

Product Name: **BOV Kompact EM PB/DP VR24 Subaru WRX (FA24F)**
 Product Description: BOV Kompact EM PB/DP VR24 Subaru WRX (FA24F)
 Product Number: TS-0223-1X68
 Document Version: V1.00 Rev A



IMPORTANT NOTES ON YOUR BOV

- Turbosmart accepts no responsibility whatsoever for incorrect installation of this product which is potentially hazardous and can cause serious engine damage or personal injury.
- The EM series BOV is designed for use as a factory replacement for a turbocharger that utilises an electronic diverter valve, this valve can be used on other applications if there is a control signal to actuate the BOV.
- Ensure the engine is cold prior to installation.
- For Standalone ECU configuration, ensure valve is not energised for indefinite periods of time as this can cause significant life detriment to the actuation solenoid.

RECOMMENDATIONS

- **Turbosmart recommends that your Blow Off Valve (BOV) is fitted by an appropriately qualified technician**

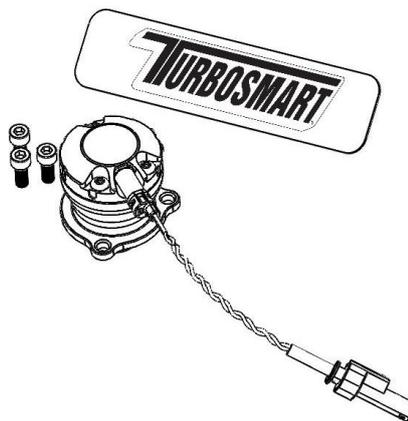
KIT CONTENTS



Please check that the following items have been provided in your EM Series BOV packaging

Part	Description	Use
1	Turbosmart EM Series BOV	Main unit
2	Turbosmart Sticker	
3	3 x Allen Bolts (M6 Cap Screws)	Allen bolts for mounting Kompact to mount

Figure 1 - Kit Contents



TOOLS REQUIRED

- 5mm hex key
- 8mm Socket
- Screw drivers
- T30 Torx
- Socket Set

ABOUT YOUR KOMPACT SERIES BOV

Turbosmart has developed a unique “plug and play” diverter valve (or bypass valve) upgrade for your vehicle that is currently equipped with an electronic diverter valve. While we have developed this unit to be as simple as possible for you to install, we have not compromised on performance. This unit will not leak under elevated boost pressures and will still provide you with rapid response ensuring that all the OEM calibration strategies are not interfered with, providing you with maximum boost performance while the advanced strategies of the OEM’s are retained.

As the valve is completely controlled by the factory engine control unit, the factory diverter valve is almost silent, due to our construction, it is possible that your EM series will be much more audible. By being able to hear the unit actuate, occasionally the valve may be opening for a few seconds under the following events such as traction control, cruise control management, rapid gearchanges and varying throttle position changes, these are all coded as part of the torque management software in the OEM engine control unit, there is no adjustment available over these functions via our product. By hearing these events, it is not abnormal, it is completely normal for the EM series BOV to be considered “very active” as it is protecting your turbocharger from surge events or bypassing air for torque management purposes.

