SEN05331-05

Shop Manual

HYDRAULIC
EXCAVATOR

PC228US -8
PC228USLC-8

SERIAL NUMBERS 50001 and up

ecot3

KOMATSU®

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Notice of revision 1

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Failure code [CA272] IMV/PCV1 Open Error

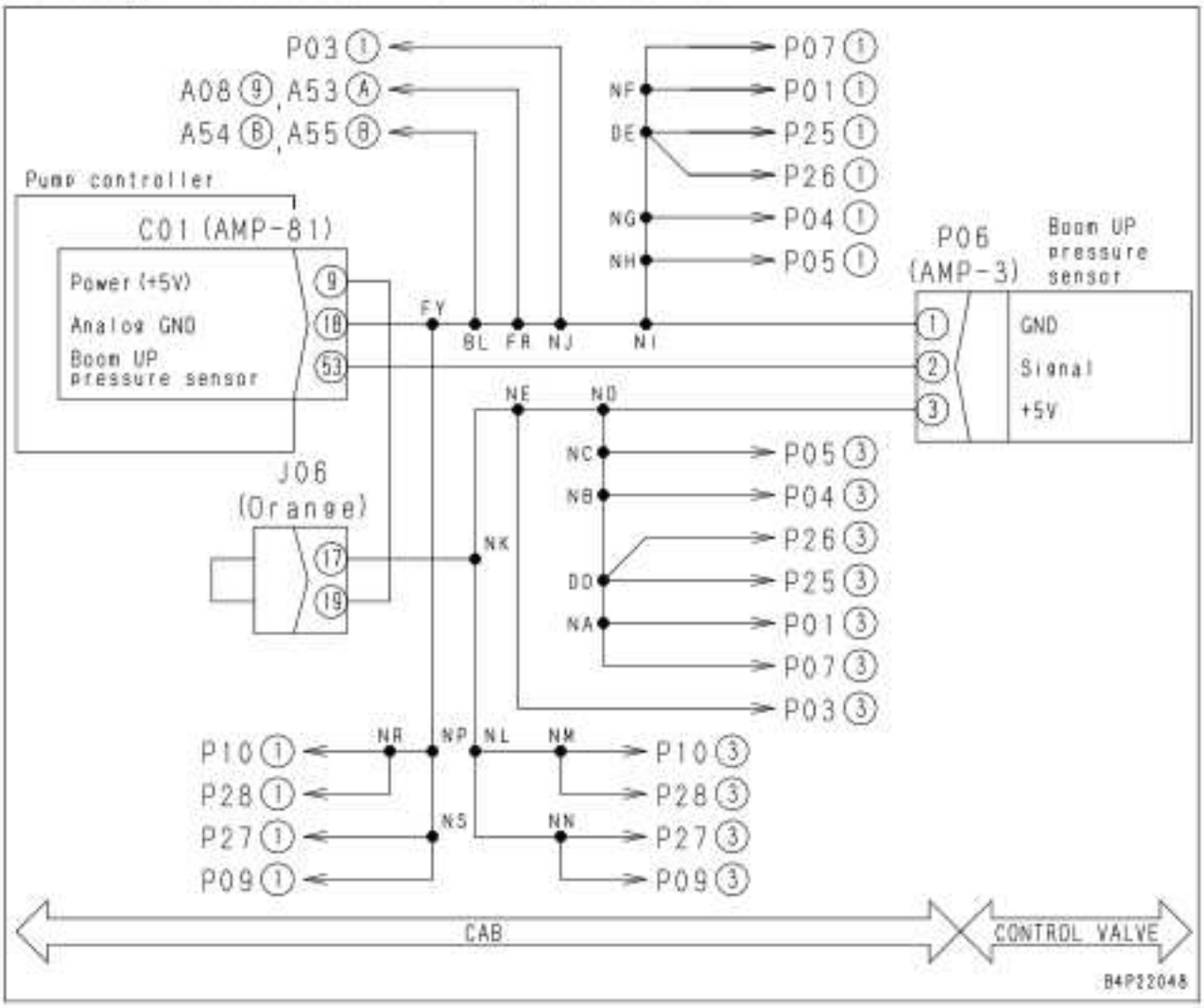
User code	Failure code	Failure	Open circuit in IMV/PCV1 (Engine controller system)
E10	CA272		
Detail of failure	• Open circuit is detected in drive circuit of supply pump actuator.		
Action of controller	• None in particular		
Problem on machine	• Engine runs but its speed does not stabilize. • Common rail fuel pressure rises above command value.		
Related information	• Method of reproducing failure code: Turn starting switch to ON position. • Since troubleshooting "socket" for this sensor features female connector alone, it is not connectable to harness side female connector and thus not usable for checking open circuit (not designed as a T-adapter).		

