

# DRIVE RITE

## AIR SUSPENSION SYSTEMS

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### DR.11.016112

WR1-760-6112

### COMPRESSOR AND DUAL GAUGE KIT WITH LOW PRESSURE SENSOR

### INSTALLATION INSTRUCTIONS



MN-789  
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ECR 7567

# Table of Contents

<b>Table of Contents .....</b>	<b>2</b>
<b>Introduction .....</b>	<b>3</b>
IMPORTANT SAFETY NOTICE .....	3
Special Instructions for Air Connections.....	3
<b>Installation Diagram .....</b>	<b>4</b>
<b>Installing the Compressor and Dual Gauge System .....</b>	<b>5</b>
RECOMMENDED COMPRESSOR LOCATIONS .....	5
GETTING STARTED .....	5
STEP BY STEP INSTALLATION .....	6
<b>Product Use Information .....</b>	<b>9</b>
FREQUENTLY ASKED QUESTIONS .....	9
TUNING THE AIR PRESSURE.....	9
GUIDELINES FOR ADDING AIR (SEMI AIR KITS): .....	10
WARRANTY CLAIMS: .....	11

# Introduction

The purpose of this publication is to assist with the installation of the compressor and dual gauge system.

It is important to read and understand the entire installation guide before beginning installation or performing any maintenance, service or repair. The information here includes a hardware list and step-by-step installation information.

Drive-Rite reserves the right to make changes and improvements to its products and publications at any time. Contact Drive-Rite at +353 1 8612 632 or visit us online at [www.driveriteair.com](http://www.driveriteair.com) for the latest version of this manual.

## IMPORTANT SAFETY NOTICE

The installation of this kit does not alter the Gross Vehicle Weight Rating (GVWR) or payload of the vehicle. Check your vehicle's owner's manual and do not exceed the maximum load listed for your vehicle.

**Gross Vehicle Weight Rating** = the maximum allowable weight of the fully loaded vehicle (including passengers and cargo). This number — along with other weight limits, as well as tyre, rim size and inflation pressure data — is shown on the vehicle's Safety Compliance Certification Label.

**Payload:** The combined, maximum allowable weight of cargo and passengers that the truck is designed to carry. Payload is GVWR minus the Base Curb Weight.

### Precautions

Never exceed the maximum and minimum recommended pressure limits:

- Minimum Pressure            1 Bar (14.5 p.s.i)
- Maximum Pressure           7 Bar (100 p.s.i)

