



# **GEN2 INSTALLATION INSTRUCTIONS**

**Part# 220-0118**

**Ford Raptor Gen2 4 Tire Inflation System**



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***Air It Up!***



## IMPORTANT INFORMATION - PLEASE READ FOR YOUR SAFETY

*PLEASE TAKE A MINUTE TO READ THIS ENTIRE INSTRUCTION MANUAL BEFORE YOU START.  
WE WANT YOU TO HAVE A FUN AND EASY INSTALLATION WITHOUT HURTING YOURSELF OR YOUR Raptor.*

### **SAFETY PRECAUTIONS**

If you are working on the ground always use jack stands and chalk any tires touching the ground. Wear safety glasses and gloves as you will be using power tools for this installation. We recommend disconnecting the battery any time you are working on your Raptor.

**NEVER DRIVE WITH THE WHIPS CONNECTED TO YOUR Raptor, DAMAGE CAN OCCUR.**

### **TOOLS NEEDED**

- Cordless Drill
- 11/16" and 7/32" Drill Bit
- Thread Sealer (**Loctite 577—We do not recommend using Teflon tape**)
- Spray Bottle with Mild Soapy Water
- Medium Flathead Screw Driver
- Tube Cutter or Sharp Utility Knife

### **WRENCHES**

- Crescent
- 9/16", 5/8"
- 13mm, 12mm
- 8mm, 1/4" Allen
- T-30 Torx

### **1/4" Drive**

- Ratchet
- 10mm Socket
- 11mm Socket
- 1/4" Allen Socket

## Secure Raptor and Prep for Installation

This entire install can be done on the ground but jack stands or a lift will make it even easier.

1. Park your Raptor and set the parking brake.
2. Raise your Hood for access to the engine compartment.
3. Disconnect the negative (-) battery terminal.
4. Read and refer to your ARB instructions for all issues directly related to your ARB compressors. UpDownAir warranty does not cover any ARB Compressors or parts.
5. Have your Raptors Owner Manual Handy for wiring the ARB Compressor to the Auxiliary/ Up fitter Switches.



IMPORTANT INFORMATION - PLEASE READ FOR YOUR SAFETY

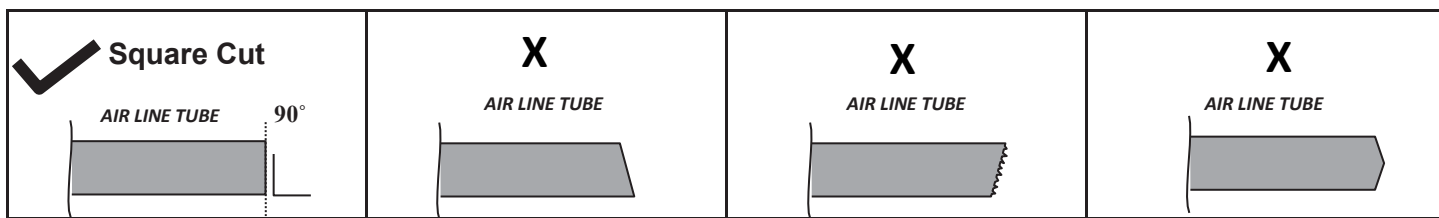
**Always:**

Use a tube cutter or sharp utility knife.

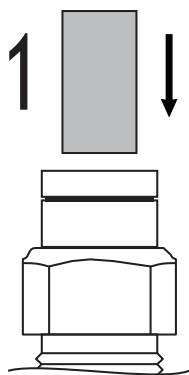
**Do Not:**

Fold or kink the Air Line Tube. Cut the Air Line Tube at an angle. Do not use pliers, scissors, snips, saws, or side cutters.

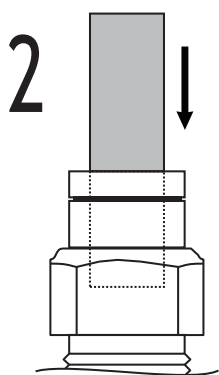
**PROPER AND IMPROPER CUTS IN THE AIR LINE TUBE**



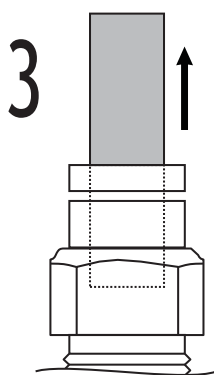
Insert end of Air Line Tube into Air Fitting.



