GFB VTA

Installation Instructions

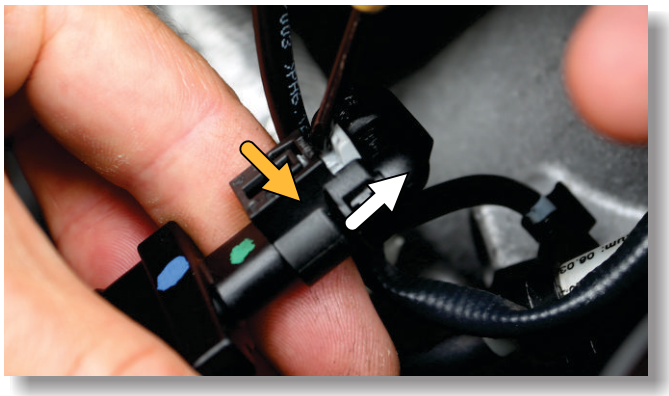
Part # T9458

Installation

Begin by locating the factory diverter valve, which is mounted on the front of the turbo compressor cover. On transverse engines (such as A200) first remove the engine cover, and the diverter is found right next to the turbo intake (⇨). On longitudinal engines (e.g. C200), unclip and remove the airbox intake pipe to reveal the diverter valve underneath (⇨).

- Using a 5mm hex driver/key, undo the 3 screws holding the diverter - take care not to drop them!

- The electrical connector features a double-locking clip - first slide the grey tab out (⇨), then push it down (⇨) to disengage the clip and remove the connector.



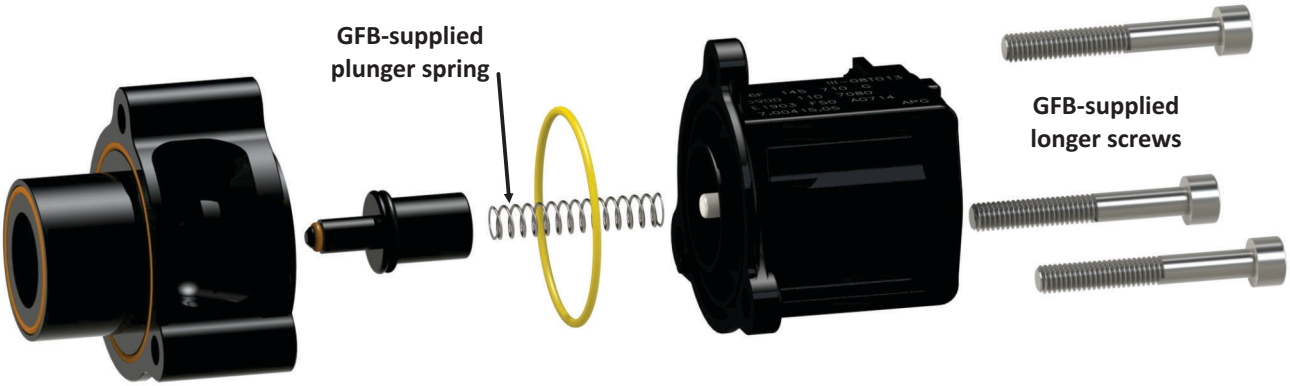
- Separate the factory valve mechanism from the solenoid body by pulling on the plastic sleeve (⇨) that surrounds the diaphragm - don't pull on the valve itself as the diaphragm may tear.

Leave the yellow o-ring in place as this is re-used.

Remove the valve, plastic sleeve, and spring. Keep these pieces in a safe place together with the 3 bolts, as these parts are not re-used.

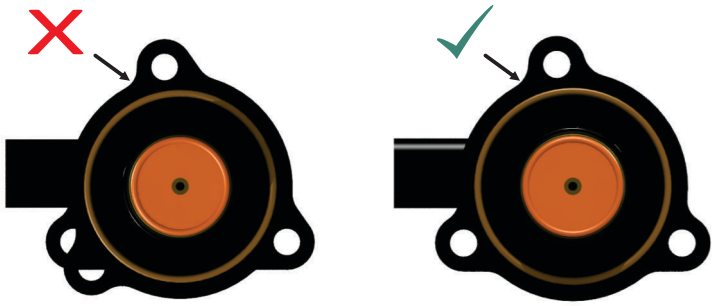
Installation - Continued

• Insert the GFB supplied spring (**DO NOT re-use the factory spring**) and plunger into the solenoid, and check that it slides freely. Now fit the VTA body and factory yellow o-ring onto the plunger/spring/solenoid assembly as shown below:



The VTA body will usually "snap" onto the solenoid, making it easier to fit the assembly onto the car, but variations in the factory solenoid's moulded plastic sometimes mean the solenoid won't hold itself onto the VTA body, in which case it simply needs to be held together by hand until it is bolted to the turbo, and in other cases the fit can appear to be quite tight and it need a good deal of force (by hand) to assemble. This variation in factory moulding tolerance does not affect the operation in any way.