### **NEVER DRIVE WITH DEFLATED AIR SPRINGS**

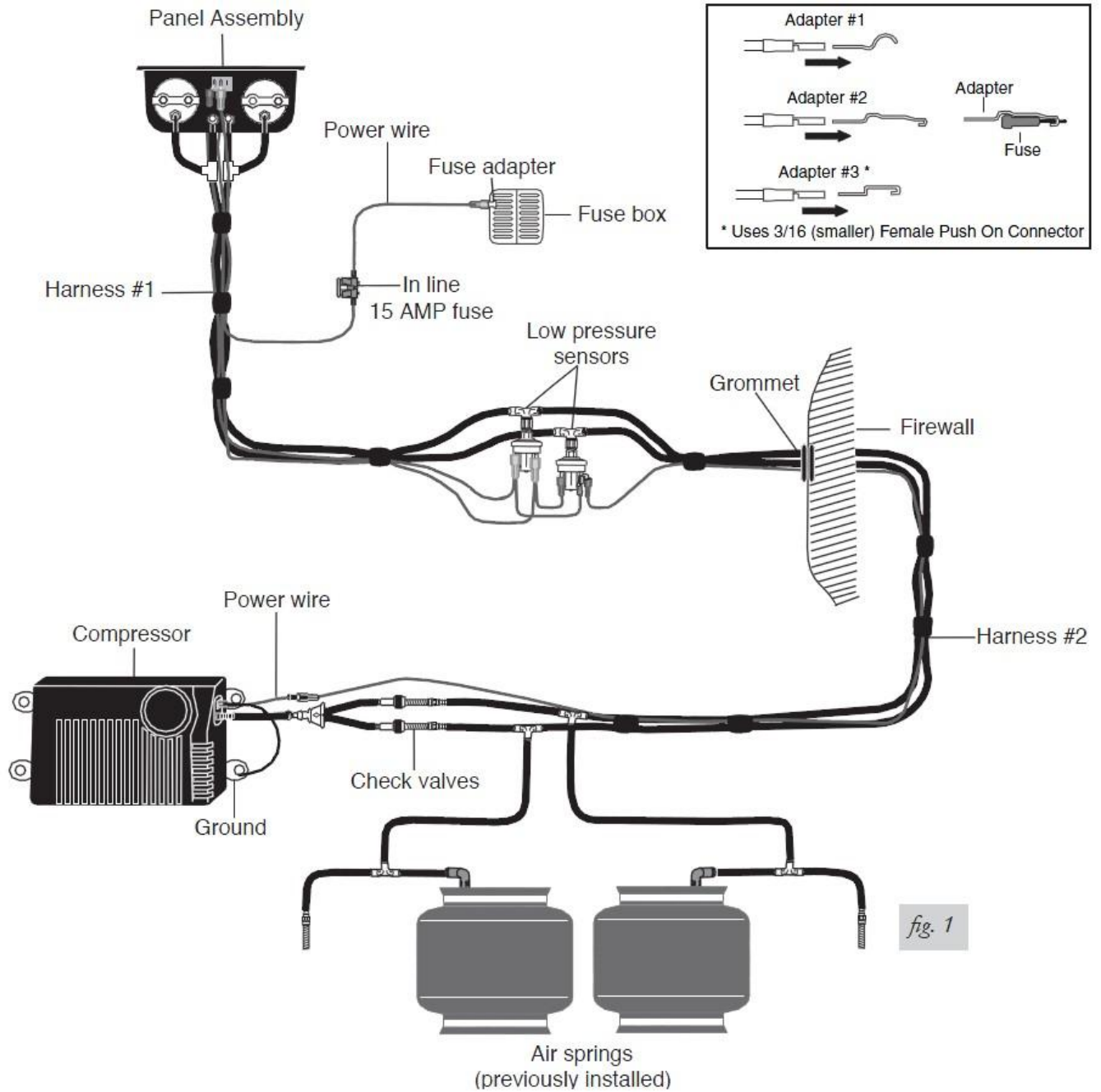
## Special Instructions for Air Connections

- To cut the tubing correctly an appropriate cutter must be used (not scissors)



- When inserting the tubing into the connection, it must be pushed in approximately 14mm until a 'click' is heard.
- To remove the tube, you must push the flange in on the connection and at the same time pull the tube. (No tool is necessary.)
- **ATTENTION**, when a tube is removed it is important to trim 14mm from the end before reconnection.

# Installation Diagram



## HARDWARE LIST

Item	Description.....Qty	Item	Description.....Qty
A	Compressor.....1	G	Grommet.....1
B	Panel assembly.....1	H	Fuse.....1
C	'Y' assembly.....1	I	Fuse.....1
D	Harness #1.....1	J	Fuse Adapter.....1
E	Harness #2.....1	K	Red Wire......5m(16')
F	Hose.....7.5m(25')	L	Black Wire.....2.5m(8')

# Installing the Compressor and Dual Gauge System

## RECOMMENDED COMPRESSOR LOCATIONS

### Important

LOCATE COMPRESSOR IN DRY, PROTECTED AREA ON VEHICLE.  
 DIRECT SPLASH OR EXCESSIVE MOISTURE CAN DAMAGE  
 THE COMPRESSOR AND CAUSE SYSTEM FAILURE.

#### Please also remember...

- To avoid high heat environments
- To avoid mounting the compressor in the engine compartment.
- To check to be sure the compressor harness #2 will reach the compressor and connect to harness #1.

The compressor can be mounted in any position — vertical, upside down, sideways, etc. (please refer to the instruction manual).

