ENGLISH

NEW EASY FAST ECU WITH OBD COMMUNICATION

Introduction:

The OBD ECU has been created not for managing the entire calibration process with only OBD but using read information K or CAN lines allowing to OBD ECU to self adjusting itself during the over time (within established limits) following modified conditions of installed system.

Main Characteristics:

This ECU has been created on the base of Easy Fast control unit adding the possibility to manage OBD communication on K or CAN line.
It has the same functions of present Easy Fast ECU.
Pin-out compatible with current Easy Fast ECU, have been added only three wires for OBD communication (one for line-k and the others for CAN line)
Possibility to display petrol fuel trims (without using OBD scan tool)
Self adaptivity can be enable or disable
Full compatibility with currently used calibrations

Self-recognizing of connection type:

- ISO9141 — K-line pin7 (type 1)
- KWP – 2000 Fast Init — K-line pin7 (type 2)
- KWP – 2000 Slow Init — K-line pin7 (type 3)
- CAN standard - 250 kbps — CAN-H pin6, CAN-L pin14 (type 6)
- CAN extended - 250 kbps — CAN-H pin6, CAN-L pin14 (type 7)
- CAN standard - 500 kbps — CAN-H pin6, CAN-L pin14 (type 8)
- CAN extended - 500 kbps — CAN-H pin6, CAN-L pin14 (type 9)

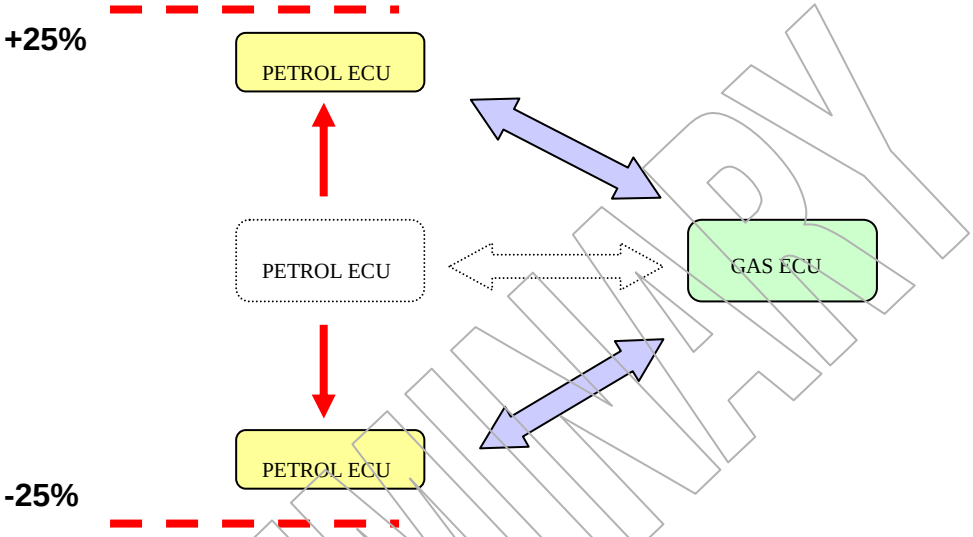
Applicability:

At the moment is compatible with petrol ECU in which Fast and Slow integrators are the following (for different types of correctors please contact LOVATO GAS S.p.A.)

