Air Lift™
PERFORMANCE

Kit 75522
Mazda3
Front Application

AIR LIFT PERFORMANCE™

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-780 • (011305) • ERN 7247

TABLE OF CONTENTS

Introduction 2
Notation Explanation 2
Important Safety Notices 2

Installation Diagram 3
Hardware List 3

Installing the Air Suspension 4
Preparing the Vehicle 4
Stock Suspension Removal 4
Air Suspension Installation 5
Setting Bushings and Prolonging Bushing Life 7
Aligning the Vehicle 7
Camber Adjustment 8
Damping Adjustment 8
Adjusting Extended or Drop Height Using Lower Mount 9

Before Operating 10
Installation Checklist 10

Product Use, Maintenance and Servicing 11
Suggested Driving and Maximum Air Pressures 11
Maintenance Guidelines 11

Troubleshooting Guide 11

Frequently Asked Questions 11
Tuning the Air Pressure 12
Checking for Leaks 12
Fixing Leaks 12

Warranty & Returns Policy 13

Replacement Information 13

Contact Information 13

Introduction

The purpose of this publication is to assist with the installation, maintenance and troubleshooting of this Mazda3 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.

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 our website at www.airliftcompany.com.

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

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

Installation Diagram

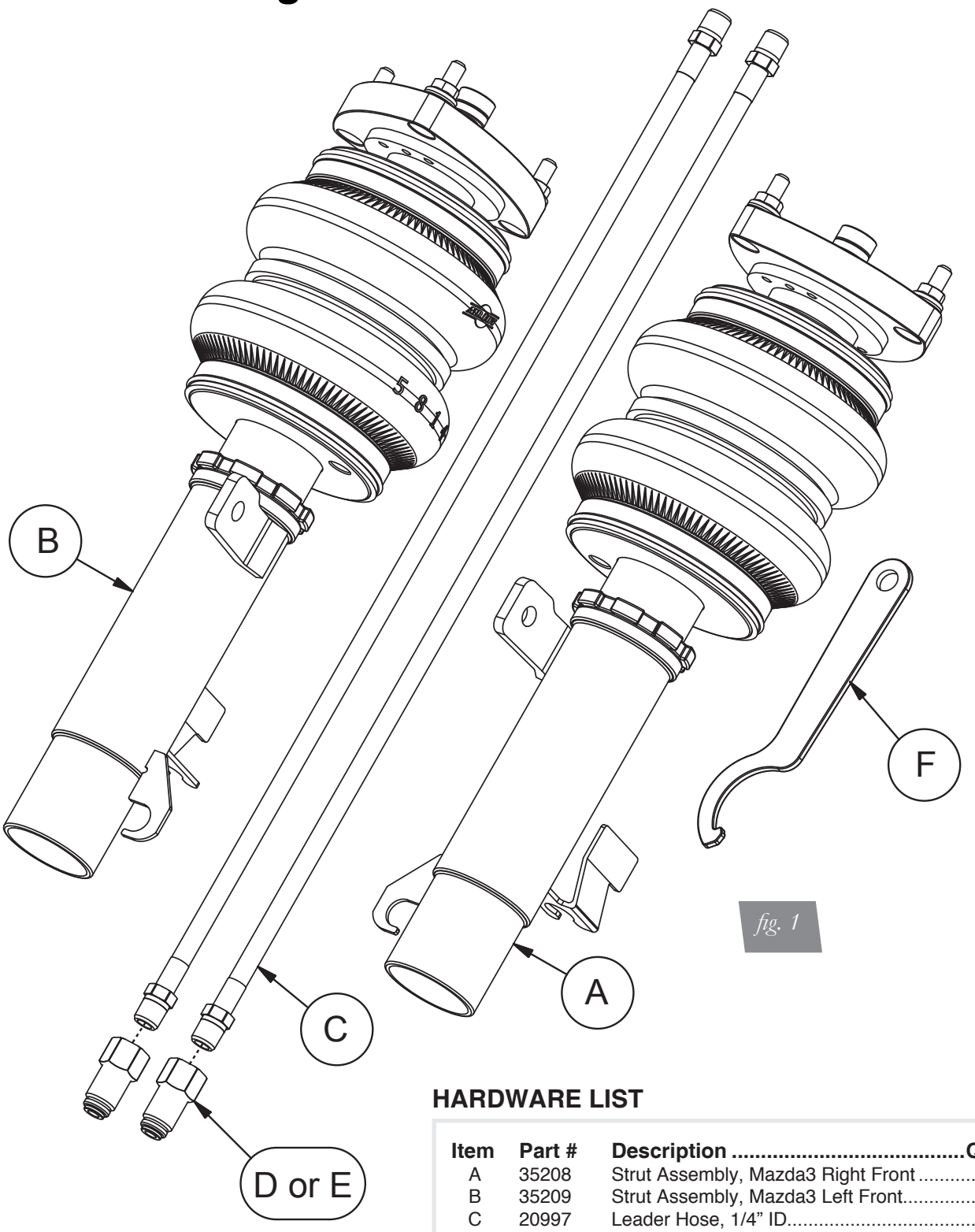


fig. 1

HARDWARE LIST

Item	Part #	Description	Qty
A	35208	Strut Assembly, Mazda3 Right Front	1
B	35209	Strut Assembly, Mazda3 Left Front	1
C	20997	Leader Hose, 1/4" ID	2
D	21810	Union, 1/4"FNPT X 1/4"PTC, "DOT"	2
E	21987	Union, 1/4"FNPT X 3/8"PTC, "DOT"	2
F		Spanner Wrench	1

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. 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.

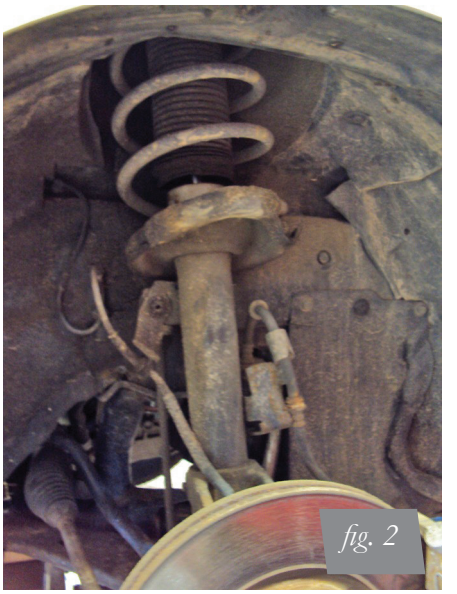


fig. 2

STOCK SUSPENSION REMOVAL

1. Detach the brake line (figs. 3 and 4) and sensor wires (fig. 5) from the supporting bracket.

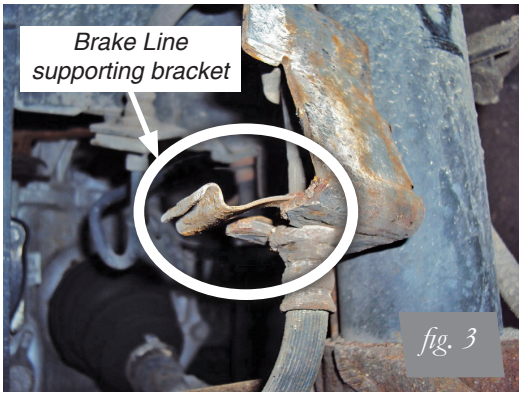


fig. 3

fig. 4

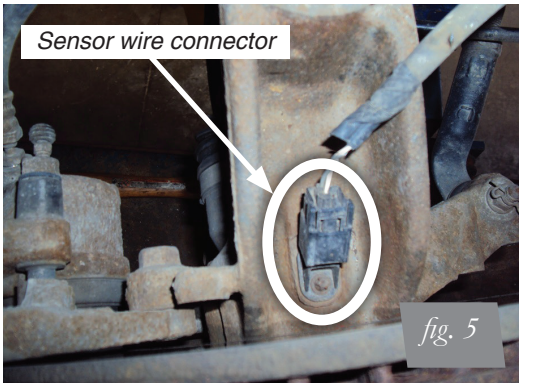


fig. 5

2. Disconnect the stabilizer link from the strut body (figs. 6 and 7).

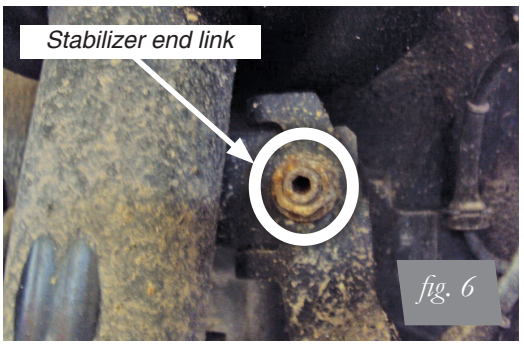


fig. 6

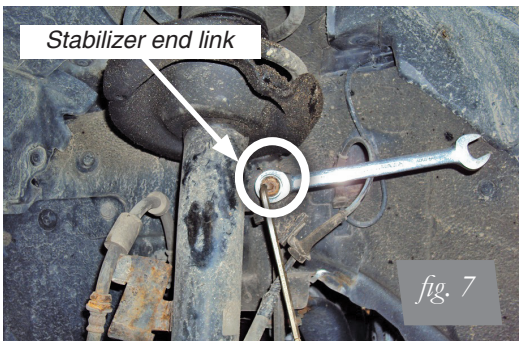


fig. 7

3. Remove the lower strut bolt (fig. 8). Spread the strut mounting knuckle and slide the knuckle off of the strut (fig. 9).

