



Air Lift Performance 3H™/3P™

P A T E N T E D



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.

Download the App for the Best #lifeonair

The Air Lift Performance 3 mobile app allows for full integration of your new 3H/3P control system on compatible mobile devices. Simply download the FREE app to not only take full control of your system, but to always have the latest system firmware with updates directly from the app.

For iPhone: air-lift.co/3app

For Android: air-lift.co/android

Users can also search “Air Lift Performance” in either the Apple App Store or Google Play.

See 3H/3P User Guide for instructions on pairing your device.





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Component List

Refer to Installation diagram on pages 16-17 for item illustrations.

NOTE

Some kits include parts in addition to or different from what is listed here. Those kits include an Installation Manual insert with a parts list for that kit.

HARDWARE CONTENT

Item	Part #	Description	Qty	Item	Part #	Description	Qty
A	26498-009	Harn – USB Display Cable.....	1	L	24561	ATM Fuse Tap Adapter	1
B	26498-006	Harn – Main Harness	1	M	24542	ATO/ATC Fuse Tap Adapter.....	1
C	27050	3H/3P Display	1	N	10466	Zip Tie 8” Black.....	20
D	24503	Fuse ATM 3A	1	O	17103	Screw 5/16”-18 x 12” Zinc	2
E	24501	Fuse Holder ATM	1	P	18542	Flat Washer 5/16” Stainless.....	2
F	24500	Fuse Holder ATO/ATC.....	1	Q	17263	Screw 1/4”-14 x 1” Self-Tapping Zinc .	1
G	24661	Heat Shrinkable Butt Splice 14-16GA... 1		R	17494	Screw 1/4”-14 x 2” Self-Tapping Zinc .2	
H	24752	Heat Shrinkable Butt Splice 10-12GA...3		S	10530	Hose Cutter Kit	1
I	24748	Ring Terminal 3/8” 10-12GA.....	2	T	24504	Fuse Low Profile Mini 3A	1
J	24524	Ins. Female .187” Term. 14-16GA	1	U	24505	Low Profile Mini Fuse Tap.....	1
K	24594	Ins. Female .250” Term. 14-16GA	1	V	24547	Fuse ATO/ATC 30A.....	1

MANIFOLD CONTENT

3/8” Manifold (27685, 27695)			
Item	Part #	Description	Qty
AE	72614	Manifold ECU 3/8”	1
AF	20947	Air line 3/8”	60 ft.

1/4” Manifold (27680, 27690)			
Item	Part #	Description	Qty
AE	72615	Manifold ECU 1/4”	1
AF	20946	Air Line 1/4”	60 ft.

FILTER CONTENT

Item	Part #	Description	Qty
AI	11217	Clamp P, 1.5” Cushion.....	1
AJ	11517	Miniature Filter	1
AK	17173	Screw #14-1/4 x 3/4” self-tapping	1
AL	20937	Hose 1/4” Dia. Poly	5 ft.
AM	22677	Tee Fitting, 1/4”.....	1
AN	21048	Pressure-Relief Valve.....	1

COMPRESSOR (OPTIONAL)

Item	Part #	Description	Qty
AG	16444	Compressor.....	1

TANK (OPTIONAL)

Item	Part #	Description	Qty
AH	Varies	Tank	1

HEIGHT CONTENT (OPTIONAL INCLUDED IN 3H SYSTEMS ONLY)

Item	Part #	Description	Qty	Item	Part #	Description	Qty
W	34977	HPACK- Height Sensor Linkage.....	4	AA	26953-020	Harn-20FT FL Height Sensor*	1
X	26894	Height Sensor Assembly	4	AB	26953-021	Harn-20FT FR Height Sensor*	1
Y	26953-012	Harn-12FT RL Height Sensor*	1	AC	10466	Zip Tie 8” Black	20
Z	26953-013	Harn-12FT RR Height Sensor*	1	AD	17497	Screw 10-16 x 1 3/4” Self Tapping Zinc ..	8
				AO	11998	Height Sensor Spacer	4

* FL = Front left corner RL = Rear left corner
FR = Front right corner RR = Rear right corner

Introduction

The purpose of this publication is to assist with the installation, maintenance and troubleshooting of Air Lift Performance® 3H/3P.

Read and understand the entire installation guide before beginning installation or performing any maintenance, service or repair. The information includes step-by-step installation information, installation templates and a troubleshooting guide.

Air Lift Company reserves the right to make changes and improvements to its Air Lift Performance products and publications at any time.

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.



WARNING

IF THE PRESSURE-BASED SYSTEM IS ALREADY INSTALLED BEFORE HEIGHT SENSOR INSTALLATION, MAKE SURE TO DISABLE RISE ON START AND PRESET MAINTAIN. THIS WILL PLACE THE SYSTEM INTO MANUAL MODE AND PREVENT UNINTENDED ADJUSTMENTS. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN EQUIPMENT DAMAGE, BODILY HARM OR DEATH (SEE USER GUIDE).



WARNING

FLOOR JACKS CAN BE DANGEROUS. WHENEVER USING A FLOOR JACK, MAKE SURE IT IS RATED FOR THE LOAD IT IS LIFTING. CHECK THE VEHICLE OWNER'S MANUAL FOR INFORMATION ABOUT WHERE TO PLACE THE JACK. BEFORE RAISING THE VEHICLE, PLACE WHEEL CHOCKS IN FRONT AND BEHIND THE WHEELS TO PREVENT THE VEHICLE FROM ROLLING. ALWAYS USE JACK STANDS TO SUPPORT THE VEHICLE. NEVER GET UNDER OR PLACE ANY BODY PARTS UNDER A VEHICLE THAT IS SOLELY SUPPORTED BY THE JACK.



CAUTION

REMOVE ALL FUSES WHEN JUMP-STARTING OR WELDING ON THE VEHICLE. FAILURE TO DO SO COULD DAMAGE THE MANIFOLD.



Installing Air Lift Performance 3H/3P Kit

LAYOUT OVERVIEW

NOTE

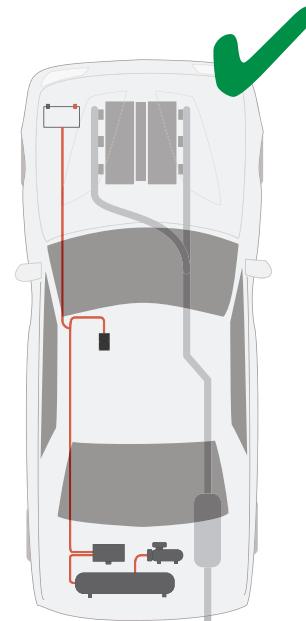
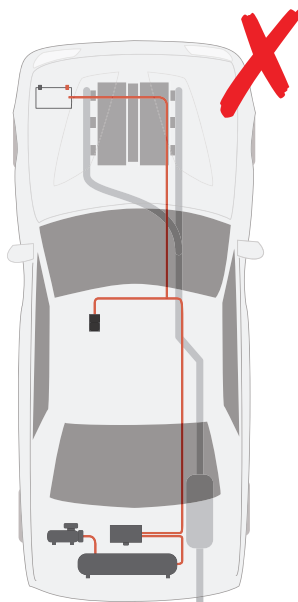
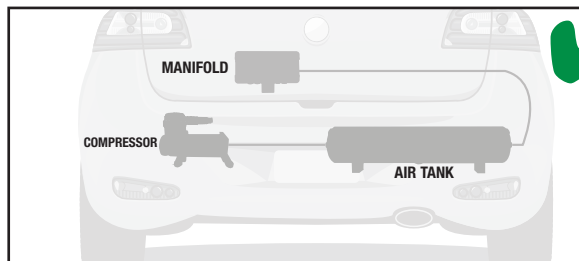
For a complete installation diagram, see pages 16-17. See page 2 for a complete parts list.

Layout

1. Plan component location first. Ideally, the manifold should be located at a level above the compressor and tank to avoid compressor ingested water from gathering in the manifold (fig. 1). This is most important for vehicles operated in below-freezing climates.
2. Prior to mounting components, check to make sure:
 - the electrical harness connections will reach the manifold and compressor.
 - the compressor leader hose will reach the tank.
 - the air lines will route cleanly through the vehicle without kinking or bending.

NOTE

Be sure to install all components as far as possible from any heat sources (figs. 2 and 3). Plan and prepare harness and air line routing thru the vehicle. Eliminate all sharp edges that could chafe. Use rubber grommets when passing through compartment walls.



TANK (OPTIONAL)

Tank pre-assembly

1. Determine tank location and orientation prior to installing fittings.
2. Before installing fittings, apply thread sealant around the male threads, leaving the first two threads uncovered.

CAUTION

NEVER BACK OFF AN INSTALLED PIPE FITTING TO ACHIEVE PROPER ALIGNMENT. LOOSENING INSTALLED PIPE FITTINGS WILL CORRUPT THE SEAL AND CONTRIBUTE TO LEAKAGE AND FAILURE.

3. Install the drain/fill PTC fitting in the tank's lowermost threaded port.
4. Choose a middle tank threaded port for manifold/filter air line.

Tank install

1. Using the tank's feet as a template, drill holes for hardware assembly.
2. Secure the tank using the supplied hardware.
3. Route the drain/fill air line with the Schrader valve (included in the tank hardware pack) preferably outside the vehicle (fig. 4).
4. Install tee fitting and pressure-relief valve in-line to the drain fill line. Locate the pressure-relief valve inside the vehicle, if possible.

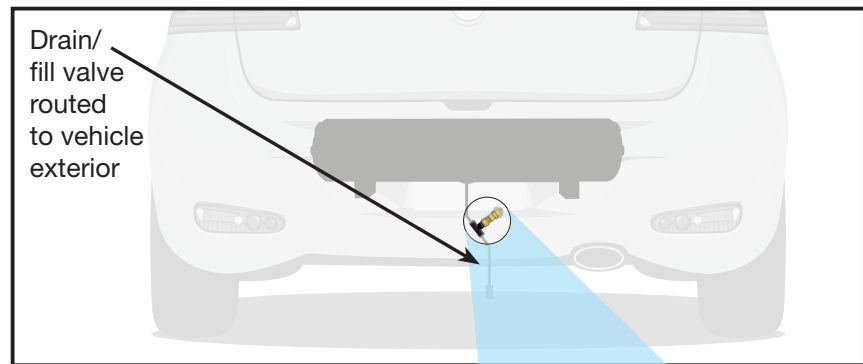
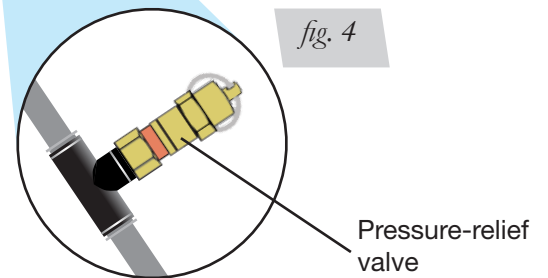


fig. 4

The pressure-relief valve should be mounted at an angle above horizontal. Ideally, it would be mounted with the valve pointed straight up, but any angle above horizontal is acceptable. This will stop water from collecting in the valve.



CAUTION

INSTALLATION OF THE PRESSURE-RELIEF VALVE IS IMPORTANT TO ENSURE THE SYSTEM IS NOT OVER-PRESSURIZED AS A RESULT OF A COMPRESSOR OR RELAY FAILURE.

Torque Specifications		
Fitting Size	Turns Past Finger Tight	Torque lb./ft.
1/8" NPT	1.5 - 3.0	12
1/4" NPT	1.5 - 3.0	25
3/8" NPT	1.5 - 3.0	40
1/2" NPT	1.5 - 3.0	54

Table 1

FILTER

CAUTION

AIR COMPRESSORS TAKE IN MOISTURE (HUMIDITY) FROM THE OUTSIDE AIR SOURCE, AND WILL DEPOSIT THAT MOISTURE IN THE AIR TANK. THE AIR LIFT PERFORMANCE 3H/3P SYSTEM INCLUDES A FILTER THAT WILL GREATLY REDUCE THE POTENTIAL FOR MOISTURE TO ENTER THE MANIFOLD. HOWEVER, TANKS MUST BE REGULARLY PURGED TO ELIMINATE THE POSSIBILITY OF WATER ENTERING THE MANIFOLD. BE SURE TO PROVIDE EASY ACCESS TO DRAIN/ FILL VALVE (PREFERABLY OUTSIDE THE VEHICLE). IF USING AN ENGINE-DRIVEN COMPRESSOR, AN ADDITIONAL COALESCING FILTER MUST BE USED. OTHERWISE THE LIFE OF THE PROVIDED FILTER MAY BE REDUCED DUE TO THE INCREASED POTENTIAL FOR OIL BEING INTRODUCED INTO THE SYSTEM.

1. Mount the filter to the tank using the appropriate fittings (fig. 5).



fig. 5

2. Ensure the filter is mounted in a vertical position. Do not install filter inverted or angled (fig. 6).



fig. 6

3. The arrow on the filter indicates flow direction and must point toward the manifold (fig. 7).

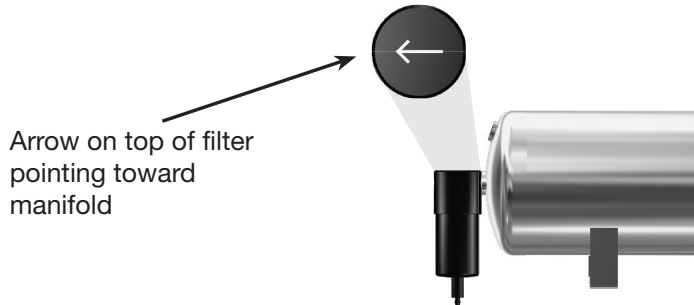


fig. 7

4. If choosing not to mount the filter to the tank, run necessary hose from tank to the filter and filter to the manifold using the appropriate fittings.
5. Run the hose from bottom of filter to location where water will drain (fig. 8).

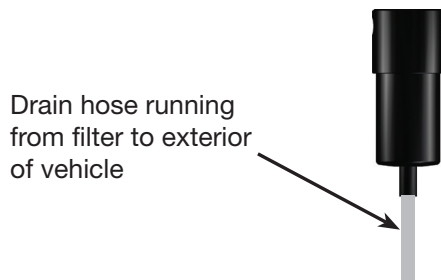


fig. 8

INSTALL HARNESS

The harness can be routed inside or underneath the vehicle. In either case, ensure all parts of the harness are protected from abrasive edges and heat sources.

