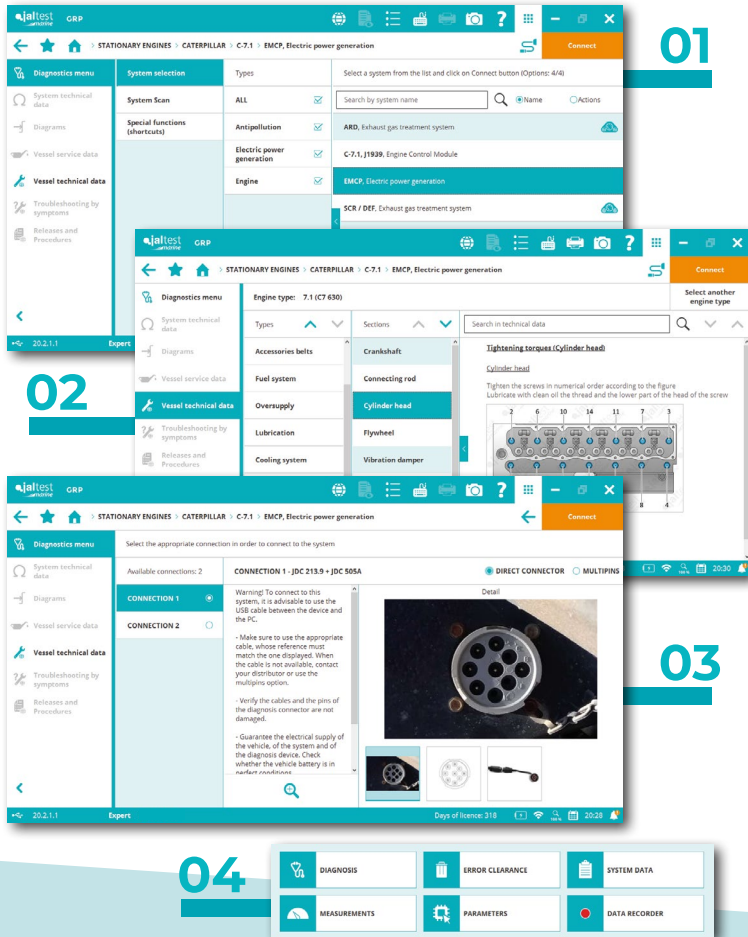


Jaltest Marine Coverage on Caterpillar: Genset System EMCP on a C7.1



Jaltest Marine goes further than any other Aftermarket Solution. A proof of that are the multiple advance functions that Jaltest Marine performs in many different systems, covering not just gasoline engines, but also diesel, DTS, stationary engines, gensets, etc. The All-Makes and All-Systems Diagnostics Solution provides a total coverage for those users that work with different makes and systems.

This case of study is about how Jaltest Marine works on Genset Systems. Something that is very interesting for those technicians that work with bigger vessels that use this type of equipment.

The following screenshots show how Jaltest Marine performs Dealer Lever Diagnostics on a Caterpillar C7.1 Genset.

In order to access to this Cat Genset, we would click on Stationary Engines, select Caterpillar, choose Caterpillar C7.1 (pic 1) and then EMCP (Electronic Power Generator). There, and before connecting, Jaltest Marine provides a lot of technical information through the menu that is on the left side. For example, wiring Diagrams; a lot of Technical Data, like the tightening torques for the cylinder head; (pic 2) or Troubleshooting. Moreover, Jaltest Marine helps you with the connection, showing you how to hook up, the cables needed and if there are more possible ways (pic 3).

Once we have connected to the Central Computer of the engine, you will see the main Jaltest Marine Diagnostics Menu (pic 4). There, you will be able to perform a diagnosis with freeze frame data in this Genset (pic 5).

