

Product Name: BOV Controller Kit
 Product Description: Electronic BOV controller
 Product Number: TS-0304-1001



IMPORTANT NOTES:

- Please thoroughly read and understand these instructions before commencing this installation.

RECOMMENDATIONS

- Turbosmart recommends that your BOV controller is fitted and adjusted by an appropriately qualified technician
- Turbosmart recommends that a boost gauge be permanently fitted to the vehicle

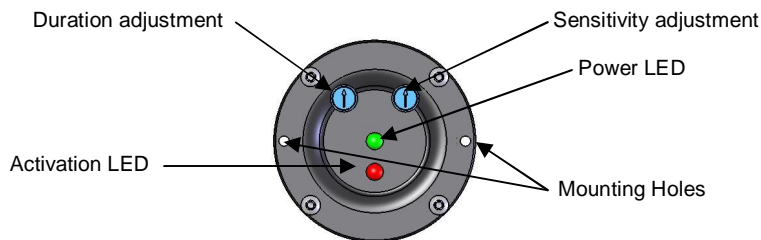
Please check that the following items have been provided in your BOV Controller Kit

Quantity	Description	Use
1	BOV Controller Unit	BOV Controller
1	Race Port assembly	Blow off valve fitted with 1.5 PSI pink inner spring
2m	2 core wire	Connect BOV Controller to solenoid
1	Heat shrink	Insulating soldered joints
2	Double sided adhesive	Surface mounting BOV controller
2	M3 X 30 Screws	Mounting BOV controller
2	M3 Nuts	Mounting BOV controller
1	3 Port solenoid	Controls pressure to BOV
3	1/8 NPT nipples	Connects solenoid to hose
1.2m	6.3mm Reinforced pressure tube	To connect the solenoid to the BOV
1	Solenoid Bracket	Mounting the solenoid
2	M3X20 SHCS	Mounting bracket to solenoid
2	5 amp Fuses	To protect the BOV controller and solenoid from voltage problems
1	M6 Nut	Secure solenoid bracket to car
1	M6 X 25 SHCS	Secure solenoid bracket to car
1	M6 Washer	Secure solenoid bracket to car
10	Cable ties	Securing vacuum tube and wires
1	Crimp ring terminal	For ground connection
4	Hose clamps	Securing all pressure lines
1	8 way wiring loom	Connects BOV Controller to devices and power

FUNCTIONALITY

The BOV controller works by detecting a negative voltage change in throttle position. It then energises the solenoid to vent all of the air out of the BOV cap, causing a pressure differential between the piston of the BOV and the cap which will vent pressure from the intake system. There are 2 parameters that can be adjusted to tune the controller for optimum performance; duration and sensitivity. The green LED shows that the BOV controller is on. The yellow LED shows when the solenoid is activated.

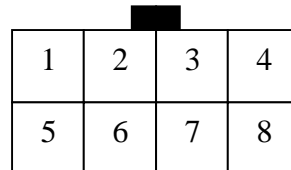
LAYOUT



INSTALLATION

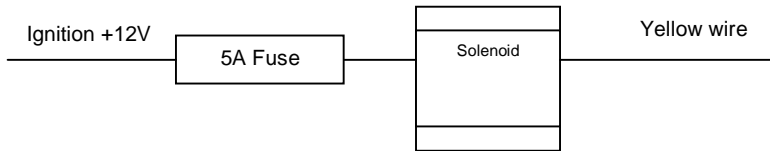
Mount the unit away from any heat source and moisture. Wire up the unit as per diagram. Do not connect the unit to a power supply which will have a greater voltage than 14V DC.

1. ORANGE = +5V (For external TPS)
2. GREEN = 0V (For external TPS)
3. WHITE = TPS signal Input
4. YELLOW = Solenoid trigger signal
5. GREY = Disable Trigger wire (Ground to disable Controller)
6. BROWN = Enable Trigger wire (Ground to keep solenoid energised)
7. BLACK = Controller Ground
8. RED = +12V (USE SUPPLIED 5A Fuse inline)



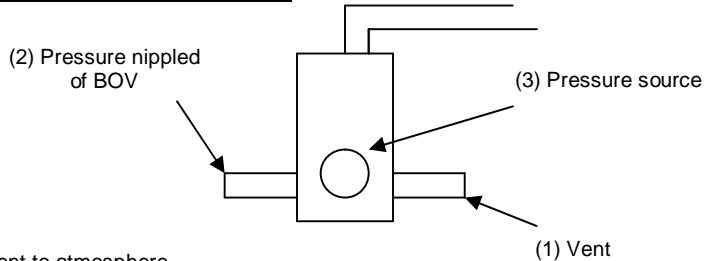
Looking into BOV Controller

SOLENOID ELECTRICAL CONNECTION



Connect one wire of the solenoid to a fused (**use supplied fuse**) ignition activated 12V power source and connect the other wire to the Solenoid trigger signal (Yellow) on the BOV controller unit. Polarity is not important.

