

Fitting Instructions for GFB Deceptor Pro Blow-Off Valve

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Included in kit (unless ordered with non-standard adaptors):

- Deceptor Pro blow-off valve
- Blow-off valve in-car volume controller
- Double sided tape
- 2 x M5 grub screws
- 2 x M5 nuts
- 1 x base o-ring

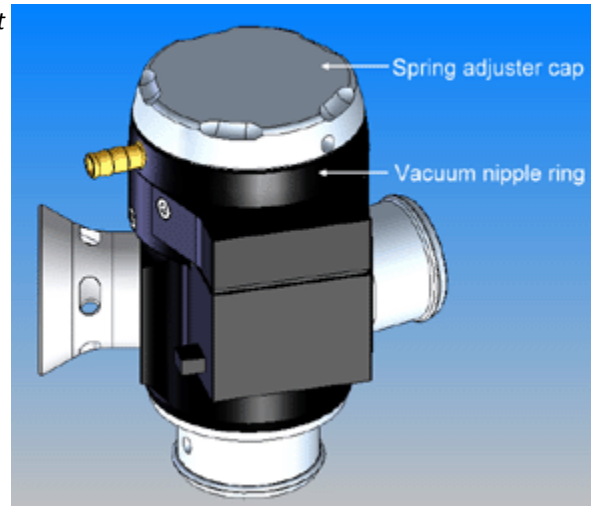
Thank you for purchasing the GFB Deceptor Pro blow off valve, *the world's first in-car electronically adjustable blow-off valve*. We highly recommend that you familiarize yourself with the operation and adjustments of the Deceptor Pro before installing it.

The top of the Deceptor Pro is divided into two separate sections:

Spring adjuster cap: The Deceptor Pro's chrome cap adjusts spring preload; clockwise for firmer, and anti-clockwise for softer. Note that the chrome cap rotates when the volume level is being electronically adjusted with the controller, so although it may appear that the spring is being adjusted when the volume level is changing, this is not the case - the volume and the spring pre-load are in fact independent adjustments.

Vacuum nipple ring: Directly under the chrome cap, this ring is free to rotate 360 ° independently to make attaching the vacuum hose easier.

Installing and wiring the in-car volume controller



WARNING: When testing your Deceptor Pro, DO NOT put fingers or foreign objects through the trumpet or plumb back ports. Doing so may result in personal injury or damage to the blow-off valve.

1) Test the unit before installation by connecting the Deceptor Pro's plug to the in-car controller. Strip the end of the red wire and connect to the positive terminal of your car's battery or a 12V source. Connect the black wire with the eyelet to the negative terminal. Upon initial power-up, the unit will perform an open/close cycle before reverting to the position indicated on the controller dial. By turning the dial, you will see the chrome cap rotate with the inner sleeve. Observe that the inner sleeve rotates from 'trumpet port closed' to 'plumb back port closed'; this will be obvious when looking through the respective ports.

2) Find a suitable location on or around the dashboard, steering column or instrument binnacle for your in-car volume controller. Clean both mating surfaces with some Methylated Spirits or "wax and grease remover" and secure the controller using the supplied double-sided tape. Note that it takes up to 24 hours for the tape to develop a strong bond.

3) Using a multi-meter or voltmeter, find suitable power wire that reads 12V only when the ignition is turned on. Strip the end of the volume controller positive (red) wire and solder it to the 12 V source, making sure that the fuse is still accessible and that the joint is insulated properly.

4) Find a suitable bolt on the body/chassis (up to 5.7 mm diameter) to connect the unit's ground (black) wire to. Connect the unit's ground wire using the attached eyelet.

5) At this point you should plug the Deceptor Pro back into the in-car volume controller, and test its operation again to ensure the electrical connections are good.