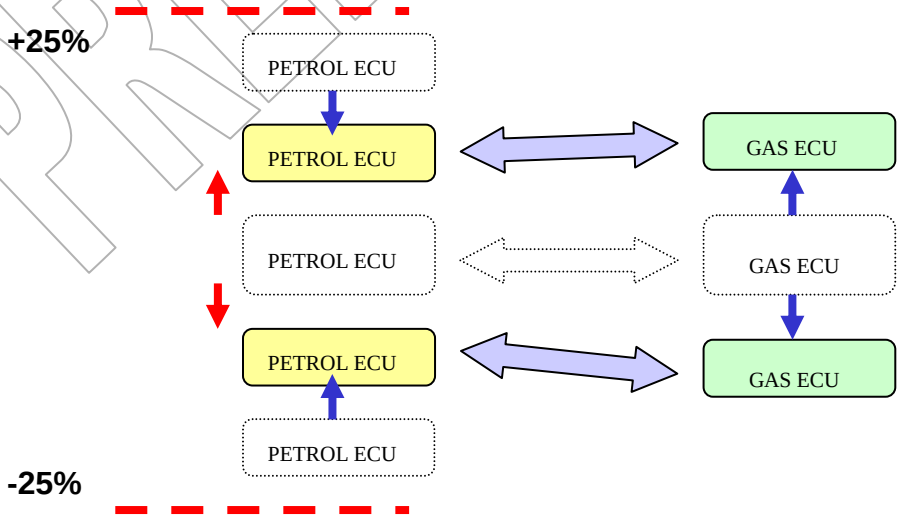
- ± 25%
- ± 50%
- "rights" or "inverted"

FUNCTIONING PRINCIPLES:

