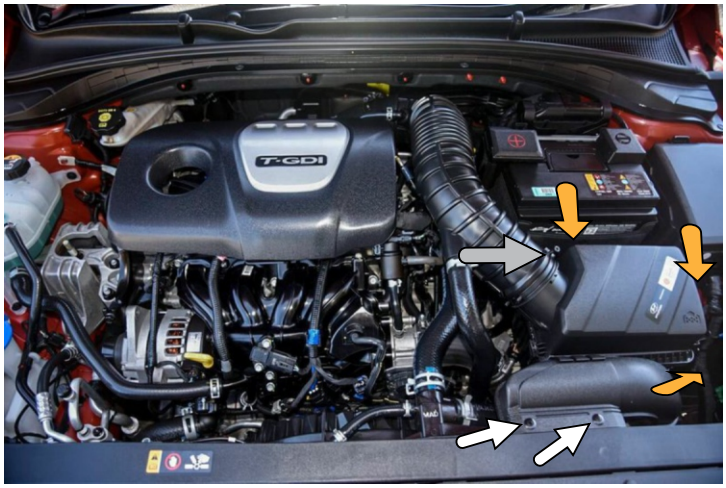
GFB Mach 2

Part #T9111

Installation

1) Access to the factory diverter valve is made easier with the removal of the airbox. To do this, remove the two plastic clips on the intake (press the centre pin in to release ⇨), hose clamp (➡), and the 3 bolts holding the airbox (➡).

Carefully remove it from the car and set aside.



2) Before unbolting the factory valve, it is easiest to first remove the recirc hose while the valve is still solidly mounted (this hose is quite tight and needs some wiggling persuasion). Then remove the factory valve from the car using a 10mm socket for the 4 screws.

3) Ensure the brown o-ring is installed in the groove on the underside of the Mach 2 valve, then install it back in the factory location using the supplied longer screws and 5mm hex key.

4) Fit the recirc and vacuum hoses onto the Mach 2, and replace the clamps.

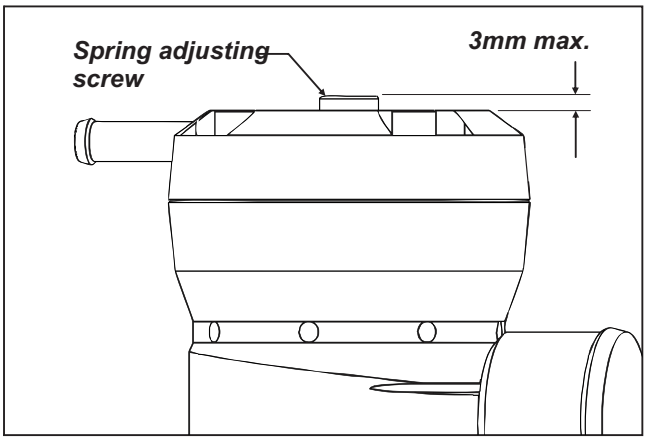
5) Re-install the airbox in the reverse order of removal.

Adjusting the Spring Pre-Load

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.

Because Hyundai uses an ECU-controlled solenoid valve to switch the top port of the BOV from boost to vacuum when it requires it to open, the conditions under which the BOV vents are largely determined by the ECU. However, the duration of the sound and how easily it blows off is controlled by the spring pre-load.

The screw in the centre of the Mach 2 cap is the spring adjuster, which requires a 5mm metric hex key (supplied).



The softest spring setting is achieved when the top of the adjustment screw is 3mm above the head of the valve as shown opposite. Do not set the screw more than 3mm above the head.

Since the Mach 2 valves are fully recirculated, and there is no MAF sensor on these cars, the spring pre-load adjustment is not critical and is it possible to use the Mach 2 valves straight out of the box without adjustment. However, you can use the adjustment to fine-tune throttle response. Generally speaking, the hardest spring pre-load you can run without causing compressor surge (fluttering sound when lifting off the throttle) is ideal.

To set the spring pre-load for maximum throttle response:

- Set the spring to the hardest setting (adjust the screw all the way down)
- Start the car and drive it until it is warm
- Accelerate moderately in a high gear to about 3000RPM and then lift off the accelerator - these are the conditions most likely to cause compressor surge. If you hear a fluttering sound as you lift off, turn the adjustment screw in the "-" direction one turn at a time until the noise disappears. This is now the ideal setting for best throttle response.

Note that all cars have a different threshold for compressor surge, so it is possible that you may be able to leave the valve in the hardest setting without hearing surge.

Don't be afraid to experiment with the spring pre-load adjustment, you can't cause any damage by doing so, and getting the setting right to suit your car can help to optimise throttle response.

Converting to Atmo Venting

If you want a blow-off sound, it is possible to vent your Mach 2 valve to atmosphere by removing the recirc hose. The recirc hose needs to be plugged, and the correct sized hose plug is available separately from GFB, part # 5225. No other changes to the Mach 2 valves are required for atmosphere venting, and because these cars have no MAF sensor the ECU is completely unaffected.

You can purchase standard or whistling trumpets to change the venting sound - the standard trumpet (part # 6110) increases the sound volume, whilst the whistling trumpet (part # 5702) changes the venting sound to a high-pitch whistle.

When venting to atmosphere, the spring pre-load adjustment will change how easily the valves vent, and the duration of the venting sound. A softer setting allows the valves to vent at lower RPM and with less boost, and also means the blow-off sound trails on longer, whilst a harder setting does the opposite.