Marathon 125LC ie E5

On Board Diagnostic (OBD)

RIEJU

...for everyday adventure

Index

Introduction

Introduction

This document describes the characteristics of the On Board Diagnostic system (OBD) used by the ECU and assembled on the Marathon 125LC ie Euro 5.

The OBD system checks and shows one or more faults concerning:

- Emission up to Euro 5 limits.
- Engine power limitation.

On this document you can find all information needed to solve the OBD Errors found on the bikes.

OBD System

OBD System

The ECU is provided by the OBD system, when the OBD detects a failure it shows the following symbol on the dashboard:

To know the cause of the failure you will need to connect to the ECU with a OBDII reader, this tool can be show the diagnostic Error and erase it, once the error has been erased the symbol on the dashboard will switch off, if after erasing the failure the symbol continues it means that the problem is not solved.

Specific tool

To connect the bike at the OBDII reader you can have on harness adapter to connect the standard connector of the bike to the connector SAE J1962 Type A use on the OBDII readers.

Rieju has the next part available to use the OBD systems:

0/000.160.5048 – HARNESS SUPPLEMENT OBD EURO 5

System for auto diagnostics

0/K00.160.4000 – KIT OBD READER WITH HARNES SUPPLEMENT

If you have a standard OBD reader you will need only the harness supplement to connect it with the ECU of the bike. If you don't have an OBD reader Rieju suggest use the KIT OBD READER WITH HARNESS SUPPLEMENT, this kit has been tested on Rieju bikes and its operation is guaranteed

Connection OBD reader with the bike

The OBD connector is placed under the seat.

OBD System

1. Check that the key is in OFF position.
2. Take out the cap protection.
3. Plug the OBD harness supplement with the main harness.
4. Plug the OBD reader on the harness.

5. Turn ON the key (it will not necessary run the bike).

When the key is in the ON position the OBD reader will switch ON automatically. Look at the OBD reader instructions to know the error codes and erase it if necessary.

If the OBD reader does not switch ON, and the OBD reader is not supplied by Rieju it's possible that your OBD reader is not compatible with the OBD II system and you will need replace it.

If the OBD reader is provided by Rieju but it cannot switch ON please check the battery is correctly connected and is full charged, check the fuse of the main harness. If the problem continues contact with the Rieju after sales department.

Error code

Error code

Once the OBD reader is connected with the ECU we can found the following error code, with the system found a malfunction:

Component / system	Malfunction criteria	Fault code	Fault detection criteria
Fuel injector	circuit high	P0262	Unable to complete fuel injection, engine power loss
	circuit low or open	P0201	
	circuit low	P0261	
Ignition Coil	Error detected if, upon the OFF command, the logic level of the internal voltage feedback to the ECU is “low”.	P0230	fuel injection in long term then cylinder flooded, engine misfire, power loss;
	Error detected if, upon the ON command, the logic level of the internal voltage feedback to the ECU is “high”.	P2301	Loss of ignition, loss of engine power
Fuel pump relay	circuit open	P0231	Fuel supply failure, power loss; engine stalled
	circuit high	P0232	
Intake air pressure sensor	Check the sensor voltage; If it is bigger than maximum setting voltage, that means it is SC or OC	P0108	The system switches the control mode; torque fluctuation
	If it is less than minimum setting voltage, that means it is SC	P0107	
Intake air temperature sensor	If it is less than minimum setting voltage, that means it is SC	P0112	torque fluctuates and may even stall
	Check the sensor voltage; If it is bigger than maximum setting voltage, that means it is SC or OC	P0113	
	Signal not plausible	P0114	
	Signal not plausible	P0111	

Error code

Component / system	Malfunction criteria	Fault code	Fault detection criteria
Oxygen sensor	Error detected when voltage VLAMA1 > SLAMCC mV	P0132	Abnormal closed-loop correction, torque fluctuation; exit closed-loop, power fluctuation
	Error detected when (KO2B1=>KO2MAXI) AND (C.SUPKO2 >N.SUPKO2)	P0130	exit closed-loop, torque fluctuation
	Frequency error	P0133	exit closed-loop; torque fluctuation
Throttle position sensor	Error detected when the sensor voltage less than minimum setting voltage	P0120	The system switches the control mode and the power drops
	Error detected when the sensor voltage bigger than maximum	P0123	
Stepper motor	SC VCC	P0509	Idle torque fluctuates and may even stall

Error code

Once the OBD reader is connected with the ECU we can found the following error code, with the system found a degradation:

