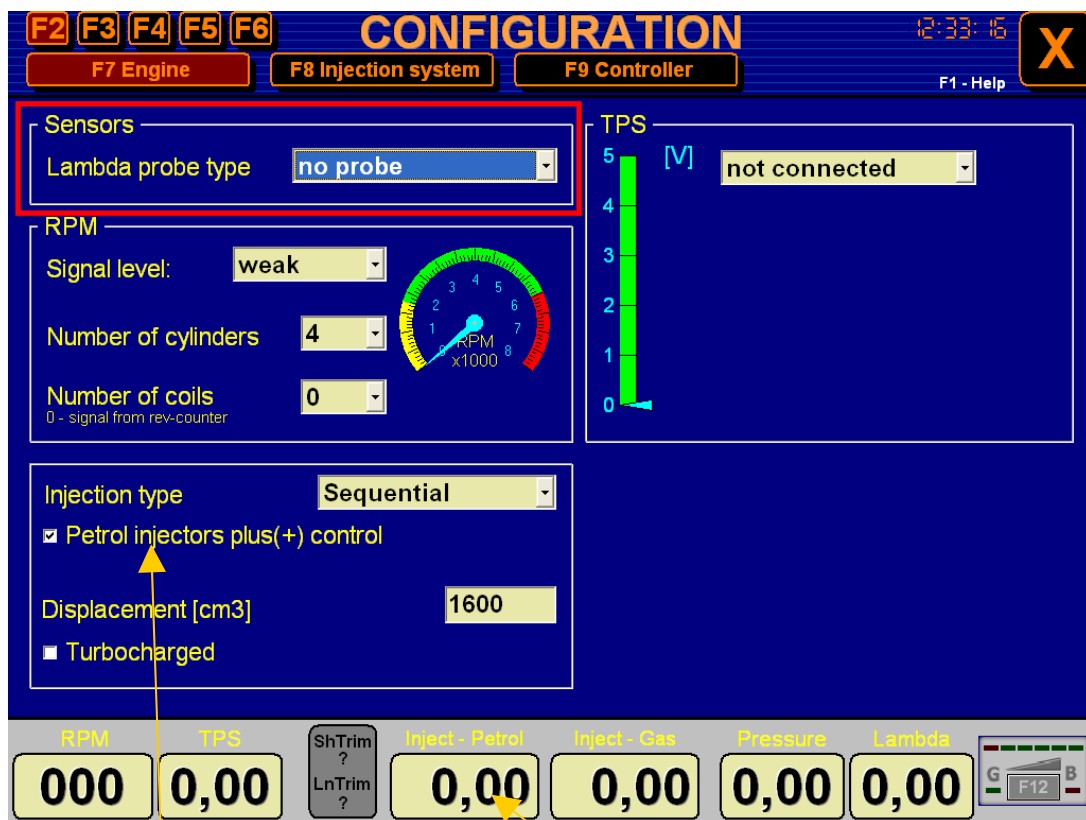


Calibration and tips

1. Never **DO NOT CONNECT THE LAMBDA PROBE** at all. The auto-calibration system do not use lambda so it's not needed at all. Sometimes connection of lambda could make some mistakes in calibration cause the measurement of probe may be different on gas and petrol. The calibration process uses the petrol injection times to calibrate gas injection times and OBD trims (check if the car is equipped with OBD system).

So when you are mounting the Gas Tech sequential kit do not connect in wiring harness of system the violet cable and turn off the measurement of lambda probe in software to prevent any errors. You can see lambda probe signal after connection OBD interface cause it reads the lambda signal from the OBD socket.



2. **Petrol injectors plus(+)control** – the standard steering of petrol injector is based on minus (-). *How to control polarization of injectors:* You have to move out all plugs from petrol injectors we start ignition and we check by 12 V tester (test-tube) control on which side of petrol injector's plug there is plus. So it means that the cable on which you can not find a plus is steering cable. If you noticed that after switch on the gas, "Virtual" petrol injection time will be very high from 20 till 30 ms you have to activated option Petrol injectors plus(+)control (first of all please control if RPM signal is correct).

3. Setting of configuration.

CONFIGURATION 10:33:08

F2 F3 F4 F5 F6

F7 Engine F8 Injection system F9 Controller

Fuel type: LPG

Injection type: BlueTech No nozzle

Gas temperature sensor type: KTY83-110

Reducer temperature sensor type: Thermistor 4K7

Pressure sensor: connected to manifold

Reducer pressure: 1,00

Gas level sensor: Hallotron DT

Display filter: Disable

RPM: 000 TPS: 0,00 ShTrim ? LnTrim ? Inject - Petrol: 0,00 Inject - Gas: 0,00 Pressure: 0,00 Lambda: 0,00



do not change parameters in this red area.



Gas Tech 700 map sensor is always connected to atmosphere. Gas tech 400 does not have map sensor.



System Gas Tech 700 is equipped in 2 Ω Blutech injectors. System 400 is equipped in 4 Ω Greentech injectors. To adjust correct size of nozzles please see our website: www.dtgas.pl – distribution network – selection of nozzles.