#### NOTE

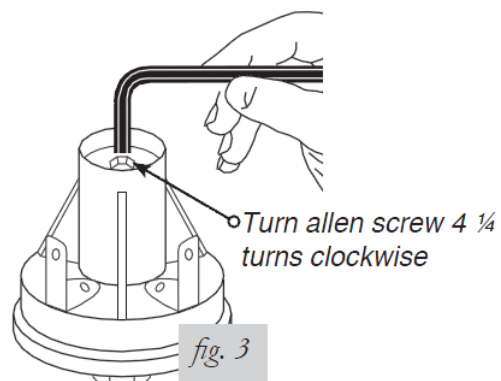
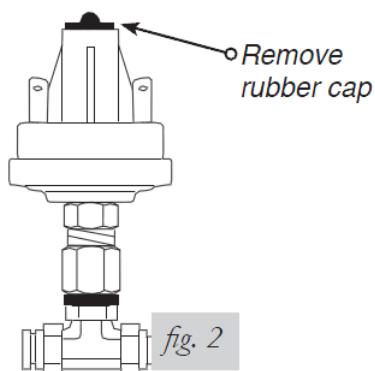
*Failure to install the compressor in a recommended location could void the warranty.*

## GETTING STARTED

This part of the installation should be done after the air spring kit is installed.

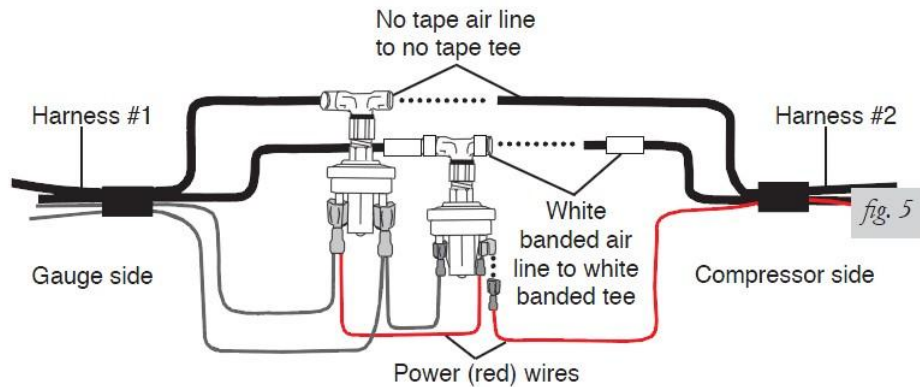
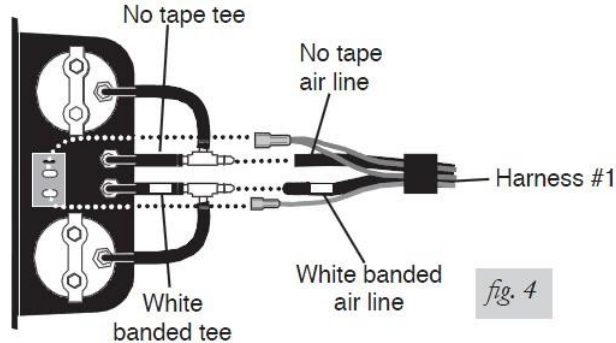
If you are adding this control system to a CoilRite application, then no modifications to the low pressure sensor are necessary. If you are adding this control system to a Semi-Air application, and if your specific application requires a minimum of 2/3Bar (10 p.s.i.), then it will be necessary to adjust the low pressure sensor to 2/3Bar (10 p.s.i.). To increase the pressure in the low pressure sensor, remove the rubber plug with pliers (fig. 2). Using an Allen wrench, turn the screw clockwise 4 1/4 turns (fig. 3). Push the rubber plug back into the top of the low pressure sensor. Proceed with the step by step installation instructions.

Do not cut, trim, modify, or disassemble the harness. If you have excess length, simply coil it up and secure out of the way with the provided tie straps. All preassembled gauge panels have been 100% leak & function tested. DO NOT attempt to tighten, loosen, or adjust any fittings or connections. This will likely cause a leak or malfunction and void the warranty.



## STEP BY STEP INSTALLATION

All of the electrical connections are matched by male-to-female push-in terminals. All of the air line connections will be white- to-white, no tape-to-no tape, indicated by the colour band. The colour band also serves as a reference point for installing the air line into the fitting. Properly installed, the front edge of the colour band should be against the collar of the fitting (fig. 4 and 5).



