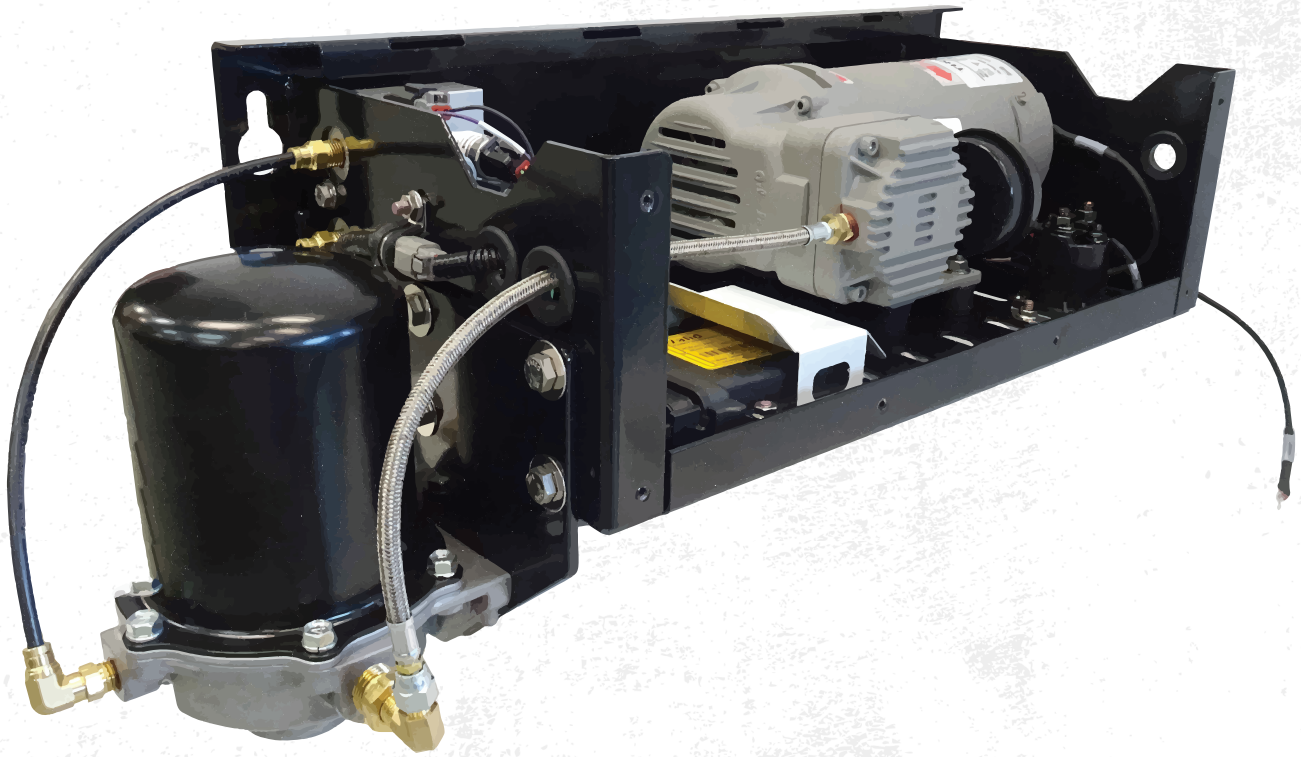
Reyco Granning SUSPENSIONS

Powered Vehicle Suspensions Installation Manual

AirMaster - Electronic Air Control Kit



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REV	ECR #	DATE	CHANGE DESCRIPTION	BY	CHK	APV
OR	21039	6/8/17	RELEASED FOR PRODUCTION	JCR	-	-
A	21341	6/15/18	IMPROVEMENTS TO INFORMATION	LLG	MGO	JAH
B	22825	9/27/23	PAGE 20 & 21: UPDATED SCHEMATIC TO ADD A RELAY	STM	RSC	JAH

INTRODUCTION

Company Profile

Reyco Granning Suspensions was formed by the merger and acquisition of two well-known names in the heavy duty vehicle suspension industry—Reyco and Granning.

Reyco grew out of the Reynolds Mfg. Co and was first known as a major supplier of brake drums for heavy duty vehicles and later developed a full line of air and steel-spring suspensions for trucks, buses, trailers and motorhomes.

Granning Air Suspensions was founded in 1949 in Detroit, Michigan as a manufacturer of auxiliary lift axle suspensions. Granning later became an innovator of independent front air suspensions for the motorhome industry.

Reyco Granning LLC was formed in early 2011 through a partnering of senior managers and MAT Capital, a private investment group headquartered in Long Grove, Illinois.

Congratulations on your purchase of a ReycoGranning® product. Founded in 1948 by one of the pioneers of air suspensions, ReycoGranning® Air Suspensions supplies drive and tag axle air suspension systems to a variety of original equipment manufacturers as well as to the aftermarket industry. The R-Series products, are utilized by OEM customers in applications such as recreational vehicles, shuttle bus, trailer, chassis builders, Type I and III ambulances and class 3 through 8 truck applications. This product line now exceeds 25 models that cover all major chassis utilized in the above applications.

INTRODUCTION

About This Manual

This publication is intended to instruct in the installation of your **Reyco Granning**® product. It is important to read and understand the entire Technical Procedure publication prior to performing any operation of or service to this product.

Reyco Granning ® Air Suspensions reserves the right to modify the products and/or procedures and to change specifications at any time without notice and without incurring obligation. Contact customer service at **800-753-0050** for information on the latest version of this manual.

You must follow your company safety procedures when you service the product. Be sure you read and understand all the procedures and instructions before you begin work on the product.

Some procedures require the use of special tools for safe and correct service. Failure to use these special tools when required can cause personal injury or damage to suspension/air control components.

The latest revision of this manual is available online at
http://www.*ReycoGranning*.com/
Reyco Granning ® Air Suspensions has developed this manual to aid in the installation of **Reyco Granning** ®'s AirMaster Electronic Height Control System.

PRODUCT OVERVIEW

This manual covers the installation and configuration of the AirMaster Electronic Height Control system to control the **rear** suspension air bags for Ride or Kneel heights.

RIDE HEIGHT: This is the normal height of the rear of the vehicle when driving.

KNEEL HEIGHT: At speeds below 10 mph the rear of the vehicle can be lowered to provide increased accessibility.

Note: By default, the kneeling feature is disabled. To enable kneeling during setup, refer to page System Setup, step 2f.

Two (2) electronic ride height sensors are connected to a control module which operates air valves to allow the driver and passenger suspension air bags to be inflated or deflated as required.

Note: The front suspension is not part of this control system.

A discrete wired input for ignition is used to enable the height control system.

A manually operated momentary switch is added adjacent to the driver which provides an input to the control module to initiate kneeling. This switch also provides a means to perform 'Ride Height Setup, 'Travel Zero Set' and 'Kneel Height Setup' - refer to System Setup steps 2a – 2f.

A **Door** switch discrete wired input is provided. With the ignition on, this is used to kneel when a door is opened, and return to ride height when the door is closed.

A **Motion Warning** discrete wired output is activated when the rear of the vehicle is lowering or raising between ride height and kneel height.

A **Low Pressure** discrete wired output is activated when the rear of the vehicle is either below the lower warning limit for an extended period of time or the compressor has been running for an extended period of time.

The control module is connected to an air pressure transducer and activates the air compressor to maintain pressure for normal driving and to provide optimum pressure to minimize transition time when recovering from kneel height to ride height. When energized, a **Dryer** output purges the air dryer and provides compressor pressure head relief.

Depending on the design of rocker switch, it may incorporate a status indicator. Otherwise, a separate status indicator is added in the dash area. This is also used to provide fault 'blink' codes; refer to the AirMaster Owner's Manual (D714424).

A connection to the vehicle CAN bus network provides transmission gear and speed data. In reverse gear, automatic ride height adjustments are temporarily disabled. Kneeling is only available at speeds of less than 0.02n 10 MPH.

SAFETY INSTRUCTIONS

WARNING

- **DO NOT USE THE VEHICLES SUSPENSION TO SUPPORT THE VEHICLE FOR SERVICING OR INSPECTION. INSTEAD, INSTALL ADEQUATE BLOCKING BEFORE WORKING UNDER ANY VEHICLE. THE SYSTEM IS DESIGNED AS A 'HEIGHT CONTROL' SYSTEM ONLY.**
- **KEEP CLEAR OF PINCH POINTS WHEN ADJUSTING THE RIDE HEIGHT SENSORS AS THE SUSPENSION AIR BAGS WILL ADJUST IN RESPONSE TO A LEVER ADJUSTMENT.**
- **KEEP PEOPLE CLEAR OF VEHICLE WHILE RAISING OR LOWERING.**

CAUTION

- READ AND UNDERSTAND THE ENTIRE OPERATOR'S MANUAL BEFORE USING OR SERVICING YOUR ELECTRONIC RIDE CONTROL SYSTEM.
- THIS SYSTEM SHOULD BE SERVICED ONLY BY QUALIFIED PERSONNEL.
- LEAKS IN A VEHICLE'S AIR SYSTEM CAN CAUSE THE VEHICLE TO LOWER OVER TIME WHEN THE SYSTEM IS OFF.
- CONNECT THE SUSPENSION CONTROL SYSTEM TO THE VEHICLE BATTERY ONLY AFTER ALL OTHER ELECTRICAL AND PNUEMATIC COMPONENTS HAVE FIRST BEEN INSTALLED.

PREPARATION

Tools, parts, consumables and documents required

- Mounting fasteners for the suspension control enclosure and ride height sensors.
- ¼" & 3/8" Air tubing to connect the suspension control enclosure.
- Ignition switched 12VDC for the Rocker switch, Ignition and Permit.
- Connection fasteners, linkage rods and brackets for the two (2) Ride-Height Sensors.
- Service Pit or Hoist to setup the ride-height sensors.
- Hand tools for adjusting the ride-height sensors
- Measuring tape.
- Air Suspension Installation Instructions and Drawing
- AirMaster Installation Drawing 714393
- AirMaster Owner's Manual D714424 (for reference, if needed).
- Optional wire and contacts for installing the 'motion warning' or 'low pressure' outputs to a relay, or an indicator and/or audible annunciator.

