



## **SEQUENTIAL FUEL SYSTEM**

### **ADDITION TO MANUAL OF S.W. 2.9**

**Tartarini Auto S.p.a**

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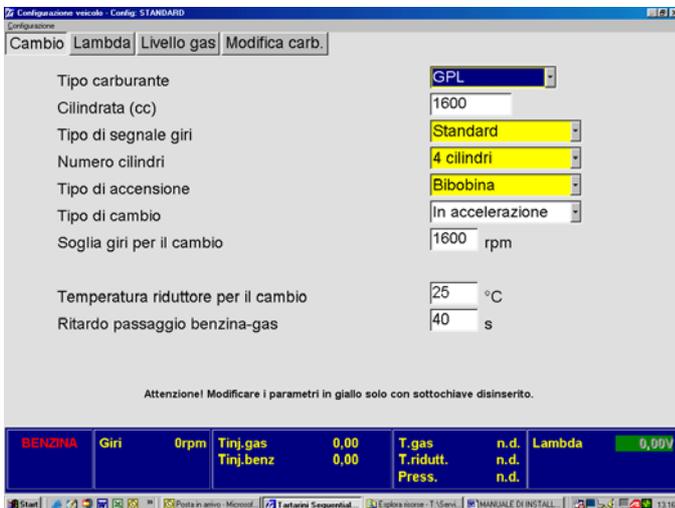
# LPG

## VEHICLE CONFIGURATION

By selecting the “VEHICLE CONFIGURATION” menu you can display the main functions used to optimise the running conditions of the vehicle on gas.

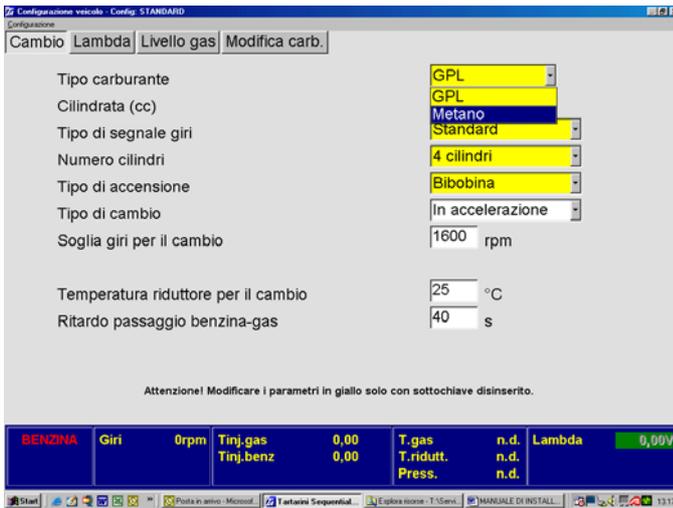


## CHANGE



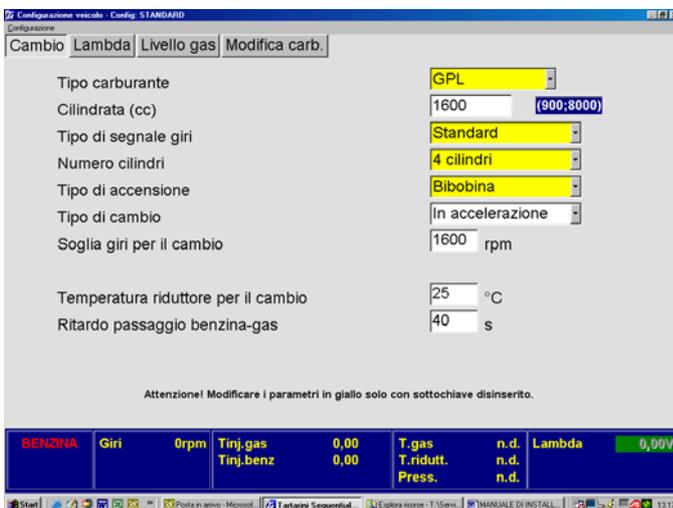
This page shows all the types of settings to be made.

The items enhanced in YELLOW are to be modified with the dashboard switched off.



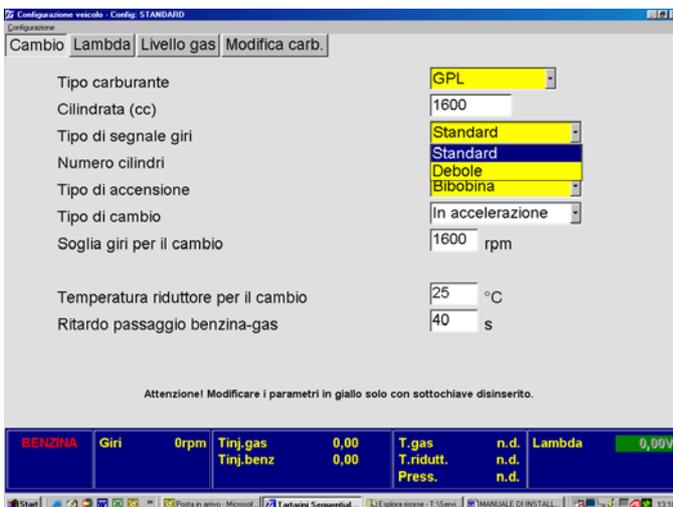
### Type of fuel.

This selection is to be made to initialise the control unit for the correct operation according to the type of fuel selected, LPG/CNG.



### Displacement (cc)

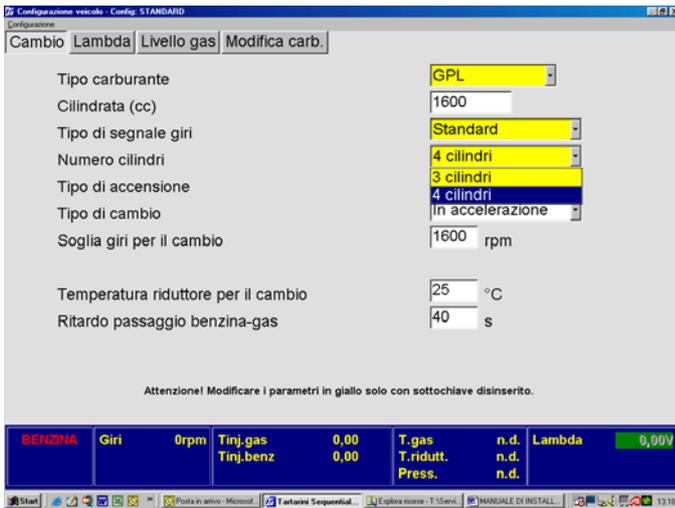
This selection is used to set the vehicle's displacement.



