Air Suspension

PREPARING THE VEHICLE

1. Elevate and support the vehicle with a hoist or safety stands.
2. Remove the rear tire and support the hub assembly (Fig. 2).

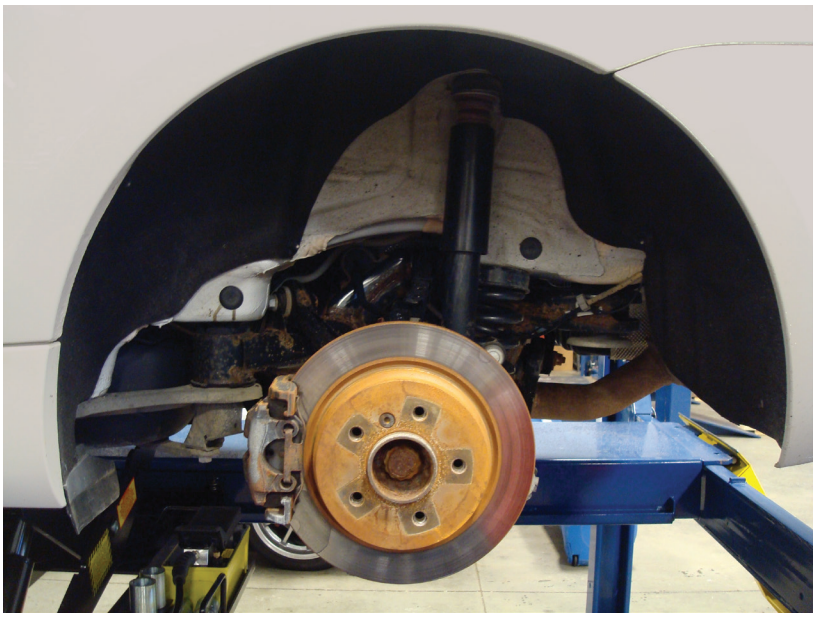


fig. 2

3. Disconnect the headlight alignment linkage from the lower control arm bracket (if equipped) (Fig. 3).

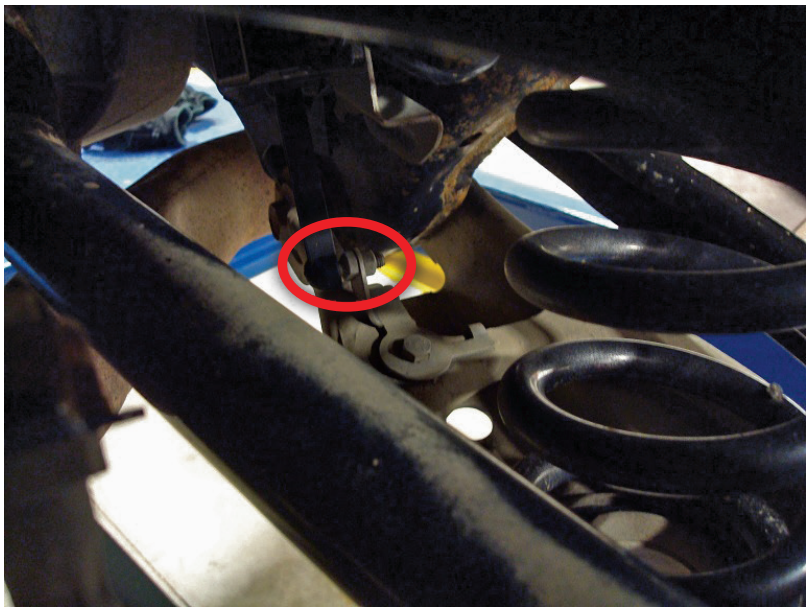


fig. 3

REMOVAL OF STOCK SUSPENSION

1. Remove the coil spring and rubber spring isolator from the top spring seat (Fig. 4).

⚠ CAUTION

COIL SPRING UNDER COMPRESSION. COIL SPRINGS SHOULD BE REMOVED USING FACTORY PRESCRIBED GUIDELINES.