- How to set a hallotron Gas Level Indicator made by D.T. Gas.** If you want to set a hallotron level indicator you have to fill 20% of LPG to tank. Than you should switch off *Display filter*. Next you should manually set level indicator (turn left or right level sensor) to see first green light on the switch. You can also you a Special Tester for Setting hallotron level indicator (if you use it you do not have to switch off filter). During the setting of level indicator car have to work on LPG.

5. Change over parameters.

CALIBRATION 11:13:57 **X**

F2 F3 F4 F5 F6

F7 Change over **F8 Map of corrections**

Petrol	Parameters	Units	Gas
400	RPM for change over	RPM	1800
	Change over when the engine speed is		Rising
6000	Maximum RPM on gas	RPM	
10	Gas temperature	°C	25
10	Reducer temperature	°C	30
0,30	Gas pressure	bar	0,80
	Change over time offset	s	30,0
0	Permissible time of RPM cut-off on Gas	s	
0	Overlapping time	cycles	0
	Heating up		disabled

RPM 000 **TPS** 0,00 **ShTrim** ? **LnTrim** ? **Inject - Petrol** 0,00 **Inject - Gas** 0,00 **Pressure** 0,00 **Lambda** 0,00 **F12**

☐ Change over time offset – you can set time of delay to switch on from petrol to LPG. In some cars like VW (older models) you can observe that car is not changing over smoothly from petrol to LPG (shaking). In this case please activated this option.

☐ Permission time of RPM cut-off on Gas – in some model of new cars we can observe that RPM signal can disappeared. Mostly it happen when the car is running down off the hill and the driver is breaking by the engine (do not accelerate). If you activated this option system memorized himself last RPM signal for a 60 seconds and does not return to petrol.

☐ Overlapping time – if you activated this function the system supply two fuels (petrol and LPG) to allowed smooth change over from petrol to LPG.

☐ Heating Up – you can set a heating up of injectors looking for your country climate conditions. You can set a hard, middle and small heating. In cold climate (Russia, Poland) you have to set a hard heating up of injectors.

6. How to make a calibration and changes of map correction of coefficients.

CALIBRATION 11:34:04

F2 F3 F4 F5 F6
F7 Change over F8 Map of corrections F1 - Help

Map of correction coefficients [%]

RPM/inj	1000	2000	3000	4000	5000	6000
1 ms	90	100	100	100	100	100
2 ms	90	100	100	100	100	100
3 ms	90	100	100	100	100	100
4 ms	90	100	100	100	100	100
5 ms	90	100	100	100	100	100
6 ms	100	100	100	100	100	100
7 ms	100	100	100	100	100	100
8 ms	100	100	100	100	100	100
9 ms	100	100	100	100	100	100
10 ms	100	100	100	100	100	100
11 ms	100	100	100	100	100	100
12 ms	100	100	100	100	100	100
13 ms	100	100	100	100	100	100
14 ms	100	100	100	100	100	100
15 ms	100	100	100	100	100	100

Autocalibration

F9 Idling
F10 Autocalibration

Manual calibration

Correction value: Mult 1.54

Inject - Petrol Memo

00,00 Memo

RPM 000 TPS 0,00 ShTrim ? LnTrim Inject - Petrol 0,00 Inject - Gas 0,00 Pressure 0,00 Lambda 0,00

At first step always you should use auto-calibration or idle calibration to make a map of coefficients. In cars without OBD you should make calibration on idle.

In new cars equipped with OBD system you have to make an auto-calibration.

If your car does not work properly in some range of RPM you should adjust or decrease the values in boxes (max +/- 10%) in ranges that the engine has no power or getting over-fueled. That means that the values located in boxes on map after a auto calibration should be everywhere 100%.

If the car is equipped with OBD system you should check the fuel trims while running on gas and set the correction that way that the short term trim should be in range from 0% to +5%. It means that the mixture is set correctly and the petrol ECU will not reprogram. The car will be running good on both fuels.

Calibration and correction map on idle. Sometimes the engine gets too much fuel on idle after calibration. That problem occurs usually in cars with automatic gearbox and equipped with air-condition. In that case you should change only correction values on idle (first column) from 1ms to 5ms. Try to make a little leaner mixture by decreasing the correction value in this range from 5% to 10% less. It means that all the map is 100% and in the first column you have for example five boxes with 90%. That's the map you saw in files that I sent you.