### Type of RPM signal

The WEAK signal is selected if the rpm input is given through the pilot signal of the transistor of the ignition coils. The STANDARD option is used in the case of connection to the coil negative pole.

If the connection is made to the rpm meter you can use either one of the items, even if it is preferable to set WEAK SIGNAL.



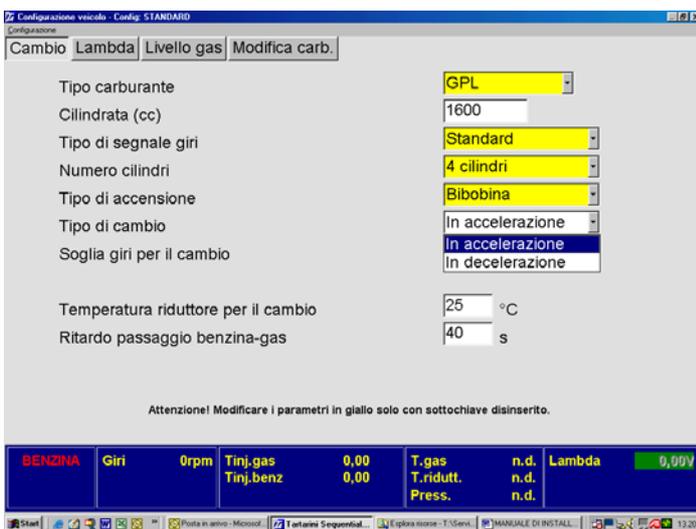
### Number of cylinders.

This option is used merely to inform the control unit of how many cylinders the vehicle has and therefore how many injectors it has to read and pilot.



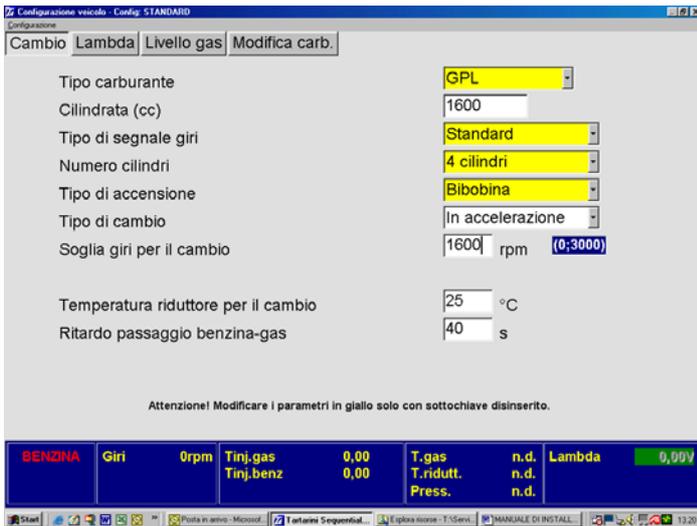
### Type of ignition.

This function is used by the control unit to calculate the engine rpm correctly. Select SINGLE COIL if the vehicle has one coil for each cylinder and the signal is taken from the negative pole of the coil. Select DOUBLE-COIL if the vehicle has one coil that pilots two cylinders and the signal is taken from the negative pole of the coil. Use RPM meter in the other cases.

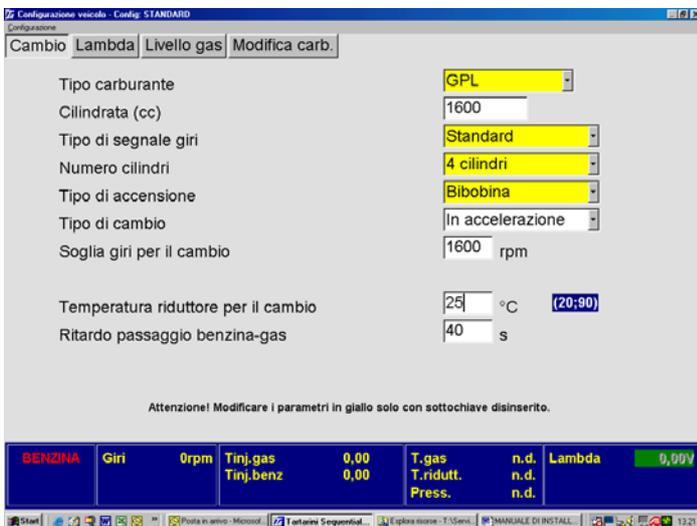


### Type of change-over.

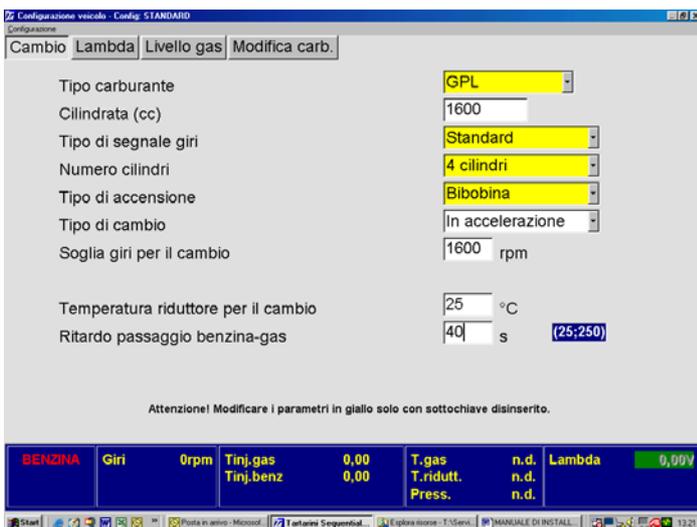
“In acceleration / In deceleration”  
This option is used to choose the type of petrol – gas change-over:  
In **acceleration**: the system changes over when the engine exceeds the RPM THRESHOLD set for the change-over at + 100 rpm (hysteresis):  
If set in **deceleration** the system changes over when the RPM falls below this reference value.