NOTE

Do not allow the hub assembly to hang from the brake line.

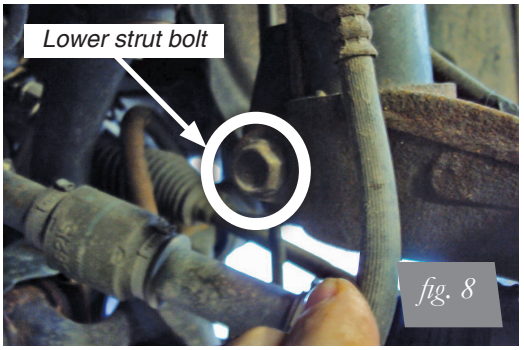


fig. 8

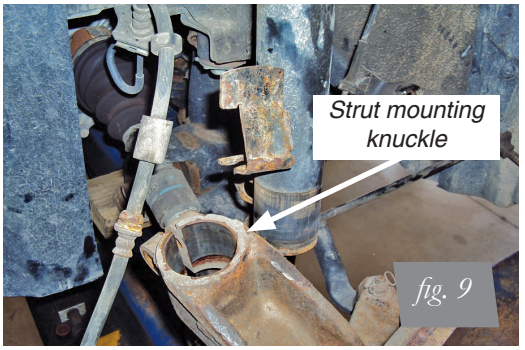


fig. 9

4. Remove the three upper strut mount nuts (figs. 10 and 11) and remove the strut from the vehicle.

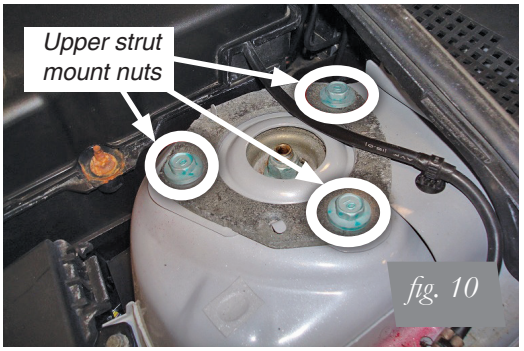


fig. 10

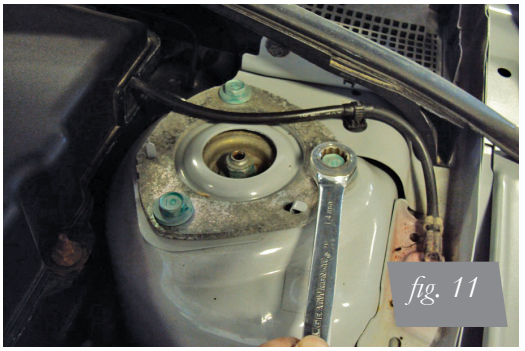


fig. 11

AIR SUSPENSION INSTALLATION

1. Apply thread sealant to the threads of the leader hose and install into the lower end cap turning 1 and 3/4 turns beyond hand tight (fig. 12). Install the appropriate fitting to the leader hose 1 and 3/4 turns beyond hand tight.

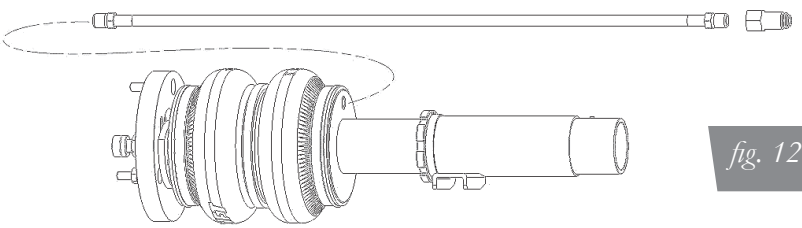


fig. 12

2. Attach the strut to the vehicle chassis (fig. 13) and torque the upper bracket bolts to 28Nm (19lb-ft).

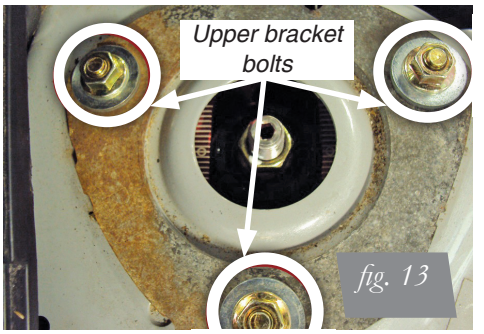


fig. 13

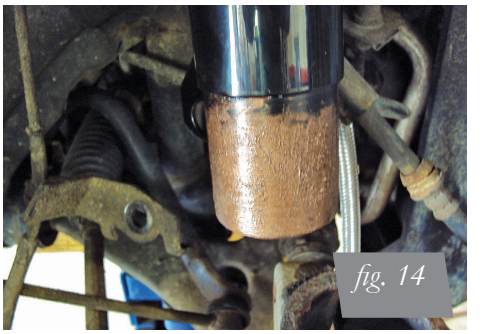


fig. 14

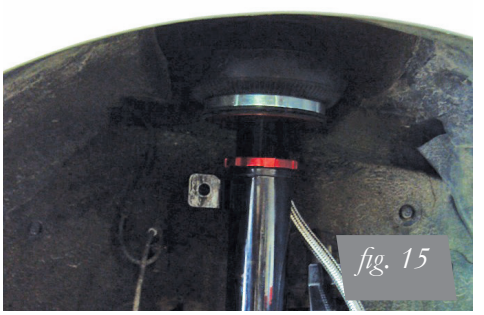


fig. 15

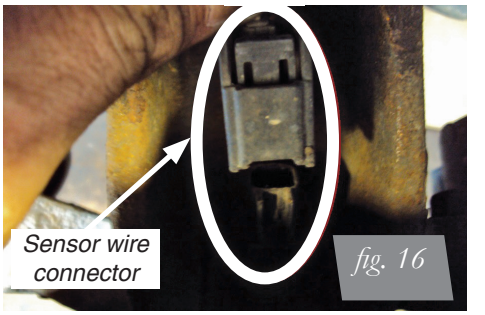


fig. 16

3. Raise the knuckle up to the strut lower mount and slide the mount into the knuckle (fig. 14). Re-install the lower strut mount bolt (fig. 15) along with the brake line/ sensor wire (fig. 16). Torque the lower strut mount bolt to 74Nm (54lb-ft).
4. Install the supplied stabilizer end link to the strut cartridge and stabilizer bar (fig. 17). Torque nuts to 55Nm (40lb-ft).

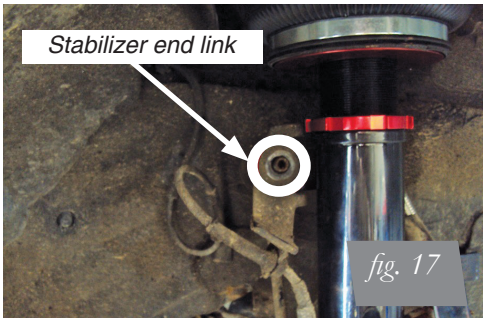


fig. 17

5. Brake line support brackets attached to the inner fenders will need to be bent up to clear the axles when the suspension is fully compressed (figs. 18 - 21). This procedure must be done on both sides. Brake lines may also need to be adjusted to prevent axle contact. Care must be taken to not damage brake lines.

