

SEQUENTIAL FUEL SYSTEM

ADDITION TO MANUAL OF S.W. 2.9

Tartarini Auto S.p.a

Via Bonazzi 43 40013 Castel Maggiore (Bo) Italy Tel.:+39 051 632 24 11 Fax: 051 632 24 00 E-mail: <u>info@tartariniauto.it</u> www.tartariniauto.it

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

Configuratione				
Cambio Lambda Livello gas	Modifica carl	b.		
Tipo carburante			GPL	•
Cilindrata (cc)	Cilindrata (cc)			
Tipo di segnale giri			Standard	•
Numero cilindri			4 cilindri	×
Tipo di accensione			Bibobina	•
Tipo di cambio			In accelerazio	ne -
Soglia giri per il camb	io		1600 rpm	
Temperatura riduttore per il cambio			25 °C	
Ritardo passaggio bei	izina-yas		1.0 5	
Attenzionel Modificare i parametri in giallo solo con sottochiave disinserito.				
BENZINA Giri Orpm	Tinj.gas Tinj.benz	0,00 0,00	T.gas n.d. T.ridutt. n.d. Press. n.d.	Lambda 0,00V
🖼 Start 🛛 🦽 🗐 📷 🖄 🔯 🇯 🔯 Posta in an	vo - Microsol 🛛 🕢 Tartarini S	Sequential 😫 Esplo	a risorse - T.\Servi MANUALE DI II	ISTALL. 30 54 54 54 54 54 54 54 54 54 54 54 54 54

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.



🔰 Staal 🖉 🖉 🗑 🖄 🔅 " 🔯 Polisin anivo-Mozool 📝 Tatarini Sequential. 🔯 Espisances-T Stark, 🕷 MANUELE (INSTALL). 🗇 🖶 🐙 🛱 🔊

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.



calculate the engine rpm correctly. Select SINGLE COIL if the vehicle has one coil for each cylinder and the signal

Type of ignition.

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.

This function is used by the control unit to

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.

Attenzione! Modificare i parametri in giallo solo con sottochiave disinserito



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.



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





Granigurazione veicolo - Config: STANDARD			_ @ ×
Cambio Lambda Livello gas M	lodifica carb.		
Tipo di sensore livello	GAS	0 - 90 ohm modificato	•
Riferimenti per senso	re modificato		
Riserva		9 Ω	
1/4		25 Ω	
2/4		52 Ω	
3/4		77 Ω	
Per confermare prem	ere	Accetta	
BENZINA Giri Orpm	Tinj.gas 0,00 Tinj.benz 0,00	T.gas n.d. Lambda T.ridutt. n.d. Press. n.d.	0,00V
			Tel ara

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

- 8 ×

MENU PRINCIPALE CONFIGURA VETTURA VISUALIZZA DIAGNOSI

AUTOTARATURA SALVA CONFIGURAZIONE **CARICA CONFIGURAZIONE RIPROGRAMMA CENTRALINA** ESCI

T.inj.benz

15,18

Tens.batteria

14,23

volt

19 **11 11 11 11 11 11 11 11 11 11 11** 11 11

Config: Standard

T.inj.gas

17,46

Pressione

0,85

🗯 Start 🛛 🧶 📽 🕲 🐘 🙁 🕅 MANUALE DI INS

6065

rmp

T.gas

120_{.c}

Lambda

0,8 V

Esci

Giri

T.ridutt.

60

°C

Carburante

Gas

tari 🧔 🖉 🧐 🖞 🗷 🕷 🔤 🗑 🗉 🔉 🕅 🖬 🛃 🖉 🧖

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

values measured by the control unit, the operational models and the injection timing (Gas or Petrol).

This page is used to display the

Select DIAGNOSIS from the main menu and press enter.



25 Diagoni contralea - Config. 51ANDAND	
Diagnosi OK	
Tempo a GAS dall'ultimo tagliando (ore) 00 : 00 Eseguire i tagliandi ogni 350 ore Azzera km tagliando	Azzera e <u>r</u> rori <u>E</u> sci

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.

Addition to manual of s.w. 2.9

MODIFY FUEL SETTING

	M	odifica	manuale	carburaz	ione (+-6	60)	
	1000	2000	3000	4000	6000	6000	
	0	0	0	0	0	0	
	0	0	0	0	0	0	
	0	0	0	0	0	0	
	0	0	0	0	0	0	
	0	0	0	0	0	0	
	0	0	0	0	0	0	
	0	0	0	0	0	0	_
	0	0	0	0	0	0	
	0	0	0	0	0	0	
	0	0	0	0	0	0	
	0	0	0	0	0	0	
	0	0	0	0	0	0	
		Di	mensionamen	to ugelli = 1	09,38		
BENZIN	A Giri	Orpm Tin Tin	nj.gas (nj.benz (),00 T.ga),00 T.ric Pres	is n.d lutt. n.d is. n.d	. Lambda	0,007

Modify fuel setting.

