

Product Name: **BOV Kompact EM VR4**
Product Description: **BOV Kompact EM VR4 (MK5 Polo GTI)**
Product Number: TS-0223-1X91
Document Version: V1.00 Rev A
Patent #: AU-[2018253619](#) UK-[GB1817612.3](#) USA-[16/174413](#)



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.

RECOMMENDATIONS

- **Turbosmart recommends that your Blow off valve (BOV) is fitted by an appropriately qualified technician.**
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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 Allen Bolts	Allen bolts for mounting Kompact to mount

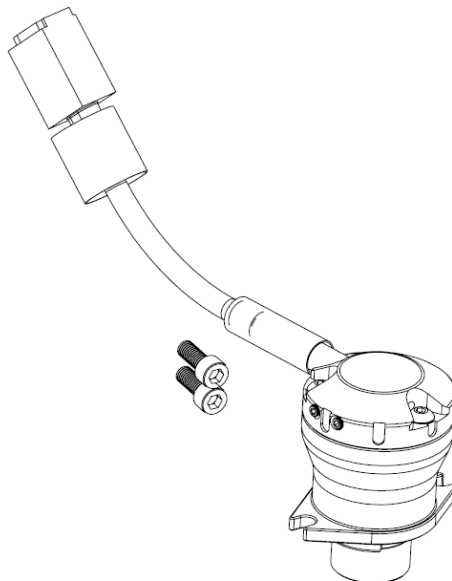


Figure 1 - Kit Contents

TOOLS REQUIRED

- Allen Key Set Metric
- Basic Socket set
- Torx Bits

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.

