

Product Name: American Muscle charge air pipe kit featuring the Turbosmart SmartPort BOV

Product Description: 2015 – 2016 2.3L Ford Ecoboost Pipe/BOV kit



- IMPORTANT NOTES:**
- Please thoroughly read and understand these instructions before commencing this installation.
  - The thread on the cap of the SmartPort BOV is AN#3. The standard swivel nipple can be changed to an AN#3 fitting if desired. The threads on the MAP adapter are 1/16" pipe.
  - Make sure that the engine is cold before installing this product.

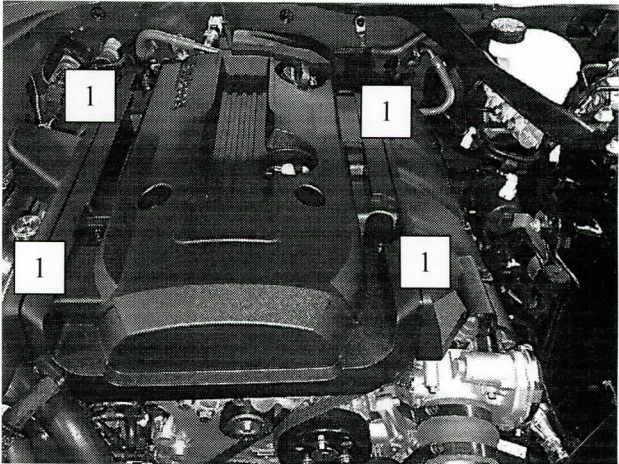
- RECOMMENDATIONS**
- **Turbosmart recommends that your charge pipe and Blow off valve (BOV) kit is fitted by an appropriately qualified technician**

Please check that the following items have been provided in your kit

Quantity	Description	Use
1	"Hot" side pipe	Replaces plastic OEM Compressor to intercooler pipe
1	"Cold" side pipe	Replaces rubber OEM Intercooler to Throttle Body pipe
1	2 ½" Coupler	Replaces OEM (Hot side pipe to intercooler)
1	2" – 2 ½" reducing coupler	Replaces OEM (Turbo discharge to pipe)
1	2 ½" – 2 ¾" reducing coupler	Replaces OEM (Intercooler to Cold side pipe)
1	2 ¾" Coupler	Replaces OEM (Cold side pipe to throttle body)
7	3 1/4" clamps	For couplers
1	3" clamp	For turbo discharge coupler
1	Smart Port BOV kit	Replaces standard electronic bypass valve
1	Electronic plug (CEL Eliminator)	Blanking off OEM electronic by pass valve wiring loom
1	5mm Black vacuum hose	Connects BOV to pressure/vacuum source
1	1/16th NPT Blank	Port blank for boost reference adapter
2	1/16th NPT nipples	Provides BOV and other devices such as boost gauges with vacuum/pressure source
1	Intake Cap	1" Silicone rubber cap for unused re-circ hose connection on intake
1	Boost reference adapter	Adapter between MAP sensor and manifold for boost/vacuum source.
1	Retaining clip	Secures boost reference adapter to intake manifold
2	6mm spring clamps and 1 x hose clamp	Secures pressure lines
2	250mm cable ties	Fixing pressure lines in position
2	100mm cable ties	Fixing pressure lines in position
1	5" re-enforced hose	For PCV line replacement