 **CAUTION**

DISCONNECT THE BATTERY GROUND BEFORE INSTALLING THE SYSTEM.

 **CAUTION**

REMOVE ALL FUSES WHEN JUMP-STARTING OR WELDING ON THE VEHICLE. FAILURE TO DO SO COULD DAMAGE THE MANIFOLD.

1. Manifold/relay/compressor connections

- Attach the manifold connector; it will “click” into place once fully seated.
- Mount the compressor relay using supplied hardware.
- Cut off the spade and eyelet from the compressor power (red) and ground (black) wires.
- Attach the compressor (red) wire to the main harness compressor power (red/white) wire using the supplied heat-shrinkable butt splice.
- Attach the compressor (black) wire to the main harness compressor ground (black) wire using the supplied heat-shrinkable butt splice.

2. Battery/ignition connections

- Route battery power (red) and ground (black) wires of the main harness to the battery.
- Attach the battery power (red) wire to the red wire of the fuse holder using supplied heat shrinkable butt splice.
- Attach supplied ring terminal to the other end of the fuse holder and fasten to the positive battery (+) terminal or stud.
- Install a 30A fuse into this fuse holder and close the cap.
- Attach the other ring terminal to the ground (black) wire and fasten to the negative battery (-) terminal or stud.
- Route the ignition (pink) wire to a key-switched ignition source that remains on during cranking. Examples include: ECU, fuel pump.

NOTE

Do not select an accessory source. With the system fully installed, if the display shuts off while starting the vehicle, this is not a true ignition source.

- Attach the ignition (pink) wire to the black wire of the fuse holder.
- Attach a faston terminal to the other end of the fuse holder and attach to a selected ignition source using a supplied fuse tap.
- Install a 3A fuse into this fuse holder and close the cap.

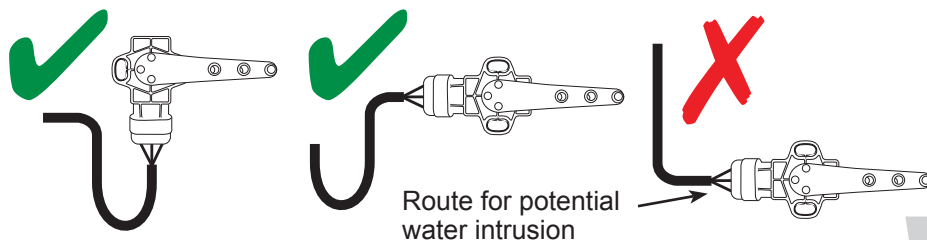
NOTE

The supplied harness is only capable of powering a single compressor. If installing dual compressors, a second dedicated power wire is required. Contact an AIR LIFT PERFORMANCE retailer to purchase the optional second compressor harness kit (part number: 27703).

3. Display
 - Route the main harness display cable as desired to the preferred operating location.
 - Attach the 4' display cable to the main harness cable, and to the back of the display.
4. Height sensor harness (optional)
 - Route and attach each height sensor harness to the height sensor locations based on the heat shrink labels for the appropriate corners of the vehicle (FL, FR, RL, RR)*.
 - Connect the main harness height sensor drops to the appropriate height sensor harness feeding the corresponding corners of the vehicle (match FL, FR, RL, RR)*.
5. Reconnect the battery once the system is completely installed.

NOTE

Keep proper drip loops and use proper bend radius for wire bundles (fig. 9).

*fig. 9*

* FL = Front left corner
FR = Front right corner
RL = Rear left corner
RR = Rear right corner

INSTALLING AIR LINES

1. Route and attach the air lines from the manifold to the air springs and from the manifold to the filter, as well as from the filter to the tank, if not mounting filter directly to tank.
 - Route air lines free from abrasive edges and heat sources.
2. Attach air lines to the appropriate manifold ports for the air springs, filter/tank and exhaust.

NOTE

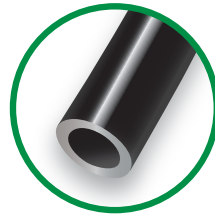
Air lines should be pushed in firmly, with a slight back-and-forth rotational twist – check the connection by pulling on each line to verify a robust connection.

3. Exhaust port can be left open, or routed to preferred exhaust location. Routing exhaust outside of vehicle will eliminate any possibility of moisture being discharged from the port to surrounding area.

NOTE

Use the included hose cutter (Part number: 10530). Cut all hose ends as squarely and as smooth as possible (fig. 10).

GOOD CUT



POOR CUT



fig. 10

NOTE

To release the air line from the connection (fig. 11), first release all air from the system. Push on the line (step 1), depressing the ring towards the fitting (step 2), and then pull the hose out of the fitting (step 3).

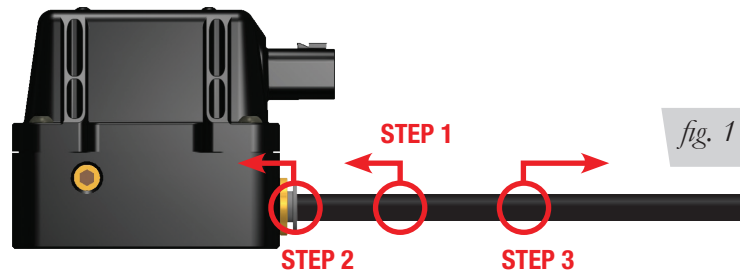


fig. 11

HELPFUL AIR LINE TIPS

4. Minimum hose bend radius
 - 3/8" hose = 1 1/2" hose bend radius.
 - 1/4" hose = 1" hose bend radius.
5. Hose to fitting
 - No side loading on fitting from hose.
 - Hose straight for 1" before bending.
6. Hose cutting
 - Cut hose perpendicular to hose length.
 - Inspect hose for scratches that run lengthwise on hose prior to insertion.
 - Use the included hose cutter.

MANIFOLD

CAUTION

BEST PRACTICE IS TO LOCATE THE MANIFOLD UNIT INSIDE THE VEHICLE. IF EXTERNAL MOUNTING IS DESIRED, THE MANIFOLD SHOULD BE LOCATED IN AN AREA SHIELDED FROM DIRECT WATER SPRAY FROM TIRES OR CAR WASHES.

1. Position the manifold in desired location. Make sure the manifold mounting surface is flat.

NOTE

When mounting the manifold, do so either horizontally or vertically, with ports and connector facing toward the ground. Do not mount the manifold upside down. Proper manifold mounting will help prevent water from settling in areas sensitive to freezing (fig. 12).

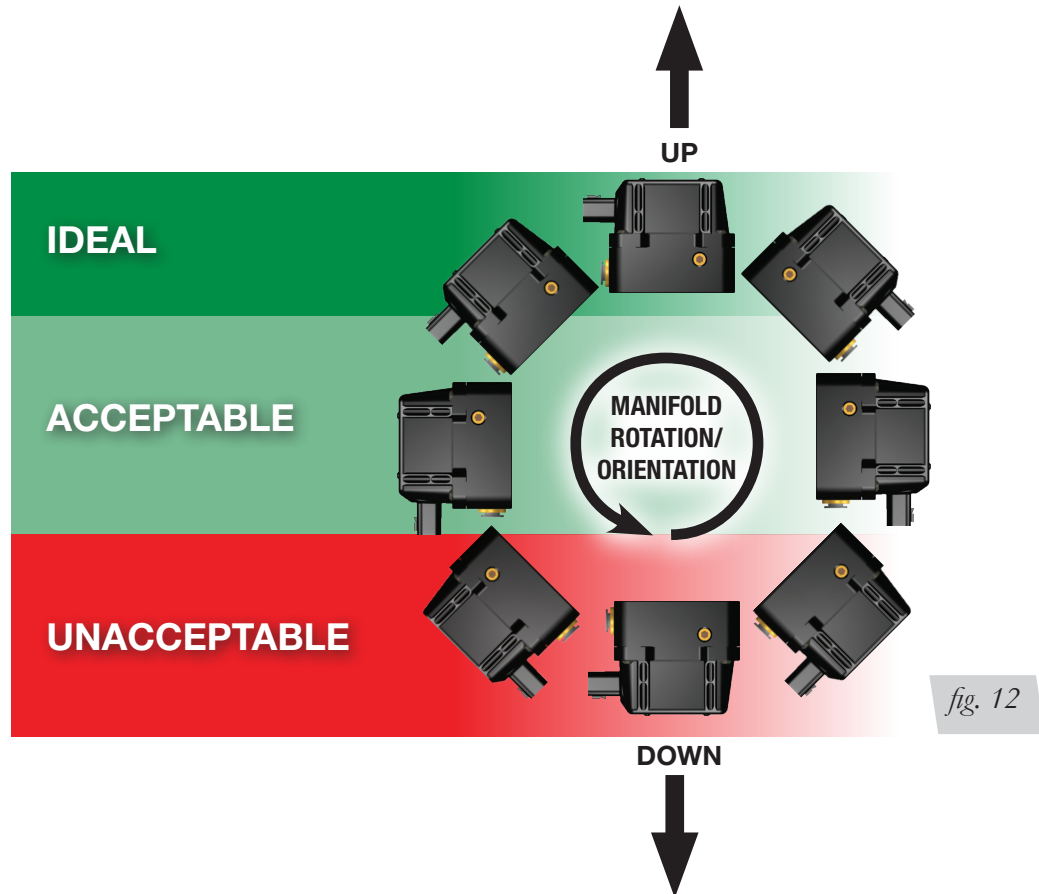


fig. 12

2. Fasten the manifold using the supplied hardware. If the mounting surface is not flat, add washers or a spacer to lift the manifold up over surface irregularities (fig. 13). In addition to the provided self-tapping screws, the manifold mounting holes are threaded and can be secured with 5/16"-18 bolts (also supplied).

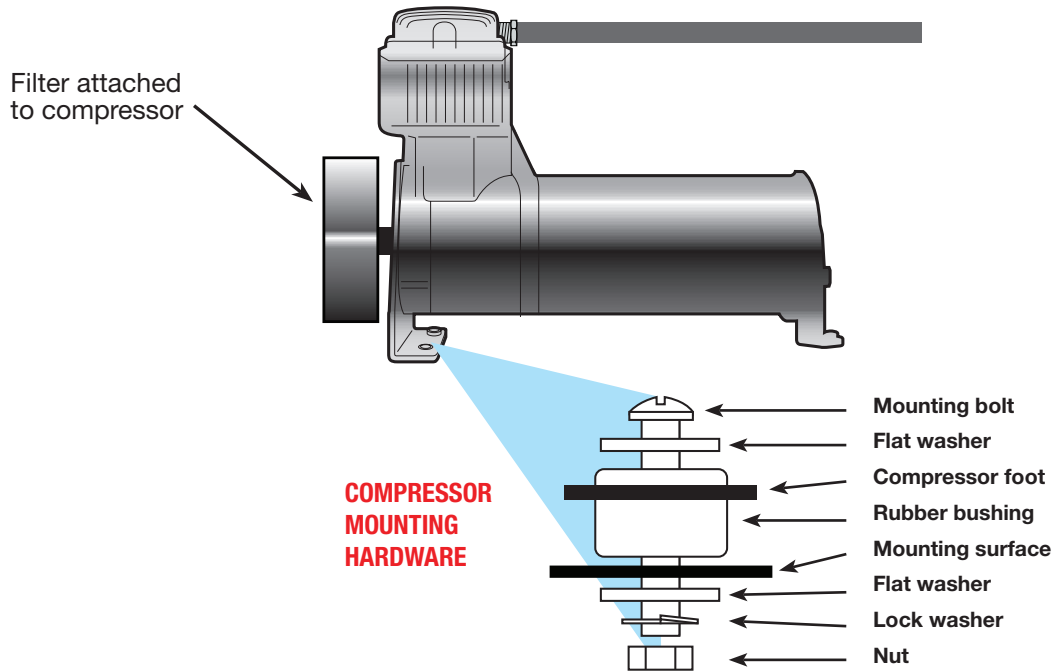


fig. 13

3. A manifold mounting template can be found on page 27.

COMPRESSOR (OPTIONAL)

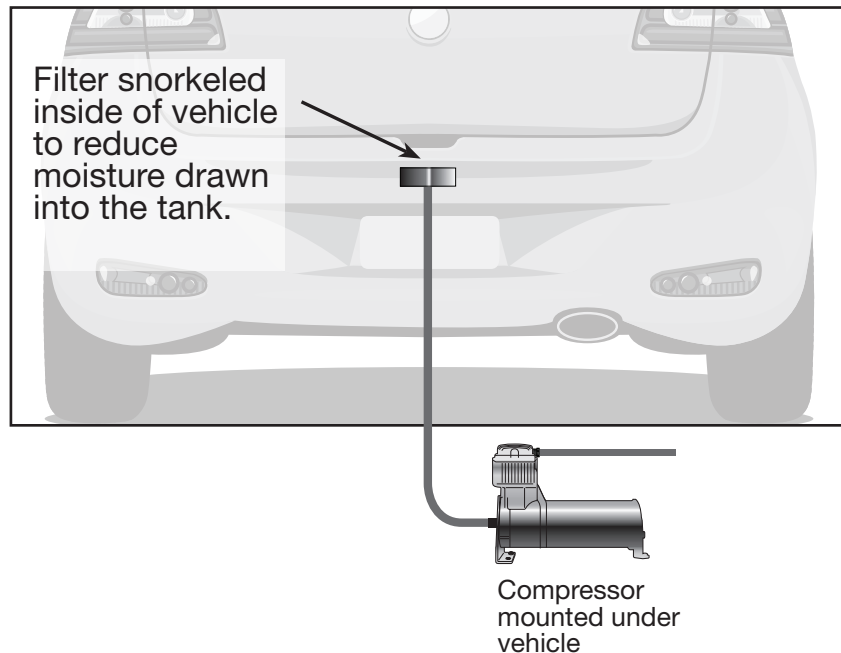
1. Prepare the compressor intake. If it is mounted inside the vehicle, attach the filter to port on end of compressor (fig. 14). If the compressor is located outside the vehicle, snorkel the inlet filter to dry location inside vehicle using components supplied with compressor (fig. 15).
2. Center-punch and drill four holes using the compressor or the template on page 29.
3. Secure the compressor using the supplied hardware (see installation diagram).



NOTE

NOTE: If using an Air-Zenith compressor see figure 33 on page 21.

