CEBM025104

Shop Manual

KOMATSU®

PC290LC-10

HYDRAULIC EXCAVATOR

SERIAL NUMBERS **PC290LC-10 A25001 and up**

ENGINE **6D107E-2**

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Failure code [CA3315] KDOC Inlet Temp Sens In Range Error

(PC220_10-CA3315-400-A-00-A)

Action level	Failure code	Failure	KDOC inlet temperature sensor in-range error (Engine controller system)
L03	CA3315		
Details of failure	• Temperatures sensed by KDOC inlet temperature sensor and KDOC outlet temperature sensor deviate from estimated values (signal voltages are in normal range).		
Action of controller	• KDOC outlet temperature is substituted for KDOC inlet temperature to continue operation. (If the KDOC outlet temperature sensor is also abnormal, the default value (250°C) is taken as KDOC inlet temperature to continue operation.) • Closes EGR valve. • Limits engine output and allows engine to run. • Disables KDPF of its regeneration control.		
Problem on machine	• Engine output lowers.		
Related information	⚠ **Since the temperature of the KDPF and KDOC will become higher than 500°C, take care not to get burn injury.** • Signal voltage from the KDOC inlet temperature sensor can be checked by using monitoring function. (Code: 47301(V)) • Temperature sensed by the KDOC inlet temperature sensor can be checked by using monitoring function. (Code: 47300 (°C)) • Signal voltage from the KDOC outlet temperature sensor can be checked by using monitoring function. (Code: 47401(V)) • Temperature sensed by the KDOC outlet temperature sensor can be checked by using monitoring function. (Code: 47400 (°C)) • Signal voltage from the KDPF outlet temperature sensor can be checked by using monitoring function. (Code: 47201(V)) • Temperature sensed by the KDPF outlet temperature sensor can be checked by using monitoring function. (Code: 47200 (°C)) • The KDOC inlet temperature sensor connector label "TEMP1" is indicated on the KDPF temperature sensor integrated box in black embossed letters (same for KDOC outlet temperature sensor connector label "TEMP2" and KDPF outlet sensor connector label "TEMP3"). • Method of reproducing failure code: Starting switch: ON [Clearing failure codes] 1. Start the engine (from stopped state). 2. When warm-up operation is complete, set fuel dial to Full and put the work equipment pump in relief condition for 30 seconds. Repeat steps 1 and 2 several times. If this failure code is cleared, repair is complete.		

No.	Cause	Procedure, measuring location, criteria and remarks
1	Defective KDOC inlet temperature sensor	If failure code [CA3313] or [CA3314] is displayed, carry out troubleshooting for it first.
2	Defective wiring harness connector	1. See descriptions of wirings harness and connectors in "c: Electrical equipment" in "Checks before troubleshooting" of "General information on troubleshooting", and check them. 2. Starting switch: ON
		If this failure code does not appear, the wiring harness connector is defective. ★ If this failure code appears, perform the following.
3	Defective wiring harness or engine controller	1. Starting switch: OFF 2. Disconnect TEMP1 (KDOC inlet temperature sensor). 3. Starting switch: ON
		If failure code [CA3314] is not displayed, the wiring harness or engine controller is defective. ★ Carry out troubleshooting for cause 2 again.

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<table>
<tr><th>No.</th><th>Cause</th><th colspan="3">Procedure, measuring location, criteria and remarks</th></tr>
<tr><td rowspan="4">4</td><td rowspan="4">Open circuit in wiring harness
(wire breakage or defective contact of connectors)</td><td colspan="3">1. Turn starting switch to OFF position.
2. Disconnect connectors CP01 and P07, and connect T-adapters to each female side.</td></tr>
<tr><td rowspan="3">Resistance</td><td>★ If power supply voltage in check on cause 2 is normal, this check is not required.
Between CP01 (female) (18) and P07 (female) (1)</td><td>Max. 1 Ω</td></tr>
<tr><td>Between CP01 (female) (12) and P07 (female) (2)</td><td>Max. 1 Ω</td></tr>
<tr><td>★ If power supply voltage in check on cause 2 is normal, this check is not required.
Between CP01 (female) (6) and P07 (female) (3)</td><td>Max. 1 Ω</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">Ground fault in wiring harness
(contact with GND circuit)</td><td colspan="3">1. Turn starting switch to OFF position.
2. Disconnect connectors CP01 and P07, and connect T-adapters to either female side.</td></tr>
<tr><td>Resistance</td><td>Between ground and CP01 (female) (12) or P07 (female) (2)</td><td>Min. 1 MΩ</td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">Hot short circuit in wiring harness
(contact with 5 V or 24 V circuit)</td><td colspan="3">1. Turn starting switch to OFF position.
2. Disconnect connector P07.
3. Connect T-adapters to female side of connector P07.
4. Turn starting switch to ON position.</td></tr>
<tr><td>Voltage</td><td>Between P07 (female) (2) and ground</td><td>Max. 1 V</td></tr>
<tr><td>7</td><td>Defective pump controller</td><td colspan="3">If no failure is found by above checks, pump controller is defective. (Since this is an internal defect, troubleshooting cannot be performed.)</td></tr>
</table>