**Rpm threshold for change-over.**  
 This points out the minimum rpm threshold at which the system can change over from petrol to Gas (0;3000).



**Regulator temperature for change over.**  
 This points out the minimum temperature threshold at which the system can change over from petrol to Gas. The default value is 25°C.



**Petrol gas switching delay**  
 It indicates the number of seconds that you can delay or anticipate the petrol gas switching function. The default setting is 40s.

## LAMBDA PROBE



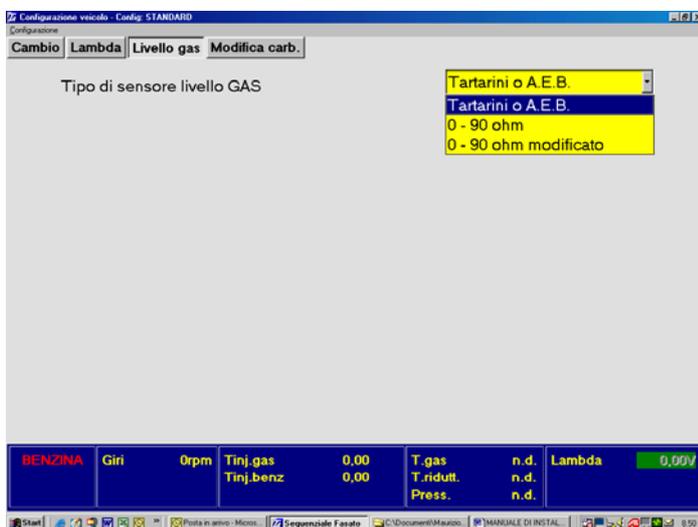
### Type of Lambda probe.

This selection enables the control unit to interpret the correct signal sent from the Lambda probe.

**NOTE:** There is no need to connect the probe, even if the system is already pre-arranged with it.

### UEGO Probes:

Connect the cables only when you have the specific wiring diagrams.



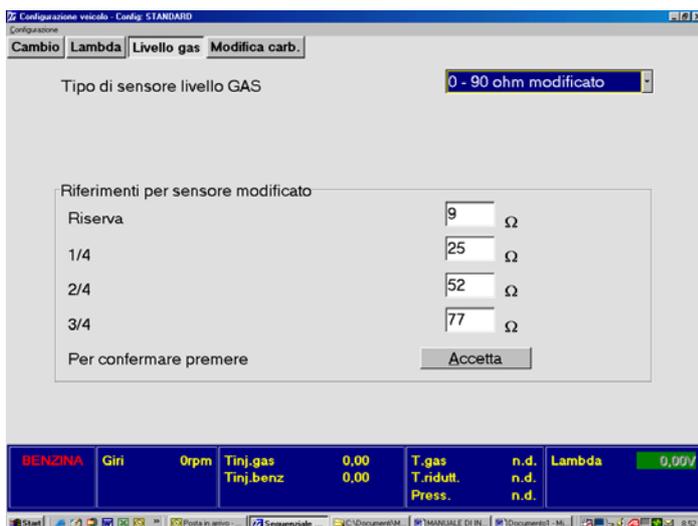
### Type of GAS level sensor.

This function is used to set the correct level sensor fitted in the vehicle.

Setting "A E B" is to be selected for most sensors.

Setting "0 – 90 ohm" is to be set for sensors with 0 – 90 ohm specifications.

"0 – 90 ohm" sensors are adjustable.

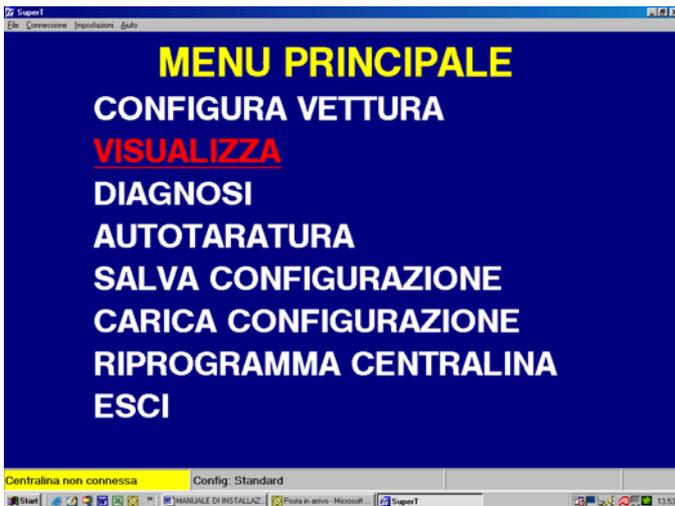


### 0 – 90 ohm modified:

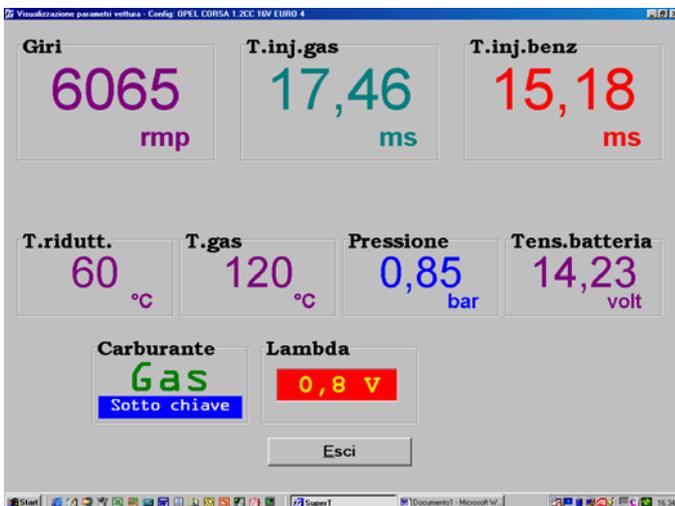
We have the possibility to adjust the resistance relative to the LED of the switch.

