Product Name: **BOV Kompact EM VR25**
Product Description: **BOV Kompact EM VR25 (7th Gen Nissan Z)**
Product Number: TS-0223-1X97
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.

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	Quantity	Use
1	Turbosmart EM Series BOV	2	Main units
2	Allen Bolts (M6 Cap Screws)	6	Allen bolts for mounting BOVS
3	Turbosmart Sticker	1	

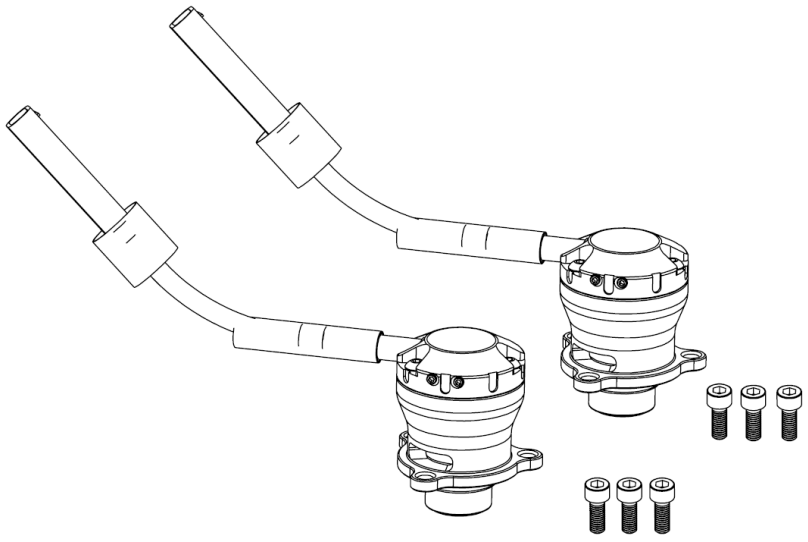


Figure 1 - Kit Contents

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.