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Install the hoses and tubes to the KVGT according to the following procedures.

1. Install tube (56).

V-clamp:
7 ± 1.1 Nm {0.7 ± 0.11 kgm}

- MIKALOR clamps

★ Use a new clamp.

1) Set the hose to the original position (marked position).

★ Reference
Air hose fitting length: 50 mm (aftercooler end)
Air hose fitting length: 40 mm (KVGT end)

2) Set the bridge (**BR**) under the clamp bolt and lap it over band (**BD**) by at least 5 mm (**b**).
Dimension (**b**): Min. 5 mm

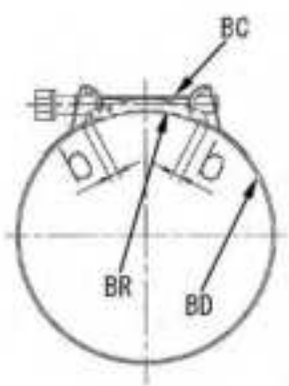
Clamp bolt thread portion (BC): Lubricant (THREEBOND PANDO 18B)

★ Impact wrench is not allowed to use.

- If hoses are to be reused
Install the clamp to the clamp mark put on the hose.

Clamp bolt:
Min. 6 Nm {0.6 kgm}

- When using a new hose
Tighten the clamp so that BDG dimension is as follows.
BDG: 7 to 10 mm





2. Install hose (57).

Hose clamp:
10.0 to 11.0 Nm {1.02 to 1.12 kgm}

3. Install hose (58).

Hose clamp:
4.4 ± 0.49 Nm {0.45 ± 0.05 kgm}

4. Install hose (54).

Hose clamp:
3.3 ± 0.49 Nm {0.34 ± 0.05 kgm}

5. Install hose (53).



[*4]

When installing a connector of quick coupler type, observe the following points.

★ The internal parts of the fitting may be damaged when the hose or tube is removed. Accordingly, do not reuse the hose or tube.
When installing, replace it with a new one.

★ Ensure that mud or dirt is not sticking to the hose joint portions in advance.

★ Push the connector straight (in the direction of (**b**)). Do not pry it in or shake it.
If it is difficult to insert the connector, do not push it in forcibly but pull it out. Then, check the male and female couplings for damage and sticking mud.



[*5]

Fuel return hose mounting bolt:
19.6 to 29.4 Nm {2.0 to 3.0 kgm}

[*6]

