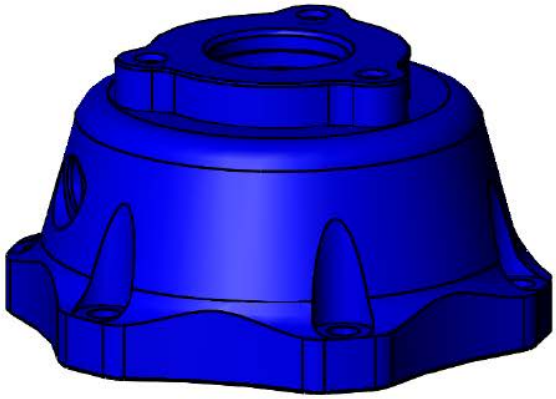
Product Name:	**WG50/60 Valve Position Sensor**
Product Description:	Valve Position Sensor WG50/60
Part Numbers:	TS-0502-301X, TS-0502-200X

IMPORTANT NOTES ON INSTALLATION OF YOUR WASTEGATE SENSOR CAP, SENSOR AND SENSOR PLUG

- Fitting your sensor cap may require fabrication or modification to your existing setup. Turbosmart recommends that your sensor cap is fitted by an appropriately qualified technician.
- Turbosmart recommends that a qualified auto electrician completes the installation of the sensor plug.

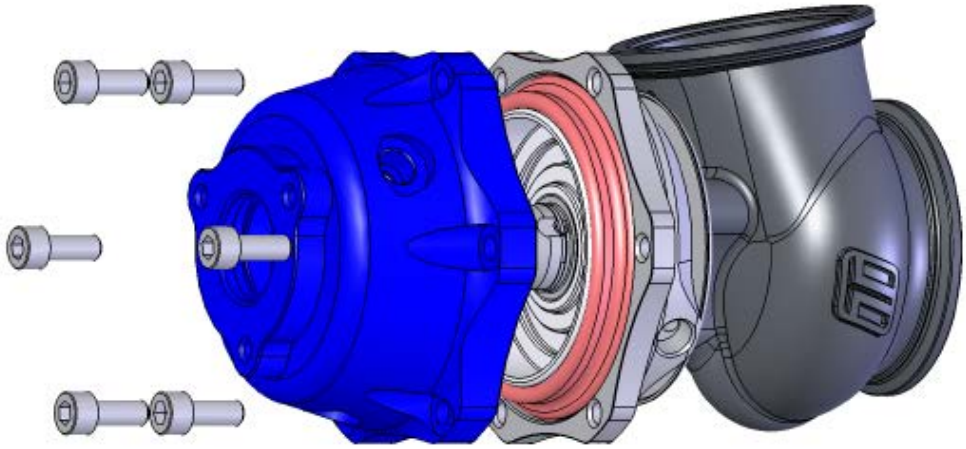
PRO-GATE 50MM WASTEGATE VALVE POSITION SENSOR CAP



- The cap is designed to be a straight replacement to the original wastegate cap. No modifications are required for fitment.
- The “top port” is incorporated in the valve position sensor cap design. Pressure may still be supplied to the top port to help close the wastegate valve.
- The valve position sensor (TS-0502-2008) and valve position sensor plug (TS-0502-2009) are sold separately.

Changing the wastegate caps

WARNING! Use caution when changing the wastegate caps**.**



- Remove the wastegate from the exhaust manifold. Use **CAUTION!** The wastegate may still be **HOT!**

- Hold the cap down in a press or vice. Using a 5mm Allen Key, remove the M6 Socket head cap screws that secure the upper wastegate cap. **WARNING!** The cap is under spring tension, wear safety glasses and remove with care! Slowly back off the vice or press and remove the cap.

