



# Kits 75559, 75561 & 75562

*Universal Air Spring-Over-Strut*



## INSTALLATION GUIDE

**NOTE: THIS KIT IS SOLD  
WITHOUT A WARRANTY.**

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.*



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# Introduction

Air Lift Performance thanks you for purchasing the most complete, fully engineered high-performance universal air suspension. 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.



### WARNING

AFTER INSTALLATION, ENSURE ALL ORIGINAL EQUIPMENT VEHICLE SAFETY FEATURES ARE PROPERLY CALIBRATED BY A QUALIFIED TECHNICIAN. CHANGING VEHICLE HEIGHT MAY AFFECT FUNCTIONING OF SAFETY SENSORS AND CAMERAS.

# Installation Diagram

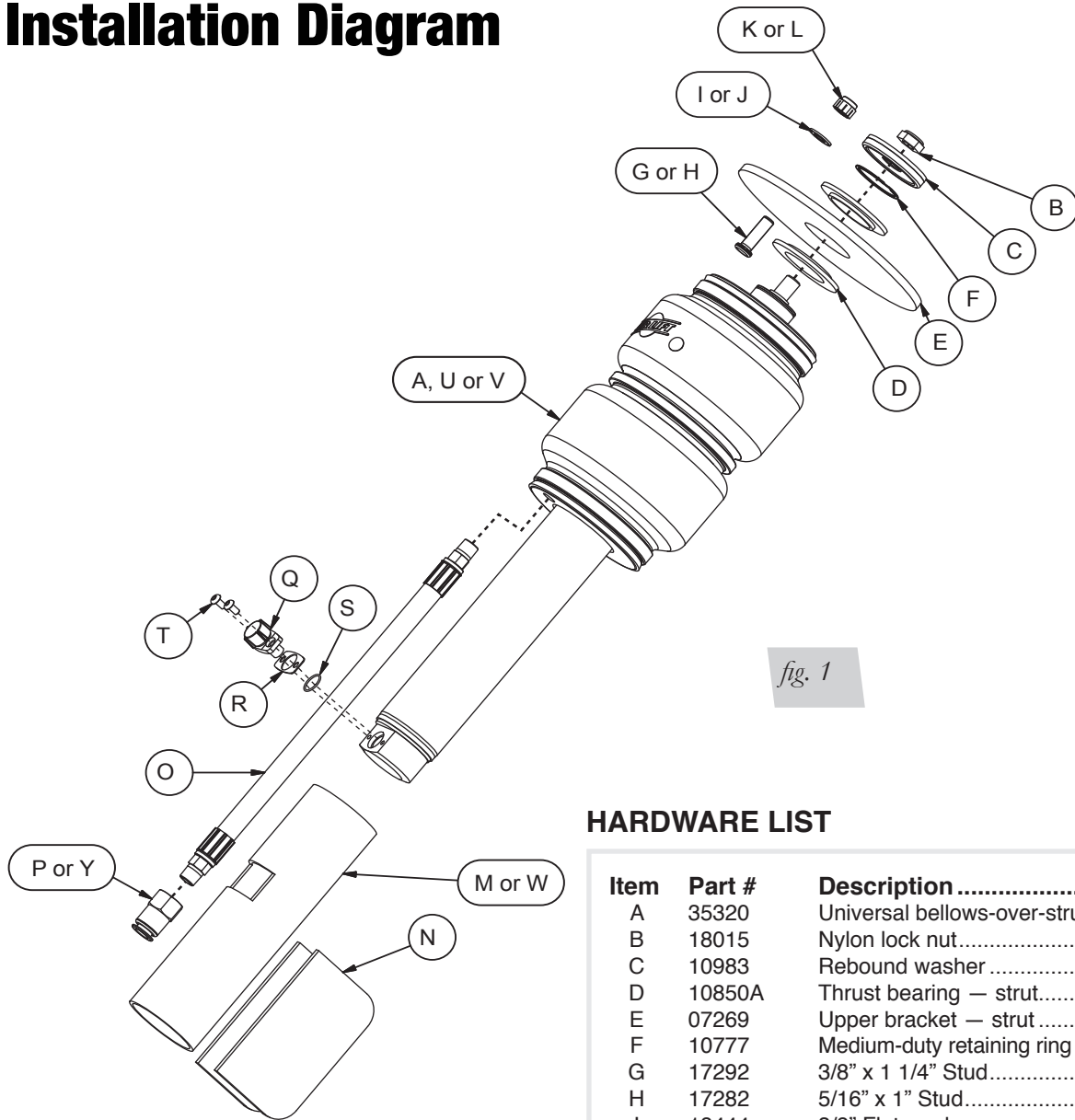


fig. 1

## HARDWARE LIST

Item	Part #	Description .....	Qty
A	35320	Universal bellows-over-strut — long .....	2
B	18015	Nylon lock nut.....	2
C	10983	Rebound washer .....	2
D	10850A	Thrust bearing — strut.....	4
E	07269	Upper bracket — strut .....	2
F	10777	Medium-duty retaining ring (WS-150) ....	2
G	17292	3/8" x 1 1/4" Stud.....	8
H	17282	5/16" x 1" Stud.....	8
I	18444	3/8" Flat washer.....	8
