

Product Name: **Power Port**
 Product Description: Blow off valve (BOV)
 Product Number: TS-0207-100X
 Document Version: V1.00 Rev D



IMPORTANT NOTES ON YOUR POWER PORT BOV

- **Do NOT block lower chamber ports unless used with a pressure source**
- Use only silicone hose that is the correct size and pressure/vacuum rating for your application.
- Ensure that all plumbing is secured with suitable clamps or the correct fittings are used.
- Your Power Port should be mounted at least 100mm from any significant heat source.
- Check the vacuum level produced by your engine to ensure the correct spring/s combination for your Power Port for maximum response.

RECOMMENDATIONS

- **Turbosmart recommends that your Power Port is fitted by an appropriately qualified technician**

HOW TO INSTALL YOUR POWER PORT BOV

KIT CONTENTS

Please check that the following items have been provided in your Power Port BOV kit.

Quantity	Description	Use
1	Turbosmart Power Port	Main BOV unit
1	1/8" NPT Blank	Used to seal spare inlet port on lower chamber of BOV
1	1/8" NPT Nipple	Used to supply signal to lower chamber of BOV
1	Inlet Weld-On Flange (Alloy)	Used to mount BOV onto piping
1	V-Band	Used to secure weld-on flange to BOV main unit
1	60x2.6mm O-Ring	Used for sealing inlet flange
1	Collar Tool	Used for removal of BOV collar
1	Turbosmart Sticker	Turbosmart sticker

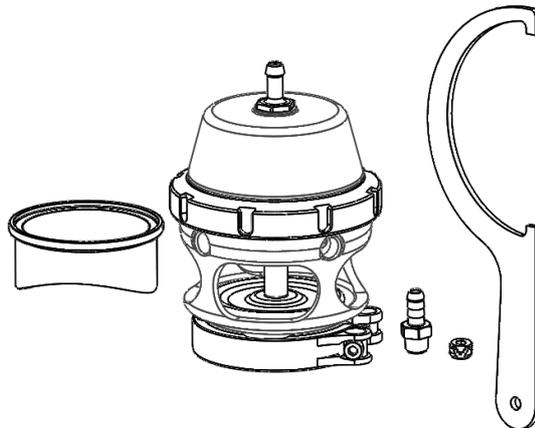
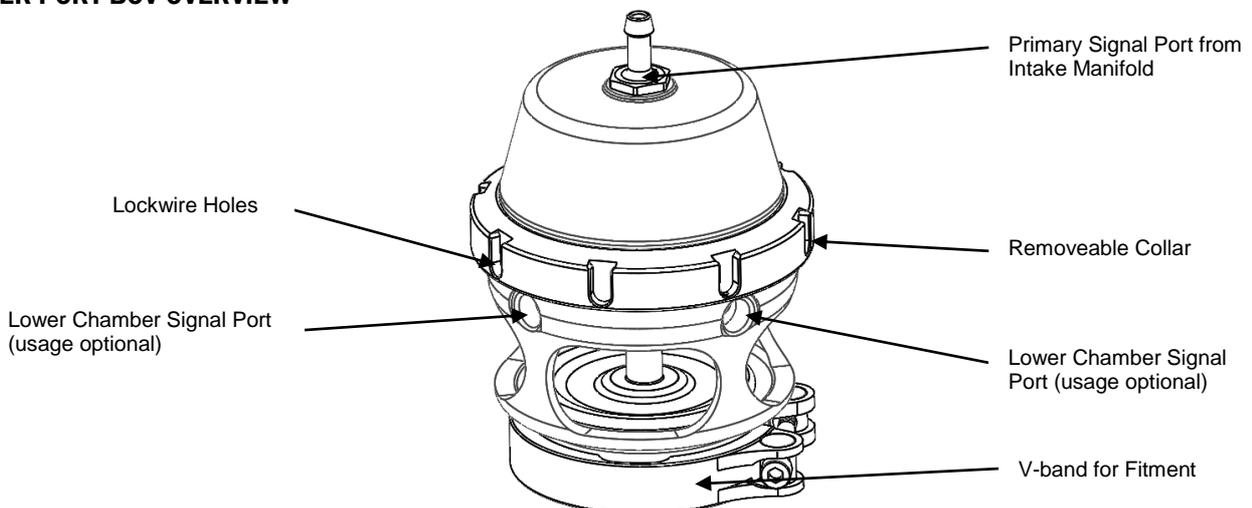