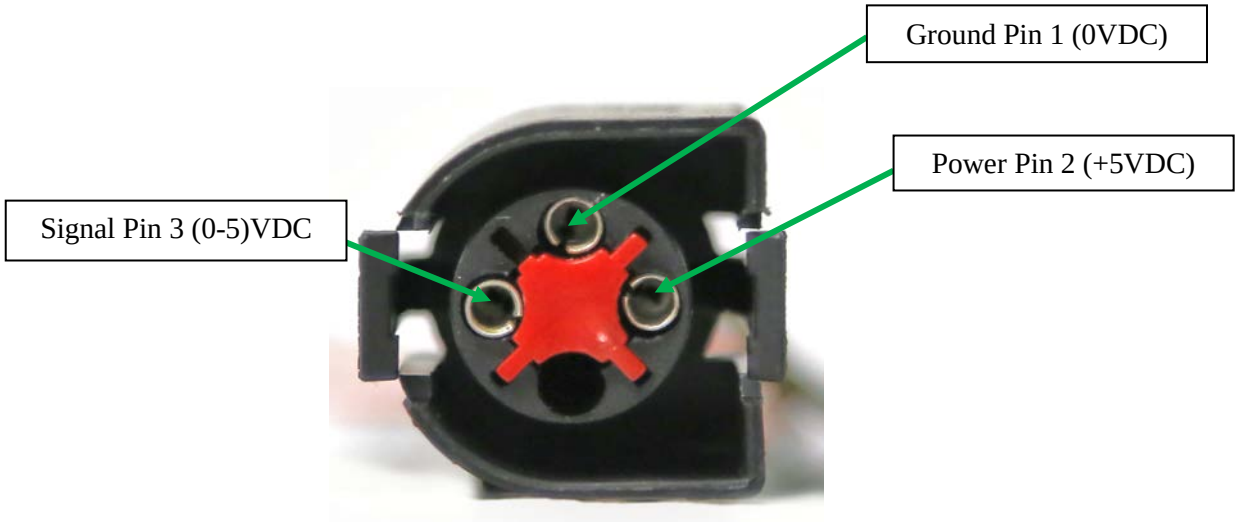
- Slowly rotate the wastegate cap left and right while pulling it of the wastegate body.

- Lightly place the sensor cap over the body. Ensure that the diaphragm is inside the diaphragm groove. The six holes on the outer ring of the wastegate diaphragm should be in line with the 6 holes in the lower wastegate cap.

- Slowly push the top sensor cap down on the lower diaphragm housing in a vice or press. As the cap reaches the diaphragm, slowly turn the cap left and right as you lower the cap to the lower diaphragm housing. Make sure that the convolution of the diaphragm is not pinched between the top cap and the lower diaphragm housing. Refit the upper wastegate cap re-using the M6 Socket head cap screws. Again you may find it helpful to use a press to hold down the cap with a press or a clamp while tightening these screws. Tighten the M6 Socket head cap screws using a 5mm Allen Key and torque to 8 N-m (5.9 lb-ft).

Wiring the sensor plug

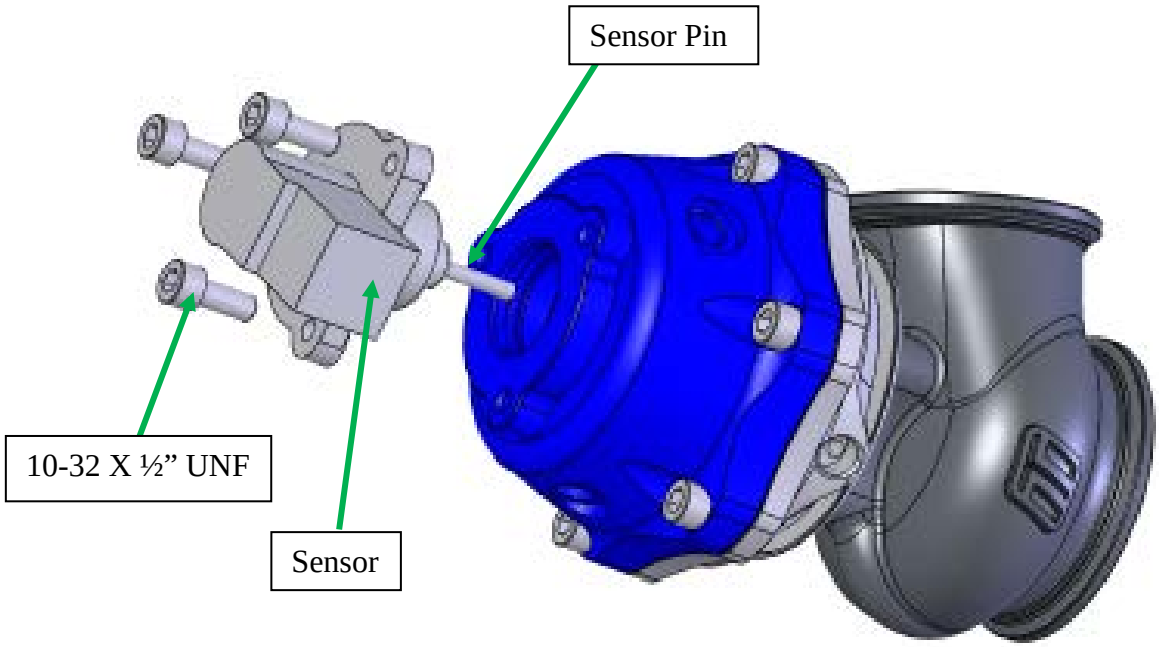
WARNING! Use caution when soldering the wires**.**



- 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.