IJKP-27 / Installation Instructions

4-Tire Air System
Jeep JL Unlimited / JL / JT (2018 - Present) with POWER PASSENGER SEAT and Air Lockers

Made in USA

Kit Contents:

- 1 Power Seat Bracket for ARB Compressor
- 2 Aluminum Spacers
- 2 M10 Bolts
- 2 Seat Brackets (for Quick Connect Bulkheads)
- 2 Female Quick Couplings with Preinstalled Tube Bulkheads
- 2 M6x16mm Button Head Bolts / Nuts
- 1 Branch Tee Fitting
- 1 14 inch section of Black Nylon Tubing (Passenger Side Connection to Compressor)
- 1 54 inch section of Black Nylon Tubing (Union Tee to Compressor)
- 1 14 inch section of Black Nylon Tubing (for Driver Side Connection to Union Tee)
- 1 9 foot section of Black Nylon Tubing (for Air Locker Manifold to Union Tee)
- 2 Double air lines (10ft) with 2 Y-Connectors, 4 Haltec Air Chucks, and Custom Storage Bag
- 1 Union Tee Fitting
- 1 Air Locker Manifold
- 1 90° Elbow Fitting
- 2 M5x40mm Socket Head Bolts and 1 Nut (for securing Air Locker Manifold to Firewall)
- 3 5/16” Ring Terminals for ARB Harness to Battery

Tools Required:

- Drill / ¼” Drill Bit
- Ratchet (3/8” and ¼” Drive) / Extensions
- T-50 / E-12 Torx
- 10mm Socket (¼” Drive)
- 4mm Ball Head Allen (long socket type ideal)
- 10mm Wrench
- 2.5mm Allen Wrench
- Sealant
- Gorilla or Duct Tape and Two-Sided Tape
- Crimping Tool
- Heat Source (for shrink wrap on electrical connectors)

Other items that may be required (not Supplied):

- If using a Switch Controller: 22-18 Gauge (Red) Female Spade, Ring Connectors, and/or wire (red and black) (to connect provided ARB Switch Harness (180415) to controller)

STEP 1 – Bracket / Compressor Preparation

1-A) Place the compressor face down with the electrical connectors at top as shown in **Figure 1**. Remove the eight (8) screws (4mm allen) that secure the base to the compressor and remove the base. Remove six (6) of the rubber grommets in the base. Set the base aside (it will not be reused, and it is recommended to save it).

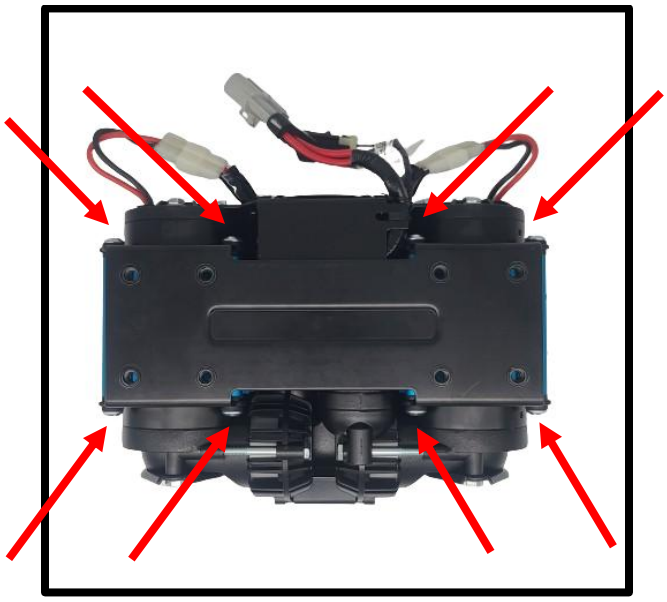

Figure 1

1-B) Install the six (6) grommets in the positions as shown in **Figure 2**. **Note:** The two (2) open holes are optional. They are not required for the installation. Installation of the bolts (after grommets are installed) can be difficult.