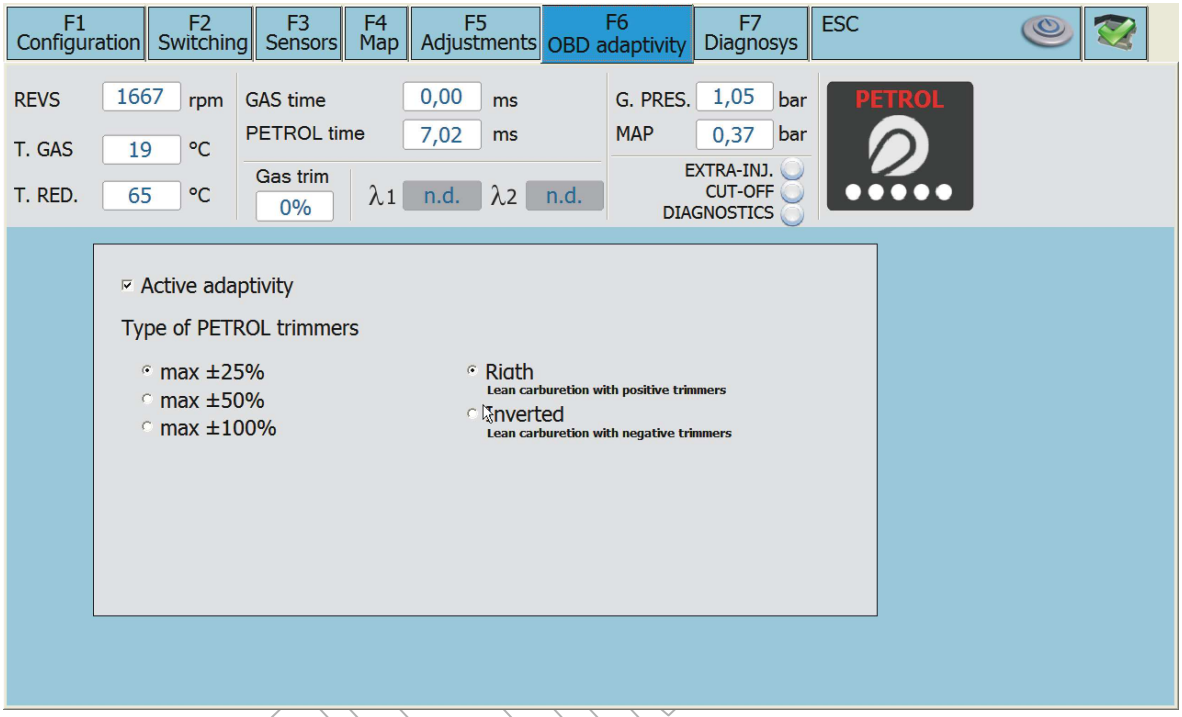
ADJUSTEMENT OF ECU PARAMETERS



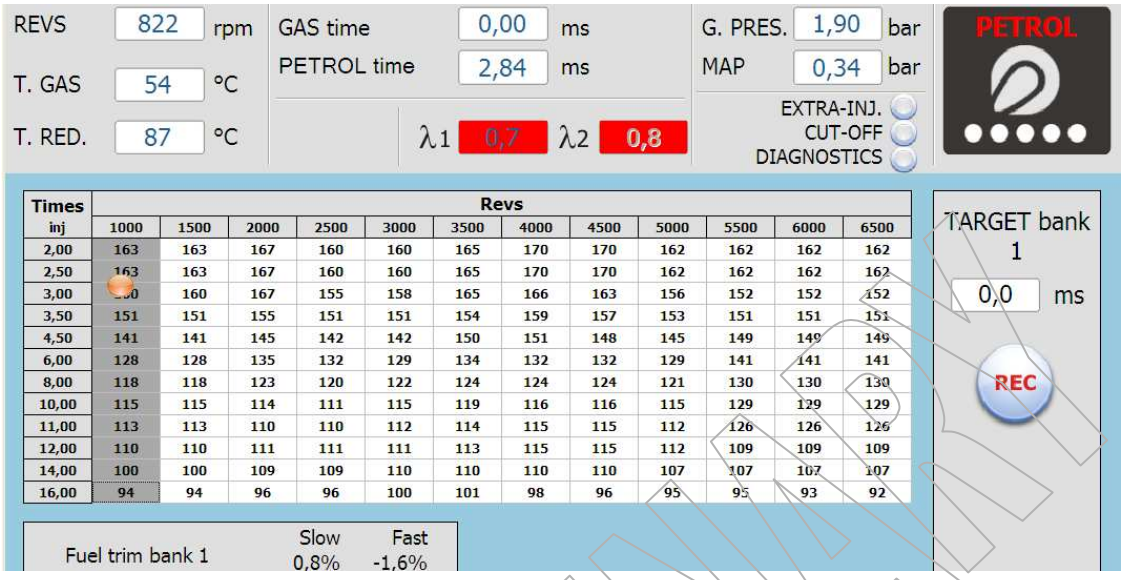
SELF ADAPTATIVITY STRATEGY CALCULATE GAS COEFFICIENT OF CORRECTION AND PETROL ECU ADJUSTEMENTS WILL DECREASE