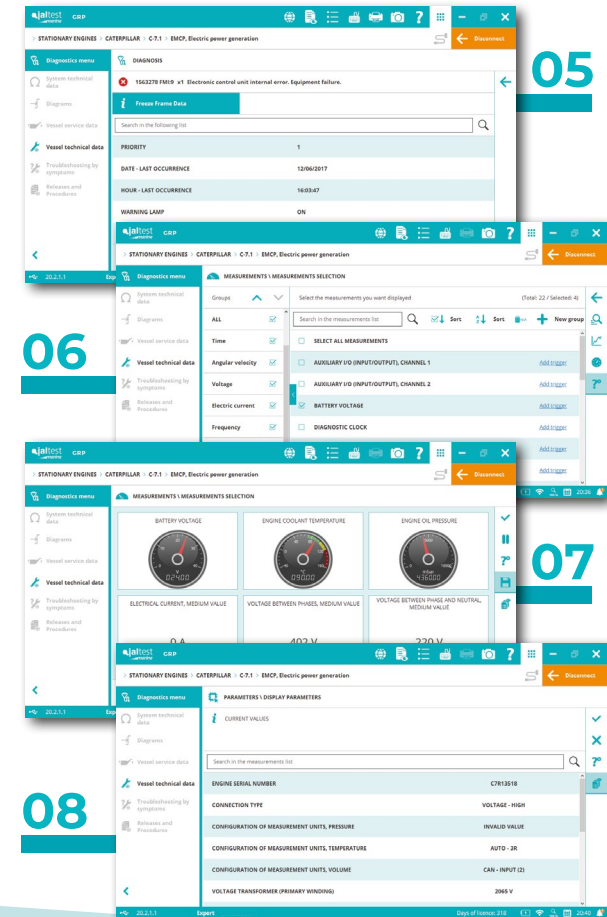
After checking the faults and clicking on Measurements, we will be able to display different measures in live (22 for this Genset) (pic 6). Jaltest Marine provides information about how the Genset is performing regarding different values: temperature, pressure, voltage, current, etc. in different ways (pic 7) that you can add to the Diagnostics Report to show your customers those anomalies.

Additionally, after working in different units systems and performing different bidirectional tests, you can save the automatic report in Jaltest GRP, attaching it to a customer and a vessel. Those Diagnostics

Reports will be available in GRP for future actions, so you can have a total control of your tasks and resources.

Finally, for this Caterpillar Genset, Jaltest Marine can show the parameters (pic 8) providing a lot of information about the configuration of the ECU.

Being able to work in Genset Systems in the same platform and on the same way in which you work on engines and other systems is the best way to save money and time. Cover it yourself with Jaltest Marine!



For more information visit: cojaliusa.com

click on images to enlarge



01

jaltest marine GRP

STATIONARY ENGINES > CATERPILLAR > C-7.1 > EMCP, Electric power generation

Connect

Diagnostics menu	System selection	Types	Select a system from the list and click on Connect button (Options: 4/4)
System technical data	System Scan	ALL <input checked="" type="checkbox"/>	Search by system name <input type="text"/> <input checked="" type="radio"/> Name <input type="radio"/> Actions
Diagrams	Special Functions (shortcuts)	Aftertreatment <input checked="" type="checkbox"/>	ARD, Exhaust gas treatment system
Vessel service data		Electric power generation <input checked="" type="checkbox"/>	C-7.1, J1939, Engine Control Module
Vessel technical data		Engine <input checked="" type="checkbox"/>	EMCP, Electric power generation
Troubleshooting by symptoms			SCR / DEF, Exhaust gas treatment system
Releases and Procedures (TSBs)			

20.3.1.1 Expert JorgeVB Days of license: 157 100% 19:01

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02

The screenshot displays the jaltest marine software interface. The top navigation bar shows the path: STATIONARY ENGINES > CATERPILLAR > C-7.1 > EMCP, Electric power generation. The left sidebar contains a 'Diagnostics menu' with options like System technical data, Diagrams, Vessel service data, Vessel technical data, Troubleshooting by symptoms, and Releases and Procedures (TSBs). The main content area is divided into 'Types' and 'Sections' columns. The 'Types' column lists various engine components, with 'Tightening torques' selected. The 'Sections' column lists specific parts, with 'Cylinder head' selected. The right pane displays the 'Tightening torques (Cylinder head)' section, which includes a diagram of the cylinder head with 14 numbered screws and the following instructions:

Tightening torques (Cylinder head)

Cylinder head

Tighten the screws in numerical order according to the figure
Lubricate with clean oil the thread and the lower part of the head of the screw

1st stage: 37 lb-ft (50 Nm)
2nd stage: 118 lb-ft (160 Nm)

The bottom status bar shows version 20.3.1.1, user 'Expert', 'JorgeVB', 'Days of license: 157', and the time '19:01'.

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jaltest marine GRP

STATIONARY ENGINES > CATERPILLAR > C-7.1 > EMCP, Electric power generation

Connect

Diagnostics menu

- System technical data
- Diagrams
- Vessel service data
- Vessel technical data
- Troubleshooting by symptoms
- Releases and Procedures (TSBs)

Select the appropriate connection in order to connect to the system

Available connections: 2

CONNECTION 1

CONNECTION 2

CONNECTION 1 - JDC 213.9 + JDC 505A DIRECT CONNECTOR MULTIPINS

Warning! To connect to this system, it is advisable to use the USB cable between the device and the PC.

- Make sure to use the appropriate cable, whose reference must match the one displayed. When the cable is not available, contact your distributor or use the multipins option.
- Verify the cables and the pins of the diagnosis connector are not damaged.
- Guarantee the electrical supply of the vehicle, of the system and of the diagnosis device. Check whether the vehicle battery is in perfect conditions.