This page is used to finely tune the gas values of the map coefficients (+-60 points) both at minimum and out of minimum, acquired during the calibration procedure.

IMPORTANT:

When modifying the fuel setting, check the Fast/Slow correctors and the petrol injection timing, which when running on gas must remain as similar as possible to when the vehicle is running on petrol.

Sizing of nozzles

100 = OK

150 = Nozzles too large 50 = Nozzles too small

When the vehicle is running you can see the little "ball" flickering between the various points. To calibrate correctly, modify the parameters based on the petrol correctors and/or the value of the lambda probe. Modify the whole line, from right to left, in which the little ball is flickering at that time.

SAVE CONFIGURATION



This sub-menu is used to save the configuration parameters of the control unit in a file that can later be used to initialise other control units fitted in vehicles of the same or similar models.

Files disponibili - LPG	Nome del file da salvare	
	standard	
	Dati identificativi del file	
	Auto	
	Euro	
	Valvole	o
	Cilindri	o
	Cilindrata (cc)	0
	Potenza (kW)	0
	Motore	
	Centralina	
	Cambio	
	Anno	0
	○ 3-4 cilindri	
	© 6-6-8 cilindr	1
	C Turbo	
	OK	Annulla

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

Elle Connessione Impostazioni Aiuto		
١	MENU PRINCIPALE	
CON	FIGURA VETTURA	
VISU	ALIZZA	
DIAG	NOSI	
AUTC	TARATURA	
SALV	A CONFIGURAZIONE	
CARI	CA CONFIGURAZIONI	
RIPR	OGRAMMA CENTRAL	NA
ESCI		
Centralina non connessa	Config: Standard	
🧝 Start 🥔 🖉 🔍 🐭 🖄 😒 " 🦉	MANUALE DI INSTALLAZ	13.55
💯 Scegli la configurazione da caricare in ce	ntralina	X
Files disponibili - LPG		

 Dati identificativi del file

 Auto
 STANDARD OPEL 1600 1900 20X

 Euro
 Valvole

 Valvole
 P

 Cilindri
 P

 Cilindri (cc)
 P

 Potenza (XW)
 P

 Motore
 Centralina

 Cambio
 Anno

 - 3-4 cilindri
 * 5-6-8 cilindri

 * 5-6-8 cilindri
 * Turbo

 OK
 Annulla

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

- 8 ×

MENU PRINCIPALE

CONFIGURA VETTURA VISUALIZZA DIAGNOSI AUTOTARATURA SALVA CONFIGURAZIONE CARICA CONFIGURAZIONE RIPROGRAMMA CENTRALINA ESCI

📺 Start 🛛 🦽 😭 🖼 🔯 💌 🛞 MANUALE DI INSTALLAZ... 🔯 Posta in aniv

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:

경 Configuratione veicele - Config STANDARD 문화	
Cambio Lambda Livello gas Filtro arricchimenti Modifica carb.	Enriching filter:
	Possible enrichment at minimum
	tracking.
Possibile inseguimento arricchimento al minimo 30 (1:200)	This enrichment or weakening
Possibile inseguimento arricchimento fuori minimo	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.
BENZINA Giri Orpm Tinj.gas 0,00 T.gas n.d. Lambda 0,007 Tinj.benz 0,00 T.ridutt. n.d.	
Configuratione veicels-Config STANDARD Configuratione	
Cambio Lambda Livello gas Filtro arricchimenti Modifica carb.	Enriching filter:
	Possible enrichment out-of-minimum
	tracking.
Possibile inseguimento arricchimento al minimo 30	This enrichment or weakening
Possibile inseguimento arricchimento fuori minimo 15 (1:200)	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.
Tinj.benz 0,00 T.ridutt. n.d. Press, n.d.	
🗯 Stard 🖉 🖉 🖾 🔯 🐂 🔯 Postan anio. 🔐 O Documero. 🔮 MARAULE D. 📝 Sequencia 😢 Documerol	

ENRICHING FILTER

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



Addition to manual of s.w. 2.9

SCHEMA PER VETTURE 4 CILINDRI



SCHEMA PER VETTURE 5/6/8 CILINDRI



Continuo dalla pagina seguente.



Continuo dalla pagina seguente.