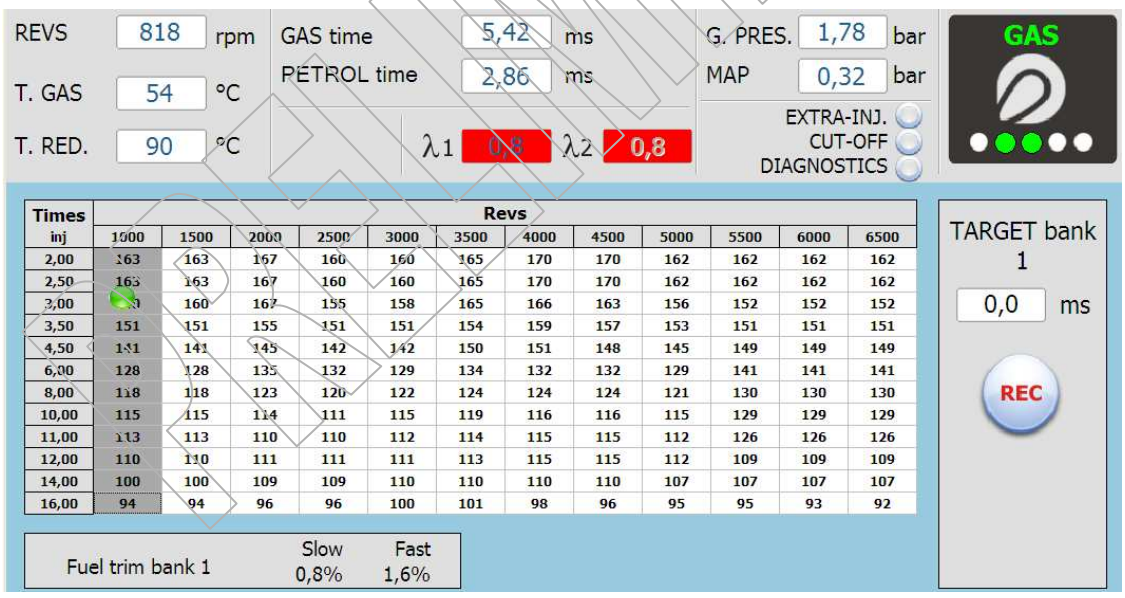
OBD ADAPTIVITY WINDOW



In F6 window is it previously possible to enable or disable self-adaptivity setting the right type of petrol fuel trims.
Gas correction coefficient and slow/fast fuel trims are visible in window F4 (see following example)
When ECU is communicating PC, the visualization of slow/fast fuel trims starts after about a minute: this for giving priority to an eventual OBD scan tool that may be connected on the vehicle.
In case an OBD scan tool has been connected it is not possible to read correctors.
Control units are working with software version 1.3.9 or higher.