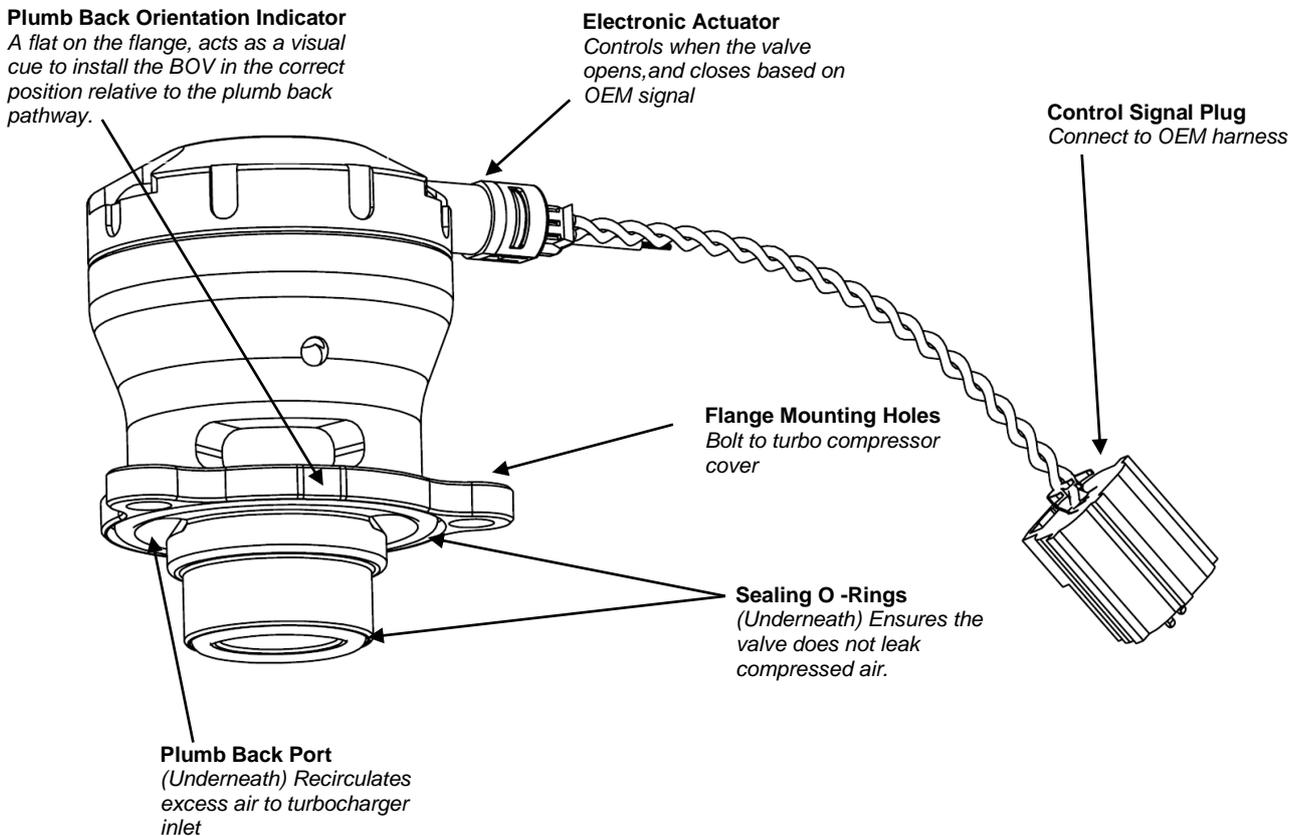


Figure 2 - EM Series BOV Overview
(Figure for illustration purposes only, actual product may vary slightly)

FITTING YOUR EM SERIES BOV

1 Identify OEM Diverter valve location

On the model designation Second Generation Subaru WRX '22 Onwards the Diverter valve is located on the compressor cover of the turbo. It requires some intake components to be removed for ease of install. Access from bottom is required.



NOTE!

It may be required to remove auxiliary components to access the diverter valve, ensure you consult your local specialist or a service manual for correct disassembly procedures.

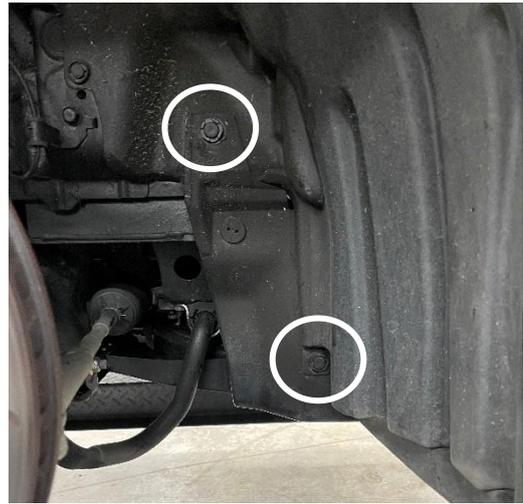
2 Removing OEM Undertray

The OEM Undertray cover needs to be removed for ease of access. This is done by removing all the trim clips that hold it on as well as 2 x 12mm bolts at the front (Dashed Line)

There is also a Turbo Sump Guard that will need to be removed. This is held on with 4 x 12mm Bolts



Two clips are hidden behind the front wheels on each side, for ease of access the wheels can be placed at full lock to allow access to the part. Ensure if you remove the wheels that the car is sufficiently supported before working underneath the car.



3 Removing OEM Charge Pipe

The Turbo Inlet pipe can be removed to allow for more access to the OEM Diverter valve. This is held on with an 8mm hose clamp. Once removed it can simply be moved out of the way.