   Before adjustments:

Left front

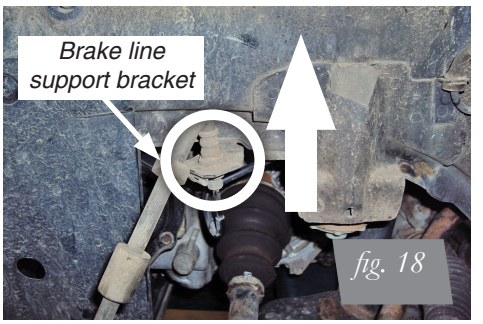


fig. 18

Right front

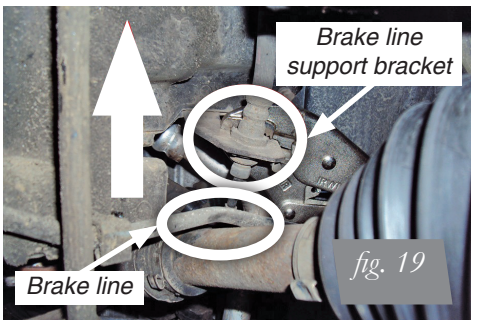


fig. 19

After Adjustments:

Left front

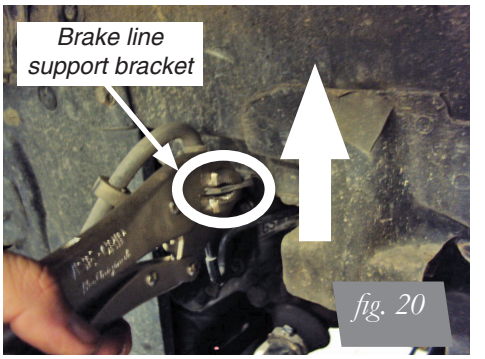


fig. 20

Right front

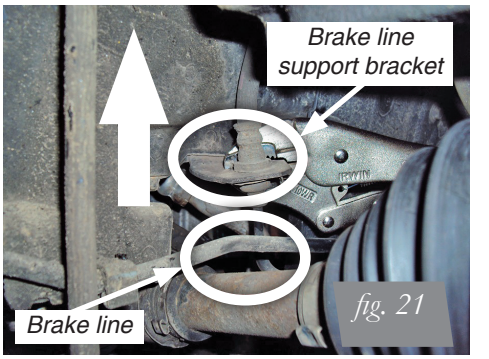


fig. 21

6. 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.

SETTING BUSHINGS AND PROLONGING BUSHING LIFE

1. 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. 22). This position gives 50% stroke in either direction and is a great starting point for ride height. At this position torque the lower control arm bolts to manufacturer's specifications (Table 1).

   Formula for calculating ride height:

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

fig. 22

2. 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! Please make sure to get an alignment at the preferred drive height.

ALIGNING THE VEHICLE

1. Using the control system, set the vehicle height to the most often used 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 (Table 1).

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 based on the custom ride height.

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	28	19
Lower strut mount clevis bolt	74	54
Stabilizer end link nut	55	40
Wheels	118	88

Table 1

CAMBER ADJUSTMENT

If camber adjustment is desired after installation, the following procedure must be followed:

1. Support vehicle with jack stands at approved lifting points.
2. Support hub assembly from below.
3. Exhaust all air pressure from spring.
4. Remove 3 upper mounting nuts.
5. Lower hub to gain access to camber plate adjustment cap screws.
6. Loosen cap screws and slide camber plate to desired position.
7. Tighten cap screws.
8. Raise hub and guide strut back into mounting location.
9. Re-install 3 mounting nuts and torque to specification.
10. Check for any rubbing of air spring on strut tower through entire travel.

IMPORTANT

It may not be possible to use all of the camber adjustment provided and still maintain adequate clearance of vehicle body to air spring.

WARNING

ANY CONTACT OF AIR SPRING TO VEHICLE BODY DURING SUSPENSION TRAVEL OR STEERING WILL EVENTUALLY RESULT IN AIR SPRING FAILURE. THIS MUST BE AVOIDED BY ADJUSTING CAMBER PROPERLY TO AVOID ANY RUBBING. SPRING FAILURE DUE TO RUBBING IS NOT COVERED UNDER WARRANTY.

DAMPING ADJUSTMENT

The shocks in this kit have 30 settings or “clicks” of adjustable compression and rebound damping characteristics. Damping is changed through the shock 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 front 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/setting of damping. This setting was developed on a 2007 Mazda3 GT hatchback and may need to be adjusted to the different vehicles and driving characteristics.

fig. 23

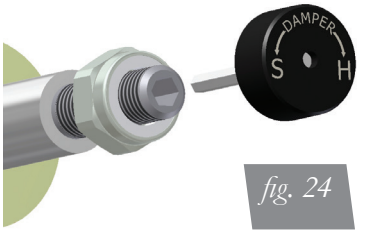


fig. 24

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. 25).
4. Deflate the air spring to 0 PSI on the corner you are adjusting.
5. Disconnect lower mount from suspension.
6. Spin the lower mount to the desired location.

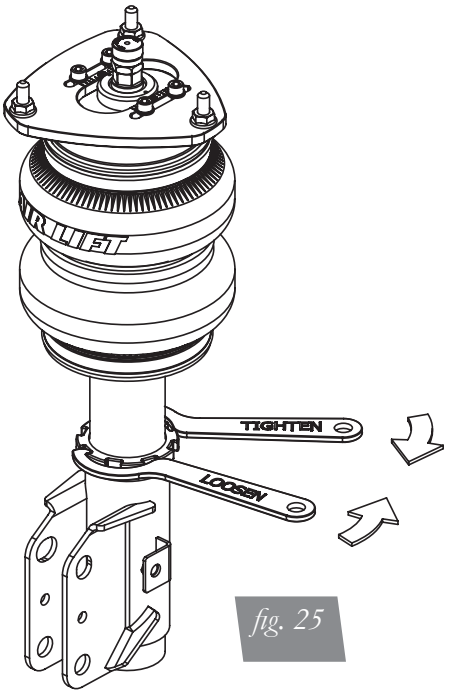


fig. 25

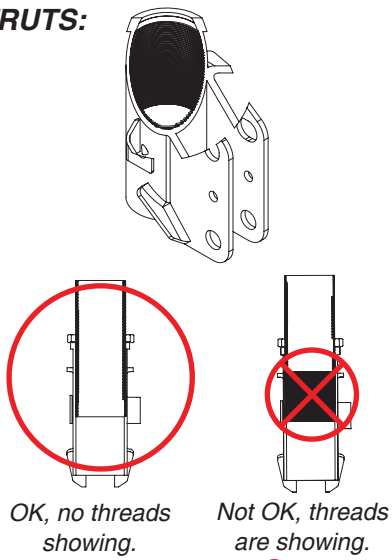
NOTE *Not all models will have further drop height available.*

7. Re-install lower mount to suspension and torque fasteners.
8. Tighten the lower locking collar to the lower mount using significant force.

⚠ WARNING WHEN ADJUSTING HEIGHT UPWARDS, MAKE SURE THAT THE STRUT BODY ENGAGES ALL THE THREADS OF THE LOWER MOUNT (FIG. 26). 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.

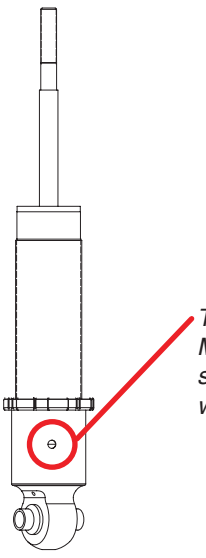
FOR STRUTS:



OK, no threads showing.

Not OK, threads are showing.

FOR SHOCKS:



Thread MUST be showing in window.

fig. 26

Before Operating

CAUTION MAKE SURE THE FRONT WHEELS ARE STRAIGHT WHEN DEFLATING AND REINFLATING AIR BAGS.

1. Inflate and deflate the system (do not exceed 125 PSI) to check for clearance or binding issues. With the air springs deflated, check clearances on everything so as not to pinch brake lines, vent tubes, etc. Clear lines if necessary.
2. Inflate the air springs to 75 PSI - 90 PSI and check all connections for leaks.
3. Air Lift part #27669 or #27671, AutoPilot V2 Air Management System, is highly recommended for this product.
4. Please continue by reading the Product Use, Maintenance and Servicing section.

INSTALLATION CHECKLIST

- ❑ **Clearance test** — Inflate the air springs to 75-90 PSI and make sure there is at least ½" clearance from anything that might rub against each sleeve. Be sure to check the tire, brake drum, frame, shock absorbers and brake cables.

- ❑ **Leak test before road test** — Inflate the air springs to 75 PSI - 90 PSI and check all connections for leaks. All leaks must be eliminated before the vehicle is road tested.

- ❑ **Heat test** — Be sure there is sufficient clearance from heat sources, at least 6" for 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 test** — Recheck all bolts for proper torque.

- ❑ **Road test** — The vehicle should be road tested after the preceding tests. Inflate the springs to recommended driving pressures. Drive the vehicle 10 miles 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 of the paperwork that came with the kit.