Figure 1 - Kit Contents

POWER PORT BOV OVERVIEW



FITTING YOUR POWER PORT BOV

1 Locate charge pipe for Power Port installation and prepare for welding

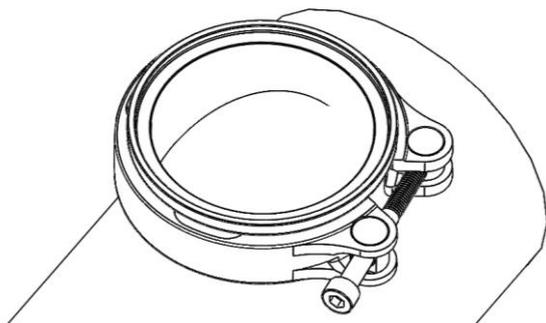
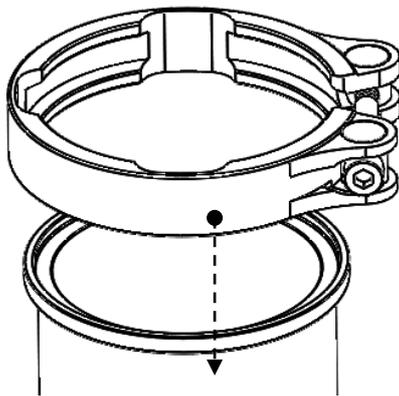
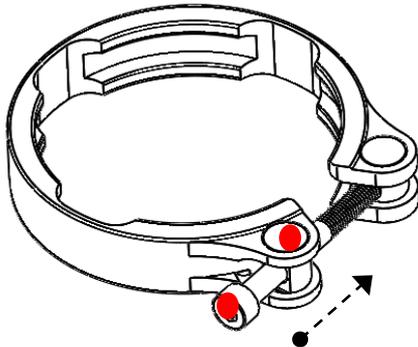
This pipe is located between the pressure source outlet and the throttle body. Take time to determine where you wish to mount the Power Port along this pipe and prepare the pipe for welding. Weld alloy inlet flange onto pipe in your desired location. (Stainless Steel Weld Flange Optional – TS-0207-2001)

CAUTION!

Allow engine to cool down before installing your Power Port.

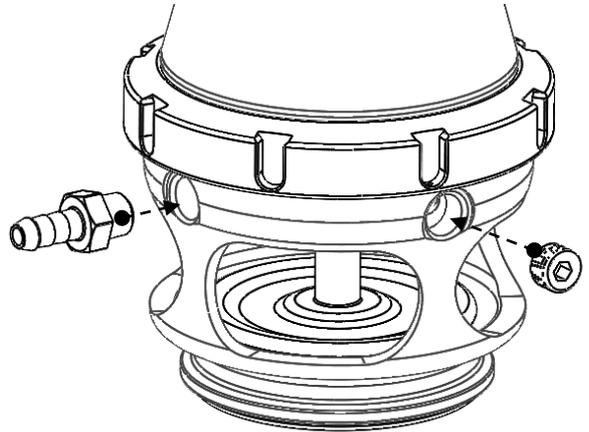
2 Prepare Power Port for installation

Prior to mounting the Power Port, place v-band over weld on flange by unscrewing the bolt on the v-band as far out as possible and then squeezing the bolt in a syringe motion to expand the v-band (squeeze the dots together below). Once the v-band is in its fully expanded position, slide the v-band over the flange to allow for the Power Port to be installed. (Replacement V-Band Optional – TS-0207-3004)



3 Fit Lower Chamber Port Fittings (OPTIONAL)

This step is optional. Prior to mounting the Power Port, install 1/8" NPT blank with 3/16" hex key and signal nipple into lower chamber ports. Port order or orientation is not important, select which suits your packaging requirements. Apply thread lubricant and screw in clockwise until finger tight, then tighten further 1-2 turns for seal.

