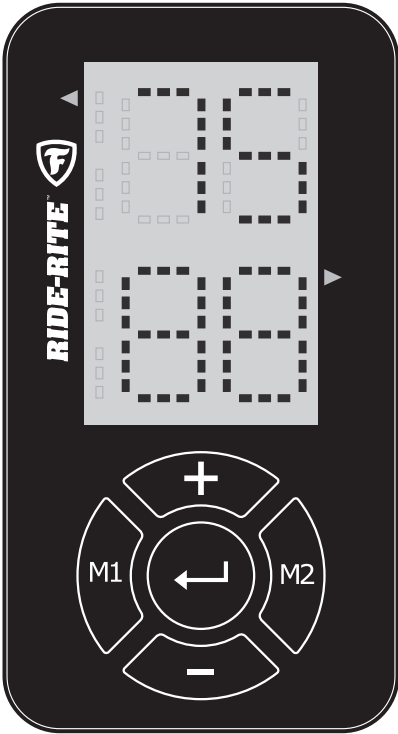




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# INSTALLATION INSTRUCTIONS



# **IMPORTANT**

*PLEASE DON'T HURT YOURSELF, THE KIT, OR YOUR VEHICLE. TAKE A MINUTE TO READ THIS IMPORTANT INFORMATION.*

## **SAFE INSTALLATION**

Please take all safety precautions during installation. A hydraulic jack can fail, and if that happens, you can be seriously hurt, or worse, if you are relying on it to hold up the vehicle. If you use a hydraulic jack, secure jack stands in the appropriate locations and chock any tires still touching the ground.

Wear safety glasses or goggles. Your eyes may be lower than some parts and pieces, and you don't want to lose an eye.

Remove the possibility of any electrical issues by disconnecting the negative battery cable.

## **VEHICLE GVWR**

NEVER exceed the maximum load recommended by the vehicle manufacturer (GVWR). The GVWR can be found in your vehicle's Owner's Manual or on the data plate on the driver's side door.

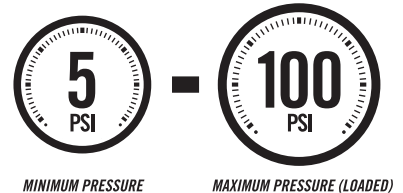
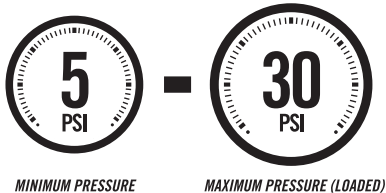
## **PRESSURE TO LOAD**

Be sure to review the load limits noted in the Air Spring Kit Installation Instructions (sold separately).

## **APPROPRIATE AIR PRESSURE**

For best ride, use only enough air pressure in the Air Springs to level the vehicle when viewed from the side (front to rear). This will vary, depending on the load, location of the load, condition of the existing suspension, and personal preference.


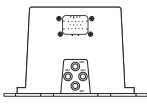
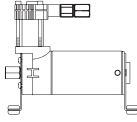
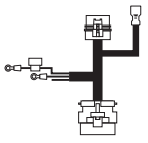
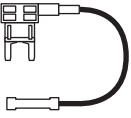
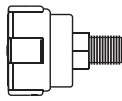

**ONCE INSTALLED SUCCESSFULLY, FOLLOW THE PRESSURE REQUIREMENTS FOR THE AIR SPRINGS.  
FOR FIRESTONE, GENERALLY:**







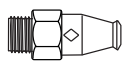






# PARTS AND TOOLS

Compare the parts below to your kit. Assure you have all pieces, and organize them for an easier installation.

## MAIN KIT CONTENTS

|             |   |                            |             |   |                      |             |   |                   |
|-------------|---|----------------------------|-------------|---|----------------------|-------------|---|-------------------|
| PART # 9490 |  | x1 WIRELESS CONTROLLER     | PART # 9489 |  | x1 ECU               | PART # 9377 |  | x1 AIR COMPRESSOR |
| PART # 9491 |  | x1 WIRE HARNESS            | PART # 2526 |  | x1 IGNITION FUSE TAP | PART # 9129 |  | x1 AIR FILTER     |
| PART # 9414 |  | x1 AIR LINE TUBE (18 FEET) |             |   |                      |             |   |                   |