FILTER



WARNING

IF THE PRESSURE-BASED SYSTEM IS ALREADY INSTALLED BEFORE HEIGHT SENSOR INSTALLATION, MAKE SURE TO TURN OFF RISE ON START TO AVOID UNINTENDED AIRING UP. (SEE USER GUIDE.)

HEIGHT SENSORS

Installation of height sensors is a trial-and-error process and requires patience. The goal is to use as much of the sensor range as possible which will maximize height adjustment accuracy.

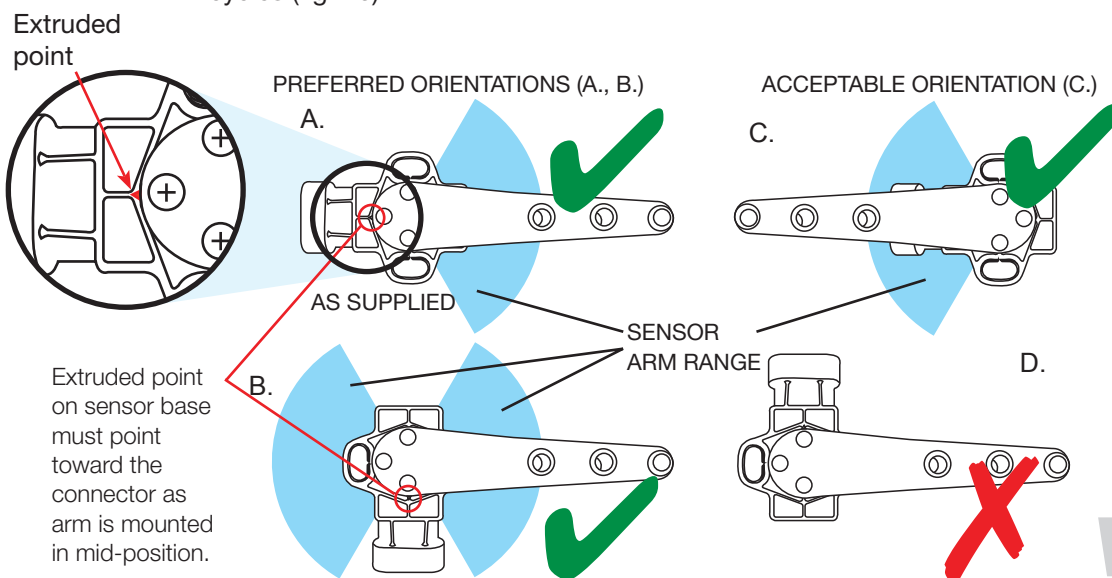
Determining Height Sensor Mounting Point

1. Choose a solid mounting point on the body or frame that will not deflect. Anything that moves is not a good mounting point.

NOTE

For best system performance, mount the sensors in the same location on the driver's and passenger's sides of the vehicle. This will ensure that the sensor range is equal side to side.

2. The sensor can be mounted in any direction and will still work as long as the sensor arm base's extruded point is pointing toward the connector when the sensor arm is at its mid-position. The height sensor assembly is supplied in position A. Remove the arm to reposition it to B or C but keep the extruded point in the direction of the connector. The orientation of the connector must be either facing down or parallel to the ground to avoid water accumulating on the connector and making its way into the sensor. Also, mount the sensor where the arm will be mounted opposite or 90 degrees from the connector wiring if possible. If not possible, ensure the wiring harness is secured away from arm travel so it will not get caught up when the arm cycles (fig. 16).

**NOTE**

*Do **NOT** position sensor with connector up, or with point on sensor base pointed anywhere but at the sensor connector when arm is in its mid-position.*

3. Find a point where the sensor will be directly above the lower linkage mounting surface. It may be necessary in some applications to fabricate a bracket to locate sensor in appropriate position.
4. Make sure that the sensor and sensor arm clear the vehicles suspension, wheels, and any other moving parts. This includes steering the wheels all the way to the lock position left and right to ensure proper clearance. Provide enough clearance to compensate for heavy load/movement that can't be seen from manual/physical articulations.
5. Keep the sensor and wires away from heat sources and moving parts that will create wear and may damage these components.

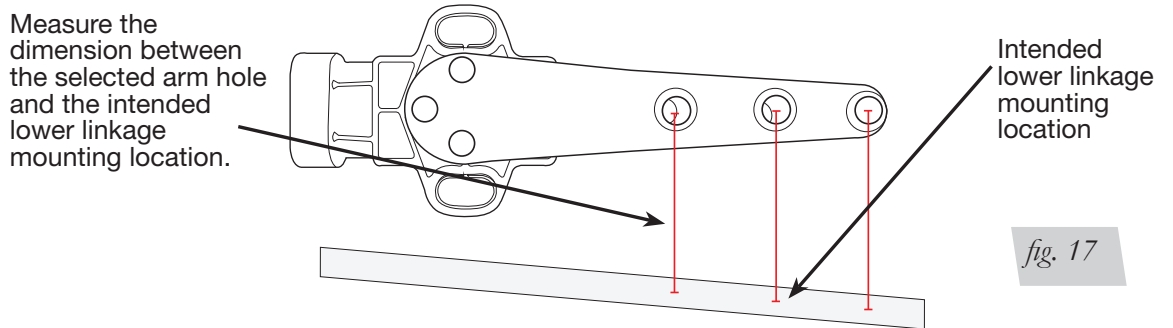
6. Understand whether the suspension or wheel assembly is the limiting factor when the vehicle is aired out. This will ensure proper accommodation of sensor arm travel.
7. If using self-tapping screws into the frame, make sure there are no wires or brake/air/fuel lines on the other side before installing screw.

WARNING

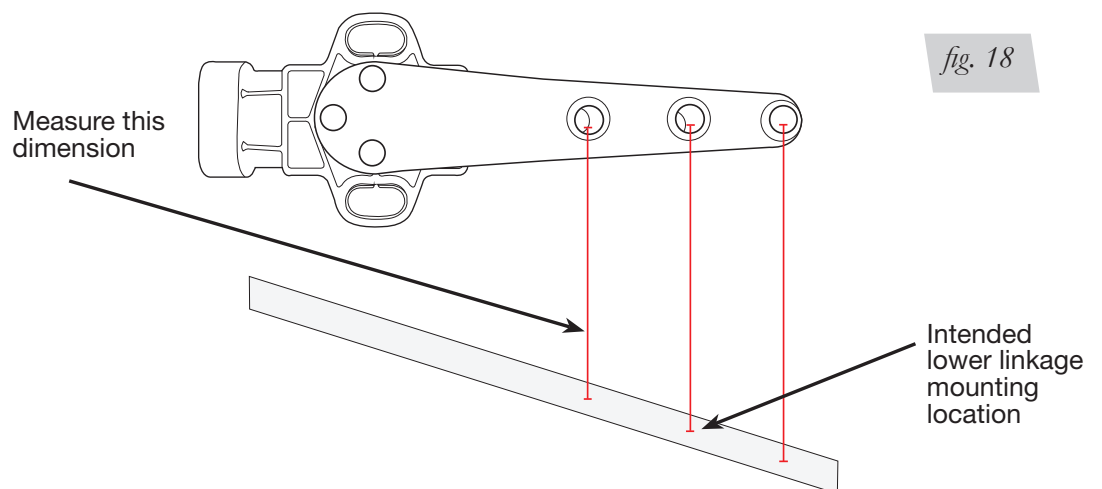
FLOOR JACKS CAN BE DANGEROUS. WHENEVER USING A FLOOR JACK, MAKE SURE IT IS RATED FOR THE LOAD IT IS LIFTING. CHECK THE VEHICLE OWNER'S MANUAL FOR INFORMATION ABOUT WHERE TO PLACE THE JACK. BEFORE RAISING THE VEHICLE, PLACE WHEEL CHOCKS IN FRONT AND BEHIND THE WHEELS TO PREVENT THE VEHICLE FROM ROLLING. ALWAYS USE JACK STANDS TO SUPPORT THE VEHICLE. NEVER GET UNDER OR PLACE ANY BODY PARTS UNDER A VEHICLE THAT IS SOLELY SUPPORTED BY THE JACK.

SELECTING SENSOR LOCATION

1. Mark on the vehicle the intended sensor mount location to maintain consistency in measuring methods in the next several steps. After finding a potential sensor location, measure the suspension travel, which will determine the proper arm hole. Exhaust the air springs, disconnect the air lines and jack up the suspension to its lower limit position. Take the measurement between the selected sensor arm hole with the arm at its midpoint and directly below the intended lower linkage location (fig. 17).



2. Reinstall air lines and cycle the suspension to get to the upper limit position again, measuring between the sensor arm's middle position and directly below the sensor arm hole mounting to the lower linkage ball joint (fig. 18). The difference between these two values will be the full suspension travel range.



SELECTING SENSOR ARM HOLE

Max angle of travel for this sensor is 120 degrees, which can be correlated to the necessary suspension travel as seen in the table below (table 2). Any significant over-extension or over-compression may damage and possibly destroy the sensor or sensor linkage (fig. 19).

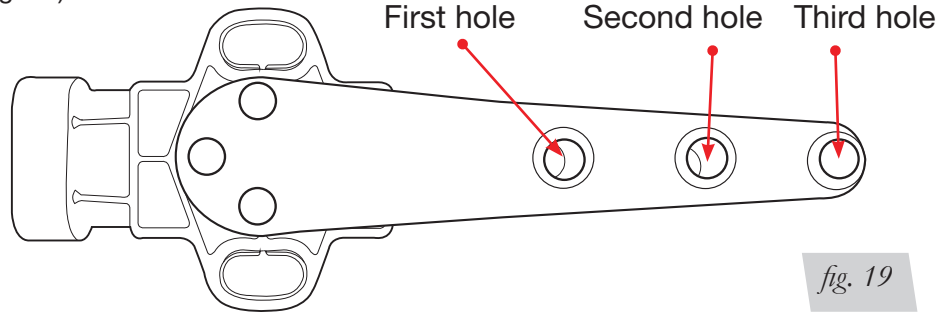


fig. 19

Hole	Maximum Suspension Range	Minimum Suspension Range
First	2 3/4"	1 13/16"
Second	4 3/16"	2 7/8"
Third	5 5/8"	4 3/16"

Table 2

The sensor should be mounted so the measured travel falls near one of the maximum suspension range dimensions. Move the sensor closer or farther from the suspension pivot point to achieve this measurement. (fig. 20).

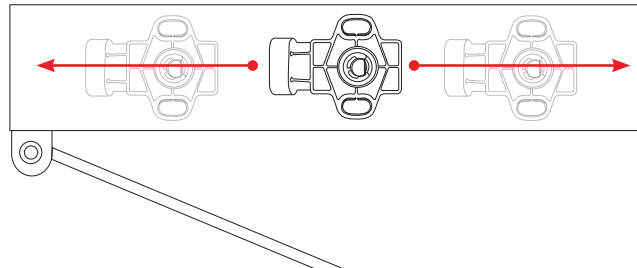


fig. 20

MODIFYING LINKAGE ANGLE

After selecting the location of the sensor and the arm hole to be used, determine the lower mounting point. Ensure the angle between the mounting point and the sensor arm is less than 15 degrees. Any more angle than that, will put unwanted stress on the components. Use the supplied spacer on the lower mounting point to get the angle closer to vertical with respect to the sensor arm (fig. 21).

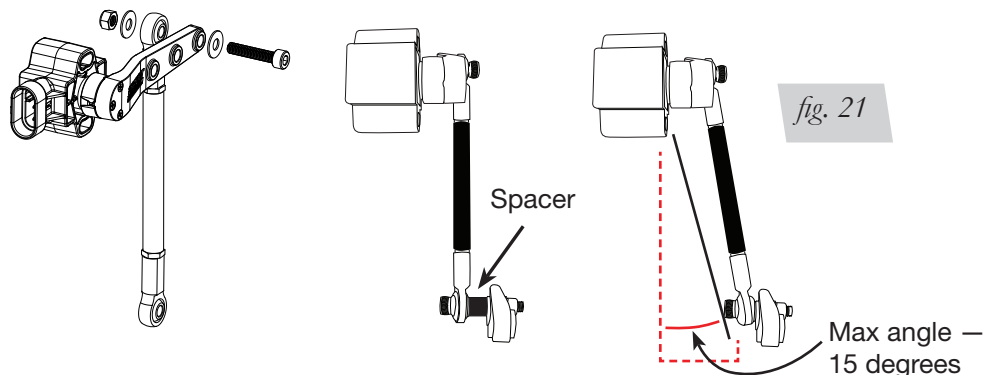
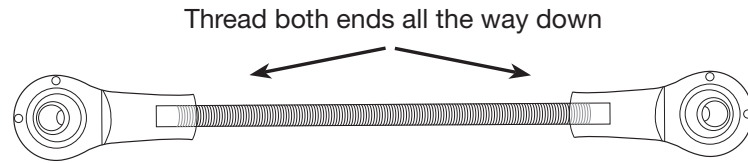


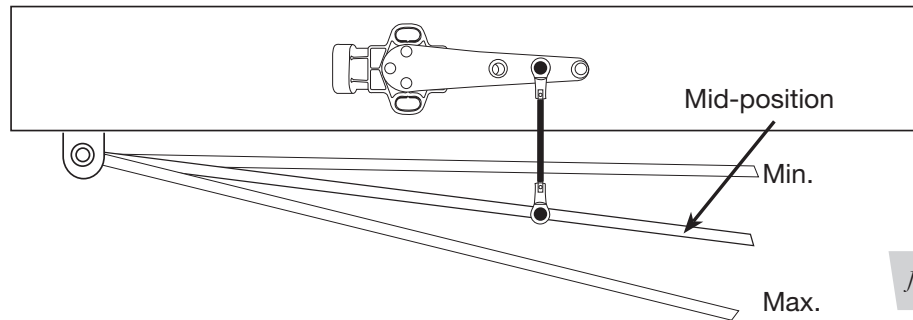
fig. 21

LINKAGE ASSEMBLY/MODIFICATION

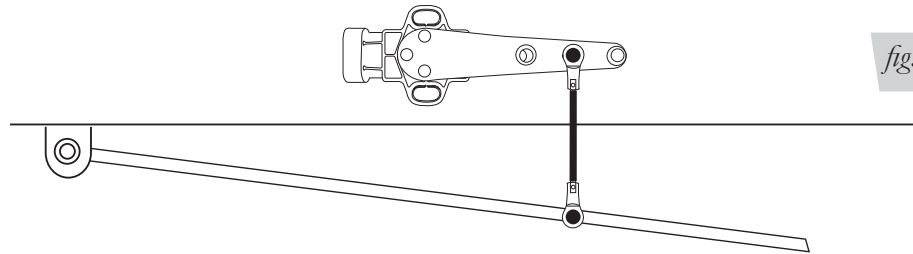
1. Locate the linkage and ensure the rod is threaded all the way on (fig. 22).