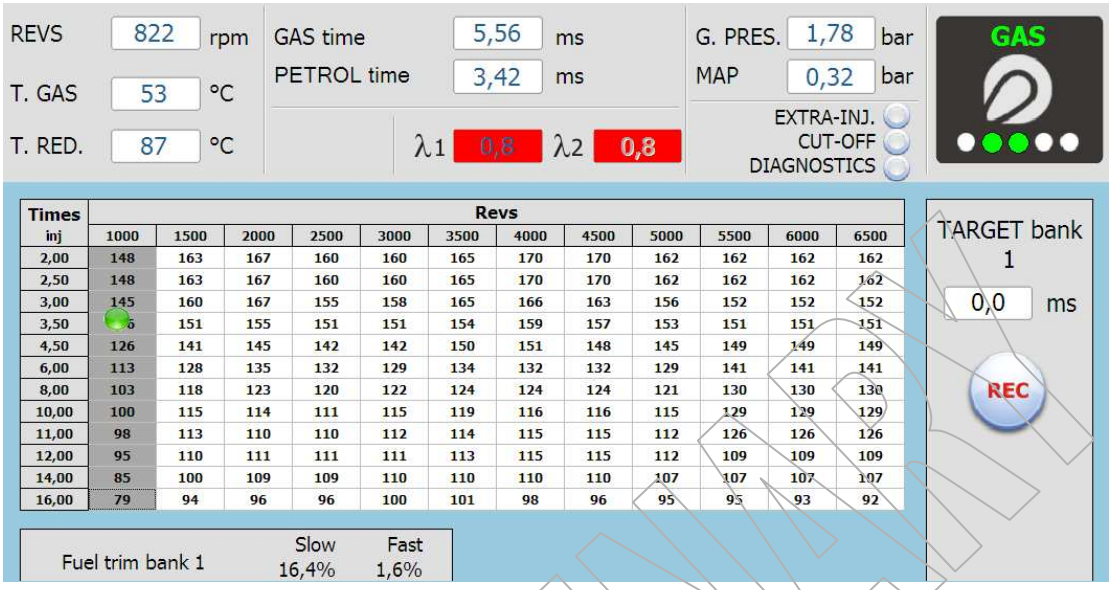


ON PETROL MODE



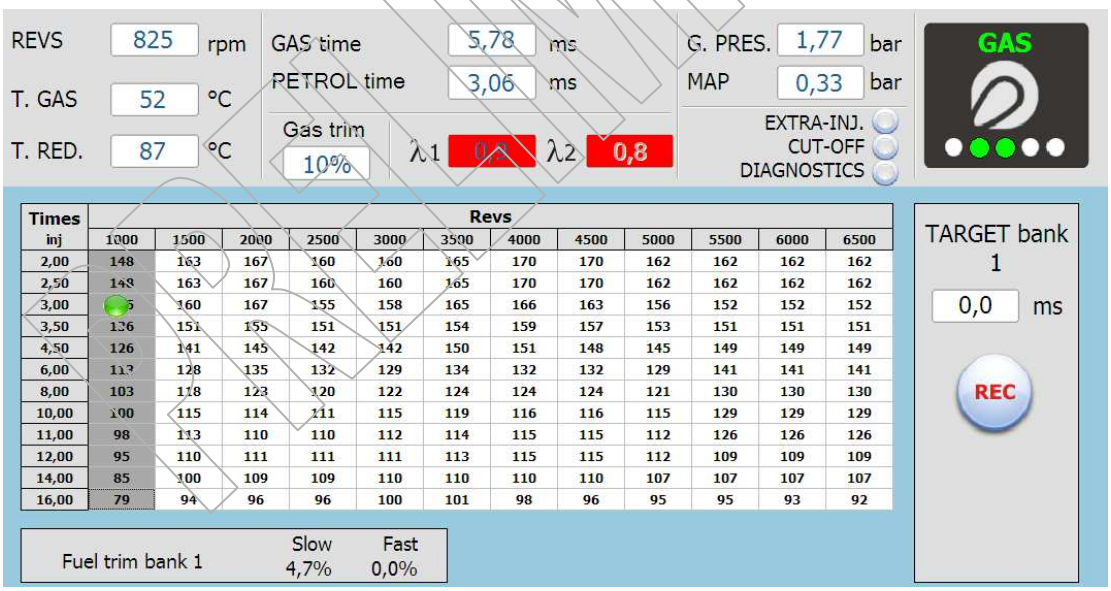
ON GAS MODE WITH SELF-ADAPTATIVITY DISABLED

Optimum for calibration: slow and fast fuel trims are working with similar values to petrol mode condition.



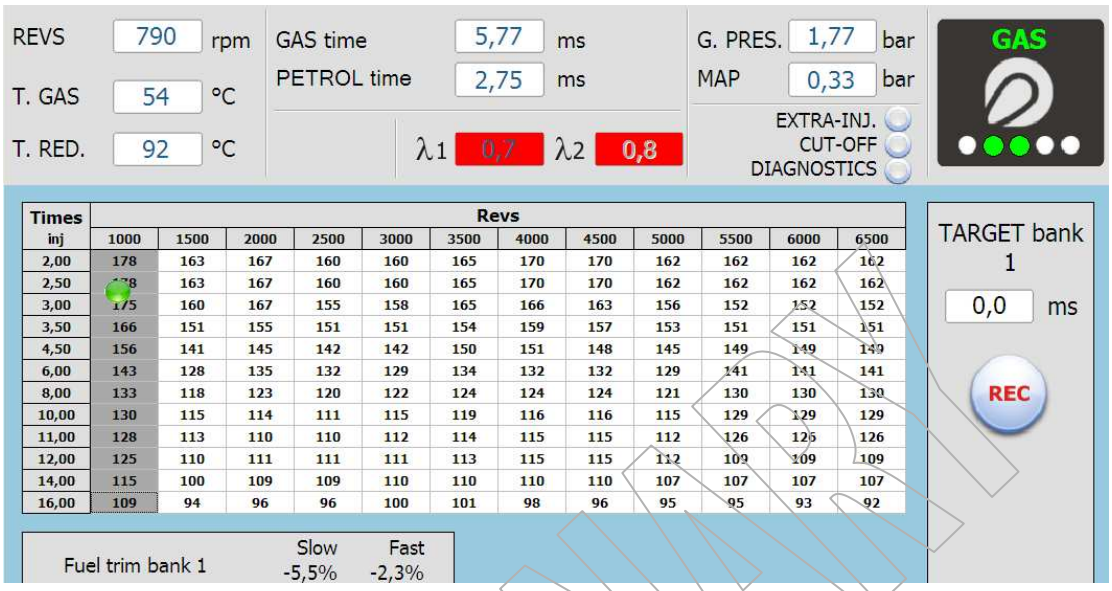
ON GAS MODE WITH SELF ADAPTATIVITY DISABLED

Lean condition is simulated decreasing gas injection time (-15 K on minimum column)