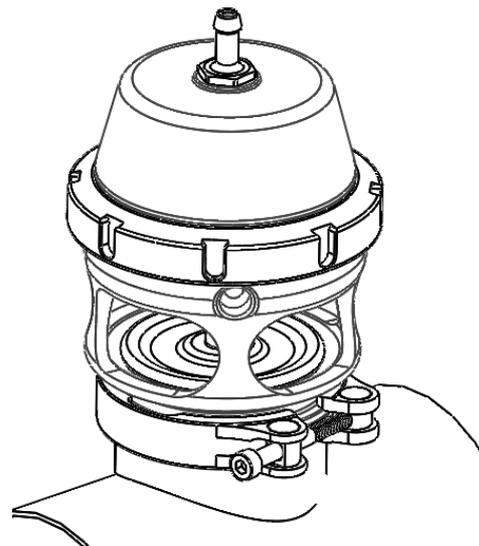


CAUTION!

Do NOT insert fittings and blank unless lower chamber is to be used as this can affect the performance of the product.

4 Mounting your Power Port

With all fittings installed onto the Power Port, the Power Port can now be mounted. Place the O-ring provided onto the mounting flange. Align the Power Port onto the flange and squeeze the v-band in a syringe action to expand the v-band and slide over the flange and Power Port to clamp together. Tighten v-band bolt to 6 Nm or finger tight + 2.5 turns. Proceed to connect your signal lines.



CAUTION!

Ensure O-Ring is located between Power Port and mounting flange.
Ensure signal source for BOV is located from inlet manifold post throttle body.

5 Start engine and check for leaks

Congratulations, your Power Port is installed and ready for use. Double check all fittings, lines and mountings then proceed to start engine and check for leaks. No adjustment is required.

See over for troubleshooting steps if required.

POWER PORT SPRINGS

*Power Port as supplied

	Part Number	TS-0207-3002	Installed	Installed
	Location	Inner	Middle	Outer
	Pressure	4inHg	8inHg	8inHg
Manifold Vacuum	0-4inHg	•		
	4-8inHg		•	
	*8-16inHg		•	•
	16-20inHg	•	•	•

HOW TO CHANGE YOUR POWER PORT BOV SPRING

The Power Port has a variety of springs to suit different vacuum levels. Different tuning levels produce different levels of idle vacuum. The Power Port is fitted with a standard spring which will remain closed until the engine produces more than 16 inHg. Turbosmart has a range of springs to suit different vacuum levels to ensure high levels of response from the Power Port.

1 Remove Power Port off charge pipe

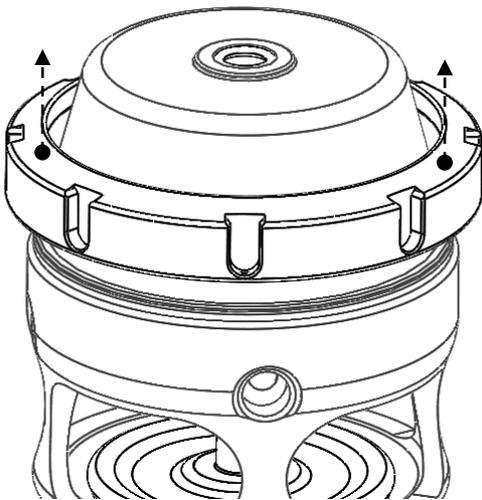
This pipe is located between the pressure source outlet and the throttle body. Remove all signal lines to Power Port. Unscrew v-band bolt anti-clockwise until bottomed out and squeeze v-band against the bolt head in a syringe like motion to expand the v-band clamp. Lift off Power Port while expanding v-band to allow for it to slide out.

CAUTION!

