



# GFB MACH 2 TMS TR9102

## INSTRUCTION MANUAL



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## MACH 2 INSTALLATION

T9102 covered vehicles: R32 and R33 GTS-T, R34 GT-T, all Mazdaspeed 3/6 and Mazda 3/6 MPS.

On the Skyline, VR4 and Eclipse, the valve is easily accessible (figure 1 shows an R32 GTS-t).

On the Mazda models, first remove the engine cover to gain access to the factory bypass valve (figure 1b).

Remove the two bolts shown in figures 1a or 1b (item 1), taking care not to drop them or the valve gasket. Open the spring clamp (item 3) and pull the vacuum hose free, then loosen the clamp on the recirc hose (item 2) and remove the valve from the car.

Fit the GFB Mach 2 valve to the factory mounting flange making sure the supplied red o-ring is inserted fully into the groove in the underside of the GFB valve's flange as shown below. Do NOT use the factory gasket.

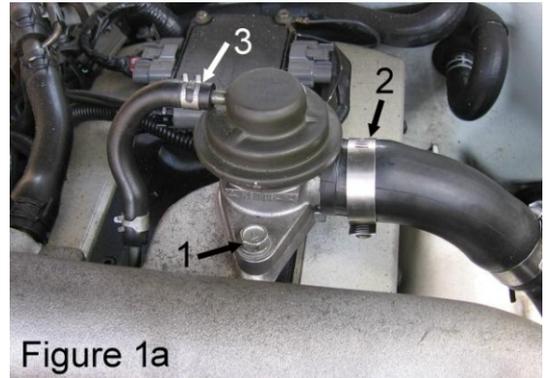


Figure 1a

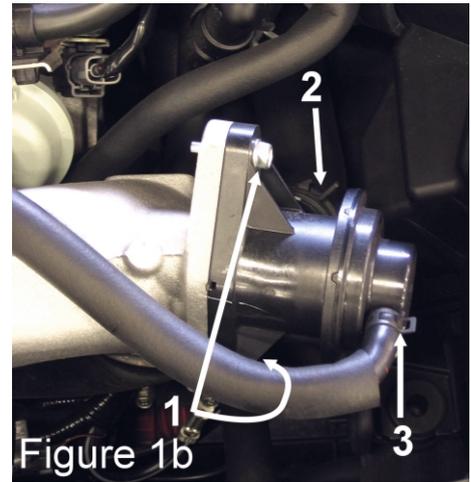


Figure 1b

Replace the two bolts, recirc and vacuum hoses and clamps.

## ADJUSTING THE SPRING PRELOAD

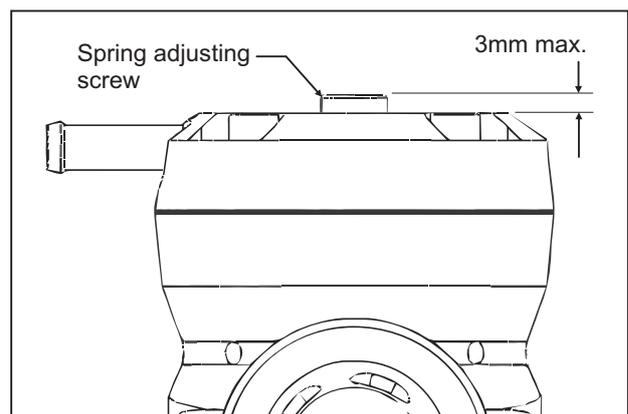
### PLEASE NOTE!

Contrary to popular belief, the spring pre-load **DOES NOT need to be adjusted for different boost pressures**. The Mach 2 will stay shut under full throttle conditions *regardless of boost pressure* or spring pre-load.

Rather, the spring pre-load affects how easily the valve opens when you lift the throttle, and how long it stays open when it vents.

The screw in the centre of the head is the spring adjustment. Use the supplied 5mm hex key to make adjustments.

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



## SPRING PRELOAD CONTINUED

Unlike an atmosphere-venting BOV, the spring pre-load on a fully recirculated valve does not need to be adjusted to prevent stalling or backfiring, since all of the vented air is recirculated.

It is possible to use the Mach 2 straight out of the box without any spring pre-load adjustments, 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, and make sure the A/C is off.
- Accelerate moderately in a high gear to about 3000RPM and then ease off the accelerator, keeping the clutch engaged - 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.

Do not 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.

## 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.

## CONVERTING TO ATMO VENTING

If you want to change your Mach 2 to 100% atmosphere venting for a blow-off sound, simply purchase and fit GFB's atmo conversion kit part # 5930.

You may also need to re-orient the flange and/or cap so the trumpet and vacuum nipple point in a suitable direction (rather than at the recirc hose). This is easy to do, and complete instructions are included in the conversion kit.

Atmo conversion kit part # 5930 includes a trumpet to replace the recirc outlet, a firmer spring that is suitable for venting to atmosphere (keeps the piston closed at idle), and a 30mm hose plug to block off the recirc hose.

**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.**