Technician's Signature _____ ***Date*** _____

POST-INSTALLATION CHECKLIST

- ❑ **Overnight leak down test** — Recheck air pressure after the vehicle has been used for 24 hours. If the pressure has dropped more than 5 PSI, then there is a leak that must be fixed. Either fix the leak yourself or return to the installer for service.

- ❑ **Air pressure requirements** — Regardless of load, the air pressure should always be adjusted to maintain adequate ride height at all times while driving.

- ❑ **Thirty day or 500 mile test** — Recheck the air spring system after 30 days or 500 miles, whichever comes first. If any part shows signs of rubbing or abrasion, the source should be identified and moved, if possible. If it is not possible to relocate the cause of the abrasion, the air spring may need to be remounted. If professionally installed, the installer should be consulted. Check all fasteners for tightness.

Product Use, Maintenance and Servicing

Suggested Driving Air Pressure	Maximum Air Pressure
32 PSI	125 PSI
FAILURE TO MAINTAIN ADEQUATE MINIMUM PRESSURE (OR PRESSURE PROPORTIONAL TO LOAD) WILL RESULT IN BOTTOMING OUT, OVER-EXTENSION OR RUBBING AGAINST ANOTHER COMPONENT AND WILL **VOID THE WARRANTY**.	

MAINTENANCE GUIDELINES

NOTE *By following these steps, vehicle owners will obtain the longest life and best results from their air spring.*

1. Check the air pressure before driving.
2. Never inflate beyond 125 PSI.
3. If you develop an air leak in the system, use a soapy water solution to check all air line connections, before deflating and removing the spring.
4. When increasing load, always adjust the air pressure to maintain normal ride height. Increase or decrease pressure from the system as necessary to attain normal ride height for optimal ride and handling. Remember that loads carried behind the axle (including tongue loads) require more leveling force (pressure) than those carried directly over the axle.

⚠ CAUTION FOR YOUR SAFETY AND TO PREVENT DAMAGE TO YOUR VEHICLE, DO NOT EXCEED MAXIMUM GROSS VEHICLE WEIGHT RATING (GVWR), AS INDICATED BY THE VEHICLE MANUFACTURER. ALTHOUGH YOUR AIR SPRINGS ARE RATED AT A MAXIMUM INFLATION PRESSURE OF 125 PSI, THE AIR PRESSURE ACTUALLY NEEDED IS DEPENDENT ON YOUR LOAD.

5. Always add air to the springs in small quantities, checking the pressure frequently. Sleeves require less air volume than a tire and inflate quickly.
6. Should it become necessary to raise the vehicle by the frame, make sure the control system is turned off before lifting.

Troubleshooting Guide

1. Leak test the air line connections, the threaded connection into the air spring, and all fittings in the control system.
2. Inspect the air lines to be sure none are pinched. Tie straps may be too tight. Loosen or replace the strap and replace leaking components.
3. Inspect the air line for holes and cracks. Replace as needed.
4. Look for a kink or fold in the air line. Reroute as needed.

If the preceding steps do not solve the problem, it is possibly caused by a failed air spring — either a factory defect or an operating problem. Please call Air Lift at (800) 248-0892 for assistance.

Frequently Asked Questions

Q. Will installing air springs increase the weight ratings of a vehicle?

No. Adding air springs will not change the weight ratings (GAWR, GCWR and/or GVWR) of a vehicle. Exceeding the GVWR is dangerous and voids the Air Lift warranty.

Q. How long should air springs last?

If the air springs are properly installed and maintained they can last indefinitely.

Q. Will raising the vehicle on a hoist for service work damage the air springs?

No. The vehicle can be lifted on a hoist for short-term service work such as tire rotation or oil changes. However, if the vehicle will be on the hoist for a prolonged period of time, support the axle with jack stands in order to take the tension off of the air springs.

Tuning the Air Pressure

Pressure determination comes down to three things — level vehicle, ride comfort, and stability.

1. **Level vehicle**

   If the vehicle's headlights are shining into the trees or the vehicle is leaning to one side, then it is not level. Raise the air pressure to correct either of these problems and level the vehicle.

2. **Ride comfort**

   If the vehicle has a rough or harsh ride it may be due to either too much pressure or not enough. Try different pressures to determine the best ride comfort. See Air Lift suggested driving air pressure.

3. **Stability**

   Stability translates into safety and should be the priority, meaning the driver may need to sacrifice a perfectly level and comfortable ride. Stability issues include roll control, bounce, dive during braking and sponginess. Tuning out these problems usually requires additional air pressure, strut damping, or both.

Checking for leaks

1. Inflate the air spring to 80 PSI.
2. Spray all connections and the inflation valves with a solution of 1/5 liquid dish soap and 4/5 water. Spot leaks easily by looking for bubbles in the soapy water.
3. After the test, deflate the springs to the minimum pressure required to restore the system to normal ride height.
4. Check the air pressure again after 24 hours. A 2 - 4 PSI loss after initial installation is normal. Retest for leaks if the loss is more than 5 lbs.

Fixing Leaks

1. If there is a problem with a swivel fitting:
   a. Check the air line connection by deflating the spring and removing the line by pulling the collar against the fitting and pulling firmly on the air line. Trim 1" off the end of the air line. Be sure the cut is clean and square (see fig. 27). Reinsert the air line into the push-to-connect fitting.
   b. Check the threaded connection by tightening the swivel fitting another ½ turn. If it still leaks, deflate the air spring, remove the fitting, and re-coat the threads with thread sealant. Reinstall by hand tightening as much as possible and then use a wrench for an additional two turns.
2. If the preceding steps have not resolved the problem, call Air Lift customer service at (800) 248-0892.

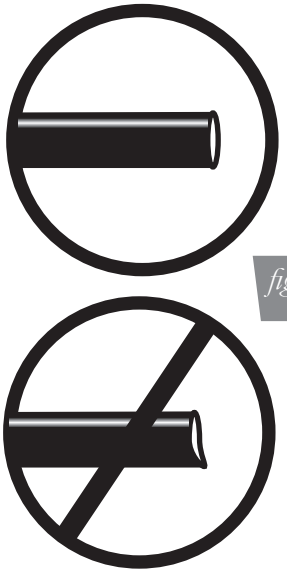


fig. 27

Warranty and Returns Policy

Air Lift Company warrants its performance products for one year to the original purchaser against manufacturing defects one year from the date of purchase when used on cars and trucks as specified under normal operating conditions. The warranty does not apply to products that have been improperly applied, improperly installed, or which have not been maintained in accordance with installation instructions furnished with all products. The consumer will be responsible for removing (labor charges) the defective product from the vehicle and returning it, transportation costs prepaid, to the dealer from which it was purchased or to Air Lift Company for verification.

Air Lift will repair or replace, at its option, defective products or components. A minimum $10.00 shipping and handling charge will apply to all warranty claims. Before returning any defective product, you must call Air Lift at (800) 248-0892 in the U.S. and Canada (elsewhere, (517) 322-2144) for a Returned Materials Authorization (RMA) number. Returns to Air Lift can be sent to: Air Lift Company • 2727 Snow Road • Lansing, MI • 48917.

Product failures resulting from abnormal use or misuse are excluded from this warranty. The loss of use of the product, loss of time, inconvenience, commercial loss or consequential damages is not covered. The consumer is responsible for installation/reinstallation (labor charges) of the product. Air Lift Company reserves the right to change the design of any product without assuming any obligation to modify any product previously manufactured.

This warranty gives you specific legal rights and you may also have other rights that may vary from state-to-state. Some states do not allow limitations on how long an implied warranty lasts or allow the exclusion or limitation of incidental or consequential damages. The above limitation or exclusion may not apply to you. There are no warranties, expressed or implied including any implied warranties of merchantability and fitness, which extend beyond this warranty period. There are no warranties that extend beyond the description on the face hereof. Seller disclaims the implied warranty of merchantability. (Dated proof of purchase required.)

Replacement Information

If you need replacement parts, contact the local dealer or call Air Lift customer service at (800) 248-0892. Most parts are immediately available and can be shipped the same day.

Contact Air Lift Company customer service at (800) 248-0892 first if:

- Parts are missing from the kit.
- Need technical assistance on installation or operation.
- Broken or defective parts in the kit.
- Wrong parts in the kit.
- Have a warranty claim or question.

Contact the retailer where the kit was purchased:

- If it is necessary to return or exchange the kit for any reason.
- If there is a problem with shipping if shipped from the retailer.
- If there is a problem with the price.

Contact Information

If you have any questions, comments or need technical assistance contact our customer service department by calling (800) 248-0892. For calls from outside the USA or Canada, our local number is (517) 322-2144. You may also contact customer service anytime by e-mail at techsupport@airliftperformance.com.

For inquiries by mail, our address is PO Box 80167, Lansing, MI 48908-0167. Our shipping address for returns is 2727 Snow Road, Lansing, MI 48917.

