

GFB Hybrid

Installation Instructions

Part #T9235



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TURBO MANAGEMENT SYSTEMS



PERFORMANCE WITHOUT COMPROMISE

INSTALLATION

The GFB Hybrid T9225 is suitable for custom hose-mount installations (1" I.D. hose inlet and outlet), and is also a direct factory replacement for plastic Bosch style 25mm diverter valves.

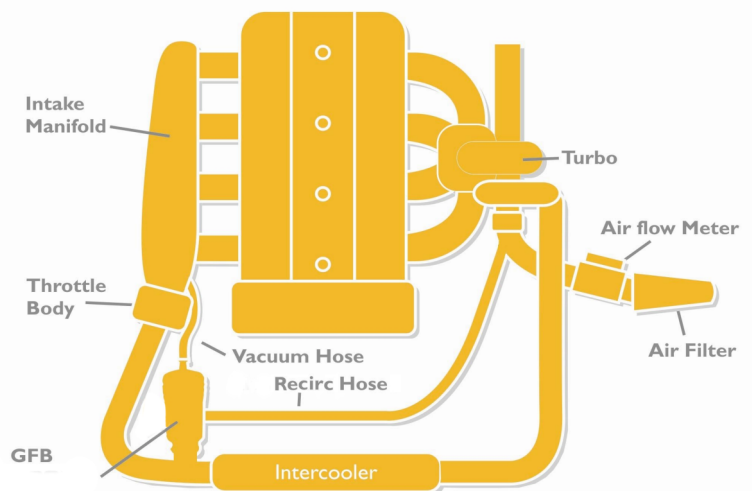
The standard base of the GFB Hybrid T9235 can be mounted in two ways; either as a push fit inside 32-35mm (1.25 – 1.375") internal diameter hose, secured with a hose clamp, or by mounting onto a 25.4mm (1") outside diameter metal pipe. The supplied recirc outlet is 30mm.

T9235 is suitable for custom installations, and is also a direct factory replacement for:

- Subaru WRX/STi MY97-98
- Nissan 300ZX Z32 (2 valves required)
- Nissan Silvia/200SX S13 (SR20DET)
- Nissan Pulsar GTi-R N14 (needs softer spring, part # 6116)

For cars without factory fitted blow-off valves, a location for the Hybrid must be found on the piping between the turbo outlet and the throttle body, and a suitable adaptor must be welded in that location. GFB has a range of weld-on adaptors in aluminium or stainless steel for this purpose. A hose to connect the Hybrid recirc outlet must also be fitted to the piping before the turbo (after the airflow meter if one is installed).

NOTE: GFB recommends mounting the BOV closer to the throttle body rather than the turbo, since some factory turbo piping can cause pressure drops which may affect the performance of the valve. If an intercooler is used, it is preferable to mount the valve after the intercooler, before the throttle.



- Pipe mounting - Once a suitable 25.4mm (1") O.D. metal pipe has been welded to the turbo piping, insert the supplied o-ring into the internal groove in the base of your Hybrid, and partially thread the M5 grub screws into the tapped holes. Smear a little oil or grease on the o-ring, and slide the valve onto the pipe. Make sure that the pipe passes fully through the o-ring and bottoms out in the valve base, and then lock the valve in place firmly with the grub screws. Thread the supplied nuts onto the ends of the grub screws and tighten – this is to prevent the grub screws working loose.
- Hose mounting – Push the base of the Hybrid into the hose, and secure with a hose clamp. Ensure the clamp is seated on the straight section of the hose fitting, and not on the retaining bead.
- Connect the recirc outlet of the Hybrid to the recirc hose and secure with a hose clamp.
- Connect the vacuum nipple on the top of the Hybrid to a suitable manifold vacuum source (after the throttle body), using rubber or silicone vacuum hose of at least 4mm I.D. Try to avoid attaching any other hoses and t-pieces to the vacuum hose and keep it as short as possible, as this will ensure rapid response from your GFB valve.

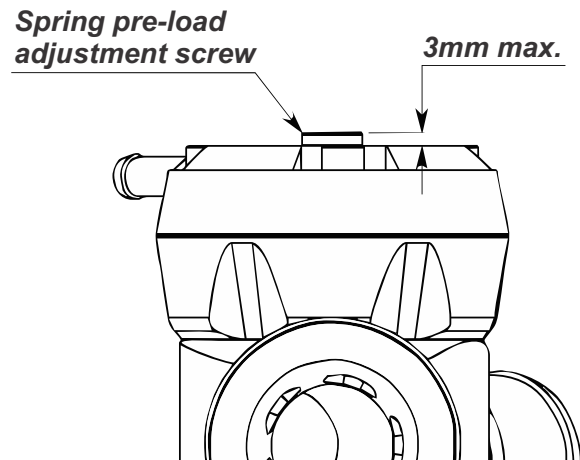
DO NOT CONNECT THE VACUUM HOSE TO BOOST CONTROL, FUEL PRESSURE REG OR BRAKE BOOSTER HOSES.