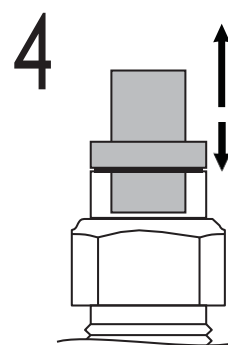
Push Air Line Tube into Air Fitting as far as possible.



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



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



**Removal Tip:** Use a small open-ended wrench to push the collar down .

**Always:**

Select routes protected from heat, debris, and sharp edges. Use Nylon Ties to secure the Air Line Tube.

**Do Not:**

Bend or sharply curve Air Line Tubes. Leave Air Line Tube exposed to sharp edges. Use unnecessary lengths of Air Line Tube. Route Air Line Tube near moving parts. Let Air Line tube hang unsecured from vehicle. Scar Air Line Tube while routing.



IMPORTANT INFORMATION- BILL OF MATERIALS

|                   |            |  |
|-------------------|------------|--|
| Instructional BOM |            | <b>220-0118/ 22-0318/ CKMTA12</b>                  |
| <b>Part #</b>     | <b>QTY</b> | <b>Description</b>                                 |
| <b>220-0118</b>   |            | <b>ADS System</b>                                  |
| 299-100           | 1          | ADS -Controller-raptor                             |
| 01-200            | 8          | Quick Release Chucks/w/Betty Bars                  |
| 05-115            | 10         | 8" Cable Ties                                      |
| 02-108-122        | 4          | 3/8 OD Neon Green whips                            |
| 09-102            | 1          | Whip Bag   |
| 09-500            | 1          | Decal  |
| 02-100-305        | 2          | 3/8 Black Tubbing 102"( Rear)                      |
| 02-100-20         | 2          | 3/8 Black Tubbing 7.8 ""( Front)                   |
| 02-102-68         | 1          | 3/8 Black Tubing 26.7 "                            |
| 02-102-190        | 1          | 3/8 Black Tubing 75.8"                             |
| 02-103-303        | 2          | 3/8 inch split loom 120.7" (rear)                  |
| 02-103-18         | 2          | 3/8 inch split loom 7.5" ( Front)                  |
| 02-104-66         | 1          | 3/8 Split Loom Crossover 26.5"                     |
| 02-104-188        | 1          | 3/8 Split Loom Fire Wall Crossover 75.5 "          |
| 01-101            | 4          | Special Schrader's 90 degree                       |
| 02-117            | 4          | Vinyl caps   |
| 01-110            | 2          | 3/8 x 3/8" Y                                       |
| 01-15             | 1          | 3/8 Tee  |
| 05-133            | 8          | Flat washers for Fender mounting Special Schrader  |
|                   |            |  |
|                   |            |  |
| <b>22-0318</b>    |            | <b>ARB Bracketm Install kit</b>                    |
| 01-112            | 2          | 3/8 X 1/4 NPT 90 degrees Swivel for ADS            |
| 03-525            | 1          | Raptor ARB Bed Mount                               |
| 04-110            | 1          | ARB Wiring Extension                               |
| 05-120            | 4          | Spacers for ARB Mount                              |
| 05-126            | 1          | 3/8 Flat Washer                                    |
| 05-132            | 4          | M6-1.2 X 25 MM Bolt                                |
| 05-135            | 1          | 3/8 -24X1.75" Hex Head Bolt                        |
| 02-113-620        | 1          | 3/8 Black High Temp Tubing 620 CM                  |
|                   |            |  |
|                   |            |  |
| <b>CKMTA-12</b>   | 1          | ARB Compressor (refer to ARB box and instructions) |
|                   |            |  |





## Overview

The following illustration (Figure 1) will give you an overview of how the Up Down Air® air delivery system works. The illustration will not only help understand how the system works, but also help you identify the parts for installation. Please note that the illustration is not to scale.