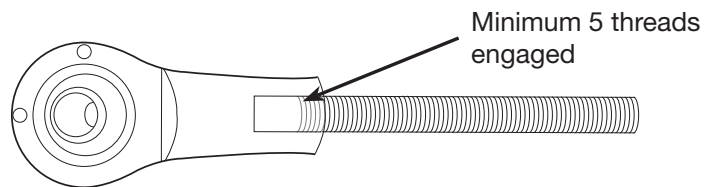
2. Next put the suspension in the mid-position with respect to full suspension travel (fig. 23).



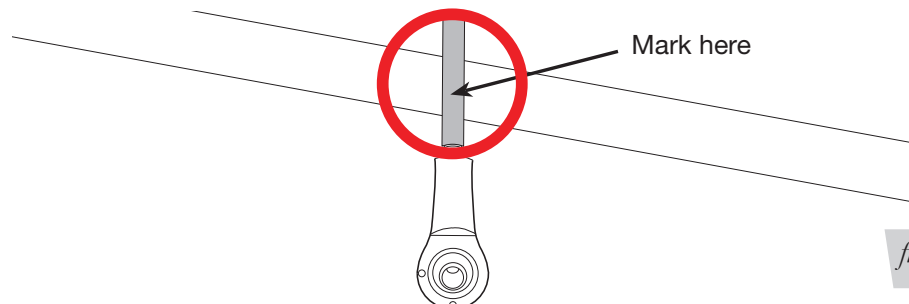
3. Fasten by finger tightening the linkage to the sensor arm and ensure the sensor arm is at mid-position with respect to the sensor (fig. 24).

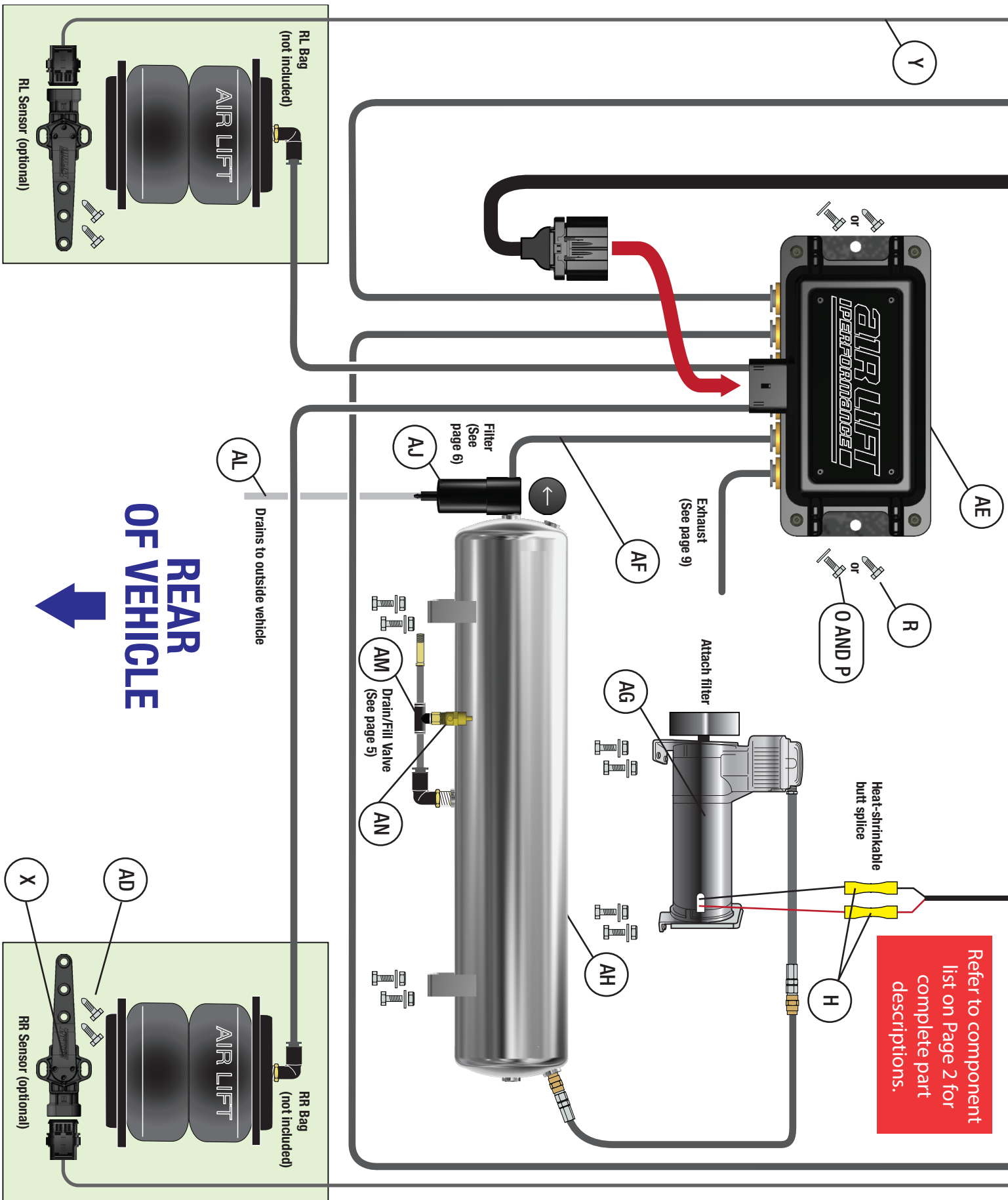


4. Loosen if needed in order to extend to reach the lower mounting point. If loosening the linkage to extend, it is required to make sure to have at least 5 threads of engagement on both ends (fig. 25).

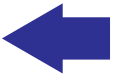


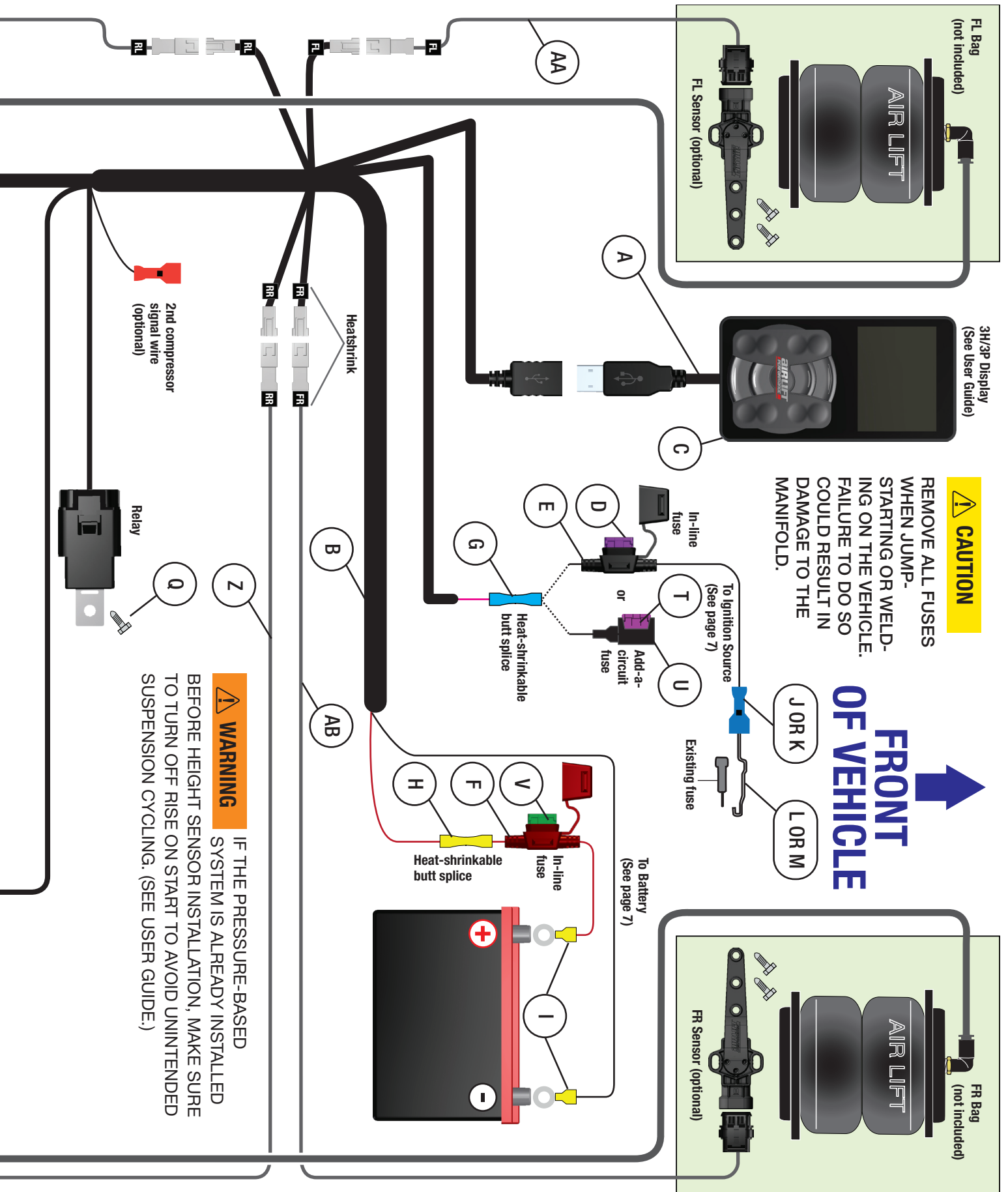
5. If shortening the rod linkage is necessary, mark the rod cover where the mounting location intersects with the intended mounting location (fig. 26).





**REAR
OF VEHICLE**

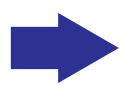




CAUTION

REMOVE ALL FUSES WHEN JUMP-STARTING OR WELDING ON THE VEHICLE. FAILURE TO DO SO COULD RESULT IN DAMAGE TO THE MANIFOLD.

FRONT OF VEHICLE



J OR K
L OR M

WARNING

IF THE PRESSURE-BASED SYSTEM IS ALREADY INSTALLED BEFORE HEIGHT SENSOR INSTALLATION, MAKE SURE TO TURN OFF RISE ON START TO AVOID UNINTENDED SUSPENSION CYCLING. (SEE USER GUIDE.)

- Remove the rod linkage from the sensor arm and measure 1/2" back from the mark. This will show where to cut the rod (fig. 27).

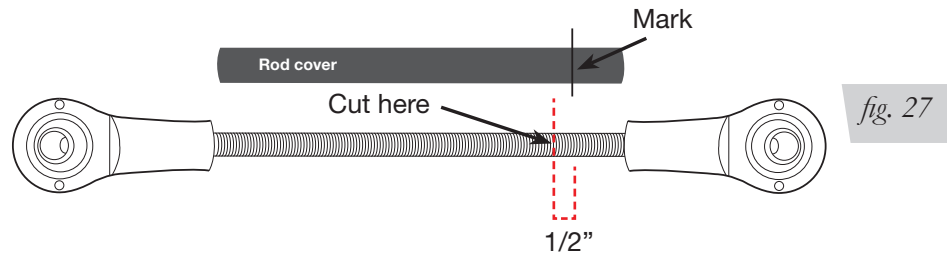


fig. 27

- Before cutting the rod, thread the jam nut back on the rod. Use the nut to deburr the rod end (fig. 28).

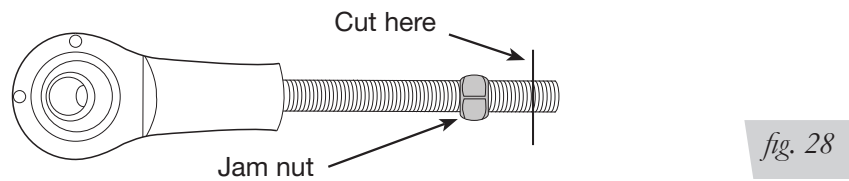


fig. 28

- Cut the rod cover 5/8" shorter than the rod length with the rod assembled on one end after cutting (fig. 29).

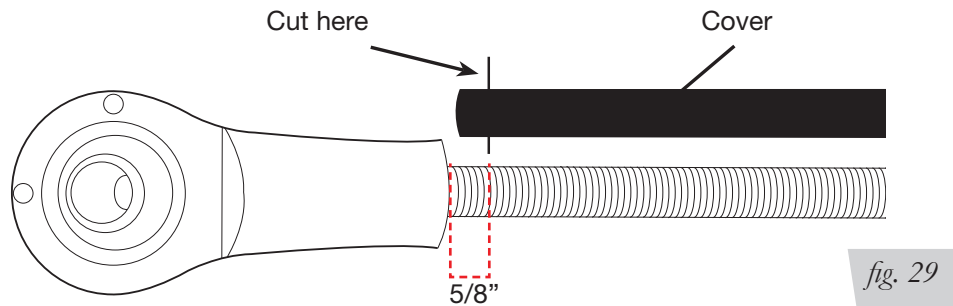


fig. 29

- Assemble linkage back together, and fasten it to the sensor arm and lower mounting location with supplied hardware (fig. 30). Temporarily secure the sensor in its intended location including using the height sensor spacer that is provided.

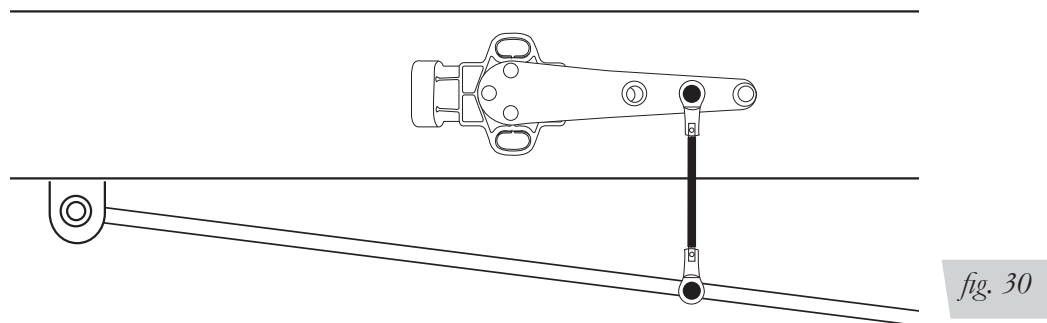


fig. 30

VERIFYING SUSPENSION RANGE

Use the paper height sensor tool on page 25 or electronic sensor tool in the display to make sure the range is sufficient to provide accurate measurements (fig. 31). (See User's Guide)

Next, manually air the vehicle up and down to see if there is any issue with the travel of the sensor using the height sensor install tool.