We can therefore decide with how much GAS the red reserve LED and the other green LED's are to light up. When doing so, you need to adjust by 20 points per attempt.

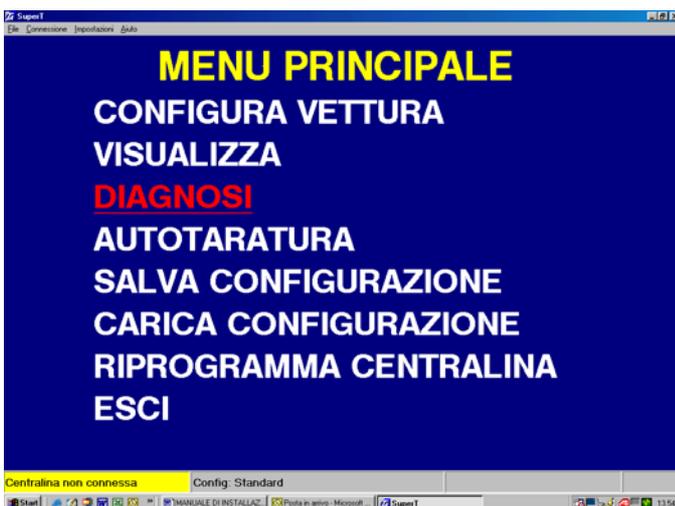
## DISPLAY



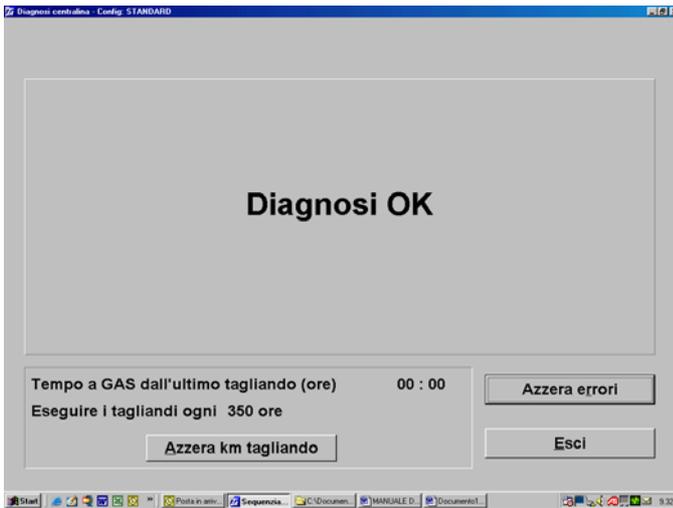
Select DISPLAY from the main menu and press enter.  
This menu is used to display the operational parameters.



This page is used to display the values measured by the control unit, the operational models and the injection timing (Gas or Petrol).



Select DIAGNOSIS from the main menu and press enter.



If there is no error in the ECU the page will appear as illustrated.  
 If there is an error in the ECU, the type of error will be displayed with the possibility to cancel it.  
 The service jobs are displayed in the bottom left corner. Each time the system is serviced the installer can reset the meter using the “reset service mileage” push button.  
 All the service data will be saved in the ECU.

## AUTO-CALIBRATION

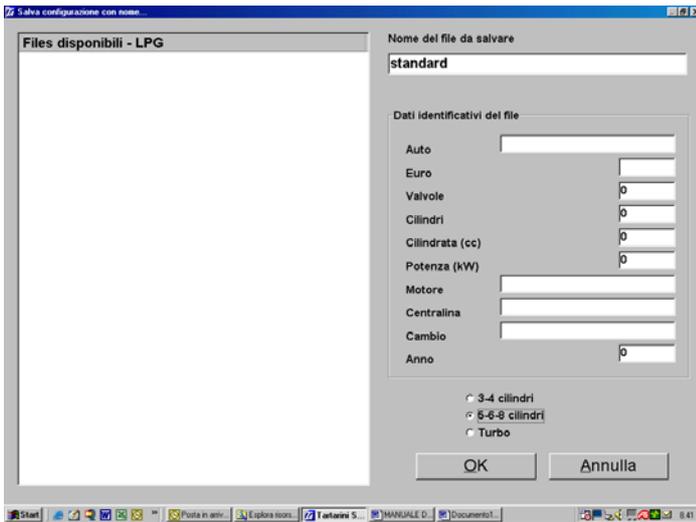


Select AUTO-CALIBRATION from the main menu and press enter.



Check all the signals before pressing Enter:  
 RPM/Gas inj.T./Petrol inj.T./RegT. must be legible.  
**Important:** The system is unable to calibrate until the regulator reaches a temperature of 50°C.  
 Put the gears in neutral and run the engine idle at 3000 rpm, press the Enter button and stay in this condition until the calibration procedure is complete.



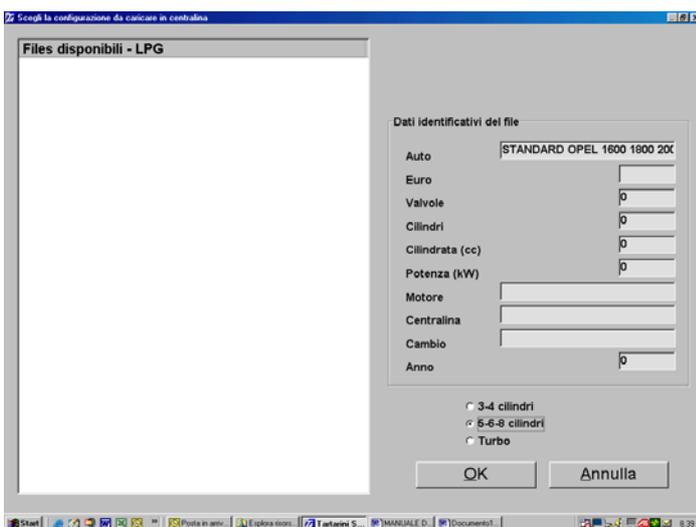


The information entered in the box called “File identification data” is used to provide details that prove useful to characterise the vehicle in which the system is installed. Before you click on OK, choose the configuration of the vehicle, 3-4 cyl. /5-6-8 cyl. / or Turbo. Each option has its own folder containing the relative files saved.