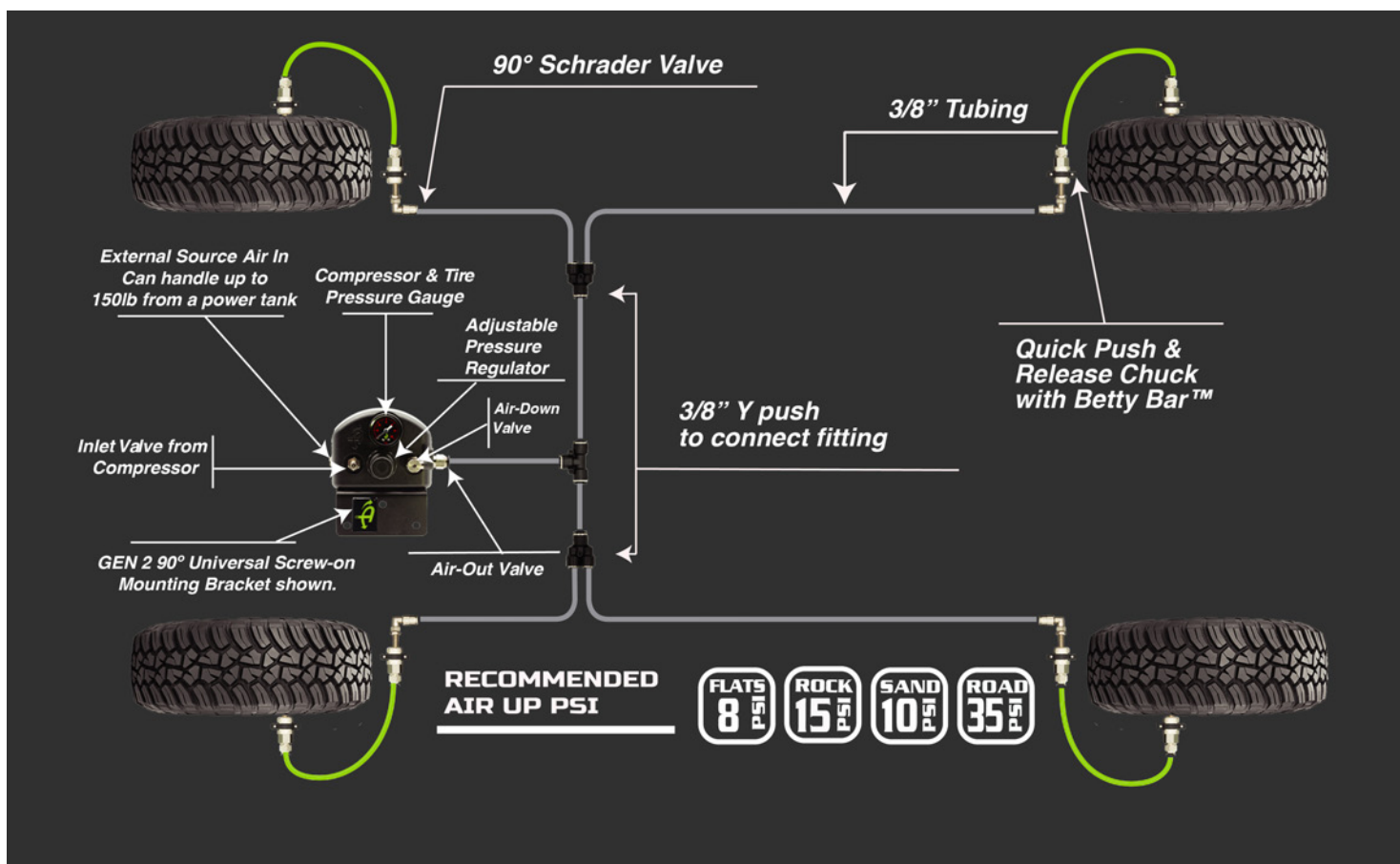


Figure 1



**Start here for Kit Number— 20-0318, 20-0218, 22-0219  
For Kit Number— 220-118 Go to Section #2 Pg 9.**

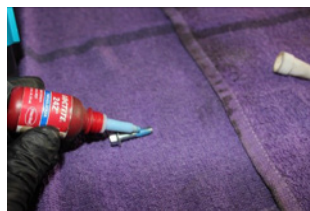
Using the Bill of Materials identify and lay out all your kit components confirming that you have all the correct parts and quantity.

1. Locate ARB Compressor Assembly and Bracketry.



2. Install T Nut (03-525-1) and 3/8-24 Bolt with washer into ARB Compressor Bed Mount (03-525). Leave Bolt and Nut loose to allow room to slide into bed Cleat with compressor assembly.

3. Locate The M6 Hardware and Spacers (05-120) to attach the Bed Mount (03-525) to the ARB compressor. Use a Thread Locker to prevent the hardware from vibrating loose during use.