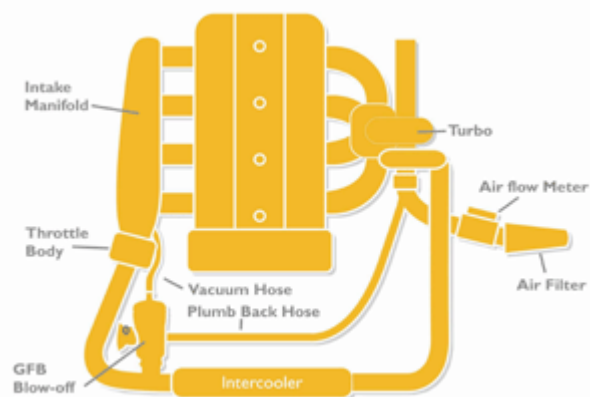
6) Unplug the Deceptor Pro and pass the controller's extension lead through the firewall into the engine bay. It is usually possible to find an existing grommet that can be used for this purpose. In any case, it is important to ensure that the lead is protected where it passes through the firewall to prevent wear or damage.

7) Ensure that all excess wiring inside the car is bundled together and secured under the dashboard.

Installing the Deceptor Pro

Locate and inspect the factory blow-off (diverter) valve on your car, taking note of the hoses or flanges that connect to it and its orientation. Before removing the factory valve, you should be able to determine if you require additional adaptors simply by visual comparison (for example, if your car has a flange-mounted factory valve, clearly the Deceptor Pro will not fit on without a suitable adaptor). The standard base of the GFB Universal Deceptor Pro can be pipe mounted onto 25 mm / 1" pipe or hose clamped into 33-35mm hose, and the standard plumb back outlet is 30 mm. A list of alternative adaptors is found at the end of these instructions, but if in doubt, check out the [adaptors page](#) on our website, or contact your local GFB dealer.

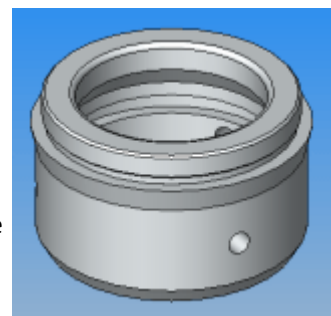
For cars without a factory fitted diverter/bypass valve (generally cars manufactured before about 1990), a location for the Deceptor Pro must be found on the piping between the turbo outlet and the throttle body (as shown adjacent), and a suitable adaptor must be welded in that location. GFB has a range of weld-on adaptors in aluminium or stainless steel for this purpose. A hose to connect the Deceptor Pro plumb back (recirculation) outlet must also be fitted to the piping before the turbo (after the airflow meter if one is installed).



NOTE: If an intercooler is fitted, GFB recommends mounting the BOV between the throttle body and the intercooler, rather than between the turbo and intercooler. **DO NOT** mount the Deceptor Pro where it will receive constant exposure to water, rain, or direct heat from an exhaust or turbo. The Deceptor Pro's circuitry is resistant to the elements, but like all electrical engine components GFB recommends covering the unit before performing any sort of engine-bay degreasing process, or when spraying the engine bay with water.

1) Once a suitable 25 mm / 1" O.D. metal pipe has been welded to the turbo piping, insert the supplied 25 mm o-ring into the internal groove in the base of your Deceptor Pro, and partially thread the two 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 two grub screws. Thread the supplied nuts onto the ends of the grub screws and tighten – this is to prevent the grub screws working loose.

Should you need to mount your Deceptor Pro onto a 1.5" pipe, you will need to use adaptor part number 5338 for this purpose (see adjacent pic). The 5338 adaptor is a larger version of the standard Deceptor Pro base, and comes with the necessary o-ring and grub screws. Simply remove the small 3mm grub screw from the side of the Deceptor Pro, and unscrew the standard base. Replace it with the new base adaptor and re-install the grub screw.



2) Where the Deceptor Pro is replacing a factory valve, a hose that returns the vented air to the intake prior to the turbo inlet (plumb back system) will already be fitted. If your car does not have a return hose, one should be installed as described above. This hose should then be connected to the plumb back outlet of your GFB blow-off valve (opposite the trumpet) and secured with a hose clamp.