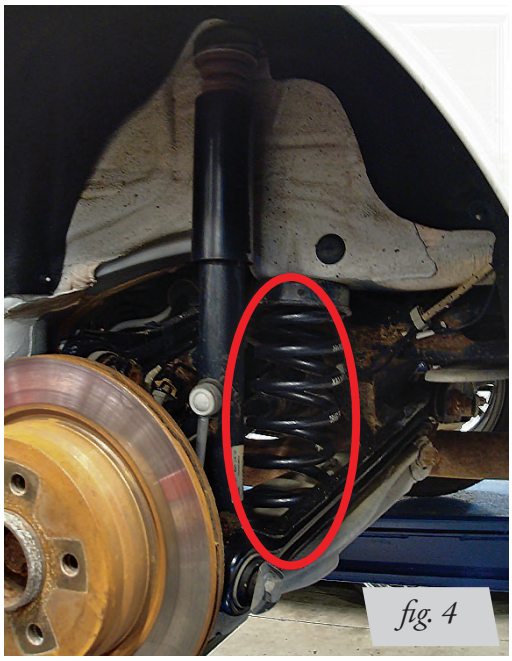


fig. 4

fig. 5

2. Disconnect the lower shock nut from the isolated mount (Fig. 5).
3. Support the lower control arm and unbolt the lower control arm from the hub assembly and sub-frame (Fig. 6). Remove the lower control arm.

NOTE

Some factory exhaust pieces may need to be removed or lowered to remove the cam bolt that attaches the lower control arm to the sub-frame.

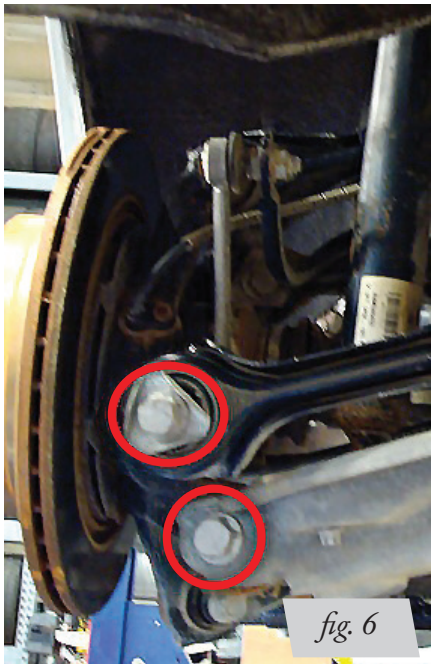


fig. 6

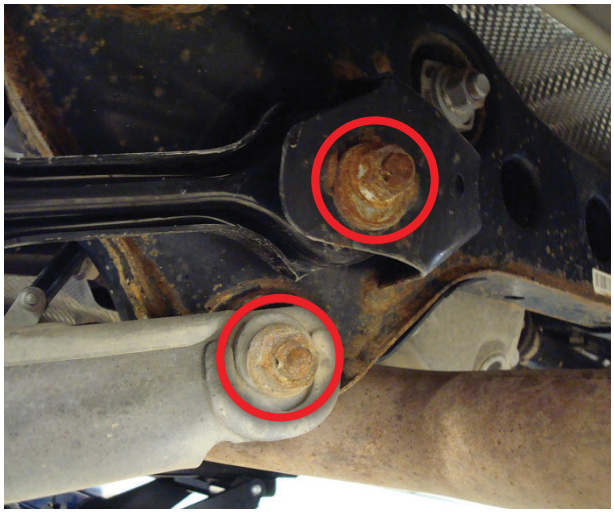


fig. 7

4. Unbolt and remove the toe link from the hub and sub-frame (Fig. 7).

5. Within the trunk, remove the shock rod nut and remove the shock from the vehicle (Fig. 8). Retain the lower isolator and rubber gasket that the shock rod passes through within the wheel housing (Fig. 9).

fig. 8

fig. 9

6. **If installing the kit without rear shocks, proceed to the *Assembling the Air Spring Upper Bracket and Air Fitting* section.** With the rod nut removed (Fig. 10), peel the micro cellular isolator from the rod nut washer and retain this isolator for future use (Figs. 11 & 12). Take care not to damage the isolator during the removal process. The nut and washer will not be used when installing Air Lift rear shocks.