Quick checklist

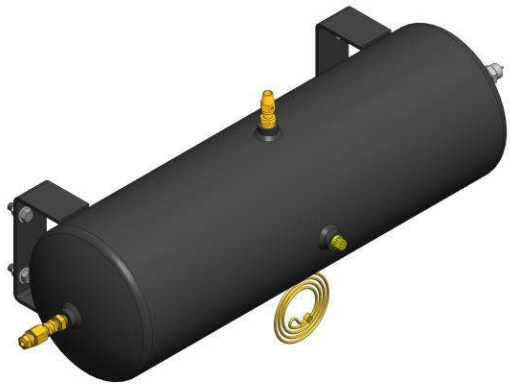
- ❑ Support the vehicle.
- ❑ Mount the suspension control enclosure.
- ❑ Connect Air Compressor DC Common and plug in the main harness.
- ❑ Mount the driver and passenger electronic ride height sensors.
- ❑ Harness connections to the ride height sensors
- ❑ Feed the harness into the cab
- ❑ Mount the Rocker switch.
- ❑ Extend rocker switch wires (if required).
- ❑ Connect Ignition and DC Common control wires.
- ❑ Connect to the Vehicle CAN bus Network.
- ❑ Connect Door Switch Wire.
- ❑ Connect Motion Warning Output.
- ❑ Connect Low Pressure Output.
- ❑ Connect air-line between the air dryer and the main air tank with a check valve.
- ❑ Connect air-lines for the Driver & Passenger air springs.
- ❑ Connect air supply & exhaust air-lines.
- ❑ Connect persistent 12VDC supply to 50 Amp automatic reset breaker and main harness.
- ❑ Connect persistent 12VDC supply to 10 Amp manual reset breaker.
- ❑ Move the vehicle a drive-on service pit or hoist.
- ❑ Perform Ride-Height Setup, Travel Zero-Set and set Kneel Height.
- ❑ Test System Operation.

INSTALLATION

Kit list – K714393 Includes:

Refer to Drawing 714393 for installation of the following components:

Air Tank Assembly (713882-01)



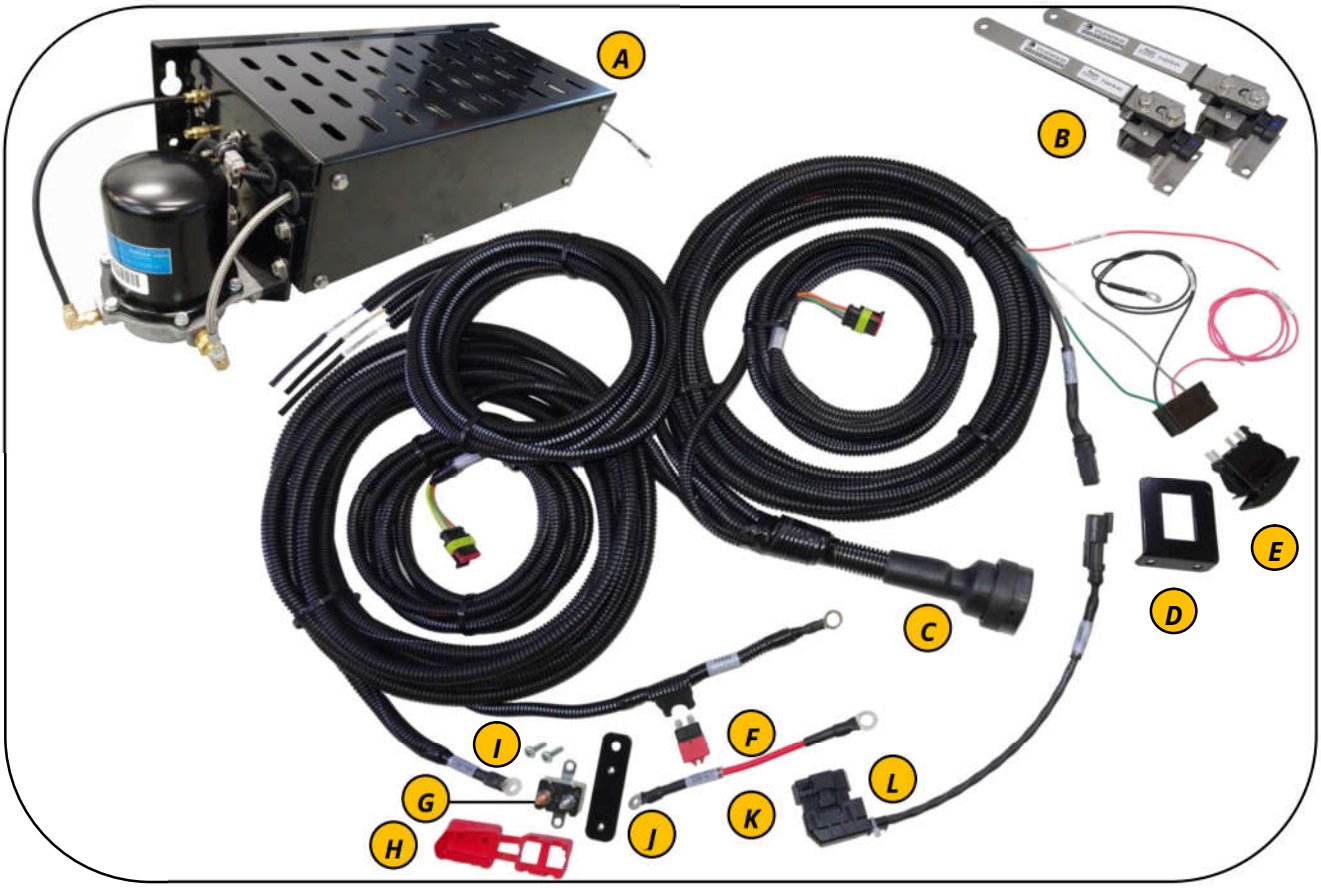
Elbow (x2) for Air Springs – 90, 1/4T x 1/4MPT (702600-01)

Hex Head Bolt (x4) – 3/8-16 x 1" (100263-P1), Washer (x8) – 3/8 (263), Nut (x4) – 3/8-16 (20029-01) for mounting Enclosure Assembly

Hex Head Bolt (x4) – ¼-20 x ¾", Washer (x4) – ¼, Nut (x4) – ¼-20 (4458)(x2) for mounting Electronic Height Control Sensors

INSTALLATION

Refer to drawing 714393 for installation of the following components



ITEM	DESCRIPTION
A	Suspension Control Enclosure
B	Left and Right Ride Height Sensors. (Identical part numbers)
C	Suspension Control Main Harness (12V DC Power, Ride Height Sensors, Rocker switch and vehicle interface with discrete outputs, discrete inputs and CAN bus)
D	Rocker Switch mounting bracket
E	Momentary Rocker Switch with integrated status indicator
F	Type 3, 10 Amp manual reset breaker (control circuit 12V DC power)
G	Type 1, 50 Amp automatic reset breaker (compressor 12V DC power)
H	Insulator Boot for 50 Amp automatic reset breaker
I	Mounting screws for 50 Amp automatic resent breaker
J	Mounting bracket for 50 Amp automatic reset breaker
K	Battery jumper for compressor 50 Amp automatic reset breaker
L	CAN bus to OBD-2 connector harness

INSTALLATION

Step 1 – Support the vehicle

Before you start this installation, read the **Safety Instructions section** to understand the risks.

The vehicle should be supported on solid ground using blocks or other jacking methods.

Do **not** use the vehicle's suspension.

Elevate the vehicle to its normal ride height.

Note: Later on in this installation procedure the vehicle support must be removed to set up the ride-height sensors. It is always unsafe to go under a vehicle with minimal ground clearance. Therefore, a hoist

Step 2 – Mount the suspension control enclosure

Important: The enclosure should not be subjected to direct water spray from the wheels. Install a spray barrier as required.

Before mounting the suspension control enclosure, first **confirm the supplied harness has sufficient length** (extensions available) to reach the following locations:

- Vehicle CAN bus connection point.
- Both ride height sensors.
- Dash mounted kneel rocker switch.

Mount the enclosure on either a left or right frame rail. Allow sufficient clearance to access either end to connect the main harness and air lines, as well as service access to remove the cover.

Note: The enclosure is intended to be mounted horizontally. There is no need to manually fine-tune the placement because the software will determine where 'Travel level' is during initial calibration.

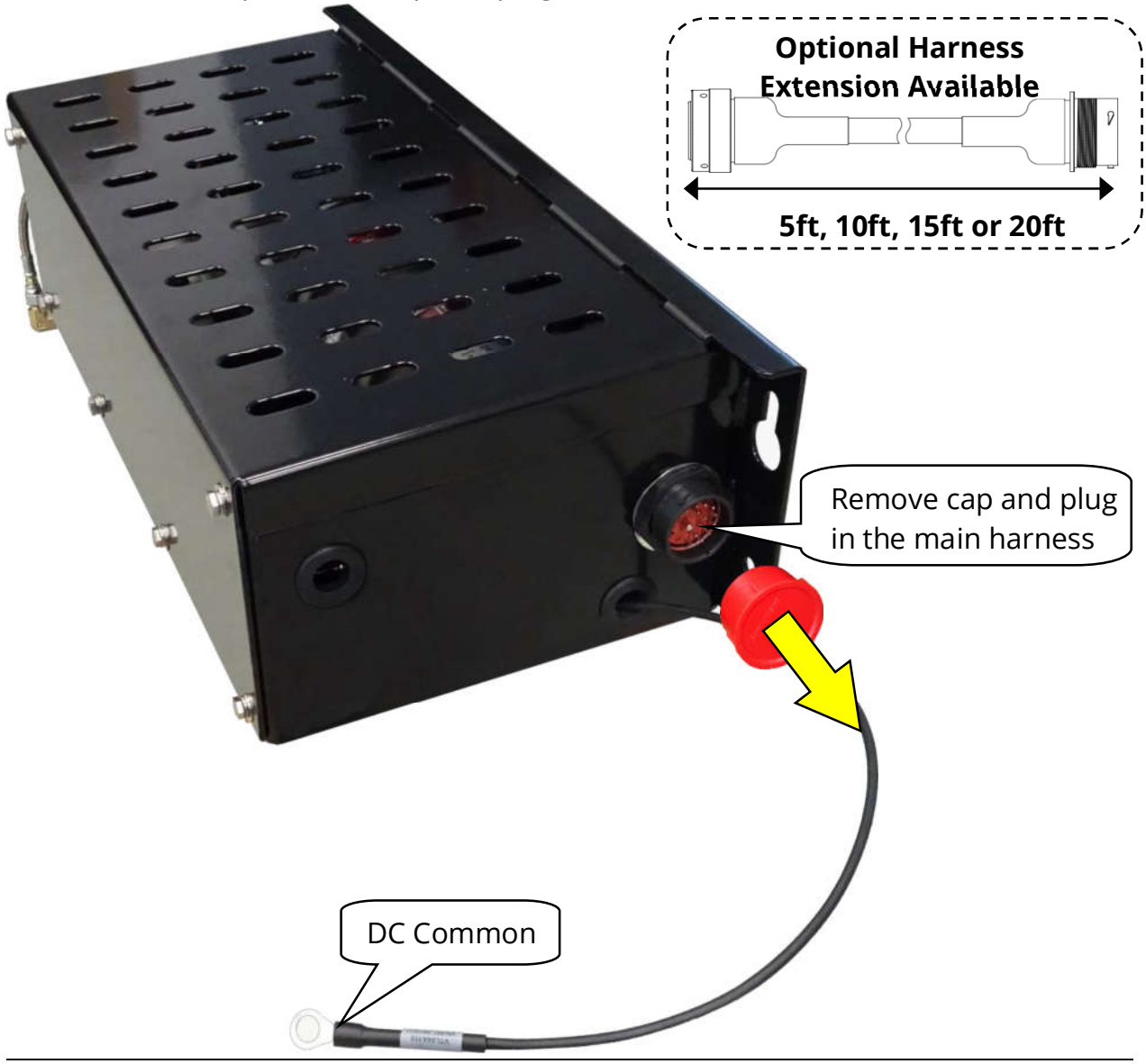
INSTALLATION

Step 3 – Connect air compressor DC common and plug in the main harness

Connect the Air Compressor DC common wire to the chassis frame.