1. Install the gauge panel. Select a convenient mounting location that has a sturdy rigid surface. The bottom edge of the dash on either side of the steering wheel is a good location. Attach the panel to the selected location with the black self-tapping screws.
2. Install the compressor unit.
  - a. Hold the compressor in the recommended location and use the provided silver self tapping screws to attach the mounting brackets to the vehicle.
  - b. In some cases the mounting area does not provide enough room to use a drill to drive the screws in. It may be necessary to use the mounting brackets as a template to drill 5mm (13/64") holes through the frame first and then use a 7/16" nut driver to install the self tapping screws.

**NOTE**

*Attach the ground wire to one of the screws (fig. 1).*

- c. For box frames: In some cases the frame section will not be wide enough to mount the compressor legs flat to the rail. Refer to fig. 6 in this situation.

**CAUTION**

DO NOT DRILL ANY HOLES INTO THE FRAME OR THE FLOOR BEFORE CHECKING FOR HYDRAULIC LINES, FUEL LINES, AND/OR ELECTRICAL WIRES THAT MAY NEED TO BE MOVED ASIDE. ALSO, WHEN ATTACHING TO THE FLOOR, IT IS IMPORTANT TO CHECK WHERE THE SCREWS PROTRUDE THROUGH THE FLOOR. IT MAY BE NECESSARY TO TRIM OR COVER THE TOP OF THE SCREWS INSIDE THE VEHICLE. A SEALER SHOULD BE USED AROUND THE SCREW TO PREVENT THE ELEMENTS FROM ENTERING THE CAB

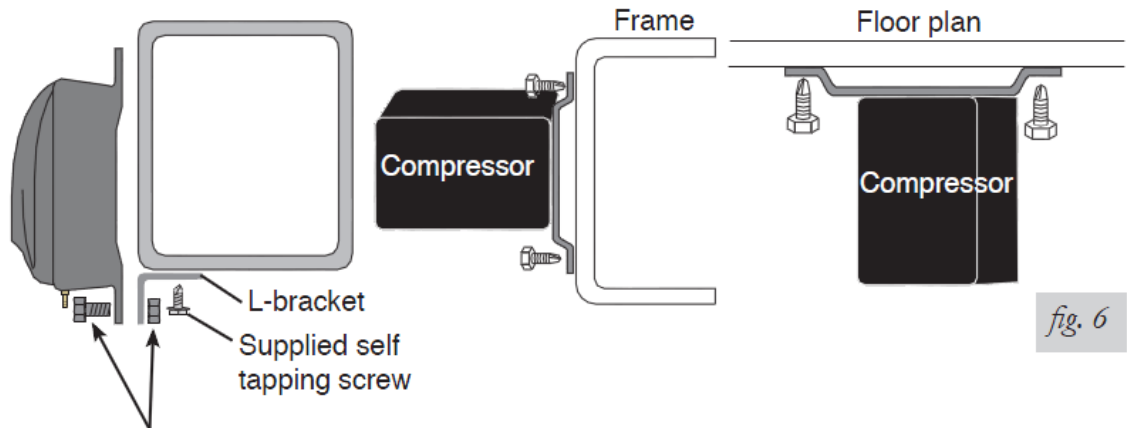


fig. 6

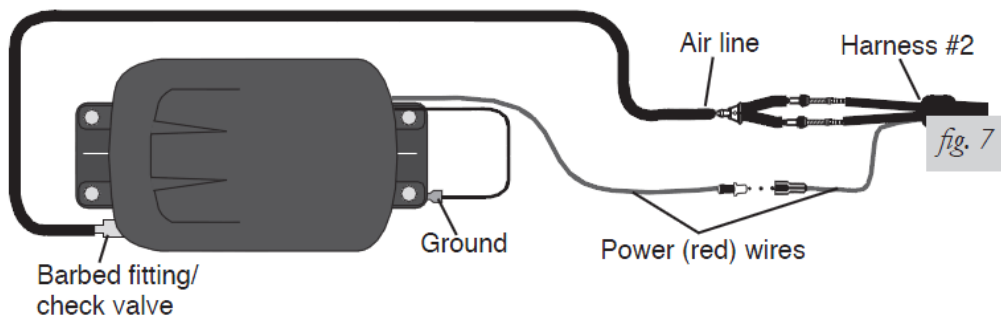
*1/4" Bolt and nut will need to be provided if the L-bracket is fabricated.*