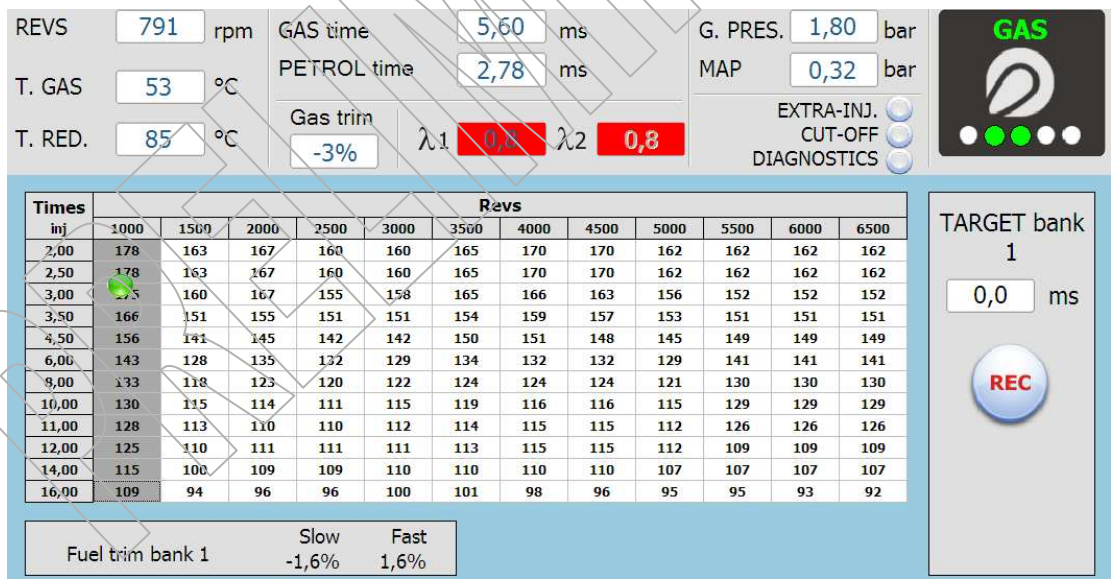
ON GAS MODE WITH SELF ADAPTATIVITY ENABLED

Gas corrector increase his value in order to increase gas injection time. Fast and slow trim fuels come back to values similar to starting ones.



ON GAS MODE WITH SELF-ADAPTATIVITY DISABLED

Reach condition is simulated increasing gas injection time (+15 K on minimum column)