IMPORTANT: This DC common wire must have a good conductive connection and be well secured.
Once secured, apply a corrosion inhibitor to the connection point. For example: Paint or Liquid Tape.

Remove the protective cap and plug in the main harness.



INSTALLATION

Step 4a – Mount the driver and passenger ride height sensors

'Step-1 Support the Vehicle' on page 10 **MUST** be performed before installing the ride-height sensors.

The ride-height sensor **body** is mounted to the chassis and its **arm** is connected to the axle with a **linkage rod**.

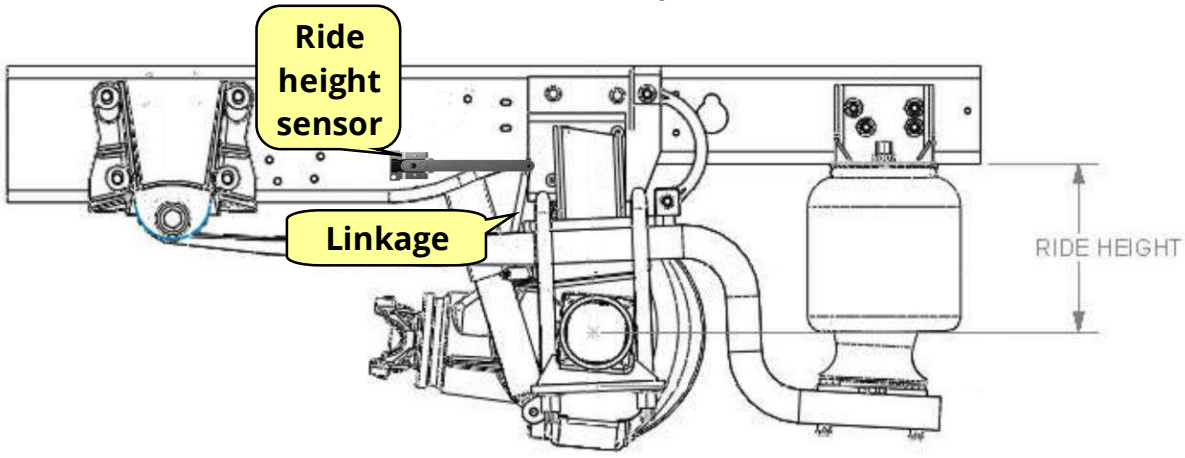
**** IMPORTANT ****

Do not remove the **rubber retaining ring** until **after** installation of the ride height sensors. Otherwise, the arm may hang down and damage the ride height sensor as the mounting bolts are tightened.

Be careful when attaching the linkage rod to the ride height sensor arm. The arm is intended to be rotated up and down **only**. Electronic ride height sensors are more susceptible to damage from side-to-side movement compared to pneumatic height control valves.

Refer to the air suspension Installation Drawing to determine the ride height dimension.

The illustration below is for reference only:



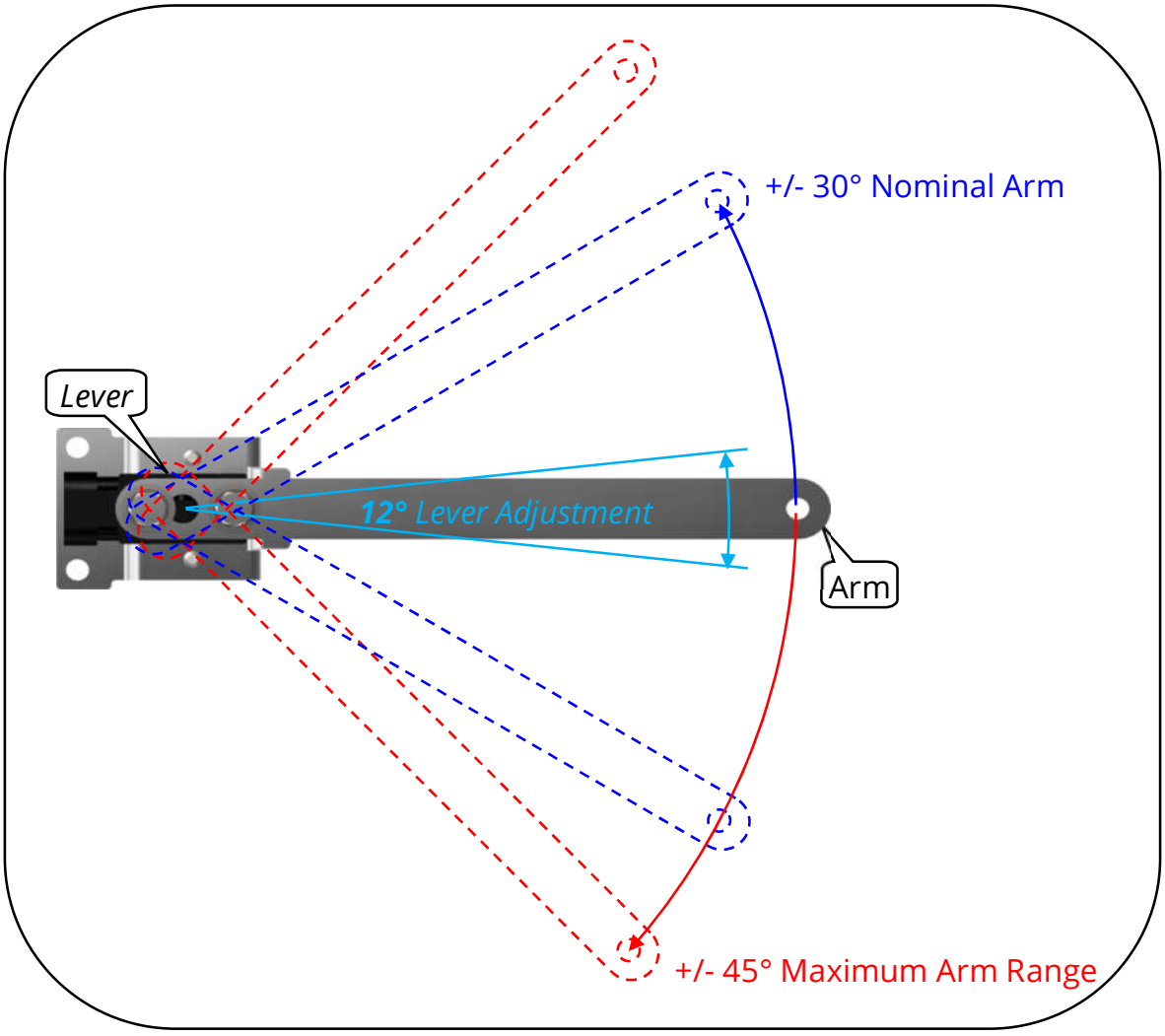
The ride-height sensors are mounted at the **rear** left and right axles of the vehicle.

For normal travel, the arm should face towards the rear of the vehicle and should be perpendicular to its body when at ride height. As the vehicle chassis **lowers**, the **Driver** (**left)** sensor arm should rotate **counter-clockwise** and the **Passenger** (**right)** sensor arms should rotate **clockwise**.

The ride height sensors are identical, so it does not matter which sensor goes on the left or right. **However, the harness connectors are specific to Driver (left) and Passenger (right).**

INSTALLATION

Ride height is when the arm is at the mid position of the ride height sensor. The nominal design target is typically +/- 30°. **However, the absolute maximum range of +/- 45° must never be exceeded.**



After installation of the linkage rod, the lever allows a rotation of 12 degrees, which is adjusted during ride height setup, as described in System Setup, step 2b.

INSTALLATION

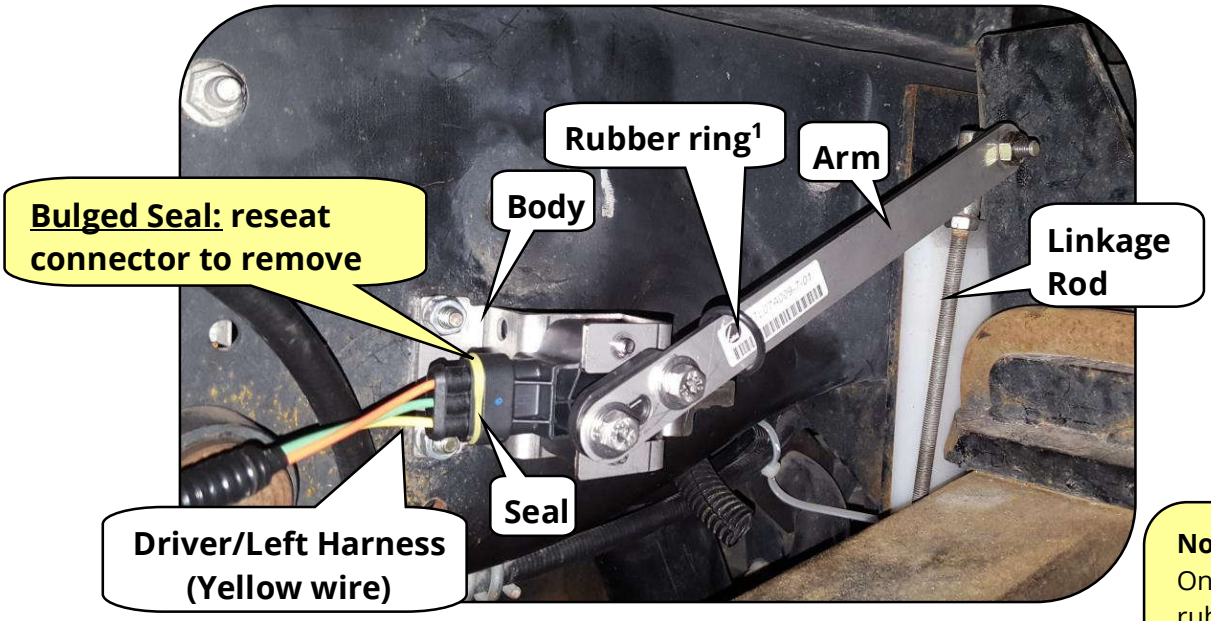
Step 4b – Harness connections to the ride height sensors

Connect the left and right ride height sensor harness connectors to their respective ride height sensors. **Firmly** press to push the connector in to ensure it latches. Ensure the seal does **not** bulge out as shown in the image below.