ADJUSTING THE SPRING PRELOAD

Contrary to popular belief, the spring pre-load **DOES NOT** need to be adjusted to suit different boost levels. **All GFB valves will stay shut under full throttle conditions regardless of boost pressure or spring pre-load.**

The spring pre-load affects how easily the valve opens when you lift off the throttle, and how long it stays open. It is adjusted to ensure the valve opens easily enough to release the air, but not long enough to cause idling problems. The guide below will walk you through the steps involved.

- Using the supplied 5mm hex key, set the spring pre-load adjusting screw to the softest setting (3mm above the head, as shown opposite), and ensure the atmosphere venting port is open so you can see the movement of the piston during setup.
- Start the car and let it warm up for a couple of minutes. Make sure the A/C is off.
- Look at the piston through the trumpet. If it is hovering open, wind the adjustment screw in the "+" direction until the piston closes fully. If it is already closed, proceed to the next step.



WARNING: For this next step, keep your face away from the trumpet when revving the engine. View the piston from a safe distance away from the blast of air.

- Give the engine a rev - stab the throttle hard then lift off quickly. The piston should lift slightly and vent, then close slowly and smoothly. The harder you stab the throttle, the further the piston will open, but typically it will not fully open when revving in neutral as the turbo doesn't generate significant boost until the engine is under load.
- If the piston does not close before the engine drops back to idle, it may cause the engine to "stumble" or stall. If this happens, turn the adjustment screw in the "+" direction one turn at a time until the engine returns smoothly to idle after revving.
- For the final adjustment, take the car for a drive. Accelerate moderately in 2nd gear then pull up to a stop quickly whilst watching the tacho - if the revs dip below idle, tighten the spring 1-2 turns.
- If a fluttering sound is heard when lifting off sharply from full boost, wind the adjustment screw in the "-" direction one turn at a time until the noise disappears. Note that it is not uncommon to hear a slight fluttering at low RPM under certain conditions. This is a result of the different way in which this valve operates compared to the factory unit, and is not detrimental in any way.

Note there is no harm to the engine when experimenting with the spring pre-load and venting bias adjustments, in fact we encourage you to do so. Every car responds differently, and getting the spring pre-load right will usually offer a noticeable throttle response improvement over the factory valve. If you get it wrong, there may be noticeable negative drivability effects such as backfiring, stalling, or poor throttle response, in which case keep making adjustments until you find what works best for your car.

A video example of setting up the spring pre-load can be found using the QR code opposite or the link below:

gfb.com.au/downloads/gfb-tv?video=KgGRfR6jt-c



CHANGING THE SOUND

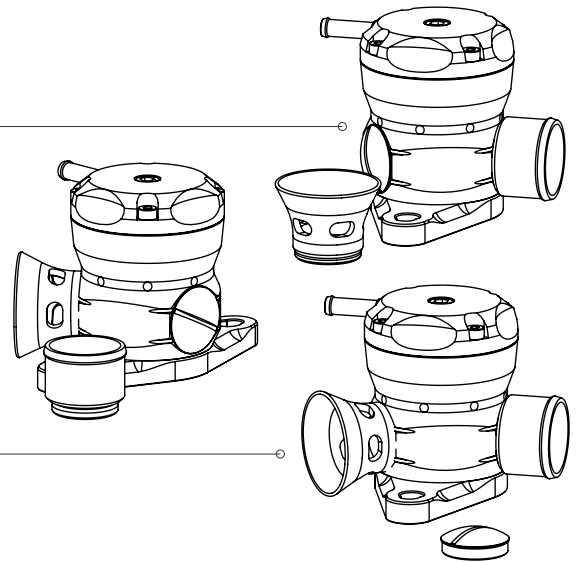
The GFB Hybrid is supplied with a plug set that allows you to configure the valve in 3 different ways, depending on your preference.

Typically, most engines will allow 100% atmosphere venting with no problems, however some combinations of modifications can result in backfiring or stalling with full atmosphere venting. In this case the solution is to revert back to 50/50 or full recirc venting.

For silent, fully recirculated operation, leave the recirc hose connected and swap the trumpet for the threaded plug.

For full atmosphere venting and maximum noise, plug the recirc hose with the supplied hose plug, and install the screw-in plug in place of the Hybrid's recirc outlet.

For 50/50 venting and a moderate sound, keep the recirc hose connected and the trumpet installed.



MAINTENANCE

GFB blow-off valves are designed to be as maintenance-free as possible. In most cars the small amount of crankcase and rocker-cover oil vapor that is directed into the intake system is enough to keep the piston well lubricated indefinitely.

However, if you notice the sound of the valve changing over time (e.g. slow response time, intermittent operation), or if you can see that the piston is not moving smoothly, it may require a clean and re-lube.

Cleaning Procedure: Remove the four screws holding on the cap, taking care as the spring will try to push the cap off as the last screw is removed. Remove the spring and the brass piston, and wipe any grime from the inside of the valve and the piston with a rag. Apply normal engine oil to the piston and the inside of the bore, and re-assemble.

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 recommends that only qualified motor engineers fit this product. Warranty is for the period of one year from the date of purchase and is 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.