## A21-760-2581 HARDWARE PACK

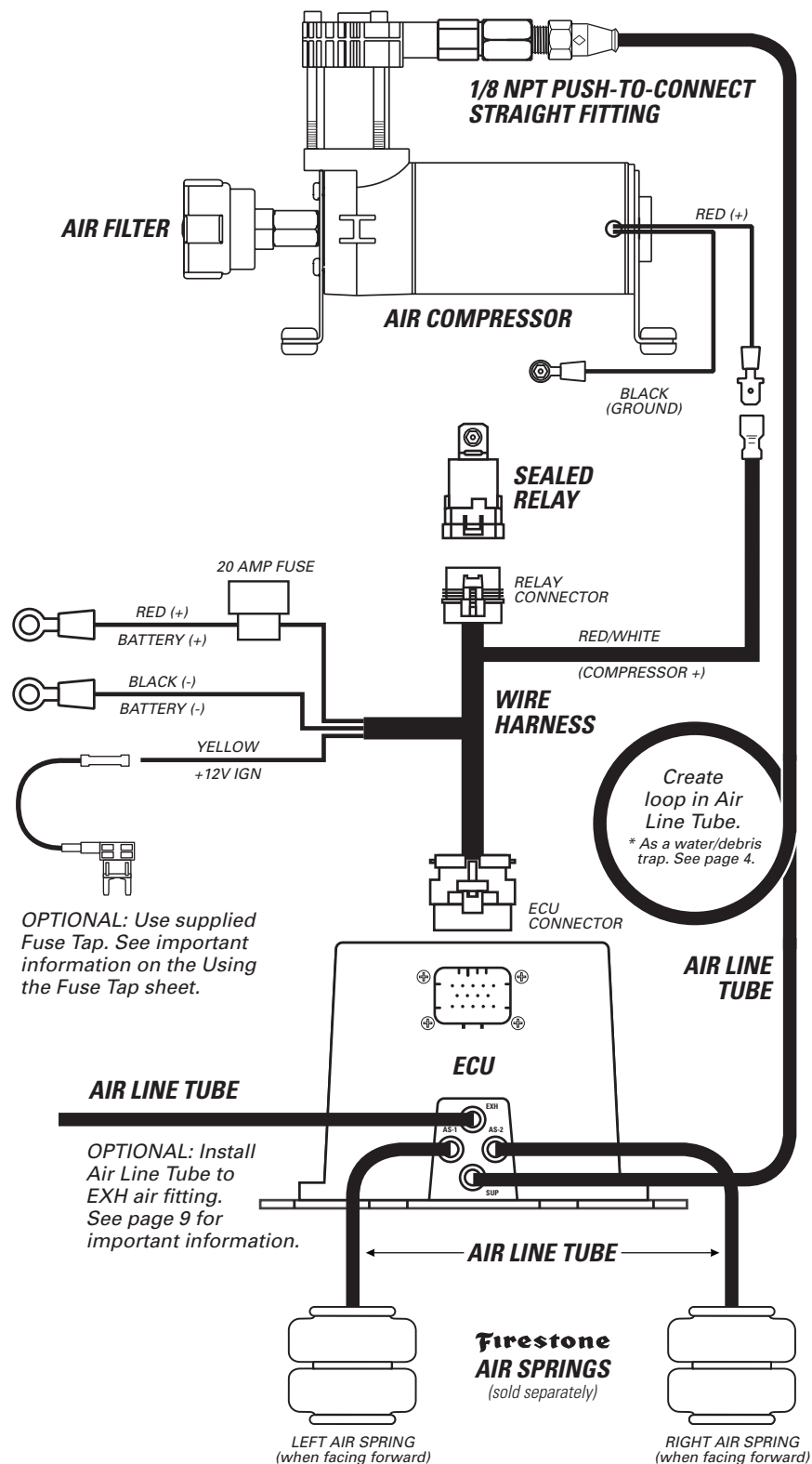
|             |   |                                    |             |  |   |             |   |                       |
|-------------|---|------------------------------------|-------------|--|---|-------------|---|-----------------------|
| PART # 3087 |   | x4 10-32 x 1" MACHINE SCREW        | PART # 3083 |    | x3 10-32 x 3/4" MACHINE SCREW               | PART # 3086 |   | x13 3/16" FLAT WASHER |
| PART # 3088 |  | x9 10-32 NYLOCK NUT                | PART # 3055 |   | x1 1/8 NPT PUSH-TO-CONNECT STRAIGHT FITTING | PART # 9361 |  | x1 SEALED RELAY       |
| PART # 3421 |  | x1 10-16 x 3/4" SELF-TAPPING SCREW | PART # 9275 |   | x4 VELCRO TABS                              | PART # 9036 |  | x15 RED NYLON TIE     |
| PART # 9488 |  | x4 LARGE NYLON TIE                 | PART # 0899 |  | x2 THERMAL SLEEVE                           |             |   |                       |

## TOOLS REQUIRED:

|                       |                               |                              |
|-----------------------|-------------------------------|------------------------------|
| 3/16" DRILL BIT       | (2) 7/16" WRENCHES OR SOCKETS | PLIERS                       |
| WIRE CRIMPER/STRIPPER | POWER DRILL                   | UTILITY KNIFE                |
| PHILLIPS SCREW DRIVER | ELECTRICAL TAPE               | CENTER PUNCH OR MARKING TOOL |
| 9/16" WRENCH          |                               |                              |

# CONTENTS AND OVERVIEW

|         |   |
|---------|---|
| PAGE 4  | PLANNING THE INSTALL                                |
| PAGE 5  | PREPARE THE AIR COMPRESSOR                          |
| PAGE 6  | DRILL HOLES FOR AIR COMPRESSOR AND ECU              |
| PAGE 7  | INSTALL THE AIR COMPRESSOR AND ECU                  |
| PAGE 8  | INSTALL THE WIRE HARNESS                            |
| PAGE 9  | INSTALL THE AIR LINE TUBES                          |
| PAGE 10 | INSTALL THE AIR FILTER AND CLEAN UP                 |
| PAGE 11 | ADJUSTING AIR PRESSURE AND UNITS                    |
| PAGE 12 | WIRELESS CONTROLLER MEMORY SETTINGS AND ERROR CODES |
| PAGE 13 | TEST THE SYSTEM                                     |
| PAGE 14 | FIX AN AIR LEAK                                     |

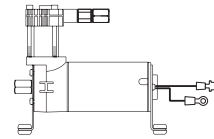


# PLANNING THE INSTALL

THESE PLANNING STEPS WILL HELP YOU SAVE TIME AND WILL MAKE THE INSTALLATION EASIER.

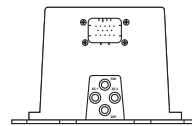
## **DETERMINE THE MOUNTING LOCATION FOR THE AIR COMPRESSOR**

- Provides ample air flow and is protected from airborne debris and moisture.
- Mount close enough to the ECU to allow Wire Harness connections to reach.
- If using the optional Firestone Air Accessory Mounting Kit, consider the guidelines above, and follow the kit's instructions.



## **DETERMINE THE MOUNTING LOCATION FOR THE ECU**

- Mount close enough to the Air Compressor to allow Wire Harness connections to reach.
- Allow room for Air Line Tubes to connect to the air fittings on the ECU.
- Allow room for the 14-pin ECU connector to connect to the ECU.
- Allow room for the Air Line Tube to run without sharp curves or bends.
- Using supplied fasteners shown in Step 3 is recommended. If no other mounting option is available, see the sidebar on Step 2 for using the Large Nylon Ties.
- Select a location that is solid and secure on the body or frame of the vehicle, away from any moving parts, electrical or any other lines.



## **PLAN INSTALLATION ROUTES FOR WIRING AND AIR LINES**

- Make sure the Wire Harness and Air Line Tubes are not exposed to sharp metal edges that can damage them.
- Use supplied Thermal Sleeves on Air Line Tubes when routing near heat sources.
- Use supplied Nylon Ties to secure Air Line Tubes and Wire Harness to the vehicle.
- Make a loop in the Air Line Tube where shown. This creates a water/debris trap that protects the Air Compressor.
- Measure twice, cut once!

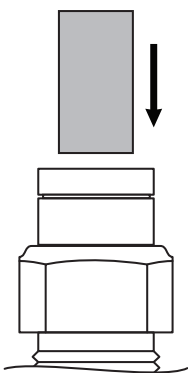
## **TAPE ALL ELECTRICAL CONNECTIONS**

- Use electrical tape to appropriately secure and protect all electrical connections.

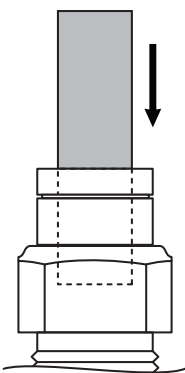
## **USING PUSH-TO-CONNECT FITTINGS FOR AIR LINES**

Your kit includes Push-to-Connect fittings to connect the Air Line Tubes to hardware. Use the instructions below when using the Air Line Tubes.