4. Install 90 Degree fitting into The ARB compressor assembly.

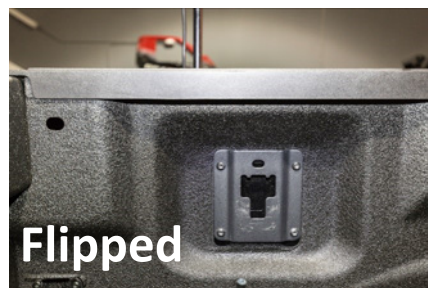


5. Locate the wiring harness for the ARB Compressor and Harness Extension. Connect the wires together to create one long loom.

6. Locate the High Temp 3/8 OD Air line. (02-113-620) 244 inches long. Set line aside with wiring loom for install.

7. Locate the Bed Cleat on the Passenger Side of the bed closest to the cab.

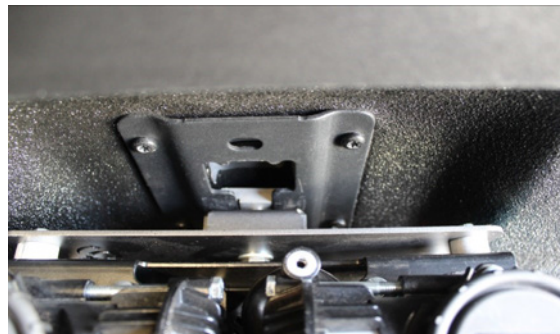
8. Remove the Bed Cleat and rotate it 180 degrees so the large opening is on the top  
Reinstall bed Cleat.



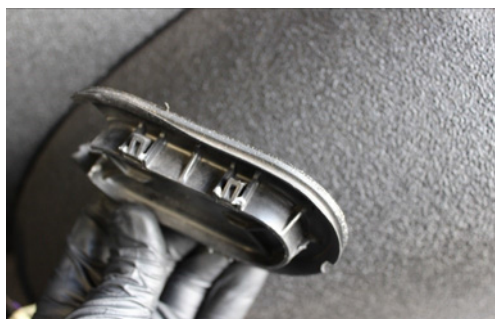


## ARB Compressor Installation

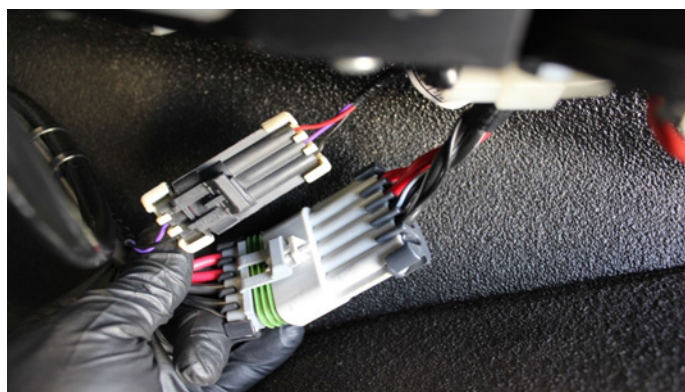
1. With the bed Cleat reinstalled we can slip the Compressor assembly into the cleat. Make sure the T Nut (03-525-1) has enough room to side into the cleat.



2. Tighten the 3/8 bolt for the Compressor Mount. It may be necessary to slightly rotate the compressor assembly to fit the wrench under the bed rail. The compressor should be level to the bed rail when fully tightened.
3. Remove the Oval Dust Cap in the lower Corner of the Bed on the passenger side. There are several tabs on the back of the dust cover that need to be compressed to release the Dust cover.



4. Notch the Dust Cover to allow the Power Cables and Feed Line for the compressor to pass through the Dust Cover.
5. Run the Power cables and 3/8 High Temp Air Line (02-113-620) (244 inches Long) through the bed. The lines should extend approx. 24".
6. Re install Dust Cover.
7. Connect the power cables to the Compressor Assembly.