After confirming that the range is correct and adequate, permanently secure the position of the sensor using the supplied hardware.

Complete this for all four sensors. To verify range using the electronic sensor tool, start with the vehicle at its lowest height. The sensor tool should display "range low" below each corner. Manually air up the front corners of the vehicle to their maximum height. Both front corners should then display "OK." Manually air up the rear corners to their maximum height. Both rear corners should then display "OK."

It may be necessary to repeat these steps by raising the rear first, to see if results vary. For any corners that do not display OK, sensors will need to be adjusted to be within the acceptable limits, or increase the overall range (stroke).

Once the system is completely installed and system calibration is done, if any of the height sensors are out of range, there will be a warning message and the affected corner's visual indicators will not move with pressure adjustments. See User's Guide for more information.

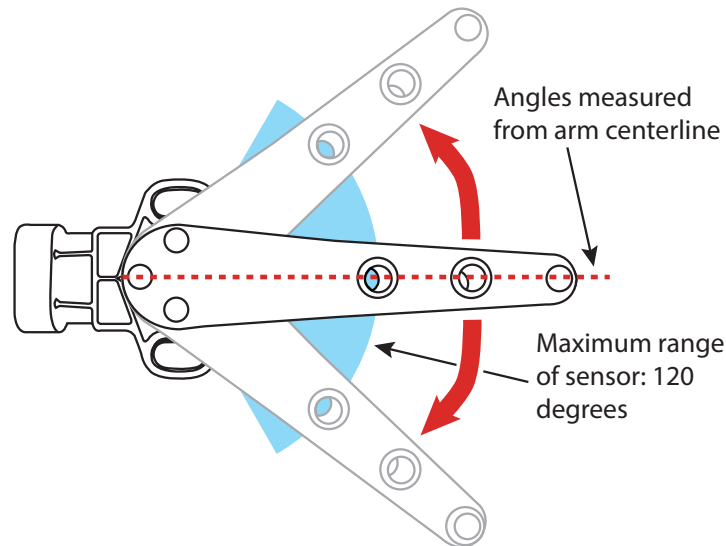


fig. 31

MODIFYING SENSOR ARM

Follow the arcs around the appropriate holes to make the arms shorter. Keep the smooth, rounded contour of the end of the arm (fig. 32).

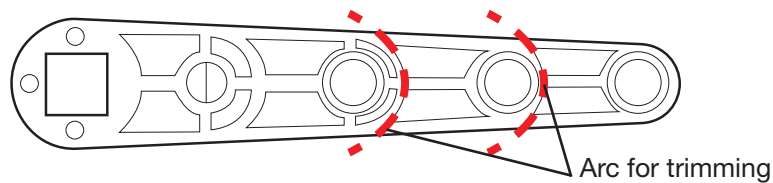


fig. 32

Troubleshooting Guide

PROBLEM	CAUSE	SOLUTION
<i>Compressor doesn't run.</i>	Check for a blown fuse, bad relay, poor ground, or poor electrical connections or the motor overheated.	Replace the 30A or 3A fuse if blown. Check ground wire connection at battery and compressor. Let compressor cool off for about 30 minutes to allow thermal overload switch to reset.
<i>Compressor runs all the time.</i>	The compressor relay is defective or there is a leak.	Replace the relay or locate the leak and repair.
<i>Air spring or tank leak.</i>	Fitting seal or air line is compromised.	Check to make sure air lines are seated in connectors. Inspect fittings with soapy water. Trim hose or re-seal fitting. Ensure lines are cut straight.
<i>Nothing happens when the vehicle is key on, ignition active.</i>	Check for a blown fuse or a poor connection.	Replace the fuses and check the electrical connections.
<i>Compressors runs all the time but doesn't fill the tank.</i>	Compressor in-line check valve fitting has been overtorqued.	Loosen fitting and check again. Replace if needed.
<i>Display does not work.</i>	Check for a blown fuse, compromised cable/harness.	Replace the 3A fuse if blown. Replace the extension cable.

Leak Testing and Detection

1. A leak can be defined as a loss of pressure of more than 5 PSI over an 8-hour period. Be aware that ambient temperature change has an effect on pressure that may seem like a leak. For example: a change of 10 degrees F up or down from your baseline will have an approximate gain or loss of indicated pressure of 2 PSI. If a leak is suspected after including any temperature change, proceed to step 2.
2. Spray soapy water (1/5 Dawn® brand dish soap to 4/5 water) on suspect fittings and hose connections and look for any bubbling caused by air leakage.
3. Fix leaking connection (review page 9 for help on NPT fittings and air line connections).
4. Wipe down sprayed connections with rag to remove any residual soapy water.

NOTE

Dawn® brand dish soap will not corrode the metals (aluminum, brass, steel) with which it comes into contact.

Permissible Modifications

1. If it is necessary to extend the display cable beyond the 4-foot cable that is supplied, purchase a USB A/M adapter extension of up to 8 feet. Use an off-the-shelf USB 3.0 cable if possible.
2. If using an Air-Zenith OB2 compressor, follow the wiring diagram below (fig. 33). The 70A fuse, relay, etc. are supplied with compressor. Wiring requirements for the compressor should follow manufacturer's recommendation.

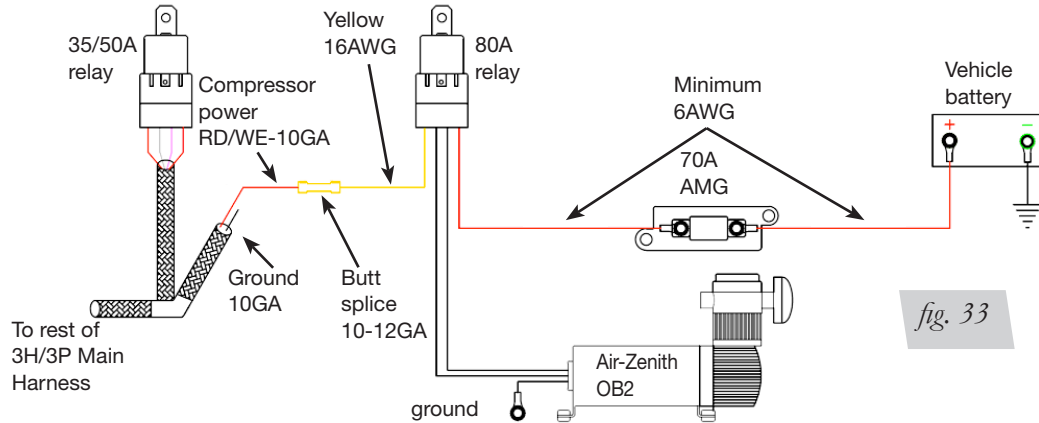


fig. 33

3. The keypad on the 3H/3P display can be rotated for horizontal applications but it must not be rotated so that the keypad is above the screen (fig. 34). It will not power up in this position.
 - a. Rotate the keypad after removing the two screws on the back of the 3H/3P display unit (fig. 35). Once they are removed, the keypad can be pulled out and rotated.
 - b. Using light and even pressure, push the keypad into the display until it is flush.
 - c. After rotating the keypad, re-fasten the screws to the torque of 14-16 oz.-in. Do not overtighten.
 - d. See the User Guide for additional information about display options.

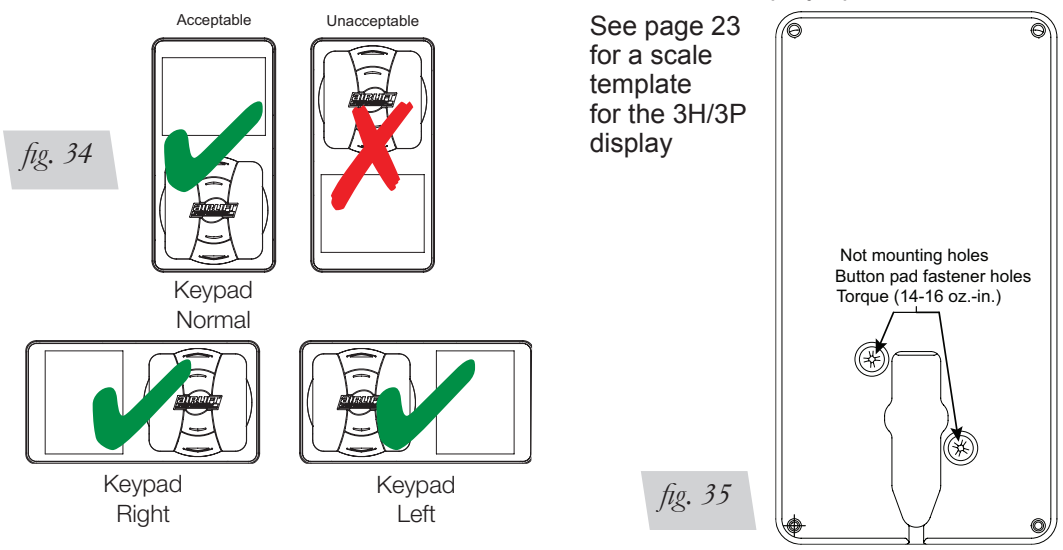


fig. 34

fig. 35

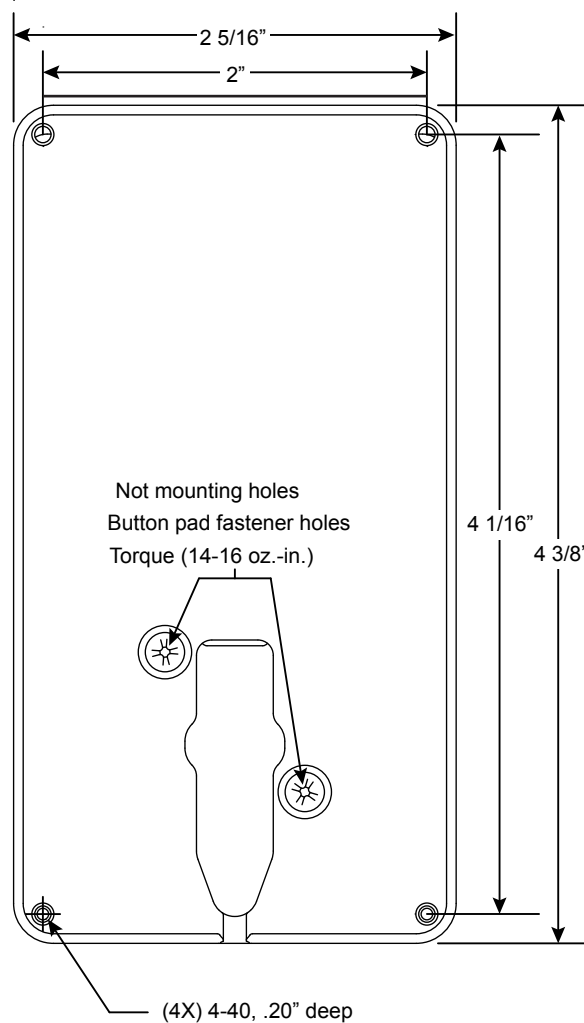
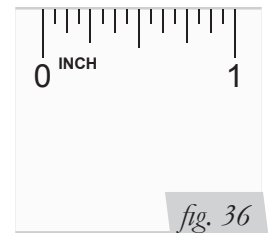
4. Extending the compressor power and ground wires is not recommended. It is permissible to remove a portion of the battery power and ground wires to extend the compressor wiring if necessary, keeping the same overall harness length. This will keep the voltage drop within industry standards. Failing to do so could decrease the life of the compressor.