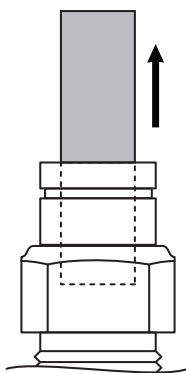
- 1** Insert end of Air Line Tube into air fitting.



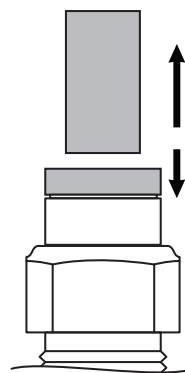
- 2** Push Air Line Tube into air fitting as far as possible.



- 3** Gently pull on the Air Line Tube to check for a secure fit.



- 4** To remove, push down collar and gently pull Air Line Tube away.

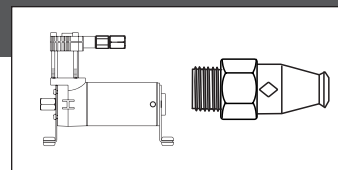


**Removal Tip:** Use a 1/4," 5/16," or 6mm open-ended wrench to push the collar down.

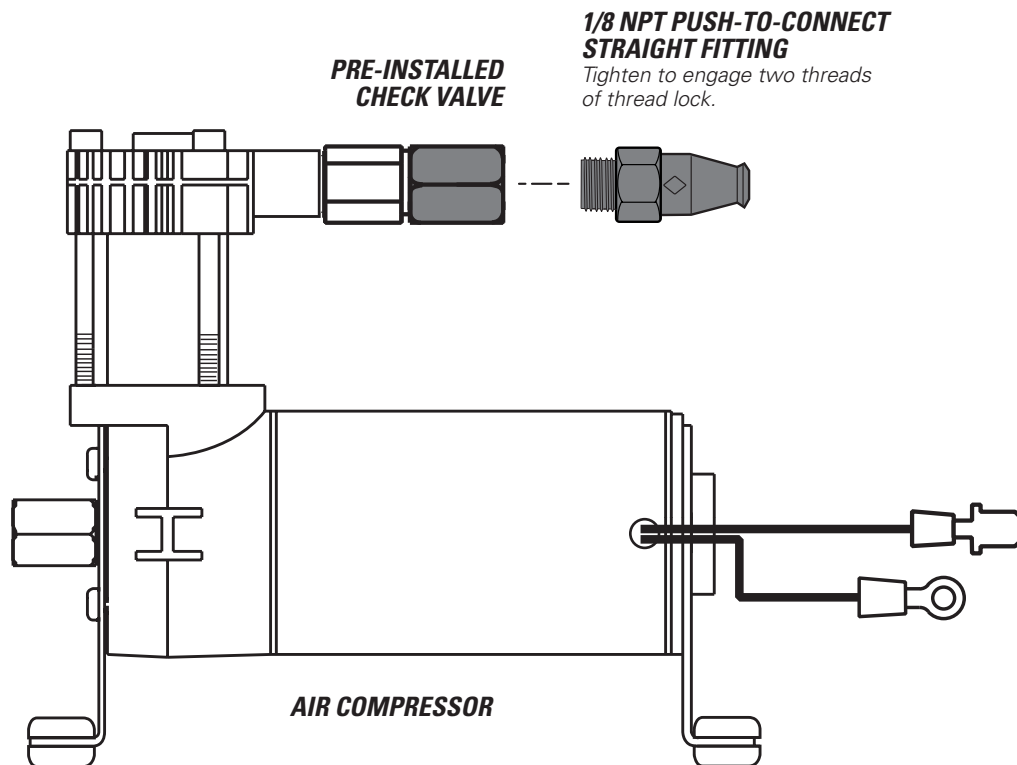
# 1

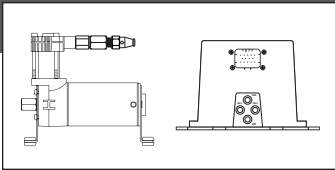
## PREPARE THE AIR COMPRESSOR

Note that the Air Compressor can be mounted facing any direction.



- 1 Install 1/8 NPT Push-to-Connect Straight Fitting on the Check Valve.





CHECK SURROUNDING AREA AND BACK SIDE OF MOUNTING LOCATION TO AVOID DRILLING INTO EXISTING LINES OR WIRING.



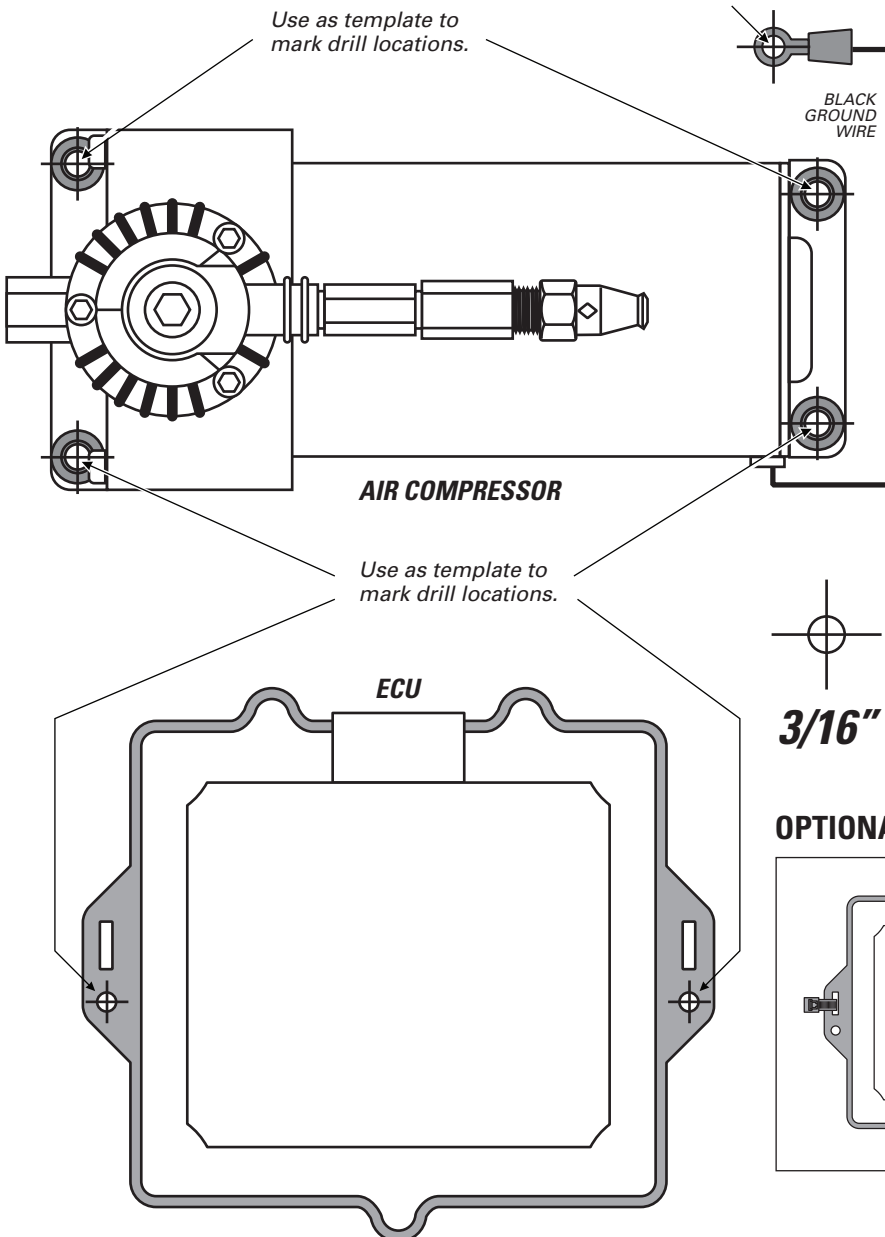
IF YOU ARE USING THE OPTIONAL FIRESTONE AIR ACCESSORY MOUNTING KIT, SKIP THIS STEP AND REFER TO THE MOUNTING KIT'S INSTRUCTIONS.