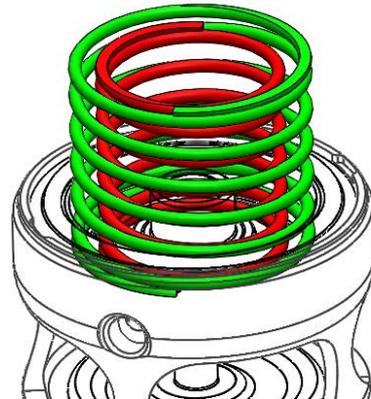
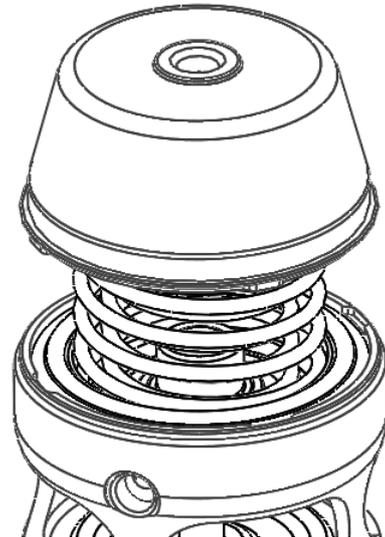
Allow engine to cool down before removing your Power Port.

2 Remove Power Port top cap

Prior to removing the Power Port cap, remove the top cap signal nipple by unscrewing it anti-clockwise. Hold the cap down in a press or a vice. Unscrew locking collar in an anti-clockwise direction until completely disengaged and slowly remove tension from vice or press allowing the spring to expand, finally remove cap when cap has stopped expanding.



2 Remove Power Port top cap (cont.)



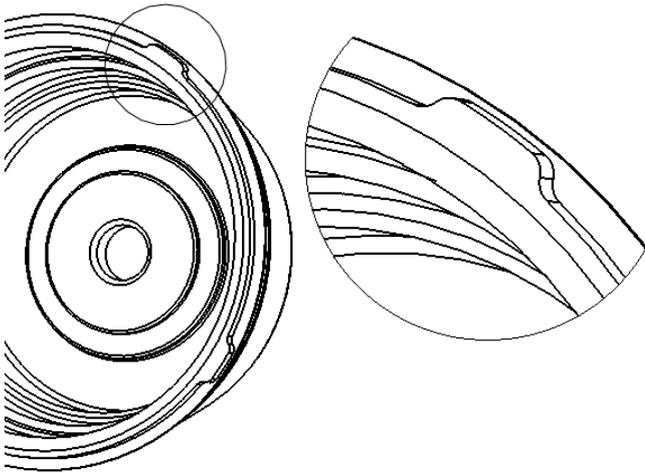
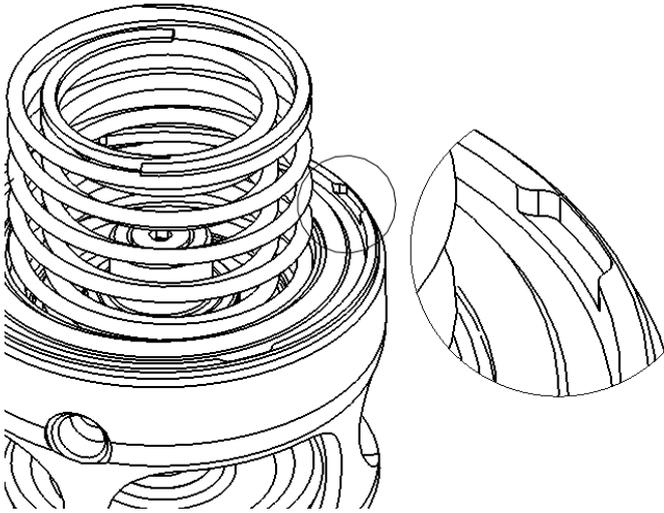
Configure Power Port with your preferred spring combination of inner, middle or outer springs.

CAUTION!

Ensure diaphragm is contained within the groove prior to cap re-assembly.

3 Familiarise yourself with the cap and body notches

Locate cap and body notches and grooves which dictate the alignment of the cap. These notches are used to locate the cap onto the body and must be aligned prior to compression of the cap onto the body.