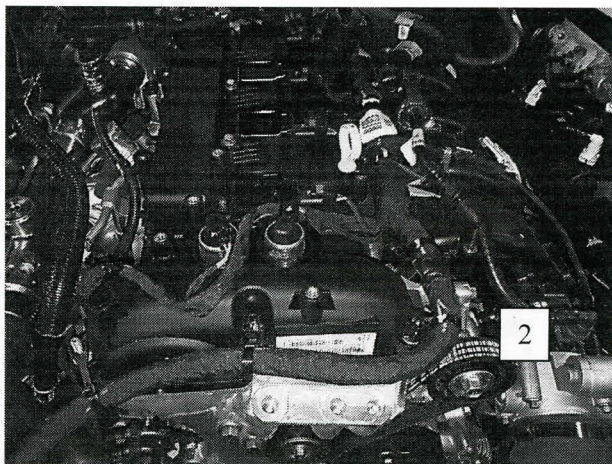
HOW TO INSTALL YOUR BOV

1. Remove the engine cover by removing both nuts and bolts securing the engine covering in place.

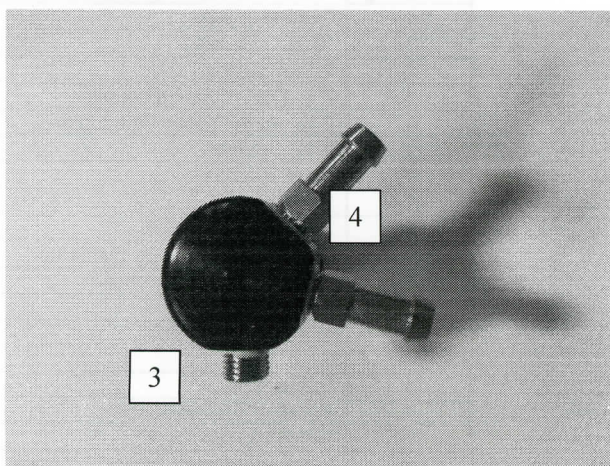




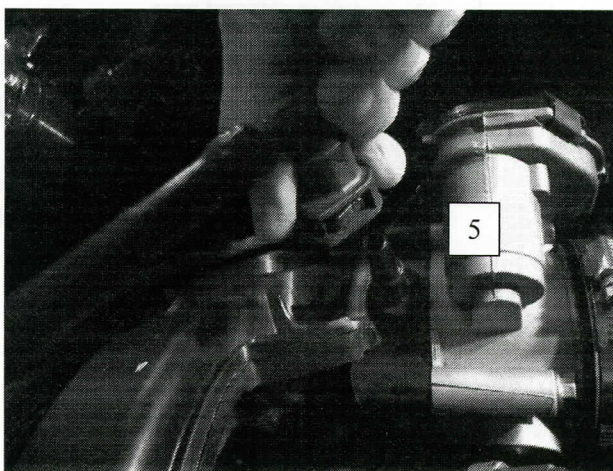
2. Locate the PCV connection at the back of the throttle body. When facing the vehicle, the PCV connection is on the right hand side of the engine behind the throttle body.



3. Install the included plug on the unused port of the boost reference adapter. **Apply thread sealant on threads.**
4. Install two vacuum/boost nipples as shown. **Apply thread sealant on threads.**