	Cause	Procedure, measuring location, criteria and remarks		
1	Defective wiring harness connector	See descriptions of wiring harness and connectors in "c: Electrical equipment" in "Checks before troubleshooting" of "General information on troubleshooting", and check them directly.		
2	Defective supply pump actuator	1. Turn starting switch to OFF position. 2. Disconnect connector CP3 PUMP REGULATOR.		
		Between CP3 PUMP REGULATOR (male) (1) and (2)	Resistance	Max. 5 Ω
3	Open or short circuit in wiring harness	1. Turn starting switch to OFF position. 2. Disconnect connector ECM and connect T-adapter to female side.		
		Between ECM (female) (2) and (32)	Resistance	Max. 5 Ω
4	Hot short circuit in wiring harness (contact with 24 V circuit)	1. Turn starting switch to OFF position. 2. Disconnect connector CP3 PUMP REGULATOR. 3. Insert T-adapter to connector ECM. 4. Turn starting switch to ON position and perform troubleshooting after one minute or longer (with connector CP3 PUMP REGULATOR disconnected). ★ Average voltage is displayed because of PWM.		
		Between ECM (2) and (32)	Voltage	Max. 3 V
5	Defective engine controller	If no failure is found by above checks, engine controller is defective. (Since this is internal failure, troubleshooting cannot be performed.)		

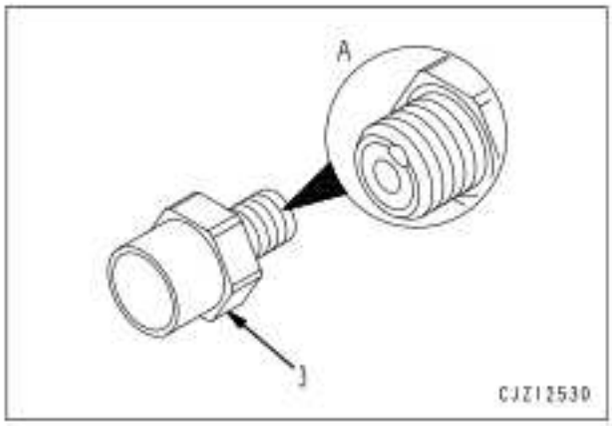
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Cause		Procedure, measuring location, criteria and remarks		
5	Hot short in wiring harness (short to 24 V circuit)	1. Turn starting switch to OFF position. 2. Disconnect connector P06. 3. Connect T-adapter to female side of connector P06. 4. Turn starting switch to ON position.		
		Between P06 (female) (2) and ground	Voltage	Max. 1 V
6	Defective pump controller	If no failure is found by above checks, pump controller is defective. (Since this is internal failure, troubleshooting cannot be performed.)		