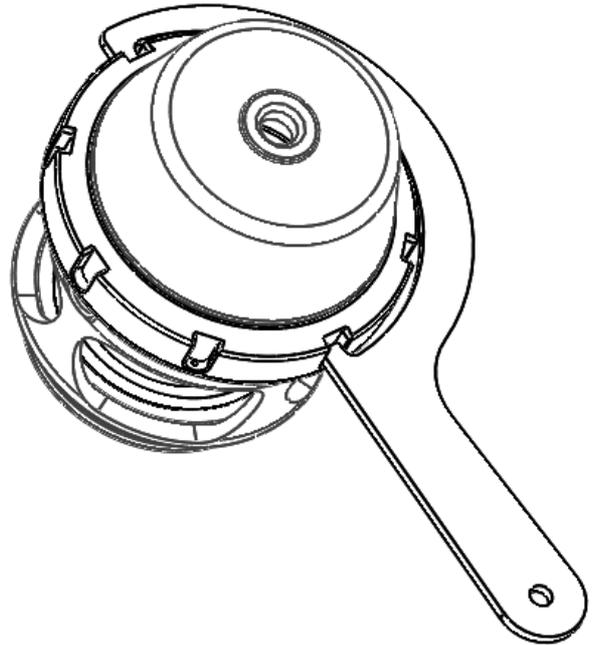


CAUTION!
Ensure notches are aligned and seated home correctly prior to exerting force to tighten collar, permanent damage will occur if these are not aligned correctly.

4 Press cap onto body

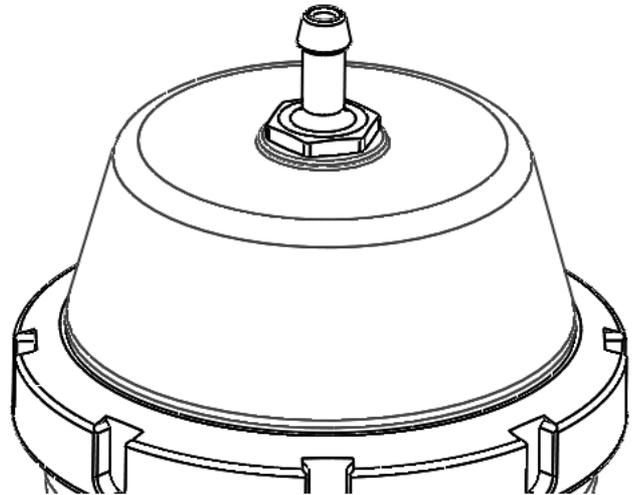
Using a vice or press, compress the cap onto the body ensuring the notches are remaining aligned. Once the cap has seated home onto the body, screw the collar down by hand in a clockwise direction. While still in the press or vice, tighten the collar further with the collar tool until the collar will not turn.

4 Press cap onto body (cont.)



CAUTION!
Maintain downward pressure on cap while tightening collar or non-repairable thread damage will occur.

Reinstall top cap signal nipple.

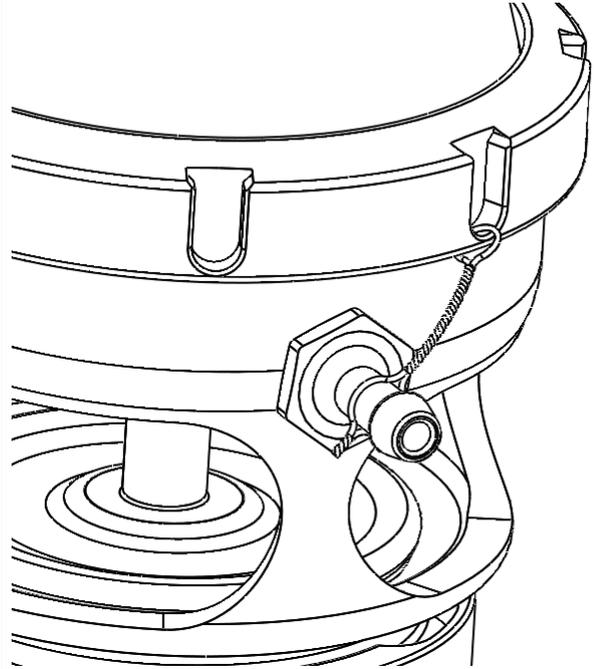
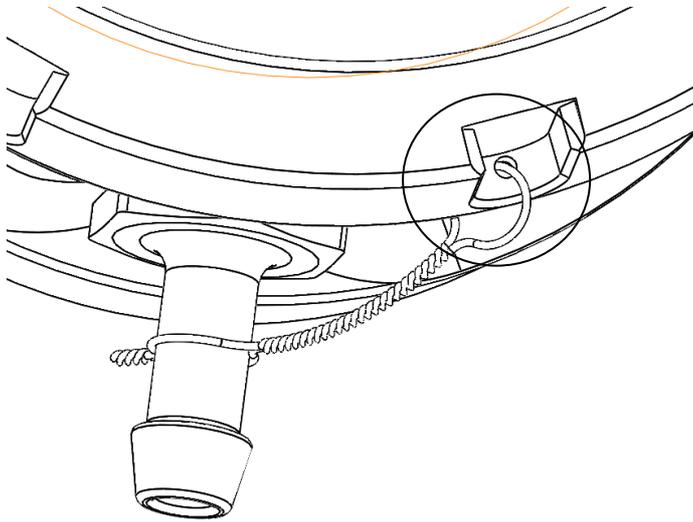


