

Product Name: **RACE PORT**
 Product Description: Blow off valve
 Product Number: TS-0204-11XX



IMPORTANT NOTES ON YOUR RACE PORT

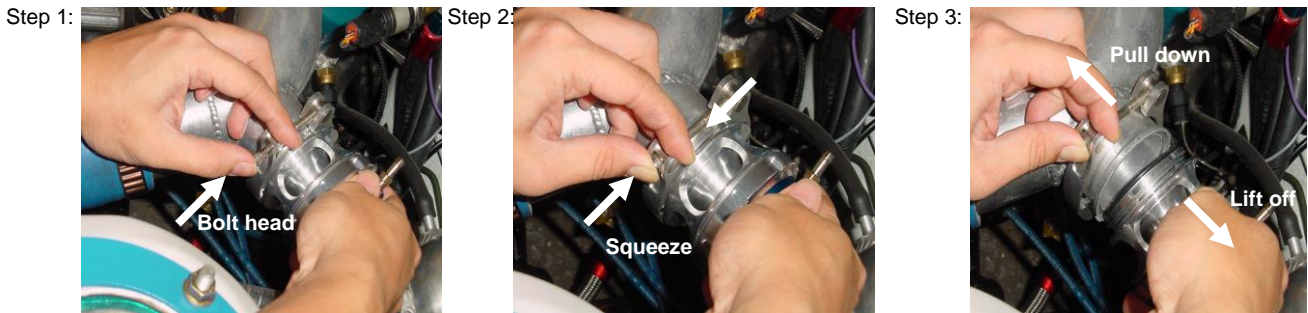
- Use only silicone hose that is the correct size and pressure/vacuum rating for your application when fitting your Race Port
- Ensure that all plumbing is secured with suitable clamps or the correct fittings are used
- Your Race Port should be mounted at least 100mm from any high heat source or adequately shielded
- Check the vacuum level produced by your engine to ensure the right spring is installed in your Race Port for maximum response

RECOMMENDATIONS

- Turbosmart recommends that your Race Port is fitted and adjusted by an appropriately qualified technician

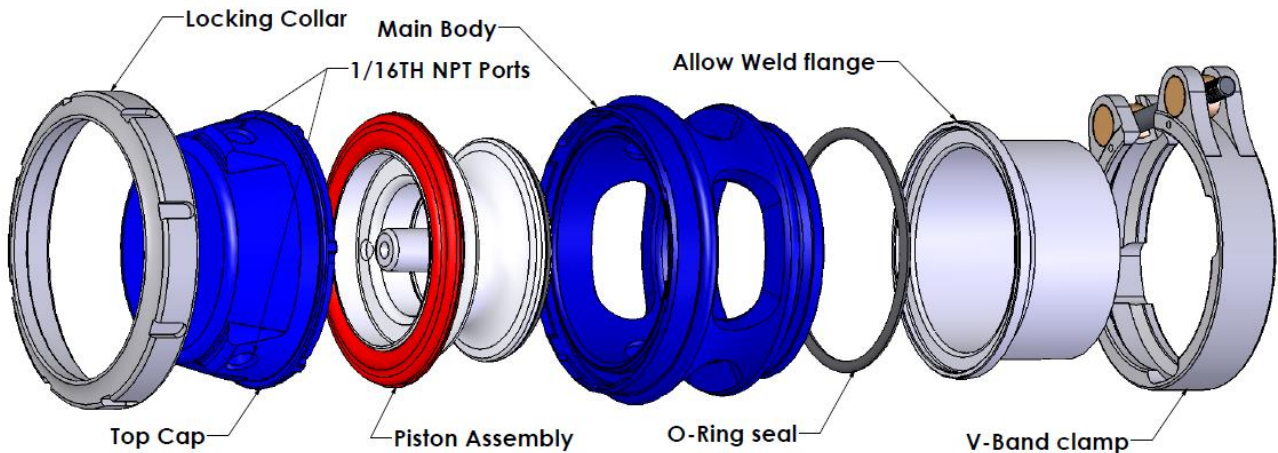
HOW TO INSTALL YOUR RACE PORT

- Allow the engine to cool down before installing your Race Port
- Identify a suitable location along the intercooler/intake piping for the Race Port – this will need to be between the outlet of the turbo and the throttle body ideally between the throttle body and the intercooler
- Remove the Race port from the weld on adapter by removing the V-Band clamp. The V-band clamp is removed by opening the screw until it has reached the end stop, then pushing the head of the screw in a "syringe" like motion and lifting the Race Port off the weld flange.