Component / system	Monitoring strategy	Fault code	Fault detection criteria
Intake air pressure sensor	Intake pressure sensor voltage signal	P0107	If it is less than minimum setting voltage, that means it is SC
	Intake pressure sensor voltage signal	P0108	Check the sensor voltage; If it is bigger than maximum setting voltage, that means it is SC or OC
Intake air temperature sensor	Intake temperature sensor voltage signal	P0112	If it is less than minimum setting voltage, that means it is SC
	Intake temperature sensor voltage signal	P0113	Check the sensor voltage; If it is bigger than maximum setting voltage, that means it is SC or OC
	Air temperature sensor Intermitted	P0114	Signal not plausible
	Air temperature sensor stuck	P0111	Signal not plausible
Water temperature sensor	Coolant temperature sensor Intermitted	P0119	Signal not plausible
	Coolant temperature sensor stuck	P0116	Signal not plausible
	check circuit voltage	P0117	Error detected when the sensor voltage less than minimum setting voltage
	check circuit voltage	P0118	Error detected when the sensor voltage bigger than maximum setting voltage
Throttle position sensor	Check TPS voltage	P0120	Error detected when the sensor voltage less than minimum setting voltage
	Check TPS voltage	P0123	Error detected when the sensor voltage bigger than maximum setting voltage

Error code

Component / system	Monitoring strategy	Fault code	Fault detection criteria
Stepper motor	feedback voltage by hardware	P0509	SC VCC
	feedback voltage by hardware	P0508	SC GND
	feedback voltage by hardware	P0505	OPEN CIRCUIT
	feedback voltage by hardware	P0511	Not plaisoble
Warning lamp	Performed by hardware	P0650	Open circuit
Oxygen sensor	check oxygen feedback signal voltage	P0130	Error detected when (KO2B1=>KO2MAXI) AND (C.SUPKO2 >N.SUPKO2)
	check oxygen feedback signal voltage	P0132	Error detected when voltage VLAMA1 > SLAMCC mV
	check oxygen feedback signal voltage	P0133	Frequency error
Oxygen sensor heater	check circuit voltage	P0030	circuit open
	check circuit voltage	P0031	circuit low
	check circuit voltage	P0032	circuit high
Engine speed sensor	Check flywheel signal	P0336	Signal not plausible
canister valve	Performed by hardware.	P0458	SC GND or Open circuit
	Performed by hardware.	P0459	SC Vbat
Ignition coil	check circuit voltage	P2300	Error detected if, upon the OFF command, the logic level of the internal voltage feedback to the ECU is “low”.

Error code

Component / system	Monitoring strategy	Fault code	Fault detection criteria
Fuel injector	check circuit voltage	P0201	circuit low or open
	check circuit voltage	P0261	circuit low
	check circuit voltage	P0262	circuit high
Fuel pump relay	check circuit voltage	P0231	circuit open
	check circuit voltage	P0232	circuit high
Cooling fan relay	check circuit voltage	P0480	circuit open
	check circuit voltage	P0691	circuit low
	check circuit voltage	P0692	circuit high
Misfire diagnosis	Crankshaft signal, Camshaft signal,and misfire rate threshold	P0300	The misfire rate exceeds the threshold within 200 engine cycles
			The misfire rate is calculated through crank and cam signal in WLTC cycle when the catalyst is heated. Within the first 1000 engine cycles from engine start, the misfire rate exceeds the threshold
			The misfire rate exceeds the threshold within 200 engine cycles
			The misfire rate is calculated through crank and cam signal in WLTC cycle when the catalyst is heated. Within the first 1000 engine cycles from engine start, the misfire rate exceeds the threshold

Error code

Component / system	Monitoring strategy	Fault code	Fault detection criteria
Oxygen sensor	check oxygen feedback signal voltage	P0130	Error detected when (KO2B1=>KO2MAXI) AND (C.SUPKO2 >N.SUPKO2)
	check oxygen feedback signal voltage	P0132	Error detected when voltage VLAMA1 > SLAMCC mV
	check oxygen feedback signal voltage	P0133	Frequency error
Oxygen sensor heater	check circuit voltage	P0030	circuit open
	check circuit voltage	P0031	circuit low
	check circuit voltage	P0032	circuit high

RIEJU, S.A. c/.Borrassà, 41 E-17600 FIGUERES, GIRONA (SPAIN)

Telf. +34 972500850 Fax +34 972506950 www.riejumoto.com / e-mail rieju@riejumoto.com