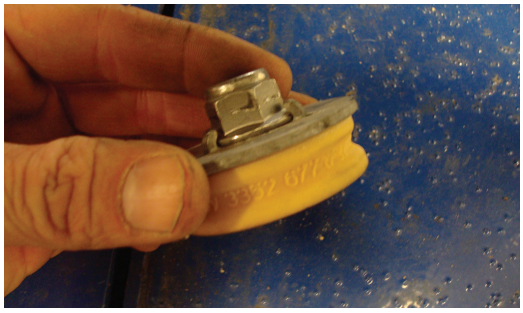


fig. 10

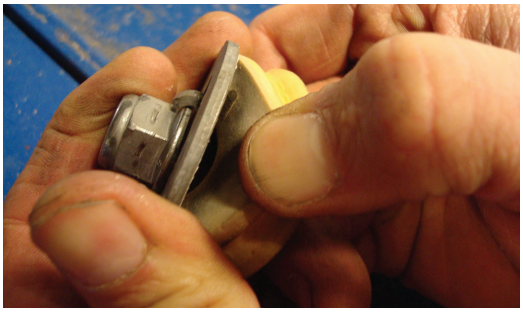


fig. 11

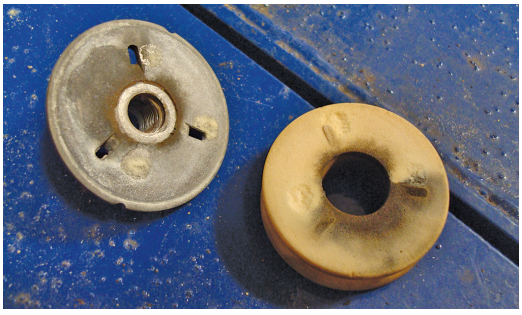


fig. 12

ASSEMBLING THE AIR SPRING UPPER BRACKET AND AIR FITTING

1. Apply thread sealant to the chosen air fitting threads and install into the air spring port. Torque 1 3/4 turns beyond hand-tight.
2. Place the roll plate over the air spring followed by the upper mount spacer (Fig. 13). Attach with two bolts and lock washers. Torque to 27Nm (20 lb.-ft.) There are two mounting positions for the upper spacer to mount to the air spring. Best practice is to have the air fitting located on the forward side of the vehicle, with the air line outlet facing rearward. This helps protect the air line connection. Mount the air spring so that it is positioned away from the wheel, toward the cross-member (Fig. 14).