J	18433	5/16" Flat washer.....	8
K	18438	5/16"-18 Nylon lock nut .....	8
L	18435	3/8"-16 Nylon lock nut .....	8
M	35026-001	Tube — strut adapter .....	2
N	35368-002	Tab — spindle mounting.....	4
O	20997	Braided air line .....	2
P	21810	Union, 1/4"FNPT x 1/4"PTC DOT.....	2
Q	N/A	Adjuster knob .....	2
R	N/A	Gasket.....	2
S	N/A	O-ring .....	2
T	N/A	Bolt .....	4
U	35325	Universal bellows-over-strut — short ...	2
V	35219*	Univ. bellows-over-strut — high-damp ....	2
W	35262-001	Tube, adapter .....	2
X	35262-004	Tube, inner adapter .....	2
Y	21987	Union, 1/4"FNPT x 3/8"PTC "DOT" .....	2

\* Kit 75559 does not have adjustable damping.



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

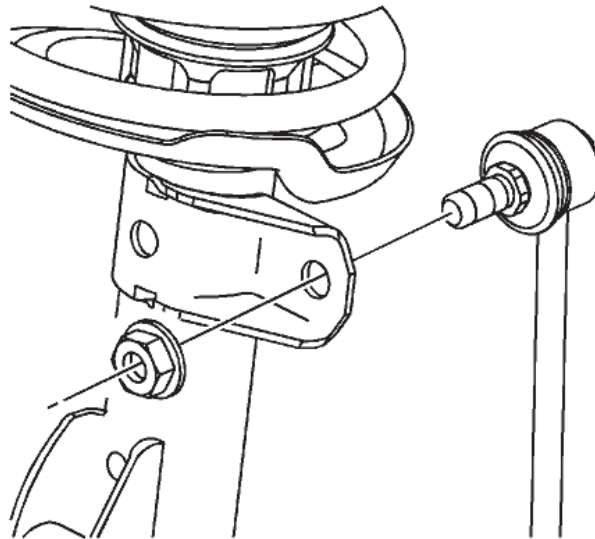
# Installing the Air Suspension

## PREPARING THE VEHICLE

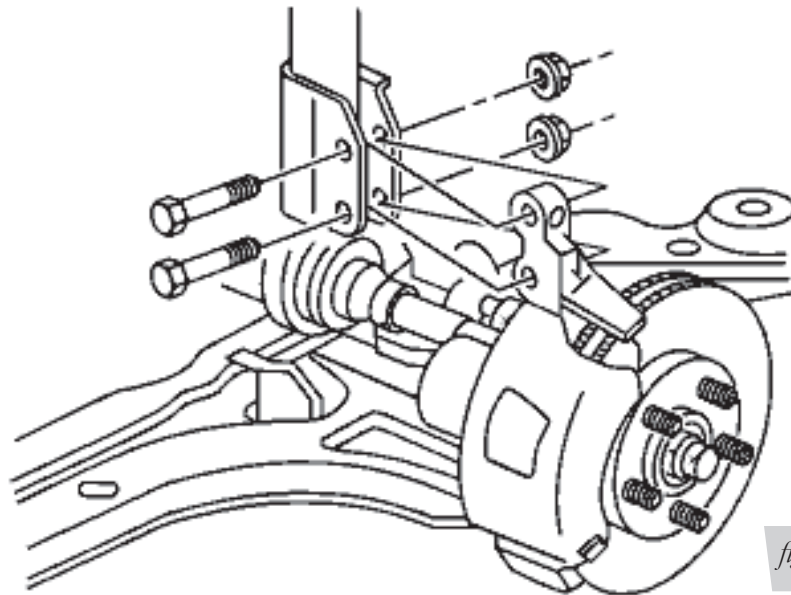
1. Elevate the vehicle and support the body with a hoist or jack stands.
2. Remove the wheels.

## STRUT REMOVAL

1. Support the lower control arm, brake, and axle/spindle assembly.
2. Detach brake hoses, wheel speed sensors, and the stabilizer link from the strut assembly (Fig. 2).

