

Product Name: **BOV Kompact EM VR8 (Fiat/Abarth)**
 Product Description: BOV Kompact EM VR8 (Fiat/Abarth)
 Product Number: TS-0223-1X89
 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 as long as there is a control signal to actuate the BOV.
- Ensure the engine is cold prior to installation.

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	2x Hose clamps	Mount BOV to inlet and outlet hoses
3	1x Blanking plug*	Block off second outlet port *(Dual Port Variants only) *
4	1x Mount	Fiat 500 Kompact BOV Mount
5	2x Allen Bolts	Allen bolts for mounting Kompact to mount
6	Turbosmart Sticker	Turbosmart sticker

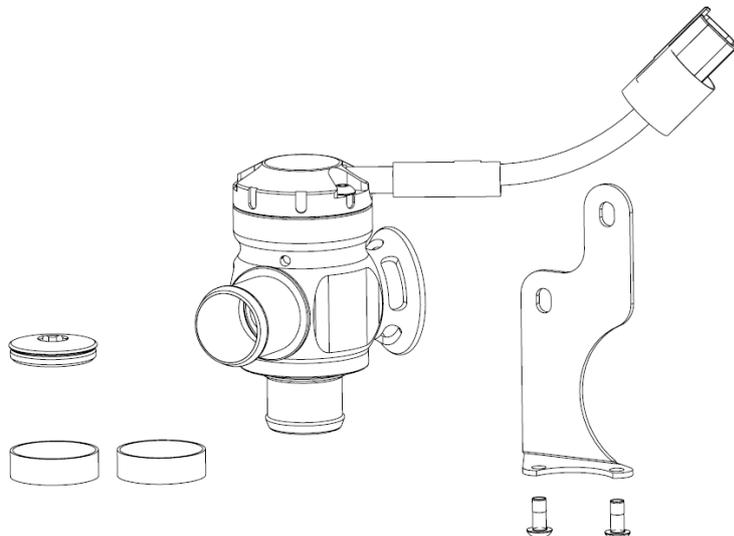


Figure 1 - Kit Contents

TOOLS REQUIRED

- Hose clamp screwdriver
- Flat bladed screw driver
- Allen Key Set Metric
- Basic Socket set

ABOUT YOUR EM 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.

The EM series BOV is available in two configurations, Dual Port and Plumb Back. The functionality of the BOV is still the same, there is no performance difference between the two units, it is a personal preference if the user wishes to utilise a classic vent to atmosphere sound or revert all bypass gasses back into the inlet tract of the turbocharger.

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.