NOTE *The images are representative, actual kit may differ.*

fig. 13

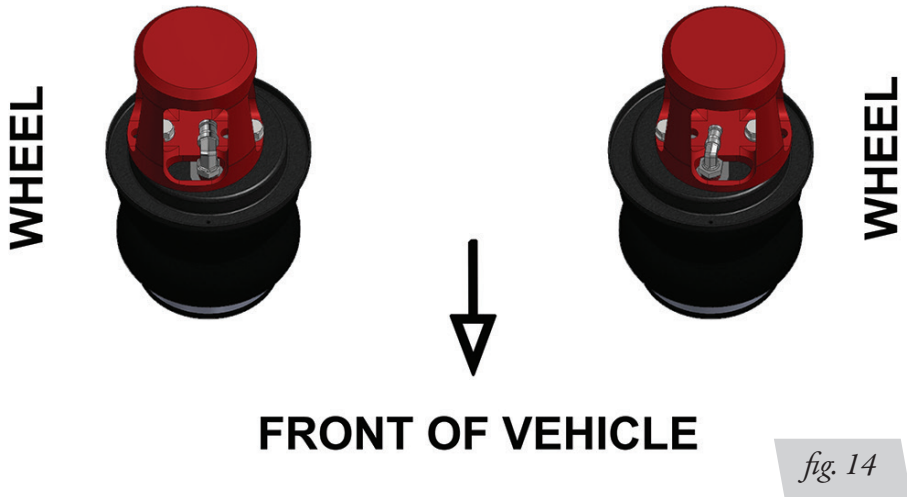


fig. 14

INSTALLING THE AIR SUSPENSION

1. Attach the supplied lower control arm to the hub assembly and the sub-frame (Figs. 15 & 16). Do not torque bolts at this time.

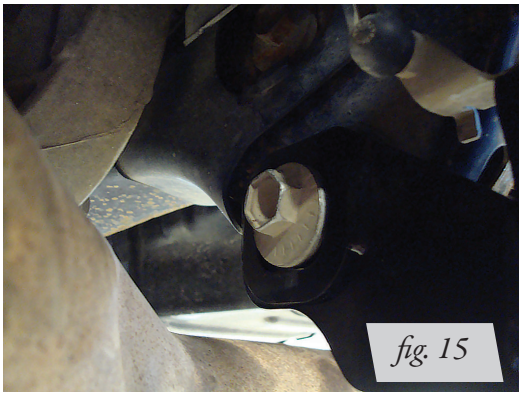


fig. 15


fig. 16

2. Attach the headlight alignment linkage to the control arm (Fig. 17).


fig. 17

3. Place the air spring assembly with the remaining roll plate on the lower control arm (Fig. 18). Bolt the air spring in place by assembling a lock washer and bolt (H) through the control arm. Torque to 27Nm (20 lb.-ft.) The upper mount is offset to properly position the air spring in the chassis (Fig. 19). Align the assembly so the air spring is closest to the sub-frame. The air spring must be positioned farthest inboard away from the shock and wheel. Then insert the air spring spacer into the coil spring perch.


fig. 18

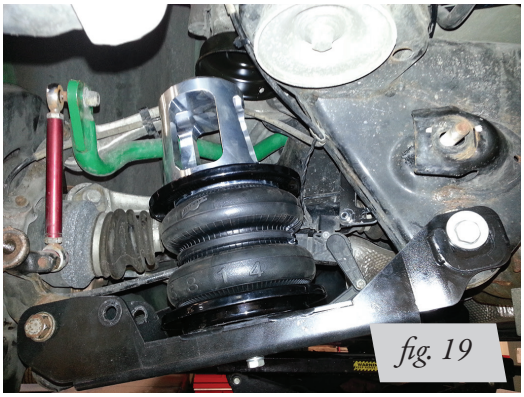


fig. 19

4. Snip the zip ties from the toe link. The toe link bushing spacers must be installed opposite the bend of the link (Fig. 20). Attach the link to the hub assembly and sub-frame with the bend rearward and directed downward (Figs. 21 & 22). Do not torque bolts at this time.

⚠ CAUTION

IF THE BEND IS DIRECTED UPWARD, CONTACT WITH THE SUB-FRAME AND TOE LINK WILL OCCUR. IF THE BEND IS FORWARD OR IF THE BUSHING SPACERS ARE INSTALLED INCORRECTLY, AIR SPRING CONTACT WITH THE TOE LINK WILL OCCUR. THIS CONTACT WILL CAUSE DEGRADATION OF THE AIR SPRING AND VOID THE WARRANTY.