Drill within reach of the ground wire ring terminal on body or frame of vehicle. **AIR ACCESSORY MOUNTING KIT CANNOT BE USED AS A GROUNDING LOCATION FOR THE AIR COMPRESSOR.**

**1** Using the Air Compressor and ECU as templates, mark drill locations as shown with a punch or marking tool.

**2** Mark Air Compressor ground wire fastening location within reach of the ground wire ring terminal.

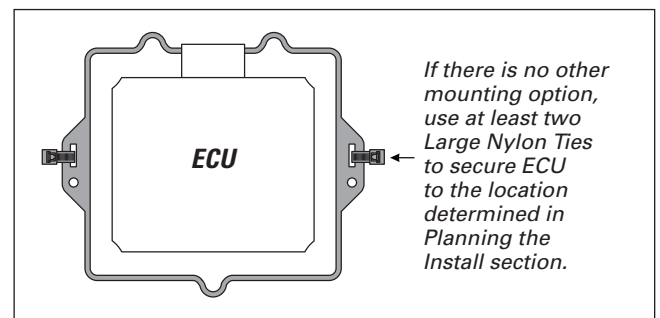
**3** Drill 3/16" diameter holes. Remove any burrs and debris from drill holes.



ASSURE THAT YOU INSTALL THE AIR COMPRESSOR AND ECU CLOSE ENOUGH SO THE CONNECTORS ON THE WIRE HARNESS WILL REACH THEM BOTH.

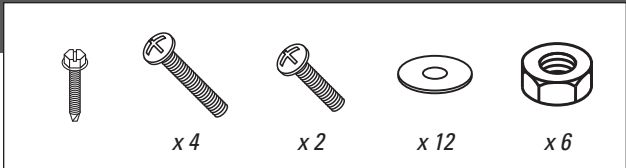


**OPTIONAL ECU MOUNTING**



# 3

## INSTALL THE AIR COMPRESSOR AND ECU

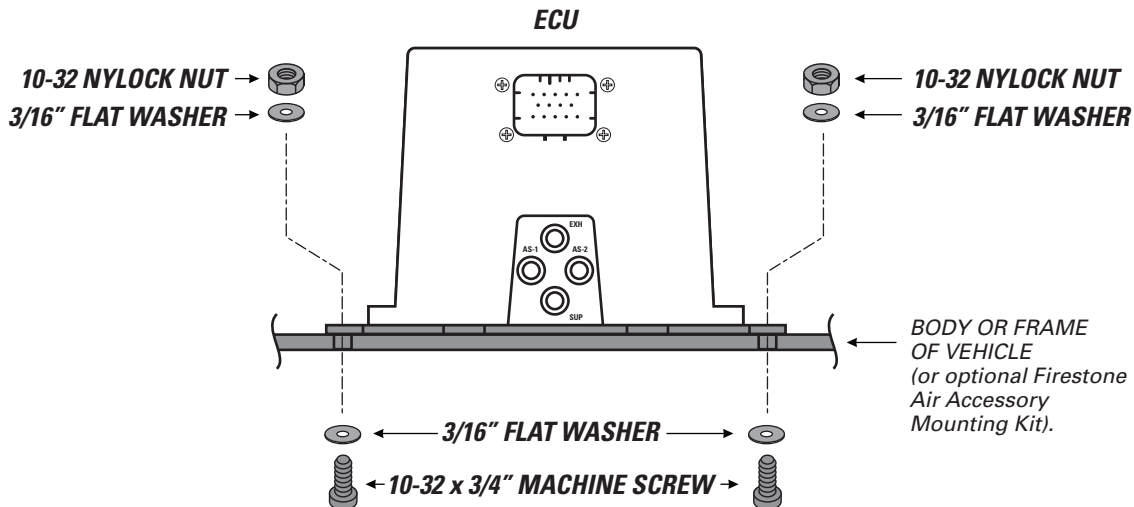
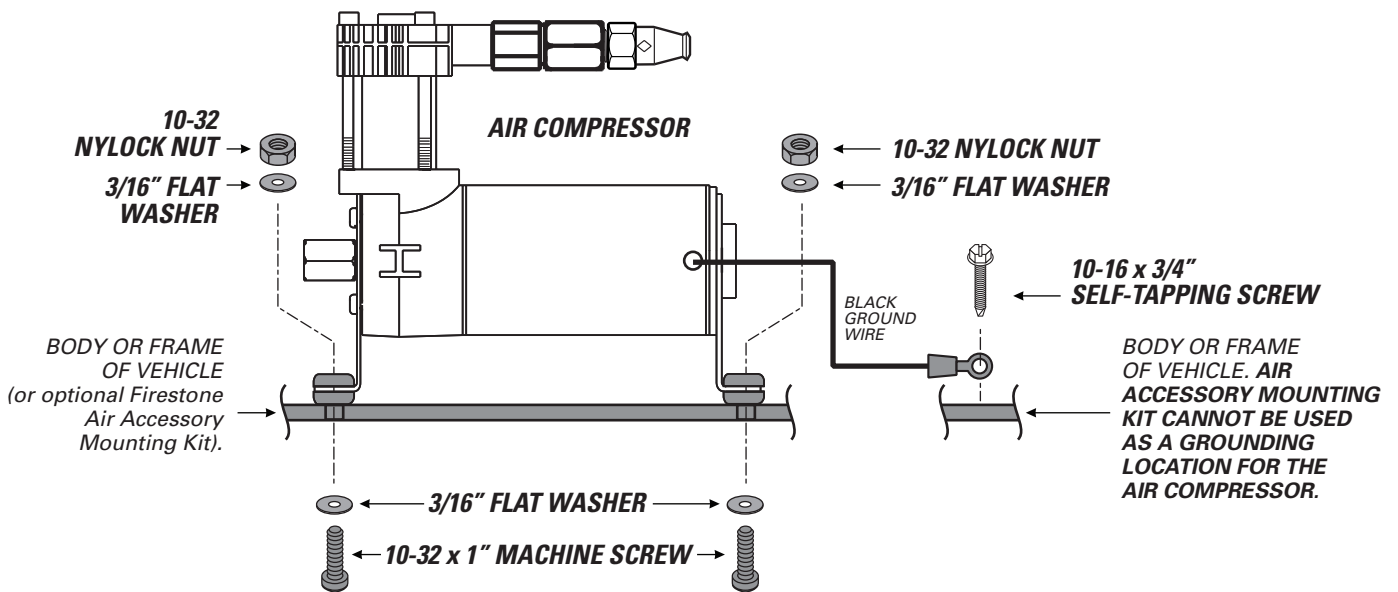