SOLENOID PRESSURE CONNECTION



Port 1: Vent to atmosphere.

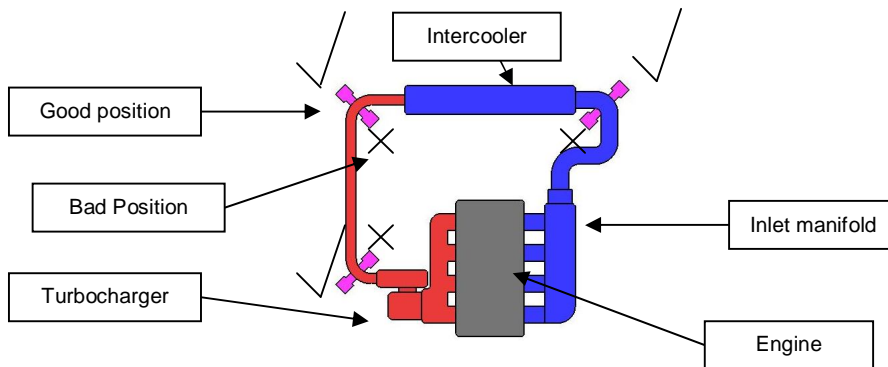
Port 2: To pressure nipple of BOV.

Port 3: To pressure source e.g. Intercooler piping (Make sure the pressure source is not shared and that it is from the same part of the pipe work as the BOV)

MOUNTING YOUR BOV

Find a suitable location on your intercooler pipe to mount the BOV. Weld the supplied alloy weld flange onto the intercooler piping. Do not weld the weld flange onto the piping with the BOV still connected to it as this can damage the BOV. The pressure source for the BOV can come from any port on the intercooler piping. Ideally a port can be welded onto the pipe work next to the BOV to allow for simple installation of the solenoid.

9+



THROTTLE POSITION CONNECTION

The BOV controller can be wired to the existing throttle position sensor on your vehicle. Connect the white wire to the signal output wire from the existing throttle position sensor.

For vehicles without a standard throttle position sensor, an external one can be wired in. The orange and green wire can be used to power an external throttle position sensor if one needs to be installed. Install the throttle position sensor on the throttle cable.

ADJUSTING YOUR BOV CONTROLLER

DURATION: The duration is the length of time that the solenoid blocks the pressure signal to the BOV. The longer the duration, the longer the BOV will not have pressure supplied to the cap, essentially keeping the BOV open. The controller also has an override function which reactivates the BOV once it detects positive throttle movement, independent of what the duration is set at.

SENSITIVITY: The sensitivity setting determines how the BOV controller reacts to throttle movement. The controller will only activate on negative changes in throttle. The higher the sensitivity setting, the lower the negative change in throttle movement needs to be before the solenoid will activate the BOV e.g. a change from 4V to 3.5V will not activate the valve but from 4V to 3V will activate the valve.

ENABLE FUNCTION: Grounding the brown wire activates the enable function which allows the BOV controller to keep the solenoid activated. Even though the unit is still reading changes in throttle position, it will not respond to them, not allowing pressure to reach the top of the BOV. The yellow LED will stay on when this function is activated. This function can be used to limit boost as the BOV will not have any pressure keeping it closed. It can also be used as an over boost safety feature when connected to another device such as a data logger or ECU which can ground the wire if a over boost scenario is reached.

DISABLE FUNCTION: Grounding the grey wire will activate the disable function which disables the BOV controller. The BOV controller is still switched on but will not respond to changes in throttle position, keeping pressure to the top of the BOV, not allowing the BOV open. This can be used when the BOV is not required to be functional e.g. when using cruise control, the BOV will not actuate on sudden throttle changes cresting hills.

The Turbosmart Pledge

TURBOSMART ONE YEAR LIMITED WARRANTY

Turbosmart is a company built on Customer Satisfaction and Service. That is why all of our products go through regimented test procedures before they are packaged and shipped. Turbosmart stands behind its products for one full year after purchase. Terms of Warranty, Service and Returns are as follows:

Limited Warranty: Turbosmart warrants its products to be free from defects in material and workmanship under normal use and if properly installed for a period of one year from date of purchase. If found to be defective, it will be replaced or repaired if returned prepaid along with proof of date of purchase. This shall constitute the sole remedy of the purchaser and the sole liability of Turbosmart to the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representations whether expressed or implied, including any implied warranty of merchantability or fitness. In no event shall Turbosmart be liable for special or consequential damages. This warranty is only valid on products purchased from Turbosmart Authorized Dealers.