Cut off the rubber ring[1] **after** installation of the ride height sensors is complete.

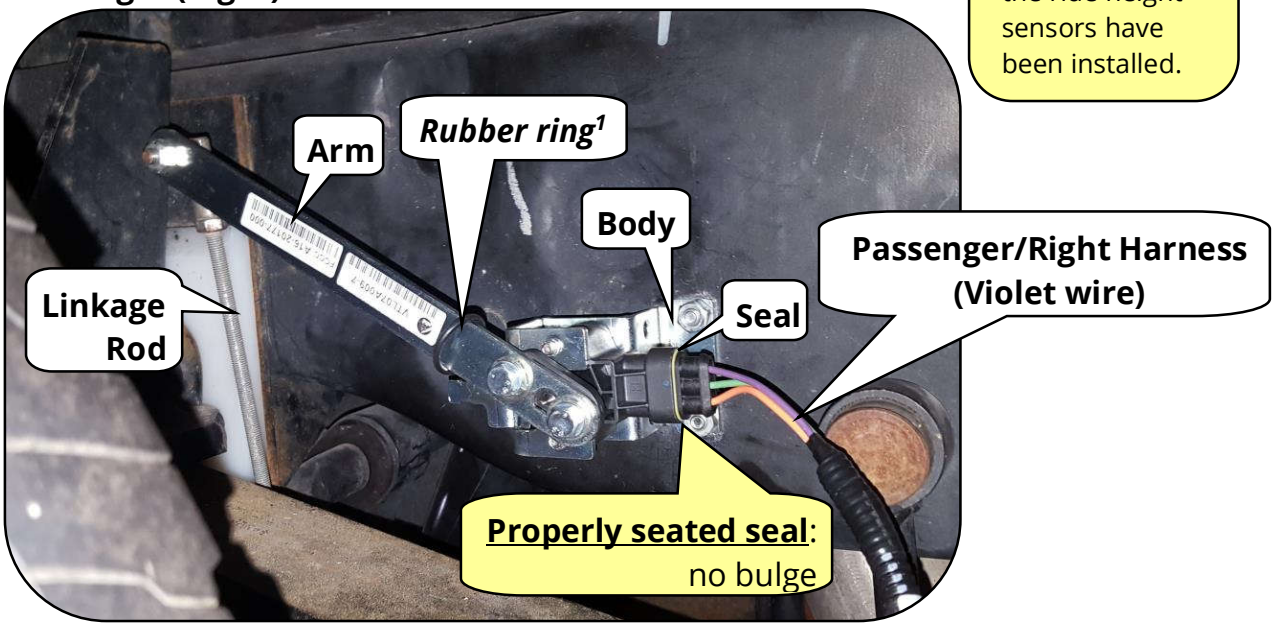
- The connector with the YELLOW wire plugs into the driver (left) side sensor.
- The connector with the VIOLET wire plugs into the curb (right) side sensor.

Driver (Left) Side



Note 1
Only remove the rubber ring **after** the ride height sensors have been installed.

Passenger (Right) Side



INSTALLATION

Step 5a – Feed the harness into the cab

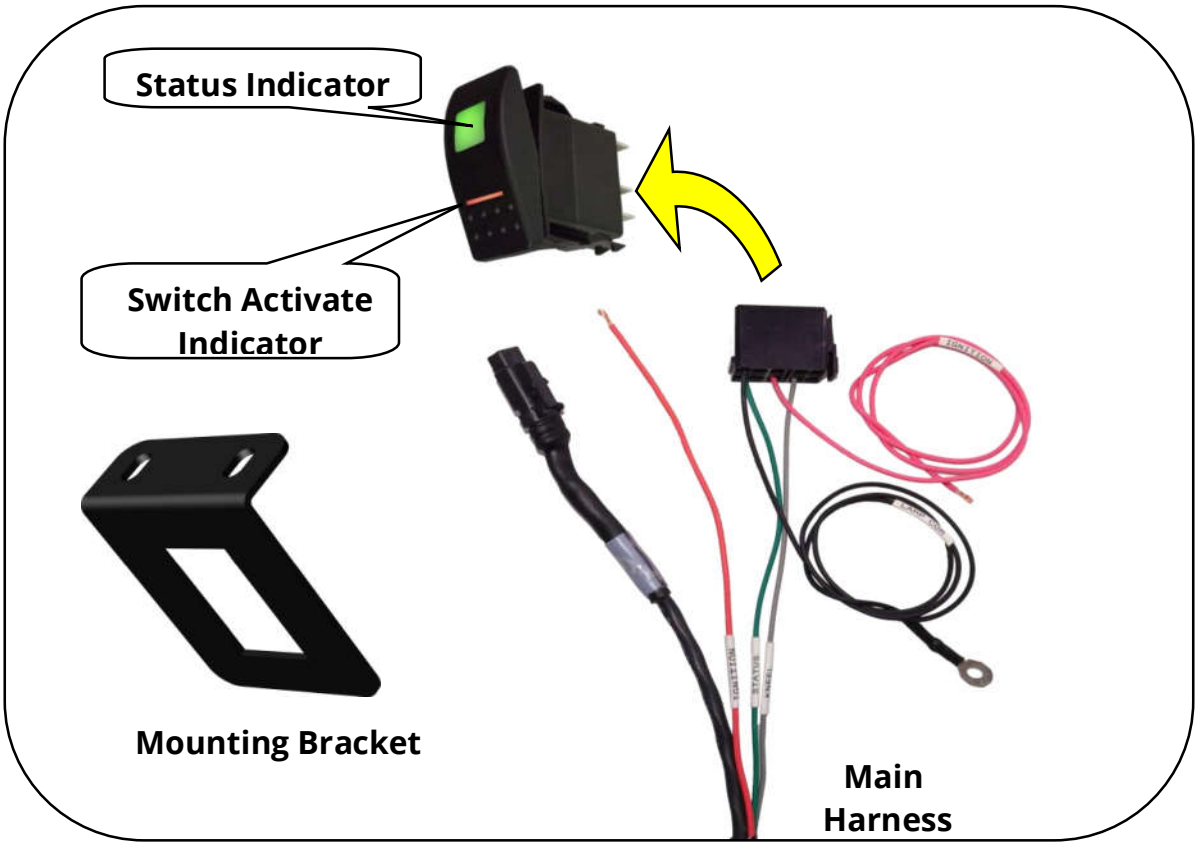
The rocker switch and CAN bus harness is always fed into the cab. To feed the harness through a smaller cab access hole, the rocker switch connector may be removed by cutting the **Status** and **Kneel** wires and re-connecting using splices as per instructions in Installation, step 5c.

Step 5b – Mount the rocker switch

The rocker switch may be mounted in the dash to facilitate driver access, or in any other accessible, dry location away from the elements. Refer to Installation, step 5c for instructions on how to extend the rocker switch wires using splices.

A rocker switch mounting bracket is supplied as part of the kit.

The main harness includes a pre-wired connector which plugs into the switch. Ensure there is enough slack in the harness to reach the switch before connecting the other wires.



INSTALLATION

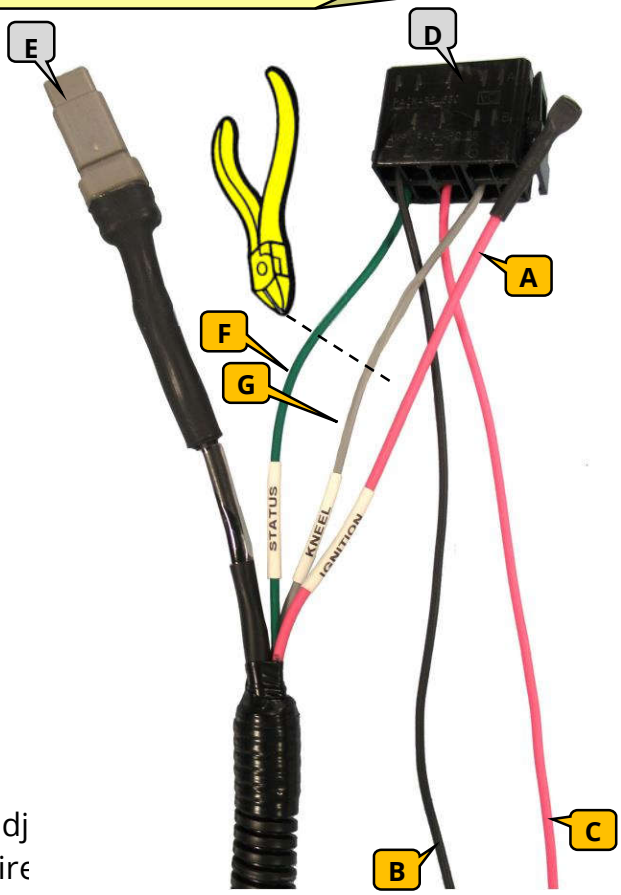
Step 5c – Extend rocker switch wires (if required)

If the rocker switch is not installed in the cab, the rocker switch connector wires must be extended.

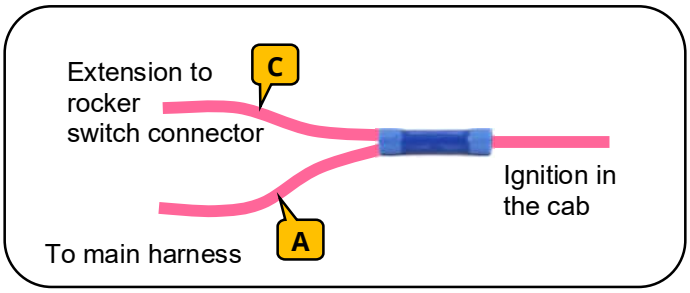
Use a suitable splice method to extend the wires. Please note the following:

Important: Splices must be performed so that they are in a dry, accessible location awav from the elements.

Extension wires must be 18 gauge automotive grade TXL, GXL, or SXL. If possible, use the same color as the original, and create and attach matching wire labels.