Circuit diagram related to boom RAISE PPC pressure sensor



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[*9]
Joint bolt:
24 ± 4 Nm {2.4 ± 0.4 kgm}

[*10]
Mounting bolt:
24 ± 4 Nm {2.4 ± 0.4 kgm}

[*11]
Fuel block mounting bolt:
32 ± 4 Nm {3.3 ± 0.4 kgm}

[*12]
⚠ **Install each high-pressure pipe and harness at least 10 mm apart from each other.**

[*13]
Air hose clamp:
10.0 – 11.0 Nm {1.02 – 1.12 kgm}

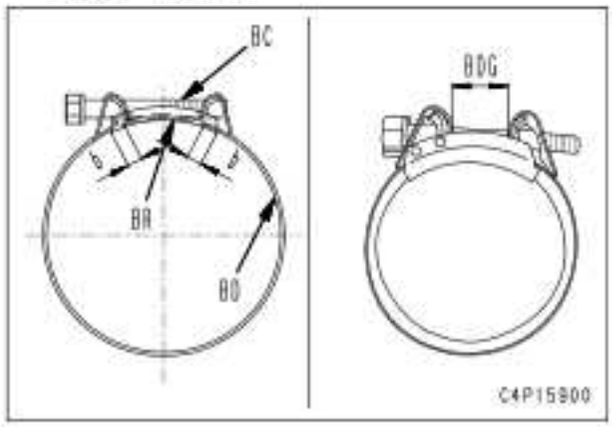
[*14]
- Reconnect the disconnected air tubes according to the following procedure.

★ Use a new MIKALOR clamp.

1) Set the hose to the original position (marked position).
(Reference)
Air hose fitting depth:
40 mm (turbocharger end)
65 mm (aftercooler end)
2) With bridge (**BR**) set under the clamp bolt, tighten the bolt so that bridge (**BR**) overlaps with the band by dimension (**b**) indicated below.
Dimension (b): 5 mm or more
Threaded portion of clamp bolt (BC):
Lubricating oil (THREEBOND PANDO 18B)
★ Do not use an impact wrench.

- **When reusing the hose**
Install the clamp to the clamp mark made on the hose.
Clamp bolt:
6 Nm {0.6 kgm}

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



[*15]
Mounting nut of lubricating oil inlet hose for turbocharger
35 ± 5 Nm {3.57 ± 0.5 kgm}
★ When tightening the hose mounting nut, fix the connector on the turbocharger side securely by using a wrench since its tightening is low.
★ If the connector had been loosened with the nut, tighten the connector the following torque.
Connector:
36 ± 5 Nm {3.7 ± 0.5 kgm} (turbocharger side)
24 ± 4 Nm {2.4 ± 0.4 kgm} (oil cooler side)
★ If the stud bolt is removed, install it and tighten to the following torque.
Stud bolt:
24 ± 4 Nm {2.4 ± 0.4 kgm}
Mounting bolt of lubricating oil return tube for turbocharger:
24 ± 4 Nm {2.4 ± 0.4 kgm}