5. Unclip factory PCV connection from port located behind the throttle body.

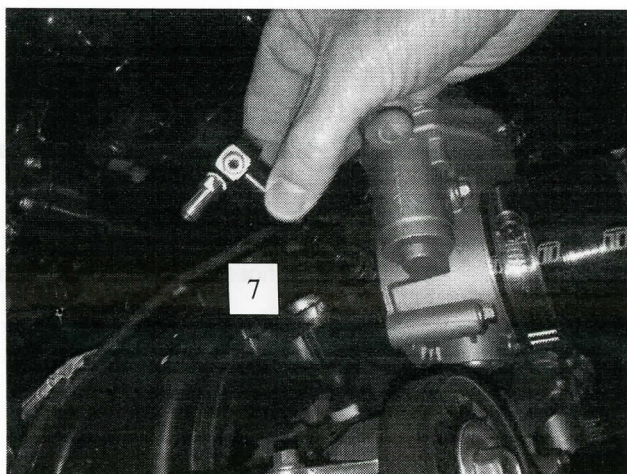




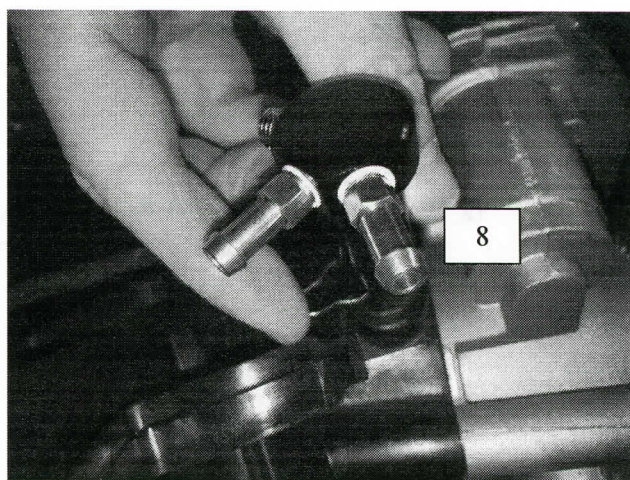
6. Cut and remove the OEM PCV line as shown.



7. Slide the boost reference adapter onto the OEM port as shown. Twist adapter back and forth while pressing down as there will be some resistance due to the internal O-ring.

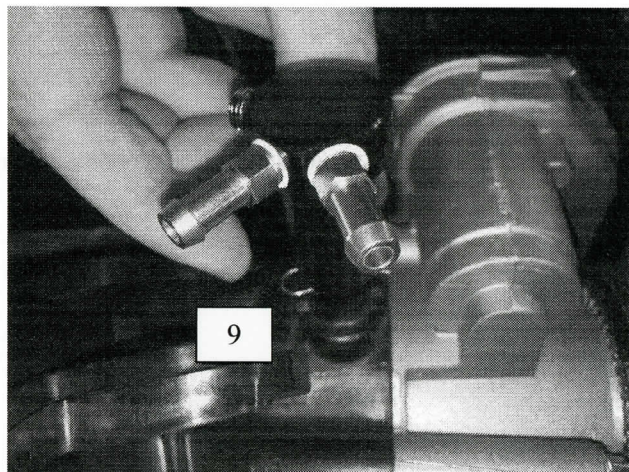


8. Install the retaining clip provided to secure the boost reference adapter in position

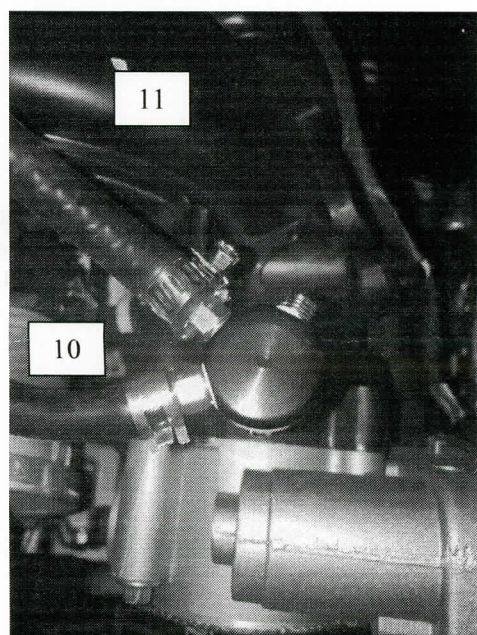




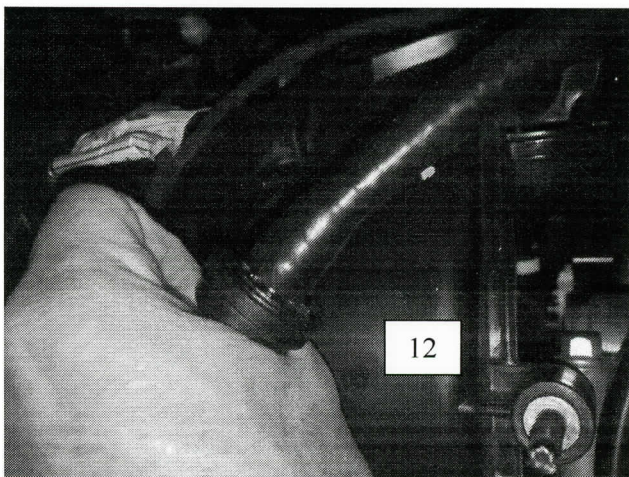
9. Once installed, the boost reference adapter should look as shown. Vacuum hoses can now be connected.