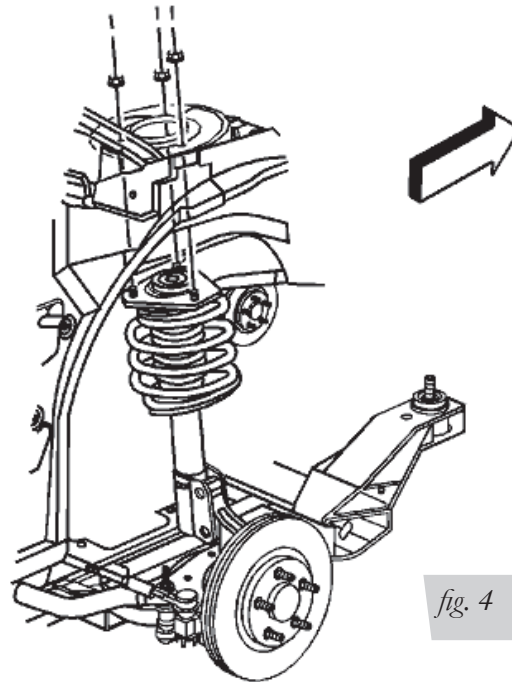


3. Remove the lower nuts and bolts from the lower spindle clevis (Fig. 3).



4. Lower the control arm, brake and axle/spindle assembly being careful not to pull against brake hoses or sensor wires.

5. Remove the upper strut mounting bolts from vehicle body. Remove strut from the vehicle (Fig. 4).

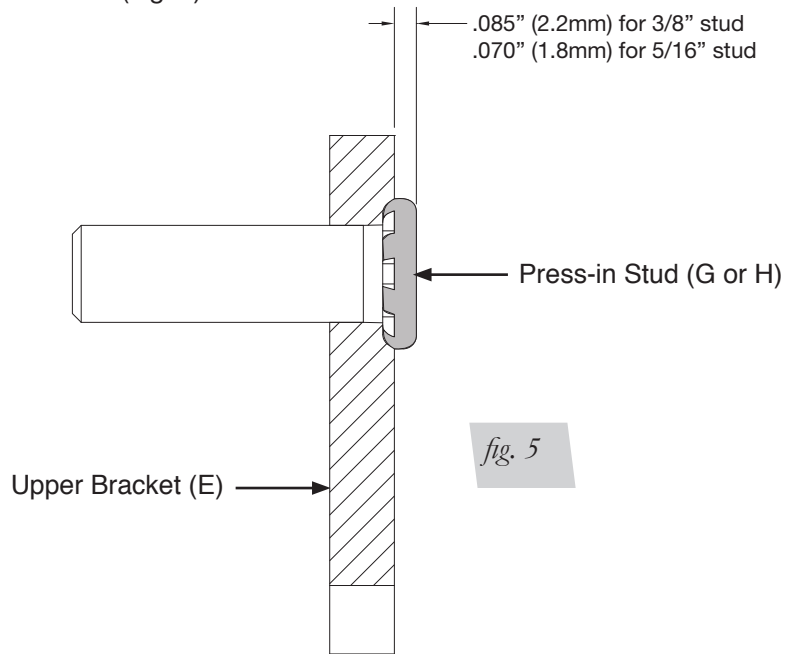


6. Using a spring compressor, (caution and attention to safety is required, spring will be under tension) securely mount the spring in the compressor and remove the nut from the top of the strut rod. Slowly release the compressor with attention to safety. Once the spring and strut are free from tension, remove the stock upper mount. Pay attention to the order in which parts remove from the strut.