Display Mounting Template

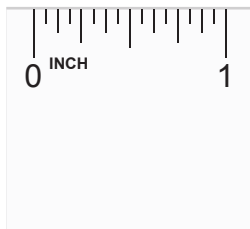
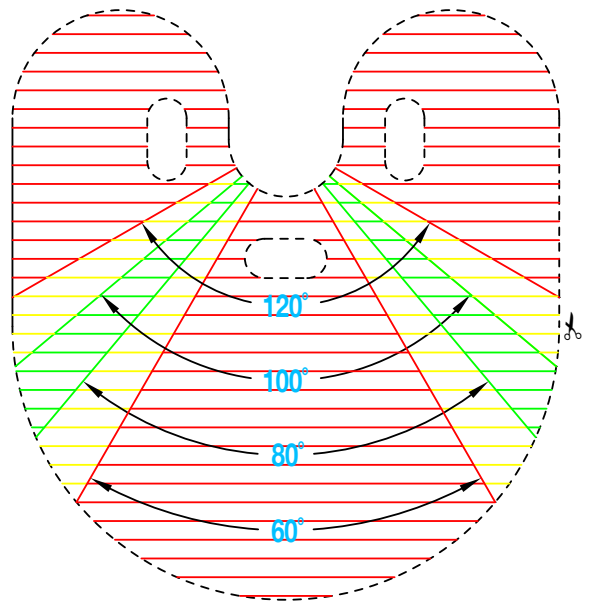
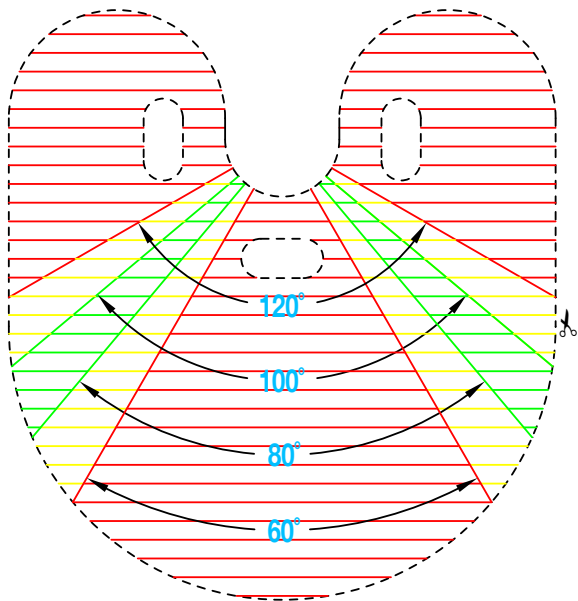
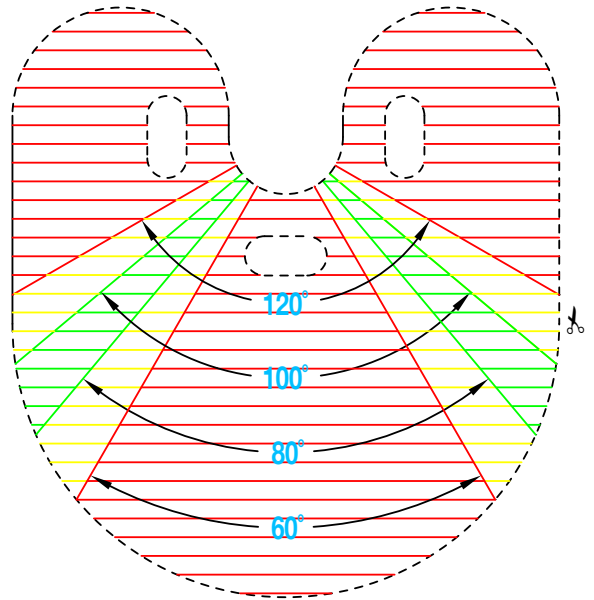
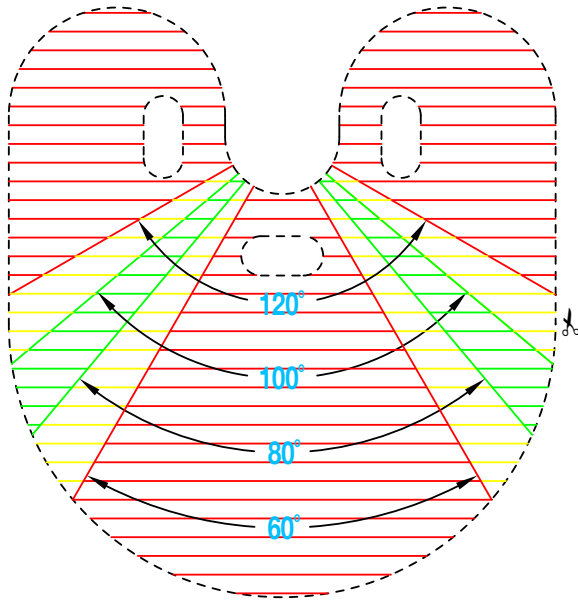
CAUTION

IMPORTANT: PRINT THIS MANUAL AT 100% SCALE. THIS MANUAL CONTAINS DRILLING TEMPLATES, WHICH WOULD BE RENDERED INCORRECT IN DIMENSION IF PRINTED WITH ANY SCALING. USING AN INCORRECT TEMPLATE TO DRILL HOLES MAY CAUSE DAMAGE TO YOUR VEHICLE.

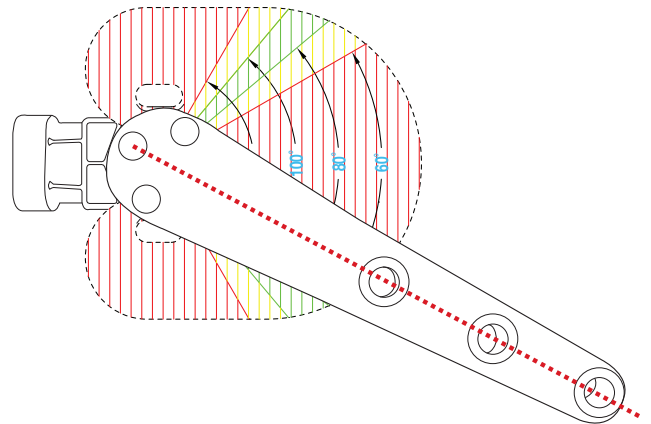
REFER TO THE ONE-INCH SCALE (FIG. 36) AND USE A MEASURING TOOL TO CONFIRM THAT THE PRINTED SCALE MEASURES ONE INCH TO VERIFY PROPER SCALE. IF THIS IS PRINTED AT ANY SCALE OTHER THAN 100%, THE INSTALLER COULD END UP DRILLING IN THE WRONG LOCATIONS ON THE VEHICLE.



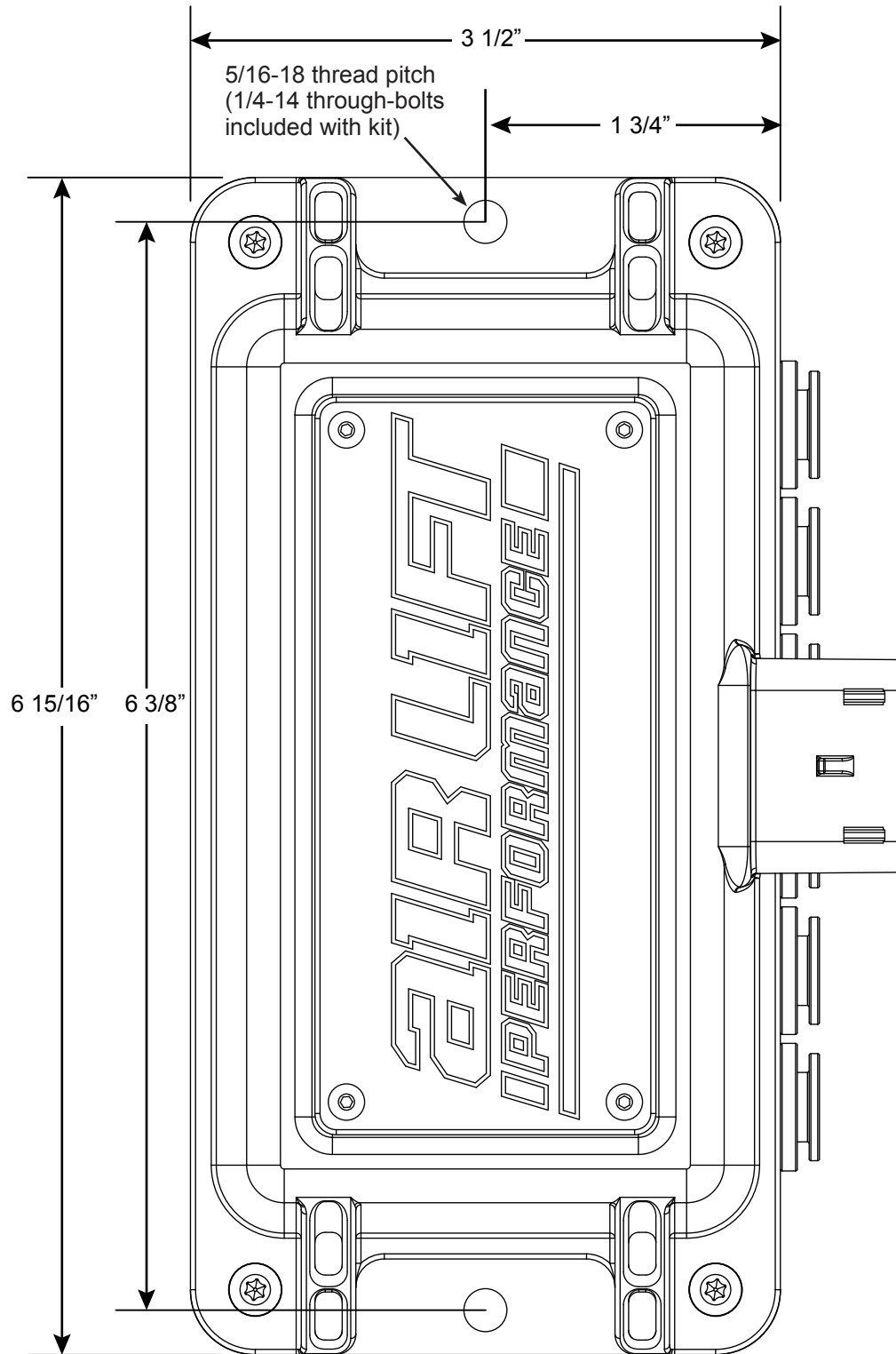
Height Sensor Install Tool



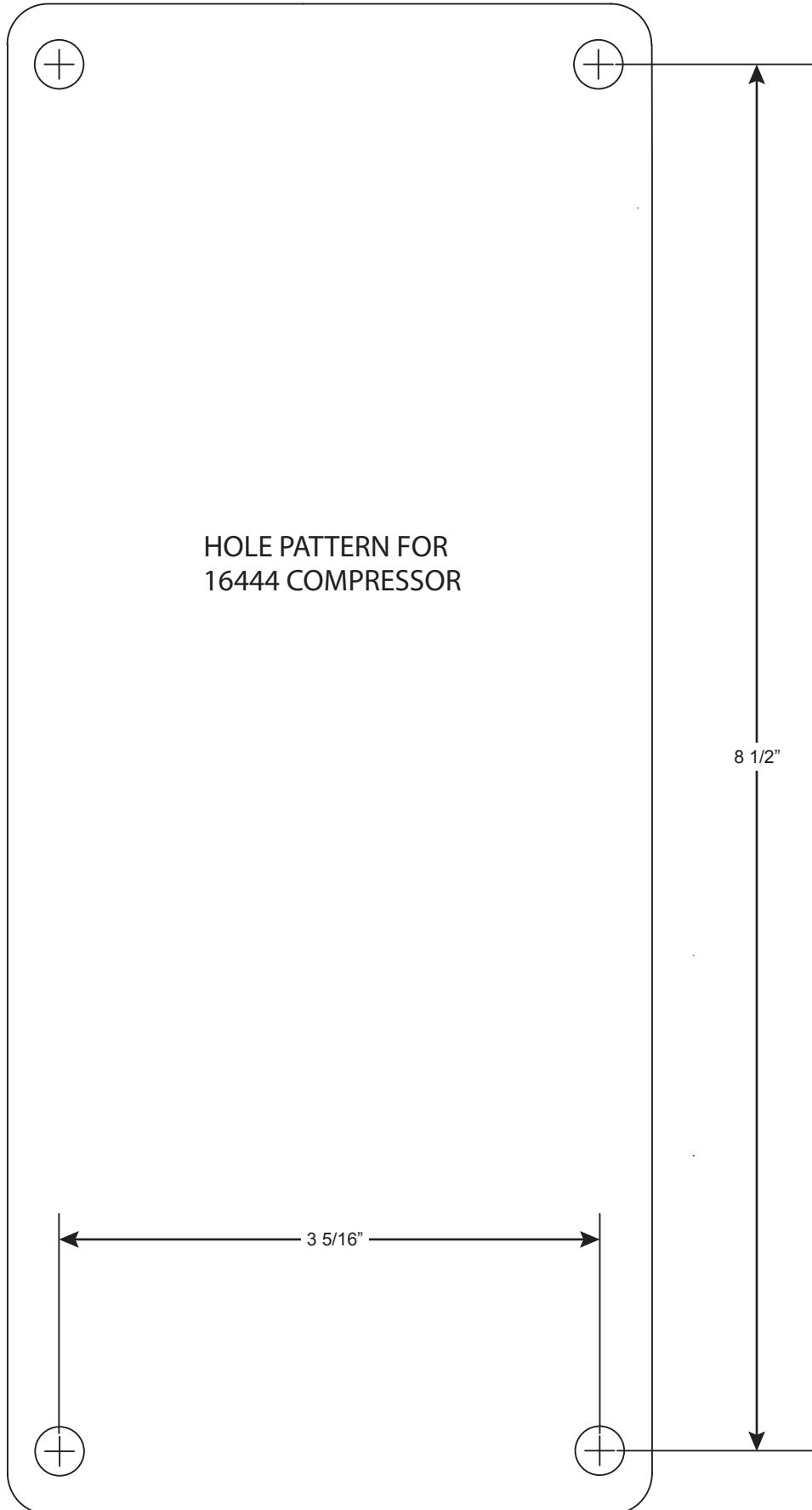
Cut out the height sensor tools and position each one as shown at right depending on the height sensor orientation. It would be a good idea to make copies of this page in case the tools are damaged during installation. Make sure to copy at 100% so the tools are the correct size. The drawing to the right is not to scale.



Manifold Mounting Template



16444 Compressor Mounting Template





Air Lift Performance 3H /3P™

Control System
P A T E N T E D



AIR LIFT
PERFORMANCE

USER GUIDE

For maximum effectiveness and safety, please read these instructions completely before operating.

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

Download the App for the Best #lifeonair

The Air Lift Performance 3 mobile app allows for full integration of your new 3H/3P control system on compatible mobile devices. Simply download the FREE app to not only take full control of your system, but to always have the latest system firmware with updates directly from the app.

For iPhone: air-lift.co/3app

For Android: air-lift.co/android

Users can also search “Air Lift Performance” in either the Apple App Store or Google Play.

See page 11 for instructions on pairing your device.





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Introduction

The purpose of this publication is to assist with the calibration, maintenance, and troubleshooting of the Air Lift Performance 3P or 3H control systems.

Read the entire user guide before beginning calibration or performing any maintenance, service or repair. The information includes a step-by-step calibration set-up, display options and functions, and diagnostic troubleshooting.

Air Lift Company reserves the right to make changes and improvements to its Air Lift Performance products and publications at any time.

IMPORTANT SAFETY NOTICES



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.



WARNING

ONLY USE THE AIR LIFT PERFORMANCE 3 APP ON A MOBILE DEVICE WHEN THE VEHICLE IS IN A CLEAR LINE OF SIGHT. TO AVOID THE RISK OF SERIOUS INJURY OR HARM, VERIFY THAT NO PERSON OR THING IS NEAR OR IN THE WAY OF THE VEHICLE'S PATH OF TRAVEL WHILE CYCLING THE SUSPENSION.