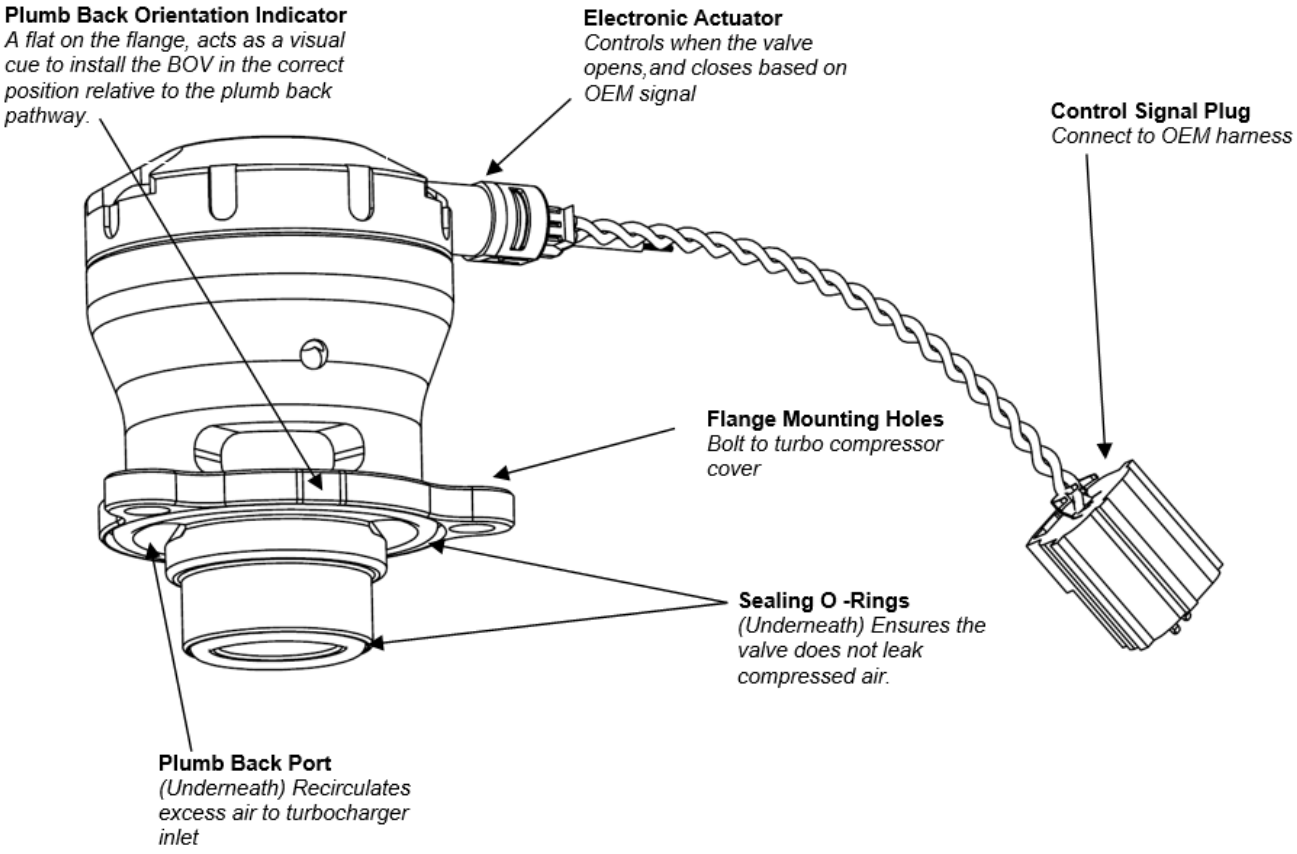


Figure 2 - EM Series BOV Overview

1 Identify diverter valve location.

On the model designation, 7th Generation Nissan Z (RZ34) the Diverter valves are located on the compressor housing outlet pipe. The RHD variant car passenger side is located up higher and easier in the engine bay than the driver's side, which is located a little lower in the engine bay closer in line with the chassis rail.

NOTE!
Allow for the engine to cool down.

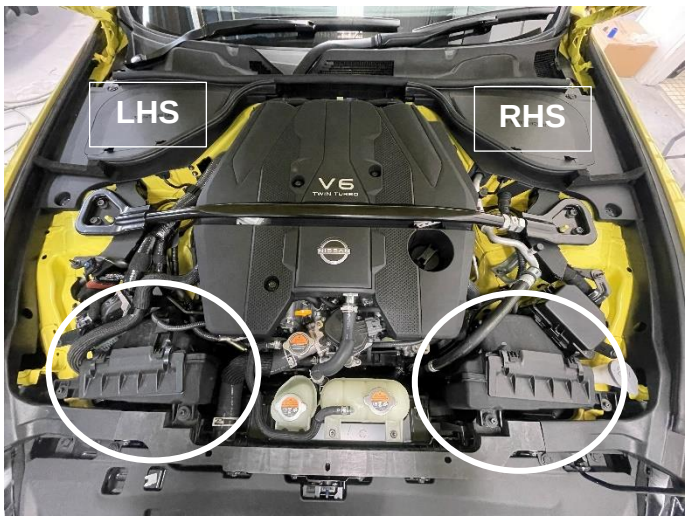
If the diverter valve cannot be located, seek assistance from your local specialist.

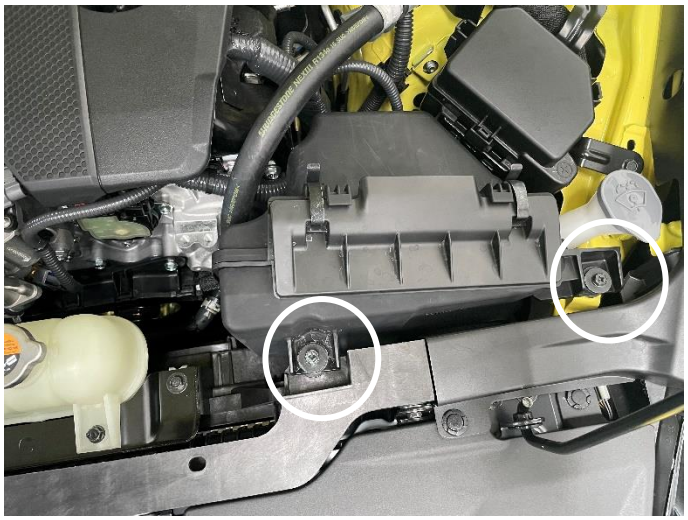
NOTE!
It may be required to remove auxiliary components to access the diverter valve, ensure you consult your local specialist or a service manual for correct disassembly procedures.