3. Connect wiring harness #1 to the back of the gauge panel.
  - a. With your thumb against the front side of the switch, connect the wire by pushing the female connectors onto the blade connectors on the switch.
  - b. Match the colour band on the air line to the colour band on the tees.
  - c. Push the air lines onto the "T" fitting until the air line completely covers the barb (fig. 4). Lubricating the air line will ease pushing the air line over the barb.
  - d. Do not connect the power wire at this time.
  - e. Wiring harness #1 also connects the gauge panel to the low pressure sensor assembly. The low pressure sensor protects the air springs from failure resulting from low pressure in the unloaded condition. These sensors are preset to maintain a MINIMUM pressure of 1/3Bar (5 p.s.i.) in the air springs. The sensors measure the pressure in each spring and turns on the compressor if the pressure falls below 1/3Bar (5 p.s.i.).

**NOTE**

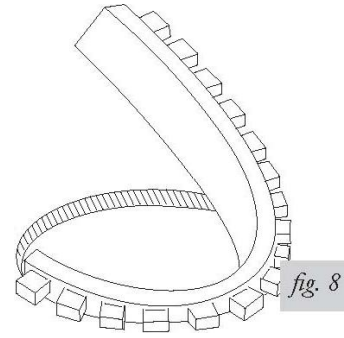
*The low pressure sensor is preassembled onto wiring harness #1. The sensors should be located under the dash inside the vehicle and secured with the provided tie straps.*

4. Attach harness #2 to the compressor unit.
  - a. Push the air line completely over the barbed fitting on the compressor and connect the power wire (red) (fig. 7).



5. Route wiring harness #2 from the compressor.
  - a. Use existing grommets in the floor or firewall to route the harness from the compressor to the low pressure sensors on harness #1.
  - b. In some cases, a hole may have to be drilled to allow access for the harness. Drill a 16mm (5/8") diameter hole and install the provided grommet (fig. 8). It will be necessary to seal any grommets or holes that have been cut, drilled or removed so as not to allow elements to enter the cab area of the vehicle.
  - c. When routing wiring harness #2 from the compressor, it should not be routed so as to lie on, or near, the exhaust pipe/silencer/catalytic convertor of the vehicle. Routing along the top of a cross member or over a heat shield is recommended.

After the hole is drilled and before you route the harness through the firewall, insert the grommet and “walk” the material around the inside edge of the drilled hole. You may have to trim the grommet to get an exact fit. (The flexible grommet is in the sealed parts package.)



6. Connect wiring harness #2 to wiring harness #1 inside the vehicle by connecting the red wire from harness #2 and the banded and no tape air lines to the low pressure sensors. See fig. 5 for air line and electrical connection.
7. The next connection is between each air spring and the air line “T” fitting located just ahead of the check valves in harness #2, near the compressor (fig. 1 and 7).
  - a. With the air springs deflated, use a hose cutter to cut the air line already installed between the air springs and the inflation valves.
  - b. Install the provided “T” fittings (fig. 1) by pushing the air line into each leg of the “T” until you feel a definite “click”. Each line should go in 14mm(9/16”).
  - c. Connect a single length of air line to the open leg of each “T”. Bring each of the lines to the “T” fittings in harness #2 just in front of the check valves and connect as shown in fig. 7.
  - d. Route the air line across the chassis from the far side over the exhaust system heat shields and along the frame up to the compressor. Avoid heat sources, sharp edges, and tight bends.
8. Connect the power wire from harness #1.
  - a. Route it to the vehicle fuse box.
  - b. Use a multi meter to determine which open terminal (accessory, etc.) works only when the key is in the “on” or accessory position (or refer to the owner’s manual for an available accessory fuse). The terminal should have amperage rating equal to or higher than the 15 amp in-line fuse.
  - c. Connection to the fuse terminal will depend on what type of fuse your vehicle uses. If your vehicle uses the barrel type fuse, use adapter #1. If you have the standard spade type fuses, use adapter #2. Many late model vehicles use a smaller spade type fuse which requires adapter #3 (see inset with fig. 1). If adapters #1 or #2 are used, it will be necessary to cut off the ¼” female connector attached to the power wire and crimp the smaller 3/16” female connector supplied with this kit.