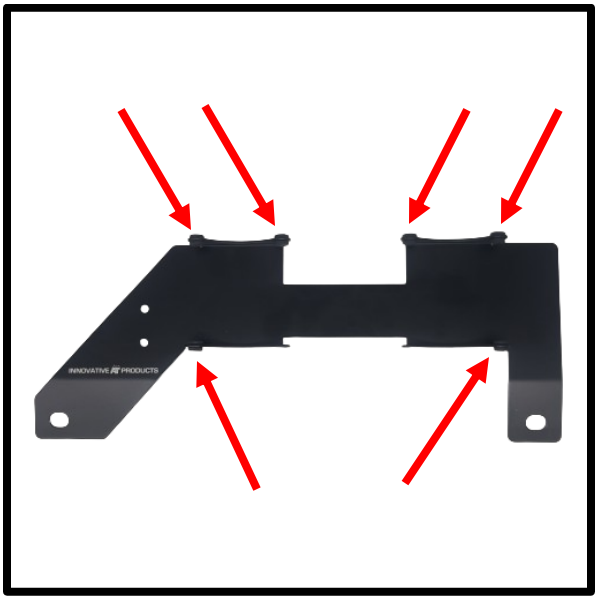

Figure 2

1-C) Place the bracket over the compressor assembly while ensuring the grommets slide into place over the screw holes in the body of the compressor. Be careful not to tear the grommets you slide bracket into place. Also be careful not to damage the wiring harness in the area indicated with the **red** arrow in **Figure 3**.

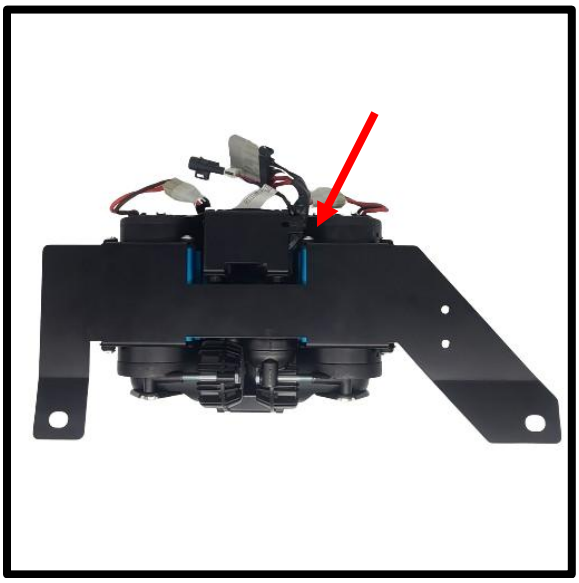

Figure 3

1-D) Flip the assembly over and insert a 10mm wrench into the slot on the top of the compressor and loosen the bolt on the end of the manifold (just enough to allow the end cap to rotate). Install the provided branch tee fitting into the outlet. Tighten the fitting to ensure a good seal. Rotate the fitting as far over as possible (**Figure 4**), then retighten the bolt on the manifold. **This step is really important since seat clearance is very tight. Get the fitting over as far as possible!** Install the ARB provided filters on back of compressor and set assembly aside.

Figure 4

STEP 2 – ARB Wiring Harnesses Installation

2-A) Using a T-50 or E-12 Torx remove the 2 rear bolts that secure the passenger seat, then slide the seat all the way back, and tilt back section all the way forward. Then remove the 2 front seat bolts and lean seat backwards (**Figure 5**). There will be one or more harnesses attached to the bottom of the seat. They do not need to be removed or disconnected.

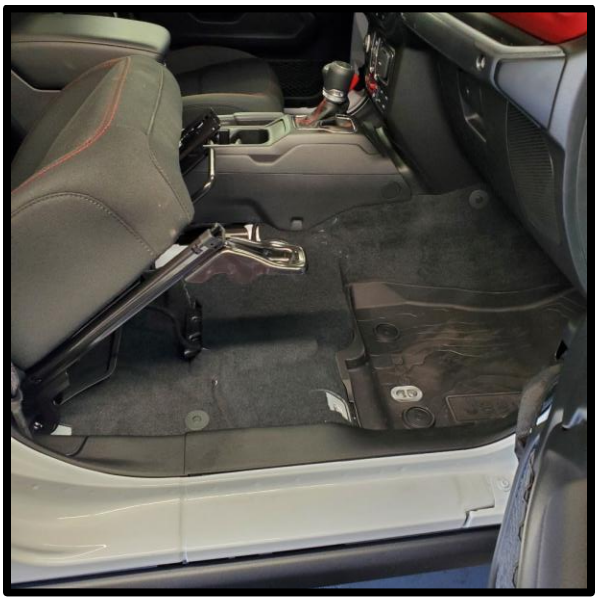

Figure 5

2-B) Lift up the carpet underneath the seat to access the rubber drain plug (**Figure 6**). Remove it, cut a hole in one of the center sections, and then make a slice from edge to center (**Figure 7**). Later you will be passing the main ARB harness through this plug.

Figure 6

Figure 7

2-C) It is best for the Jeep to be cool before starting this step. Especially on diesel engine models since you will be working near the exhaust. Open the hood and obtain the main ARB harness (the larger one with two built in fuses). Pass the plug end of the main ARB harness down between the battery and inner fender (**Figure 8**). For each location, if you look down in the respective areas you will see a gap where you can pass the main plug down and behind the fender liner. Once you get it down through the gap, feed a good portion of the harness down through the gap. Then from underneath the Jeep you will be able to reach up and grab the harness to pull it down. Leave just enough up top for the positive wires (red) to reach the positive battery terminal. You will come back to this later.