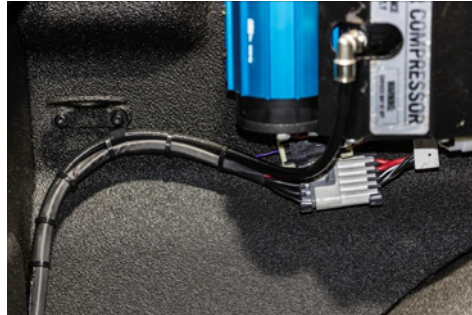


**Air It Up!**



8. Connect the Hi Temp 3/8 Airline to the 90 Degree fitting on the Compressor.

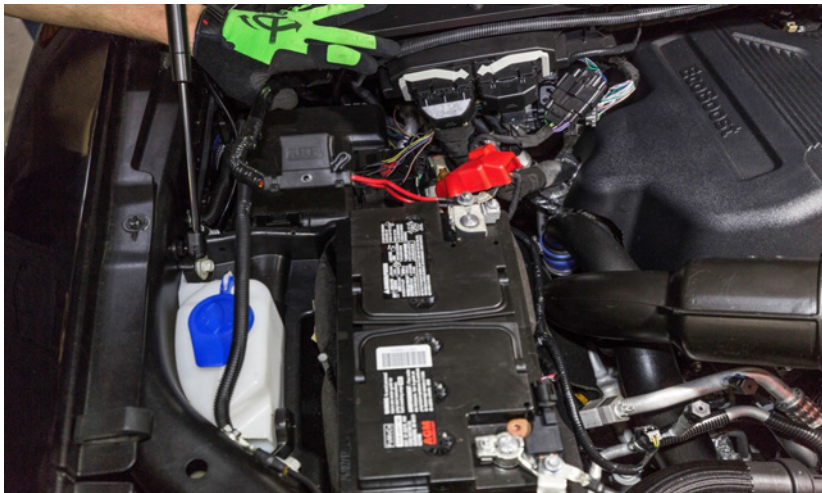
9. We recommend using zip ties to loom the Power cables and High Temp 3/8 Airline together.



10. With the Compressor assembly and Lines bundled in the bed we can move on to routing the power cables. Feed them along the frame rail above the Body Mounts.



11. Once they reach the Passenger Fender well they will run up the back side of the fender to the engine compartment near the battery and ECU.

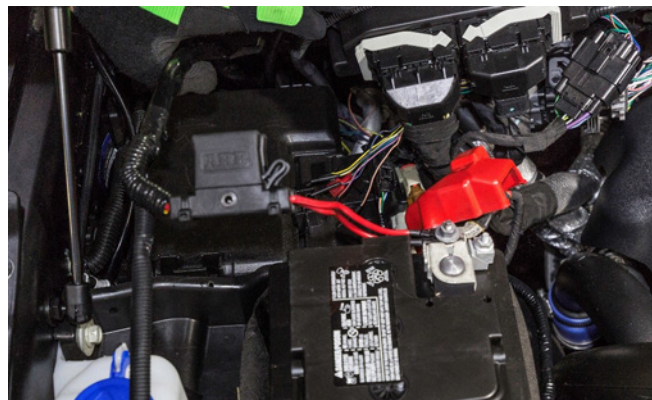


12. The 3/8 Airline will continue along the windshield cowl until it reaches the Master cylinder. Then it will be ran to the front corner of the engine compartment near the driver side head light where it will connect to the ADS Controller assembly.





13. The Main power (Red) wires for the ARB compressor will attach to the Positive terminal on the Battery.



14. The Negative (Black) wires for the Compressor and Relay will attach to the existing ground just below the Gas shock for the Hood. Use supplied Negative wire extension ( Spade to Eyelet) for the On/ Off Relay.



15. Locate the Wire Loom for the Raptor Up fitter/ Axillary Switches located just below the ECU on the firewall. (Depending on your current accessories you will need to choose an AUX Switch to Power your ARB Compressor.) We recommend referencing your Raptors owners manual for more detailed information on the Auxiliary/ Up fitter Switches. Once you have chosen the switch and corresponding wire for that switch you can connect it to the **Purple** Relay wire. This will turn the compressor on/ off with the AUX Switch you have chosen. The Green and Yellow wires are not used at this time.



16. With the power Relay/ Switch connected the installation of the ARB Compressor is Complete. We recommend using zip ties to secure any and all power cables/ hose's to prevent damage.



## Start Here For Kit Number— 220-0118

### Tire Whip Assembly -

1. Locate the Quick Disconnect Chucks (8 pcs) PN 01-100 & PN 01-109 (8 pcs) 3/8" Hose Adapters.
2. Apply thread Sealer to PN 01-109 and screw them into PN 01-100. Stop when the fittings are hand tight. Once the fittings are hand tight continue to tighten for 2-3 Full rotations. Continue step #2 for all Quick Disconnect Chucks.
3. Insert the Green 3/8" OD Whip lines into each of the fittings to build a total of 4 Complete Tire Whips.



