

OWL-SGEN3-D1

Installation Instructions

DELUXE 4-Tire Air System for Sprinter 2019-Present (3rd Gen)

Made in USA

Tools Required:

- Teflon Tape
- 14, 15, 16, 19, 21 mm Wrenches
- 1/4, 5/16 Allen Wrenches
- 2.5, 4, 6 mm Allen Wrenches
- Ratchet
- Extension
- 11/16" Socket
- 10mm Socket
- Tubing Cutter or Sharp Knife / Cutter
- 3/4" Step Drill
- Plastic Fastener Removal Tool or Pliers
- Crimping Tool
- Heat Source (for shrink wrap on electrical connectors)

Other items that may be required (not Supplied):

- Cable Ties
- Wire and Wire Connectors depending on the switch control option selected.

STEP 1 – Assembly of Components

- 1-A) Apply Teflon tape to threads and attach one (1) industrial series plug and one (1) Haltec air chuck to each of the four(4) coiled airlines. Then attach a pair of the coiled airlines to each of the 2-way air manifolds. Each assembly can be set aside and stored in your preferred van location.



Figure 1



Figure 2

- 1-B) Apply Teflon tape to the threads of the two (2) ARB hose couplers and attach to two (2) of the tube bulkheads. Attach the two (2) ARB hose coupler dust caps to each. Set one (1) assembly aside for installation later. Assemble the other one onto the rear air bracket as shown in **Figure 4**. Set aside for installation later.



Figure 3



Figure 4

1-C) Next you will be assembling the ARB Pressure Control manifold assembly. It is important that all the pieces are assembled as show in **Figures 5 and 6** and the ARB pressure control valves are oriented facing up from what will be the top of the manifold assembly when bolted to the compressor bracket. The top is the side of the aluminum block (the piece on the right) with the brass plug and tube fitting. Alternate tightening the brass bushing (**C**) and silver fitting on the ARB Pressure Control (**A**) to achieve the correct orientation while ensuring both are tight. Only apply Teflon tape to the items indicated below.

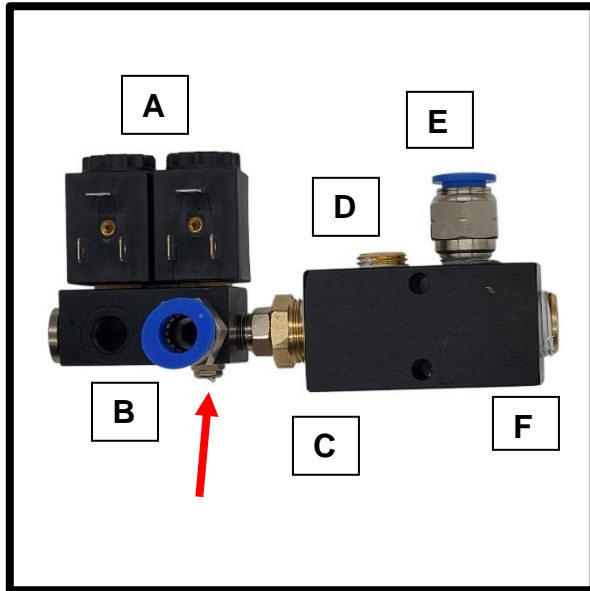


Figure 5

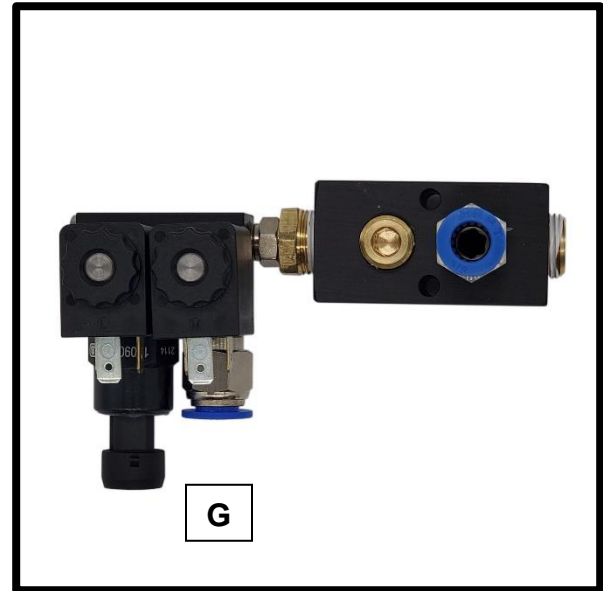


Figure 6

A – ARB Pressure Control (Apply Teflon tape to exposed threads of silver fitting)

B – 3/8” Tube x 1/8” BSPT Fitting

C – Brass Bushing (Apply Teflon tape)

D – 1/4” Brass Plug (Apply Teflon tape)

E – 3/8” Tube x 1/4” NPT Fitting

F – 3/8” Brass Plug (Apply Teflon tape)

G – ARB Pressure Sensor (install using fingers only, finger tight. Do not overtighten or you will damage the o-ring seal)

Note: The **red** arrow is pointing to the exhaust port of the ARB Pressure Control. It is a muffler designed to reduce the noise of the air being released during an air down cycle. However, we have found it does restrict airflow and in turn increases the time to air down. We recommend removing it. The sound difference is minimal.