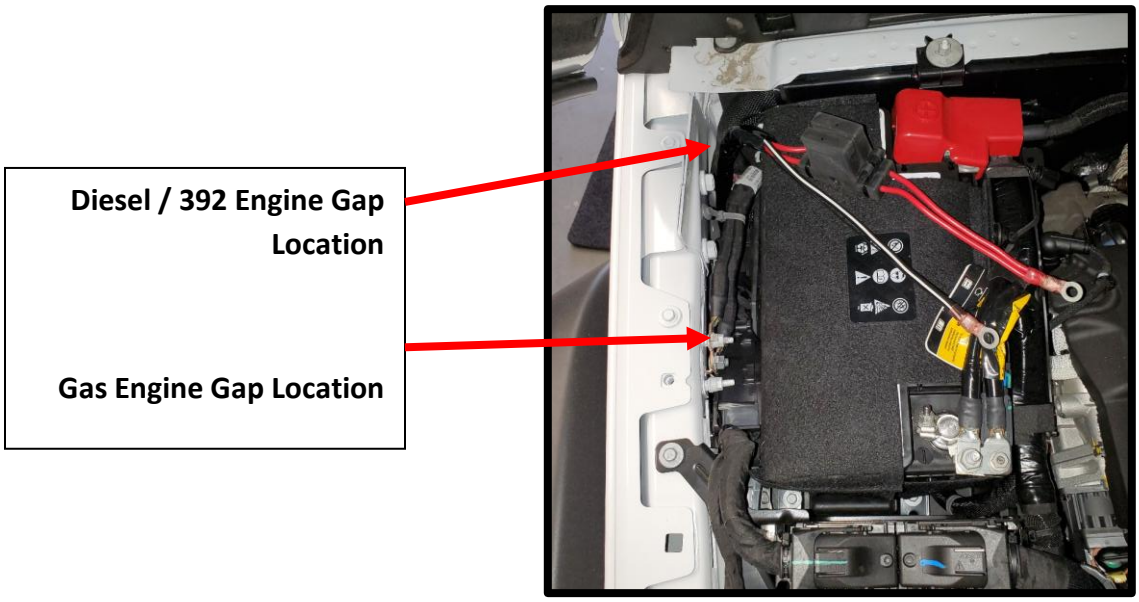

Figure 8 (Diesel Engine Layout Depicted)

Note: Switch controller (i.e. sPod, SwitchPros, etc.) users that plan to use one of these systems to turn on/off the ARB compressor continue reading. These systems typically have the control part mounted under the hood, so it is recommended to run the long ARB switch harness along the same path as the main ARB harness at this time. Leave the end with the 4 spade connectors under the hood and feed the end with the plug as described above with the main ARB harness. Ignore this if using factory AUX switch or the ARB switch.

2-D) From underneath, run the main ARB harness down along firewall and along the top of the frame rail. It is recommended to run the main ARB harness just to the inside edge (towards center of Jeep) of the first body mount on top of frame to keep it clear of the exhaust (**Figure 9**). Continue along the top side of the frame rail until you reach the drain plug hole from **Step 2-B.** Gas Engine Models - you will not be able to see the drain plug hole. It is on top of the forward section of the gas tank. You can fish the main ARB harness across the top of the gas tank or use a metal rod inserted from the drain plug hole and attach it to the main ARB harness to pull it back to the drain plug. Diesel

Engine Models – You will be able to see the drain plug hole and fish the plug end of the main ARB harness up through the drain plug hole.