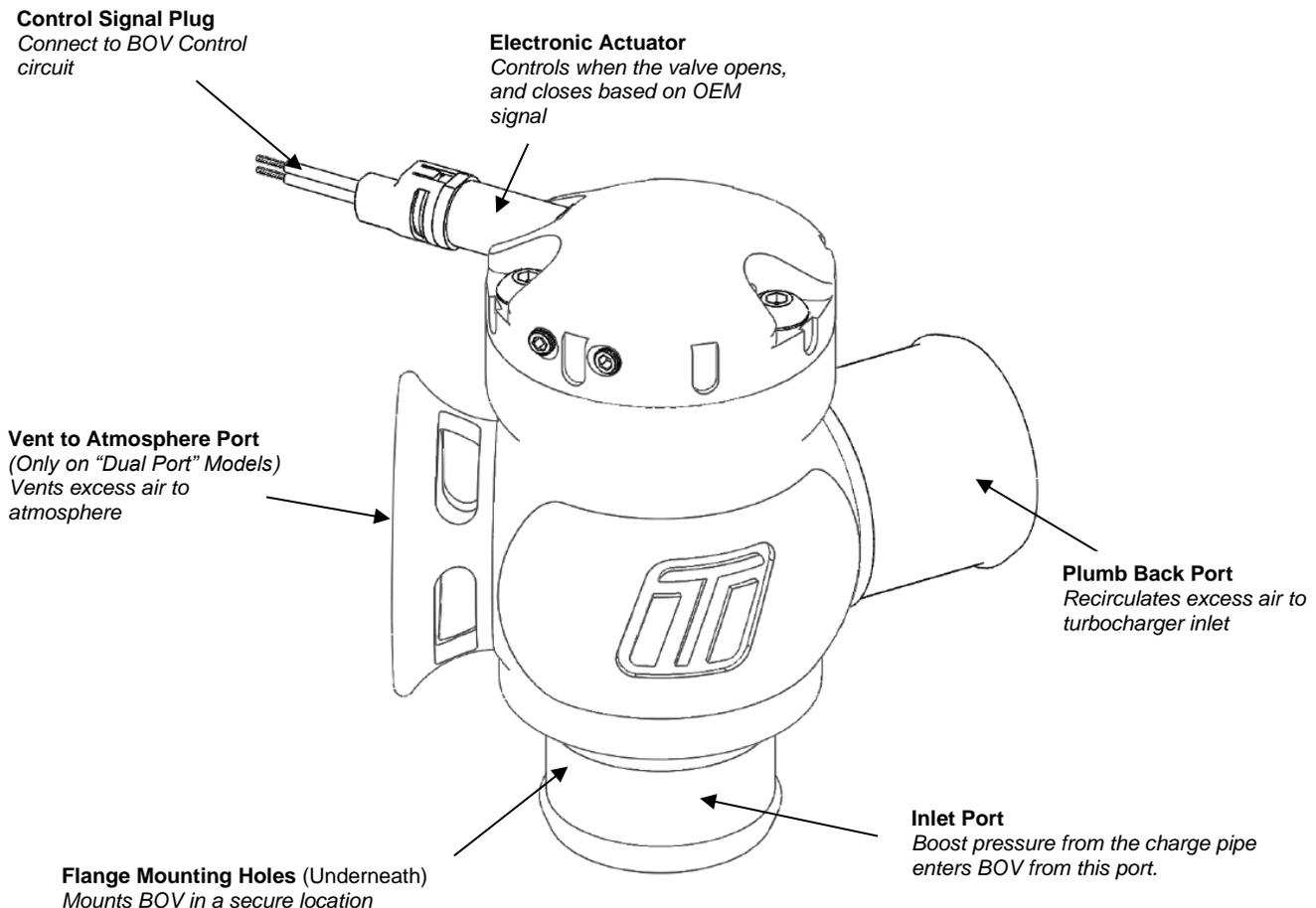


Figure 2 - EM Series BOV Overview

FITTING YOUR EM SERIES BOV

1 Identify diverter valve location

The diverter valve will be located on the charge pipe between turbo and throttle body, some applications have a hose to mount the diverter valve away from the charge pipe linking the plumb back hose into the turbocharger inlet pipe.



On the model designation Type 312 (Above) Abarth 500 the Diverter valve is located below the battery. Next to the washer jet fill up point. It has been located using the white circle below.

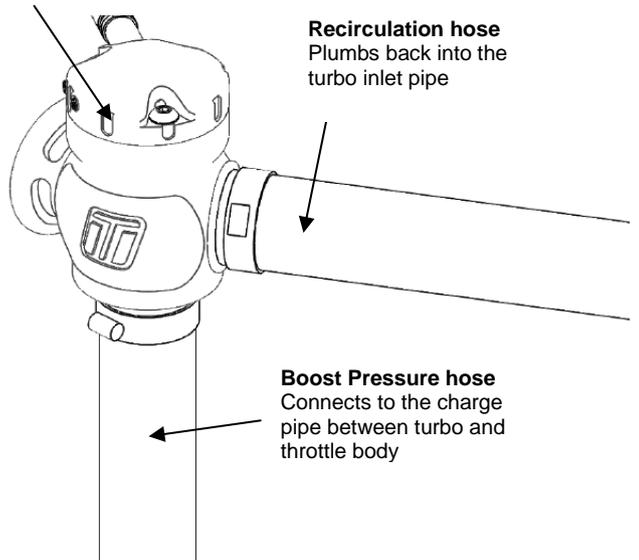


If the diverter valve cannot be located, seek assistance from your local specialist.

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.

OEM Diverter Valve
Usually black plastic construction



Recirculation hose
Plumbs back into the turbo inlet pipe

Boost Pressure hose
Connects to the charge pipe between turbo and throttle body

2 Removing the OEM diverter valve

Remove the electronic plug from the OEM diverter valve and unscrew any hose clamps and disconnect any hoses, Remove the BOV from any brackets, ensure you do not drop the OEM valve as permanent damage may occur to the plastic.

The Yellow Tab must be pulled backwards to unlock the mechanism that unlatches the electrical connector from the Diverter valve. This yellow tab will be in the unlocked position till the Turbosmart valve has been plugged in.



3 Removing the OEM hose clamps and hoses

Next to remove is the hose clamps from the diverter valve. This is done using a screwdriver or appropriately sized socket. If the car is fitted with an ear clamp. They can be removed by using a flat bladed screwdriver to flick up the locked ear that is located on the inner raised ear.