DO NOT OVER TIGHTEN MOUNTING BOLTS AND NUTS ON THE AIR COMPRESSOR. TOO MUCH TORQUE CAN CRUSH THE BRASS INSERTS AND RUBBER ISOLATORS.

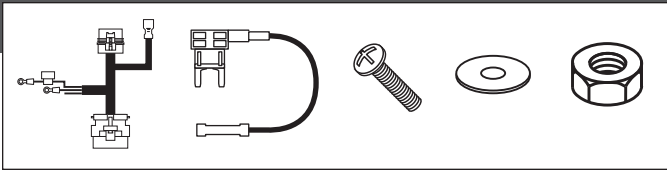
**1** Mount the Air Compressor to the drill hole location using the supplied fasteners. DO NOT OVER TIGHTEN.

**2** Mount the ECU to the drill hole location using the supplied fasteners.

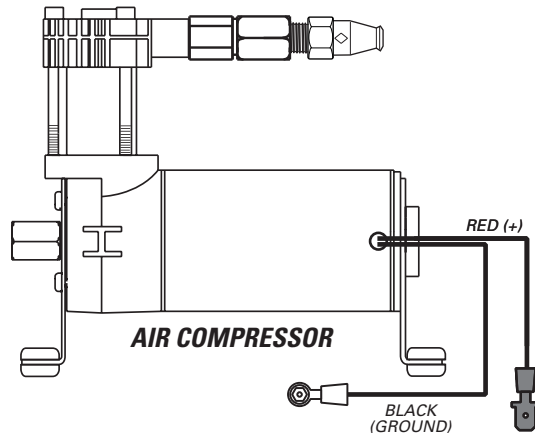
**3** Mount the black ground wire ring terminal using the supplied fasteners. Assume that the ring terminal makes a solid contact with bare metal for a proper ground.





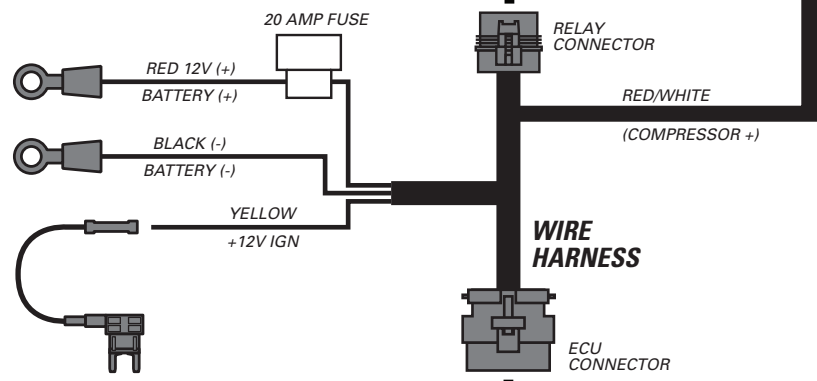


Why ground the Wire Harness to the battery? The ECU needs a good, clean ground for optimal accuracy. The Air Compressor can ground to the frame, but the ECU cannot.

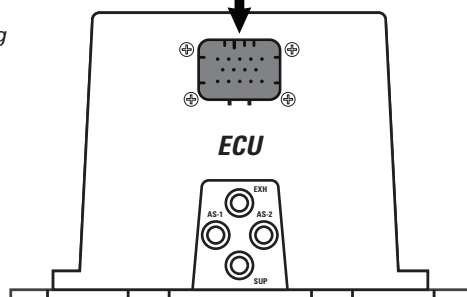


- 10-32 NYLOCK NUT
- 3/16" FLAT WASHER
- 10-32 x 3/4" MACHINE SCREW

Drill 3/16" hole in suitable location on vehicle (or use optional Firestone Air Accessory Mounting Kit).

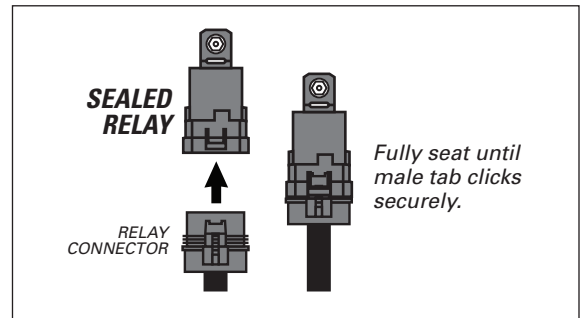


OPTIONAL: Use supplied Fuse Tap. See important information on the Using the Fuse Tap sheet.



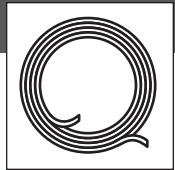
- 1 Determine a suitable location to mount the Sealed Relay, assuring it will be within reach of the relay connector on the Wire Harness.
- 2 Securely fasten the Sealed Relay as shown.
- 3 Route the Wire Harness in the most protected manner possible, and securely make all connections as shown.

