

Product Name: BOV Smart SP Supersonic 2015+
 2.7/3.5 F150/Raptor Ecoboost
 Product Description: 2015+ 2.7/3.5L Ford Ecoboost OEM
 replacement BOV
 Product Number: TS-0215-1371



IMPORTANT NOTES:

- Please thoroughly read and understand these instructions before commencing this installation.
- The thread on the cap for the vacuum source is AN#3. The standard swivel nipple can be changed to an AN#3 fitting if desired.
- Make sure that the engine is cold before installing this product.
- After fitting this product there may be an audible ticking noise emitting from the EVAP circuit lines, this is normal as the sound is no longer damped and not a cause for concern.

RECOMMENDATIONS

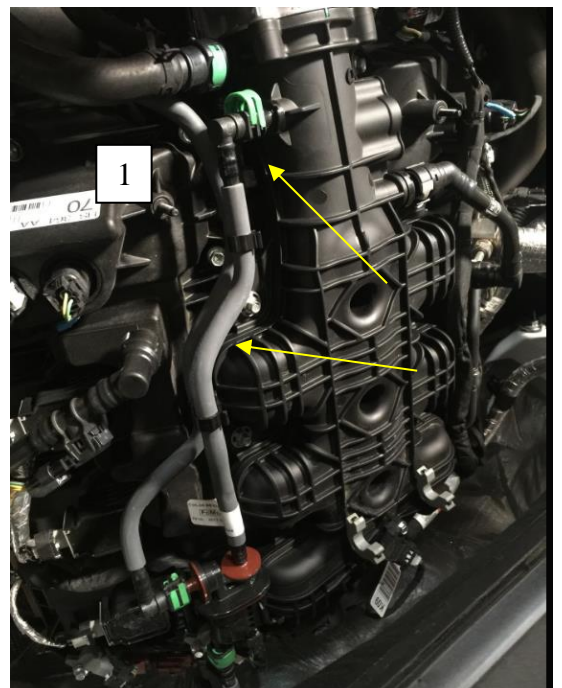
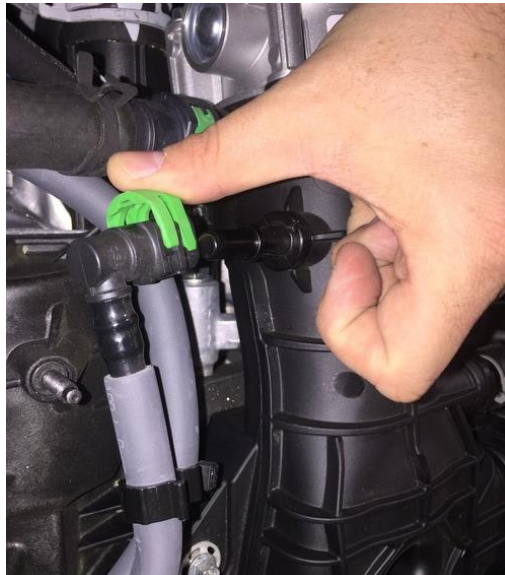
- **Turbosmart recommends that your Blow off valve (BOV) is fitted by an appropriately qualified technician**
- **Turbosmart recommends that a boost gauge be permanently fitted to the vehicle**

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

Quantity	Description	Use
1	Model specific BOV	Replaces standard electronic bypass valve including V-band clamp
1	39.00 X 2.00 O-Ring	Sealing O-Ring (Intercooler adapter-BOV side)
1	32.92 X 3.53 O-Ring	Sealing O-Ring (Intercooler adapter-intercooler side)
1	12.00 X 2.00 O-Ring	Sealing O-Ring (MAP adapter)
1	Electronic plug	Blanking off OEM electronic by pass valve wiring loom
2	5mm Black vacuum hose	Connects BOV to pressure/vacuum source
14"	6.3mmID Reinforced hose	Connect Boost reference adapter to check valve
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	F150 BOV adapter L Bracket	Bracket to mount BOV onto intercooler
1	Hose blank	Blanking plug for OEM plumb back hose
1	Boost reference adapter	Adapter between MAP sensor and manifold for boost/vacuum source.
1	M6x8 button head bolt	Bolt to hold L bracket onto intercooler adapter
1	M6x16 socket head bolt	Bolt to hold L bracket onto intercooler
1	M6 nut	Nut
2	M6 spring washers	M6 spring washers to use with M6 bolts
1	M5x20 button head bolt	Secures OEM MAP sensor on MAP adapter
2	6mm spring clamps	Secures pressure lines
2	250mm cable ties	Fixing pressure lines in position
2	100mm cable ties	Fixing pressure lines in position

HOW TO INSTALL YOUR BOV

1. After Removing the engine cover, locate the OEM evap hose connecting the intake manifold to the check valve. Unclip the quick connect hose fitting by first pressing on the locking tab all the way.