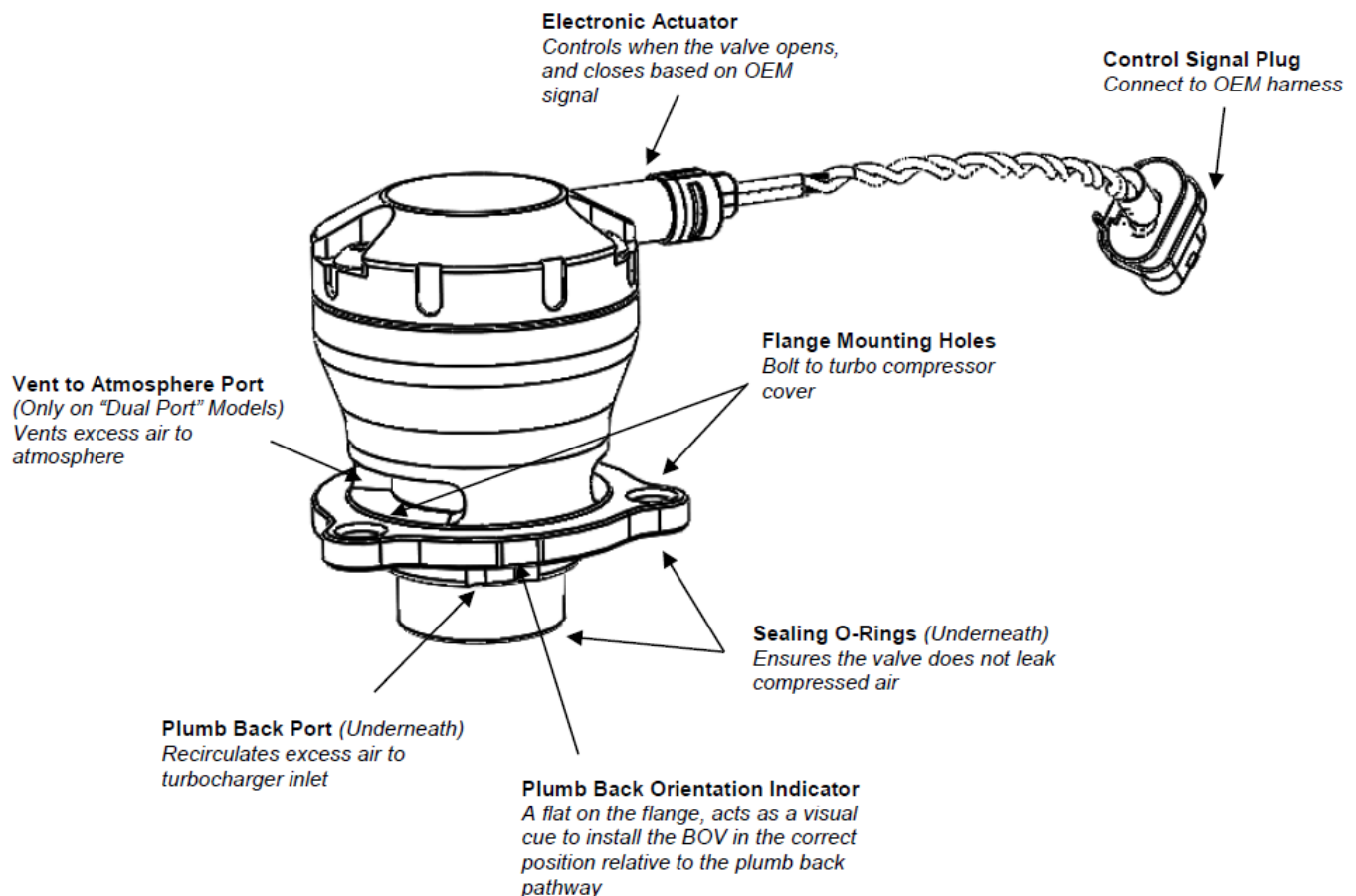


Figure 2 - EM Series BOV Overview

FITTING YOUR EM SERIES BOV

1

Identify diverter valve location.

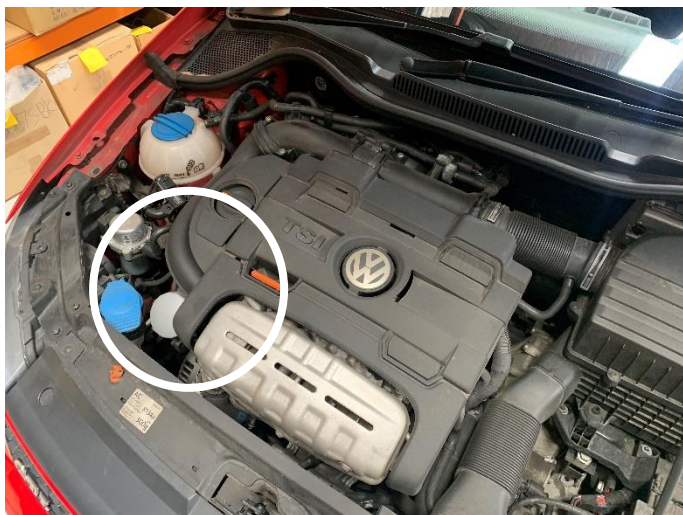
On the model designation MK5 Polo GTI (TYP 9R) the Diverter valve is located right next to the turbo. It is hidden under the engine cover. It has been located using the white circle below.

NOTE!

Allow for the engine to cool down.

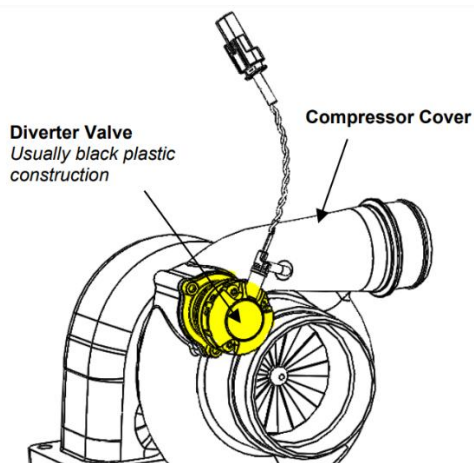


If the diverter valve cannot be located, seek assistance from your local specialist.



NOTE!

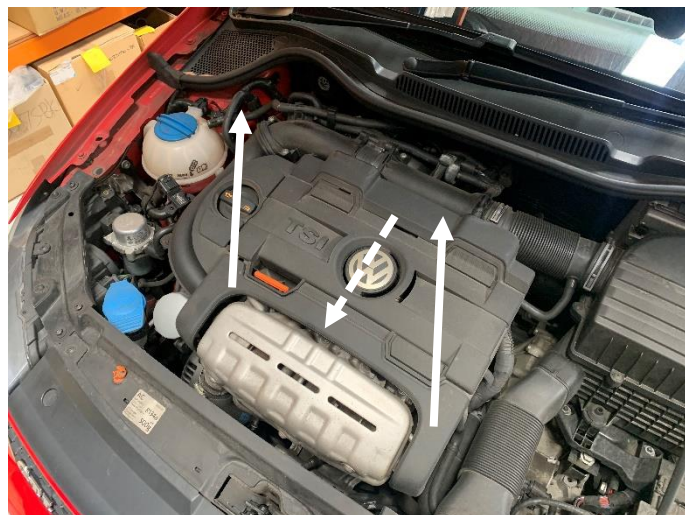
It may be required to remove auxiliary components to access the diverter valve, ensure you consult your local specialist or a service manual for correct disassembly procedures.