WARNING

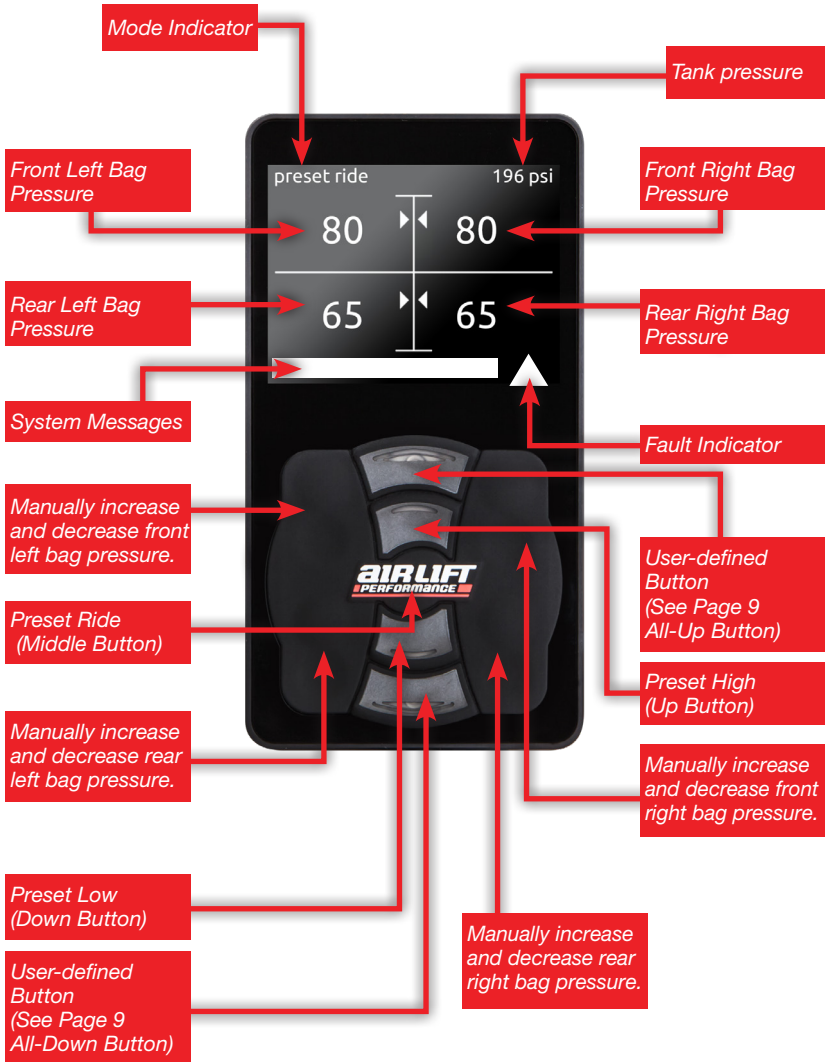
FOR USER SAFETY AND TO PREVENT VEHICLE DAMAGE, THE SYSTEM HAS A 25% OR 25 PSI (1.7BAR) MINIMUM DRIVE HEIGHT AS THE DEFAULT. DUE TO EXTREME RISK OF DANGER TO THE USER OR VEHICLE, AIR LIFT COMPANY STRONGLY RECOMMENDS NOT TO CHANGE THIS VALUE. IF FOR SOME REASON THE MINIMUM DRIVE HEIGHT IS SET BELOW THE DEFAULT VALUE, AIR LIFT COMPANY SUGGESTS THIS SETTING ONLY BE USED WHILE THE VEHICLE IS STATIONARY. IT IS POSSIBLE TO SET THE VEHICLE AT A HEIGHT THAT IS BELOW THIS THRESHOLD, THEN START DRIVING. THIS IS A UNIVERSAL SYSTEM AND SETTINGS WILL BE DIFFERENT FOR EVERY USER AND VEHICLE. THE INSTALLER IS RESPONSIBLE TO DETERMINE HOW LOW THE SUSPENSION CAN BE SET WITHOUT CAUSING DAMAGE. IT IS THE SOLE RESPONSIBILITY OF THE USER, AND AIR LIFT COMPANY WILL NOT BE HELD LIABLE FOR, ANYTHING THAT MAY HAPPEN TO THE OPERATOR OR THE VEHICLE AS A RESULT OF THE USER'S CHOICE TO ALTER THESE DEFAULT VALUES BELOW RECOMMENDED MINIMUMS.



WARNING

FLOOR JACKS CAN BE DANGEROUS. WHENEVER USING A FLOOR JACK, MAKE SURE IT IS RATED FOR THE LOAD IT IS LIFTING. CHECK THE VEHICLE OWNER'S MANUAL FOR INFORMATION ABOUT WHERE TO PLACE THE JACK. BEFORE RAISING THE VEHICLE, PLACE WHEEL CHOCKS IN FRONT AND BEHIND THE WHEELS TO PREVENT THEM FROM ROLLING. ALWAYS USE JACK STANDS TO SUPPORT THE VEHICLE. NEVER GET UNDER OR PLACE ANY BODY PARTS UNDER A VEHICLE THAT IS SOLELY SUPPORTED BY THE JACK.

Main Controls



Quick Reference Guide

Main Menu Screen	Sub-Menu	Data	Default
Display	Brightness	Level 1-10	Level 7
	Brightness Sleeping	Level 1-10	Level 4
	Sleep Time	5-59 Sec	10 Sec
	All-Up Button	All-Up	All-Up
		Front-Up	
		Preset	
	All-Down Button	All-Down	Air-Out
		Front-Down	
		Preset	
		Air-Out	
Units	PSI	PSI	
	BAR		
Language	English	English	
	Spanish		
	German		
	French		
Operation	Rise-on-Start	Off	Off
		On	
	Preset Maintain	Off	Off
		On	
	Minimum Drive Height	0-100 PSI (Pressure)	25 PSI / 25%
		0-100% (Height)	
	Pressure/Height Mode	Height	Pressure
		Pressure	
Anti Cross-Load (Height)	Off	On	
Axle Equalization (Pressure)	On		
Show Mode	Off	Off	
	On		
Bluetooth Pairing	Off	Off	
	On		
Setup	Sensor Tool	See Page 12	—
	Compressor	See Compressor Main Menu	—
	Min. Battery (Voltage to allow compressor to still run)	10-15 Volts	11 Volts
	Preset Mode	Double tap	Double tap
		Single tap	
Factory Reset	Cancel	Cancel	
	Reset All		
Compressor	On/Off	Off	Off
		On	
	Enable/Disable	Enabled	Enabled
		Disabled	
	Dual/Single	Single	Single
		Dual	
	Max Pressure	10342-13789mBAR (150-200 PSI)	10342mBAR (150 PSI)
	Duty Cycle	33%	50%
50%			
66%			
75%			
100%			
Calibration	Wizard	See Page 14	—

Getting Started

This User Guide is designed to demonstrate all the different menu options and default settings that will help make using this system easy and enjoyable.

1. To get to the main menu screen, push the middle (preset ride) button simultaneously with either the up (preset high) button or down (preset low) button.
2. All other settings and parameters will be detailed in the following pages to ensure the system is set up accurately.
3. Use the preset low and preset high buttons to scroll.
4. Green text indicates the last saved value.



Display

BRIGHTNESS

Set the brightness for the display while in use.

1. Level 1-10
2. Use the up and down buttons to increase or decrease luminosity in 10% increments.
3. Level 7 (default)

BRIGHTNESS SLEEPING

Set the brightness for the display after it goes into sleep mode.

1. Level 1-10
2. Use the up and down buttons to increase or decrease luminosity in 10% increments.
3. Level 4 (default)

SLEEP TIME

Set the amount of time it takes to revert back to the main screen and for the display to go to sleep.

1. 5-59 seconds.
2. Use the up and down buttons to increase or decrease time in 1-second increments.
3. 10 seconds (default)
4. To disable sleep mode, turn the timer past 59 seconds to zero.



WARNING

SETTING THIS TO ZERO WILL MAKE THE SYSTEM VERY RESPONSIVE AND MAY CAUSE UNINTENTIONAL ADJUSTMENTS.



Display, Cont.

ALL-UP BUTTON

Set function for the all-up button.

1. All-up (default)
2. Front-up
3. Preset

ALL-DOWN BUTTON

Set function for the all-down button.

1. All-down
2. Front-down
3. Preset
4. Air-out (default)

UNITS

Set units of measure to PSI or BAR.

1. PSI (default)
2. BAR

LANGUAGE

Set the language for the display. The system will boot to the language selection menu until a calibration is completed.

1. English (default)
2. Spanish
3. German
4. French

Operation

RISE-ON-START

This setting brings the vehicle to ride height at key-on if at a preset below ride height.

1. Off (default)
2. On

PRESET MAINTAIN

When enabled, the Preset Maintain will maintain the selected preset, whether pressure or height.

1. Off (default)
2. On

MINIMUM DRIVING HEIGHT

Set the minimum vehicle ride height. The system will not deflate below this level while driving.

1. 0-100 PSI (pressure mode) or 0-100% (height mode)
2. Hold down the up or down button to cycle quickly to 0 or 100 PSI or press the buttons individually to go up or down 1 PSI at a time.
3. 25 PSI (pressure mode) or 25% (height mode) (default)



Operation, Cont.

PRESSURE/HEIGHT MODE

Set system to operate in height or pressure mode.

1. Height
2. Pressure (default)

ANTI CROSS-LOAD/AXLE EQUALIZATION

Set system to equalize the axle to prevent cross-loading.

1. Off
2. On (default)

SHOW MODE

This provides operation with ignition off for one ignition cycle.

(Running the compressor(s) will drain the battery.)

1. Off (default)
2. On

BLUETOOTH PAIRING

Set to “on,” to enable Bluetooth pairing with a compatible mobile device for one ignition cycle. If no display is present, pairing mode can be entered by: turning the ignition on 3 seconds, ignition off 3 seconds, ignition on.

Setup

SENSOR TOOL (HEIGHT MODE MUST BE ENABLED)

This tool is used to ensure that the range of the height sensors as installed are sufficient to provide optimal accuracy for the system. (Each time that this tool is used it will reset and initially show low range until the suspension is cycled to tell the system its range.)

1. At any time, press the “Preset Ride” button to exit the tool.
2. By cycling the suspension up and down, the tool will determine the following:
 - **Range low** – Not enough range in the sensor to portray accurate data.
 - **OK** – The range of the sensor is adequate for accurate data.
 - **Limit** – The range of the sensor is at or beyond the bounds of acceptable data.
3. The “Preset Low” button can be used to reset the tool.



COMPRESSOR* (SETUP)

ON/OFF

Control the compressor(s) manually. In the default setting of “Off” the compressor(s) will operate normally. Selecting “On” will activate the compressor(s) for troubleshooting.

1. Off (default)
2. On

ENABLE/DISABLE

Enable or disable the compressor(s) until the next ignition cycle.

1. Enabled (default)
2. Disabled

DUAL/SINGLE

Set based on whether a dual or single compressor setup is installed. If using a second compressor and harness, dual must be selected for proper operation.

1. Single (default)
2. Dual

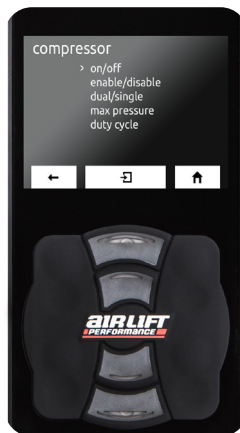
* The 3H/3P system can be installed with one or two compressors.

Setup, Cont.

MAX PRESSURE

Set the maximum tank pressure. The compressor(s) will turn on at 15 PSI below max tank pressure.

1. 10342-13789mBAR (150-200 PSI)
2. Holding the up or down button quickly cycles between 10342mBAR (150 PSI) and 13789mBAR (200 PSI). A single press changes pressure one increment at a time.
3. 10342mBAR (150 PSI) (default)



DUTY CYCLE

This is for the user to set the compressor(s) duty cycle.



WARNING

SETTING THE DUTY CYCLE HIGHER THAN THE MANUFACTURER'S RECOMMENDED VALUE MAY CAUSE DAMAGE TO THE COMPRESSOR(S).

See Page 25 for compressor duty cycle and working pressure.

MINIMUM BATTERY VOLTAGE

Set minimum battery voltage required to allow the compressor(s) to turn on.

1. 10-14 volts
2. 11 volts (default)

PRESET MODE

Set the button sequence for commanding a preset.

1. Double tap (default)
2. Single tap



WARNING

SETTING THIS TO SINGLE TAP WILL MAKE THE SYSTEM VERY RESPONSIVE AND MAY CAUSE UNINTENTIONAL ADJUSTMENTS.

FACTORY RESET

Resets all settings and calibration back to factory default.

1. Cancel (default)
2. Reset all

Cycle ignition to complete the factory reset.

Calibration

WIZARD

Run this program to complete calibration. At any time, cancel calibration by pressing “stop.”

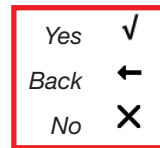
1. Make sure the vehicle is on a level surface and select “Yes.”
2. Verify that the front wheels are straight to prevent damage to fenders, then select “Yes.”
3. Verify nothing is under the vehicle that could cause undercarriage damage, then select “Yes.”
4. Verify that the manifold is securely mounted, then select “Yes.”

NOTE *An unmounted manifold will not allow Preset Maintain to function properly.*

5. Determine how many compressors are in use. If using a single compressor, select one. If using two compressors with the second compressor harness (kit number: 27703) select two.
6. The system will ask if it should use manual or automatic pressure calibration. The user should select manual calibration if ride pressures will be over 100 PSI (6.9BAR) or if the calibration failed during automatic calibration.

NOTE *If automatic calibration fails, try setting max and min pressure values 1.4-2BAR (20-30 PSI) above and below typical ride pressure.*

7. If height sensors are installed, select “Yes.” If running as a pressure only system, select “No.” If only running pressure, system will now skip to step 8.
8. If height sensors are installed, select whether to calibrate them automatically or manually. Most vehicles can be calibrated automatically. The manual option can be used when there is a custom setup where there may be concern about component interference at either high or low limits.



Calibration, Cont.

9. After selecting “Yes” the system will begin calibration. Selecting “No” will exit the calibration wizard.
10. System checks to make sure manifold is mounted in a proper orientation.
11. System is calibrating the accelerometer.

NOTE *If manual pressure calibration is selected, the system will ask the user to set the maximum and minimum pressures.*

12. System is now calibrating the front axle for Pressure mode.
13. System is now calibrating the rear axle for Pressure mode. If using the system for Pressure only, calibration will complete after this step.



14. Height Sensor Calibration (upper limits)

- a. If Auto Sensor Calibration was selected, the system will cycle the suspension to calibrate its upper limit position.
- b. If Manual Calibration was selected, the system will now ask for the user to set the “Upper Limits.” Do this by using the manual buttons to raise the suspension to its highest setting on all four corners. Press the middle button when complete.