2 Removing OEM Airboxes

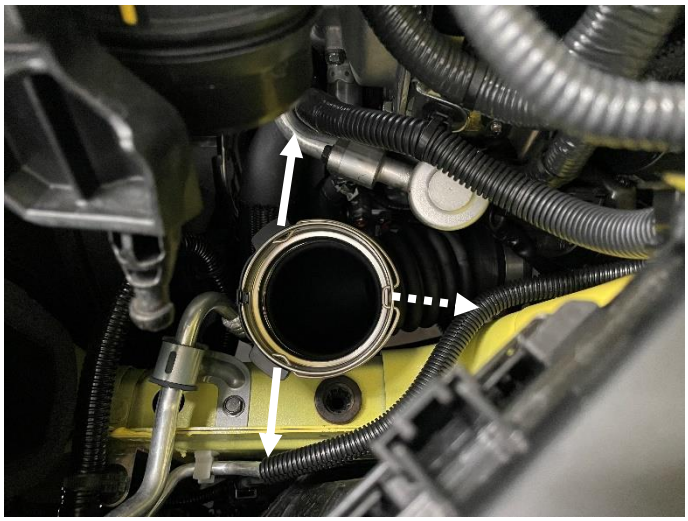
The two Airboxes need to be removed from the car to allow for adequate movement. They are held on with two 10mm bolts for each side, attached to the front radiator support of the car. With the bolts removed the intake hoses are quick release components that need the retaining clip to be removed to allow for them to release the airbox from the car

The Air Flow meter wiring will also need to be unclipped to allow the boxes to be completely removed. This is easily removed from the airbox.





Pictured the two 10mm on the RHS airboxes. These are the mirrored on the LHS airboxes and must be removed as well.



These clips are what retain the airbox to the inlet pipe for the turbo cool air feed. To release the three points of contact must be pulled in these directions. Technically the dotted line should release all of them if pulled lightly in that direction.

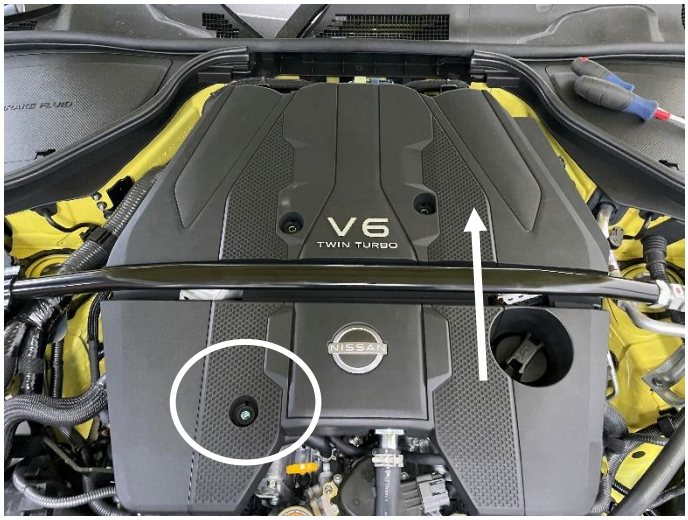
NOTE!

It may not be necessary to remove the engine undertray panel however it enables access if it is possible to work underneath the vehicle.