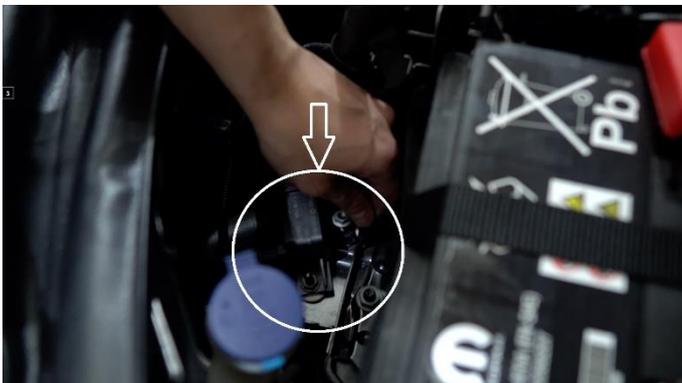
The hoses can now be persuaded off the diverter valve. Some force may be required to dislodge the hoses.



4 Removing the OEM mounting bolts

With the hose clamps loose and electrical connector removed. The two mounting bolts that hold the OEM diverter in place must now be removed ensuring not to drop the bolts.

Once removed can remove the OEM diverter valve from the engine bay and store in a safe place.



NOTE!
These bolts are not captive and will fall into the engine bay if not supported from underneath.

Congratulations the OEM Diverter valve has been removed.

5 Mounting your EM Series BOV to it's Mount

Using the bracket and associated fasteners the BOV bracket must be fastened to the bottom of the BOV. This is done with two Allen key fasteners that have been included in the packaging.



6 Mounting your EM Series BOV to the Vehicle

The BOV can now be mounted to the car using the supplied fasteners, making sure to keep the originals in a safe place. As seen above. It is important to hold the supplied bolts from below to ensure they are not dropped into the engine bay.



7 Mounting your EM series BOV to it's Hoses

The hoses must now be attached as seen by picture above and below, making sure that the hose clamps are on before putting the hoses back on! Once on they must be tightened to ensure no leaks are present.



Finalising your EM series BOV installation

Once the valve has been mounted, connect the electrical plug into the OEM factory plug and secure the wiring safely away from a heat source. Ensuring to push the yellow tab towards the connectors to ensure they are locked in



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 vehicles

NOTE!

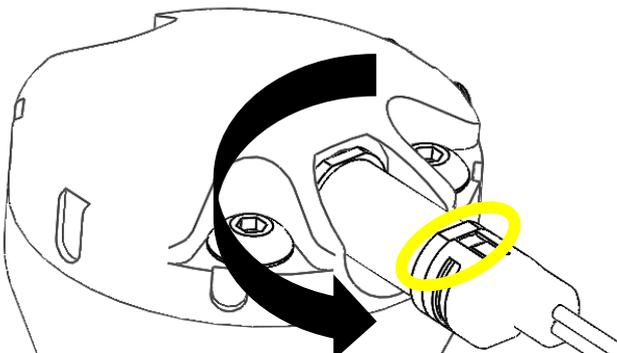
Cosmetic engine covers may be required to be removed prior to the assembly being visible.

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

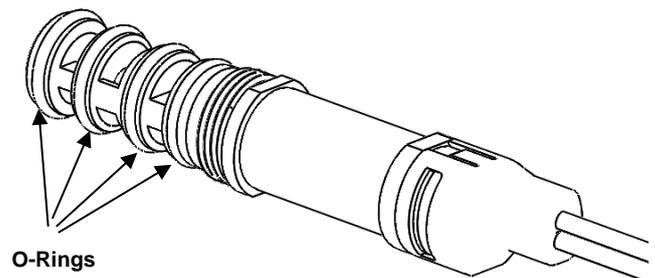
Using a 11mm open end wrench in the flat sides of the solenoid, undo the actuator in an anti-clockwise direction when viewed from the end. Ensure the wrench is placed on the metallic portion of the flats and not on the plastic cover.



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



CAUTION!

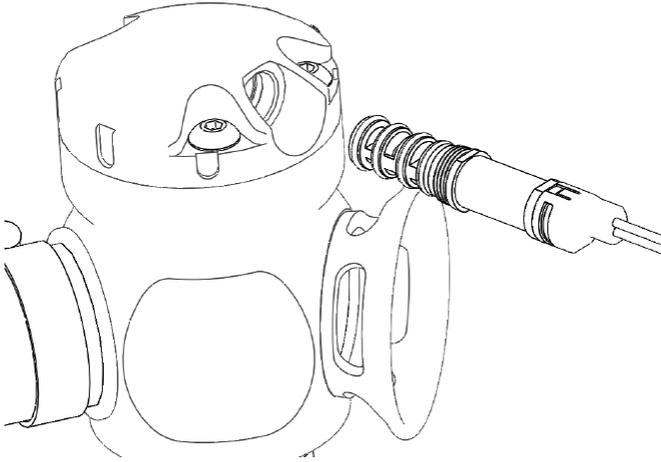
Failure to ensure O-rings are seated correctly may lead to cutting of an O-Ring and unexpected results from the EM series BOV

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

- 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.
 - 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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