### ADS Pre Assembly-

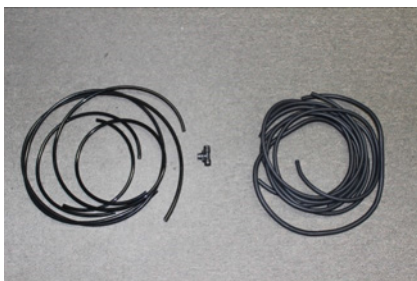
1. Locate the 3/8 Airlines, Split Loom and "T" Connector (01-105). There are 3 Lengths of 3/8 Line.

PN—(02-102-81.25) 32 inches long

PN— (02-102-68) 26.7 inches long

PN— (02-102-190) 75.8 inches long

2. Locate the "T" Connector (01-105), (02-102-81.25) 32 inch line and the (02-102-190) 75.8 inch long hose. Connect one end of each hose into the "T" connector to make a continuous length of hose approx. 110 inches long.
3. The last piece of 3/8 line (02-102-68) 26.7 inch will be installed perpendicular in the "T" connector.
4. With all 3 lines installed into the "T" connector the corresponding Split Loom can be slipped over the 3/8's Lines and set aside for installation.







### ADS Pre Assembly Continued-

5. Locate the 1/4 inch Lines, Split Loom and "Y" Connectors PN (01-110). There are 2 different Lengths of 3/8 inch lines. 1 is (02-100-305) 120 inches long the 2<sup>nd</sup> is (02-100-20) 7.8 inches long.



6. The 3/8 inch lines will be installed into the parallel ports on the "Y" Connector. 1 Long and 1 Short per "Y" connector. With the 3/8" lines installed the corresponding split loom can be installed on the lines. Once complete they can be set aside for installation.



7. Locate the 4 Schrader valves (01-101) and (8) Fender washers. The Schrader valves will be mounted in all 4 fender wells.



8. For the Front you will want to locate the small recess near the bottom of the fender well near the cab. It has a small Flat Surface that faces towards the outside of the vehicle. You will need to drill a 5/16" hole to mount the Schrader valve. Mount the Schrader valve on the Driver and Passenger side with supplied washers and nut.



9. For the Rear you will locate the smooth area of the fender well in front of the tire (Front Side of the Fender Well) just inside of the fender flare. Approximately 10" up from the bottom of the fender. Drill a 5/16" hole to mount the Schrader Valve. Mount the Schrader valve on the Driver and Passenger side with supplied washers and nut.



10. Once the Schrader valves are secured in the fender wells the pre assembly is complete. The next step is to mount the ADS Controller in the engine compartment.



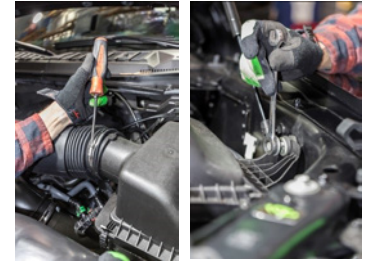
1. Locate ADS Controller. If using the on board Compressor assembly you must remove the plug from the Feed Side of the ADS Controller. Then Install the 3/8" 90 degree fitting with Thread Sealant for the compressor Feed Line. Set ADS Controller aside.



2. To mount the ADS Controller you will need to remove the Air Filter Box assembly. Start by removing the Air intake on the core support.



3. Loosen the Clamp for the Air filter box and support bolt on the inner fender to remove complete Air box assembly.

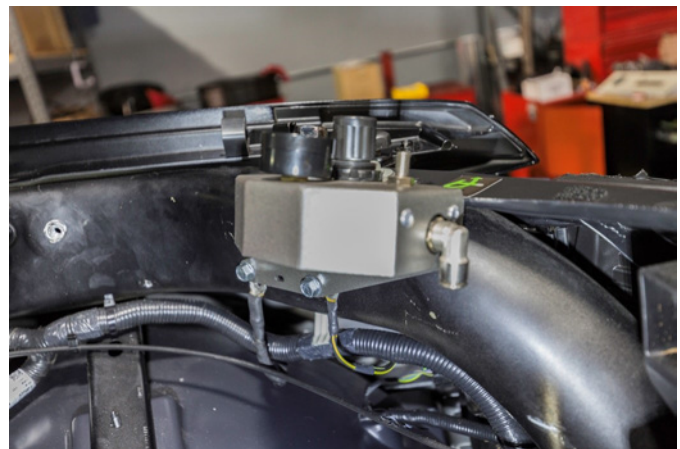


4. Remove the entire air box Assembly. It will lift out with a little wiggle. It has 2 rubber grommets that hold the bottom in place.