5 Reinstall Power Port onto charge pipe

Reinstall Power Port back onto piping by expanding v-band clamp in a syringe type motion and sliding Port Power port onto flange, clamp flange and Power Port together with v-band and tighten to 6 Nm or hand tight + 2.5 turns.

6**Safety Wire (Lock Wire)**

Using safety wire pliers, install safety wire onto the collar using the small holes provided in the collar and using a suitable fixed location for the opposite end. Twist the safety wire to provide adequate tension to prevent the collar from coming loose. A typical installation, but not limited to, utilises nipples fitted to one of the lower chamber ports. The safety wire should be made as short as possible and in the direction that does not allow any loosening of the collar.



CAUTION!
Do Not overtension the Safety Wire as this could cause damage to the BOV

HOW TO CHANGE YOUR POWER PORT BOV DIAPHRAGM

BOV Power Port Diaphragm Replacement: **TS-0207-3005**

1**Remove Power Port off charge pipe**

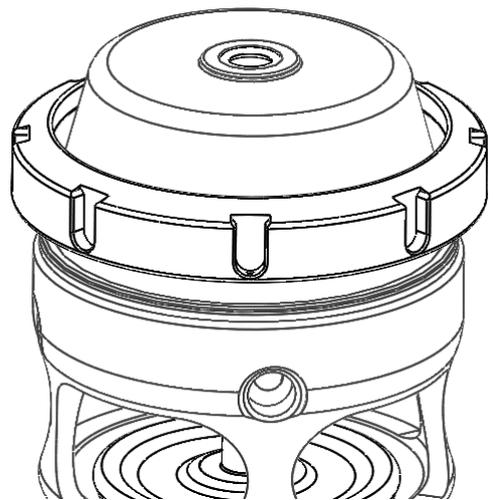
This pipe is located between the pressure source outlet and the throttle body. Remove all signal lines to Power Port. Unscrew v-band bolt anti-clockwise until bottomed out and squeeze v-band against the bolt head in a syringe like motion to expand the v-band clamp. Lift off Power Port while expanding v-band to allow for it to slide out

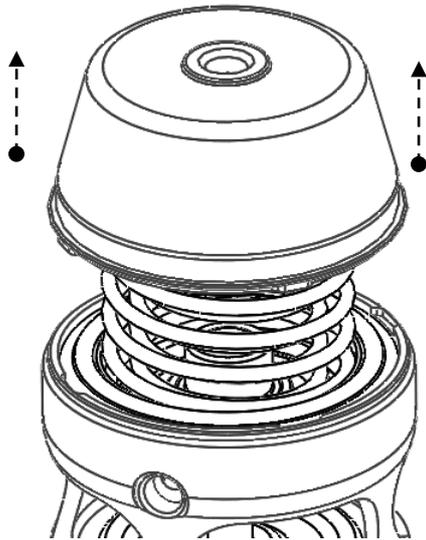
CAUTION!

Allow engine to cool down before removing your Power Port.