10. Install BOV reference hose to nipple and secure with spring clamp.
11. Install  $\frac{1}{4}$ " ID re-inforced PCV replacement hose to second nipple and secure with hose clamp. Point hose in the direction of the PCV check valve.

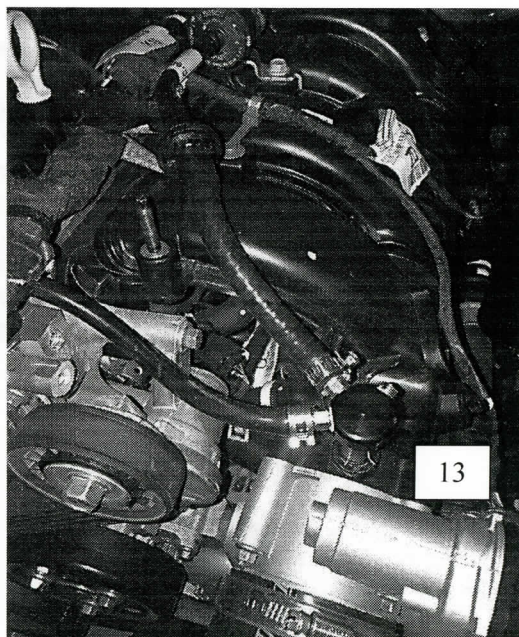


12. Install other end of  $\frac{1}{4}$ " re-inforced hose over barbed end of PCV check valve as shown. No clamp is needed.

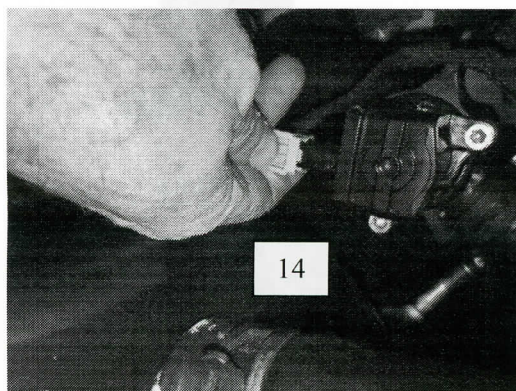




13. Once installed, the boost reference adapter and hose should look as shown.

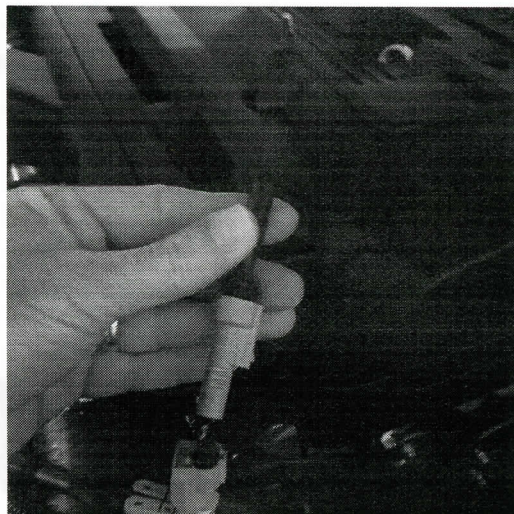


14. Locate the factory BOV and unplug the solenoid plug.



15. Install provided CEL Eliminator into OEM solenoid plug as shown. Secure with cable ties.

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16. Loosen all charge pipe clamps and remove OEM plastic and rubber charge pipes (including OEM solenoid BPV and re-circ hose). This can be done from within the engine compartment but it is easier to access the lower intercooler clamps if the vehicle is raised and the belly pan removed.
17. Install new charge pipes using the provided 5 ply couplers and performance clamps in the same manner as the OEM pipes were installed.
18. Install your new Turbosmart SmartPort BOV on new charge pipe making sure that o-ring is properly seated before installing v-band clamp. Tighten v-band clamp.

