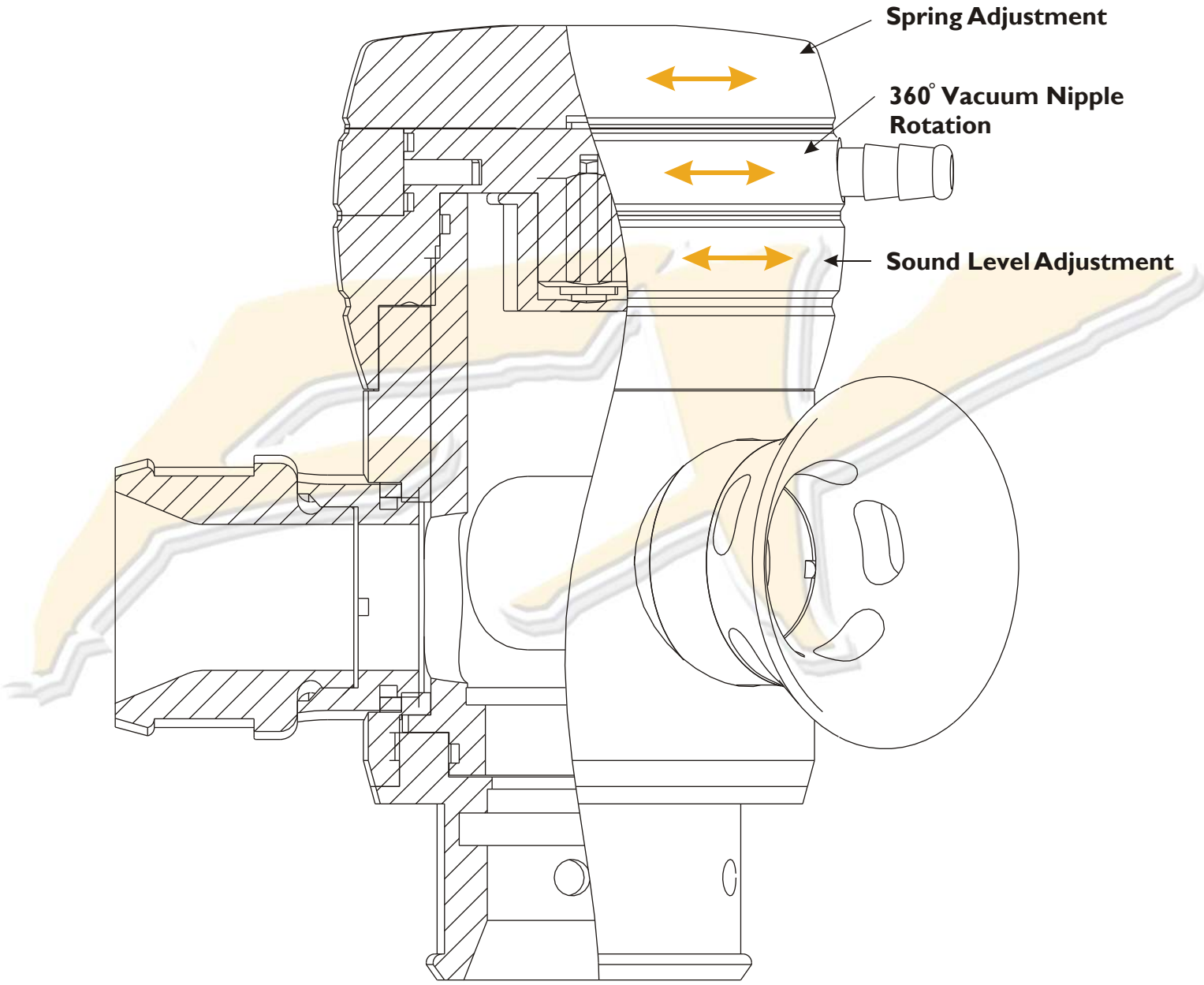
Getting technical with hybrid technology...



The two venting outlets are 'staged' on the valve body, where the recirculation outlet is positioned at the very bottom of the valve so that it will vent with the slightest movement of the piston. The trumpet is positioned 4mm higher so that it will open after the recirc port. With a normal Hybrid valve the split is about 60%/40% of vented air between the recirc outlet and trumpet respectively, but with the new ***StealthFX***, this ratio is infinitely variable. Here's how GFB's Hybrid and Stealth series BOVs work...

During light throttle lift-offs when cruising, the piston will only lift about 4-6mm, so the majority of the air is recirculated and will not make much noise. However, when you lift off after hard acceleration, two things happen. First, the pressurised (boosted) air must escape the inlet pipes and intercooler, opening the piston fully and giving a loud "whoosh". Once the pressure is evacuated from the inlet system, the turbo will continue to spin, pumping air through the valve.

In the case of an atmosphere venting valve, the volume of air passing through the valve also passes through the car's air-flow meter (if it is equipped with one). The ECU will still deliver fuel to suit this amount of air, even though it has escaped to the atmosphere. In some cars this can cause problems such as backfiring and poor throttle response. The Hybrid was the first valve on the market to address this problem by recirculating a portion of air to the inlet. Because of the staged outlet design, once the pressure is evacuated from the system, the piston will begin to close, forcing more air through the recirc outlet and further preventing the chance of backfiring. Now with the ***StealthFX***, your control over this process (and the blow-off noise!) is much greater.