## LOAD CONFIGURATION



If you wish to load a file saved previously, select “LOAD CONFIGURATION” from the main menu and press Enter.



This sub-page is used to load configurations saved previously for vehicles of the same model on which the system is being installed. Choose the configuration 3-4 cyl. /5-6-8 cyl. / or Turbo. Enhance the name of the vehicle involved and press ENTER. The file selected will be automatically loaded in the GAS ECU.

## RE-PROGRAM THE ECU



Select RE-PROGRAM ECU from the main menu and press Enter. This menu is used if you should need to re-program the control unit following an up-date of the “Firmware” on behalf of Tartarini Auto, for improvement purposes or to add new program functions.



To be able to program, select the file containing the new “Firmware” for the control unit, through a communication window. Once you have selected the file, simply click on the Program tab to start up-dating the control unit.



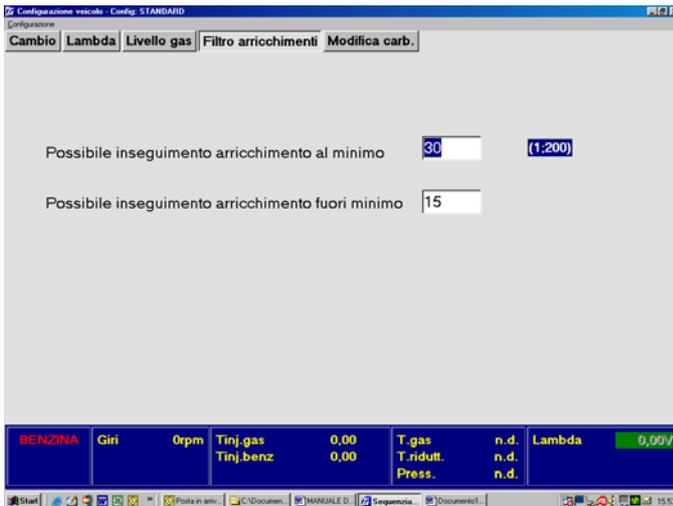
**WARNING:**

NEVER re-programme the ECU while the vehicle is running on GAS or petrol.

# CNG

The CNG programme only differs from the LPG programme because it has an extra page in the Configure Vehicle page, called:

## ENRICHING FILTER



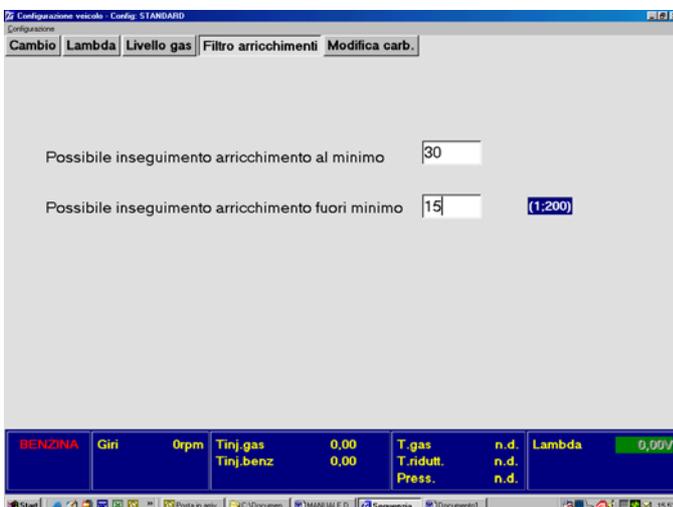
### Enriching filter:

Possible enrichment at minimum tracking.

This enrichment or weakening function is used **when returning to minimum**.

Lower the value, weaker the mix and higher the value, richer the mix.

If you enter a value of 200 the enrichment filter is automatically disabled.



### Enriching filter:

Possible enrichment out-of-minimum tracking.

This enrichment or weakening function is used when **out-of-minimum**.

Lower the value, weaker the mix and higher the value, richer the mix.