3 Removing the OEM Front Engine Cover

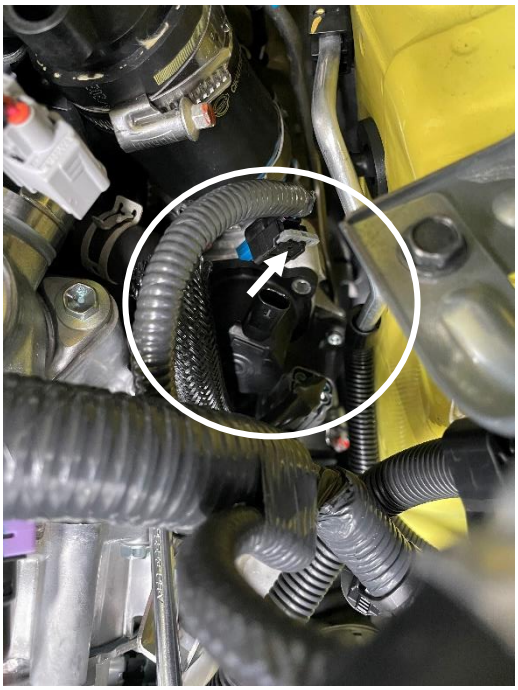
The front engine cover is held on with 1 x 5mm Allen key . This is lightly held on and needs a small amount of force to unlock it from its rubber bush. Pulled in an upwards in the location of the arrow.

This can now be removed from the car and put in a safe place until reassembly.



4 Removing the RHS Divertor Valve

The OEM divertor valve is located near the shock tower. It is located as seen below in the outlined circle. There are 3 x Torx bolts holding the divertor valve on. It may be required to remove some auxiliary brackets, wiring and components to allow for easier access of each bolt. Beware of dropping these bolts



Unclip the electronic connector by pulling the grey locking tab back and then pushing down.

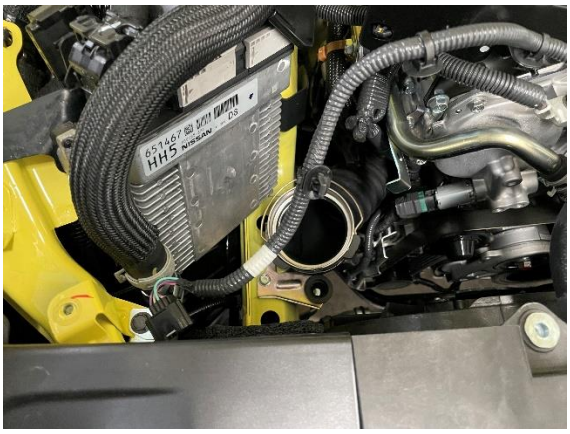
Once removed store the diverter valve and hardware in a safe place.

5 Fitting RHS EM Series BOV

Take 3 of the M6 bolts supplied of the 6 to fit the RHS EM BOV. Use an M5 Allen key to fit these bolts. The electronic connector can now be plugged into the car. Although polarity isn't important you do need to hear a positive click to ensure that the connector is locked in.

6 Removing LHS EM Series BOV

Removing the Left-hand side is similar with the airboxes already removed. The Airbox Retaining clip must be released as previously explained.



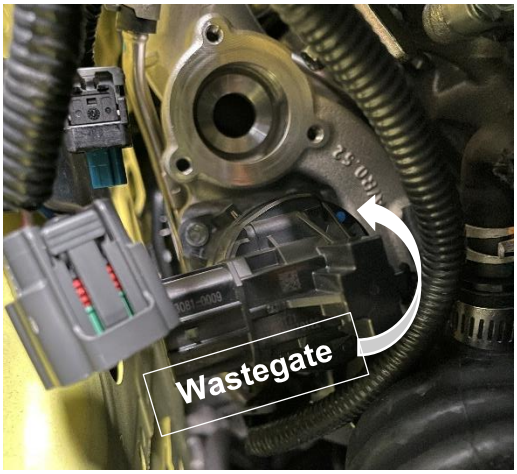
We need to remove the PCV pipe to allow for movement around the turbo inlet area. There is a clip that holds the wiring in that will need to be removed to allow movement.

Here is the BOVs location, it is near the inlet of the turbo. We need to remove the 3 x Torx T30 on the BOV as well as the electrical connector.

Unclip the electronic connector by pulling the grey locking tab back and then pushing down. The electronic actuator also can be unplugged there is no locking tab on it.