TAB CONNECTOR EXAMPLE



# 5

## INSTALL AIR LINE TUBES



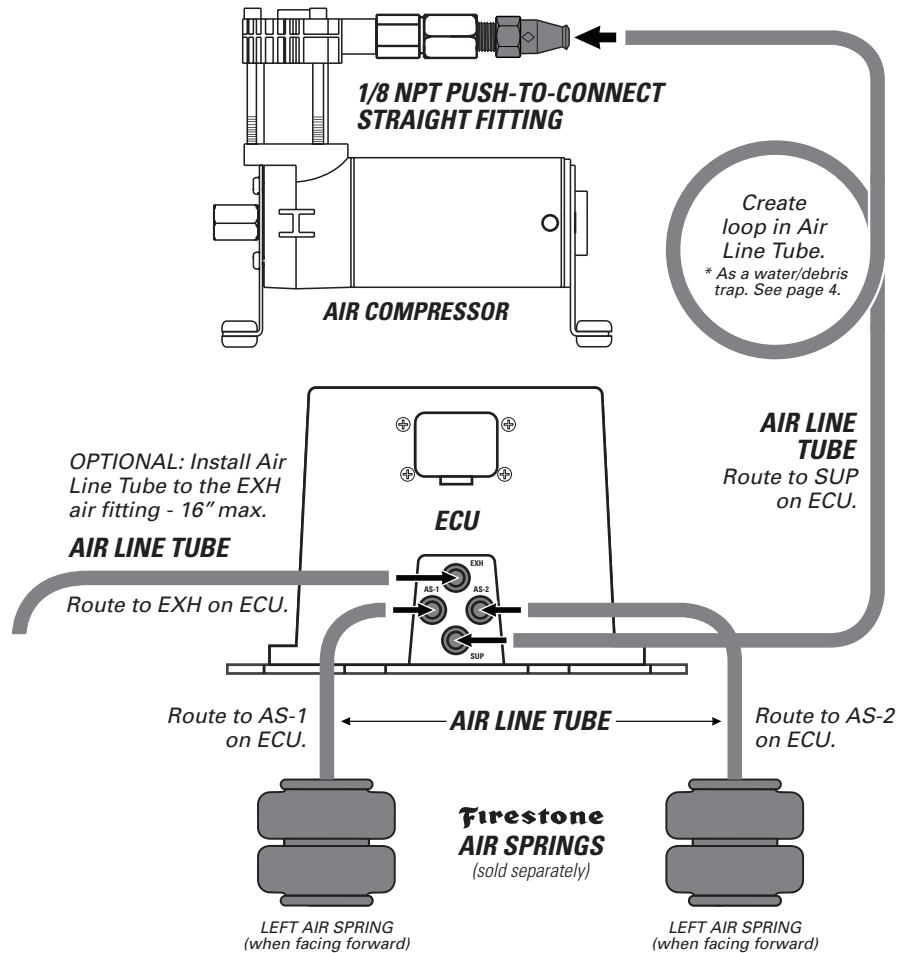
EXHAUST ALL AIR FROM THE SYSTEM PRIOR TO RELEASING AIR TUBES FROM AIR FITTINGS.



**1** Route the Air Line Tube from 1/8 NPT Push-to-Connect Straight Fitting on the top of the Air Compressor to the Supply (SUP) air fitting on the ECU, leaving room to secure it safely. Use the guidelines on page 4 for proper Push-to-Connect Straight Fitting install.

**2** Repeat Steps 1 to route Air Line Tube from the ECU to the Air Springs. Use the AS-1 and AS-2 air fittings on the ECU.

**3** If desired, install Air Line Tube to the Exhaust (EXH) air fitting to reduce exhaust noise and prevent dirt from clogging the port (recommended for off-road or dirty environments). Do not exceed 16" of Air Line Tube, and secure it so the end turns to the ground.



# DO

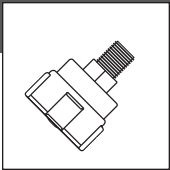
Make sure the cut is as square as possible. Use a tube cutter or very sharp utility knife.

# DON'T

Fold or kink the Air Line Tube. Cut the Air Line Tube at an angle. Use pliers, scissors, snips, saws, or side cutters.

### PROPER AND IMPROPER CUTS IN THE AIR LINE TUBE

|   |                      |                      |                      |
|---|----------------------|----------------------|----------------------|
| <p>Square cut<br/>AIR LINE TUBE<br/>90°</p> | <p>AIR LINE TUBE</p> | <p>AIR LINE TUBE</p> | <p>AIR LINE TUBE</p> |
|---|----------------------|----------------------|----------------------|

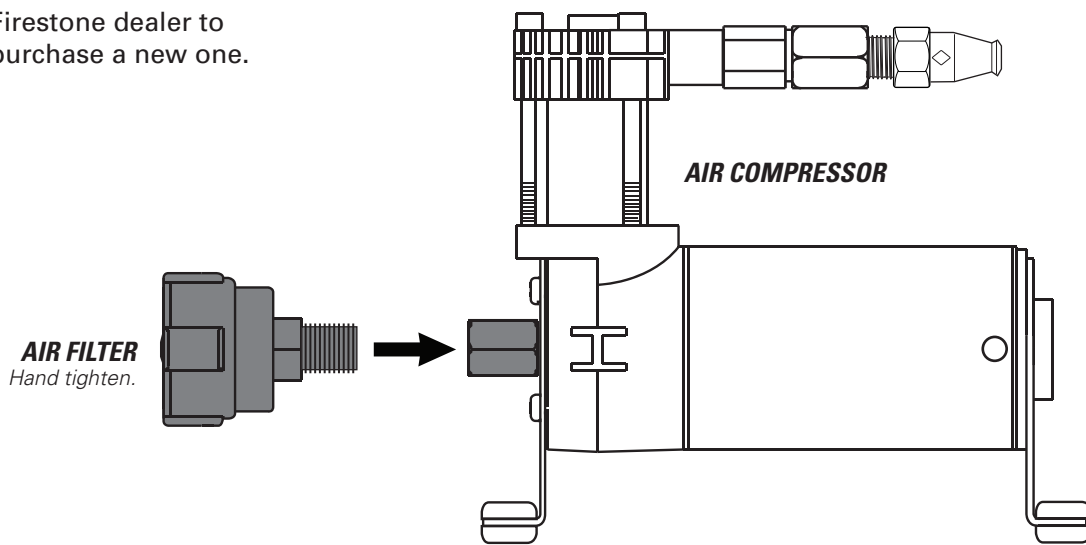


**1** Install the Air Filter by threading it onto the Air Compressor as shown.

**2** Periodically check the Air Filter during operation. When the Air Filter is dirty and needs to be replaced, contact an Authorized Firestone dealer to purchase a new one.



