

## Lambda Control System ( EURO III )

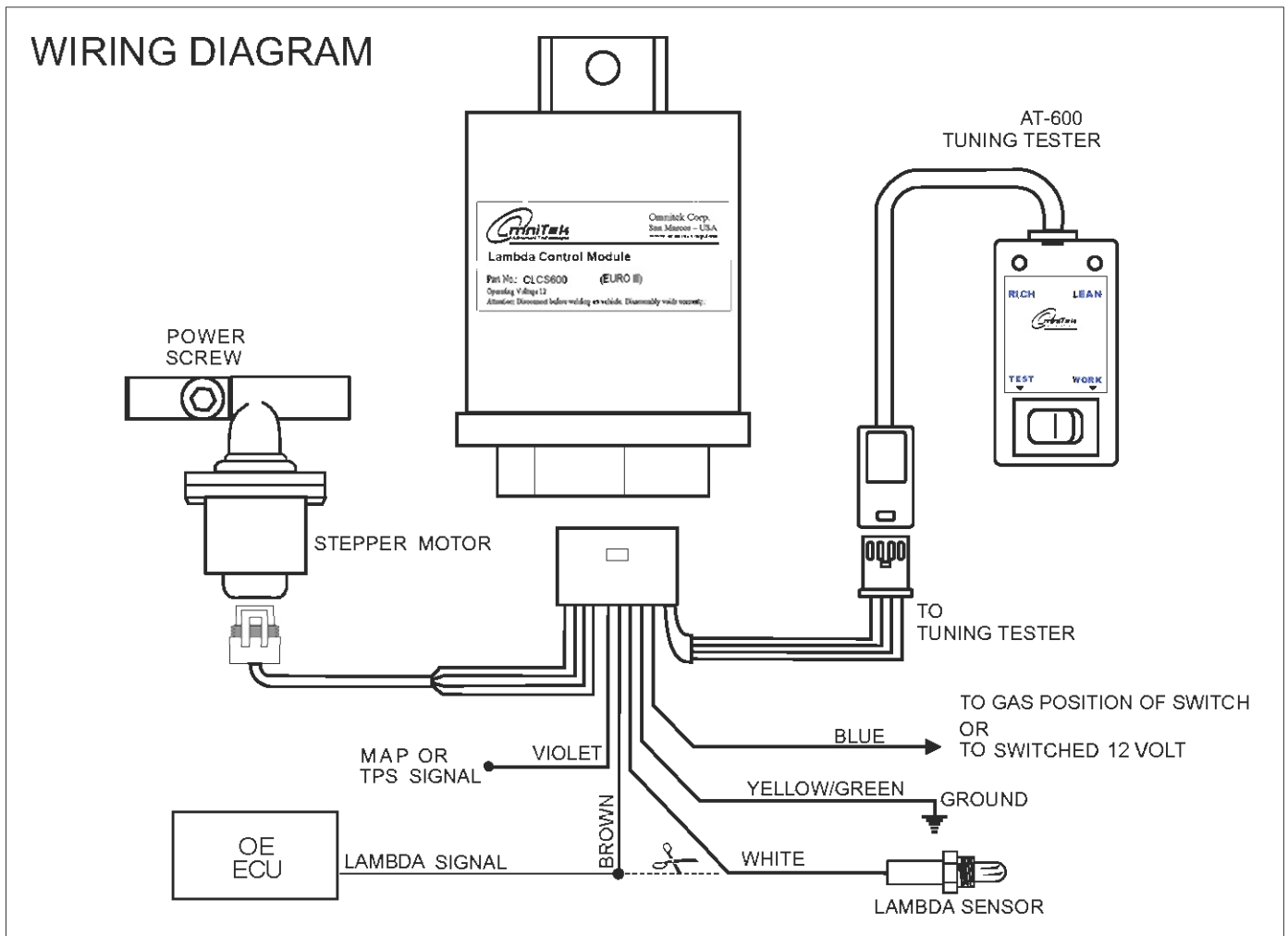
# CLCS600

The CLCS600 closed-loop lambda control system reliably controls the Air/Fuel ratio of natural gas (CNG) or propane (LPG) engines at all operating conditions to stoichiometric.

This reduces tail pipe emissions and fuel consumption.

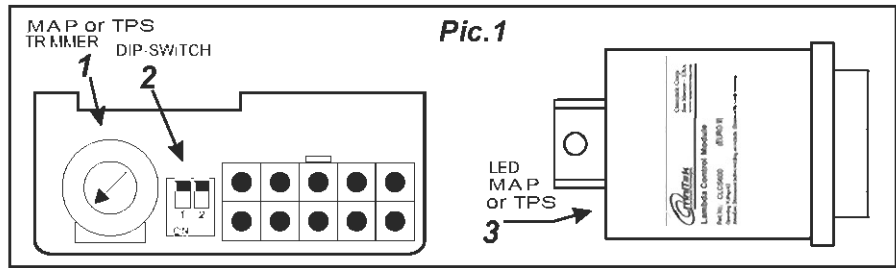
Included are the electronic control module, a high-resolution stepper motor gas flow metering valve and wiring loom.

Feedback from original or retrofit throttle position sensor (TPS) or manifold absolute pressure sensor (MAP), as well as an exhaust oxygen sensor is all that is needed to provide the performance needed to keep the A/F ratio to EURO II or EURO III levels. (high efficiency catalytic converter is needed).



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### INSTALATION

Locate and fix the CLCS600 Lambda Control Module in a vertical position, away from any heat source and protect from water contact.  
 Ensure the wiring connection port is facing downwards to prevent water entry into circuitry.  
 Make sure the wiring connections as per the wiring diagram.  
 Install the stepper motor in the vapor supply line, as close as possible to the gas mixer.

### CALIBRATION

Start the engine, allow to warm up to operating temperature and roughly adjust the power screw to mid range or until smooth engine running is obtained, with the engine running at approx. 2500 RPM.  
 Allow the engine to idle at approx. 850 RPM, adjust the idle mixture on the gas converter until smooth idling is obtained.

With the engine idling smoothly, turn the MAP trimmer (See pic. 1, Item #1) so that the red light (item #3) just switches off. This light should turn back on as soon as the accelerator pedal is slightly depressed.  
 NOTE: Where there is no need for the stepper motor to control at idle, leave the violet MAP/TPS wire Disconnected and properly insulated.

Connect the Tester (AT-600) to the CLCS600 Lambda Control module as shown in the wiring diagram and switch to "Test" position.  
 Increase the engine speed and hold at 3500 RPM. Turn the power screw on the stepper motor until the Red light on the Tester (AT-600) is "ON" and constant, indicating "Rich" mixture.  
 Allow the engine to idle. Adjust the idling mixture on the converter until the red LED light on the Tester (AT-600) is "ON" and constant, indicating "Rich" mixture.  
 Change the switch position on the tester (AT-600) to "Work" mode, to memorize the calibration.  
 To verify the calibration: once again increase the engine speed to 3500 RPM and hold. The LED lights on the Tester (AT-600) should now alternate between Red and Green, indication that the air to fuel ratio is now running stoichiometric. The calibration is now completed.

Test the vehicle on the road and verify by means of the Tester, that even when driving the Red and Green LED's alternating correctly. If the condition found is too lean (more time for the Green LED ON), unscrew the power screw by a half turn.  
 (NOTE: Engine speed of 3500RPM is indicative only)

### EMULATION SELECTION ← not used with mono-fuel applications (CNG only) (only used on petrol + CNG bi-fuel applications)

three modes of Lambda probe emulation. (see pic. 2)

↓ use this setting