Ignition:
Use a suitable splice to connect the A & C ignition wires and the extension wire:



Ground:
Attach the ground wire (B) to a ground point adj rocker switch. Cut and splice to extend if require

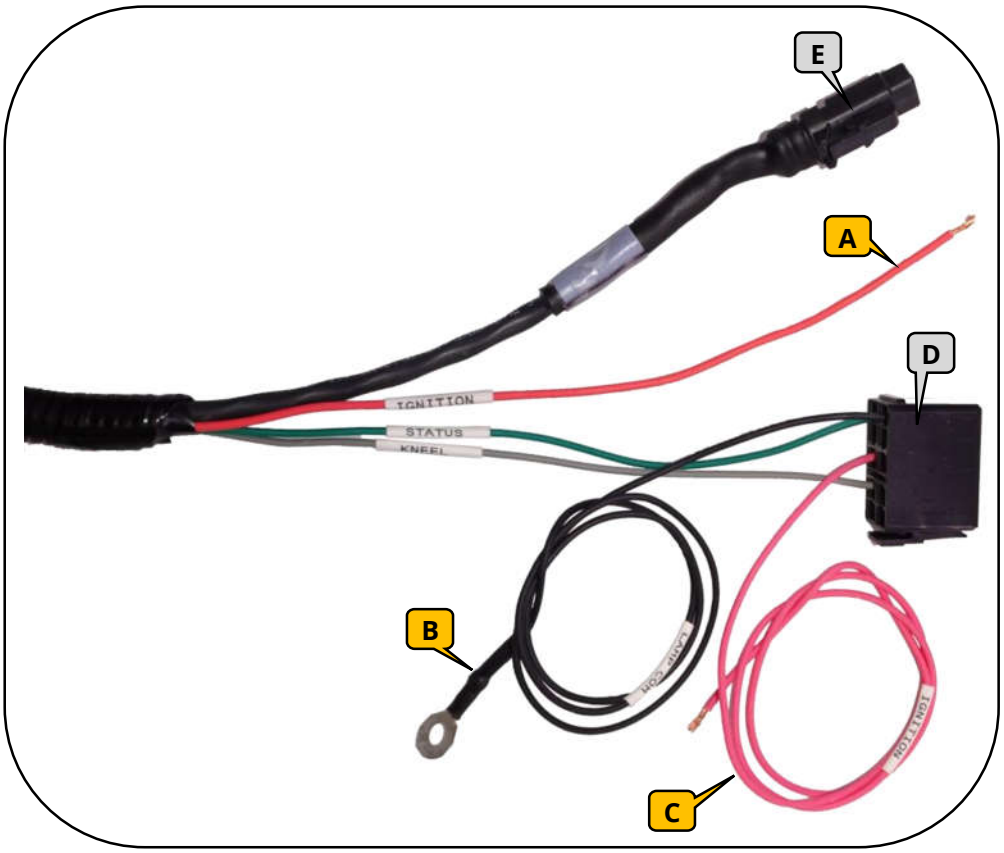
Status and **Kneel**:
Cut the **Status** (F) and **Kneel** (G) wires as shown at right and reconnect with suitable splices.

A: Ignition
B: Ground (common)
C: Ignition
D: Rocker Switch Connector
E: OBD-2 Harness Connector
F: Status
G: Kneel

INSTALLATION

Step 5d – Connect ignition and DC common control wires

Connect the three (3) wires (A, B & C) for the ignition and DC common.



Item	Wire	Color	Description
A	**Ignition***	Pink	+12VDC when ignition on
B	**Common**	Black	Battery DC Common (for switch indicator)
C	**Ignition***	Pink	+12VDC when ignition on
D			Connector for Rocker switch
E			Connector for OBD-2 harness

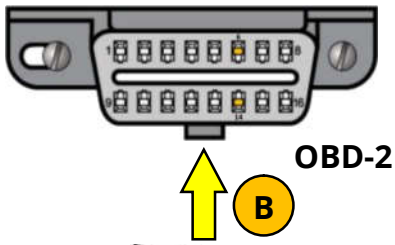
Note *: Connect both pink ignition wires to the same ignition signal

INSTALLATION

Step 5e – Connect to the vehicle CAN bus network

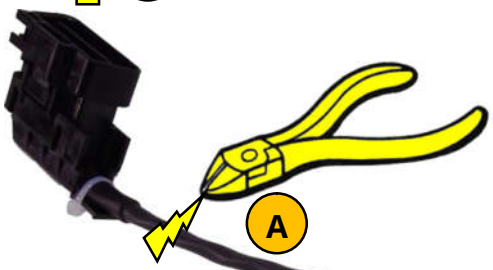
The control module is designed to communicate on the vehicle CAN bus network.

A harness with an OBD-2 connector is provided as part of the kit. This provides a plug-in connection to OBD-2 diagnostic port under the dash. However, the harness may be directly spliced into the vehicle CAN bus network after cutting the OBD-2 harness at location '**A**'.



OBD-2 diagnostic Port

B



A

The OBD-2 Dash connector 'B' has the CAN High and CAN Low wires connected to pins 6 and 14, respectively.

Connection '**C**' is required for service and maintenance by connection to an optional databridge (see Owner's Manual D714424).

OBD-2 Harness

C

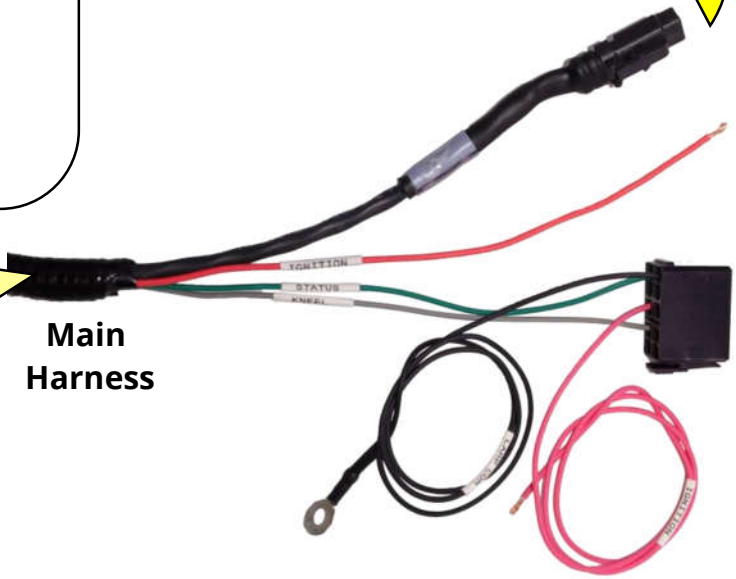
Choose connection method **A** or **B:**

A. Cut the OBD-2 Harness as shown, and splice into the vehicle CAN bus harness.

Yellow wire = CAN High
Green wire = CAN Low

OR

B. Plug the OBD-2 connector into the diagnostic port.



If required, remove cable(s) from loom to increase separation length

Main Harness

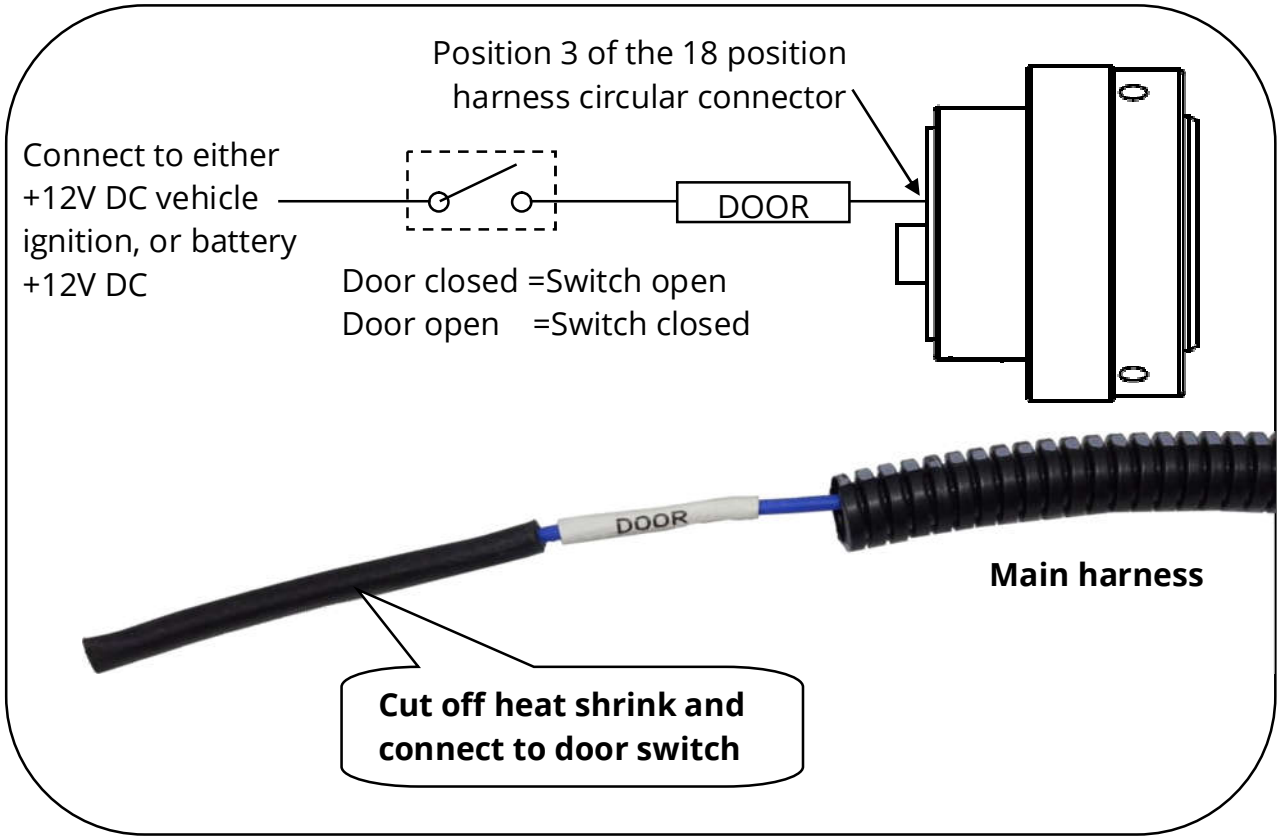
INSTALLATION

Step 6 – Connect door switch input

The wiring harness includes a **DOOR** wire for connection to a door switch. This wire has protective heat-shrink installed on the end, for when the door option is not used.

With the ignition on and a vehicle speed less than 10 mph, a 12VDC signal on the **DOOR** wire indicates the door is open and so the vehicle will immediately kneel.

With the ignition on, as soon as the door is closed and the **DOOR** wire is open circuit or connected to the vehicle chassis (battery DC common), the vehicle will immediately raise up to restore travel ride height.