If running a rear air locker or one is being installed at the same time, the air locker solenoid must be assembled in between the ARB Pressure Control unit and the aluminum block with the solenoid valve facing up just like the ARB Pressure Control unit (not shown above).

1-D) Attach the ARB Pressure Control manifold assembly to the compressor bracket using the provided M5 x 40mm SHCS and M5 Nyloc nuts as shown in **Figure 7**.



Figure 7

1-E) Place your ARB compressor on a work surface upside down with the electrical connectors to the right. Lay the compressor bracket on top of the compressor with the ARB Pressure Control manifold assembly facing down as show in **Figure 8**. Attach the compressor to the bracket with the ARB provided hardware.

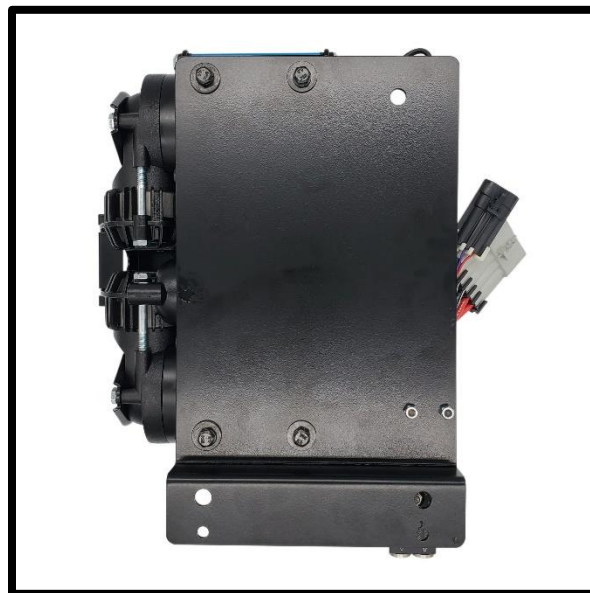


Figure 8

1-F) Flip the assembly over and install last 3/8" Tube x 1/4" NPT fitting in the top of the compressor (**Figure 9**). Tighten using a 11/16" socket. Insert the two (2) 90° male elbow fittings into the threaded air intake ports of the compressor. Tighten with a 15mm wrench (**Figure 9**). Cut a 30" section of the provided black tubing. Use a tubing cutter to a sharp knife to make a clean straight cut. Create a loop and press each end in firmly into the two 3/8" tube fittings on the compressor and manifold assembly as shown in **Figure 10 and 11**. Attach a couple cable ties to secure the loop.



Figure 9



Figure 10

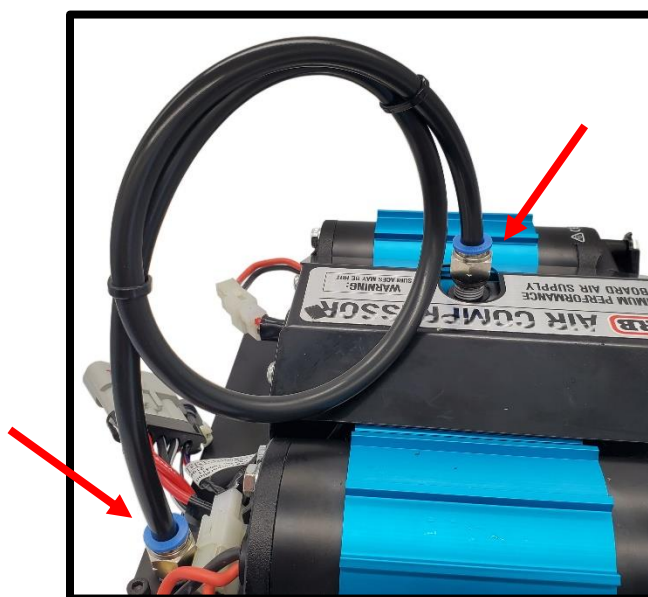


Figure 11

STEP 2 – Air Box Preparation

2-A) Remove the air box. There will be 3-4 nuts to remove using a 10mm socket.