- Carefully cut along the other end of the hose to free it from the check valve nipple.



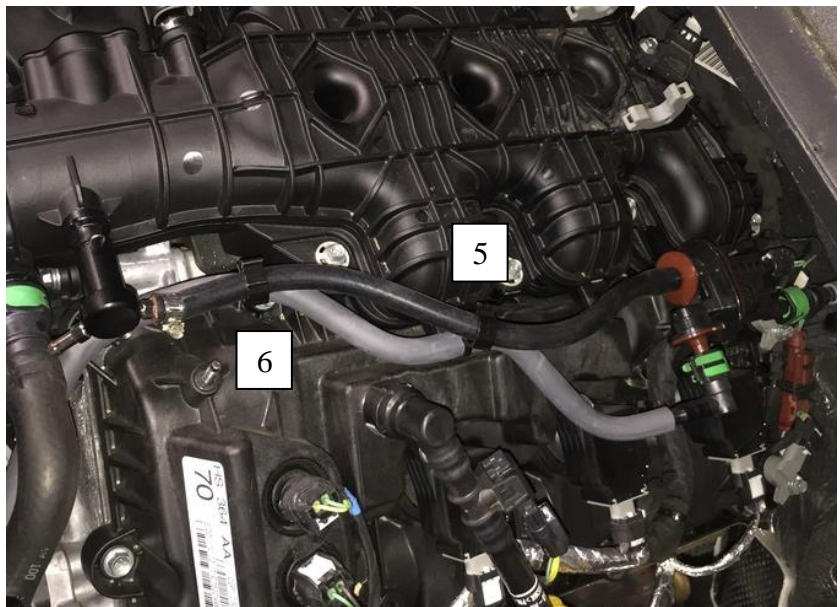
- Using thread sealant, fit two supplied 1/16npt nipples to the boost reference adapter, and fit blank into the third optional port.

- Push the assembled reference adapter onto the intake manifold where the fitting was disconnected earlier, ensure the adapter is on all the way and fit retaining clip to secure boost reference adapter. **(Ensure O-Rings are not kinked or damaged during installation)**

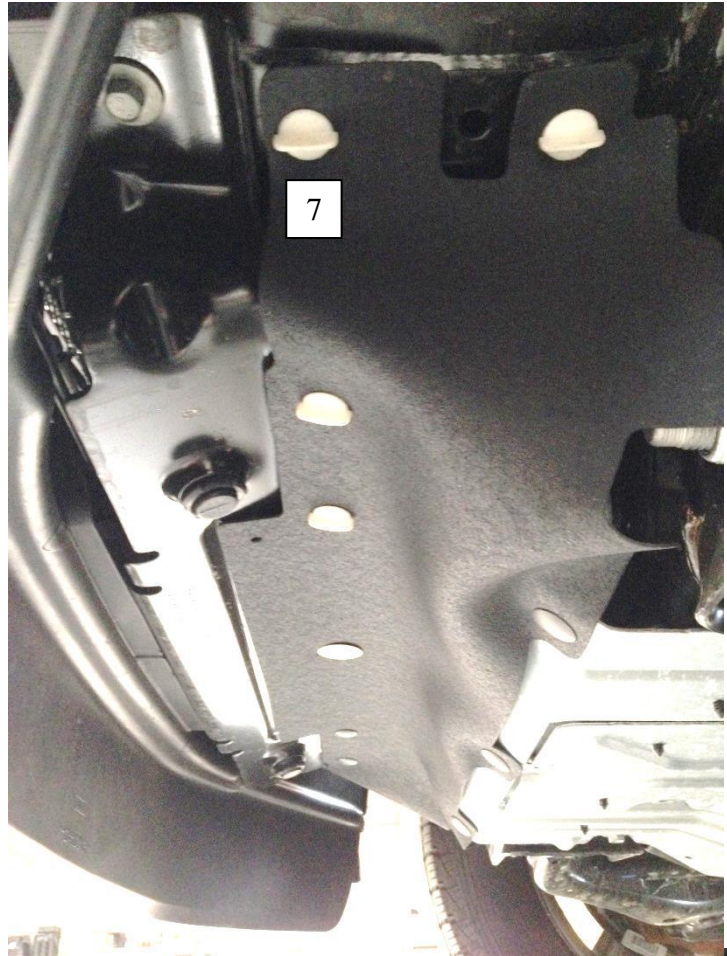


- Lay out the supplied reinforced 6.3mm ID hose between the newly fitted boost reference adapter and the check valve and cut to length