- Weld the adapter onto the intake pipe in your ideal position, then allow the adapter to cool down
- Put the V-Band clamp over the adapter before re-installing the O-Ring seal and the Race Port
- Open the V-Band clamp and place in position. Tighten the V-Band clamp screw until it is finger tight then turn an additional 2.5 turns or 4 Nm (3 ft/lbs) with an allen key. Be sure not to over tighten the screw as this will cause damage to the V-Band clamp
- Install the provided vacuum nipple into one of the ports in the top cap and install the blanking plug into the other.
- Identify a standalone vacuum / pressure source from a port after the throttle body and connect with correctly sized hose to the vacuum/boost port nipple on the cap of the Race Port. Ensure this line is as short as possible
- Secure all silicone hose ends with correct clamps
- Start the engine and check for air leaks in the system

RACE PORT DIAGRAM



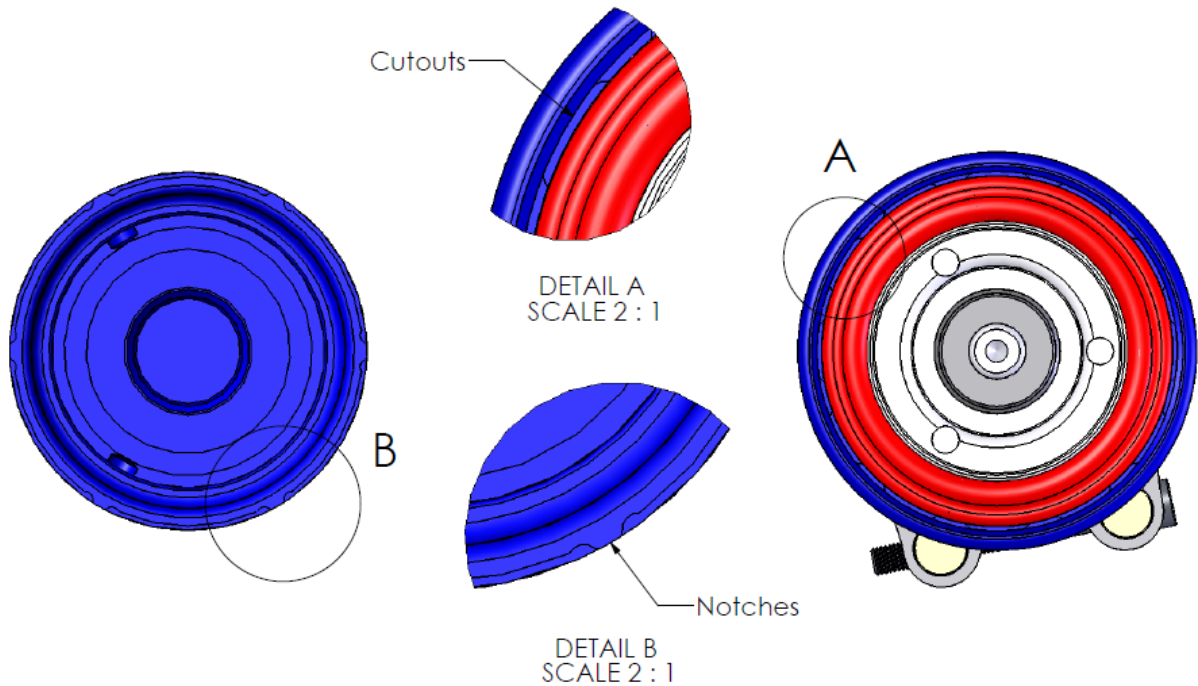
ACCESSORIES AND SPARE PARTS

TS-0204-2001	BOV Race Port S/S Weld flange	TS-0505-2007	1/16 th NPT Male – 1/8 NPT Female fittings
TS-0204-2104	BOV Race Port Spring Kit	TS-0505-2008	1/16 th NPT Male – -3AN Flare fittings
TS-0204-2006	BOV Race Port Flange blank	TS-0505-2009	1/16 th NPT Male – -4AN Flare fittings
TS-0204-3001	BOV Race Port Alloy Weld flange	TS-0505-3007	74mm Locking Collar
TS-0204-3102	BOV Race Port 18 inHg spring	TS-0505-3008	74mm Collar tool
TS-0204-3103	BOV Race Port Piston Assembly	TS-0505-3009	1/16 th NPT 6mm hose tail fittings
TS-0204-3004	BOV Race Port V-Band clamp		
TS-0204-3005	BOV Race Port Flange O-Ring		