Figure 12

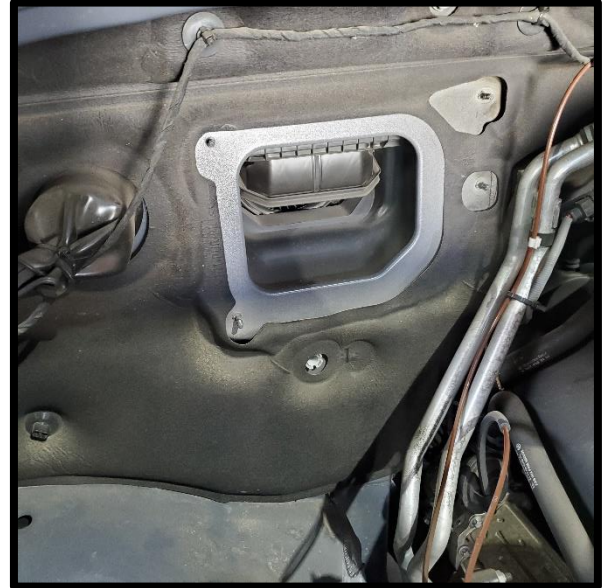


Figure 13

2-B) On the passenger side of the air box you will be installing the two (2) remaining tube bulkheads. The ARB compressor air intake filters will be mounted to the inside of the air box to isolate the ARB compressor air intakes from the hot engine bay. Drill two (2) 3/4" holes using a step drill that are 3.5" apart just below the plastic flange where the insulation ends. Use the nut of the tube bulkhead as a guide to ensure no interference with the plastic flange on the air box and to center the hole location. Also make sure the location will allow the filters to be installed without hitting the edges of the airbox. Trim insulation as needed and set the assembly aside. It will be reinstalled later.



Figure 14



Figure 15

STEP 3 – Compressor Assembly Installation

- 3-A) On the passenger side, towards the front, separate the wiring harness as shown in **Figures 16 and 17** from the body with a plastic fastener removal tool or carefully using a set of pliers. Inside the passenger side wheel well remove the single nut at the top shown in **Figure 18** with a 10mm socket. This will allow the plastic to be pulled back to access one of the mounting holes (the circled hole in **Figure 16**) for the compressor bracket in the next steps.



Figure 16

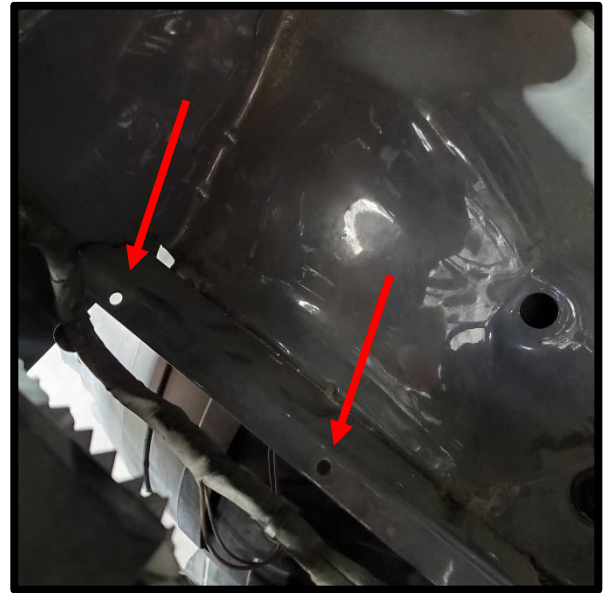


Figure 17



Figure 18

3-B) Place the compressor assembly on top of the wheel well. Line up the forward outer mounting hole in the compressor bracket (the one under the ARB Pressure Control unit) with the hole that the wiring harness was removed from earlier (**note:** the two smaller holes towards the front edge of the compressor bracket are for securing the wiring harness). Place one of the provided 1/4" x 1/2" bolts and 1/4" washers in the bolt hole and screw on one of the provided 1/4" Nyloc nuts finger tight. Do not tighten. Line up the other hole and repeat. Do not tighten. We have found there is some variation with the location of the holes on the body, so if you are having difficulty lining up the second hole, we recommend opening up the hole on the compressor bracket, not the body. From the passenger wheel well, pull back the plastic and insert the provided 5/16" x 1" bolt and 5/16" fender washer up through the hole and into the hole in the back corner of the compressor bracket. Place the provided 5/16" washer and finger tighten the provided 5/16" Nyloc nut. This can be done alone or with the assistance of another person. Now tighten all three (3) mounting points. Then press the wiring harness plastic pins into the holes on the compressor bracket to secure it. Replace the nut removed from the inner fender plastic liner in Step 3-A.