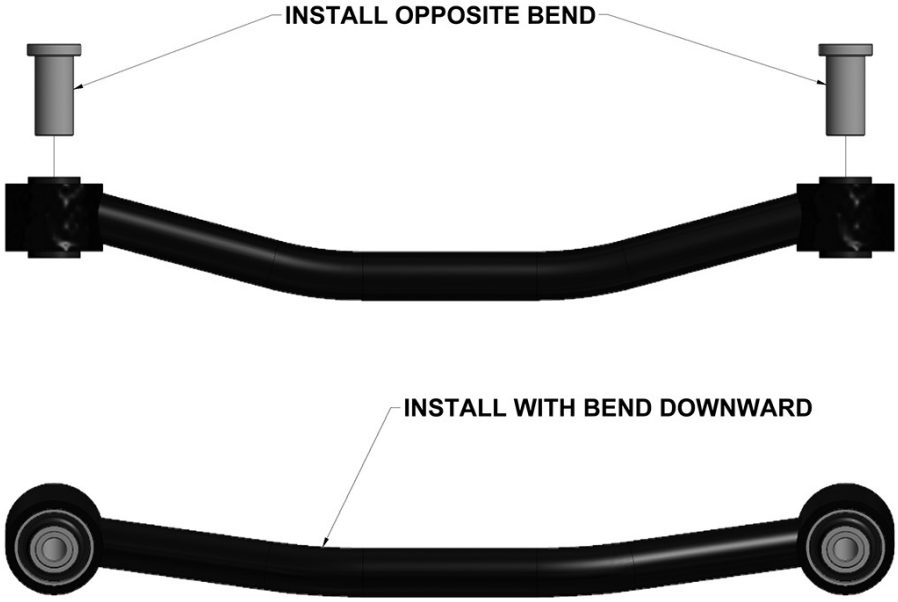


fig. 20

fig. 21

fig. 22

INSTALLING SHOCKS

1. Insert the shock rod with large washer through the lower isolator and gasket (Fig. 23). Install through the upper shock mount (Fig. 24). Within the trunk, apply the upper isolator (Fig. 25) followed by the second large flat washer (Fig. 26) and nylon lock nut (Fig. 27). Torque the nylon lock nut to 27Nm (20 lb.-ft.).


fig. 23


fig. 24


fig. 25


fig. 26


fig. 27

2. Align the lower shock eye with the control arm shock mount and install the supplied bolt and washer (Fig. 28). Apply another washer, and nylon lock nut to the other side (Fig. 29). Do not torque at this time.


fig. 28

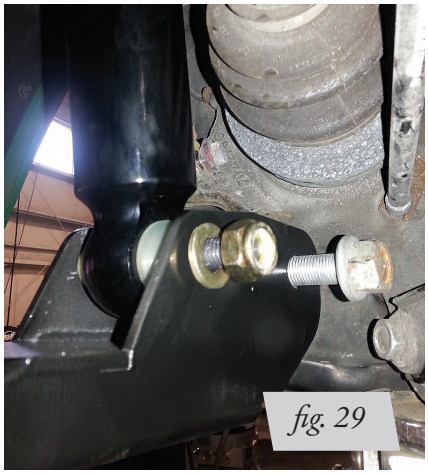


fig. 29

ROUTING THE AIR LINES

1. Fully compress the suspension using a jack. With the suspension compressed, review the best routing for the air line that is clear of all suspension components and axle.
2. 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.

Before Operating

SETTING THE RIDE HEIGHT

Please refer to the User Guide supplied with this kit to set up the suspension.

Torque Specifications			
Location	Nm	lb-ft	lb-in
Toe Link to Sub Frame	100	74	
Toe Link to Hub	100	74	
Lower Control Arm to Sub Frame	165	122	
Lower Control Arm to Hub	165	122	
Trailing Arm to Sub Frame	100	74	
Trailing Arm to Hub	100 + 90 degrees	74 + 90 degrees	
Wishbone to Sub Frame	100	74	
Wishbone to Hub	100 + 90 degrees	74 + 90 degrees	
Shock Rod Nylon Lock Nut	27	20	
Shock Eye Nut/Bolt	132	97	
Headlight Alignment Nut	5		44
Air spring bolts	27	20	
Wheels	120	89	
Air Fitting (with sealant)	1.5-3.0 turns beyond hand-tight		

Table 1

Suggested Driving Air Pressure	Maximum Air Pressure
70 PSI (4.8BAR)	**125 PSI (8.6BAR)**
FAILURE TO MAINTAIN ADEQUATE MINIMUM PRESSURE (OR PRESSURE PROPORTIONAL TO LOAD) MAY RESULT IN EXCESSIVE BOTTOMING OUT AND **WILL VOID THE WARRANTY**.	

