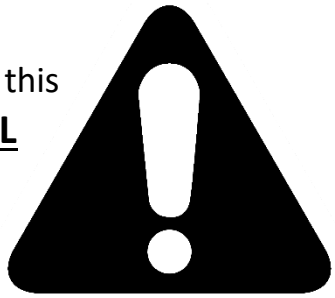
DIESEL RX BOOST COMPENSATION KIT INSTRUCTIONS

SAFETY INSTRUCTIONS

LEARN TO RECOGNIZE SAFETY INFORMATION



This is the safety alert symbol. When you see this symbol in this manual, **BE ALERT TO THE POTENTIAL FOR PERSONAL INJURY!**

Follow recommended precautions and safe operating practices.

UNDERSTANDING SIGNAL WORDS

A signal word-**DANGER, WARNING,** or **CAUTION** is used with the safety alert symbol.

DANGER indicates a hazardous situation which, if not avoided, **WILL** result in death or serious injury.

WARNING indicates a hazardous situation which, if not avoided, **COULD** result in death or serious injury.

CAUTION indicates a hazardous situation which, if not avoided, **COULD** result in minor or moderate injury.

PRE-INSTALLATION CHECKS

WARNING: SUFFOCATION HAZARD! Immediately discard any plastic bags and packing materials to eliminate **CHOKING HAZARDS TO CHILDREN AND ANIMALS.**

The installation of your **Boost Compensation Kit** can be made relatively easy by following the steps outlined in this manual, and:

1. Inventory the package components completely. Notify *PUREFLOW® AIRDOG* immediately of any parts missing or damaged.

2. Read the installation manual completely. Understand how the system operates and installation recommendations before beginning installation.

3. The installation recommendations contained herein are suggested installation guidelines only. Individual installations may vary.

4. If any installation procedure is uncertain, contact *PUREFLOW® AIRDOG* for technical assistance.

SAFETY GUIDELINES!

WARNING Please be sure to chock the vehicle's tires to prevent rolling.

WARNING Please use proper supports when working beneath an elevated vehicle.

WARNING Vehicle frame rails should not be drilled into or welded upon.

CAUTION Wear safety glasses or shield when operating power tools such as drills and grinders or when using a punch or chisel.

CAUTION Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protective devices such as ear muffs or earplugs to protect against objectionable or uncomfortable loud noises.

CAUTION Use common sense when routing air lines. Keep them away from hot exhaust components and/or moving parts. Properly secure lines to prevent chaffing.

INTRODUCTION

This kit can only be used on the AirDog II-5G and Raptor-4G products that Pureflow AirDog in Shelbyville Indiana sells. The purpose of this kit is to help alleviate fuel pressure drops on highly modified light duty diesel trucks. This kit uses an air pressure regulator in conjunction with fittings and line to get boost air from the intake horn to the diaphragm regulator on the fuel system.

PARTS LIST

QUANTITY	PART NUMBER	DESCRIPTION	PHOTO
1	001-APR-REG	0-50PSI AIR REGULATOR KIT	
1	001-APR-BRKT	REGULATOR BRACKET KIT	
1	1168-04-01	1/4 PTC X 1/16 NPT FITTING	
3	1168-04-02	1/4 PTC X 1/8 NPT FITTING	
2	1169S-04-02	1/4 PTC X 1/8 NPT 90° FITTING	
1	NHS-1/4-15	15FT 1/4” HARD PNUMATIC LINE	

