GFB DVX
T9661

INSTRUCTION MANUAL

GFB
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Ph: +61 (0)2 9534 0099
Fax: +61 (0)2 9534 3999
Email: sales@gfb.com.au
Web: www.gfb.com.au

INSTALLING THE VALVE

Included in T9661 Kit:

- ⇨ DVX BOV
- ⇨ BS021 o-ring (installed on BOV flange)
- ⇨ BS036 o-ring (installed on BOV flange)
- ⇨ 3x M6 x 35 screws (used for Veloster)
- ⇨ 3x M6 x 16 screws (for all other applications)
- ⇨ Vacuum hose

The T9661 DVX fits a number of different applications, and since the Hyundai Veloster requires the front bumper to be removed, the installation is documented in detail for this model. For other cars, it is simply a matter of removing the factory diverter and installing the DVX in its place, using the relevant steps below.

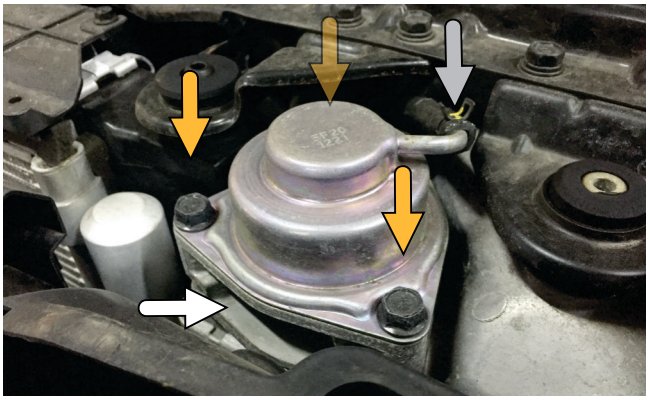
The front bumper needs to be removed to access the factory valve. There are plenty of videos on youtube documenting this in more detail.

⇨ Remove the upper radiator cover screws/clips, side mounting screws (located in the wheel arch), and the lower mounting screws (along the front underside edge of bumper). Unclip the foglight connectors.

⇨ Pull each side of the bumper outwards from the wheels arches to pop the clips. Then pull the bumper forward - there are clips under each headlight holding it on.

Remove the vacuum hose (shown below, ⇨) from the factory valve, then unscrew the 3 screws (⇨).

Remove the upper section of the factory valve from the car, leaving the lower section (⇨) in place.



The factory vacuum hose needs to be replaced with the supplied hose to reach the DVX vacuum port.

Follow the vacuum hose into the engine bay, where it attaches to a solenoid. Loosen the spring clamp and remove the hose from the solenoid valve (it may help to remove the airbox to gain access to the solenoid).

Fit the supplied silicone hose to the solenoid, securing with the factory spring clip. Feed the new hose back through to the valve's location, only this time route the hose so it approaches the DVX on the left side where the vacuum port is positioned.

Check that the DVX has 2 o-rings installed in the grooves on the underside, then install it onto the lower section of the factory valve spacer. Orient the DVX so the venting slot faces the front of the car, and secure with the supplied M6 screws.

Push the silicone hose onto the DVX vacuum barb. This is a tight fit and will not need a hose clamp or zip tie.

Leave the bumper off whilst setting up the spring pre-load and venting bias as described on the next page.

Once this is done, the bumper can be re-installed in the reverse order of removal.

The venting bias of the DVX can be adjusted with the bumper in place by removing the screws from the upper radiator cover and carefully lifting it up to gain access to the valve.