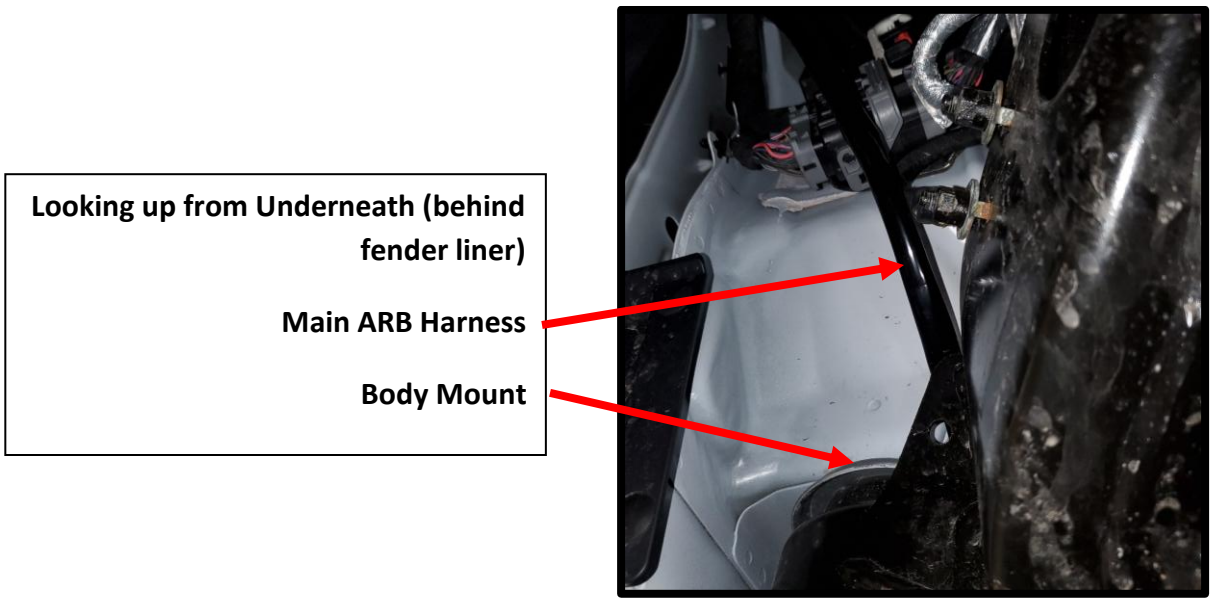

Figure 9

2-E) Pass the main ARB harness through the hole in the rubber drain plug you prepared in **Step 2-B**. Replace the plug in the floor leaving at least nine (9) inches of the main ARB harness showing (and long ARB switch harness, if applicable from the note in **Step 2-C**). It is recommended to seal around the harness in the plug and the edge of the plug with sealant to minimize any risk of water intrusion (**Figure 10**). Also apply gorilla / duct tape across the top and sides as another barrier (**Figure 11**). This will also allow you to reinstall the carpet without having to wait for the sealant to dry.

Figure 10

Figure 11

2-F) Replace the carpet under the passenger seat leaving the harnesses as shown in **Figure 12**.

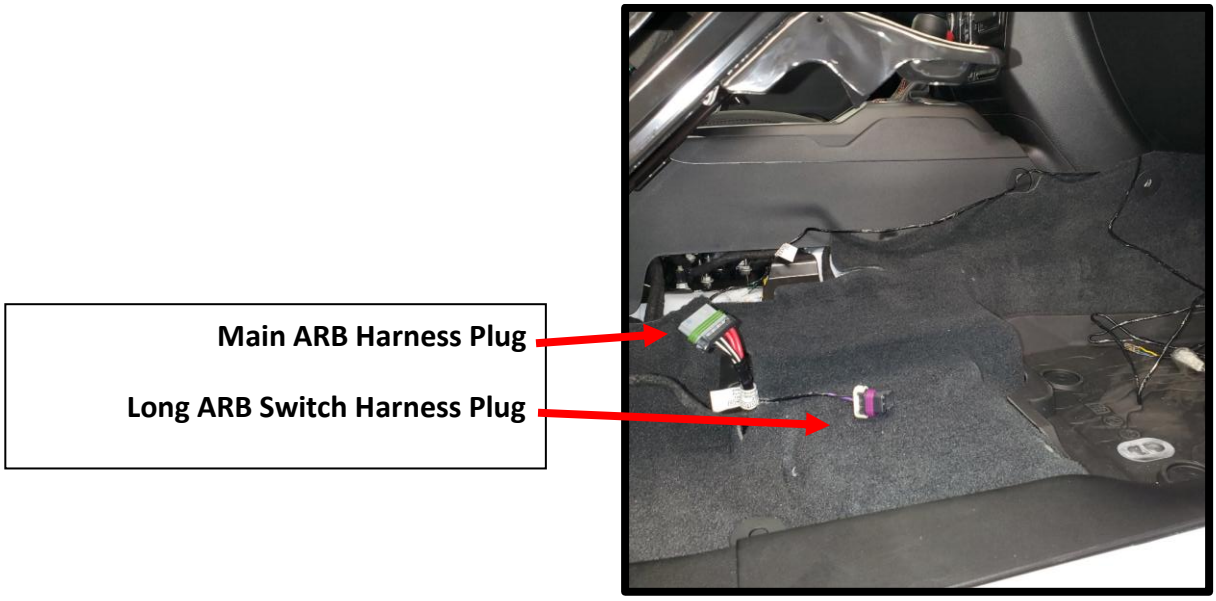

Figure 12

STEP 3 – Seat Brackets and Compressor Installation

3-A) There is a driver and passenger side seat bracket. Install the provided bulkheads in each seat bracket as shown in **Figure 13**.