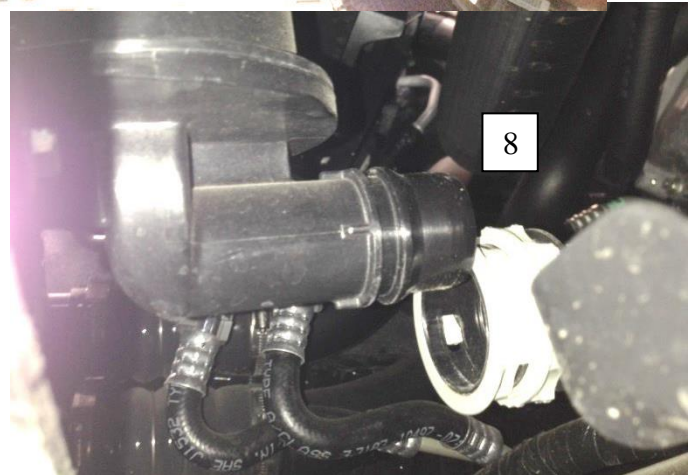
- Using a hose clamp secure one end of the hose to the boost reference adapter and the other end to the check valve. Route the supplied vacuum hose from the nipple towards the front right hand side of the vehicle (OEM BOV location). Use one of the supplied spring clamps to secure the vacuum hose onto the nipple.



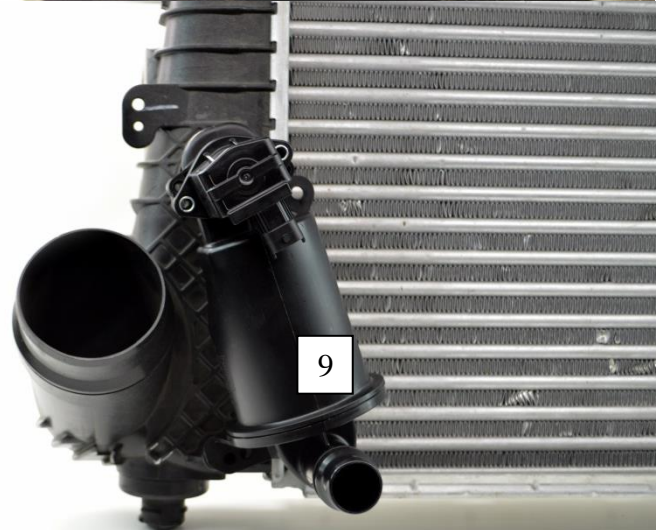
7. Remove the under-tray of the vehicle by removing all of the plastic clips holding the tray in place. Once the under-tray is removed, the intercooler assembly can be accessed. Unplug the OEM BOV plug. Undo the bolts securing the cross member in order to remove the intercooler from the vehicle.



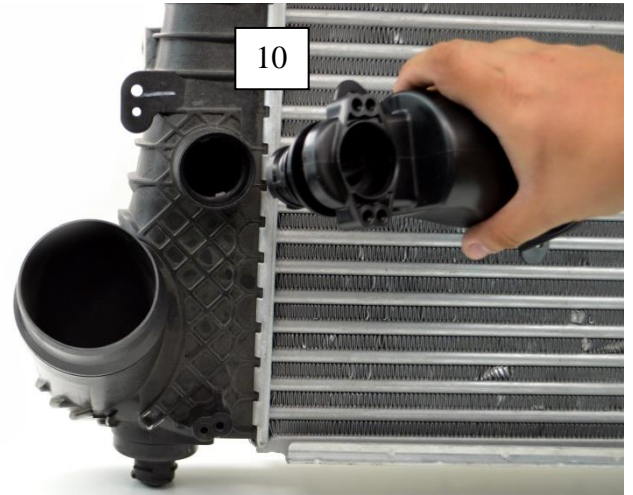
8. Unplug the BOV chamber from the OEM plumb back hose. Install the supplied plumb back hose blanking plug by pressing it into the plumb back hose plug. Please note that the blanking plug will only fit the plumb back hose in one way.



9. Once the intercooler assembly is removed from the vehicle, the OEM BOV can be upgraded. Remove the OEM BOV by undoing the two bolts holding it onto the BOV chamber.



10. Remove the BOV chamber by turning it upwards. The BOV chamber should just unscrew.



11. Fit your new Turbosmart Blow off valve to the supplied intercooler adapter. Ensure that the O-ring (39.00x2.00) is installed on the adapter. Loosely tighten the V-Band clamp to allow the BOV to be rotated into the desired orientation.