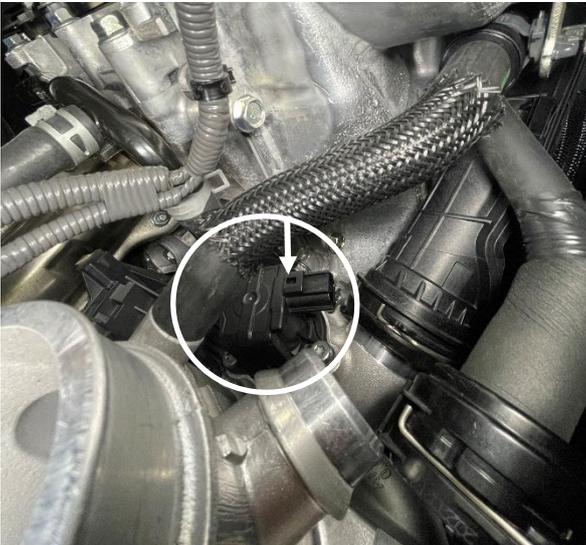
4 Unplugging PCV Hose

This picture is taken just above the Turbo. We need to remove the PCV Hose, we simply remove the quick disconnect clip forward and once locked out of place the Quick disconnect can be pushed up and off its locking seat. This allows a path for the valve to be removed and fitted in.



5 Removing OEM Diverter Valve

We can see the stock diverter valve in place. It is held on with 3 x T30 Torque bits. Once removed the valve needs to be unclipped from the car Pressure is required to be pushed on the clip closest to the valve indicated by the arrow. The clip can be pulled apart at that point.



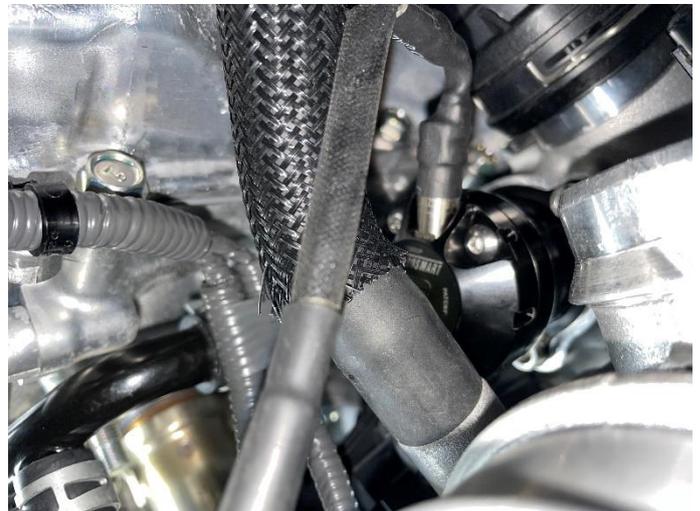
6 Fitting Turbosmart EM

Prepare the 3 x Allen bolts required for fitting, Ensure that both O rings are present before installing.

Ensure no fouling on any parts close by, a nice path for the electrical connector should be considered. Ensure the parts clip together correctly and are locked in.

It is much easier to get all three bolts in loosely before tightening up. This will ensure the valve sits correctly.

It is important to ensure that no bolts are lost during installation as the Turbo intake pipe is open and a lost bolt could cause catastrophic failure.



7 Refitting Removed Components

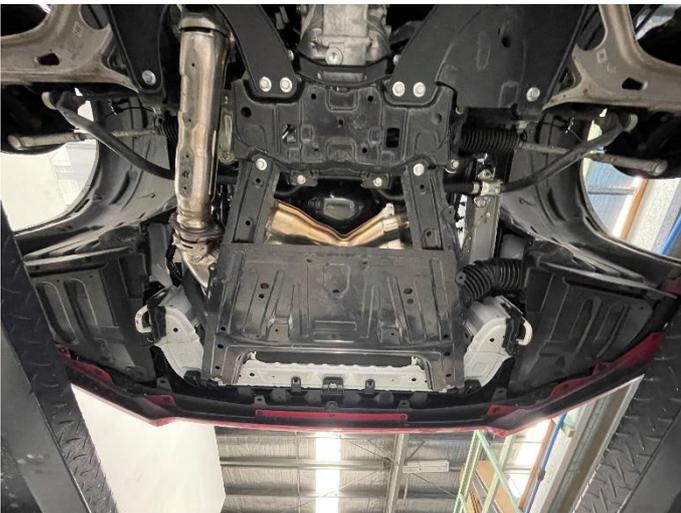
Once the Turbosmart EM has been fitted correctly to the car, we can rectify the parts that have been removed or unplugged.