SPRING REPLACEMENT

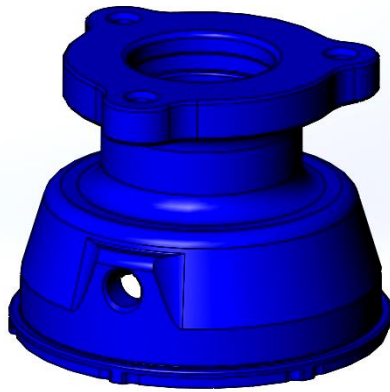
The Race Port has a variety of springs to suit different vacuum levels. Different tuning levels produce different levels of idle vacuum. The Race Port is fitted with a standard spring which will remain closed until the engine produces more than 18 in/Hg. Turbosmart has a range of springs to suit different vacuum levels to ensure high levels of response from the Race Port.

- 1) Remove the Race Port off the intercooler piping
- 2) Remove any pressure nipples in the top cap. Hold the cap down in a press or vice. Unscrew the locking collar. Slowly, back off the vice or press and remove the cap.
- 3) Select and install the required spring or combination of inner and outer springs into the piston assembly.
- 4) Ensure that the diaphragm is inside the diaphragm groove.



- 5) Slowly push the top cap down on the lower diaphragm housing in a vice or press. As the cap reaches the diaphragm, line up the notches in the cap (Figure 1) with the cut outs (Figure 2) in the lower diaphragm housing. Carefully push the cap down till the cap is home on the lower diaphragm housing. Reinstall the locking collar and tighten with the provided locking tool. Make sure that the cap is clamped down while tightening the collar.

VALVE POSITION SENSOR CAP

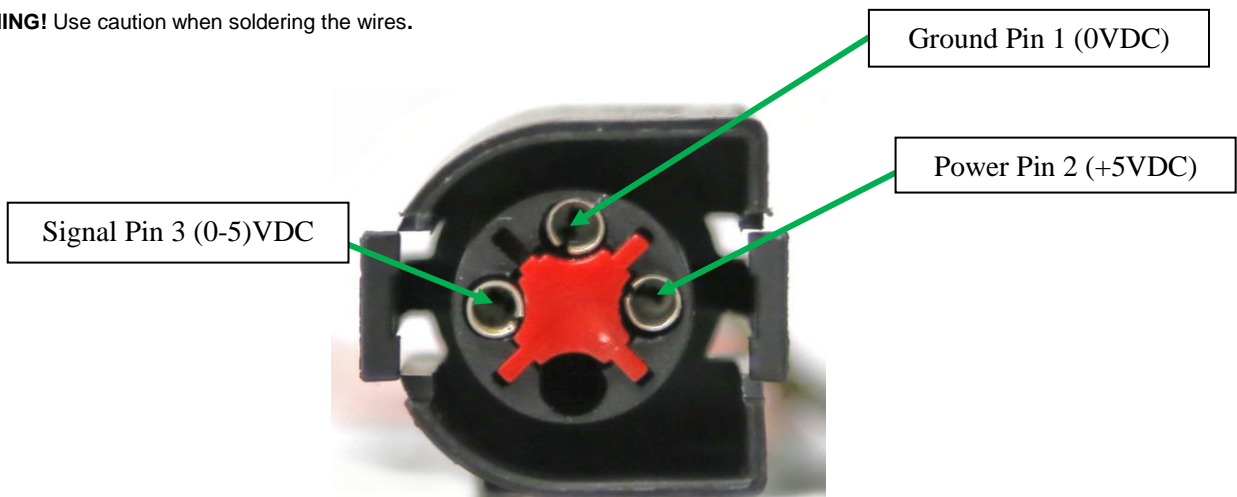


The Race Port can be upgraded to change the top cap to allow for a new piece which has provision for a valve position sensor. The sensor is an analog 0-5V contact type.