3) Connect the brass vacuum nipple on the top of the GFB valve 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 to this vacuum hose and keep it as short as possible, as this will ensure a rapid response.

4) Connect the Deceptor Pro's lead to the plug from the controller, ensuring that the whole cable is secured in the engine bay away from direct heat sources or moving parts.

Adjusting the spring pre-load

The spring pre-load **DOES NOT** need to be adjusted to hold different boost levels. The valve will stay shut *regardless* of boost pressure or spring pre-load as long as the vacuum hose is properly connected. Rather, the spring adjustment changes how easily the valve opens when you lift the throttle, and how long it stays open when it vents. It is also used to accommodate variations in manifold vacuum levels on different cars. There are 11 full turns of spring adjustment, and stops at both ends of travel.

With the car idling at normal operating temperature, start with the spring adjustment at the softest setting (anti-clockwise). Watch the piston through the trumpet (not too closely!), stab the throttle hard and quickly lift off. The piston should lift and vent, then close slowly and smoothly. If the piston remains slightly open as the engine returns to idle, tighten the spring a few turns until it

closes fully. This is a good “rough” setting to begin with. For cars with airflow meters, the spring can sometimes take a little more fine tuning according to the following guide.

If you notice any of the following symptoms, turn the chrome cap clockwise until the problem disappears.

- The piston is open at idle
- The engine “stumbles” or the RPM “dips” as it returns to idle speed
- If when driving you notice a hesitation during gearshifts or loud/excessive backfiring from the exhaust

If when driving a significant fluttering noise is heard (when using full boost and high revs), turn the chrome cap anti-clockwise a few turns.

NOTE: There is a range of around 4-5 turns within which your valve will operate properly, and if it is outside this range it will be immediately noticeable in the symptoms described above. Also note that you cannot damage your engine by experimenting with the adjustment. If you notice none of the symptoms mentioned above, then simply leave it where it is.

Adjusting the noise

WARNING: When testing your Deceptor Pro, DO NOT put fingers or foreign objects through the trumpet or plumb back ports. Doing so may result in personal injury or damage to the blow-off valve.

The in-car volume controller provides proportional volume adjustment of your Deceptor Pro to any level from silent through to loud. Turning the knob clockwise will open up the trumpet outlet more, making the valve louder, whilst turning the knob anti-clockwise will open up more of the plumb back outlet for quiet operation. Turning the knob fully anti-clockwise will close off the trumpet completely, and the valve will operate silently, like a factory diverter. Conversely, turning it fully clockwise will make it vent completely to atmosphere, which is the loudest setting.

Maintenance

All GFB valves are designed to be as maintenance free as possible. In most cars the small amount of crankcase and rocker-cover blow-by oil that is directed into the intake system is enough to keep the piston well lubricated. In cars that utilize an aftermarket oil catch-can (or if you notice the movement of the valve is not smooth), it does pay to periodically lubricate the piston every 2 months or so with engine oil. This can be done by applying a small amount to the piston surface through the trumpet and the underside of the valve, and working the piston up and down by hand. It is a good idea to keep the trumpet area clean and free from oil, as it attracts dirt which can result in damage to the piston.

NOTE: The Deceptor Pro is assembled using a light grease on the piston, which during the first week or two of use can slow the operation of the valve a little. You may notice the venting characteristics of the valve changing slightly in the initial period, this is completely normal.

Troubleshooting

Problem: A fluttering sound is heard during gearshifts.

Solution: It is not uncommon with an aftermarket blow-off valve to induce low-RPM flutter, depending on the particular application. The different way that the Deceptor Pro operates compared to a factory diverter is responsible for the improvement in throttle response, but can result in low RPM flutter. The blow-off valve will not usually vent until the RPM is above the point where the turbo is starting to build boost. So for a larger turbo, the RPM where the valve will begin to vent is higher than with a small turbo. Provided the flutter does not occur once the engine has reached the point where the turbo is making full boost, no damage will occur to the engine or turbo, and throttle response will be optimum. If the flutter occurs at high RPM see below.