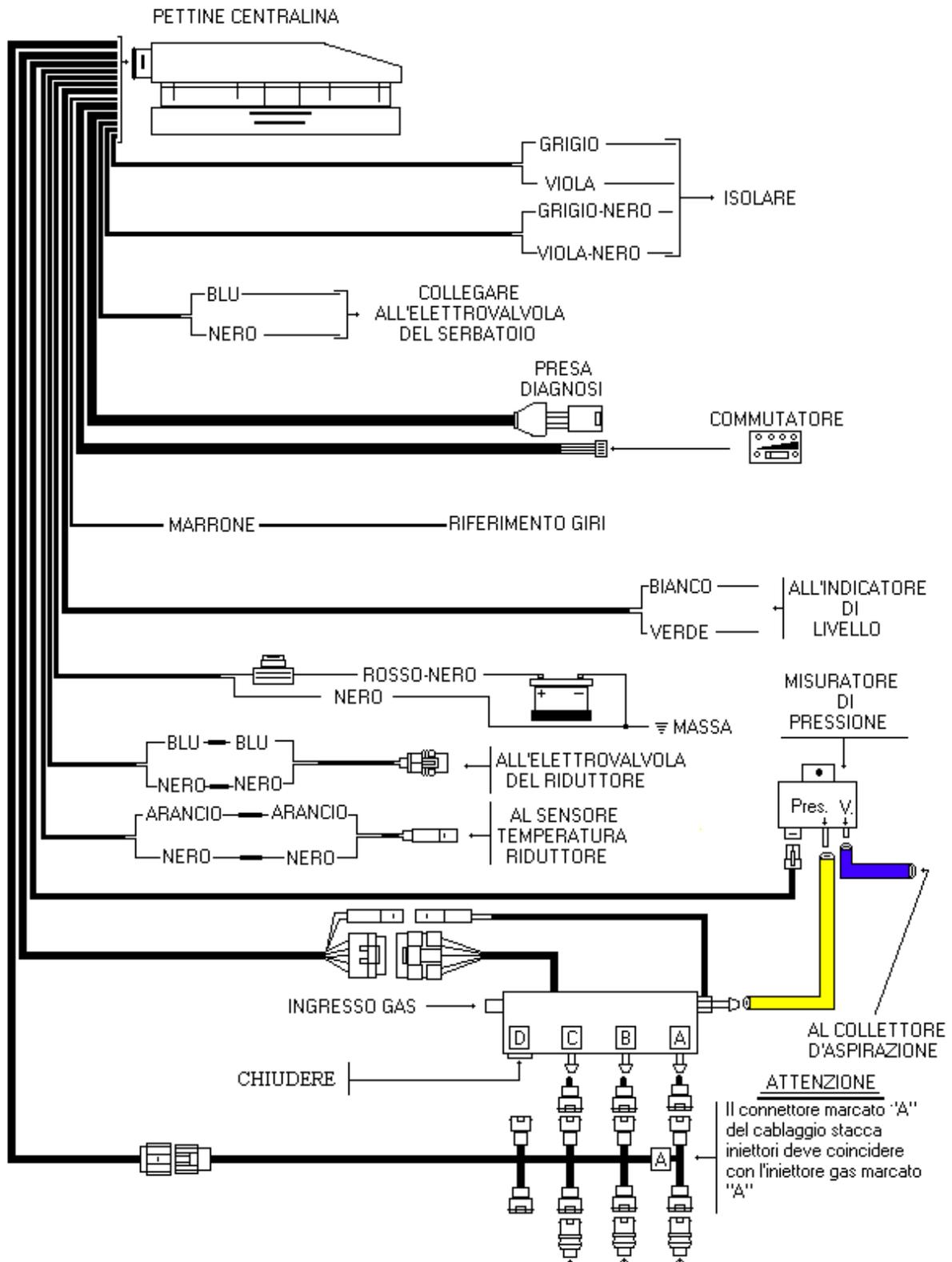
If you enter a value of 200 the enrichment filter is automatically disabled.



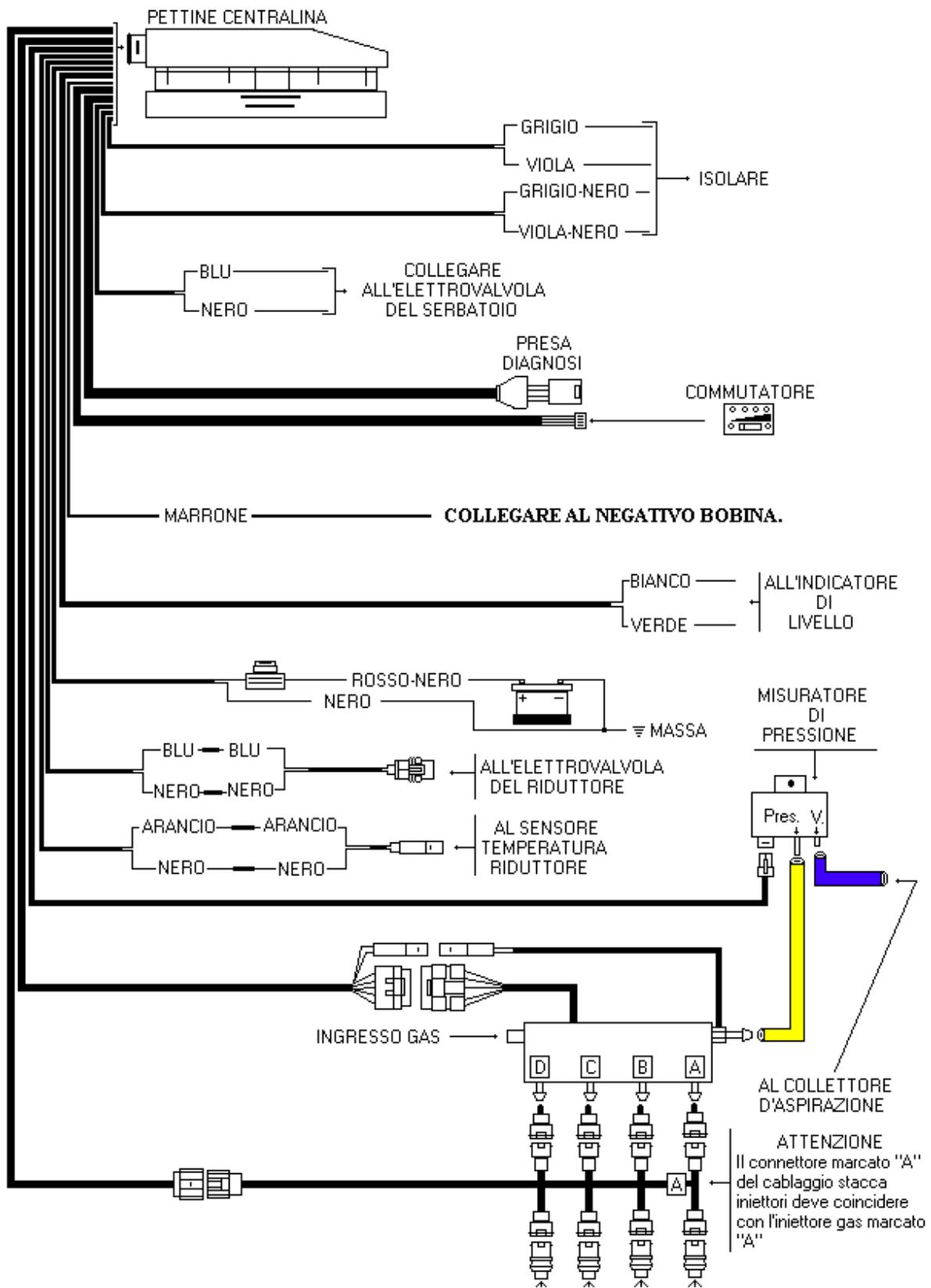
### WARNING:

The use of filters is only rarely needed when running on CNG to optimise the vehicle, especially when dropping back down to minimum and when accelerating. Before you use any filters you must have completed the auto-calibration and fuel setting modification phases. We don't think it is currently necessary to use filters for LPG, bearing in mind also that the operating parameters of CNG are different to those of LPG (Injection pressure) and therefore you must not use the CNG programme on vehicles converted to run on LPG.