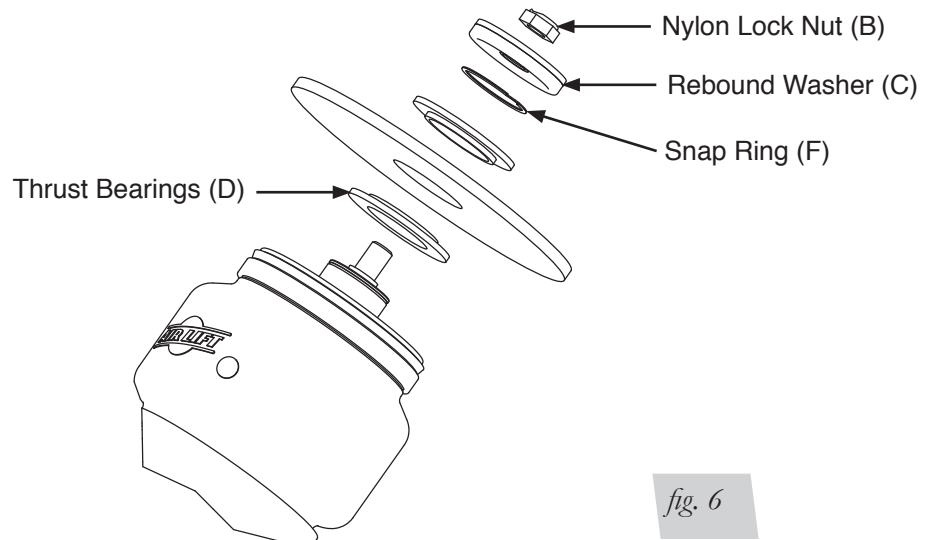
### DETERMINING MOUNTING HEIGHT

1. To determine the correct height of the new bellow-over-strut assembly, reassemble the previously removed strut without the coil spring. Reinstall the strut into its mounting location and fasten in place with the nuts and bolts. Reattach the brake hoses, sensor wires and stabilizer links.
2. Reinstall the wheels.
3. While looking for possible interference, slowly lower the vehicle down until the suspension rests on the bump stops. Determine if this height provides adequate clearance for things such as brake lines, ABS wires, control arms, stabilizer bar/link, tire/wheel clearances, camber, as well as bushing rotation, and ball joint articulation. Make height adjustments as necessary to your application.
4. Measure the desired drop height at the mounting points (top spindle bolt center and top of upper mounting bracket). Depending on the kit (75561 long stroke or 75562 short stroke) add 5 7/8" (150mm) or 4 3/8" (112mm) to this height (5 7/8" or 4 3/8" is the stroke of the bellow-over-strut that will be measured later). Record this height for later use in either figure 8a, 8b or 8c on the corresponding kit drawing.
5. Plan where the air port and adjuster knob of the bellow-over-strut would be best located at this point. Reference this to the orientation of the spindle tabs.
6. Repeat "Strut Removal" steps.

7. Using the stock upper mount as a bolt template, apply this pattern to the flat round upper bracket provided (E). Measure the bolt diameter needed. This kit provides either 5/16" or 3/8" press-in studs. These studs (G or H) are required because of "head clearance" to the air spring. Other bolts may cause rubbing of the bracket to the air spring, causing noise and reducing product life. Depending on the bolt size, drill either 5/16" or 3/8" holes on the bolt pattern. Using a press, support closely around the hole to prevent deflecting of the bracket surface during the press operation. To install the studs, press against the stud head until the "teeth" are flush with the bracket (Fig. 5).



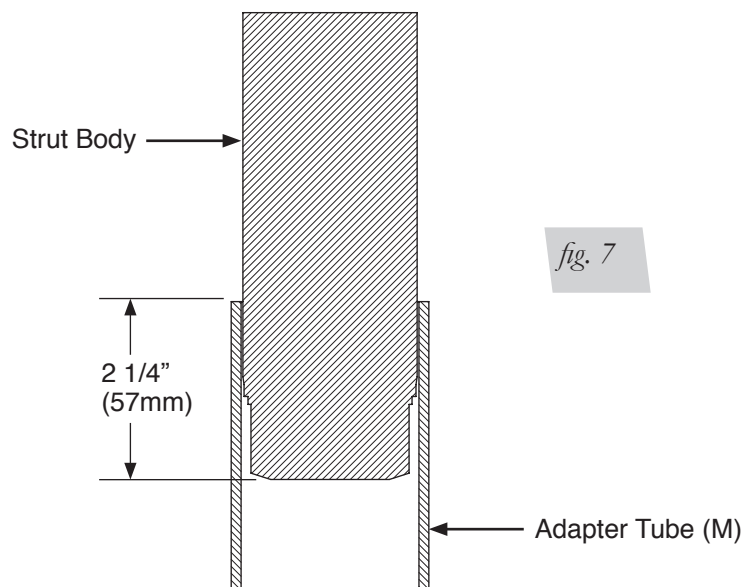
8. Assemble this bracket to the strut by removing the nylon lock nut (B) and rebound washer (C) then install the thrust bearings (D) onto the mount as shown in the figure below. Install the snap ring (F) into the groove. Reinstall the rebound washer (C), rubber side down and nylon lock nut (B) (Fig. 6).