2

Removing the OEM engine cover.

the Engine cover will need to be removed. The cover is removed by lifting the front (nearest the bumper) (White Arrow) and then pulling forward (Dashed Arrow)

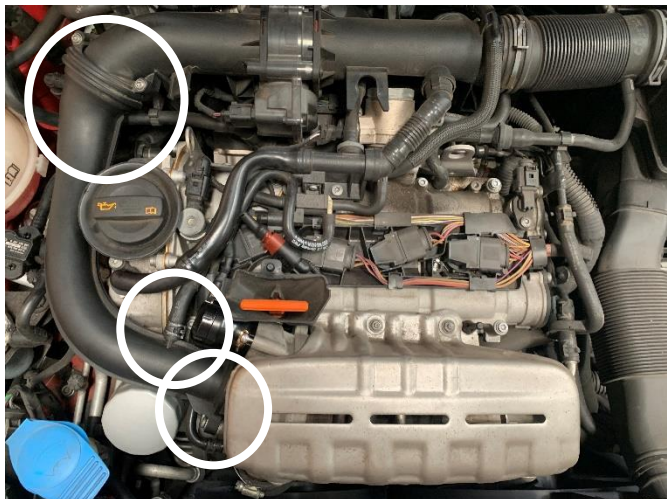


3 Removing the OEM Charge Pipe

Remove the Turbo Inlet Charge Pipe, this is fastened to the turbocharger with a single T30 Torx bolt. Making sure to not drop it into the engine bay.

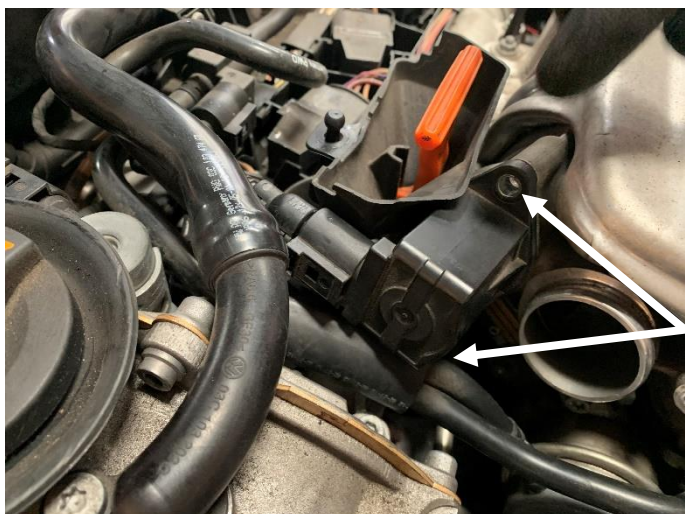
The opposite end is fastened using a bracket that clamps the hose to the inlet. These two T30 Torx also need to be removed. The pipe and bracket may require a little bit of movement to get them to unseat.

The breather hose can now be removed. It is held on with a clamp that can be taken off with pliers.



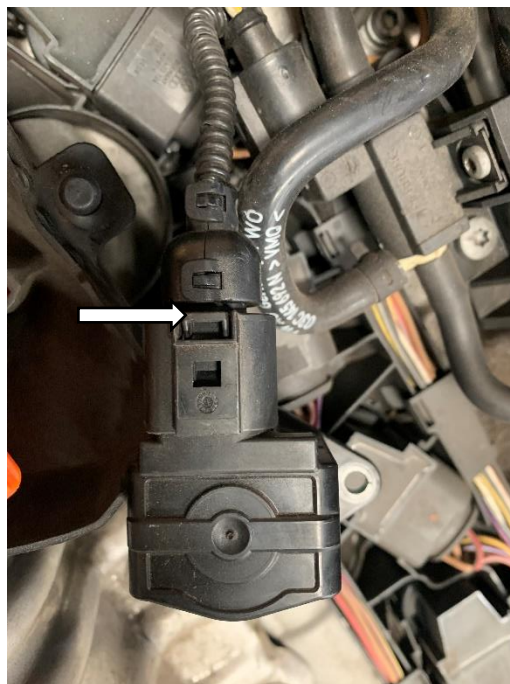
4 Removing the OEM Diverter Valve

Undo the two T30 bolts holding the valve on. There is a lot of clearance on top of the engine bay to remove the top one. It is a little bit tighter to remove the bottom one and some care should be taken to ensure that the T30 bit is correctly seated during removal as to not round off the fragile bolts. Once both bolts are out, the unit can be unseated.