15. Height Sensor Calibration (lower limits)

- a. If Auto Sensor Calibration was selected, the system will now cycle the suspension to calibrate its lower limit position.
- b. If Manual Calibration was selected, the system will now ask for the user to set the “Lower Limits.” Do this by using the manual buttons to lower the suspension to its lowest setting on all four corners. Press the middle button when complete.
16. System will now check Height Sensor vehicle wiring (Only completes this if user selected Auto Sensor).
17. The system will now perform a movement calibration for height mode.
18. Once it has run through the calibration wizard successfully, it will say “Calibration Successful” and the system will then be ready for use.

Calibration Detail Explained

AUTO SENSOR LIMITS

When the program is completing the auto sensor calibration, make sure the wheels are straight and all people stand clear as the vehicle will move up and down during calibration. The user doesn't have to do anything during this portion of the calibration.

MANUAL SENSOR LIMITS

Below is what the system is doing during the wizard's manual sensor calibration. Use this option when making a custom setup where there may be concern about component interference at either high or low limits. (e.g. *Wheel to fender interference – if the system is aired out and the wheel and fender make contact before the suspension can reach its limit.*)

1. Set upper limit
 - Use the manual buttons to set the upper height sensor limit.
 - Press the ride preset button to continue.
2. Set lower limit
 - Use the manual buttons to set the lower height sensor limit.
 - Press the middle button to continue.
3. Calibration is complete.

PRESSURE

Below is what the wizard is doing during the pressure calibration. Auto pressure calibration targets 0-6.9BAR (0-100 PSI). If the ride height is outside this range, manual calibration is suggested.

Automatic Pressure Calibration

1. **Front calibration** – The system actuates the suspension through its range of travel to calibrate pressure mode on the front axle.
2. **Rear calibration** – The system actuates the suspension through its range of travel to calibrate pressure mode on the rear axle.
3. At any time, cancel calibration by selecting “stop.”

Manual Pressure Calibration

1. **Set upper limit** – Use manual buttons to set upper pressure limit. Press ride preset to continue.
2. **Set lower limit** – Use manual buttons to set lower pressure limit. Press ride preset to continue.

Calibration Detail Explained, Cont.

HEIGHT

Below is what the wizard is doing during height calibration.

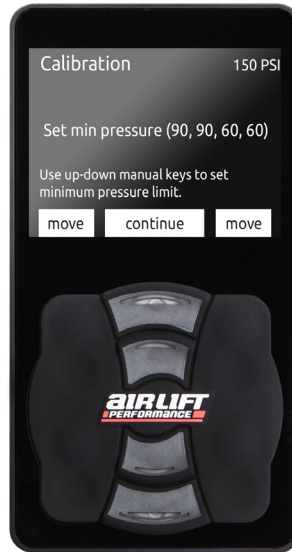
The system will actuate the suspension through its entire height range to calibrate height mode.

1. Movement calibration
 - A message will indicate completion of the movement calibration.
 - Press the middle button to continue.
2. At any time, cancel calibration by pressing “stop.”

MANIFOLD

Below is what the wizard is doing during manifold calibration.

1. If the manifold is mounted correctly, it will indicate “Complete – calibration successful.”
2. If the manifold is mounted incorrectly, it will indicate “Fault – calibration failed.”
3. If mounted incorrectly, follow the Installation Guide for proper mounting of the manifold and run calibration again.



Firmware Updates

MOBILE DEVICE APP

The app, which is free and requires no additional hardware, is available in the Apple App Store and for Android devices in Google Play. Search for Air Lift Performance.



- Operation of the mobile app is similar to operation of the 3H/3P controller. The main difference is to access the menu screens, tap the gear in the upper right corner.
- App users will get notifications that there is a firmware update, app update or other system update.
- Firmware updates can only be made through the mobile app.

After installing the system, all users should download the app and check for firmware updates.

The apps are available at these links:

For iPhone: air-lift.co/3app

For Android: air-lift.co/android

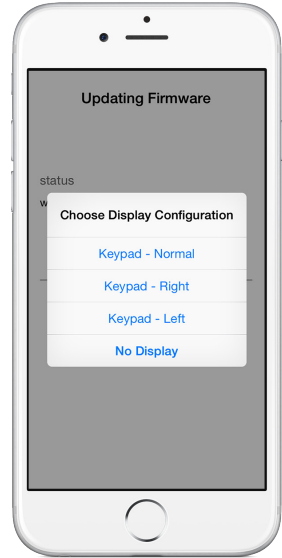


Firmware Updates, Cont.

SWITCHING TO LANDSCAPE MODE

Users have the option of changing the orientation of the 3H/3P controller to landscape mode.

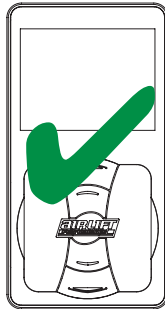
- To change modes, update the firmware and choose “Keypad Normal,” “Keypad Right” or “Keypad Left.”
- While the controller can be used with the display to the right or left of the keypad, it cannot be oriented so that the keypad is above the display.
- To rotate the keypad, remove the two screws on the back of the controller. Remove the keypad, rotate it to the preferred position and re-secure the screws to .01Nm (14-16 oz.-in.), which is essentially finger-tight.



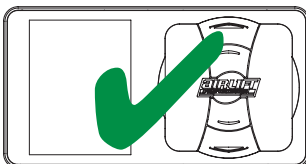
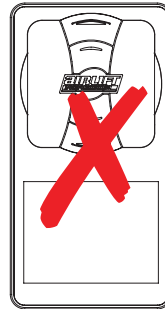
CAUTION

DO NOT OVERTIGHTEN.

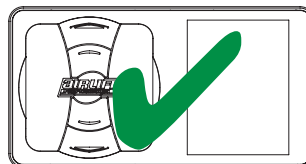
3H/3P DISPLAY ORIENTATION OPTIONS



Keypad - Normal



Keypad - Right



Keypad - Left

Additional Information

PRESET MODES

There are three standard preset modes used in this system. If the user chooses, the all-up and all-down buttons can be set as two additional presets which will follow the same requirement for operation below (see page 9).

Presets are viewed, used and changed/saved with the following procedures:

DOUBLE TAP

1. Press the appropriate preset key once to display current preset values.
2. Double press the preset key to obtain the preset value that is currently saved.
3. Press and hold the preset key to change the preset value.

SINGLE TAP

1. Press the appropriate preset key once to display and obtain the preset.
2. Press and hold the preset key to change the preset value.

CHANGING PRESETS

1. Press and hold the preset key you want to change. The display will allow you to manually change those values using the corner keys. (Values will be shown as PSI for pressure and percentage for height).



2. Press and hold the preset key again to save your selected values.
3. To exit without saving the current preset, press any other preset button at any time.

DEFAULT SETTINGS

1. **Preset low** – 1.72BAR (25 PSI) [pressure] / 25% [height]
2. **Preset ride** – 3.44BAR (50 PSI) [pressure] / 50% [height]
3. **Preset high** – 5.17BAR (75 PSI) [pressure] / 75% [height]



WARNING

IT IS POSSIBLE TO SET THE VEHICLE AT A HEIGHT THAT IS BELOW THE MINIMUM DRIVE HEIGHT THRESHOLD, THEN START DRIVING. THE 3H/3P SYSTEM IS A UNIVERSAL SYSTEM AND SETTINGS WILL BE DIFFERENT FOR EVERY USER AND VEHICLE.

About

Select this option to see what version of software is running on the system, product serial number and Bluetooth identification address.

Users may need to provide this information when calling Air Lift Company customer service.

The manifold or display software can be updated using the mobile app.














System Messages

Label	Fault	Problem
NOTICE	Calibration not completed	Customer attempts to use presets prior to calibration.
NOTICE	Manifold upside down, please re-mount	The manifold has been mounted in an unacceptable orientation.
CAUTION	Leak detected on corner (FL, FR, RL, RR*)	A leak has been detected between manifold and the air spring that is causing a drop in air pressure.
CAUTION	Check height wiring and plumbing (FL, FR, RL, RR*)	The system has detected that the either the wiring is incorrect or not responding or lines are plumbed incorrectly for the given corner.
CAUTION	Waiting for tank to fill	Detected that tank pressure dropped 1BAR (15 PSI) below user defined max tank pressure value.
DANGER	Height sensor failure (FL, FR, RL, RR*)	Detected that sensor signal has gone invalid or out of range for the given corner.
CAUTION	Range fault	Height sensor range is too low to provide accurate data to the user and will need to be adjusted to provide adequate sensor travel.
CAUTION	Limit reached	Height sensor travel is out of acceptable range of 10-90% of full sensor travel. Re-adjust sensor to be in range of acceptable wheel travel.
CAUTION	Min drive height reached	The system has detected vehicle is moving and therefore prevented vehicle from going below minimum drive height.
CAUTION	Low battery voltage	Vehicle has reached the user defined set value for minimum battery voltage used for disabling the compressor.
CAUTION	High battery voltage	Vehicle has detected battery voltage above 16V.
DANGER	Pressure sensor failure (FL, FR, RL, RR*)	Detected a pressure sensor failure at the manifold block for the corner sensor.
CAUTION	Pressure preset mode disabled	System has detected a failure in the pressure sensor and disabled pressure preset. Can still operate height preset if installed.
DANGER	Corner height sensor failure (FL, FR, RL, RR*)	Corner height sensor voltage is out of range.

* FL = Front left corner
 FR = Front right corner
 RL = Rear left corner
 RR = Rear right corner

System Messages, Cont.

Label	Fault	Problem
 CAUTION	Corner height sensor near limit (FL, FR, RL, RR*)	Height sensor range is near limit of operation at the given corner.
 CAUTION	Compressor freeze	The system has detected no increase in tank pressure when compressor commanded on. Compressor may be blocked.
 CAUTION	Compressor overrun	The compressor duty cycle has been reached and excessive usage has been detected which could overheat the compressor. Compressor is disabled.
 CAUTION	Tank pressure sensor failure	The system detected a pressure sensor failure at the manifold block for the tank sensor. System will disable the compressor when a tank pressure sensor failure has been detected to eliminate the opportunity of overfilling the tank.
 CAUTION	Tank pressure too low	Tank pressure has fallen below 5.9BAR (85 PSI). Will reset when pressure reaches 5.9BAR (85 PSI).
 DANGER	Adjusting minimum ride height below 25% may result.....	Setting the minimum driving height below the 25% default may result in vehicle damage and personal injury. Agreeing to and understanding this safety concern will allow the system to be set below 25%.
 CAUTION	Firmware update required or Incompatible revision	The manifold and display firmware are not at the same revision level and need to be updated to access all features. The system will only operate in manual mode until updated. Use the free iOS or Android app to update the firmware on the manifold and display (see pages 18-19).
 CAUTION	Invalid mount	The manifold is not mounted in an allowed orientation. Remount the manifold in an allowed orientation and recalibrate.
 CAUTION	Height calibration	The system is in height mode but a height calibration has not been completed. The system will only operate in manual mode until a height calibration is completed.
 CAUTION	Pressure calibration	The system is in pressure mode but a pressure calibration has not been completed. The system will only operate in manual mode until a pressure calibration is completed.
 CAUTION	Mount calibration	The manifold orientation calibration has not been completed. The system will only operate in manual mode until a manifold orientation calibration is completed.

INTEGRATED DIAGNOSTICS

The 3P and 3H air management systems have an integrated diagnostics tool that can be used to validate your install or troubleshoot any potential system issues. The manifold will only perform the diagnostic routine if ignition is on prior to a battery connection to the manifold. The FL valve will generate a series of clicks separated by a pause which indicates either a pass code or an error code. Count the number of clicks before and after the pause and use the table below to decipher the code.

1. Ensure that ignition is ON
2. Turn rise-on-start and preset maintain OFF.



CAUTION

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.

3. Air out the vehicle and disconnect the FL air line from the manifold.
4. With ignition still on, disconnect and reconnect the manifold electrical connector.

Code	Description
No clicks	Poor battery or ignition harness connection
Pass code 1-1	Manifold Is Functioning Properly. Battery and ignition harness connections are OK.
Error code 2-1	Manifold 5V Display Supply Error
Error code 2-2	Manifold 5V Height Sensor Supply Error
Error code 2-3	Manifold 3.3V Pressure Sensor Supply Error
Error code 2-4	System Battery Voltage Low (Below 9V)
Error code 2-5	Manifold Solenoid Over-Current Detected
Error code 3-1	Manifold FL Solenoid Failure
Error code 3-2	Manifold FR Solenoid Failure
Error code 3-3	Manifold RL Solenoid Failure
Error code 3-4	Manifold RR Solenoid Failure
Error code 3-5	Manifold Tank Solenoid Failure
Error code 3-6	Manifold Exhaust Solenoid Failure
Error code 4-1	Compressor 1 Error (Main Compressor Relay or Main Harness Issue)
Error code 4-2	Compressor 2 Error (Second Compressor Relay or Second Compressor Harness Issue)

VIAIR Compressor Duty Cycle/ Working Pressure

COMPRESSOR RATINGS (STANDARD: 16444)

Max working pressure: 13.8BAR (200 PSI)

Duty cycle at rated pressure: 50% @ 13.8BAR (200 PSI),

100% @ 6.9BAR (100 PSI)

Users have the option of installing several other compressors. Below are examples with their duty cycles and working pressures.

Air Lift P/N VIAIR Compressor	Max Working Pressure	Duty Cycle @ Rated Pressure
16130 (100C)	9.0BAR (130 PSI)	15% @ 6.9BAR (100 PSI) and 9.0BAR (130 PSI)
16190 (325C)	10.3BAR (150 PSI)	33% @ 6.9BAR (100 PSI) and 10.3BAR (150 PSI)
16380 (380C)	13.8BAR (200 PSI)	55% @ 13.8BAR (200 PSI) and 100% @ 6.9BAR (100 PSI)
16400 (400C)	10.3BAR (150 PSI)	33% @ 6.9BAR (100 PSI) and 10.3BAR (150 PSI)
16444 (444C)	13.8BAR (200 PSI)	50% @ 13.8BAR (200 PSI) and 100% @ 6.9BAR (100 PSI)
16450 (450C)	10.3BAR (150 PSI)	100% @ 6.9BAR (100 PSI) and 10.3BAR (150 PSI)
16480 (480C)	13.8BAR (200 PSI)	50% @ 13.8BAR (200 PSI) and 100% @ 6.9BAR (100 PSI)