You may also contact our sales team anytime by e-mail at sales@airliftperformance.com or on the web at www.airliftperformance.com.

Need Help?

Contact our customer service department by calling (800) 248-0892. For calls from outside the USA or Canada, our local number is (517) 322-2144.

Thank you for purchasing Air Lift Performance products!

Air Lift Performance • 2727 Snow Road • Lansing, MI 48917 or PO Box 80167 • Lansing, MI 48908-0167
Toll Free (800) 248-0892 • Local (517) 322-2144 • Fax (517) 322-0240 • www.airliftperformance.com

Printed in
the USA

Air Lift™
PERFORMANCE

Kits 75622/78638 Mazda3 Volvo C30

Rear Application (With and Without Shocks)

AIR LIFT PERFORMANCE™

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-781 • (021506) • ERN 8264

TABLE OF CONTENTS

Introduction 2
Notation Explanation 2
Important Safety Notices 2

Installation Diagram 3
Hardware List 3

Installing the Air Suspension 4
Preparing the Vehicle 4
Stock Suspension Removal 4
Air Suspension Installation 6
Aligning the Vehicle 8
Damping Adjustment 9
Adjusting Extended or Drop Height Using Lower Mount 10

Before Operating 12
Installation Checklist 12

Product Use, Maintenance and Servicing 13
Suggested Driving and Maximum Air Pressures 13
Maintenance Guidelines 13

Troubleshooting Guide 13

Frequently Asked Questions 13
Tuning the Air Pressure 14
Checking for Leaks 14
Fixing Leaks 14

Warranty & Returns Policy 15

Replacement Information 15

Contact Information 15

Introduction

The purpose of this publication is to assist with the installation, maintenance and troubleshooting of this Mazda3 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.

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 our website at www.airliftcompany.com.

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

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.

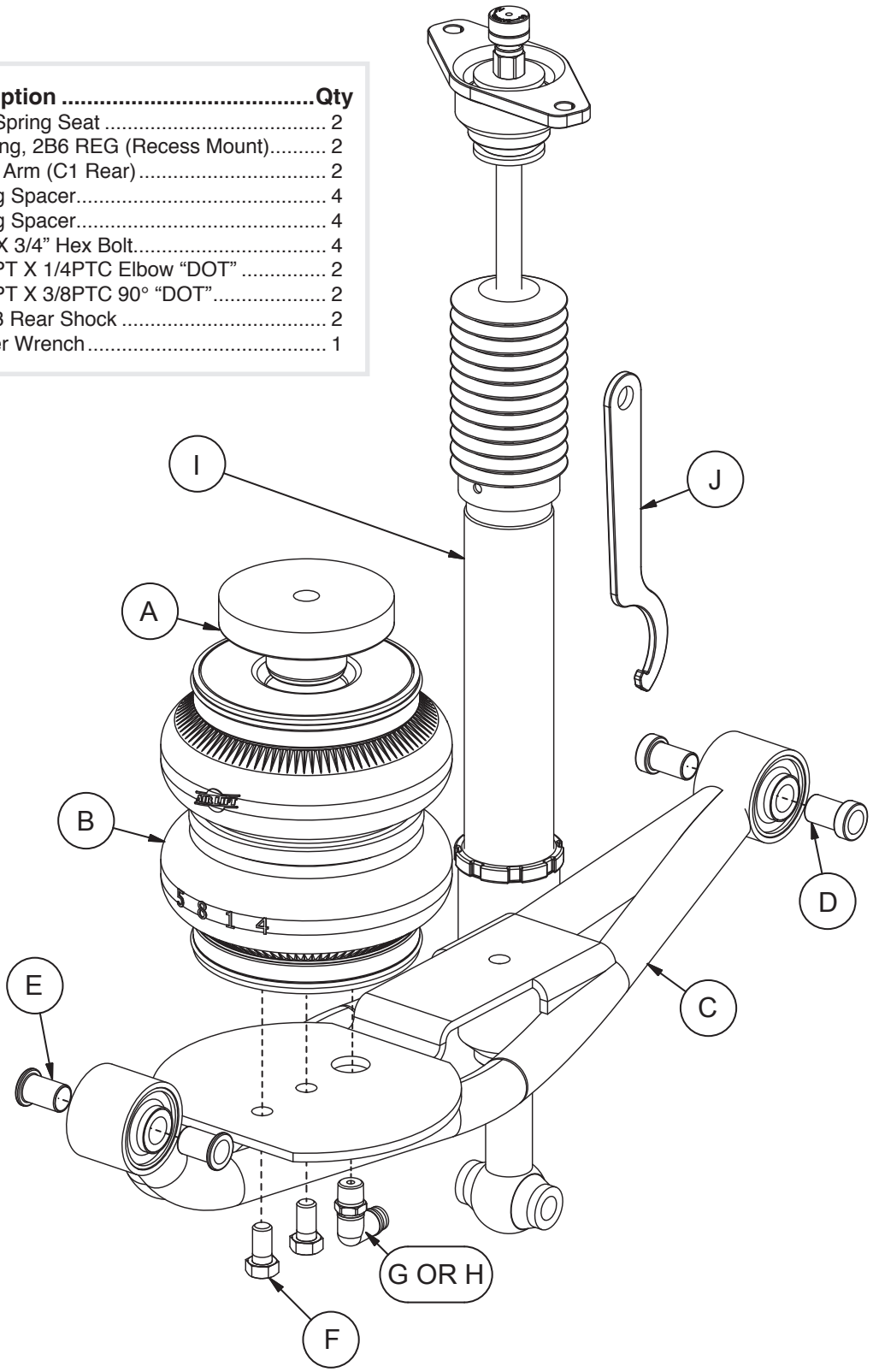
⚠ CAUTION DO NOT WELD TO, OR MODIFY LIFESTYLE STRUTS/SHOCKS IN ANY WAY. DAMAGE TO UNIT MAY OCCUR AND WILL VOID WARRANTY.

Installation Diagram

HARDWARE LIST

Item	Part #	Description	Qty
A	07038	Upper Spring Seat	2
B	58531	Air Spring, 2B6 REG (Recess Mount)	2
C	11115	Control Arm (C1 Rear)	2
D	13979	Bushing Spacer	4
E	13982	Bushing Spacer	4
F	17101	3/8-16 X 3/4" Hex Bolt	4
G	21779	1/4MNPT X 1/4PTC Elbow "DOT"	2
H	21851	1/4MNPT X 3/8PTC 90° "DOT"	2
I	26949	Mazda3 Rear Shock	2
J		Spanner Wrench	1

fig. 1



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. Support the vehicle with jack stands or a hoist at approved lifting points.
2. Remove the rear wheels (fig. 2). Support the hub assembly before beginning work (fig. 3).

fig. 2

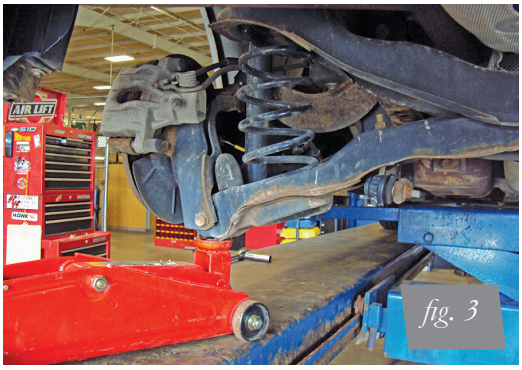


fig. 3

STOCK SUSPENSION REMOVAL

1. Disconnect the stabilizer bar end link from the lower control arm (fig. 4). You may also remove the end links from the stabilizer bar for easier installation covered later in this manual (fig. 5).

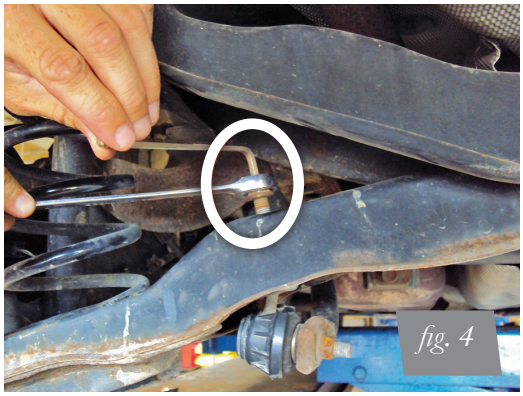


fig. 4

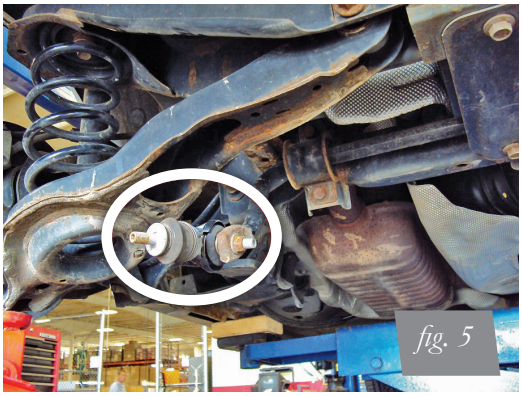


fig. 5

⚠ CAUTION

THE FOLLOWING STEPS COVER HOW TO REMOVE THE COIL SPRING WITHOUT A SPRING COMPRESSOR. CARE MUST BE TAKEN TO INSURE THE SAFETY OF YOURSELF AND OTHERS WHEN REMOVING THE COIL SPRINGS.