Table 2

INSTALLATION CHECKLIST

- ☐ **Clearance** — Inflate the air springs to 75-90 PSI (5.2-6.2BAR) and make sure there is at least 1/2" (13mm) clearance from anything that might rub against the air spring. This should be checked with the air spring fully inflated and fully deflated.
- ☐ **Leak** — Inflate the air springs to 75-90 PSI (5.2-6.2BAR) and check all connections for leaks. All leaks must be eliminated before the vehicle is road tested.
- ☐ **Heat** — Be sure there is sufficient clearance from heat sources, at least 6" (152mm) from air springs and air lines. If a heat shield was included in the kit, install it. If there is no heat shield, but one is required, call Air Lift customer service at **(800) 248-0892**.
- ☐ **Fastener** — Recheck all bolts for proper torque.
- ☐ **Road** — Inflate the air springs to recommended driving pressures (Table 2). Drive the vehicle 10 miles (16km) and recheck for clearance, loose fasteners and air leaks.
- ☐ **Operating instructions** — If professionally installed, the installer should review the operating instructions with the owner. Be sure to provide the owner with all paperwork that came with the kit.

DAMPING ADJUSTMENT

Suspension damping is a matter of compromise. Setting it too stiff will make the ride feel jarring. In addition, if the suspension is too stiff, the tires will lose contact with the road, reducing control and power delivery. On the other hand, if the suspension is too soft, the car can experience brake dive and excessive bouncing. The sweet spot lies somewhere in the middle. Air Lift dampers have a range of adjustment, which allows the driver to tune the ride and handling to his or her preferences.

Air Lift recommends damper and air pressure settings for every vehicle kit, but it is impossible to consider every situation. For example, even though Air Lift kits replace the dampers and springs, vehicles with sport-tuned suspensions might have stiffer bushings, larger anti-roll bars, bigger wheels, wider tires, etc. These settings may need to be adjusted to different vehicles and driving characteristics.

1. The dampers in this kit have 30 settings, or “clicks,” of adjustable compression and rebound damping characteristics. Damping is changed through the damper rod using the supplied adjuster (Figs. 30 & 31) or an 3mm hex key (not included).
2. Turn the adjuster clockwise (H) and the damping settings are hardened, reducing oscillations and body motion. Turn the adjuster counterclockwise (S) and the damping is softened.
3. Each damper in this kit is preset to “-20 clicks.” This means that the damper is adjusted 20 clicks away from full stiff, which starts at 0. Counting up from full stiff is the preferred method of keeping track of, or setting, damping. This setting was developed on a BMW 135i.

fig. 30

fig. 31

Limited Warranty and Return Policy

Air Lift Company provides a 1-year limited warranty to the original purchaser of Air Lift Performance damper kits from the date of original purchase, that the products will be free from defects in workmanship and materials when used on vehicles as specified by Air Lift Company and under normal operating conditions, subject to the requirements and exclusions set forth in the full Limited Warranty and Return Policy that is available online at **www.airliftperformance.com/warranty**.

For additional warranty information contact Air Lift Company customer service.

Air Lift Company reserves the right to make changes and improvements to its products and publications at any time. For the latest version of this manual, contact Air Lift Company at **(800) 248-0892** or visit **www.airliftperformance.com**.

Need Help?

Contact Air Lift Company customer service department by calling (800) 248-0892. For calls from outside the USA or Canada, dial (517) 322-2144.

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Printed in the USA
JJC-1021