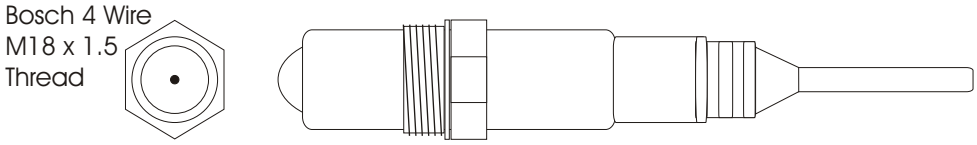
Closed Loop Lambda Control Introduction:

Closed loop lambda control uses the Lambda sensor to check the exhaust o2 content and then changes the fuel maps accordingly. All the parameters are fully configurable in the Gotech software. It is not recommended to use the closed loop lambda control on turbo charged vehicles or more than 25% throttle on normally aspirated vehicles.

The Lambda sensor must be mounted in the exhaust pipe near the exhaust header or extractor, usually after the collector. The sensor uses the exhaust gas to detect if the engine is running lean or rich.

The vehicle must be properly mapped on a rolling road before the closed loop lambda control can be used. The recommended lambda sensor is a 4 wire Bosch as used on the VW Golf vr6.

Colour codes for the Bosch four wire Lambda sensor:
White - 12v positive (Can be on either one of the white wires)
White - Earth (Can be on either one of the white wires)
Gray - Earth from instrument (brown / white)
Black - Signal (Black / Green)



WARNING:
A lambda sensor can easily be damaged by oil and debris in the exhaust system. Take care never to drop the lambda sensor as it may lead to permanent damage. Most Lambda sensors are intended for unleaded gasoline only and will not last long with leaded gasoline. Normally when a lambda sensor packs up the reading goes to 14.7 and does not change when you enrich the engine.

Closed Loop Lambda Control:

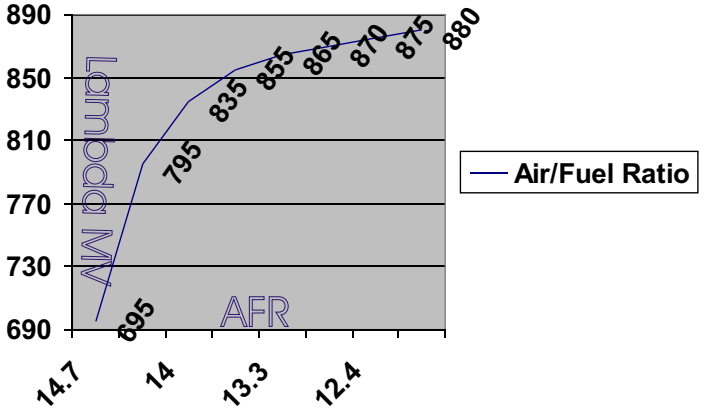
Software Settings:

All of the closed loop lambda control settings are located in the f5 (settings) screen.

1. AFR Preset (mv) — Ideal voltage output on the lambda sensor, this value is directly related to the air/fuel ratio. Best would be to read the lambda manufacturer specification on the lambda voltages.

Common values for a 4 wire Bosch sensor are:

Air/Fuel Ratio		Millie Volt Output
14.7 AFR	=	695mv
14.5 AFR	=	795mv
14.0 AFR	=	835mv
13.59 AFR	=	855mv
13.3 AFR	=	865mv
13.0 AFR	=	870mv
12.4 AFR	=	875mv
11.76 AFR	=	880mv



Note: Always consult the lambda manufacturers specifications before use.

Closed Loop Lambda Control Continued:

2. Lambda Ramp Interval — Controls the speed of the correction. A lower value makes the correction happen faster.

3. Lambda Limit — Limit of fuelling adjustment allowed. The higher the value, the more adjustment will be allowed.

4. Lambda Switch Off Load — The load site from where the closed loop will be inactive. Eg load site 10.

5. Lambda RPM — From which RPM the lambda sensor will be active. Eg 2500rpm.