FILTER LIFE WILL VARY BASED ON ENVIRONMENTAL CONDITIONS. PROTECT THE AIR COMPRESSOR BY CHANGING THE AIR FILTER MORE FREQUENTLY IN DUSTY CONDITIONS.



**1** Clean up the installation using supplied Nylon Ties, and return all factory parts and materials to operative state.




USING SUPPLIED NYLON TIES, SECURE ALL WIRING AND AIR LINE TUBE IN A MANNER THAT DOES NOT OBSTRUCT MOVING PARTS OR IN ANY WAY THAT AFFECTS YOUR ABILITY TO SAFELY OPERATE THE VEHICLE.

# 8

## ADJUSTING AIR PRESSURE AND UNITS


Use the Wireless Controller to adjust the air pressure in your Air Springs. You can select the Air Springs individually, or both at the same time. Determine sides when in vehicle, facing forward. If desired, use the supplied Velcro Tabs to secure the remote to the vehicle.

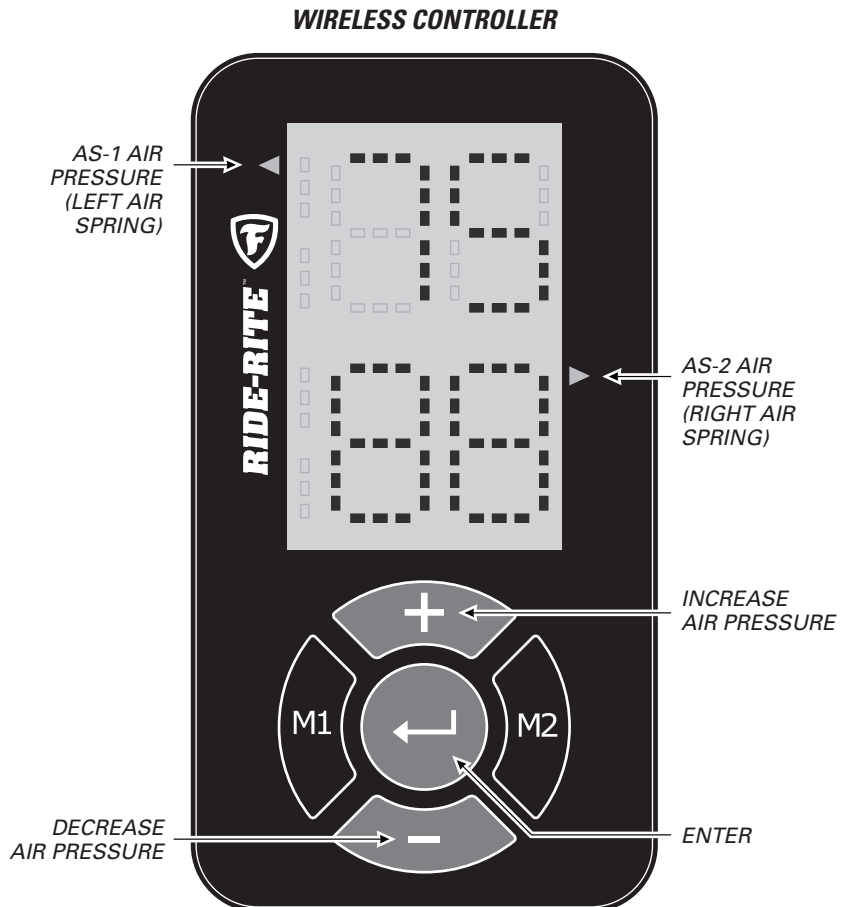


**1** Select Air Spring(s) for pressure adjustment by pressing the Enter  Button once for AS-1 (left side), twice for AS-2 (right side) or three times for both sides.

**2** Press the + Button to increase pressure in selected Air Spring(s).

**3** Press the - Button to decrease pressure in selected Air Spring(s).


**4** Press the Enter  Button to activate the system.




### WAIT, THERE'S BAR!

The Wireless Controller settings default to PSI units, but you can adjust the units by following the steps below.

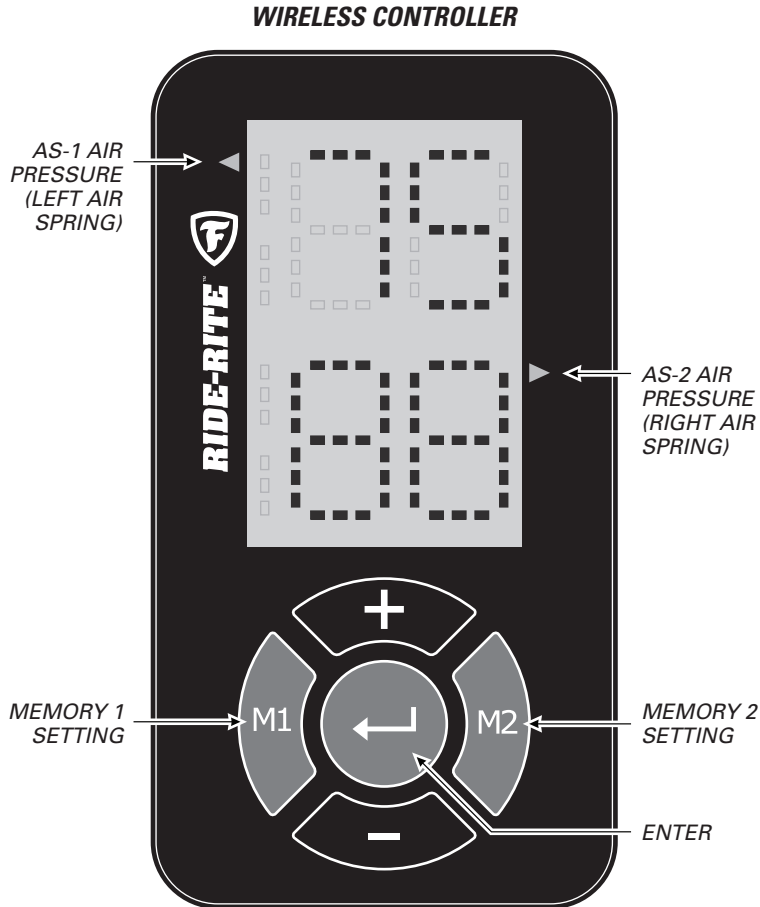
**1** Push any button to power on the Wireless Controller and make sure none of the units on the display are flashing.

**2** Hold down the Enter  Button for a few seconds.

**3** Use either the + or - Button to select PS for PSI or BR for BAR. Press Enter  Button to finalize selection.



You can set up to 2 memory settings for the system for quick adjustment to frequently used Air Spring settings. M1 is preset for 5 PSI and M2 is preset for 20 PSI.