Note: On the side of the inner fender just above the ARB Pressure Control unit is an attachment point for a wiring harness. In some cases, you may have to pull off this connection point to clear the ARB Pressure Control unit.



Figure 19



Figure 20

STEP 4 – Plumbing and ARB Air Couplers Installation

- 4-A) Remove the front grille. The front ARB air coupler will be placed in the plastic trim of the front bumper area just below the grill. Measure 15 inches from center to passenger side. Using a step drill, drill a 3/4" hole vertically centered in the plastic area. Use the nut of the tube bulkhead as a template to ensure it is centered vertically. Insert the tube bulkhead, screw the nut on from the back, and tighten. Leave the grille off for now.

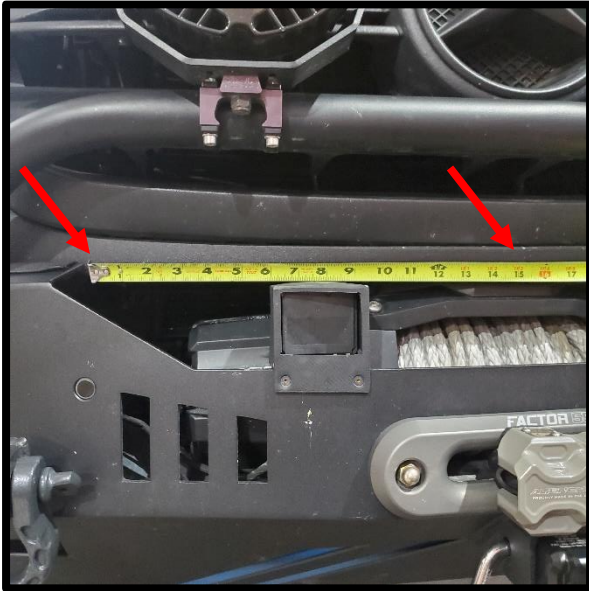


Figure 21



Figure 22

- 4-B) Install the rear air bracket assembly from Step 1-B to the driver's side of the rear hitch with the two (2) provided 3/8" x 1.5" bolts / 3/8" washers / 3/8" Nyloc nuts (or existing hardware). **Note:** Depending on accessories this bracket may need to be installed in an alternate location or orientation.



Figure 23



Figure 24

4-C) Starting at the rear of the van, attach one end of the black tubing to the rear ARB coupler by pressing in firmly to the tube connector on the back. You will be routing the tubing across to the passenger side and forward to the engine bay. **Figures 25-29** below are examples of how to run the line and may vary van to van depending on year and accessories installed. The key is to keep the tubing tucked up and away from heat sources and moving parts. As you approach the engine area, cross over to the outside of the frame rail and run up and along the backside of the passenger wheel well behind shock.