Fuel supply hose mounting bolt:
25.4 to 34.3 Nm {2.6 to 3.5 kgm}

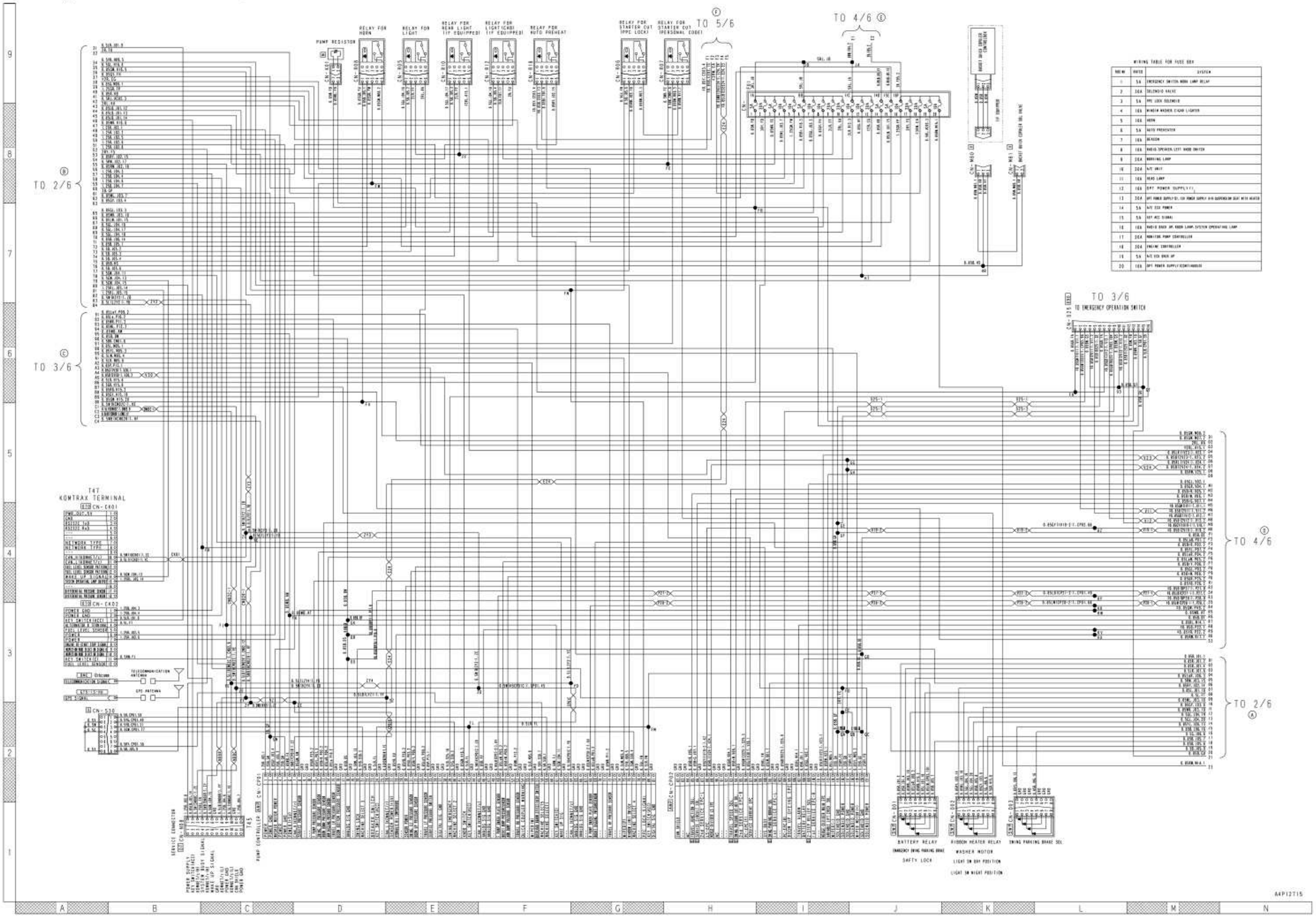
[*7]

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Electrical circuit diagram (1/6)

PC290LC-10

★ This figure covers the equipment and devices that are unavailable as optional items in some areas.



WIRING TABLE FOR FUSE BOX

NUMBER	RATED	SYSTEM
1	5A	EMERGENCY SWITCH, HORN LAMP RELAY
2	10A	SOLENOID VALVE
3	5A	PPC LOCK SOLENOID
4	10A	WINDOW WASHER, CIGAR LIGHTER
5	10A	HORN
6	5A	AUTO PREHEATER
7	10A	BEACON
8	10A	RADIO, SPEAKER, LEFT DOOR SWITCH
9	20A	WORKING LAMP
10	20A	A/C UNIT
11	10A	ROOM LAMP
12	10A	OPT. POWER SUPPLY (+)
13	20A	OPT. POWER SUPPLY (-), CAB POWER SUPPLY (FOR SUSPENSION SEAT WITH HEATER)
14	5A	A/C ECU POWER
15	5A	KEY ACC SIGNAL
16	10A	RADIO BACK UP, DOOR LAMP, SYSTEM OPERATING LAMP
17	20A	MONITOR, PUMP CONTROLLER
18	20A	ENGINE CONTROLLER
19	5A	A/C ECU BACK UP
20	10A	OPT. POWER SUPPLY(CONTINUOUS)

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