Problem: The valve does not vent at all, or a fluttering sound is heard at high RPM.

Solution: Ensure the valve is oriented correctly. Most European cars use a plastic Bosch-type diverter with equal sized hose fittings on the inlet and the outlet of the valve, and they are usually oriented in the reverse direction to conventional valves. When replacing one of these valve types with a Deceptor Pro, ensure that the boost pressure enters the bottom and dumps through the sides.

Check the spring pre-load setting; try loosening it by turning the chrome cap anti-clockwise a few turns. If the pre-load is too hard, the valve will have difficulty opening.

Check the vacuum connection. The valve relies on the manifold vacuum signal to help it open. If the signal is weak because of a hose kink or leak, it will not open properly. Also ensure no other hoses are teed into the vacuum hose, as this can prevent a strong vacuum signal reaching the valve.

Multiple throttle bodies, big cams or wild porting can reduce the amount of vacuum available to help open the valve (the Pulsar GTi-R is an example of this). Check the idle vacuum with a gauge, if it falls below 16 inches mercury (inHg), you will need a softer spring. Contact your local GFB dealer should you need one.

Problem: The valve cracks open under boost.

Solution: There are only two things that can cause the valve to open under boost: 1) a mechanical jam, or 2) a significant pressure difference between the top and bottom of the valve.

1) If the valve blows off when you shift gears, the valve is not jammed. If the piston does not move, refer to the first and second problems above.

2) Check the vacuum connection. The valve relies on the manifold connection to provide boost pressure to keep the piston shut. If there is a leak or kink in the hose, the pressure will be uneven on the top and bottom of the piston, causing it to open.

Measure the boost pressure at the manifold, and at a point close to where the valve is mounted on the intercooler pipe. If the pressure difference is more than 5psi, this will result in the valve opening under boost. The causes of a large pressure difference can be a restrictive intercooler (only a problem if the valve is mounted before the intercooler) or piping, or a poor boost signal from the manifold as described above.

Problem: The valve does not respond to the controller .

Solution: Check that the red light on the volume dial comes on when the ignition is switched on. If not, check that the power connections are receiving at least 12V, and also check the fuse. If the fuse is blown, the replacement is a commonly available 3AG size, 2A rating.

If the red light does come on with the ignition, check the lead to the servo, making sure the insulation hasn't been damaged.

Accessories

Base adaptors (screw on in place of existing base):

5320 – 20mm hose base

5325 – 25 mm hose base

5330 – 30 mm hose base

5338 – 38 mm / 1.5" pipe mount base

Plumb back adaptors:

5220 – 20 mm

5225 – 25 mm

5233 – 33 mm

Flange adaptors:

5101 – MY99-00 WRX/Forester GT

5102 – R32 Skyline GTS-T (shown)

5105 – Toyota Soarer twin turbo (must be used with 5330 base)

5107 – MY03 Forester XT

Model-Specific adaptors:

5401 – MY01 – current WRX & STi

5402 – S14 / S15 200SX

5403 – R33 / R34 GTS-T Skyline & 1 st gen Talon/Eclipse

Weld-on pipe (weld to turbo piping for custom installation)

5601 – 1" mild steel

5602 – 1" alloy

5603 – 1" stainless steel

5604 – 1.5" (38mm) alloy

5605 – 1.5" (38mm) stainless steel

Whistling trumpet:

5701 – Replacement trumpet

NOTE: for best sound this trumpet requires boost pressure to be at least 10psi, and the noise adjustment must be set to full atmosphere. At higher RPM when driving aggressively it will let out a loud whistle, which sounds quite unlike any other valve on the market.

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/drivetrain 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.