- 1** Complete Step 8 to adjust the Air Spring air pressures to desired settings.
- 2** Press and hold the **M1** Button for 3 seconds to save the displayed Air Pressure settings to the M1 memory.
- 3** Repeat steps 1 and 2 with the **M2** Button to save an M2 memory setting.
- 4** To activate a memory setting, push the desired Memory Button, either **M1** or **M2**.
- 5** Within one second of pressing **M1** or **M2**, press the Enter Button.

## OOPS, SOMETHING WENT WRONG!

Reference the Error Codes below to troubleshoot the problem.

# EO

- Check power on the ECU (red and yellow wires need +12VDC).
- Check ground for the ECU (black wire should be attached to the negative battery terminal).
- Check your wires for any abrasion or heat damage between the ECU and the battery/fuse box.
- Make sure the Wireless Controller is in range of the ECU (25 ft.). Note that range will vary depending on line-of-sight restrictions.

# LO BR

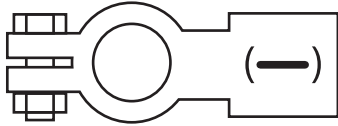
- The batteries in your Wireless Controller are low.
- Replace both CR2032 coin-cell batteries.

# 10

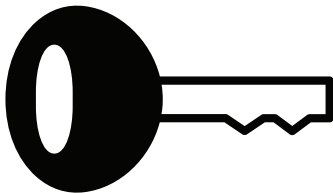
## TEST THE SYSTEM

With the Air Command F3 Kit and your Air Springs installed, you are ready to test the system.

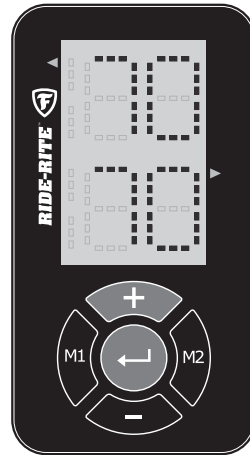
- 1** Reattach the negative battery cable.



- 2** Turn on your vehicle's ignition.



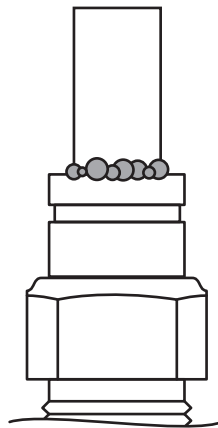
- 3** Use the Wireless Controller to inflate the Air Springs to 70 PSI. See Step 8 for details.



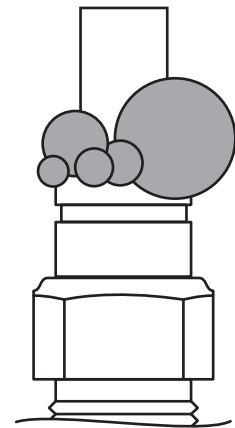
- 4** Spray fittings with soap and water mixture or glass cleaner.



- 5** Observe bubbles.



**SMALL SOAP BUBBLES  
THAT DO NOT EXPAND**



**SOAP BUBBLES  
THAT EXPAND**



# NO LEAKS?

Congratulations! You're riding right with the push of a button! Remember to review the Operating Instructions.

# LEAK?

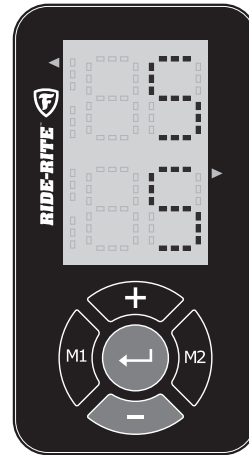
Bummer. Continue to Step 11 to fix the leak.



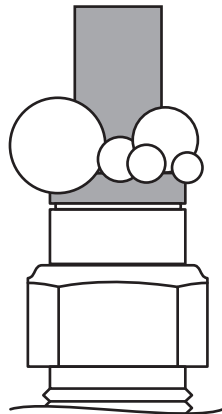
EXHAUST ALL AIR FROM THE SYSTEM PRIOR TO RELEASING AIR TUBES FROM AIR FITTINGS.



- 1 Use the Wireless Controller to deflate the Air Springs to 5 PSI. See Step 8 for details.

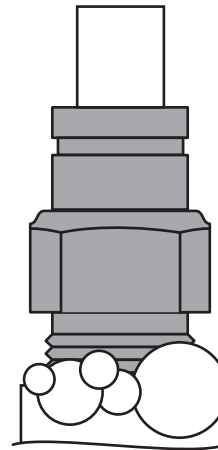


#### LEAK AT AIR LINE TUBE AND AIR FITTING



Release Air Line Tube (see page 4). Review proper cuts and procedures in Step 5. Repeat Step 5.

#### LEAK AT BASE OF AIR FITTING



Tighten Air Fitting one turn or until leak stops.

## STILL HAVE A LEAK?

Refer to the Troubleshooting section of the Instruction Manual. If the leak persists, or if there is an issue with a leaking part, call 1-800-888-0650; Option 1; Option 1 for Tech Support.



[ride-rite.com](http://ride-rite.com)

## BEFORE YOU DRIVE, CONFIRM THE FOLLOWING:

- Secure all Air Line Tubes and wiring.
- The system passes the leak test and holds air.
- The Air Compressor ground ring terminal is contacting bare metal, and coated with silicone if possible.
- The Wire Harness is grounded to the negative (-) battery terminal. The ECU needs a good, clean, interference-free ground.
- There is a loop in the Air Line Tubes as shown to prevent water or debris from getting into the Air Compressor head and damaging it.

## NEED INSTALLATION HELP? 1-800-888-0650

Select Option 1 for Ride-Rite; Select Option 1 for Technical Support.

Or, email us at [rrtech@fsip.com](mailto:rrtech@fsip.com). If emailing, please include photos to help us better diagnose and understand any problems you may be experiencing.



CONNECT WITH US



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Firestone RideRite



Firestone Ride-Rite



# USING THE IGNITION FUSE TAP

**1** Insert the fuse for the Firestone accessory port, as shown.

**2** Use your vehicle's Owner's Manual to determine a safe and suitable ignition fuse and remove the fuse, noting its location. This location should register **between 11.8 VDC and 15 VDC** when testing with a multimeter, as noted below.

**3** Insert the removed fuse into the lower Fuse Tap port, as shown.

**4** Plug the Fuse Tap into the fuse port on the vehicle, matching the hot and load sides, as shown. **DO NOT REVERSE.**