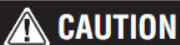
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**NOTE** Connect adapter to “LIVE” side of the fuse (use a multi meter to determine). With the ignition on, the compressor will turn on and fill the system to 1/3Bar (5 p.s.i.) before shutting off.

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9. Connect the gauge light.
  - a. Route the red wire for the illuminated gauge to harness #1’s fused wire or to a dash light wire circuit and attach with the quick splice provided.
  - b. Ground the black wire to an adequate ground. Use the additional wire and connectors supplied if longer leads are needed (fig. 1).
10. Press the off/on button to inflate both air springs and use the small deflate button to adjust the pressure. Inflate to 2Bar (30 p.s.i.). Check all fittings and inflation valve cores with a soapy water solution to test for leaks.
11. Recheck air pressure after 24 hours. A slight loss after initial installation is normal, however if pressure has dropped more than 1/3Bar (5 p.s.i.), re-test for leaks with soapy water solution. Please read and follow the maintenance and operating tips in the installation manual that came with your air spring kit.

**IMPORTANT:** If the compressor runs continually or often, then there is a leak. Disconnect the compressor at the fuse box and test for leaks with a soapy water solution.



**NEVER RUN THE COMPRESSOR LONGER THAN FOUR MINUTES CONTINUOUSLY. ALLOW AT LEAST FIVE MINUTES FOR COOL DOWN BEFORE STARTING THE COMPRESSOR AGAIN**



# Product Use Information

## FREQUENTLY ASKED QUESTIONS

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

No. Adding air springs will not change the weight ratings (GVWR) of a vehicle. Exceeding the GVWR is dangerous and voids the Drive-Rite warranty.

**Q. Is it necessary to keep air in the air springs at all time and how much pressure will they need?**

The minimum air pressure should be maintained at all times. The minimum air pressure keeps the air spring in shape, ensuring that it will move throughout its travel without rubbing or wearing on itself.

**Q. Is it necessary to add a compressor system to the air springs?**

No. Air pressure can be adjusted with any type of compressor as long as it can produce sufficient pressure to service the springs. Even a bicycle tire pump can be used, but it's a lot of work.

**Q. How long should air springs last?**

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

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

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

## TUNING THE AIR PRESSURE

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

**1. Level vehicle**

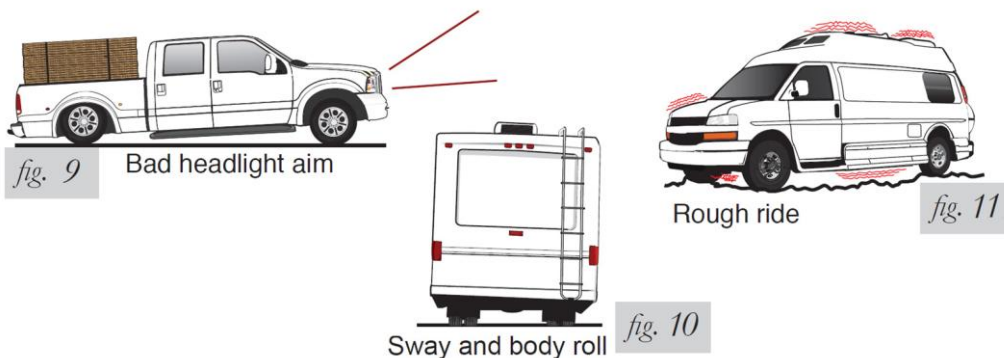
If the vehicle's headlights are shining into the trees or the vehicle is leaning to one side, then it is not level (fig. 9). Raise the air pressure to correct either of these problems and level the vehicle.