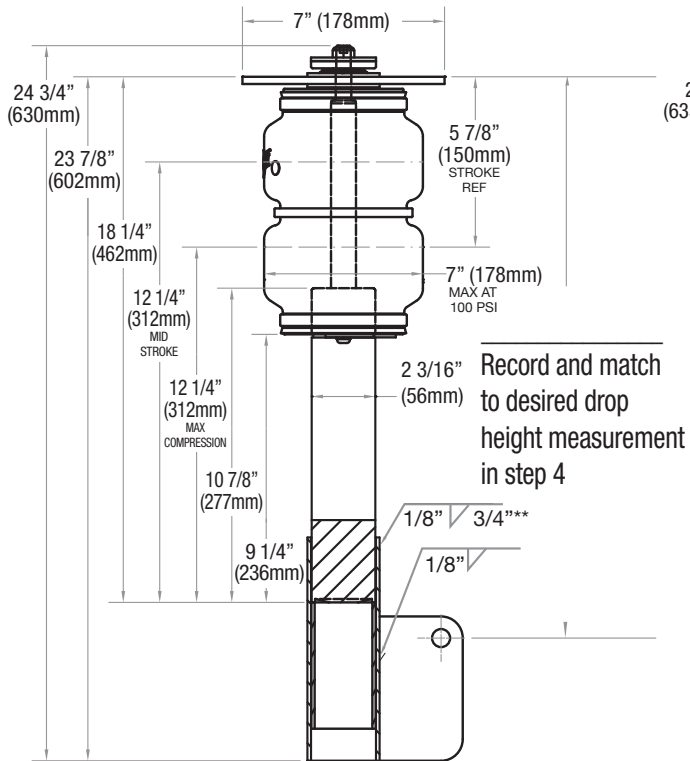
9. Replicate the hole pattern of the spindle mount to the supplied spindle tabs (N) while paying attention to hole diameter, hole center distance. If camber adjustment was necessary in step 3 of "Determining Mounting Height," plan this within the design of the spindle tabs. The width between the spindle tabs needs to be measured on the factory strut.



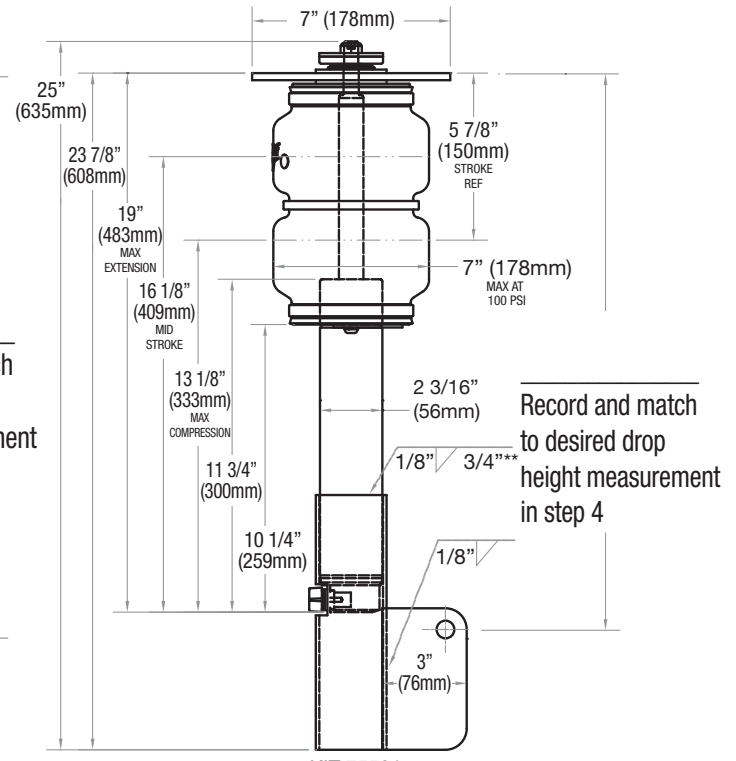
10. Depending on the recorded mounted height taken in step 4 of “Determining Mounting Height,” loosely assembly the adapter tube (M) and spindle tabs (N) to the strut for mock-up. Measure the distance (with the strut at max extension) from the top of the upper bracket to the spindle mounting holes. This should help you determine the correct length the adapter tube needs to be. Cut the adapter tube if necessary. Make sure the adjuster knob window gives adequate access to the adjuster. Modify the window if necessary.
11. Strut adapter tube (M) may need to be cut down to accept the spindle tab design and support the strut. The strut body needs to be within the tube by at least 2 1/4” (57mm) (Fig. 7).