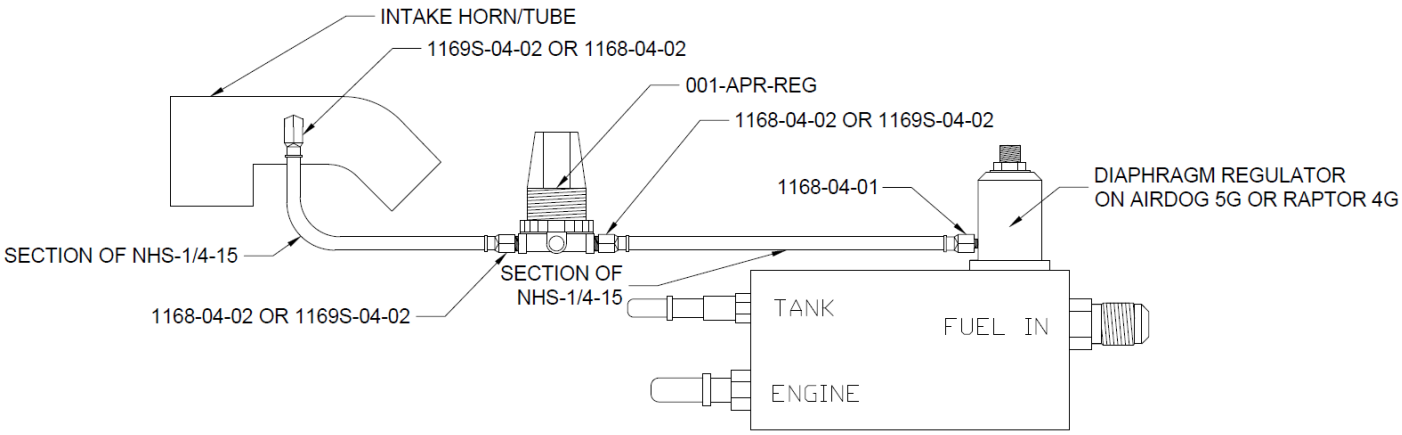
HOW IT WORKS

For every pound of boost air that is sent to the fuel pressure regulator on the fuel pump, is a pound of fuel pressure that is added to the fuel system. This kit takes boost air from the compressed air side of the engine and sends it to the air pressure regulator. Once it leaves the air pressure regulator, it is sent to the diaphragm fuel pressure regulator on the fuel pump. Obviously, on a diesel application, we do not want to send all the boost air to the fuel pressure regulator. With a lot of applications seeing 30psi or more boost air, damage to the injection system may occur if all the boost air is sent. The air pressure regulator is adjustable from 0-50psi. Say if you have your fuel pressure set at 30psi and under heavy acceleration it drops 5psi. The air pressure regulator can be adjusted to 5psi to gain that 5psi of fuel pressure back under heavy acceleration. This kit offers a simple way to combat fuel pressure drops under wide open throttle.

Another purpose of this kit is to allow a higher flowing fuel system to run at a lower pressure range while cruising down the road or idling, but when you floor it, your fuel pressure will increase to where you want it. This will prolong the life of the fuel system.

NOTICE! In order to use this kit properly, an in cab fuel pressure gauge is <u>required!</u>
Failure to properly set this system up may result in damage to the injection system!

BASIC ROUTING DIAGRAM



INSTALLING THE DIAPHRAGM REGULATOR FITTING

Every AirDog 5G and Raptor 4G is shipped with the fitting port for the diaphragm regulator facing downward in case water gets in the port, it can drain. Depending on how you want to route the air line, it may be necessary to clock the regulator cap. For this installation, we clocked the cap to point the fitting port towards the front of the truck.

1-1. If you choose to clock the regulator cap, you will need to remove the 4 allen head cap screws using a 9/64" Allen key wrench. Be sure the springs and dimple washer go back in the regulator. Once clocked, torque the cap screws back down to 40 in-lb. Do not over tighten or damage may occur!

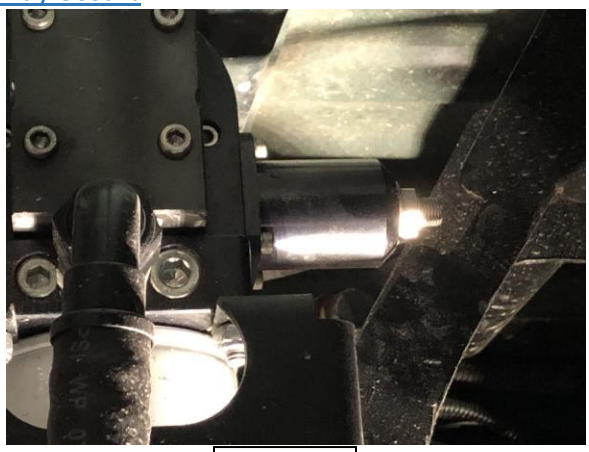


Figure 1

1-2. The next step is to install air line fitting **1168-04-01** into the fuel pump diaphragm regulator cap using a 7/16" wrench. Remember! This is a pipe thread and does not need to be bottomed out in order to seal. Once the fitting is snug, go one full revolution to seal. There will be threads showing when properly installed!

Figure 2

Figure 3

PREPPING THE AIR REGULATOR FOR INSTALLATION

The air pressure regulator comes with two 1/8” pipe plugs. These plugs will need to be installed in the regulator in order for it to function properly.

2-1. Install the two plugs in the ports labeled “GA” using a 3/16 Allen key wrench in the bottom of the regulator. Again, these are pipe thread. Do not overtighten or damage may occur!

Figure 4

Figure 5

MOUNTING LOCATION AND WHAT FITTINGS TO USE

The air pressure regulator can be mounted anywhere between the truck’s intake and the fuel pump’s regulator. Once you decide on mounting location, you can decide on what fittings to use to route the airline. In this installation, we mounted the regulator under the trucks hood.

3-1. Once you decide where to mount the air regulator, install the mounting bracket kit 001-APR-BRKT. Slide the metal bracket over the regulator and secure it with the plastic nut.