Figure 25

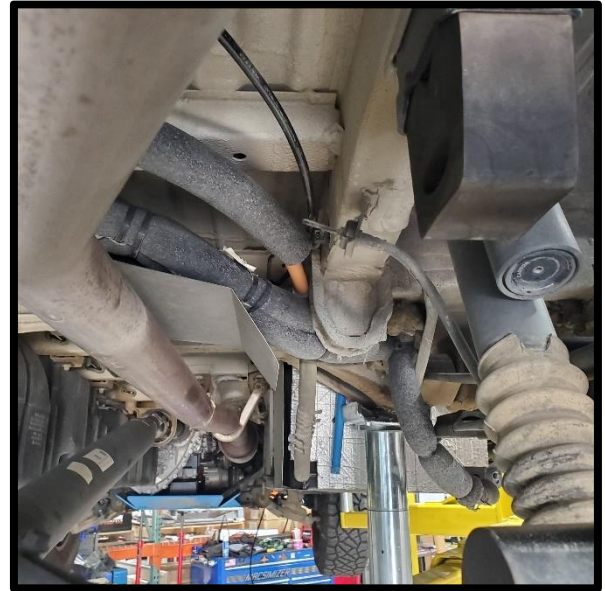


Figure 26



Figure 27

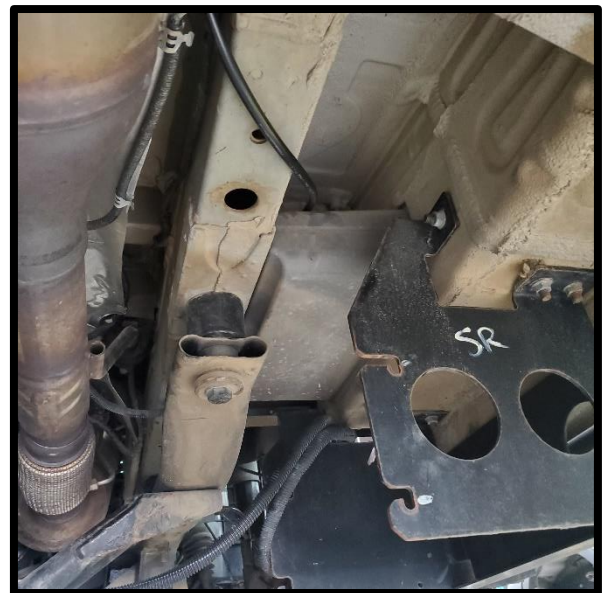


Figure 28

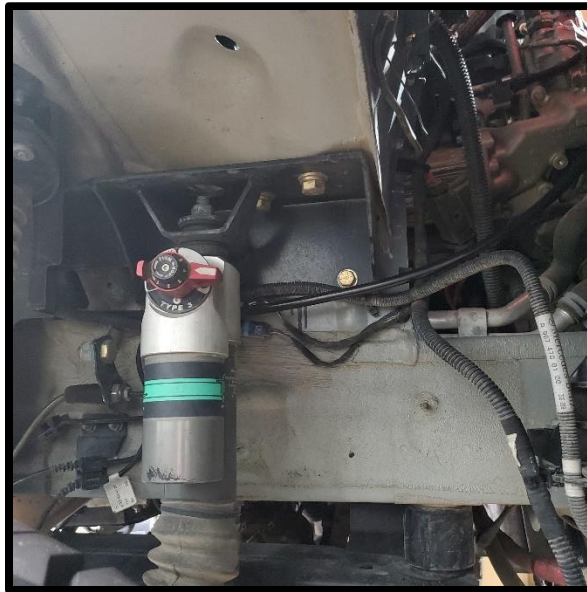


Figure 29

4-D) Connect an 8-inch length of black tubing (A) to the output tube connector of the ARB Pressure Control manifold. Attach the provide union tee (B) to the other end. The line from the back (C) connects to the other side of the union tee. Connect a length of black tubing from the center of the union tee (D) and run it forward to the front ARB hose coupler tube connection. Run it near the frame to the outside of the radiator. Trim to length as needed.

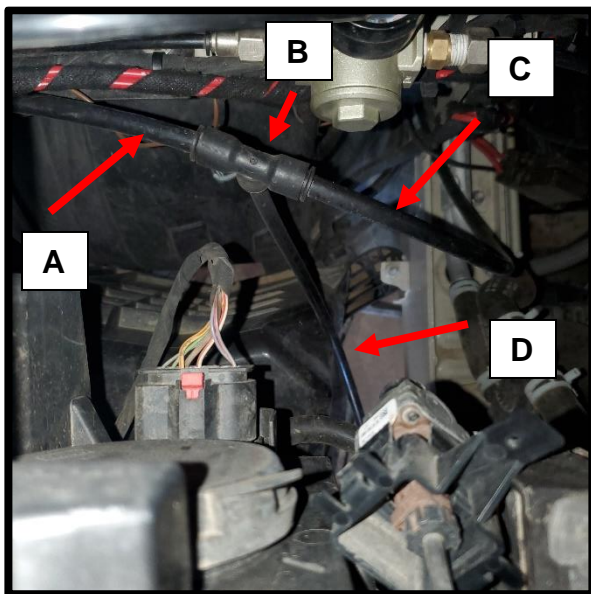


Figure 30

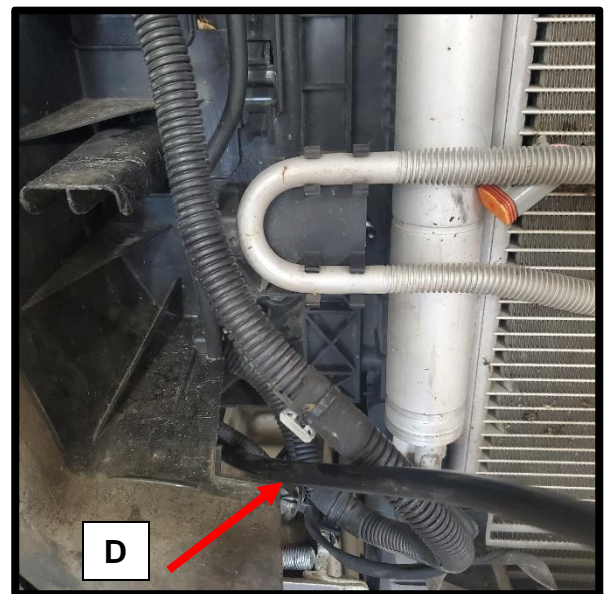


Figure 31

- A – Tubing from ARB Pressure Control output
- B – Union Tee
- C – Tubing from rear of van
- D – Tubing to front ARB hose coupler

STEP 5 – Wiring

- 5-A) Attach the two (2) provided wire connectors to the main ARB harness as shown in **Figure 32**. Both positive wires (**red**) should be placed in one of the provided connectors. Use the second connector to connect both negative wires (**black**). Crimp and use a heat source to seal each of them.