2**Remove Power Port top cap and springs**

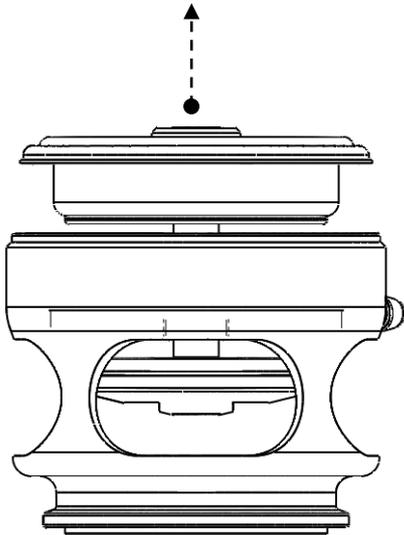
Prior to removing the Power Port cap, remove the top cap signal nipple by unscrewing it anti-clockwise. Hold the cap down in a press or a vice. Unscrew locking collar in an anti-clockwise direction until completely disengaged and slowly remove tension from vice or press allowing the spring to expand, finally remove cap when cap has stopped expanding.

2**Remove Power Port top cap (cont.)**

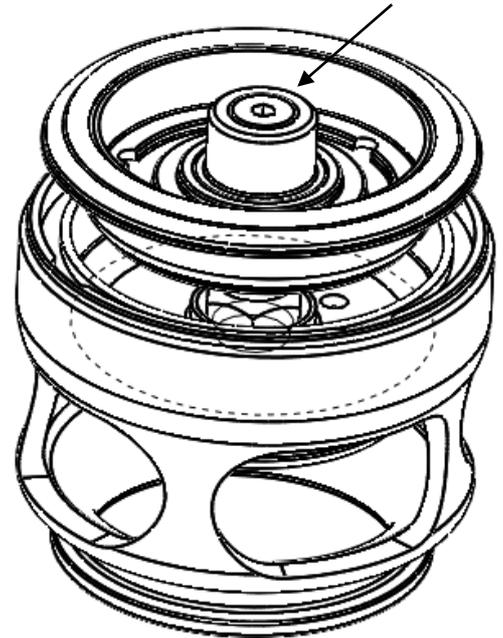


3 Diaphragm Replacement

Hold the two flats on the bottom of the valve using a 17mm spanner or similar, this may be easier if the valve is lifted allowing full side access to the valve



3 Diaphragm Replacement (cont.)



Using a 4mm allen key, undo the bolt at the centre of the diaphragm holding it to the valve stem. Wipe off any residue left behind on the valve stem.

Place your new diaphragm over the valve stem, apply thread locker to the bolt and tighten to 6 Nm or hand tight + 2.5 turns.

4 Reassemble Power Port

Refer to “**HOW TO CHANGE YOUR POWER PORT BOV SPRING**” parts 3 thru 5 for reassembly of your Power Port BOV

CAUTION!

Ensure diaphragm is contained within the groove prior to cap re-assembly.

HOW TO INSTALL YOUR POWER PORT SENSOR CAP

BOV Power Port Sensor Cap Replacement: TS-0207-3006/7 (Black/Blue)

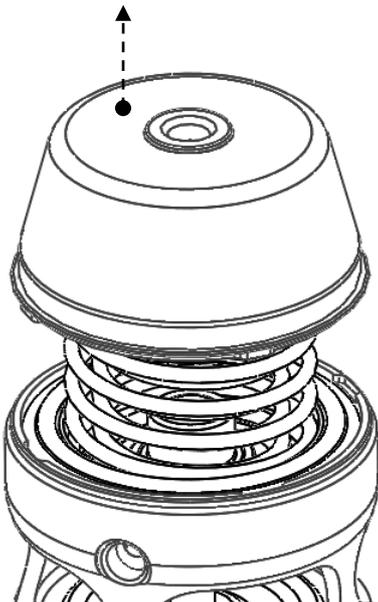
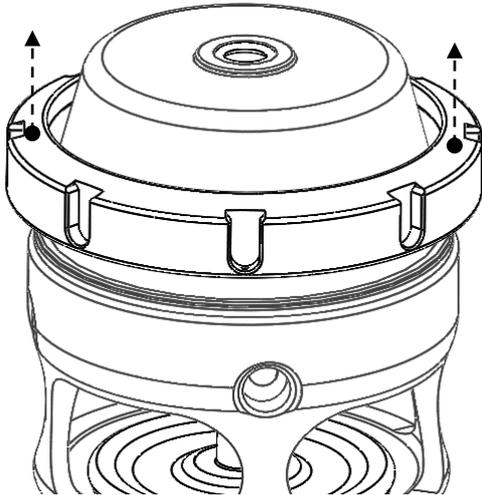
1 Remove Power Port off charge pipe

This pipe is located between the pressure source outlet and the throttle body. Remove all signal lines to Power Port. Unscrew v-band bolt anti-clockwise until bottomed out and squeeze v-band against the bolt head in a syringe like motion to expand the v-band clamp. Lift off Power Port while expanding v-band to allow for it to slide out.