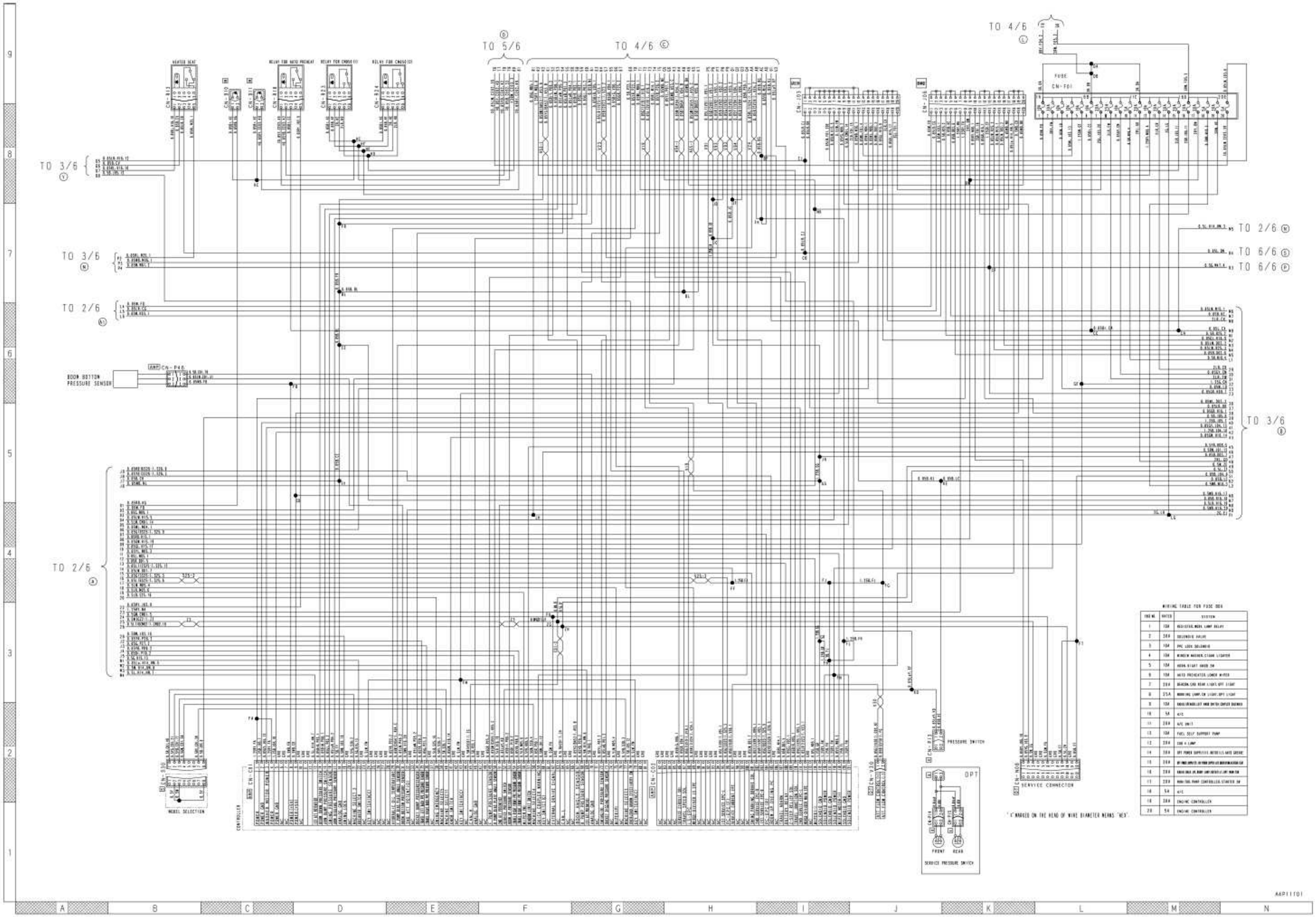
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Electrical circuit diagram (1/6)

(KUK specification)

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



FUSE NO.	RATED	SYSTEM
1	10A	RESISTOR,WORK LAMP RELAY
2	20A	SOLENOID VALVE
3	10A	PPC LOCK SOLENOID
4	10A	WINDOW WASHER,CIGAR LIGHTER
5	10A	HORN,START AUXED SW
6	10A	HEAD PREHEATER,LOWER W/PEED
7	20A	BEACON,CAB REAR LIGHT,OPT LIGHT
8	25A	WORKING LAMP,CW LIGHT,OPT LIGHT
9	10A	RADIO,RADIO,CLOCK AND DATA COMPUTER BACKUP
10	5A	A/C
11	20A	A/C UNIT
12	10A	FUEL SELF SUPPORT PUMP
13	20A	CAB 4 LAMP
14	10A	OPT POWER SUPPLY(CC.ACCESSORY)
15	20A	OPT POWER SUPPLY(CC.BATTERY)
16	20A	RADIO,MAIN LP,ROOM LAMP,SPEAKER,CLOCK,MAIN FUSE
17	20A	MONITOR,PANEL CONTROLLER,STARTER SW
18	5A	A/C
19	20A	ENGINE CONTROLLER
20	5A	ENGINE CONTROLLER

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