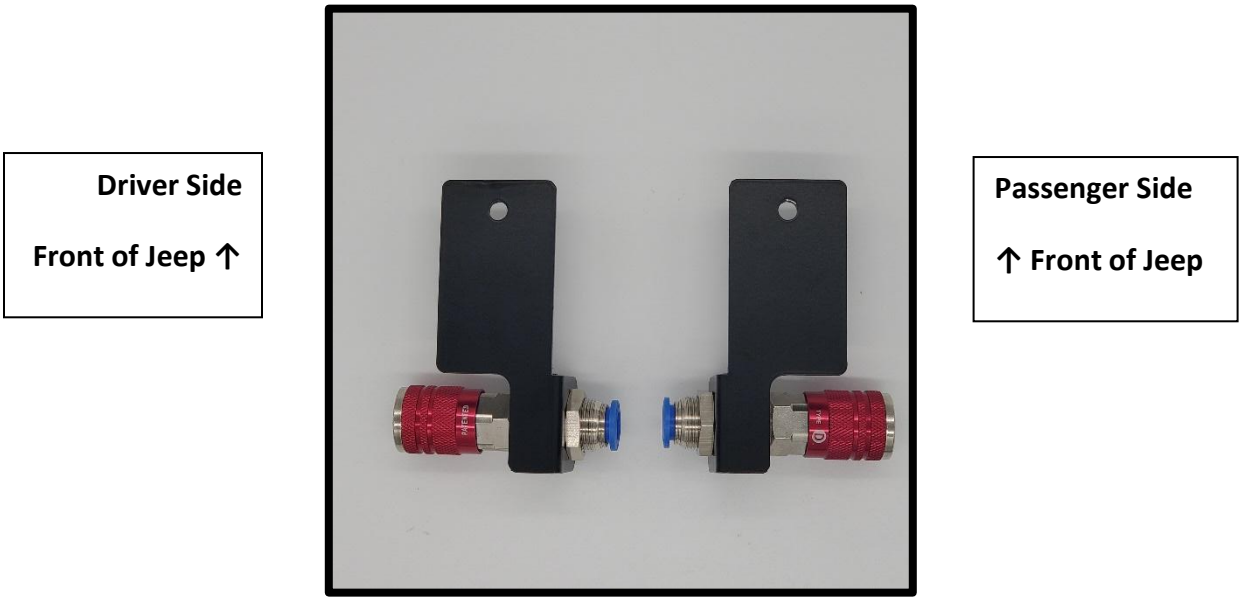

Figure 13

3-B) Attach each seat bracket with the provided bolt and nut using a 4mm allen and a 10mm wrench or socket. There is a factory hole in the top of the seat frame rail at the front of the seat. **Figure 14** and **Figure 15** show the passenger side. Repeat on the driver's side. **Note:** Manual seats shown, but installation is identical.

Figure 14

Figure 15

3-C) Before reinstalling the passenger seat, run the provided 54-inch section of black tubing under the center console. If you open the driver door to allow light in and come back to the passenger side, you will be able to see an opening to target. Note: the red tubing shown in **Figure 16** is for demonstration purposes only.

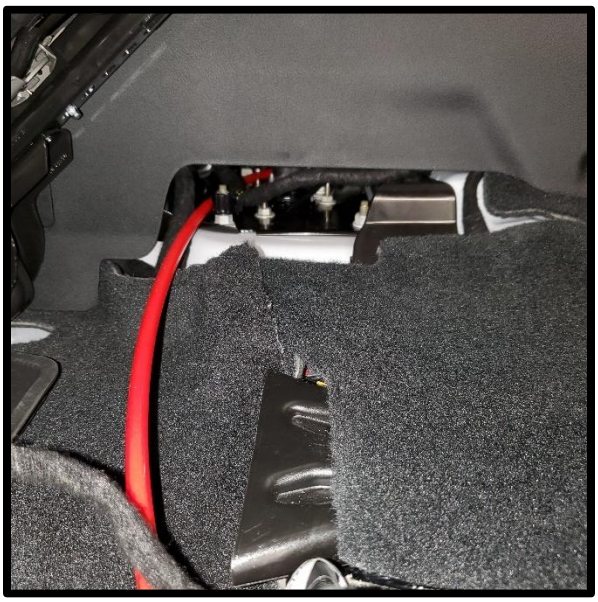

Figure 16

3-D) Tilt the passenger seat back into position, loosely install the front seat bolts only. Before sliding the compressor assembly into place, check the factory wire connections just below the HVAC vent and tuck them in if needed. Then place some tape on the plastic trim as shown. This will prevent any scratches as you slide the compressor assembly into place. Lift up the back of the seat by using your shoulder to push the back of the seat leaving your hands free and slide the assembly into place as shown in **Figure 17**. Keep constant pressure on the seat to avoid scratching the mounting plate on the seat legs as you slide into place. Place the provided spacers under the bracket (between floor and bracket, not on top of bracket) and use the provided bolts to secure in place (leave loose for now). The bracket can be moved side to side as needed to clear the seat leg on the outer edge before tightening the front bolts first, then the rear bolts, to factory specifications.