INSTALLATION

Step 7 – Connect motion warning output

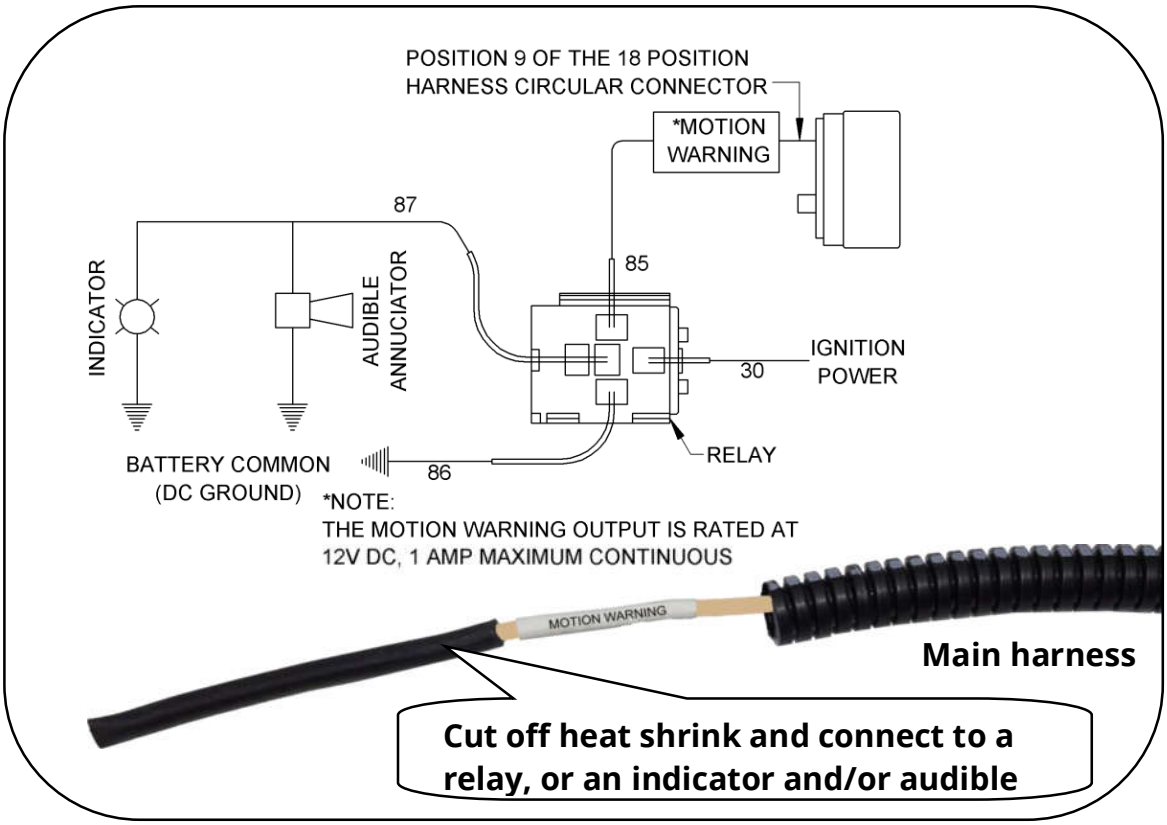
The wiring harness includes a **MOTION WARNING** output. This wire has protective heat-shrink installed on the end, for when the motion warning output is not used.

This output would typically be connected to a relay, or an indicator and/or audible annunciator.

- There is continuous maintenance voltage on this line and that can cause unwanted buzzing in a buzzer.
- The use of a relay will isolate a warning buzzer totally preventing unwanted buzzing.
- If you desire to add a buzzer without a relay, a resistor can be used, bus resistor size will be based on the brand and model of the warning buzzer. Responsibility of properly sizing the resistor lies with the installer.

The **MOTION WARNING** is active high at 12V DC during the following conditions:

- While the rear of the vehicle is lowering from ride height to kneel height.
- When the rear of the vehicle is below the factory set lower warning limit while raising from kneel height to ride height.



INSTALLATION

Step 8 – Connect low pressure output

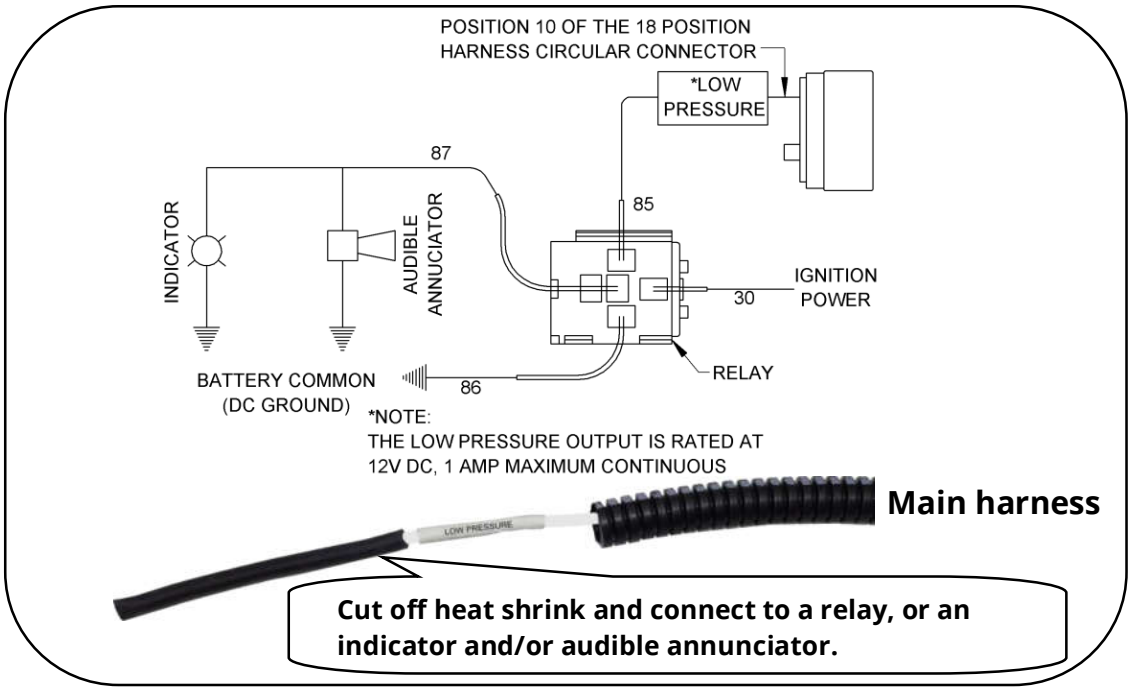
The wiring harness includes a **LOW PRESSURE** output. This wire has protective heat-shrink installed on the end, for when the low pressure output is not used.

This output would typically be connected to a relay, or an indicator and/or audible annunciator.

- There is continuous maintenance voltage on this line and that can cause unwanted buzzing in a buzzer.
- The use of a relay will isolate a warning buzzer totally preventing unwanted buzzing.
- If you desire to add a buzzer without a relay, a resistor can be used, bus resistor size will be based on the brand and model of the warning buzzer. Responsibility of properly sizing the resistor lies with the installer.

The **LOW PRESSURE** output is active high at 12V DC during the following conditions:

- When a ride height sensor is below the factory set lower warning limit height for an extended period of time. This situation also results in a fault indication; refer to the Owner's Manual (D714424)
- When the compressor has been running for an extended period of time. This situation also results in a fault indication; refer to the Owner's Manual (D714424)

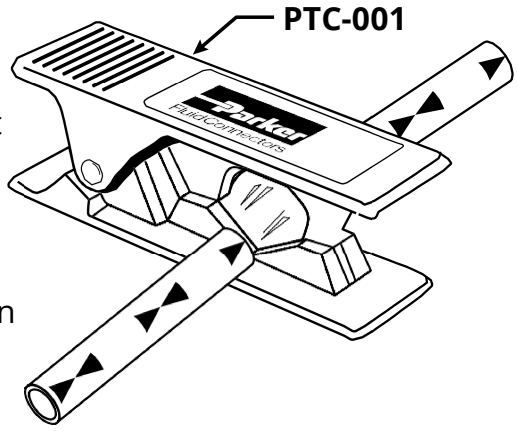


INSTALLATION

Step 9a – Air-line push-in fittings

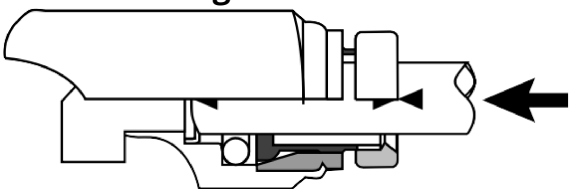
The air suspension control system uses Parker 'Prestomatic' push-in air-line fittings.

Assembly instructions



1. Cut tubing squarely - maximum of 15° angle allowable.
   - If using Parker pre-marked tubing, cut should be in center of bowtie symbol.
   - Use of Parker tube cutter PTC-001 is recommended.
2. Check that the port or mating part is clean and free of debris.
3. Insert tubing into fitting until it bottoms.
   - Push twice to verify that tubing is inserted past collet and O-ring.
   - If pre-marked tubing is used, the top of the button should be in the center of the bowtie
4. Pull on tubing to verify it is fully inserted.

Insert tubing until it bottoms

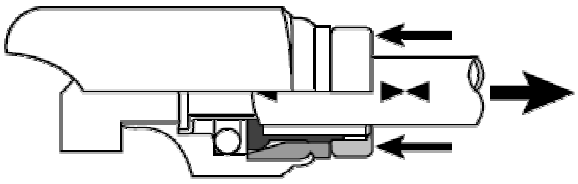


Note: Pre-marked Parker airbrake tubing is marked at regular intervals corresponding to the insertion depth of the Prestomatic fitting. The tube should be cut on the mark.

Removal instructions

1. To disassemble, simply press release button, hold against body, and pull tubing out of fitting.
2. After removal, it is necessary to trim the air-line back to remove the circular indentation, which may compromise the seal and produce an air leak.

Depress button to remove tubing



INSTALLATION

Step 9b – Connect air-line between the air dryer & main air tank with a check valve

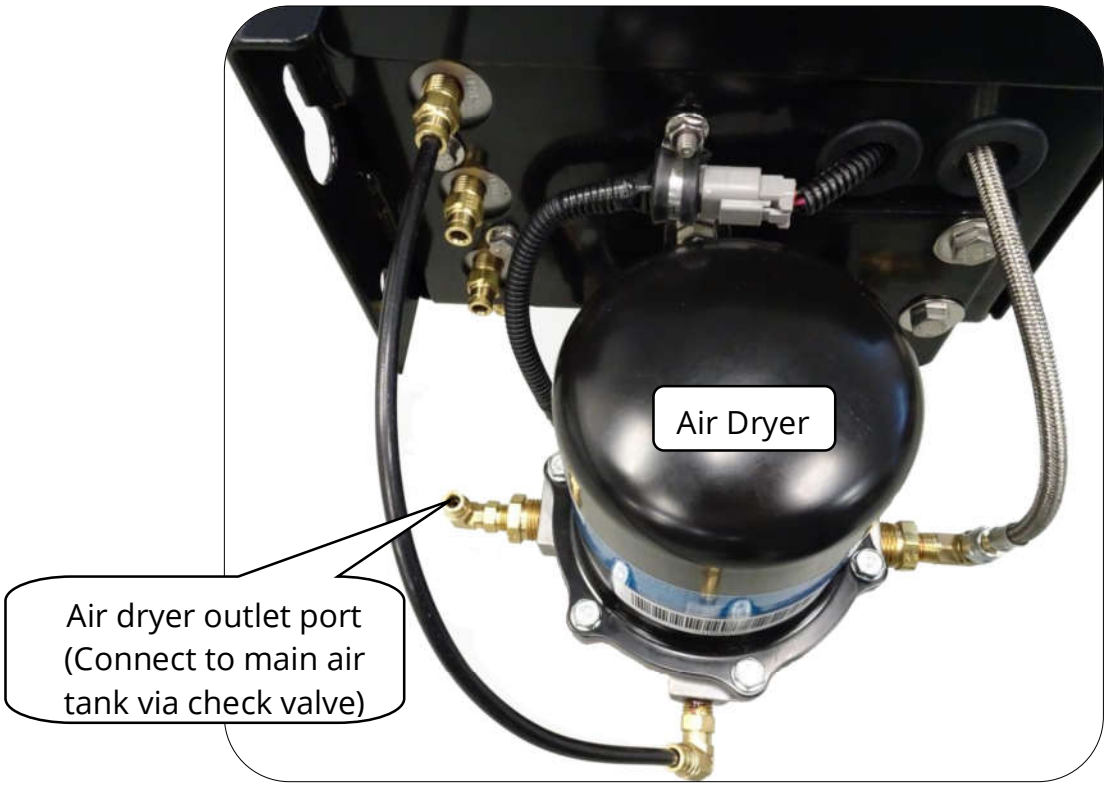
Refer to the pneumatic schematic attached to this document.