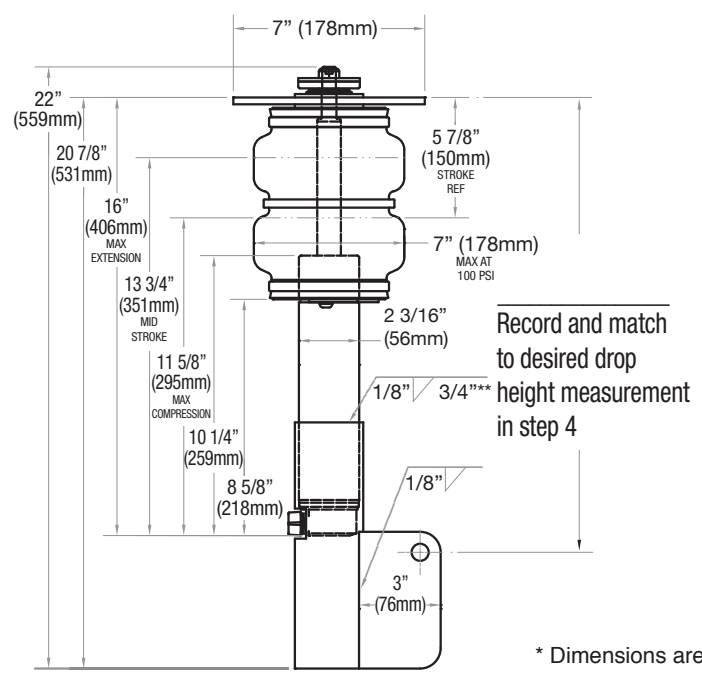
12. Tack weld the modified spindle tabs (N) to the adapter tube (M), then tack weld the adapter tube to the strut. Quench welds in water.
13. Create any other tabs that may be necessary including stabilizer bar tabs, brake line tabs, sensor wire tabs, etc.
14. Insert the assembly into the vehicles mounting points and trial fit. Verify that your design is correct before finish welding. Check for air spring clearance by measuring at the spring's maximum diameter (make sure to check clearances at intended ride height and full steering lock in both directions). Any rub or contact will cause premature wear of the assembly. If applicable, check stabilizer tab location, brake line location etc. Remove the strut assembly from vehicle when the design is verified.
15. When welding the adapter tube to the strut body, DO NOT weld continuously around the strut body! This action will overheat the internals of the strut and potentially render the strut ineffective. Weld the adapter tube to the strut in three equally spaced 3/4" (19mm) sections and quench in water immediately after. Fully weld the spindle tabs and immediately quench in water after each tab.
16. Either cover and protect the air spring assembly or remove it from the strut for welding/painting. The air spring can be removed by unthreading the nylon lock nut at the top of the strut and removing the rebound washer. Unbolt the two bolts from the lower end cap and remove the spring and collar.



*fig. 8a* KIT 75559  
HIGH DAMPING  
LONG STROKE



*fig. 8b* KIT 75561  
ADJUSTABLE DAMPING  
LONG STROKE



*fig. 8c* KIT 75562  
ADJUSTABLE DAMPING  
SHORT STROKE

\* Dimensions are provided for reference only

\*\* Make three 3/4" welds, evenly spaced around the circumference of the damper body

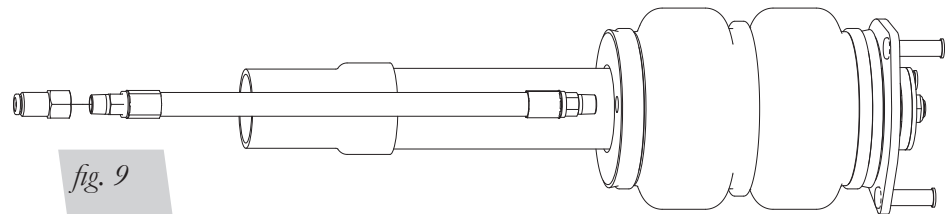
Weld symbol

## PAINTING

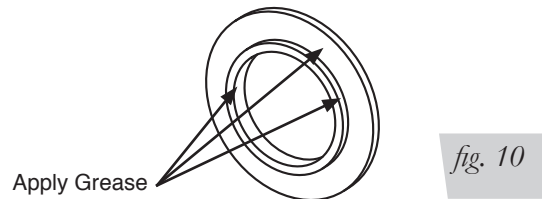
1. Remove the nylon lock nut (B), rebound washer (C), thrust bearings (D), retaining ring (F) and upper bracket (E). Mask the threads of the upper bracket studs. Cover the air spring and adjuster valve to prevent paint from applying to these surfaces.
2. Remove any sharp edges or weld spatter from the strut assembly.
3. Wipe assembly down with clean, oil-free rags to remove any possible contaminants.
4. Paint the strut and upper bracket. Do not get paint on the threads of the bracket or inside the adjuster valve. Allow adequate drying time before handling.

## BELLOW-OVER-STRUT INSTALL

1. Install the adjuster knob (Q) by applying the gasket (R) on the mating surface of the knob, and then apply the O-ring (S) around the adjuster plunger. Align the holes of the knob to the threads and bolt down with the two bolts (T).
2. Begin by installing the leader line into the air spring. Tighten the appropriate fitting to the air line (1 3/4 turns beyond hand-tight). Tighten the leader line into the air spring 1 3/4 turns beyond hand-tight (Fig. D.xx). (Fig. 9).



3. Apply a thin layer of grease to the mating surfaces of the thrust bearings (D) (Fig. 10). Attach the upper bracket to the air spring.



4. Reinstall the air spring if previously removed.
5. Install into the vehicle using the supplied washers (I or J) and nuts (K or L). The 5/16" nuts are to be torqued to 22Nm (16 lb.-ft.). The 3/8" nuts are to be torqued to 37Nm (27 lb.-ft.).
6. Reinstall the lower spindle clevis using the factory removed bolts. Torque to manufacturers specification.