Figure 17

3-E) Double check clearance under the seat as you move the seat to the rear most position! The bar for the motor should just clear the top of the compressor. The little rubber piece in the middle will bend over. Do not trim, it will act as a cushion of sorts when the seat is in the rear most position. Typically, the average seat position for most puts this bar in front of the compressor.

3-F) With the seat in the rearmost position, reach under the front of the seat and attach the two (2) ARB harnesses to the compressor. Raising the seat as well will help with reaching under the seat.

3-G) Connect the two sections of **Black** tubing to the bulkheads on each side of the Jeep seats and then to the tee fitting on top of the compressor. Connect the driver side tubing (54-inch section) to the rear side of the tee fitting and the passenger side tubing (14-inch section) to the front side of the tee fitting (**Figure 18**). The 14-inch section should go under the power seat bar, **Figure 19**. Press the tubing in firmly until it bottoms out at all four connections. Secure the driver side tubing to the back of the compressor with cable ties.

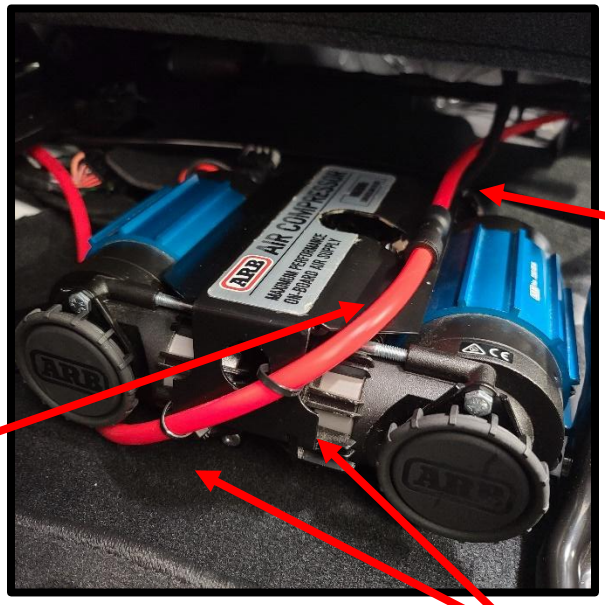

Figure 18

Red tubing shown for demonstration purposes only.

Power Seat Bar

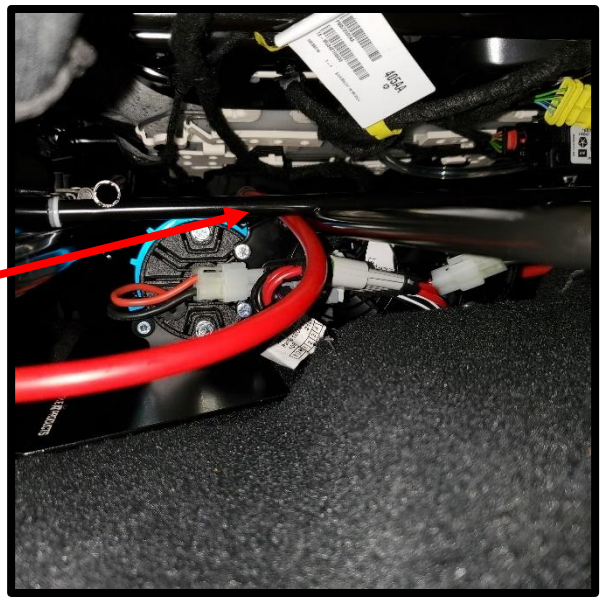

Figure 19

STEP 4 – Air Locker Manifold Preparation and Installation

4-A) Align manifold on top of firewall under hood on passenger side as shown in **Figure 20** (centerline of mounting holes aligned with edge of foam piece and towards front edge of body seam). Mark (use manifold as a guide) and drill the forward hole with a 13/64" drill bit and the rear hole with a 3/16" drill bit as shown in **Figure 21**. **IMPORTANT:** Place a metal plate or equivalent under the body seam you are drilling through to avoid accidently drilling into the wiring harness located directly underneath! Take your time!