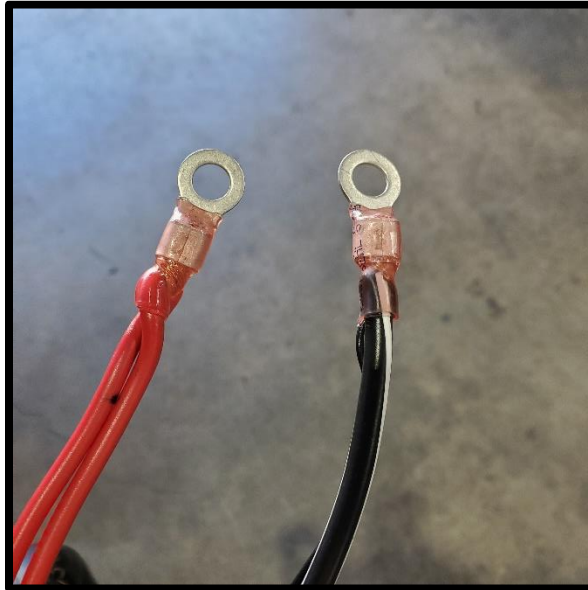


Figure 32

- 5-B) Connect the main ARB harness to the ARB compressor and connect the **red** wire to the positive (+) stud on the alternator. The **black** wires need to go to a ground stud. There is one right under the front lip of where the compressor is mounted. This will require splitting open the main ARB harness cover to route the **black** wires to the stud.
- 5-C) Connect the long ARB switch harness to the ARB compressor. Insert the ARB wires into the ARB provided white plug (attached to harness in the plastic bag) as per the ARB instructions. Set aside in the engine compartment for now.
- 5-D) Connect ARB pressure control harness to the ARB pressure control valves and pressure sensor. **It is important that the connector with the purple wire connects to the solenoid directly over the exhaust port (this will be the solenoid towards the rear)**. Secure the two (2) connectors by tightening the screws in the center of each with a 2.5mm allen wrench.
- 5-E) Run the ARB pressure control module harness (the end with the black connector) through the grommet in the firewall just above the ARB compressor. The harness will come through in the upper corner near the passenger footwell inside the van. This area will also be where you will mount the ARB pressure control module (**Important:** The ARB pressure control

module is not water / weatherproof so it must be inside the van). Find an appropriate place to secure it and plug the ARB pressure control module harness into the ARB pressure control module. Leave the **red** and **black** wires of the ARB pressure control module harness in the engine compartment for now.

5-F) Review the two following wiring methods to determine which best applies to your setup.

Wiring Options

sPod, SwitchPros, or Equivalent Switch Control Option

Note: The ARB pigtail harness (the one with all the connectors) is not used for this method.

5-G) Attach the wires to your switch controller as follows:

- Both the long ARB switch harness **purple** wire and the ARB pressure control module **red** wire to Switch Controller Positive (+).
- Long ARB switch harness **black** wire to Switch Controller Negative (-).
- ARB pressure control module harness **black** wire ring connector to a body ground stud or equivalent ground location.

GOTO STEP 6

ARB provided Switch Option

5-H) Determine where you want to mount the switch. This may require the purchase of a mounting solution for switch or cutting a hole in dash or console.

5-I) Once the switch location has been determined, route the long ARB switch harness to the location of the ARB switch and connect it to the ARB pigtail harness. The ARB pigtail harness will have a lot of terminal connectors (you will only be working with the connectors for the isolation switch (i.e., the on/off switch), a **red wire w/ yellow stripe**, and a **blue wire w/ white stripe**. The other two sets of terminal connectors are for front and rear air locker solenoids which are not applicable to this installation and can be cut off if desired.

5-J) Attach the isolation switch terminal connectors to the ARB switch as per the diagram in the ARB instructions with one exception. Attach the **red** wire with the “piggyback” connector from the ARB pressure control module harness to the ARB switch where ARB indicates to attach the **red** wire. Then attach the **red** wire terminal connector to the “piggyback” of the ARB pressure control module **red** wire as shown in **Figures 33 and 34**.