**Note: The BOV must be properly seated down in its flange so that the v-band clamp engages properly**



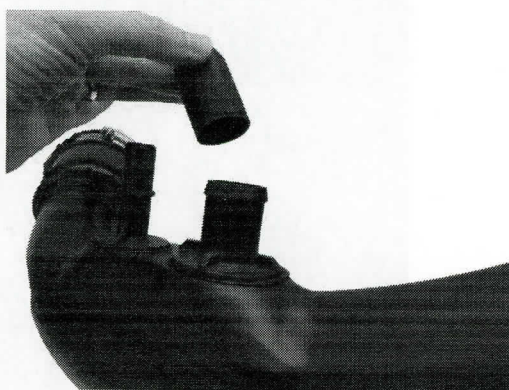
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19. Connect the 5mm vacuum hose to the nipple on top of the SmartPort BOV. Secure the hose with spring clamp.

**Note: this is the same vacuum hose that connected to the MAP adapter in step 10.**

20. Install provided silicone rubber intake cap onto the OEM valves re-circulation port on the intake as shown. This will keep the intake sealed and clean. No clamp is necessary

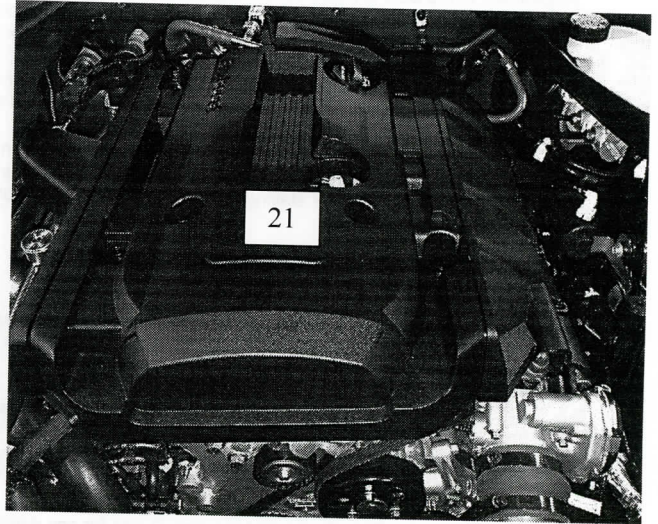


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21. Reinstall the engine cover. Vehicle is ready to start. Check for leaks. Your new charge pipe and BOV system is set to run right out of the box as-is. Consult *adjusting your BOV* section for fine tuning if desired.



## ADJUSTING YOUR BOV

INSTALL THE BOV WITH THE FACTORY SETTING FIRST BEFORE PERFORMING ANY ADJUSTMENT.

Adjustment to the BOV is made by rotating the cap. To increase the spring force on the piston, rotate the cap clockwise in the direction of hard as marked on the top of the cap. To decrease the spring force on the piston, rotate the cap anticlockwise in the direction of soft as marked on the top of the cap - **CAUTION** - Do not rotate the cap beyond the O-Ring groove.

- Start with the BOV cap at the maximum soft position (The indicator O-Ring should be completely covered by the edge of the cap)
- Free rev the engine and back off quickly, the engine should return to normal idle speed – if the engine drops below idle or stalls increase the spring tension by one turn
- Repeat this process until the engine free revs and returns to normal idle speed
- Test drive the car and ensure that when decelerating or changing gears that the engine has minimal backfiring and no stalling. If backfiring is excessive or stalling is noticed then check all connections made during the installation, otherwise increase the spring tension

## MAINTENANCE

Turbosmart recommends that the following maintenance procedure is carried out at six monthly intervals or at higher intervals if the environment is very dusty or wet. Regular maintenance will ensure that your BOV is operating at its peak performance and will extend the working life of the product.

