40 Huntingwood Drive Huntingwood NSW 2148

Phone: (02) 8825 1999 Website: www.aeroflowperformance.com

AEROFLOW PERFORMANCE

DIESEL BOOST CONTROLLER

WARNING!

THIS PRODUCT REQUIRES DETAILED KNOWLEDGE OF AUTOMOTIVE SYSTEMS. WE RECOMMEND THAT THIS INSTALLATION BE CARRIED OUT BY A QUALIFIED AUTOMOTIVE TECHNICIAN.

INTRODUCTION

Congratulations on your purchase of Aeroflow Performance diesel boost controller. Aeroflow Performance products cannot and will not be responsible for any damage, or other conditions resulting from misapplication of the parts described herein. However, it is our intention to provide the best possible products for our customer, products that perform properly and satisfy your expectations. Should you have any questions? Please call technical support at +61 2 8825 1900 and have the product part number on hand when calling.

The Aeroflow Performance diesel specific manual boost controller is a dedicated unit for diesel turbocharged engines running variable vane turbochargers, providing accurate boost control from the turn of the knob. This manual boost controller allows users to adjust boost control and spool rate; therefore, increasing engine power, reduce turbo lag and create a linear boost curve. This great for all types of driving conditions from adjusting boost for towing, or changing it if the EGT gets too high and to bring boost on earlier or hold it longer. When the factory boost curve is erratic, this can lead to engine or turbo premature failure.

It is highly recommended to have this boost controller installed by a professional tuner. This manual boost controller is considered a tuning tool and increasing boost pressure is done so at the user's risk. A boost gauge is also recommended to be installed first before attempting this install of the manual boost controller. This will allow you to know the factory present peak boost pressure and will establish a good base line and target boost pressure to ensure it does not over boost which can lead to premature engine failure. It is important to understand that every vehicle and engine is different with different limitations and tuneability.

It is advisable to ensure that not only fuelling is sufficient for the intended boost pressure but also any supporting mods required for the increased boost pressure is carried out before installation of this boost controller. It is recommended to check the exhaust gas temperature after making boost pressure changes to ensure the engine's safety.

FITTING AND MOUNTING INSTRUCTIONS

1. Locate the factory boost control solenoid by following the hose from the VNT actuator (this can be found from the factory service manual of your vehicle). This solenoid will usually have 3 hoses connected to it - one for the VNT actuator, one connected to the vacuum pump, and another vent hose connected to the turbo intake.
2. Disconnect the hoses from the factory solenoid one by one ensuring to mark where each hose came from. Connect them to the manual boost controller according to the markings engraved on the body of the unit (a diagram is supplied below for reference).
    - Connect the hose barb marked **" T "** (Turbo) to the turbochargers VNT actuator.
    - Connect the hose barb marked **"I"** (Intake) to the turbochargers intake pipe after the air filter.
    - Connect the hose bar marked **"V"** (Vacuum) to the any vacuum source from the engine.
    - Connect the hose barb marked **"B"** (Boost) to the turbo outlet or intercooler piping.
        I. **Note:** this hose usually does not exist on factory VNT systems, but it is necessary to connect it as this is how it references the actual boost pressure to control the vacuum that moves the VNT vanes. It is recommended that this line is a dedicated boost reference line and not to tee this hose off for any accessories.
3. When routing all vacuum lines in engine bay ensure to keep them away from any heat source that could potentially cause damage to the vacuum line. It is recommended to use a heat sleeving or a heat shield over the top for protection. Ensure to secure any loose vacuum lines in the engine bay from moving components.
4. When mounting this manual boost controller in the engine bay it is recommended to use the mounting hole provided in a convenient location. Ensure it is kept away from any heat source that could damage the unit. If close to any heat source use a heat shield or heat protection material to protect it.

ADJUSTING BOOST PRESSURE

1. Start by setting the "RISE RATE" adjuster completely clockwise to the maximum setting, and that the "BOOST" adjuster is turned completely ANTI-CLOCKWISE to the minimum setting.
2. Start the engine and observe the turbocharger's actuator rod and linkage setup. Slowly turn the RISE RATE adjuster anti-clockwise until the actuator arm just starts moving off its limit stopper, then turn it back ¼ of a turn. This should be a good starting point whilst you set up the peak boost pressure.
3. With the "BOOST" adjuster still in the minimum position, take the car for a drive and perform a boost run whilst monitoring the boost pressure to ensure everything is set up correctly and to note the minimum boost pressure the system will achieve.
4. Increase the "BOOST" setting one full turn clockwise and perform another run to check the boost. It may take a couple of turns before you notice the peak boost increasing, but essentially you are incrementally making and testing adjustments until you arrive at your desired target boost. Please take care to drive the same way each time you test an adjustment, as different speeds, RPM, and loads can change the peak boost pressure.
5. Once you have achieved your target boost pressure, you can adjust the "RISE RATE" setting. This is something of a balancing act, as changing the "RISE RATE" setting can affect the peak boost pressure. Increasing the "RISE RATE" setting will delay the opening of the VNT vanes and will bring boost on harder and earlier, but may also result in over boost or spiking if you go too far. As with setting the peak boost, make incremental changes and test the result. You may need to reduce the "BOOST" setting if "RISE RATE" is increased significantly.
6. If you are not comfortable with making these changes to your boost pressures which can cause engine or turbocharger failure. We strongly recommended you seek out professional help from a tuner or workshop to install this product. ***NO WARRANTY will be issued for incorrect installation or function of this product***

For more information or technical enquires

Contact: Aeroflow Performance on

Phone: (02) 8825 1979 Website: www.aeroflowperformance.com