Use ¼ inch air-line to connect the air dryer to the main air tank. Cut the ends of the air-line square and push them firmly into the quick release connectors.

The orientation of the check valve allows air to flow into the main air tank. This check valve **MUST** be installed at the **highest point** between the main air tank and the outlet port of the air dryer. This highest point will be **one** of the following:

- Outlet port of the air dryer.
- The highest point of the air tube between the air dryer and the air tank.
- The inlet port of the air tank.

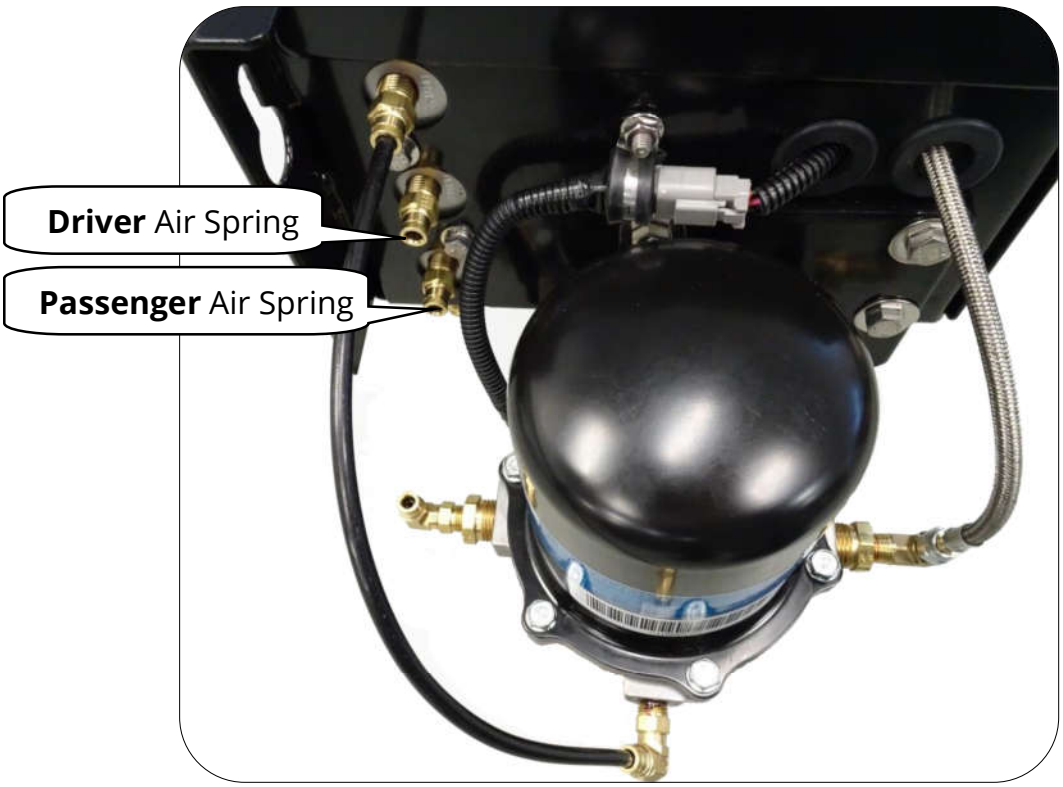
The check valve is installed at the highest point to allow moisture to freely flow downhill into either the air dryer or main tank:



INSTALLATION

Step 9c – Connect air-lines for the driver & passenger air springs

The **driver** and **passenger** air springs are connected with ¼ inch air hose to their respective push-fit connectors on the suspension control enclosure.

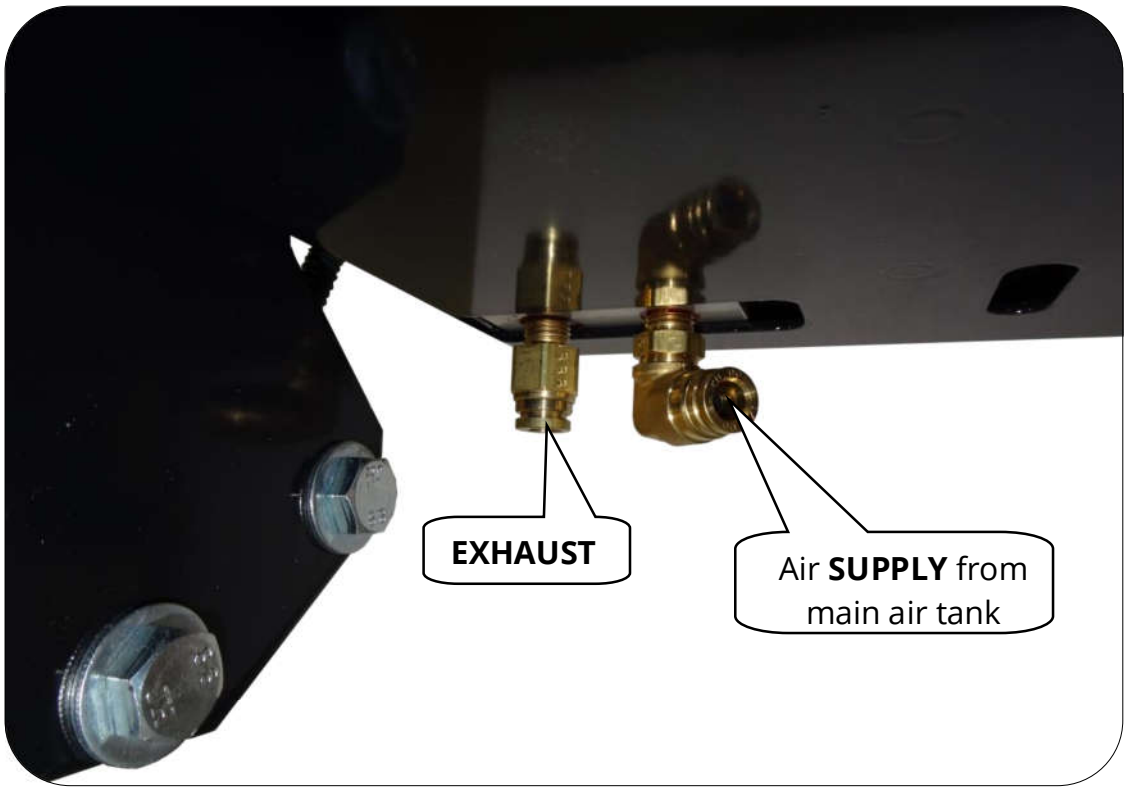


INSTALLATION

Step 9d – Connect air supply & exhaust air-lines

The air supply connection from the main air tank is made with 3/8 inch air-line which is inserted into the **SUPPLY** push-fit connector on the underside of the suspension control enclosure.

A short length of 3/8" airline is typically inserted into the **EXHAUST** push-fit connector to direct the exhaust as required.



INSTALLATION

Step 10a – Connect persistent 12VDC supply to 50 Amp automatic reset breaker and main harness

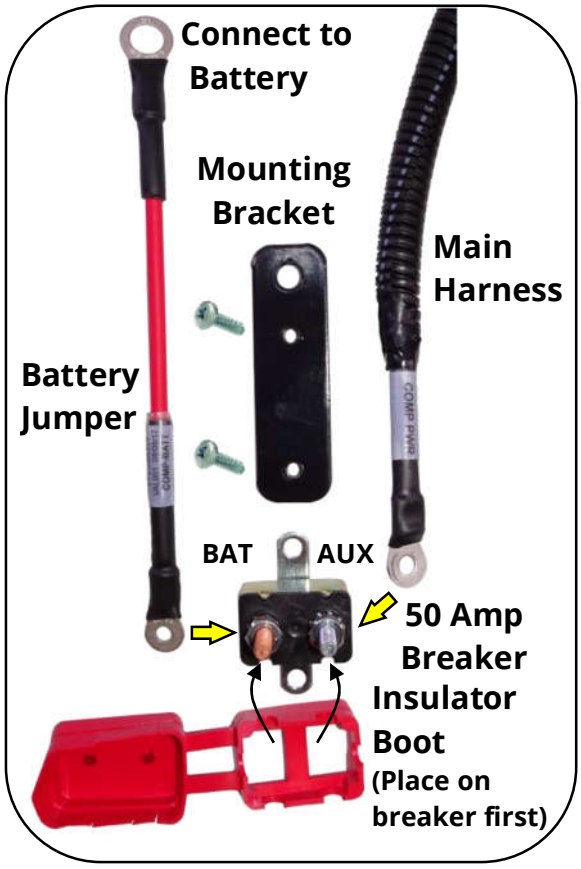
The kit includes a battery jumper, 50 Amp automatic reset breaker with insulator boot, a mounting bracket and screws, and the main harness.

The air compressor requires 12VDC to operate. This power is supplied through the 50 Amp automatic reset breaker.
Place the insulator boot on the top of the breaker before connecting the wire terminals.

The battery jumper provides battery power to the **BAT** terminal and the main harness is connected to the **AUX** terminal.

The battery connection must be a persistent 12VDC source which is **always on**, regardless of the ignition state.

Secure the automatic reset breaker to the mounting bracket using the two (2) mounting tabs and screws. Attach the mounting bracket to the threaded rod used to hold down the battery in the engine compartment.