- The cap is designed to be a straight replacement to the original blow off valve cap. No modifications are required for fitment.
 - The "top port" is incorporated in the valve position sensor cap design. Pressure is still supplied to the top port as per normal race port operation.
 - The valve position sensor (TS-0502-2008) and valve position sensor plug (TS-0502-2009) are sold separately.
- 1) Remove the Race Port off the intercooler piping
 - 2) Remove any pressure nipples in the top cap. Hold the cap down in a press or vice. Unscrew the locking collar. Slowly, back off the vice or press and remove the cap.
 - 3) Ensure that the diaphragm is inside the diaphragm groove.
 - 4) Slowly push the sensor cap down on the lower diaphragm housing in a vice or press. As the cap reaches the diaphragm, line up the notches in the cap with the cut outs in the lower diaphragm housing. Carefully push the cap down till the cap is home on the lower diaphragm housing. Reinstall the locking collar and tighten with the locking tool. Make sure that the cap is clamped down while tightening the collar.

Wiring the sensor plug

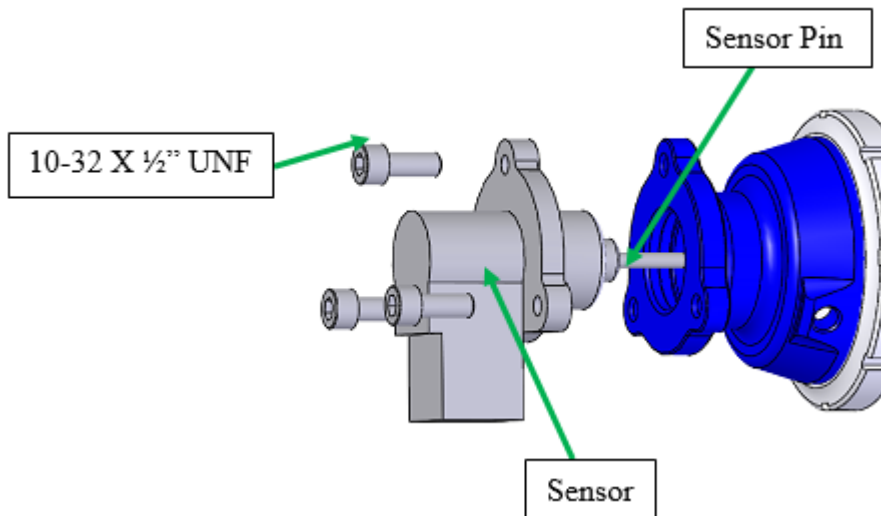
WARNING! Use caution when soldering the wires.



- The valve position sensor plug has three wire ends. The first terminal is for positive voltage supply (+5VDC, black and green wire), the second terminal is for ground supply (0VDC, black and white wire) and the third terminal is the positive variable voltage return (0-5 VDC).
- Connect the wires to your data logger accordingly. Use a solder iron and heat shrink insulation when joining the wire ends.
- Gently inset the plug into the sensor. The plug can only be inserted in one way. Check for plug and sensor orientation. Do not force the plug into the sensor.
- Test the wiring. Gently push the sensor pin up and down and ensure that the voltage input on the data logger is changing between 0-5 VDC. The data logger should approximately read 0 VDC when the sensor pin is in free form and approximately +5VDC when the sensor pin is pushed all the way in.
- Ensure that the wiring is properly shielded from external heat sources.

Installing the valve position sensor

WARNING! Use caution when installing the valve position sensor.



- Insert sensor into cap. Rotate left and right as you are pushing the sensor in. Ensure that the screw holes in the sensor body are aligned with the tapped screw holes on the sensor cap in your desired position.
- Use supplied screws to screw the sensor to the cap. Torque screws to 2 N-m (1.5 lb-ft). Be careful not to over tighten the screws as it will damage the sensor.

TROUBLE SHOOTING

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

- 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 / pressure hose from the nipple in the cap of the Race Port, there should a loud hissing sound. The engine should idle poorly, double check by covering the end of the hose with your finger. If this does not occur, the hose could be blocked or crimped. Check the hose and replace if necessary.
- Ensure that the vacuum / pressure source is not shared and that the vacuum source is directly from the inlet manifold
- Check the seal between the adapter and the Race Port – ensure that there is no gap between the Race Port base and the weld flange
- Check the join between the adapter and the intercooler pipe for leaking
- Ensure that the right spring is installed in the Race Port for your engine's vacuum level

The Turbosmart Pledge

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Happy motoring!
The Turbosmart Team

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