5. With the Air Box removed there will be 2 Bolts on the core support with ground wires connected. Remove the Bolts. Install the ADS Controller with the OEM bolts.

**\*\*\* Be sure to re connect the ground wires when installing the ADS Controller to the core support\*\*\***

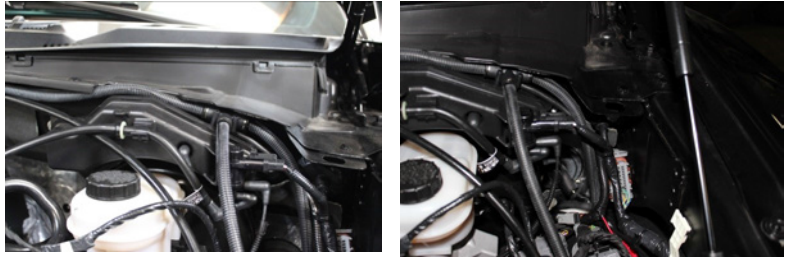






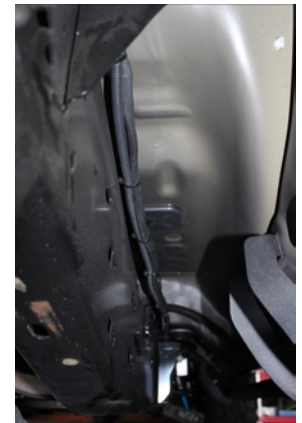
## ADS Controller Installation and Line Routing

6. With the ADS Controller in Place we can run the pre-assembled 3/8" Lines. The Long leg of the 3/8" line will run along the Firewall to the passenger side fender well. The 32" line will run down the Driver side Fender well and the 26.7" Line will run up to the ADS Controller. The "T" connector should land on the driver side of the Master Cylinder Assembly.



7. The 3/8 " Crossover line on the Firewall should run in parallel to the 3/8" feed line from the ARB compressor.

8. With the 3/8" lines in place we can run the preassembled 3/8" lines. The 3/8" lines with the "Y" connectors will run from the back side of the front fender well to the rear Schrader valves on each side of the vehicle (Driver & Passenger). The longer 3/8" line should be ran along the top side of the frame rail above the body mounts to prevent damage.



9. The Short Leg of the 3/8" line will connect to the Front Schrader valve. The long leg will connect to the Rear Schrader Valve.



10. Once the Front and Rear and Rear Schrader Valves have been connected to the 3/8" lines the 3/8" lines located at the front fender well can be connected to the "Y" connectors. All of the connections have been completed under the vehicle. Be sure to secure all air lines to prevent damage.



11. With the lines secured under the vehicle we can connect the Main Feed Line from the compressor and the 3/8" distribution line to the ADS Controller. The Compressor feed Line will connect on the left side of the ADS (Closest to the Schrader Valve on ADS) and the Distribution line will connect on the right Side (Closest to the Bleed Valve on ADS)



12. With the completion of the ADS System we can re install the Air box assembly. It will be a snug fit with the ADS Controller in place. We recommend installing the lower half of the air box first leaving the inner fender bolt out until the air box lid and intake are securely in place. This allows the air box to wiggle for extra clearance. Once the air box, lid and intake are in place install the inner fender bolt to secure the air box assembly.







## ADS Controller Installation and Line Routing





## ***Congratulations!***

**You have now completed the install of your new ARB Compressor and or ADS System.**

**WARNING: YOUR REGULATOR HAS NOT BEEN PRESET FROM THE FACORY, AND MUST BE SET AFTER INSTALLATION.**

### **How To Use Your **UP Down Air**<sup>®</sup> Air Delivery System.**

#### **Airing down your tire pressure.**

While the vehicle is parked and in a safe place, connect all 4 quick connect hoses to your tire valve stems and to the installed 90° Schrader valves.