2. Unbolt the outer lower control arm from the wheel bearing housing (fig. 6). Carefully lower the control arm down until coil spring tension is released (fig. 7). You may need to pull the control arm farther down to unseat the control arm from the upper spring perch (fig. 8). Remove the coil spring and rubber isolators.

fig. 6

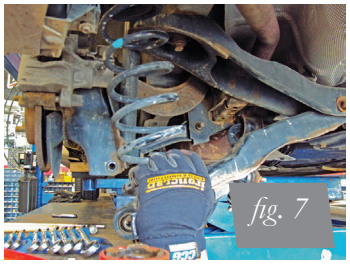


fig. 7

fig. 8

3. Remove the inner control arm cam bolts and remove the lower control arms (fig. 9). There is a connector on one side that will need some coaxing to clear the cam bolt upon removal (figs. 10 and 11).

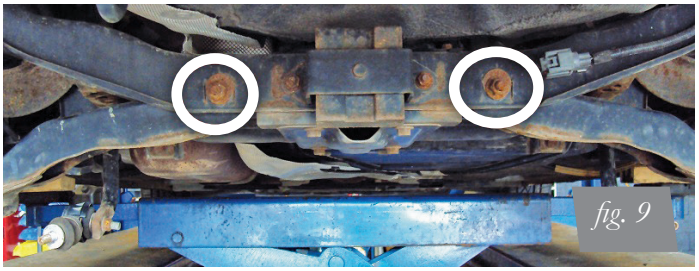


fig. 9

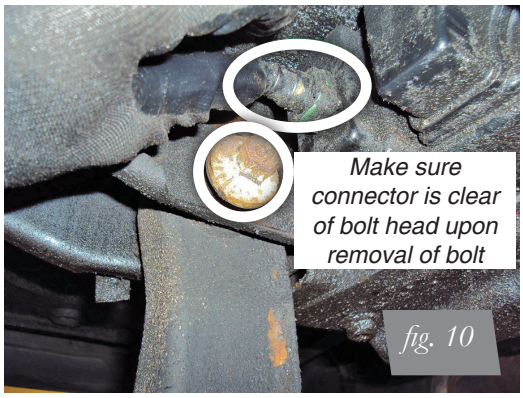


fig. 10

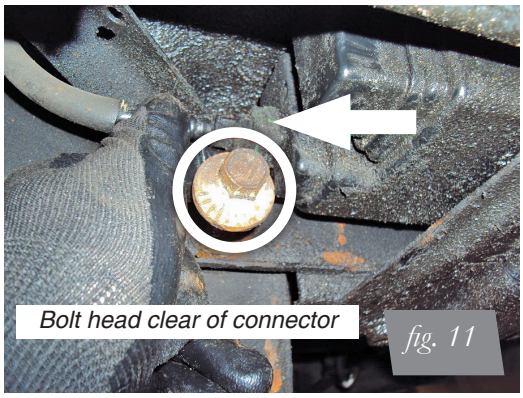


fig. 11

4. If retaining the factory shocks, continue to next step. Unbolt the upper and lower shock mount bolts and remove the shock from the vehicle (figs. 12 and 13).

fig. 12

fig. 13

AIR SUSPENSION INSTALLATION

1. Remove the subframe bolt from the upper coil spring perch (fig. 14). Place the bolt and washer through the supplied upper air spring mount and bolt into place (figs. 15-17).

fig. 14

fig. 15

fig. 16

fig. 17

2. Clip the zip tie off the end furthest from the large round spring seat (end with thick bushing spacers) and install into the cross member at the inner control arm pivot point. Reinstall the cam bolts. Do not torque at this time.
   a) Install the stabilizer bar end link onto the newly supplied control arm (figs. 18-21). Torque to 55 Nm (40 ft-lbs.).

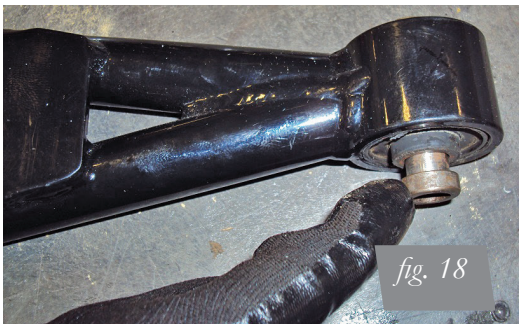


fig. 18

fig. 19

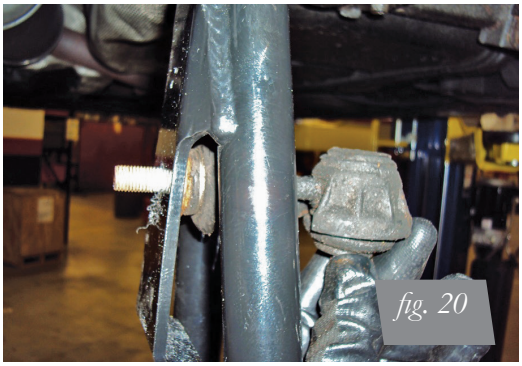


fig. 20

fig. 21

3. Attach the air spring to the control arm using the supplied washers and bolts (fig. 22). Torque to 27 Nm (20 ft-lbs.). Once the air spring is attached to the control arm, wrap the fitting threads with Teflon tape or thread sealant and thread into the air spring 1 and 3/4 turns beyond hand tight.

fig. 22

fig. 23

4. Clip zip tie from the other end and attach the control arm to the wheel bearing housing (fig. 24). Do not torque at this time.

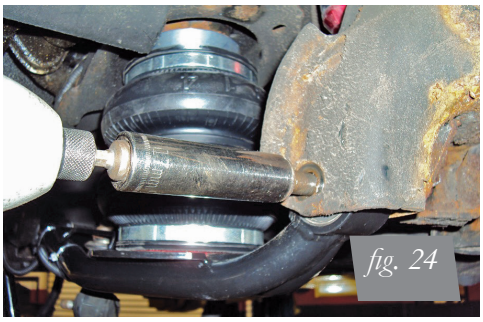


fig. 24

5. Reattach the stabilizer end link to the stabilizer bar (figs. 25 and 26). Torque nuts to 55 Nm (40 ft-lbs.).

fig. 25

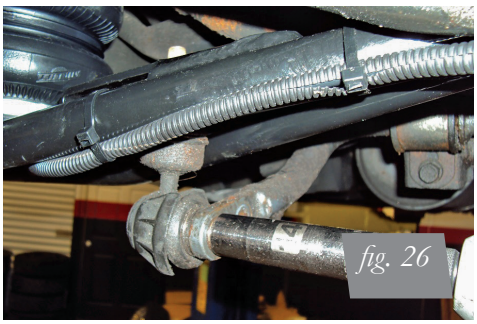


fig. 26

6. If retaining the factory shocks, continue to the next step. Install the new shock (figs. 27 and 28). Torque the lower shock mount bolt to 102 Nm (76 ft-lbs.). Toque the upper shock mount bolts to 29 Nm (21 ft-lbs.). At this time, make sure the air spring is seated against the new upper spring perch as shown in fig. 24.

fig. 27

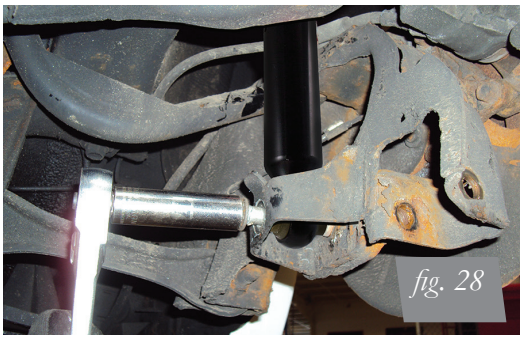


fig. 28

7. 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.
8. 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.
9. Cycle the suspension to Max Extension and record the measurement from the same reference points.
10. 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. 29).