The PCV must be re seated on the turbo. The locking clip will need to audible click back onto the car.

The 8mm hose clamp that hold the intake on must be refitted the turbo intake.



The Turbo Oil Sump guard must be reinstalled as well as the undertray.



8 Finalising your EM series BOV installation

Congratulations, your EM Series BOV is installed and ready for use. Double check all electrical connections and fasteners.

CHANGING THE ELECTRONIC ACTUATOR

1 Remove Your EM series BOV.

Remove the electronic plug from the EM series BOV and loosen the hose clamps on the inlet and recirculation hoses. Remove the BOV from the vehicle.

NOTE!

Cosmetic engine covers may be required to be removed prior to the assembly being visible.

CAUTION!

The turbocharger assembly may require the vehicle to be raised on a hoist or jacked up and secured using vehicle jack stands. Ensure your safety is not compromised.

2 Remove Electronic Actuator from your EM series BOV.

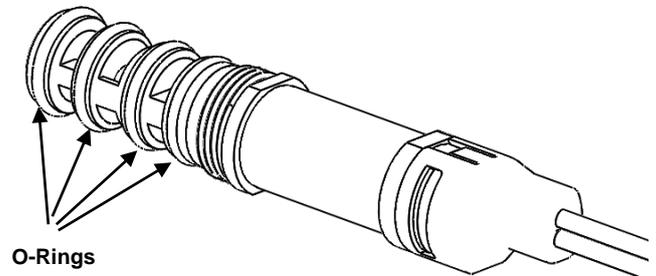
Using an 11mm open end wrench in the flat sides of the solenoid, undo the actuator in an anti-clockwise direction when viewed from the end. Ensure the wrench is placed on the metallic portion of the flats and not on the plastic cover.



Ensure the cavity is free from debris using avoiding shifting dirt into the passages.

3 Install New Electronic Actuator into your EM series BOV.

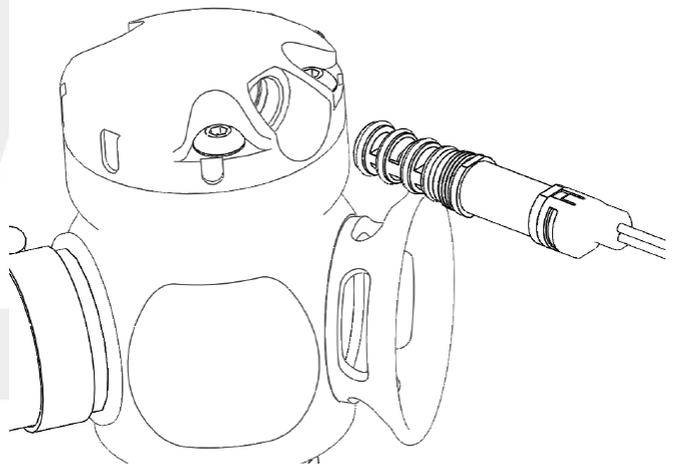
Ensure the O-rings on your new actuator are correctly seated in the grooves before installation. Also take note not to damage the O-Rings on burrs/threads during assembly.



CAUTION!

Failure to ensure O-rings are seated correctly may lead to cutting of an O-Ring and unexpected results from the EM series BOV.

Slowly insert the new actuator while turning in a clockwise direction to avoid tearing the O-rings.



Tighten the new solenoid into the EM series BOV ensuring the wrench is on the metallic portion of the solenoid.

NOTE!

Tightening the solenoid on the plastic cover may result in unreparable damage to the solenoid.

TROUBLE SHOOTING

- **It is important that any issues are resolved before heavy driving.**
 - BOV not actuating - Confirm electrical signal plug is connected appropriately, as the plugs are new, some force may be required to click the plug into place. The car will experience heavy surge if not actuating.
 - Valve is staying open – Confirm the valve has O-rings as they may have been dropped or lost during installation.
 - Boost pressure loss or lower than before - Confirm the valve has O-rings as they may have been dropped or lost during installation.
 - Failing the above, submit a technical request to tech@turbosmart.com.au with information of your engine configuration and photos of installation.
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