Figure 6

Figure 7

3-2 Once the bracket installed, install an air line fitting in the “IN” port and install a fitting in the “OUT” port. Depending on mounting location is what fittings you will want to install. For this installation we installed 2 1169S-04-02 fittings using a 7/16 wrench. Again, these are pipe threads and do not need to be turned in till the threads don’t show. Doing so will damage the regulator body. **Be sure to orient the regulator to where the “IN” port is facing the intake and the “OUT” port is facing the fuel pump. If the boost air is sent through the regulator backwards, it will not work properly.**

Figure 8

Figure 9

3-3. Once the fittings are installed, install the regulator. This kit does not include mounting hardware so you will need to source your own.

⚠ CAUTION Drilling into the vehicle’s frame is not recommended!

Figure 10

Figure 11

INSTALLING THE INTAKE HORN/TUBE FITTING

There are many ways to do this job. If you have an aftermarket intake, chances are you have an 1/8 NPT port that you can tap into. If your truck has the factory intake, you may need to drill and tap an 1/8 NPT port. The truck we used had a port drilled and tapped in the intake horn for a boost gauge. We sourced and installed a tee fitting to tap into the hole that was already there. If you drill and tap your intake, be sure to remove the intake to avoid debris in the engine.

4-1. Once you have found or created an 1/8 NPT port in the intake, install fitting 1168-04-02 using a 7/16 wrench. Again, these are pipe thread. Do not overtighten or damage may occur!

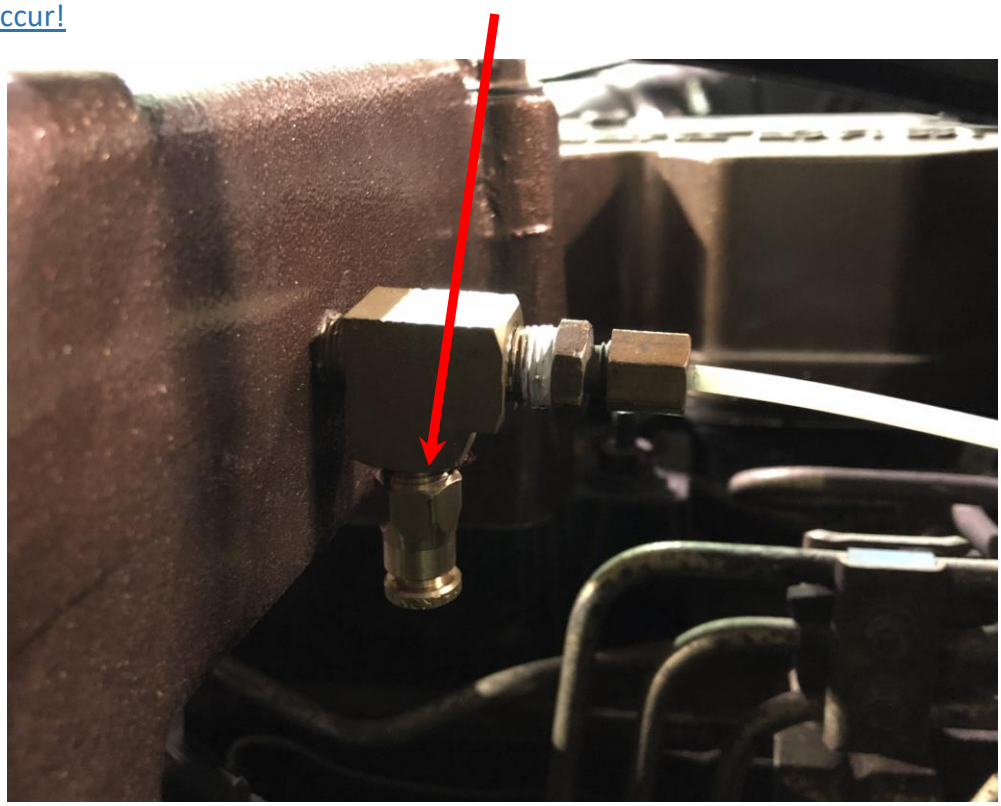


Figure 12

RUNNING THE AIR LINES

As a general rule, when running the air lines, be sure to route them away from any moving or hot parts such as steering shafts, driveshafts, and exhaust.

5-1. Connect one end of air line NHS-1/4-15 to the intake fitting. Once connected, pull on the line to make sure it is properly installed. The line will pull out if not properly installed.