Formula for Calculating Ride Height
(ME+MC)÷2=MID STROKE

fig. 29

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

Torque Specifications		
Location	Nm	ft-lbs.
Fitting to air spring	1 and 3/4 turns beyond hand tight	
Upper shock mount to chassis	29	21
Lower shock mount bolt	102	76
Stabilizer end link nuts	55	40
Wheels	118	88
Air spring bolt to control arm	27	20
Control arm cam bolt	100	73
Control arm outer bolt	102	75

Table 1

DAMPING ADJUSTMENT

The shocks in this kit have 30 settings, or “clicks”, of adjustable compression and rebound damping characteristics. Damping is changed through the shock rod using the supplied adjuster (figs. 30 & 31) 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 2007 Mazda3 GT hatchback and may need to be adjusted to different vehicles and driving characteristics.

fig. 30

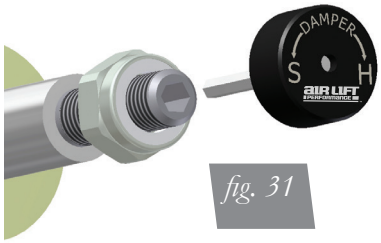


fig. 31

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 the bushings based on the custom ride height.

ADJUSTING EXTENDED OR DROP HEIGHT USING LOWER MOUNT

Your dampers 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. 32).

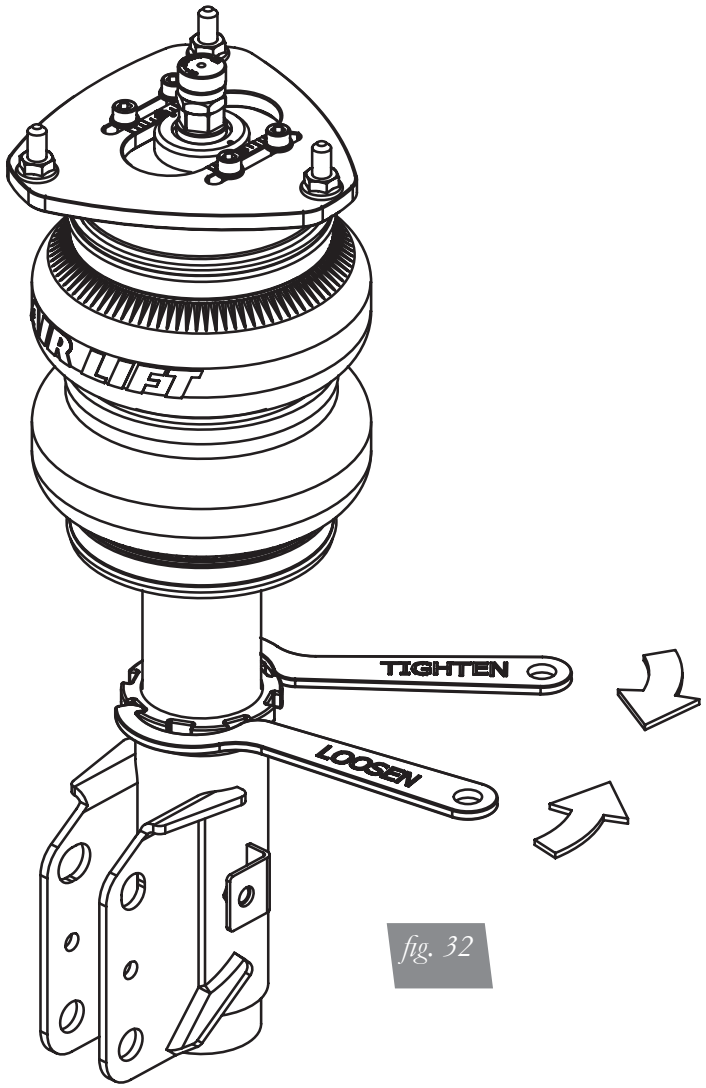


fig. 32

4. Deflate the air spring to 0 PSI on the corner you are adjusting.
5. Disconnect lower mount from suspension.
6. Spin the lower mount to the desired location.

NOTE

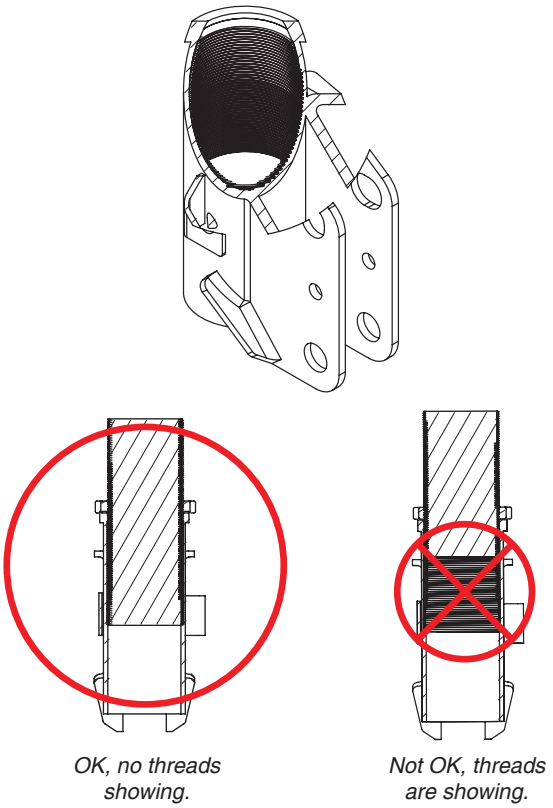
Not all models will have further drop height available.

7. Re-install lower mount to suspension and torque fasteners.
8. Tighten the lower locking collar to the lower mount using significant force.

⚠ CAUTION WHEN ADJUSTING HEIGHT UPWARDS, MAKE SURE THAT THE DAMPER BODY ENGAGES ALL THE THREADS OF THE LOWER MOUNT (FIG. 33). 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 DAMPER! DOING SO MAY CAUSE AN AIR LEAK AND COMPROMISE THE ASSEMBLY.

FOR STRUTS:



OK, no threads showing.

Not OK, threads are showing.

FOR SHOCKS:

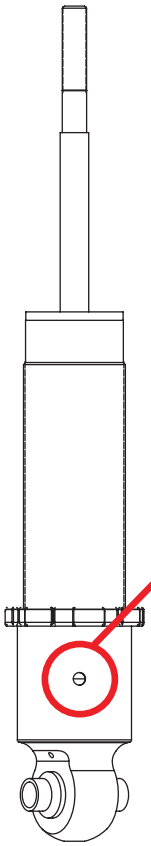


fig. 33

Before Operating

⚠ CAUTION MAKE SURE THE FRONT WHEELS ARE STRAIGHT WHEN DEFLATING AND REINFLATING AIR BAGS.

1. Inflate and deflate the system (do not exceed 125 PSI) to check for clearance or binding issues. With the air springs deflated, check clearances on everything so as not to pinch brake lines, vent tubes, etc. Clear lines if necessary.
2. Inflate the air springs to 75 PSI - 90 PSI and check all connections for leaks.
3. Air Lift part #27669 or #27671, AutoPilot V2 Air Management System, is highly recommended for this product.
4. Please continue by reading the Product Use, Maintenance and Servicing section.

INSTALLATION CHECKLIST

- ❑ **Clearance test** — Inflate the air springs to 75-90 PSI and make sure there is at least ½" clearance from anything that might rub against each sleeve. Be sure to check the tire, brake drum, frame, shock absorbers and brake cables.

- ❑ **Leak test before road test** — Inflate the air springs to 75 PSI - 90 PSI and check all connections for leaks. All leaks must be eliminated before the vehicle is road tested.

- ❑ **Heat test** — Be sure there is sufficient clearance from heat sources, at least 6" for 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 test** — Recheck all bolts for proper torque.

- ❑ **Road test** — The vehicle should be road tested after the preceding tests. Inflate the springs to recommended driving pressures. Drive the vehicle 10 miles 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 of the paperwork that came with the kit.

Technician's Signature _____ ***Date*** _____

POST-INSTALLATION CHECKLIST

- ❑ **Overnight leak down test** — Recheck air pressure after the vehicle has been used for 24 hours. If the pressure has dropped more than 5 PSI, then there is a leak that must be fixed. Either fix the leak yourself or return to the installer for service.

- ❑ **Air pressure requirements** — Regardless of load, the air pressure should always be adjusted to maintain adequate ride height at all times while driving.

- ❑ **Thirty day or 500 mile test** — Recheck the air spring system after 30 days or 500 miles, whichever comes first. If any part shows signs of rubbing or abrasion, the source should be identified and moved, if possible. If it is not possible to relocate the cause of the abrasion, the air spring may need to be remounted. If professionally installed, the installer should be consulted. Check all fasteners for tightness.