Service: After the warranty period has expired, repair service is charged based on a minimum and maximum charge rate. (Contact Customer Service for current rate).

Returns: When returning a Turbosmart product for repair, it must be accompanied by a completed Customer Warranty Form and RMA number. To access this form please go to our website www.turbosmartonline.com and you will find it on the Downloads page.

THE TURBOSMART PLEDGE

DO NOT USE ANY TURBOSMART PRODUCT UNTIL YOU HAVE CAREFULLY READ AND UNDERSTOOD THE FOLLOWING AGREEMENT.

Please call if you have any questions or do not understand this agreement. Refer to our brochure, website or catalogue for terms and conditions and further information regarding your product. Turbosmart appreciates your business and pride ourselves on our customer service. We are always happy to offer you advice and will provide you with help in any way we can. The purpose of this agreement is to avoid any problems or hard feelings.

We sometimes make mistakes, as do our dealers, distributors and suppliers. Even customers can sometimes order the wrong parts. Do not use, modify, install, trial assemble, nick, drop, scratch or adjust any part until you first check for any damage. Damage must be reported immediately. NO EXCEPTIONS. If there are any components missing please contact your authorized reseller immediately upon receipt of your shipment. Missing components must be reported within five (5) business days of receipt. Parts returned for any reason MUST BE IN RESALABLE CONDITION. It is YOUR responsibility, "THE CUSTOMER" to carefully package any returns to avoid shipping damage. Insurance is highly recommended. Credit cannot be issued for damaged goods.

Turbosmart warrants the quality of the products it designs and manufactures to be free of defects in material and workmanship. This limited warranty is extended only to the original purchaser and may not be transferred or assigned. This limited warranty applies to any product, which after careful inspection by Turbosmart, after receipt of the product from our authorized reseller, is found to have a defect in either material or workmanship. Any modifications to the product will void any and all warranties and will not be exchanged. Before installation, check new car warranty. Turbosmart is not responsible for voiding any original manufactures warranty.

All warranty claims must be returned to the nearest Turbosmart Office, you must return the product and sales receipt, at your own expense, accompanied by the Customer Warranty Form stating the reason for the claim. Proof of purchase must be provided with any warranty claim and will be verified with the authorized reseller from which the product was purchased.

If all the above procedures are followed, and the product is found to be defective in either workmanship or material, Turbosmart shall either repair or replace the product, at its sole discretion, and sole cost. This limited warranty does not cover or apply to any personal injury, labor charges or any other incidental costs or damages caused by the defective product. The individual purchaser acknowledges and agrees that the disclaimer of any liability for personal injury is a material term for this agreement and the individual purchaser agrees to indemnify Turbosmart and to hold Turbosmart harmless for any claim related to the item of the equipment purchased. Under no circumstances will Turbosmart be liable for any damages or expenses by reason of use or sale of any such equipment.

THIS LIMITED WARRANTY IS THE ONLY EXPRESS WARRANTY, WHICH APPLIES TO TURBOSMART PRODUCT AS EXPRESSLY GIVEN IN LIEU OF ANY OTHER WARRANTY EXPRESSED OR IMPLIED, INCLUDING THAT OF MERCHANTABILITY. ANY IMPLIED WARRANTY INCLUDING THAT OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE IS HEREBY LIMITED BY THE SAME TERMS AND TIME LIMITATIONS SET FORTH IN THIS LIMITED EXPRESS WARRANTY AND OTHERWISE EXCLUDED. EXCEPT FOR THOSE OBLIGATIONS ASSUMED HEREIN, TURBOSMART ASSUMES NO OTHER OBLIGATIONS IN CONNECTION WITH THE SALE OF ITS PRODUCTS.

IN THE EVENT THAT THE INDIVIDUAL PURCHASER DOES NOT AGREE WITH THIS AGREEMENT THE BUYER MAY PROMPTLY RETURN THIS PRODUCT, IN A NEW AND UN-USED CONDITION, WITH A DATED PROOF OF PURCHASE, TO THE PLACE OF PURCHASE WITHIN SEVEN (7) DAYS FROM THE DATE OF PURCHASE FOR A FULL REFUND. THE INSTALLATION OF THIS PRODUCT INDICATES THAT THE INDIVIDUAL PURCHASER HAS READ AND UNDERSTOOD THIS AGREEMENT AND ACCEPTS ITS TERMS AND CONDITIONS.

**Happy motoring!
The Turbosmart Team.**