Note that the bolt holes are NOT SYMMETRICAL. When you assemble the VTA onto the solenoid, check the alignment of the holes - if they do not line up properly, rotate the VTA body until the bolt holes line up correctly before continuing.



• Install the VTA assembly onto the turbo using the supplied longer screws. Because of the asymmetric bolt holes, the assembly can only be installed in one orientation.

• Clip the electrical connector back on, replace any parts that have been removed for access during installation, then re-install the engine cover.


C200 Completed Installation


A200 Completed Installation

Notes on VTA Operation

Oily Residue: It is normal to find some oil around the atmosphere outlet, which is from the oil vapour recirculated through the turbo intake by the PCV. This is not a fault of the VTA or anything to be concerned about.

Venting Duration/Timing: You might hear the VTA vent at seemingly odd times, but this is determined by the ECU and is not a fault with the VTA. The ECU turns on the solenoid to vent the diverter any time the throttle is closing faster than a specific rate. The throttle doesn't even have to be completely closed - as long as the rate of closure meets the ECU's requirements, it will attempt to open the diverter. The ECU turns the solenoid on for approximately 2 seconds, unless the throttle is re-opened sooner, in which case it turns the solenoid off immediately.

Unlike the factory diverter that is directly opened by the solenoid, the VTA will only open when the ECU turns the solenoid on, AND there is enough boost pressure to push the piston open. In some cases, you may hear the VTA vent when you didn't expect it to, however it can take only a slight throttle closure to trigger it, and if the throttle is not opened it will continue to vent for 2 seconds or until there is no more pressure in the intercooler. Other times, you may be closing the throttle and the VTA doesn't vent. In that case, it is simply because you are closing the throttle slow enough that the ECU doesn't turn the solenoid on to vent the valve.

Venting Sound: Because the VTA can open and close progressively in response to how much boost pressure is present (unlike the factory diverter which just opens fully regardless of whether there is boost to vent or not), it is not unusual to hear a slight fluttering sound from the intake when lifting off the throttle at low RPM, especially if you have an aftermarket intake, larger turbo, and/or ECU tune. This is nothing to be concerned about.

Fault Code: In some cases, the different operating method of the VTA (as described above) may be mis-interpreted by the ECU as a faulty diverter valve which may result in the fault code P2261 being recorded. The ECU is monitoring the pre-throttle pressure after lifting off the throttle as a diverter check, and because the VTA will start to close as boost pressure drops (where the factory diverter would remain wide open under the same conditions), that's when the ECU assumes there is an issue with the diverter.

This P2261 code does not indicate a problem with the VTA, nor does it cause any issues to the turbo or engine, and it doesn't light the check engine light.

WARNING: GFB recommends that only qualified motor engineers fit this product. This product is intended for racing use only, and it is the owner's responsibility to be aware of the legalities of fitting this product in his or her state/territory regarding noise, emissions and vehicle modifications. GFB products are engineered for best performance, however incorrect use or modification of factory systems may cause damage to or reduce the longevity of the engine/drive-train components.

GFB Limited Lifetime Warranty:

We live in a throw-away society, conditioned by cheap products and built-in obsolescence to expect eventual failure and discard something when it stops working or is superseded. However, pride in workmanship and our commitment to quality means that when we put our name to something, we are also staking our reputation on it.

That is why we back our products with the best Warranty in the business! You should expect a lifetime of use from a well-engineered product, so if your GFB product fails as a result of defective materials or faulty workmanship whilst you remain the original owner, we will repair or replace it (limited only to the repair or replacement of GFB products provided they are used as intended and in accordance with all appropriate warnings and limitations. No other warranty is expressed or implied).

If a fault occurs as a result of usage outside of the terms of the warranty, or you are not the original owner, fear not, we can still help you. You should never need to throw a GFB product away, as spare parts are available and won't cost the earth.