Augment Automotive Technical Manual Title: Augment Automotive AugTronic Installation Guide Document Number: AUG/MAN/013 Version: 002 Author: Tom Barker Date: 09 Feb 2016	

This manual has been written to help users to install the base AugTronic hardware on their vehicle. This includes installation of the ECU, Plug and Play Wiring Loom, MAP Sensor, Intake Air Temperature Sensor and AFM Delete Pipe.

AugTronic Porsche 944 Kit

Main ECU Installation

The ECU should be installed as per the factory ECU. If a breakout box is included it should be mounted securely.

Plug and Play Wiring Loom Installation

The plug and play wiring loom connects to what was the Air Flow Meter plug. Guide pins are moulded into the connector which ensure correct alignment. Metal clips hold the connector together, ensure that they are seated correctly.

Plug and play wiring loom AFM connector

The intake air temperature sensor should be connected to the two pin connector and the MAP sensor to the 3 pin connector.

MAP Sensor Installation

The MAP sensor should be mounted securely in an area which does not experience excessive heat e.g. (< 70°C) or vibration. The MAP sensor must be connected to the three pin connector on the Plug and Play Wiring Loom.

The MAP sensor has a vacuum connection to the inlet manifold after the throttle body. Typically the easiest way to get a good vacuum signal is by tapping into the vacuum lines to the fuel pressure regulator and fuel damper. Ensure the vacuum lines are in good condition and well fixed. If the MAP sensor loses its vacuum signal the car will start but will run very badly if at all. Silicone tubing and barbed fittings are recommended for this purpose. In boosted applications retaining clips are also recommended.

MAP sensors come in varying signal ranges e.g. 0.2-1 bara for a normally aspirated car or 0.2 to 4 bar for a turbocharged vehicle. These ranges correspond to the MAP sensor voltage output and the AugTronic ECU is configured for a specific MAP sensor range. If an incorrectly ranged sensor is used the engine is likely to run very badly, if at all and could result in engine damage. For information on configuring an AugTronic ECU for different MAP sensors consult the Augment Automotive 3D Tuner Manual which can be found under the support section of the

Augment Automotive website.

1 Bar Map Sensor

Augment Automotive 4 Bar MAP Sensor

Intake Air Temperature Sensor Installation

Intake air temperature sensors should be mounted in the intake air tract. For a normally aspirated car this can be anywhere along the air duct. Typically we install in the air box on a normally aspirated car. For a turbocharged car it is recommended to be installed after the turbocharger.

There are many types of air temperature sensor. The AugTronic ECU works with common thermistor type sensors which have a resistance that varies with temperature. The AugTronic ECU is calibrated to the output curve of a specific sensor. If changing a sensor ensure that the sensors output curve matches that of the AugTronic ECU otherwise incorrect temperature measurements will be made.

Consideration should be given to a common issue of intake air temperature heat soak. Plastic bodied sensors are good in this respect as they are better insulated and have less thermal mass. The sensor should be installed in a duct with low thermal mass e.g. thin walled aluminum or plastic and away from sources of heat if possible.

Two types of air temperature sensor used by Augment Automotive

AFM Delete Pipe Installation

If an air flow meter delete pipe is provided it should be fitted to replace the air flow meter. This is achieved by removing the four bolts that connect the air flow meter to the air filter and using nylock nuts with the original bolts to secure the air flow meter delete pipe the air filter. The original gasket that seals the air flow meter to the air filter should be re-fitted.