F2 F3 F4 F5 F6 CALIBRATION 1:34:04 X

F7 Change over F8 Map of corrections F1 - Help

Map of correction coefficients [%]

RPM/inj	1000	2000	3000	4000	5000	6000
1 ms	90	100	100	100	100	100
2 ms	90	100	100	100	100	100
3 ms	90	100	100	100	100	100
4 ms	90	100	100	100	100	100
5 ms	90	100	100	100	100	100
6 ms	100	100	100	100	100	100
7 ms	100	100	100	100	100	100
8 ms	100	100	100	100	100	100
9 ms	100	100	100	100	100	100
10 ms	100	100	100	100	100	100
11 ms	100	100	100	100	100	100
12 ms	100	100	100	100	100	100
13 ms	100	100	100	100	100	100
14 ms	100	100	100	100	100	100
15 ms	100	100	100	100	100	100

Autocalibration

F9 Idling

F10 Autocalibration

Manual calibration

Correction value: Mult **1,54**

Inject - Petrol Memo

00,00 Memo

RPM TPS ShTrim ? LnTrim ? Inject - Petrol 0,00 Inject - Gas 0,00 Pressure 0,00 Lambda 0,00

G F12 B

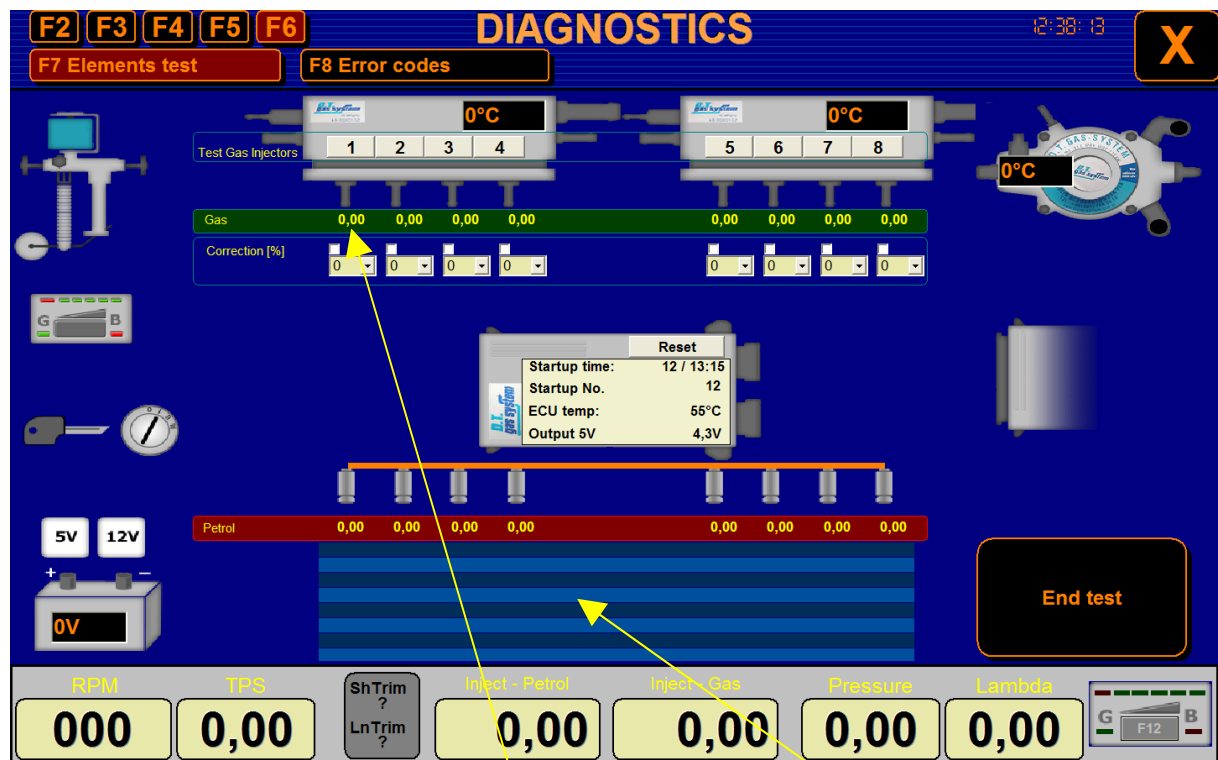
Always look at petrol injection time. Run the car on petrol on idle and look what is the petrol injection time. Then click "MEMO" to remember the time on petrol and change to gas. Then you have to change over for LPG and you will see the gas injection times and the "virtual petrol injection times". "Virtual" petrol injection time should be similar to "MEMO remembered time" in real. That means that the petrol ECU will not change the original map due to gas injection use and will not light the check engine lamp. This is the best way to set the corrections when the car has no OBD system.

If the car has no power or is over-fueled (to rich mixture) you can manually change the map of corrections but the values should be in range from 90% to 110% and if it's still working wrong it means that the main calibration value is wrong.

- MAP sensor connection.** Never connect the vacuum inlet of the map sensor to manifold. It's the measurement of air pressure (atmosphere) for system to know what is the pressure before air filter to know how change the pressure of gas for example in mountains or near the sea level. So you only take a rubber hose about 10cm long and put it on the vacuum inlet to prevent from getting dirt inside the inlet. And always set "to atmosphere" in software.

For example:

9. Diagnostic board.



In the area of diagnostic board you can see what *type of petrol injection* (*sequential, semi sequential or simultaneous*) your car is equipped. If the balls are on the same line it is simultaneous petrol injection. If you can see two balls up and two down in two pairs) it is semi sequential. If balls are located irregularly it means sequential petrol injection.

Also in diagnostic area you can see what is *the injector's efficiency*. All injectors should be equal. If you find out that one of them is different from the other you can change his float manually.