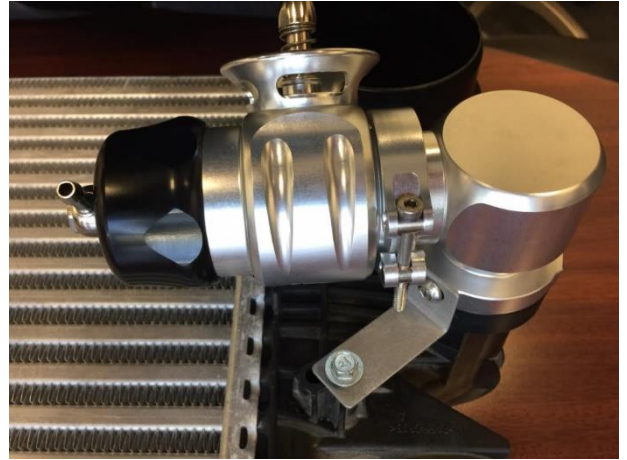
12. Install the supplied bracket on the BOV adapter. Use the supplied M6x8 Note



13. Screw the supplied intercooler adapter in place until it reaches home. Ensure that the O-ring (32.92x3.53) is installed on the adapter.



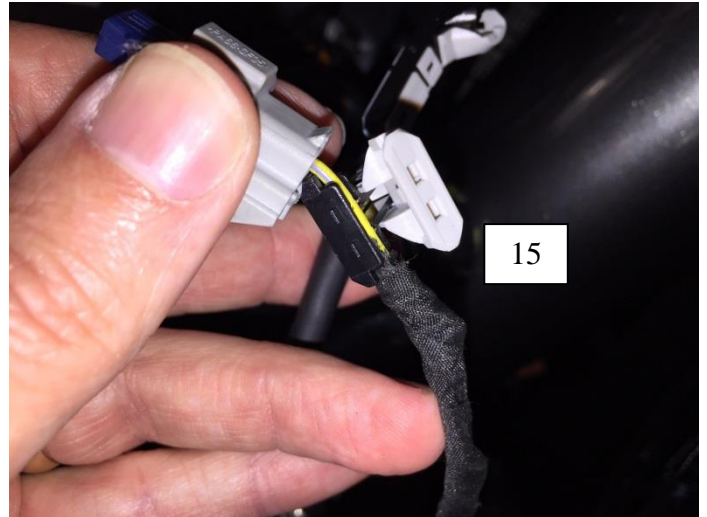
14. Using the OEM screw, secure the L-bracket onto the intercooler. **Do not over tighten.**



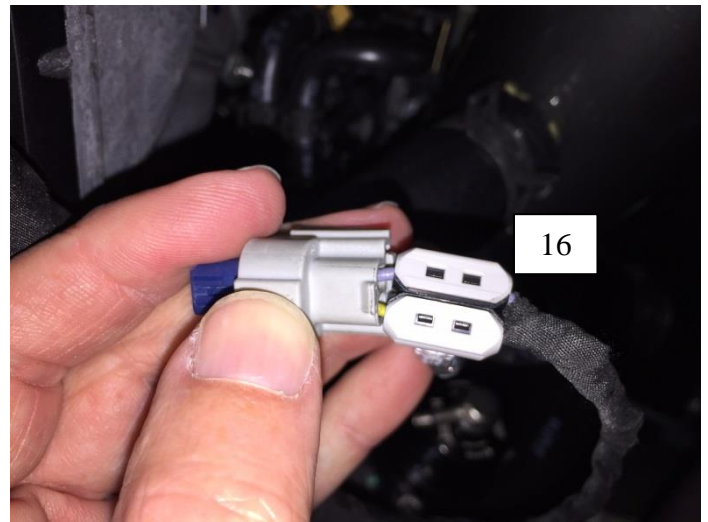
15. Orientate the BOV into position and tighten V-Band clamp. The finished intercooler assembly should look as shown on the right. Please ensure that all fasteners are secured prior to reinstalling the intercooler.



16. Prior to re-installing the intercooler back onto the vehicle. The OEM BOV plug needs to be blanked off. Depending on the purchased kit, you may receive either a direct plug-in plug option or a plug utilising scotch lock connectors. The direct plug-in blanking plug fits only one way. After blanking off the OEM BOV plug, secure it by using the supplied cable ties. If the blanking plug has scotch lock connectors as shown in the picture on the right, Strip back 15mm of mesh covering the wires of the OEM solenoid plug. Clip a scotch lock connector onto each wire, polarity not important. Secure the scotch locks with a pair of pliers ensures that both halves are pressed together.



17. The scotch locks should look like this when installed correctly. Scotch locks are removable if the factory BOV is to be re-installed. Secure plug by using the supplied cable ties.



18. Reinstall the intercooler onto the vehicle by doing the reverse of step 7.
19. Install the vacuum hose (routed from the MAP adapter) onto the nipple. Secure the vacuum hose with one of the hose clamps supplied.
20. Reinstall the under-tray.
21. Start your vehicle and enjoy your new Turbosmart BOV.

ADJUSTING YOUR BOV

Traditionally every BOV needs to be adjusted to suit the vehicle it is being mounted on. The new SP Dual Port BOV technology eliminates the need to adjust the BOV after installation.

ANNUAL MAINTENANCE

Turbosmart recommends that the following maintenance procedure is carried out annually.

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 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.
- 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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