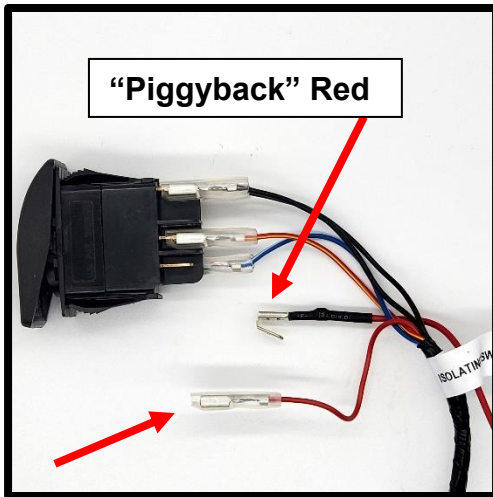


Figure 33

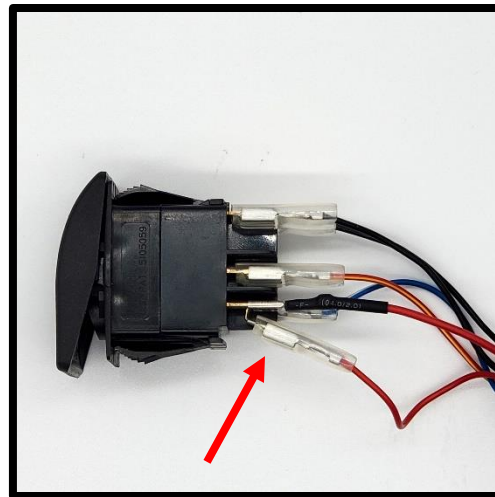


Figure 34

5-K) Connect the **red** wire w/ **yellow** stripe to an ignition activated 12V source. The **blue** wire w/ white stripe is for backlight illumination of the ARB switch typically when the headlights are turned on (this wire would need to a wire that goes hot when parking lights / headlights are turned on). Connect the ARB pressure control harness **black** wire ring connector to a body ground stud or equivalent ground location.

GOTO STEP 6

STEP 6 – Air Box / Grille Reinstall and ARB Air Intakes

- 6-A) Reinstall the air box. Once in place, insert the provided blue tubing to connect the ARB air intakes to the ARB air filters as shown in **Figure 35** (if not already installed, make sure the ARB air filters are installed in the bulkheads you installed in Step 2-B). Push the tubing in firmly at each of the four (4) connections.

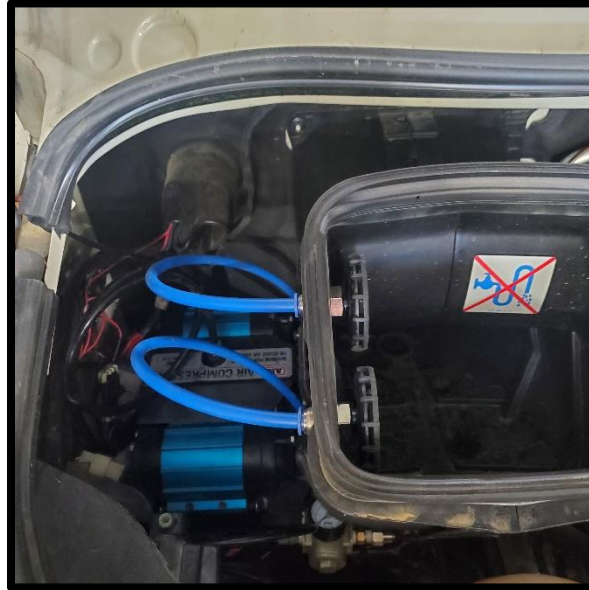


Figure 35

- 6-B) Reinstall the front grille.

STEP 7 – System Set-up and Use

7-A) Download the “**ARB Compressor Connect**” App available for iOS or Android. Sample screen shots shown below in **Figures 36** and **37**. The settings shown are just examples and not recommendations. If you select the gear icon, bottom right, it will bring you to the settings screen. From here if you select the “i”, upper right, it will bring to an information screen that provides all the details of the app.



Figure 36

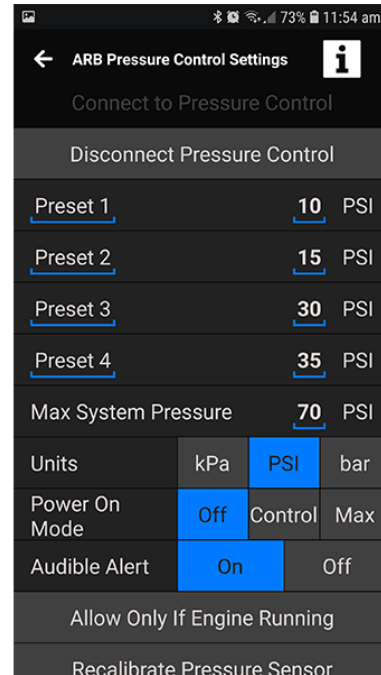


Figure 37

7-B) The following are some recommendations for the initial set-up to simplify the use. Bear in mind the recommended settings may need to be adjusted based on your vehicle weight, wheel / tire combination and conditions of the terrain. And the names for each preset can be adjusted to your preference.