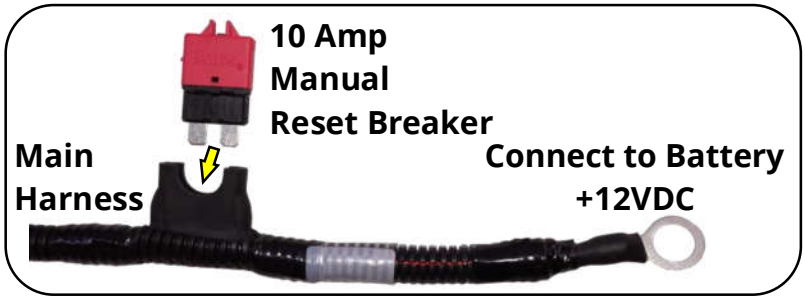
Step 10b – Connect persistent 12VDC supply to 10 Amp in-line breaker

The electronic control module requires 12VDC to operate. This power is supplied by an inline 10 Amp manual reset breaker, which is part of the main connector harness.

Connect the inline breaker to a persistent 12VDC source which is **always on**, regardless of the ignition state.

Apply dielectric grease or other corrosion inhibitor to protect the breaker plug-in spade terminals.

Plug in the breaker to power up the control system.



SYSTEM SETUP

Introduction

The system requires setup to establish ride height sensor orientation, travel ride height, accelerometer references and kneel height:

a) Ride Height Sensor Setup - Each time, it automatically detects and records the ride height sensor orientation and then it performs fast and precise travel height adjustments for manual adjustment of sensor levers.

b) Travel Zero-Set - Travel acceleration zero reference.

c) Kneel Height Setup - Disable kneeling, or set the height of the rear of the vehicle when Kneeled.

Setup mode is a dependent series of sequential of steps. For example, in order to enter 'Kneel Height Setup', it is first required to enter 'Ride Height Setup' and then do a 'Travel Zero-Set'.

The Ride Height Sensor orientation will be undefined for a brand new control module, or if a firmware update is applied to an existing module.

Proper setup of the height reference is important to achieve the required clearances and optimal rear suspension height when driving the vehicle.

The system uses the travel zero-set values to determine if the vehicle is cornering or breaking and it will not perform rear suspension ride height correction as quickly when the vehicle is in these states.

In Kneel mode, the configured height of the rear of the vehicle can be adjusted as required.

Step 1 – Move the vehicle to a drive-on service pit or hoist

Setup and configuration requires the vehicle to be supported by **all** of the wheels, so that it uses its own air suspension; no external jacks or blocks must be underneath the vehicle.

Before you start this setup and configuration, read the **Safety Instructions section** to understand the risks.

It is always unsafe to go under a vehicle with minimal ground clearance. The vehicle must be moved to a service pit or drive-on hoist.

SYSTEM SETUP

Step 2a – Select Ride Height Sensor Setup Mode

1. The ignition must be off. The door can be open or closed.
2. Press and hold the rocker switch.
3. Continue to hold the rocker switch and turn the ignition on.
4. After 30 seconds, the Status indicator should start to flash.
5. Within 15 seconds, release the rocker switch.
6. The indicator will rapidly flash and the system will automatically detect the orientation by:
    a. Lowering the suspension for up to four degrees on the ride height sensors for five (5) seconds.
    b. Raising the suspension for up to four degrees on the ride height sensors or 10 minutes.
7. Once complete, the Status indicator should be now be on solid and the system will be in Ride Height Setup Mode. The Ride Height Setup procedure can be performed.

The ignition must remain on while in Ride Height Setup Mode.

Full vehicle air pressure is required: Start the vehicle or connect to an external air supply which can provide a continuous pressure of at least 120PSI, but no more than 150PSI.

SYSTEM SETUP

Step 2b – Adjust height sensor levers

In 'ride height sensor setup mode' the system automatically activates the raise and lower valves quickly and precisely to move the ride-height sensor levers perpendicular to their body.

Upon entering 'ride height sensor setup mode' it may take a moment for the vehicle to finish adjusting the height. Wait until the height has stopped moving up or down (the valves will have stopped “clicking”).

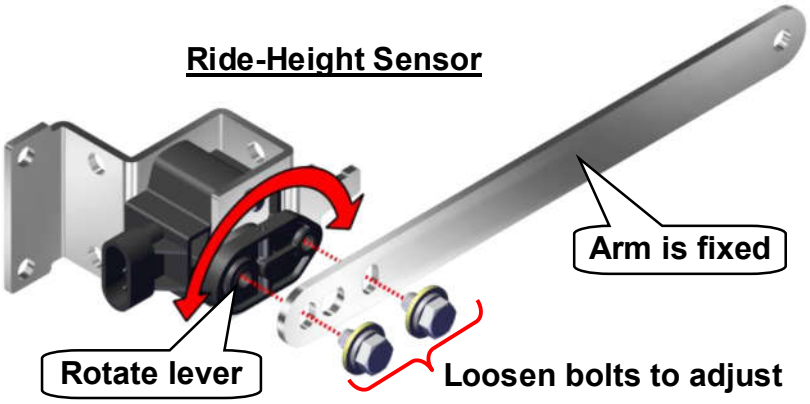
With a suitable measurement device, verify the height of the rear of the vehicle to determine the amount and direction of adjustment required. Loosen the lever bolts and adjust the lever rotation to achieve normal ride height.

NOTE: While adjusting the ride height levers, the system will attempt to re-adjust the suspension (like an ordinary ride height valve). It is important to wait until the adjustment is complete (valves stop clicking) before confirming a measurement.

AS YOU ROTATE THE LEVER THE SUSPENSION WILL RAISE OR LOWER - KEEP CLEAR OF MECHANICAL PINCH POINTS.

1. **Loosen** (do not remove) both bolts securing the arm to the lever.
2. Rotate the black plastic lever to adjust the height.

   The sensor orientation will determine if a clockwise or counter-clockwise rotation will raise the vehicle. Try rotating one way to confirm which direction the height adjusts.



SYSTEM SETUP

Step 2c – Optionally exit Setup Mode

If it is **not** required to perform a Travel Zero-Set, turn off the ignition to exit Ride Height Sensor Setup Mode.

Step 2d – Perform Travel Zero-Set

While in Ride Height Sensor Setup Mode (refer to System Setup, step 2a):

1. Press the rocker switch for at least 1 second, until the indicator goes off, and release.
2. The Status indicator should remain off for a few seconds, then turn back on solid to indicate completion.

'Travel Zero-Set' resets the accelerometer reference used when the vehicle is in **TRAVEL** mode. This allows the system to make air bag adjustments to keep the vehicle at ride height while traveling, but delays adjustments during braking, accelerating or cornering.

Step 2e – Optionally exit Setup Mode

By default, the kneeling feature is disabled. If it is **not** required to adjust the Kneel-Height setting, turn off the ignition to exit Setup Mode.

Step 2f – Enter Kneel Height Setup Mode

After performing a Travel Zero-Set (refer to System Setup, step 2d):

1. Press the rocker switch for at least 3 seconds **Note 1** until the indicator turns off, and release.

   Note 1: To <u>disable</u> the kneeling feature, press and hold for at least 1 second, but less than 3 seconds. This will then exit Setup Mode and turn off the Status indicator.

2. If the rocker switch was pressed for at least 3 seconds, the system will dump to the suspension mechanical stops (or for up to 10 seconds). The Status indicator will be on solid while dumping, then slow flash when finished. The system will record the dump height and add 0.25 inch (configurable) to conserve air during normal operation.
3. Press the rocker switch for at least 1 second to exit Setup Mode and lift the vehicle back to ride height, or turn off the ignition to leave the vehicle dumped.

SYSTEM SETUP

Step 3 – Finishing the installation

You should now have a vehicle in which the rear suspension goes to normal ride height when the ignition is turned.

If the kneeling feature is enabled, selecting the rocker switch, or opening the door, will lower the rear of the vehicle to the kneel set-point. Selecting the switch again, or closing the door, or exceeding a vehicle speed of 10 mph, will restore the rear of the vehicle to normal ride height.

The system is supplied with factory default configuration parameters. However, there may be situations where these parameters require adjustment, in which case please contact Reyco Granning Suspensions to discuss. Refer to contact information section.

SUPPORT CONTACT

For installation support, contact Reyco Granning Suspensions.

Reyco Granning Suspensions
1205 Industrial Park Drive
Mt Vernon, MO 65712

Phone: 1-800-753-0050

INSTALLATION VALIDATION CHECKLIST

AirMaster Electronic Height Control System
Installation Validation Checklist

Date: _____ Vehicle ID: _____

Name: _____

COMPLETE	ITEM	NOTES
☐	**Main Harness connector properly seated and secure** - Visually inspect and pull on the main harness connector on the suspension control enclosure to confirm it is latched in place.	
☐	**Air Lines securely installed -** not kinked or squashed with ends cut square and not deformed.	
☐	**Suspension Control Enclosure mount location** - Mounted securely in a service accessible area, on a stable, non-flexing platform and away from high heat sources. (122°F/50°C max recommended).	
☐	**Suspension Control Enclosure orientation** – Horizontal, within +/- 5 degrees (approximately).	
☐	**Ride Height Sensors mounting** – Verify mounting of sensors and brackets are per the installation drawing. Attach linkage rods with allowance for pivot.	
☐	**Ride Height Setup** completed and verified.	
☐	**Travel Zero-Set** done	
☐	**Kneel Height** completed and verified	
☐	**Status Indicator** turns on for 5 seconds and then turns off when ignition is turned on. This confirms normal operation with no faults.	
☐ ☐	**KNEEL Mode (Rocker switch):** Rear of vehicle lowers to the required height, with no faults, when the **KNEEL** request is activated. Cycle the ignition off and on again, then confirm the vehicle returns to normal Ride Height when the Rocker switch is pressed or the vehicle speed exceeds 10 mph.	

VALIDATION CHECKLIST

COMPLETE	ITEM	NOTES
☐ ☐	**KNEEL Mode (Door switch):** Rear of vehicle lowers to the required height, with no faults, when the **DOOR** request is activated (door opened). Cycle the ignition off and on again, then confirm the vehicle returns to normal Ride Height when the door is closed or the vehicle speed exceeds 10 mph.	
☐	**Motion Warning** – this output should turn on while lowering from ride height to kneel height	
☐	**Low Pressure** – Activation of this output can be tested by first kneeling the vehicle, then temporarily disconnecting the air tubes from the 'Driver' & 'Passenger ' air bags, and then trying to restore to ride height. This should generate the following fault (Refer to the Owner's Manual, D714424, for the fault code), which also turns on the 'Low Pressure' output: • A ride height sensor is below the factory set lower warning limit height for an extended period of time.	
☐	**ROAD TEST** – verify normal operation while driving, accelerating, braking and cornering and, if kneeled, the rear of the vehicle automatically raises to ride height of the vehicle speed exceeds 10 mph.	

SIGNAL TABLE REFERENCE:

DESCRIPTION	SIGNAL TYPE	Wire Color
IGNITION	Input	Orange or Pink
DOOR	Input	Blue
KNEEL	Input	Gray
STATUS	Output	Green
MOTION WARNING	Output	Tan
LOW PRESSURE	Output	White

Note: All input & output signals are active high (12V).

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Reyco® Granning®

SUSPENSIONS

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