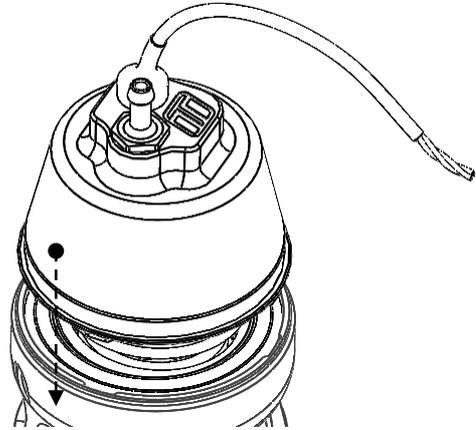
CAUTION!
Allow engine to cool down before removing your Power Port.

2 Remove Power Port top cap and springs

Prior to removing the Power Port cap, remove the top cap signal nipple by unscrewing it anti-clockwise. Hold the cap down in a press or a vice. Unscrew locking collar in an anti-clockwise direction until completely disengaged and slowly remove tension from vice or press allowing the spring to expand, finally remove cap when cap has stopped expanding.



3 Install Sensor Cap onto BOV



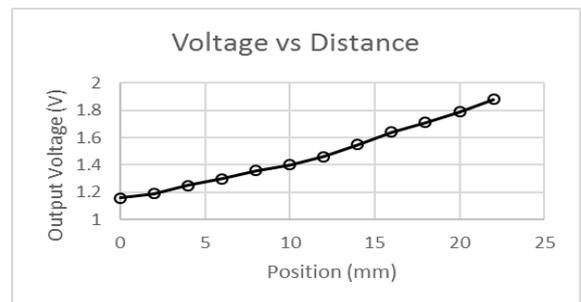
Ensure when assembling sensor cap onto BOV body that the wiring loom is not damaged or crushed. Please refer to “**HOW TO CHANGE YOUR POWER PORT BOV SPRING**” parts 3 thru 5 for reassembly of your Power Port BOV for accurate cap installation steps.

4 Wiring your Sensor

Wire	Note	Rating
Red	Sensor Supply	+5V
Black	Sensor Ground	0V
White	Sensor Output	Non-Linear Analog

The sensor calibration has been performed using 5V as most datalogging equipment has dedicated 0V and 5V rails, if your datalogger supply voltage varies from 5V please check calibration to ensure accurate results.

Position (mm)	Voltage (v)	Position (mm)	Voltage (v)
0	1.16	12	1.46
2	1.19	14	1.55
4	1.25	16	1.64
6	1.3	18	1.71
8	1.36	20	1.79
10	1.4	22	1.88



CAUTION!
Ensure wiring polarity is not reversed as permanent damage will occur.

TROUBLE SHOOTING

- Erratic Idle – Check fittings are tight and O-rings are present or not damaged. Check signal hoses for splits, cracks, loose connection, kinking or any obstruction – old or fatigued hose may collapse under vacuum causing an obstruction.
- BOV not actuating – With engine running, remove the signal hose to the BOV, there should be a loud hissing sound, confirmation of vacuum can be felt by momentarily blocking this hose with a finger. Check the hose and replace if necessary.
- Poor BOV actuation – Ensure that the signal hose is not shared and that the signal source is directly from the inlet manifold.
- Poor BOV actuation – Ensure that the lower chamber ports of the BOV are not blocked when lower chamber is not being used.
- Poor BOV actuation – Check the seal between the adapter and the BOV – ensure that there is no gap between the BOV base and the flange.
- Poor BOV actuation – Ensure that the spring installed is representative of your engines vacuum level.
- Failing the above, submit a technical request to tech@turbosmart.com.au with information of your engine configuration and photos of installation

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.

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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.