- Set the “Max System Pressure” to 100 psi
- Change “Preset 1” to “Off Road” and set to 25 psi.
 - This will be your air down to pressure of off-road conditions
- Change “Preset 2” to “Front and Rear” and set to 55 psi
 - This will be the first stage of your air up for all four (4) tires
- Change “Preset 3” to “Rear” and set to 70 psi
 - This will be the second stage of your air up for the two (2) rear tires

7-C) **System Check** - Once you get everything set-up, we recommend doing a system check. This will ensure the system works as efficiently as possible. Connect the two (2) airline sets you assembled in Step 1-A to the front and rear ARB air couplers, but do not connect to the tires. Turn on the system from your switch and then open the ARB Compressor Connect App. The app should find and connect to the ARB Pressure Control Module. Select the drop-down menu just below the Presets and select “Max Pressure”. The ARB compressor should run for a short time and then turn off. It should remain off and not keep cycling. If for some reason it does keep cycling, you will have to check for leaks. Check in this order:

1. The Haltec air chucks – sometimes when new, they may leak slightly until used a couple times. If they are leaking some air, just clip on and off a valve stem a couple times and that should correct them.
2. Check each airline for leaks where the fittings / air chucks were installed on each end and fix if necessary.
3. Check the connections between the compressor and manifold assembly and fix if necessary.
4. Check the ARB Pressure Control manifold assembly around all the threaded connections and fix if necessary.
5. Finally, listen. If you hear any air, find the source, and fix accordingly.

7-D) **System Use**

Airing Down: Connect your two (2) airline sets to the front and rear of the van. Then hook the air chucks to each tire. The order does not matter. The Haltec air chucks clip on by pressing on the valve stem and then sliding the silver sleeve towards the wheel to lock it (note: the Haltec air chucks are shipped with the sleeve in the locked position, so you will have to slide the sleeve back for the first use). Once all tires are connected, turn **on** your system switch, open the app, select the “Off Road” preset or enter your desired pressure. Then select “Pressure Control” and the system will start airing down. Once complete, select “Pressure Off”, and turn **off** the system power. Disconnect air chucks and remove airlines.

Airing Up: Repeat what was done above to connect everything and then turn **on** the system. Select the “Front and Rear” preset or enter your desired pressure. Then select “Pressure Control” and the system will start airing up. Once complete, select “Pressure Off” and disconnect the air chucks from the front tires. Select the “Rear” preset or enter your desired pressure. Then select “Pressure Control” and the system will continue airing up the rear tires. Once complete, select “Pressure Off”, and turn **off** the system power. Disconnect air chucks and remove airlines.

Note: If you have wheels with dual valves, use the valve without the TPMS sensor. Fill times will be quicker.

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Parts List:

- Compressor Bracket
 - Mounting Hardware (5/16" x 1" Bolt / 5/16" Fender Washer / 5/16" Washer / 5/16 Nyloc Nut)
 - Mounting Hardware (2x 1/4" x 1/2" Bolts / 2x 1/4" Washers / 2x 1/4" Nyloc Nuts)
- 2x Male Straight (3/8" Tube to 1/4" NPT)
- 2x Male Elbow, 90°
- 2x Tube Bulkhead
- 2x 21" Section of Tubing (Blue)
- 1x ARB Pressure Control
- Aluminum Manifold
 - Mounting Hardware (2x M5 x 40mm SHCS / 2x M5 Nyloc Nuts)
- 3/8" NPT Plug
- 1/4" NPT Plug
- 1x Brass Bushing
- 1x Male Straight (3/8" Tube to 1/16" NPT)
- 1x Union Tee
- Rear Air Bracket
 - Mounting Hardware (2x 3/8" x 1.5" Bolts // 4x 3/8" Washers / 2x 3/8" Nyloc Nuts)
- 2x ARB Hose Coupling
- 2x ARB Hose Coupling Dust Cap
- 2x Tube Bulkhead
- 2x 2-Way Air Manifold
- 4x Coiled Airlines
- 4x Industrial Series Brass Plug
- 4x Haltec Air Chuck
- 25 feet Tubing (Black)
- 2x 8ga Ring Wire Connector

Please contact support@owlvans.com if you have any questions or feedback.

www.owlvans.com