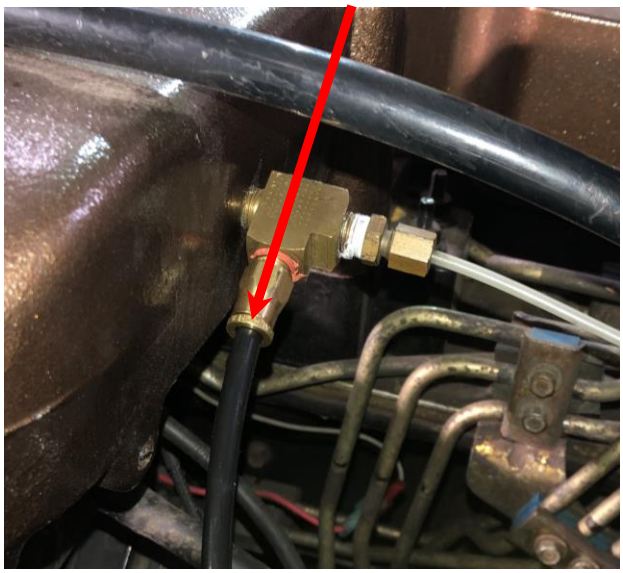


Figure 13

5-2. Run the air line to the “IN” port in the air regulator and cut the line to length. Once the line is cut to length, press the line into the “IN” fitting. Once connected, pull on the line to make sure it is properly installed. The line will pull out if not properly installed.

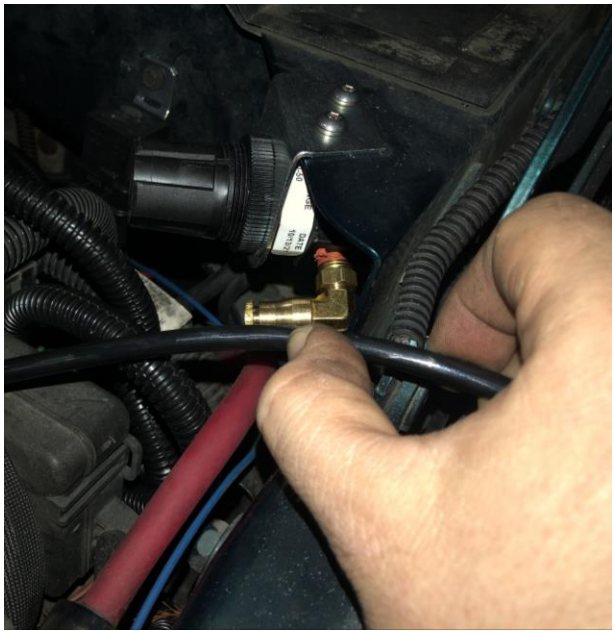


Figure 14

5-3. Take the remaining section of the NHS-1/4-15 air line and press it into the “OUT” port of the air regulator. Once connected, pull on the line to make sure it is properly installed. The line will pull out if not properly installed.

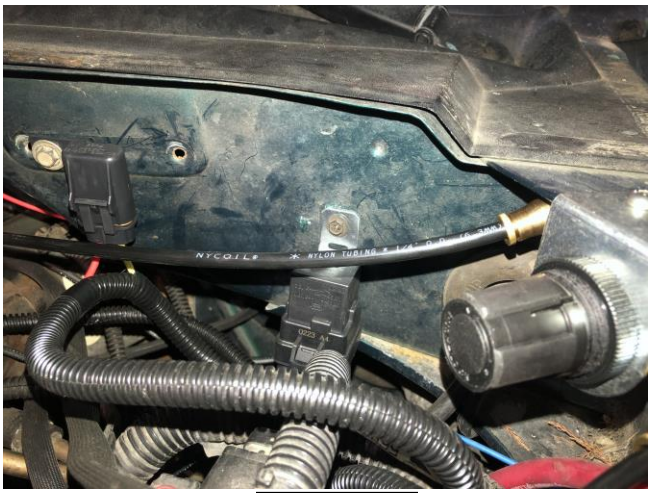


Figure 15

5-4. Run the air line along the frame of the truck to the fitting in the fuel pressure regulator on the fuel pump. Be sure to properly secure the line. Cut the line to length and connect it to the fuel pressure regulator fitting. Once connected, pull on the line to make sure it is properly installed. The line will pull out if not properly installed.

Figure 16

Figure 17

HOW TO SETUP AND OPERATE THE AIR REGULATOR

An in-cab fuel pressure gauge is required to run this kit! Excessive pressure to the injection system may result in damage to the system! This air regulator is adjusted to 0psi from our facility so the boost air can be slowly adjusted to hit your target fuel pressure.

6-1. The best way to adjust this system is to make test hits to see what the fuel pressure drops to.

Be sure to wear proper safety gear when making test hits to ensure your safety.

6-2. Once it is determined how much pressure you want to bring in. Slowly adjust the air regulator clockwise while making test hits until the target fuel pressure is achieved under full acceleration. To adjust the regulator, pull up on the cap until the cap pops up and turn the knob clockwise. Once adjusted, push the cap down until it pops back down to lock in the adjustment.

If you have any questions, call our tech support at 317-421-3180.

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