In the engine bay, go to the controller box. On the right-side controller box is the release valve lever. Open the release valve and now you're airing down all 4 your tires at the same time. Close the valve and it will now read your current tire's air pressure. *It's That Simple!*

*\*The first time you air down your tires, keep track how long it takes so you are able to set a timer next time you air down your tires.*

#### **Checking and Setting your Tire & regulator pressures or airing up your tires.**

This is how the system works for airing up:

Our ADS System uses a simple dial type pressure regulator that can be adjusted to allow more or less air in the system by turning the black regulator knob *clockwise* to release the air or *counter-clockwise* to reduce the air pressure.

With your green Quick Connect hoses completely removed, turn the compressor on, and within 10 seconds the compressor should come to a stop or turn on & off. The pressure gauge needle will show the pressure from the compressor. This is how you dial the regulator in to set your desired Tire Pressure. You should now push the knob down to set it.

In order to fill all 4 of your tires you will need to tightly connect all 4 quick connect hoses to your tires valve stems and to our special 90° Schrader valves stems. To insure there are no leaks, please rotate the chucks a quarter turn clockwise to create a tight seal to the valve stems.





Now after connecting all 4 of the quick connect hoses to the valve stems and the Schrader valves, the gauge dial needle will now reading the pressure from all 4 of the tires. At this time, you may start your engine and turn the compressor on.

While your compressor is connected and turned on, along with your vehicle being started, start turning the dial *clockwise* to allow **higher** PSI. Turn the dial *counter clockwise* to **lower** the PSI.

When the compressor pulsates or turns on and off, and you are not at your set tire pressure, then immediately turn black knob clock-wise to allow air to escape into the regulator lower chamber. This will re-activate the ARB compressor, and as you turn the dial, you will notice the compressor speeding up.

If your tires are at the desired pressure, you may now turn your compressor off and safely store your hoses with the convenient storage bag provided.

Do Not your let the compressor cycle on and off, as this means your ARB compressor is not supplying any more airflow, so the compressor is not producing any further air at this time and should be turned off immediately to avoid blowing fuses. If you're ARB compressor blows a fuse or suggestion is go to an auto parts store and buy name-brand 50 AMP fuse as the ARB seems to be equipped with a lesser quality fuse.

**We sure hope you enjoy your system our goal is to offer a trouble-free easy to use products.**

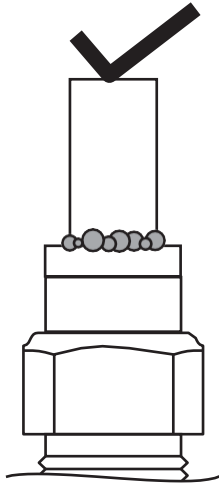


**Air It Up!**

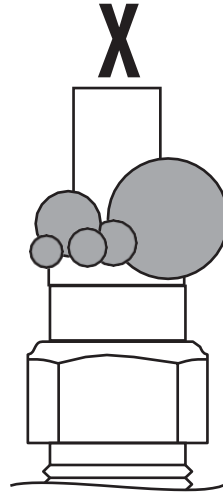


### LEAK INSPECTION

To inspect for leaks pressurize your system, take a spray bottle with a solution of mild soap and water and spray suspected area. If you are not sure where the leak is coming from take a systematic approach spraying one area at a time.



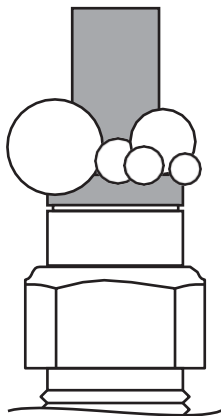
SMALL SOAP BUBBLES THAT DO NOT EXPAND



SOAP BUBBLES THAT EXPAND

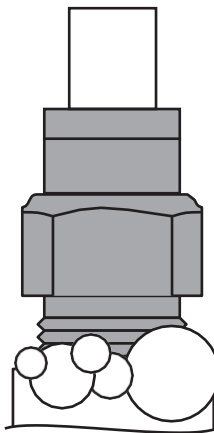
### LEAK CORRECTION

LEAK AT AIR LINE TUBE AND AIR FITTING



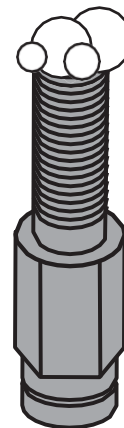
Release Air Line Tube.  
Review proper cuts and procedures.

LEAK AT BASE OF AIR FITTING ON AIR SPRING



Tighten Air Fitting one turn or until leak stops.

LEAK OUT OF THE VALVE CORE ON INFLATION VALVE



Tighten valve core with valve core wrench on Inflation Valve Cap.