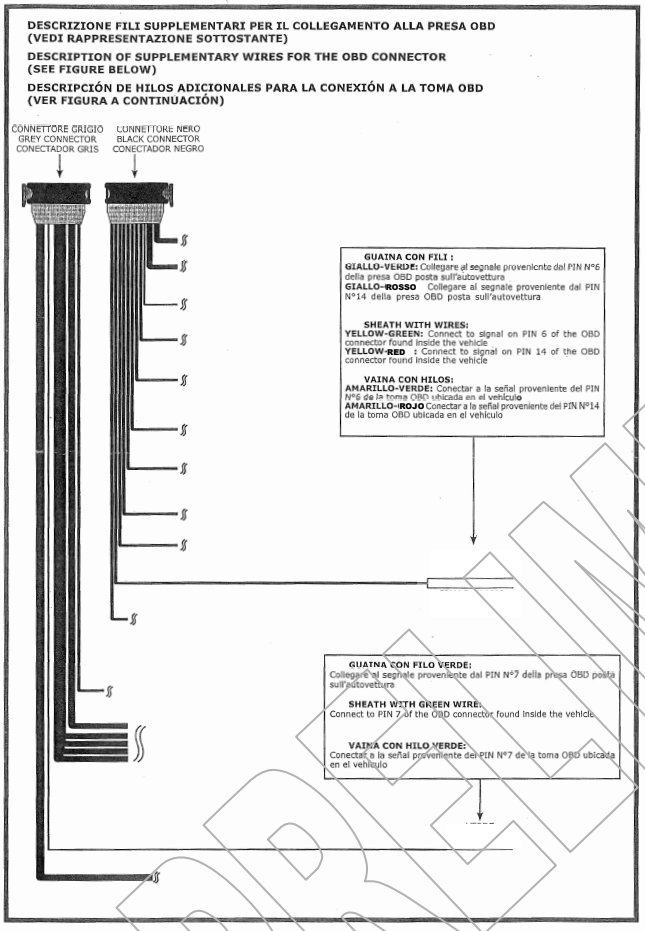


ON GAS MODE WITH SELF-ADAPTATIVITY ENABLED

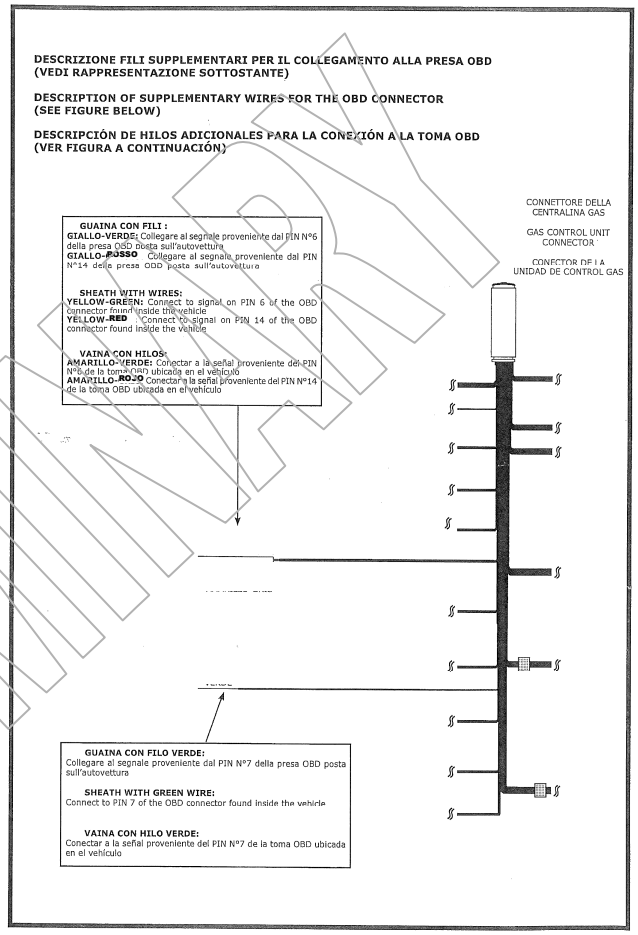
Gas corrector decrease in order to decrease gas injection time. Fast and slow fuel trims come back to values similar to starting conditions.

CONNECTION SCHEMES:

4 CYLINDERS

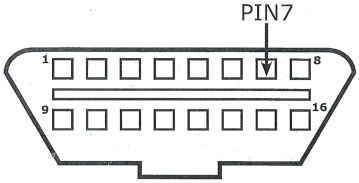


8 CYLINDERS



K-LINE o ISO 9141-2

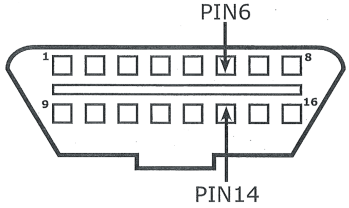
CONNECTION TYPE	CONNECTION DESCRIPTION
Connection type 1	ISO 9141-2
Connection type 2	KWP-2000 Fast Init
Connection type 3	KWP-2000 Slow Init



Connect the GREEN cable to signal from PIN N°7 of O BD PLUG. **WARNING: don't connect the cable of YELLOW-GREEN colour and YELLOW-RED coulor**

CAN

CONNECTION TYPE	DESCRIPTION TYPE
Connection type 4	CAN standard 250 Kbps
Connection type 5	CAN extended 250 Kbps
Connection type 6	CAN standard 550 Kbps
Connection type 7	CAN estended 550 Kbps



Connect the YELLOW-GREEN cable to signal from PIN N°6 of OBD PLUG and the YELLOW-RED cable to signal from PIN N°14 of OBD PLUG.. **WARNING: don't connect the cable of GREEN colour.**