Detail

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04

jaltest marine GRP

> STATIONARY ENGINES > CATERPILLAR > C-7.1 > EMCP, Electric power generation

Disconnect

Diagnostics menu

Select the desired action

Search in the list of actions

READ FAULT CODES

CLEAR FAULT CODES

SYSTEM DATA

MONITORING

PARAMETERS

DATA RECORDER

20.3.1.1 Expert JorgeVB Days of license: 157 100% 19:02

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05

jaltest marine GRP

> STATIONARY ENGINES > CATERPILLAR > C-7.1 > EMCP, Electric power generation

Disconnect

Diagnostics menu

System technical data

Diagrams

Vessel service data

Vessel technical data

Troubleshooting by symptoms

Releases and Procedures (TSBs)

READ FAULT CODES

1563278 FMI:9 x1 Electronic control unit internal fault. Equipment failure.

Freeze Frame Data

Search in the following list

PRIORITY	1
DATE - LAST OCCURRENCE	12/06/2017
HOUR - LAST OCCURRENCE	16:03:47
WARNING LAMP	ON
SYSTEM STATE	ACTIVE

20.3.1.1 Expert JorgeVB Days of license: 157 100% 19:03

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06

The screenshot displays the 'MONITORING \ LIVE DATA SELECTION' screen in the jaltest marine diagnostic software. The breadcrumb path is 'STATIONARY ENGINES > CATERPILLAR > C-7.1 > EMCP, Electric power generation'. The interface includes a 'Diagnostics menu' on the left with categories like 'System technical data', 'Diagrams', 'Vessel service data', 'Vessel technical data', 'Troubleshooting by symptoms', and 'Releases and Procedures (TSBs)'. The main area shows a list of data groups with checkboxes for selection. The 'Electric current' group is highlighted. The selected live data items include 'BATTERY VOLTAGE', 'ENGINE COOLANT TEMPERATURE', and 'ENGINE OIL PRESSURE'. The bottom status bar shows version 20.3.1.1, user 'Expert', 'JorgeVB', and 'Days of license: 157'.

Group	Selected	Live Data Item	Action
ALL	<input checked="" type="checkbox"/>		
Pressure	<input checked="" type="checkbox"/>		
Temperature	<input checked="" type="checkbox"/>		
Time	<input checked="" type="checkbox"/>		
Angular velocity	<input checked="" type="checkbox"/>		
Voltage	<input checked="" type="checkbox"/>		
Electric current	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> BATTERY VOLTAGE	Add trigger
Frequency	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ENGINE COOLANT TEMPERATURE	Add trigger
		<input checked="" type="checkbox"/> ENGINE OIL PRESSURE	Add trigger

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07

jaltest marine **GRP**

> STATIONARY ENGINES > CATERPILLAR > C-7.1 > EMCP, Electric power generation Disconnect

Diagnostics menu

- System technical data
- Diagrams
- Vessel service data
- Vessel technical data**
- Troubleshooting by symptoms
- Releases and Procedures (TSBs)

MONITORING \ LIVE DATA SELECTION

BATTERY VOLTAGE 024.00 V	ENGINE COOLANT TEMPERATURE 090.00 °C	ENGINE OIL PRESSURE 436.000 mbar
ELECTRICAL CURRENT, MEDIUM VALUE 0 A	VOLTAGE BETWEEN STAGES, MEDIUM VALUE 402 V	VOLTAGE BETWEEN STAGE AND NEUTRAL, MEDIUM VALUE 220 V

Information subject to the "License Agreement".

20.3.1.1 Expert JorgeVB Days of license: 157 100% 19:04

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08

jaltest marine GRP

> STATIONARY ENGINES > CATERPILLAR > C-7.1 > EMCP, Electric power generation

Disconnect

Diagnostics menu

- System technical data
- Diagrams
- Vessel service data
- Vessel technical data
- Troubleshooting by symptoms
- Releases and Procedures (TSBs)

PARAMETERS \ DISPLAY PARAMETERS

CURRENT VALUES

Search in the live data list

ENGINE SERIAL NUMBER	C7R13518
CONNECTION TYPE	THE INITIAL CONDITIONS ARE NOT MET
CONFIGURATION OF MEASUREMENT UNITS, PRESSURE	LEVER (3)
CONFIGURATION OF MEASUREMENT UNITS, TEMPERATURE	ACCESSORY (SUPPLY PUMP VALVE) - MODE 2
CONFIGURATION OF MEASUREMENT UNITS, VOLUME	NETWORK - NOT PERMITTED
VOLTAGE TRANSFORMER (PRIMARY WINDING)	51387 V

20.3.1.1 Expert JorgeVB Days of license: 157 19:05

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