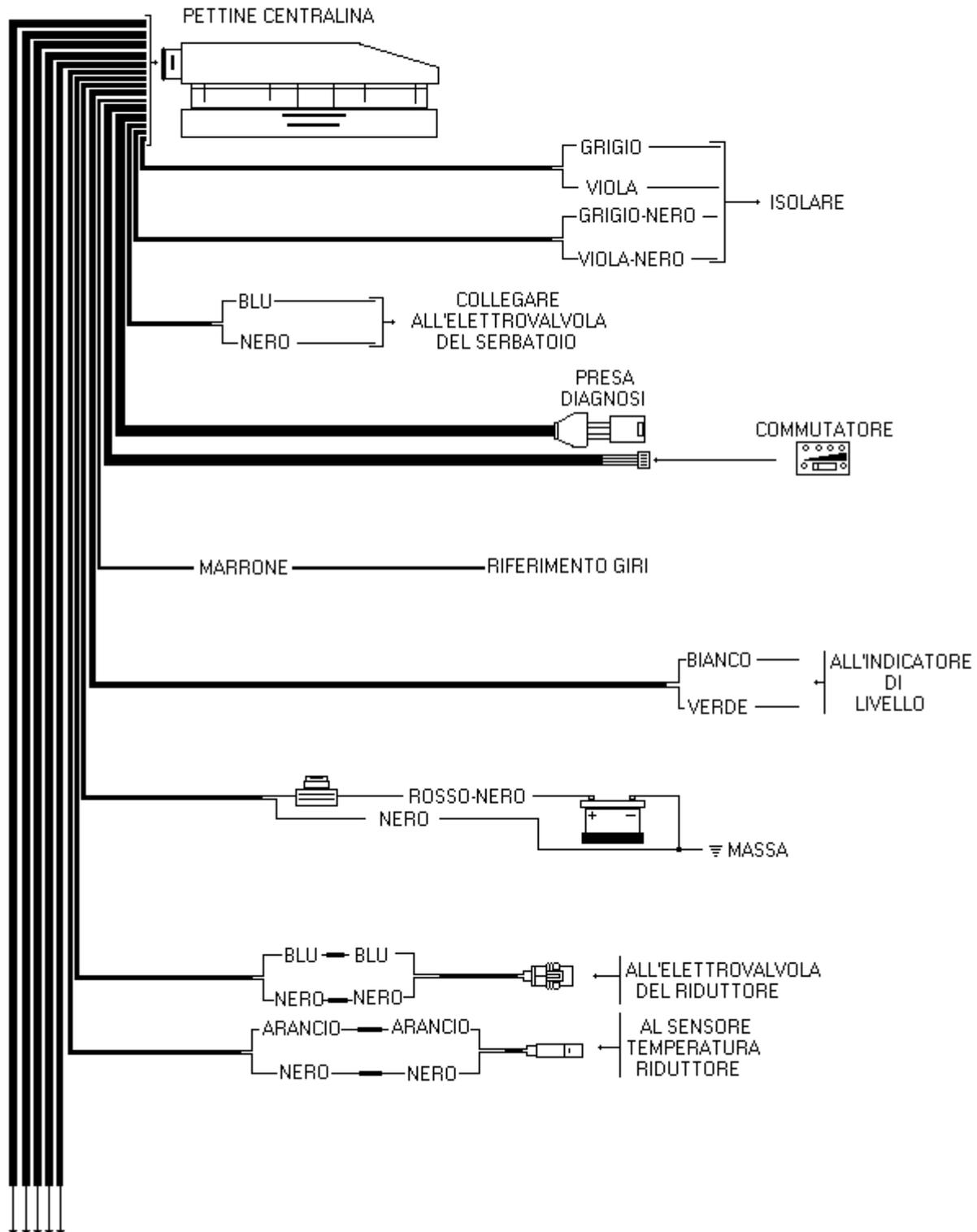
## SCHEMA PER VETTURE 3 CILINDRI



## SCHEMA PER VETTURE 4 CILINDRI

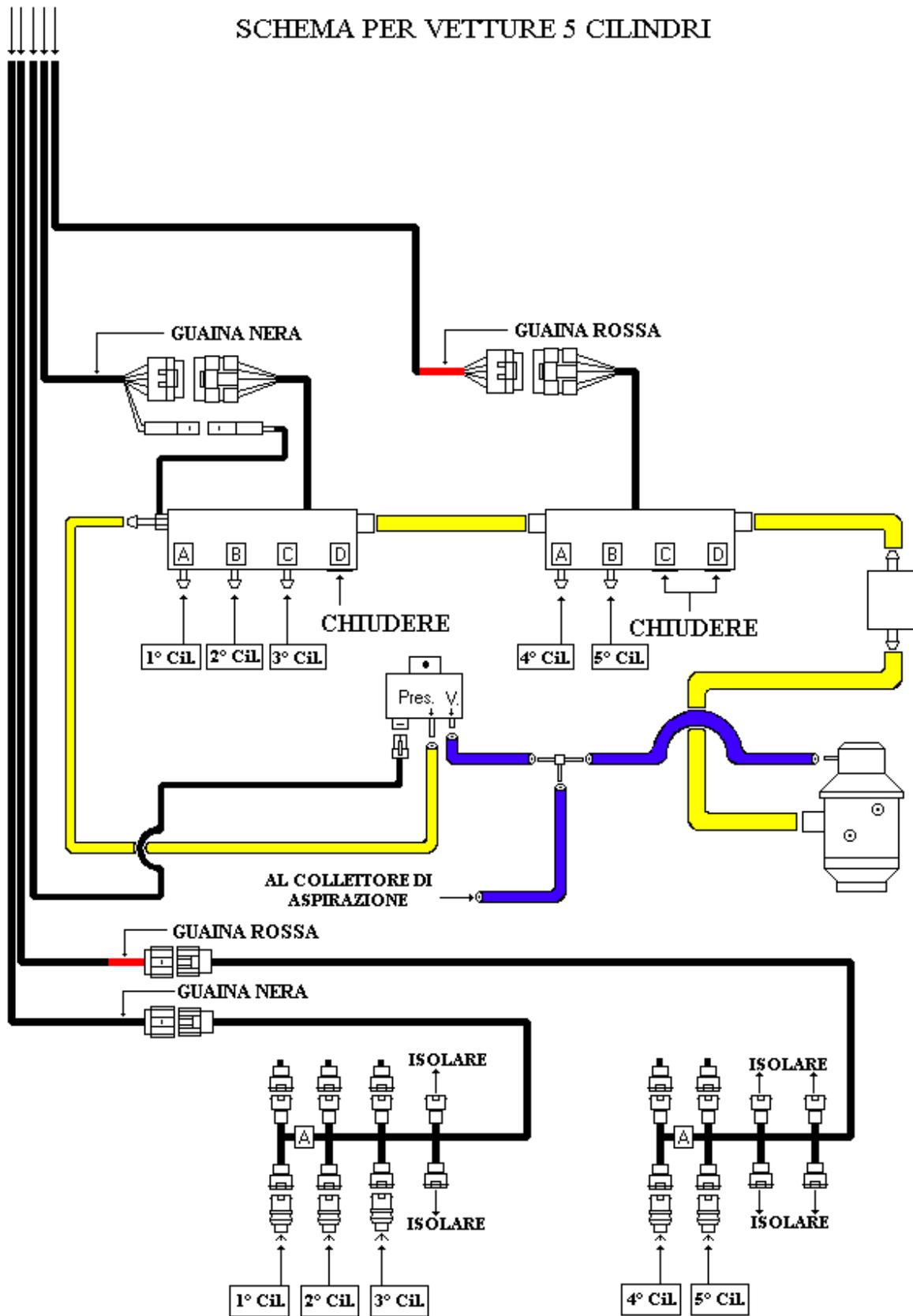


## SCHEMA PER VETTURE 5/6/8 CILINDRI



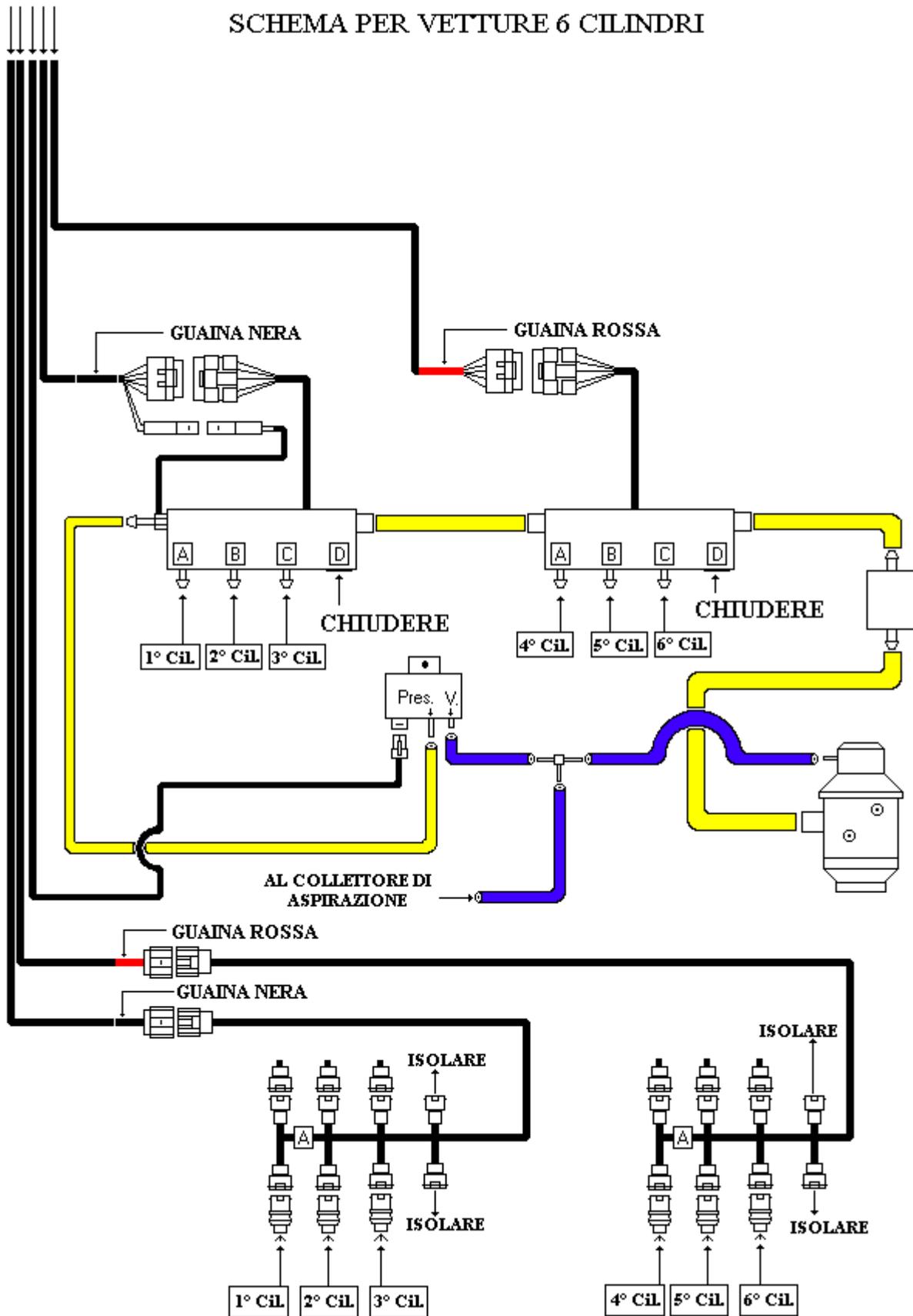
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### SCHEMA PER VETTURE 6 CILINDRI



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### SCHEMA PER VETTURE 8 CILINDRI