Product Use, Maintenance and Servicing

Suggested Driving Air Pressure	Maximum Air Pressure
38 PSI	125 PSI
FAILURE TO MAINTAIN ADEQUATE MINIMUM PRESSURE (OR PRESSURE PROPORTIONAL TO LOAD) WILL RESULT IN BOTTOMING OUT, OVER-EXTENSION OR RUBBING AGAINST ANOTHER COMPONENT AND WILL **VOID THE WARRANTY**.	

MAINTENANCE GUIDELINES

NOTE *By following these steps, vehicle owners will obtain the longest life and best results from their air spring.*

1. Check the air pressure before driving.
2. Never inflate beyond 125 PSI.
3. If you develop an air leak in the system, use a soapy water solution to check all air line connections, before deflating and removing the spring.
4. When increasing load, always adjust the air pressure to maintain normal ride height. Increase or decrease pressure from the system as necessary to attain normal ride height for optimal ride and handling. Remember that loads carried behind the axle (including tongue loads) require more leveling force (pressure) than those carried directly over the axle.

⚠ CAUTION FOR YOUR SAFETY AND TO PREVENT DAMAGE TO YOUR VEHICLE, DO NOT EXCEED MAXIMUM GROSS VEHICLE WEIGHT RATING (GVWR), AS INDICATED BY THE VEHICLE MANUFACTURER. ALTHOUGH YOUR AIR SPRINGS ARE RATED AT A MAXIMUM INFLATION PRESSURE OF 125 PSI, THE AIR PRESSURE ACTUALLY NEEDED IS DEPENDENT ON YOUR LOAD.

5. Always add air to the springs in small quantities, checking the pressure frequently. Sleeves require less air volume than a tire and inflate quickly.
6. Should it become necessary to raise the vehicle by the frame, make sure the control system is turned off before lifting.

Troubleshooting Guide

1. Leak test the air line connections, the threaded connection into the air spring, and all fittings in the control system.
2. Inspect the air lines to be sure none are pinched. Tie straps may be too tight. Loosen or replace the strap and replace leaking components.
3. Inspect the air line for holes and cracks. Replace as needed.
4. Look for a kink or fold in the air line. Reroute as needed.

If the preceding steps do not solve the problem, it is possibly caused by a failed air spring — either a factory defect or an operating problem. Please call Air Lift at (800) 248-0892 for assistance.

Frequently Asked Questions

Q. Will installing air springs increase the weight ratings of a vehicle?

No. Adding air springs will not change the weight ratings (GAWR, GCWR and/or GVWR) of a vehicle. Exceeding the GVWR is dangerous and voids the Air Lift warranty.

Q. How long should air springs last?

If the air springs are properly installed and maintained they can last indefinitely.

Q. Will raising the vehicle on a hoist for service work damage the air springs?

No. The vehicle can be lifted on a hoist for short-term service work such as tire rotation or oil changes. However, if the vehicle will be on the hoist for a prolonged period of time, support the axle with jack stands in order to take the tension off of the air springs.

Tuning the Air Pressure

Pressure determination comes down to three things — level vehicle, ride comfort, and stability.

1. **Level vehicle**

   If the vehicle's headlights are shining into the trees or the vehicle is leaning to one side, then it is not level. Raise the air pressure to correct either of these problems and level the vehicle.

2. **Ride comfort**

   If the vehicle has a rough or harsh ride it may be due to either too much pressure or not enough. Try different pressures to determine the best ride comfort. See Air Lift suggested driving air pressure.

3. **Stability**

   Stability translates into safety and should be the priority, meaning the driver may need to sacrifice a perfectly level and comfortable ride. Stability issues include roll control, bounce, dive during braking and sponginess. Tuning out these problems usually requires additional air pressure, strut damping, or both.

Checking for leaks

1. Inflate the air spring to 80 PSI.
2. Spray all connections and the inflation valves with a solution of 1/5 liquid dish soap and 4/5 water. Spot leaks easily by looking for bubbles in the soapy water.
3. After the test, deflate the springs to the minimum pressure required to restore the system to normal ride height.
4. Check the air pressure again after 24 hours. A 2 - 4 PSI loss after initial installation is normal. Retest for leaks if the loss is more than 5 lbs.

Fixing Leaks

1. If there is a problem with a swivel fitting:
   a. Check the air line connection by deflating the spring and removing the line by pulling the collar against the fitting and pulling firmly on the air line. Trim 1" off the end of the air line. Be sure the cut is clean and square (see fig. 34). Reinsert the air line into the push-to-connect fitting.
   b. Check the threaded connection by tightening the swivel fitting another ½ turn. If it still leaks, deflate the air spring, remove the fitting, and re-coat the threads with thread sealant. Reinstall by hand tightening as much as possible and then use a wrench for an additional two turns.
2. If the preceding steps have not resolved the problem, call Air Lift customer service at (800) 248-0892.

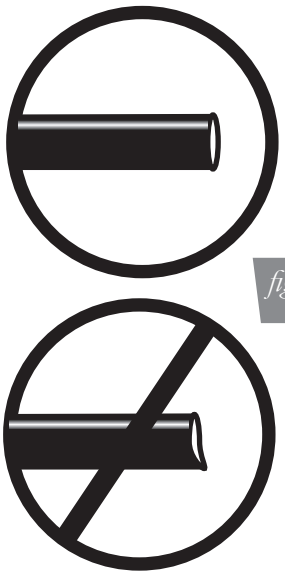


fig. 34

Warranty and Returns Policy

Air Lift Company warrants its performance products for one year to the original purchaser against manufacturing defects one year from the date of purchase when used on cars and trucks as specified under normal operating conditions. The warranty does not apply to products that have been improperly applied, improperly installed, or which have not been maintained in accordance with installation instructions furnished with all products. The consumer will be responsible for removing (labor charges) the defective product from the vehicle and returning it, transportation costs prepaid, to the dealer from which it was purchased or to Air Lift Company for verification.

Air Lift will repair or replace, at its option, defective products or components. A minimum $10.00 shipping and handling charge will apply to all warranty claims. Before returning any defective product, you must call Air Lift at (800) 248-0892 in the U.S. and Canada (elsewhere, (517) 322-2144) for a Returned Materials Authorization (RMA) number. Returns to Air Lift can be sent to: Air Lift Company • 2727 Snow Road • Lansing, MI • 48917.

Product failures resulting from abnormal use or misuse are excluded from this warranty. The loss of use of the product, loss of time, inconvenience, commercial loss or consequential damages is not covered. The consumer is responsible for installation/reinstallation (labor charges) of the product. Air Lift Company reserves the right to change the design of any product without assuming any obligation to modify any product previously manufactured.

This warranty gives you specific legal rights and you may also have other rights that may vary from state-to-state. Some states do not allow limitations on how long an implied warranty lasts or allow the exclusion or limitation of incidental or consequential damages. The above limitation or exclusion may not apply to you. There are no warranties, expressed or implied including any implied warranties of merchantability and fitness, which extend beyond this warranty period. There are no warranties that extend beyond the description on the face hereof. Seller disclaims the implied warranty of merchantability. (Dated proof of purchase required.)

Replacement Information

If you need replacement parts, contact the local dealer or call Air Lift customer service at (800) 248-0892. Most parts are immediately available and can be shipped the same day.

Contact Air Lift Company customer service at (800) 248-0892 first if:

- Parts are missing from the kit.
- Need technical assistance on installation or operation.
- Broken or defective parts in the kit.
- Wrong parts in the kit.
- Have a warranty claim or question.

Contact the retailer where the kit was purchased:

- If it is necessary to return or exchange the kit for any reason.
- If there is a problem with shipping if shipped from the retailer.
- If there is a problem with the price.

Contact Information

If you have any questions, comments or need technical assistance contact our customer service department by calling (800) 248-0892, Monday through Friday. For calls from outside the USA or Canada, our local number is (517) 322-2144. You may also contact customer service anytime by e-mail at techsupport@airliftperformance.com.

For inquiries by mail, our address is PO Box 80167, Lansing, MI 48908-0167. Our shipping address for returns is 2727 Snow Road, Lansing, MI 48917.

You may also contact our sales team anytime by e-mail at sales@airliftperformance.com or on the web at www.airliftperformance.com.

Notes

Need Help?

Contact our customer service department by calling (800) 248-0892, Monday through Friday. For calls from outside the USA or Canada, our local number is (517) 322-2144.

Thank you for purchasing Air Lift Performance products!

Air Lift Company • 2727 Snow Road • Lansing, MI 48917 or PO Box 80167 • Lansing, MI 48908-0167
Toll Free (800) 248-0892 • Local (517) 322-2144 • Fax (517) 322-0240 • www.airliftperformance.com

Printed in
the USA