

GFB V2 - VNT Boost Controller (part # 3009)

The GFB V2 has been designed to run as a stand-alone boost controller to replace problematic or unstable factory ECU controlled VNT turbo boost control systems. It is the only available dedicated VNT boost controller integrating both adjustable boost control and spool rate all within one tidy billet anodised aluminium unit.

It is important that you have a boost gauge installed on the car (or at least available for monitoring boost during setup) before fitting the V2, that you know the existing peak boost pressure, and have established your target boost based on the mechanical limitations of the engine. GFB does not advise “safe” boost levels for your car, as the V2 (like all boost controllers) is considered a tuning tool and increasing boost pressure is done so at the user’s risk.

It is advisable to ensure fuelling is sufficient for the intended boost pressure, and also to check the exhaust gas temperature after making boost pressure changes to ensure the engine’s safety.

Installation

- 1) Locate the factory boost control solenoid by following the hose from the VNT actuator. The solenoid will usually have 3 hoses connecting to it - one for the VNT actuator, one connected to the vacuum supply/pump, and another vent hose connected to the turbo intake.
- 2) Disconnect the hoses from the factory solenoid, and connect them to the V2 according to the markings engraved on the body - i.e. connect the hose barb marked “Turbo” to the turbo’s VNT actuator, “Intake” goes to the turbo’s intake after the air filter, and “Vacuum” goes to the vacuum source. The last hose barb on the V2 is “Boost”, which must be sourced from the turbo outlet or intercooler piping. Note that this hose usually does not exist on factory VNT systems, but it is necessary to connect it to the V2 as this is how it references the actual boost pressure to control the vacuum that moves the VNT vanes. It is best not to tee this hose into a boost gauge hose, as it does bleed some pressure and may affect the boost gauge reading.
- 3) Mount the V2 in a suitable location using the hole in the body and a fastener or zip tie.



Adjusting Boost Pressure

- 1) Start by setting the "RISE RATE" adjuster fully clockwise to the maximum setting, and that the "BOOST" adjuster is turned fully ANTI-CLOCKWISE to the minimum setting.
- 2) Start the engine and observe the turbocharger's actuator rod/linkage. 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 (if you feel it needs it). 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 overboost 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.

Warranty

All products manufactured or distributed by GFB are subject to the following Limited Express Warranties, and no others:

For a period of one year from and after the date of purchase of a new GFB product, GFB warranties and guarantees only to the original purchaser/user that such a product will be free from defects of material and/or workmanship in the manufacturing process. GFB, at its sole discretion, shall replace or repair a defective product. This express warranty shall be inapplicable to any product not properly installed or properly used by the purchaser/user or to any product damaged or impaired by external forces. This is the extent of warranties available on this product. GFB shall have no liability whatsoever for consequential damages following from the use of any defective product or by reason of failure of any product. GFB specifically disclaims and disavows all other warranties express or implied including, without limitation, all warranties of fitness for a particular purpose, warranties of description, warranties of merchantability, trade usage or warranties of trade usage.

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