- Remove the cap of the BOV by rotating in an anti-clockwise direction – **CAUTION**, the cap is under spring force, remove with care!
- Carefully remove the piston and thoroughly clean the piston and the bore of the BOV
- Inspect the surface of the piston and the bore of the BOV for scoring or excessive wear, silver coloured marks on the bore are an indication of excessive wear
- Check the Base O-ring and the Cap O-ring for any damage – replace if necessary
- Lubricate the bore and the piston with Uni-Glide™, hydraulic oil or sewing machine oil – DO NOT use grease or viscous oils
- Re-assemble the BOV in the reverse order

## TROUBLE SHOOTING

The following points should be checked if you find that your engine is dipping below normal idle, stalling or if the BOV is functioning poorly. Please note: the following checks will cure 99% of problems experienced with a BOV.

- Check the vacuum hose for splits, cracks, loose connection, kinking or any obstruction – old or fatigued hose may collapse under vacuum causing an obstruction.
- With the engine running remove the vacuum / boost hose from the nipple in the cap of the BOV, there should a loud hissing sound. The engine should idle poorly, double check by covering the end of the hose with your finger – otherwise the hose is blocked.
- Check to see if the BOV is blocked or contaminated with dirt or debris.
- Ensure that the vacuum / boost source is not shared and that the vacuum source is directly from the inlet manifold.
- Check the seal between the compressor cover flange and the BOV. Make sure the supplied O-Rings are installed properly and the BOV Flange is secured on the compressor cover flange with the 3 supplied screws.
- Ensure the spring clamps are secured on silicon hoses and fittings.
- If the valve does not open properly or is slow to react, it could be due to the mapping of the drive by wire system from such things as aftermarket chips and engine tunes. Check with the tuner that the mapping of the throttle is the same as OEM.
- The valve may not open if the engine is just free revved. This is due to the drive by wire system. Check that the valve operates by driving the vehicle.



## 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](http://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.

### Warranty as to Defects – Australian Consumer Law

- 1.1 We warrant for a period of twelve (12) months from the date of supply of the Goods and/or Services that if due to the fault of Turbosmart the Goods and/or Services (as the case may be) provided by Us are defective then We will, as determined by Us do one or more of the following:
  1. In the case of Goods; the replacement of the Goods, the supply of equivalent Goods, the repair of the Goods, the payment of the cost of replacing the Goods or of acquiring equivalent Goods, or the payment of having the Goods repaired; or
  2. In the case of Services; the supplying of the Services again, or the payment of the cost of having the Services supplied again.
- 1.2 You will only be entitled to the benefit of the warranty set out in this pledge, if You have not wholly or partially caused or contributed to the defect to the Goods by the misuse of the Goods or the failure to use the Goods in accordance with any specifications or instructions applicable to the Goods.
- 1.3 The warranty contained in this pledge is provided by Turbosmart Pty Limited of 32 Milton Street North, Ashfield NSW 2131, Australia, Telephone: +(61) 1300 735 506, Email: [sales@turbosmart.com.au](mailto:sales@turbosmart.com.au).
- 1.4 In order for a You to make a claim on the warranty You must within twelve (12) months of delivery of the Goods or Services give written notice to Us at the address specified in clause 1.3 above of the details of any defects in respect thereof. Any Goods referred to in a notice given pursuant to this clause should be left in the state and condition in which they were delivered until such time as We or Our duly authorised agent have inspected the Goods with such inspection to be carried out within a reasonable time after service of such notice. If the Goods are not so left in the state and condition in which they were delivered then the You shall be deemed to have accepted the Goods and the warranty contained in this pledge shall not apply.
- 1.5 You shall be responsible for all expenses associated with making a warranty claim under this pledge however if the Goods and/or Services are found to be defective due to Our fault then We shall reimburse You for any expenses incurred by You in making a warranty claim upon receiving evidence satisfactory to Turbosmart to support such expenditure.
- 1.6 The benefits to You given by the warranty contained in this pledge are in addition to other rights and remedies of You have under a law in relation to the Goods or Services to which the warranty relates. In accordance with the Australian Consumer Law We makes the following statement: "Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure."

EXCEPT AS PROVIDED BY LAW, 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**

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