## ROUTING THE AIR LINES

1. 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 and steering components.
2. Routing should allow for the suspension to extend and steer without kinking, 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.



### WARNING

AFTER INSTALLATION, ENSURE ALL ORIGINAL EQUIPMENT VEHICLE SAFETY FEATURES ARE PROPERLY CALIBRATED BY A QUALIFIED TECHNICIAN. CHANGING VEHICLE HEIGHT MAY AFFECT FUNCTIONING OF SAFETY SENSORS AND CAMERAS.

# Tips for Installing Air Lines

## CUTTING AIR LINES

When cutting air lines, use a sharp knife or a hose cutter and make clean, square cuts (Fig. 11). Do not use scissors or wire cutters because these tools will deform the air line, causing it to leak around fittings. Do not cut the lines at an angle.

The minimum bend radius for 1/4" air line is 1" (25mm). The minimum bend radius for 3/8" air line is 1 1/2" (38mm). Do not bend the air line less than the minimum bend radius or side load the fitting connections. Air lines are to be installed straight into fittings.

Inspect the air line for scratches that run lengthwise prior to installation. Contact Air Lift customer service at **(800) 248-0892** if the air line is damaged.



To watch a video demonstrating proper air line cutting, go to [air-lift.co/cuttingairline](http://air-lift.co/cuttingairline)



fig. 11

## PUSH-TO-CONNECT (PTC) FITTINGS

Air lines should be pushed into the push-to-connect fittings firmly, with a slight side-to-side rotational twist. Check the connection by pulling on each line to verify a robust connection.

### NOTE

To release the air line from the connection (Fig. 12), first release all air from the system. Push in on the air line (step 1), push the collar in (step 2), and with the collar depressed, pull the air line out of the fitting (step 3).

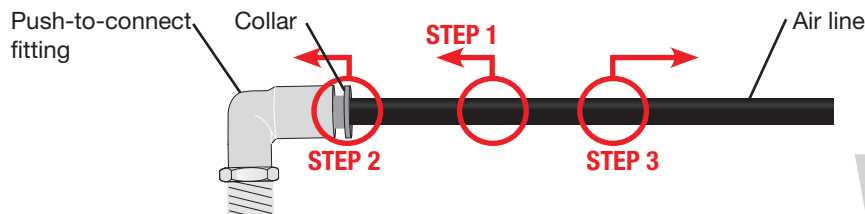


fig. 12

## CHECKING FOR LEAKS

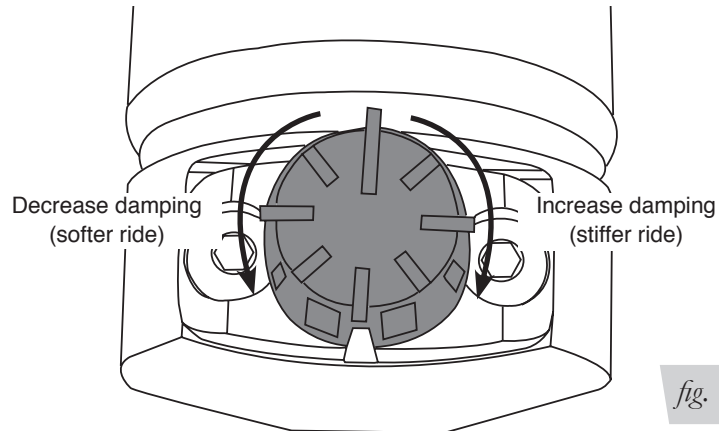
1. Inflate the air spring to 75-90 PSI (5.2-6.2BAR).
2. Spray all connections with a solution of liquid dish soap and water. Spot leaks easily by looking for bubbles in the soapy water.
3. After the test, deflate the springs to the minimum pressure required to restore the system to normal ride height.
4. Check the air pressure again after 24 hours. A 2-4 PSI (.14-.28BAR) loss after initial installation is normal. Retest for leaks if the loss is more than 5 PSI (.34BAR).

## FIXING LEAKS

1. If there is a problem with the push-to-connect fitting, remove the air line as described above. Trim 1" (25mm) off the end of the air line. Be sure the cut is clean and square (see Fig. 11).
2. Reinsert the air line into the push-to-connect fitting as described above.

## Before Operating

1. Some struts for this vehicle come with a nine-position damping dial for added adjustability (Fig. 13). If not, proceed to 2. Before driving your vehicle, set the new struts to their highest setting by turning the black dial on the shaft of the strut as far as it will go to the right (position 9).



2. Next, completely deflate and reinflate the air bags 2-3 times. This procedure will purge any trapped air in the dampers and allow for maximum performance. For ride performance and the most versatility, Air Lift Performance recommends setting the strut dial (if equipped) to at least position 6 or higher.