7 Fitting LHS EM Series BOV

The Electronic gate must be rotated 90 degrees to allow fitment, this has an adjustable nut on the actuator rod. It is important to only move the actuator anti clockwise and only 90 degrees. The Electronic gate is held on with 4 x 4mm Allen key bolts.



Take the three remaining M6 bolts to fit the LHS EM BOV. Use an M5 Allen key to fit these bolts. The electronic connector can now be plugged into the car. Although polarity isn't important you do need to hear a positive click to ensure that the connector is locked in.

With the wastegate clocked we need to move the loom down slightly to accommodate for the change of position. There is tape holding two bits of the conduit together than can be removed as well as cable tie clips that can release the loom and allow for move movement. Ensure that adequate strain relief is available to the wastegate plug to ensure no issue at the connector.

8 Refitting Removed Components

Once the Turbosmart EM has been fitted correctly to the car, we can refit the parts that have been removed or unplugged including hoses or electrical components.

We need to refit the Airboxes, an audible click must be heard when reconnecting the car airboxes to the car. As well as the 4 x 10mm bolts that hold the airboxes on.

CHANGING THE ELECTRONIC ACTUATOR

1 Remove Your EM series BOV.

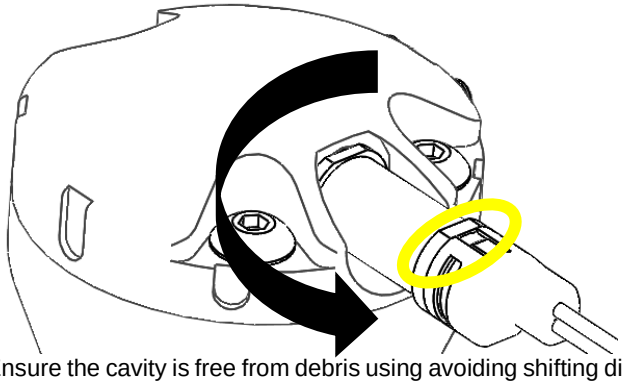
Remove the electronic plug from the EM series BOV and loosen the hose clamps on the inlet and recirculation hoses. Remove the BOV from the vehicle.

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.

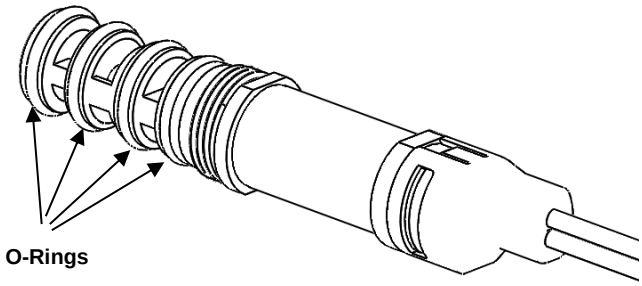
Using an 11mm open end wrench in the flat sides of the solenoid, undo the actuator in an anti-clockwise direction when viewed from the end. Ensure the wrench is placed on the metallic portion of the flats and not on the plastic cover.



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

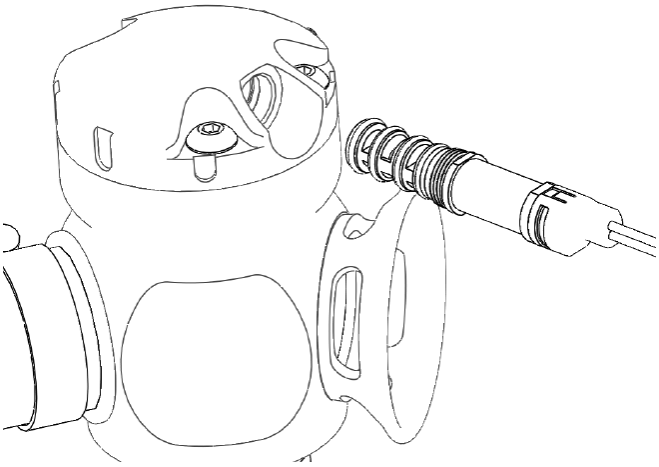
3 Install New Electronic Actuator into your EM series BOV.

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