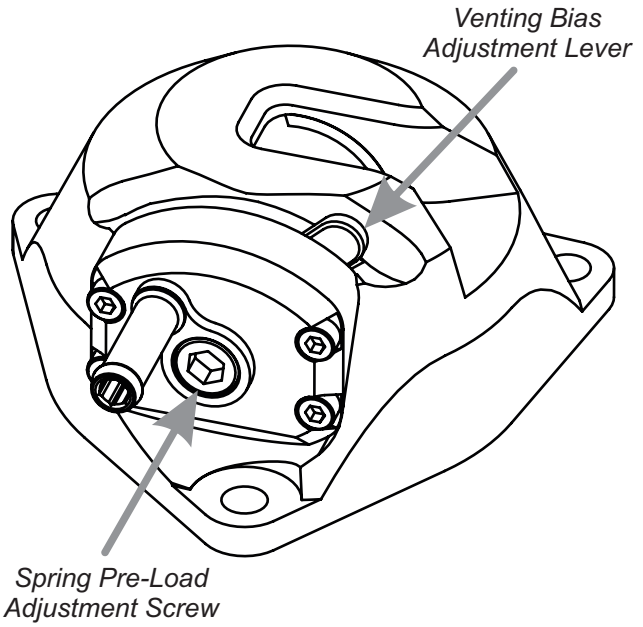
Spring Adjustment

The spring pre-load ***DOES NOT*** need to be adjusted to suit different boost pressure. **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. Normally, the spring pre-load also affects how long the valve stays open when it vents, but the most of the applications the DVX fits use an ECU-controlled solenoid to open and close the valve. It typically triggers the valve to open immediately on throttle lift off, but usually only above a certain RPM and load. It will then hold the valve open either for a certain amount of time, or until the throttle is re-opened.

Therefore, the valve may appear to vent at odd times, or at low load it may appear not to vent at all, this is normal and is determined by the ECU.

Since there is no airflow meter on the Veloster, the ECU is completely unaffected by atmosphere venting or spring pre-load, and therefore the spring pre-load can simply be set to your preference to control how easily the valve blows off when you lift off the throttle.



The softest spring setting is achieved when the ***Spring Pre-Load Adjustment Screw*** is level with the cap of the valve as shown opposite. Do not set the screw above the cap or it may rattle loose and fall out.

Set the spring to the softest setting, and move the venting bias lever to at least 50% so you can see the movement of the piston through the atmosphere venting slot.

Start the car and let it warm up (don't rev a cold engine!), then find a helper to blip the throttle whilst you watch the piston from a safe distance (safety glasses are highly recommended!). Give the engine a good hard rev - stab the throttle hard and release quickly. The piston should lift quickly and vent, then close slowly and smoothly. The harder you stab the throttle, the further the piston will open.

If the valve opens most of the way with a light throttle blip, you'll likely find when driving that it will blow off almost ANY time you lift off the throttle. Tightening the spring in this case will mean that you have to drive the car harder before the valve starts blowing off.

Adjusting the Sound

The unique patented venting bias adjustment feature on the GFB DVX lets you vary the amount of air vented to atmosphere or recirc, thereby changing the volume of the sound.

Moving the ***Venting Bias Adjustment Lever*** to the right (when viewed as per the image above) opens the atmosphere port, making the sound louder. Rotating it to the left closes off the atmosphere port whilst opening up the recirc for quiet operation.

Notes On DVX Venting

It is normal to find some oily residue 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 DVX or anything to be concerned about.

Please note that you might hear the DVX vent at seemingly odd times, but this is determined by the ECU and is not a fault with the DVX. 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 a short period, unless the throttle is re-opened sooner, in which case it turns the solenoid off immediately.

For example, if you accelerate moderately and then reduce the throttle slightly and hold it steady, the DVX will likely vent for a few seconds then stop. Conversely, if you accelerate and then slowly close the throttle, the DVX may not open at all. On the Honda Civic 1.5 Turbo there is often a small delay between lifting off the throttle and the ECU triggering the diverter solenoid, which again is programmed behaviour.

Unlike the factory diverter that is directly opened and closed by the solenoid, the DVX will only open when the ECU turns the solenoid on AND there is enough boost pressure to push the piston open. Therefore at low boost and RPM, if the ECU turns the solenoid on the DVX will likely not open. This behaviour of the DVX is controlled by the spring pre-load.

Maintenance

The GFB DVX is designed to be as maintenance-free as possible. Frequent lubrication, replacement of seals, or "re-building" in order to keep the it in top working order is generally NOT required.

Maintenance is only required if you notice the venting behaviour of the valve changing or becoming erratic. This is usually caused by a build up of carbon deposits on the piston that result from dried oil vapour in the engine's inlet tract. This varies from car to car, and in most cases cleaning will never be required, whilst others may need to be cleaned more regularly basis.

To disassemble the DVX, remove the four screws holding on the side cap (use a 2.5mm metric hex key). Remove the spring, spring spacer, 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.

Customer Support

No-one knowns a GFB product like the engineers who designed it, who are always available to help with any enquiries or issues you may have with the installation or use of your GFB products:

Email: support@gfb.com.au Ph: (within Australia): 02 9534 0099 Ph: (international): +612 9534 0099

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.