**2. Ride comfort**

If the vehicle has a rough and harsh ride it may be due to either too much pressure or not enough (fig. 11). Try different pressures to determine the best ride comfort.

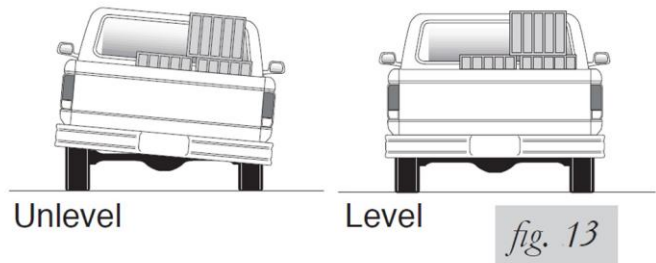
**3. Stability**

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 (fig. 10). Tuning out these problems usually requires an increase in pressure.



## GUIDELINES FOR ADDING AIR (SEMI AIR KITS):

1. For all air systems, check the recommended Maximum and Minimum pressure for that kit in the Installation instructions. This is a rough guide for general information. *NEVER over inflate air springs as this might damage the system.*
2. Start with the vehicle level or slightly above.
3. For motor homes, start with 3-6Bar (45-90 p.s.i.) in the rear because it can be safely assumed that it is heavily loaded.
4. If the front of the vehicle dives while braking, increase the pressure in the front air bags, if equipped.
5. If it is ever suspected that the air bags have bottomed out, increase the pressure (fig. 12).
6. Adjust the pressure up and down to find the best ride.
7. If the vehicle rocks and rolls, adjust the air pressure to reduce movement.
8. It may be necessary to maintain different pressures on each side of the vehicle. Loads such as water, fuel, and appliances will cause the vehicle to be heavier on one side (fig. 13). As much as a 3Bar (45p.s.i.) difference is not uncommon.



# WARRANTY POLICY

Drive-Rite products, when installed and used in the correct manner as advised by Drive-Rite, and operated under normal recreational or commercial conditions, are covered under warranty for **24 months from date of sale.**

*(Note: Exceptions to this standard 24 month cover may occasionally arise. In such cases, the extended or reduced warranty cover will be specified on the quotation, which overrides this general warranty policy.)*

Warranty cover is for the **replacement of parts only.** No further claims beyond replacement parts shall be granted, unless in exceptional cases and where agreed on an individual case basis with Drive-Rite. Cover does not include any travel or accommodation costs.

- For warranty claims the purchaser must be able to provide information relating to the date of purchase and date of installation.
- Warranty will be invalid if any modification is made to the components which renders the component not repairable or for its intended use. This includes any alteration not previously approved by Drive-Rite.

## WARRANTY CLAIMS:

Where parts are to be replaced under potential warranty cover, they should be returned to Drive-Rite as soon as possible, at the user's cost, accompanied by a completed RGA form (available on the Drive-Rite website). Failure to provide Drive-Rite with complete information as to the details of the claim may lead to the claim being rejected. Replacement parts sent are generally invoiced on initial shipment, but this invoice will be credited if accepted as a warranty case.

**Drive-Rite makes no other warranty of any kind or character, expressed or implied, and any warranties of merchantability and/or fitness for a particular purpose are excluded.**

**Limitation of Liability:** In no event shall Drive-Rite be liable under this warranty for any incidental or consequential damages including but not limited to loss of freight, loss of profit or equipment, or downtime.

## CUSTOMER INFORMATION

<b>Customer Name:</b>		
<b>Vehicle Make/Model</b>	<i>Eg. Ford / Transit FT350</i>	
<b>Vehicle Licence No:</b>		
<b>Semi-Air kit reference:</b>	<i>Eg. DR.02.003447</i>	
<b>Installed By</b>	<b>Contact Name</b>	
	<b>Company</b>	
<b>Installed Date:</b>		
<b>Proof of Purchase Retained</b>	Please retain all documents retaining to the purchase and installation of the kit	



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