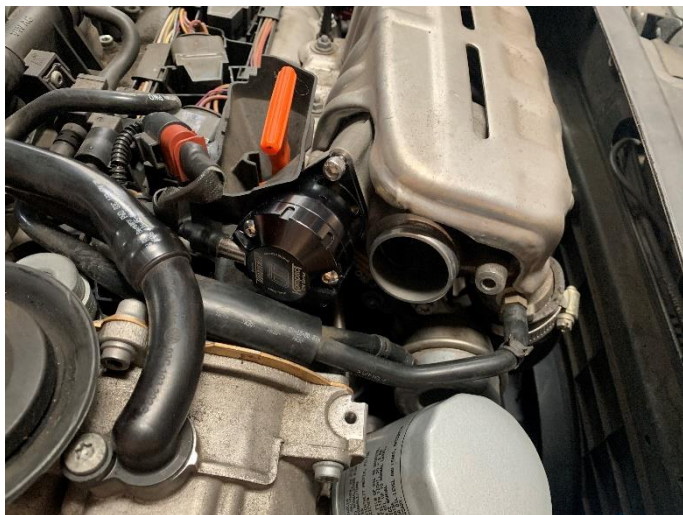
5 Removing the OEM Electrical connectors

Next, we need to remove the OEM electrical connector. The connector must be pushed down on the arrow to allow the male part to be removed. Take care as these connectors can be very fragile.

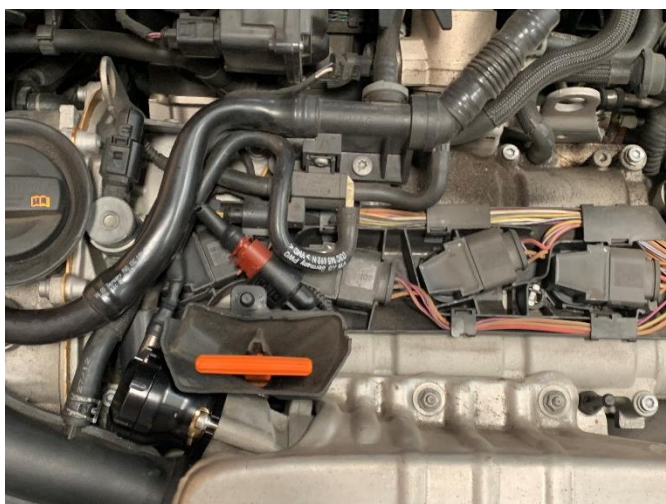


6**Mounting your EM series BOV**

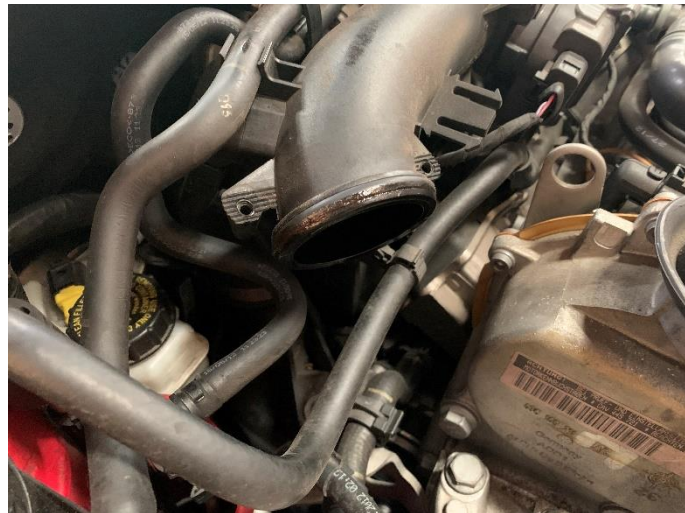
Install the Turbosmart Valve , remembering that the install is the opposite of the removal. Firstly, install the new valve in place. Making sure that both O rings are present and in place making sure they remain in place tightening them up. The original T30 bolts will be replaced by an Allen cap head bolt that uses a 5mm Allen key. Please consult your service manual for the correct torque specifications.