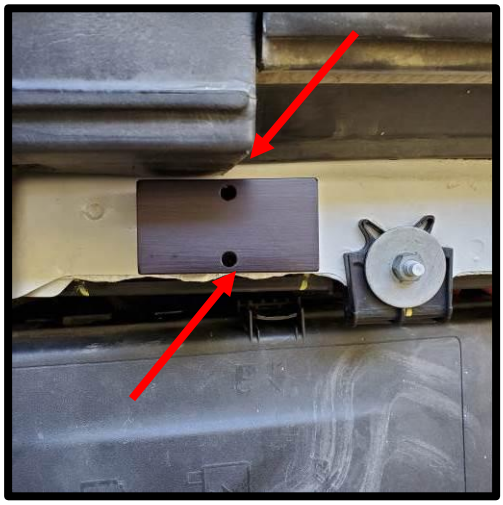

Figure 20

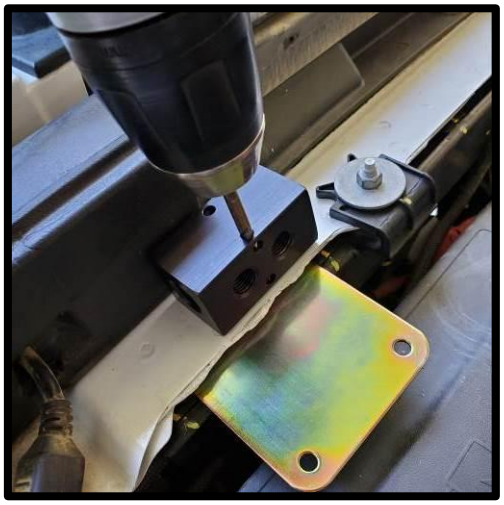

Figure 21

4-B) Install the air locker solenoids and elbow fitting onto the air locker manifold as shown in **Figure 22**. Use Teflon tape to seal all the threads (except the ARB supplied fittings with washers or o-rings). DO NOT use pipe paste or equivalent (the heat will cause it to break down and leak). Once tightened, both solenoids must be facing forward with the ARB banjo fittings on top.

Figure 22

4-C) Install manifold assembly onto the firewall as shown in **Figure 23** using one(1) M5x40mm socket head bolt in the rear hole and tighten carefully. No nut will be installed, it will just be threaded into the body seam. Install one(1) M5x40mm socket head bolt and nut in the forward hole and tighten.

Figure 23

4-D) Run your airlines from the locker solenoids to each axle. There are many paths they can be run to each axle. Use your best judgment to avoid kinks, pinch points, and high heat sources that could damage airlines.

STEP 5 – Final System Plumbing

5-A) Remove the plastic trim along the rocker panel on the driver side. To do so, you will need to first remove the access panel to the door wiring harness plug (see **Figure 24**). Once removed, pull the plug assembly off (you do not need to separate the plugs, just disconnect from inner footwell). Use a 10 mm socket to remove the retaining nut (see **Figure 25**). You will then be able to remove the trim piece. Start at front, up in footwell. There are three clips holding in place on backside that will come loose by pulling trim piece in towards center of Jeep. The rear section can be unclipped by pushing the rear part (near seam) towards center of Jeep.

Figure 24

Figure 25

5-B) Attach the 9 foot section of black tubing to the elbow in the air locker manifold. Run it along the firewall as shown in **Figure 26**, through the lower plug hole next to brake booster as shown in **Figure 27** (it can be removed by pushing from the backside inside Jeep so you can drill a hole through it and then push back in place from under the hood), and along the rocker panel inside the Jeep as shown in **Figure 28**. As you run the tubing be careful not to kink it as you route it though the Jeep.

Figure 26

Figure 27

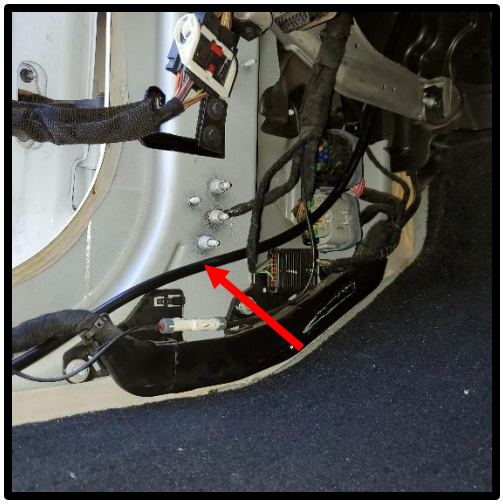

Figure 28

5-C) Starting at the air locker manifold assembly secure the 9-foot section of black tubing along the firewall. Where is passes through the plug in the firewall, it is recommended to seal the opening around the tubing. Leave the excess tubing under the driver seat and then replace the rocker panel plastic trim.