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

## CHECK FOR BINDING

1. Inflate and deflate the system (do not exceed 125 PSI [8.6BAR]) 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 75-90 PSI (5.2-6.2BAR) and check all connections for leaks.

 **CAUTION**

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

Suggested Driving Air Pressure	Maximum Air Pressure
<b>45-75 PSI (3.1-5.2BAR)</b>	<b>125 PSI (8.6BAR)</b>
FAILURE TO MAINTAIN ADEQUATE MINIMUM PRESSURE (OR PRESSURE PROPORTIONAL TO LOAD) MAY RESULT IN EXCESSIVE BOTTOMING OUT.	

*Table 1*

## ALIGNING THE VEHICLE

1. Set the vehicle to the height at which it will most often be driven.
2. If the ride height is lower than stock, Air Lift Performance recommends 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 from its mount. This will help re-orient the bushing at its new position based on the chosen ride height.*

3. Get a shop alignment of the vehicle at the new chosen ride height.

## 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) 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** — Recheck all bolts for proper torque.
- Road** — Inflate the springs to recommended driving pressures. 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.

## POST-INSTALLATION CHECKLIST

- Overnight leak down test** — Recheck air pressure 24 hours after installation and driving of the vehicle. If the pressure has dropped more than 5 PSI (.34BAR), there is a leak that must be fixed.
- Air pressure requirements** — It is important to understand the air pressure requirements of the air spring system. 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 (800km) test** — Recheck the air spring system after 30 days or 500 miles (800km), 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.

# Use, Maintenance and Servicing

1. An Air Lift air management system is strongly recommended for this product, but it is possible to operate without one. The air lines can be routed to Schrader valves for use with a separate air compressor. Air lines and Schrader valves are not included with Air Lift Performance kits and would need to be purchased separately. To learn more about Air Lift air management systems visit [air-lift.co/productlines](http://air-lift.co/productlines).
2. Check the air pressure before driving.

## WARNING

BEFORE SERVICING THE VEHICLE, MAKE SURE TO TURN OFF “RISE ON START” AND “PRESET MAINTAIN.” THIS WILL ELIMINATE ANY UNINTENDED SUSPENSION CYCLING IF YOU NEED TO TURN THE KEY ON IN THE VEHICLE FOR ANY REASON.

## TUNING THE AIR PRESSURE

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

### 1. Level vehicle

Depending on load, it is possible one side will need more pressure than the other to level the vehicle.

### 2. Ride comfort

If the vehicle has a harsh ride, it may be due to either too much pressure or not enough causing frequent bottoming. Also, riding the vehicle at the top, or close to the top of the available stroke will cause an uncomfortable ride due to a lack of rebound travel. This situation should be avoided for driving any significant distance. Try different pressures to determine the best ride comfort. See the Air Lift suggested driving air pressure for this vehicle (Table 1).

### 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, damping or both.



# Troubleshooting Guide

PROBLEM	CAUSE	SOLUTION
Air spring won't maintain pressure.	Leak at fitting, air line not cut properly or damage to air line during installation.	Find location of leak by spraying listed components with soapy water solution and look for bubbles. Tighten air fitting, re-cut air line or replace damaged components.
	Leak at lower O-ring on damper if air spring is over the damper.	Spray bottom of air spring with soapy water solution and look for bubbles. Contact Air Lift customer service at <b>(800) 248-0892</b> to determine if component should be replaced.
Knocking noise when hitting bumps.	Loose suspension component such as locking collar on damper.	Tighten lower locking collar with significant force, check and tighten suspension components to factory specs at desired ride height.
	Driving vehicle too close to maximum extension.	Check current ride height and compare to maximum height. If there is less than 1" (25mm) difference, reduce air pressure to lower ride height.
		Lengthen strut or shock to increase available up travel.
Suspension bottoms out.	Air pressure is too low, causing air springs to bottom out.	Raise air pressure.
The ride is too bouncy.	Air pressure is too high, causing air springs to be too stiff.	Lower air pressure and adjust damper length if necessary to achieve proper ride height.
	Damping is inadequate.	Increase damping with adjusters.
The ride is too soft or floaty.	Damping is inadequate.	
The ride is too harsh.	Excessive damping.	Reduce damping with adjusters.

# Notes

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# Replacement Part Information

If replacement parts are needed, 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

<b>Mailing address</b>	P.O. Box 80167 Lansing, MI 48908-0167
<b>Shipping address for returns</b>	2727 Snow Road Lansing, MI 48917
<b>Phone</b>	Toll free: (800) 248-0892 International: (517) 322-2144
<b>Email</b>	service@airliftcompany.com
<b>Web address</b>	www.airliftcompany.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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