**7****Connecting the Turbosmart Electrical connectors**

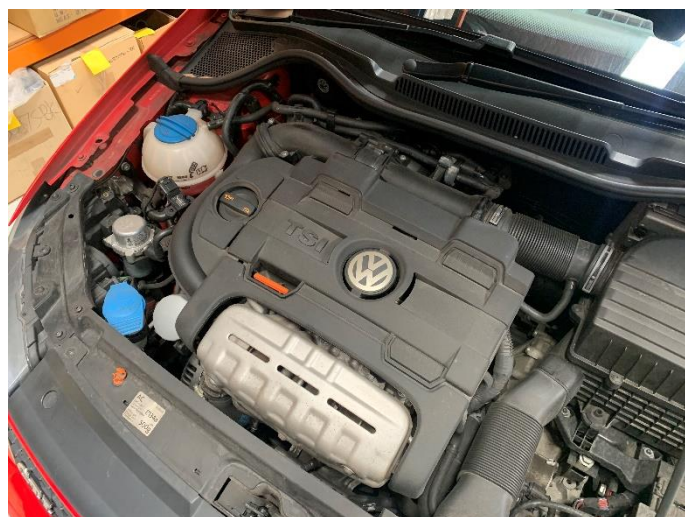
Once the valve has been mounted, connect the electrical plug into the OEM factory plug and secure the wiring safely away from a heat source. Ensuring to hear a click of the connector locking together.

**8****Connecting the OEM Charge Pipe**

Place the OEM Charge pipe into its groove as well as making sure that it is seated on the inlet of the turbo. Firstly, connect the turbo inlet first ensuring the spacer is going to go into the bracket. As seen below. Then connect the bracket that clamps the charge pipe to the rest of the intake. The breather hose will need to be connected back onto the intake.

**9****Finalising the install**

The engine cover can now be connected back to the car ensuring the Oil dipstick is correctly seated in its groove to avoid the engine cover from interfering. The cover is firstly connected at the back and then pushed down from above. The reversal of the removal

**10****Testing your install**

It is important to check for leaks and correct operation. It is important to listen for Turbocharger Surge. This is the noise of the boost pressure air running back into the turbo causing.

Taking the car for a test drive in a safe environment and listen for the correct operation and that no turbo charger surge.

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.

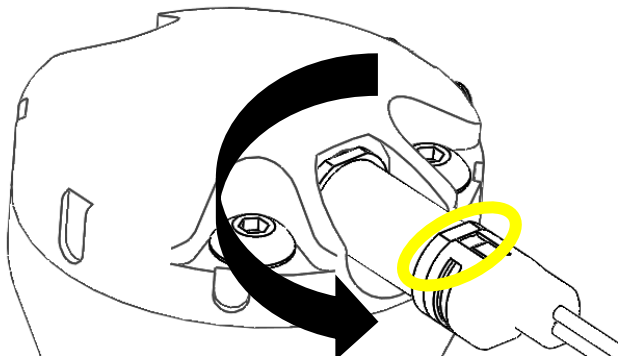
CAUTION!

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.

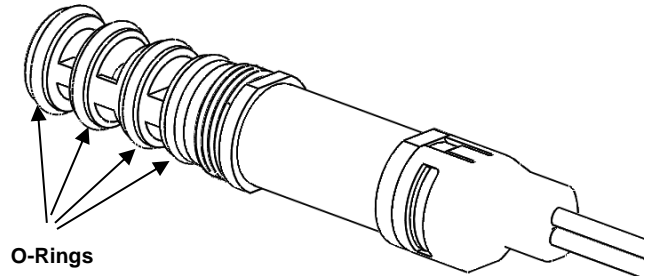


Ensure the cavity is free from debris using avoiding shifting dirt into the passages.

3

Install New Electronic Actuator into your EM series BOV.

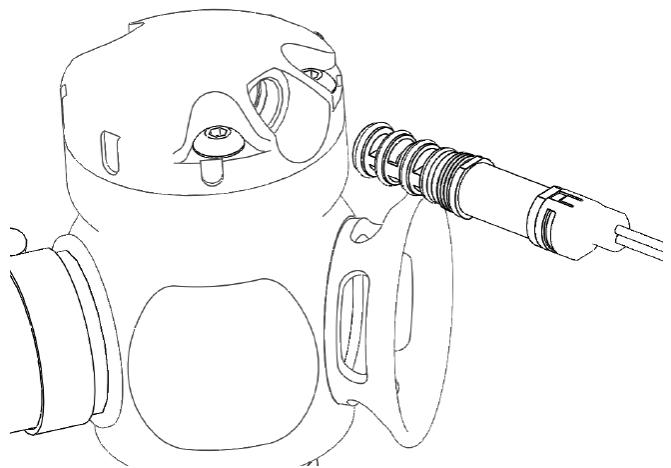
Ensure the O-rings on your new actuator are correctly seated in the grooves before installation.



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 unrepairable 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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