5-D) Attach the 14-inch section of black tubing to the driver side seat connection. Using **Figure 29** as a guide, attach the other end of the 14-inch section of black tubing to the center of the provided union tee fitting. You will then trim the 9-foot section (coming in from air locker manifold) and the black tubing from the passenger side to connect to the union tee fitting such that it is positioned as shown in **Figure 29**. **Note:** Double check everything before making any cuts! Use a sharp knife or tubing cutter to make clean, square cuts of the tubing.

Figure 29

STEP 6 – Final Wiring

6-A) Go back to the engine compartment and attach the ARB harness to the battery. Crimp and use a heat source to attach and seal one of the provided ring connectors to each positive wire (**red**). Attach both to the positive (+) terminal of battery. Make sure the wires are secure and run in a fashion not to interfere with anything. Tuck the two fuse holders behind the battery between it and the fuse box (**Figure 12**, gas engine models). On diesel engine models the fuses can go in the back corner of the battery near the firewall. Repeat with the remaining ring connector to connect both negative wires (**black**) to the negative (-) terminal of battery. For both gas and diesel engine models, attach to the ground stud on the side of the fender (not the battery, it will not reach).

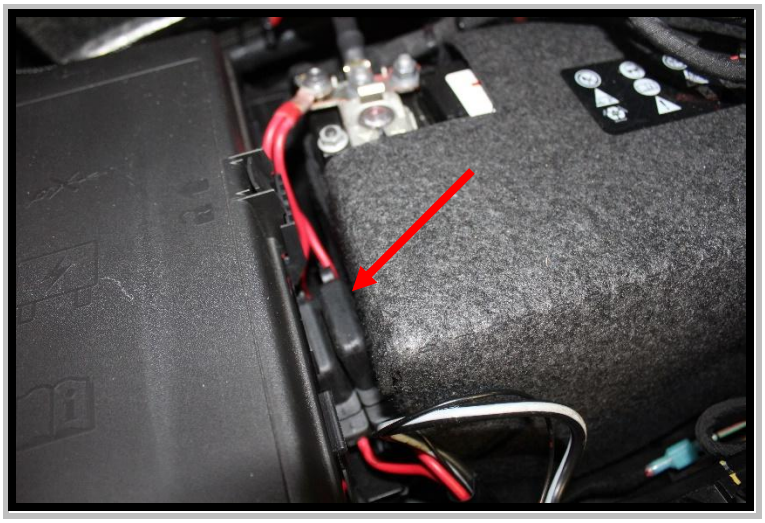

Figure 30 (Gas Engine Layout Depicted)

There are a few methods described here depending on the method you plan to use to activate the compressor and air locker solenoids. Please review each one to determine which one will work best for your application.

Method 1 – Switch Controller (i.e. sPod, SwitchPros, etc.)

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

6-B) Go back under the hood to where you left the long ARB switch harness. Insert the wires from the long ARB switch harness into the ARB provided white plug as per the ARB instructions (if using an adapter harness for your switch control) or replace the ends with the appropriate connectors for your switch control. The connections are as follows:

- ARB **Black** wire to ground
- ARB **Purple** wire to switch control # of choice (this turns on the ARB compressor)
- ARB **Yellow** (not used since REAR locker will be wired directly to your switch control system)
- ARB **Green** (not used since FRONT locker will be wired directly to your switch control system)

6-C) Follow the switch control system instructions to connect each air locker solenoid.

GOTO STEP 6-E

Method 2 – Z-Locker Controller

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

6-D) Follow the manufacturer instructions for connections to your lockers. You will also need to connect the ARB **Black** and ARB **Purple** wires to your switch control system.

GOTO STEP 6-E

6-E) Once the main ARB harness is connected to battery you can begin the process of securing the two ARB harnesses. Start underneath at the drain plug end. Secure the harnesses along the top of the frame rail. There are several locations to secure to a factory harness to keep them up and away from heat sources and potential damage. On diesel engine models this is important since the exhaust runs down this side of the Jeep. Continue up to the firewall and secure the harnesses at a location on the firewall.

STEP 7 – System Check

7-A) Turn on compressor. It should run for a few seconds then shut off (when it reaches the pressure safety switch built into the compressor). The system should be able to sit for a few minutes without the compressor cycling. If after a few seconds or even a minute the compressor cycles you will need to check for leaks. The first thing to check are the air locker solenoids to ensure there are no leaks where they connect to manifold or from the output fittings that go to your air lockers. Also check the fitting installed on top of compressor. Once everything is ok, TURN OFF the compressor. If you do find a leak, make sure you bleed pressure from the system first! This can be done by cycling one of your air locker solenoids a few times with the compressor off.

7-B) Proceed to set-up the Air Down / Air Up Tool (see IJKP-18 Instructions).

Please contact info@innovativeATproducts.com if you have any questions or feedback.

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