CEBM001505

Shop Manual

KOMATSU®

PC200LL-8
PC220LL-8

HYDRAULIC EXCAVATOR

SERIAL NUMBERS **PC200LL-8 A87001 and up**
PC220LL-8 A87001 and up

ENGINE **6D107E-1**

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November 2012

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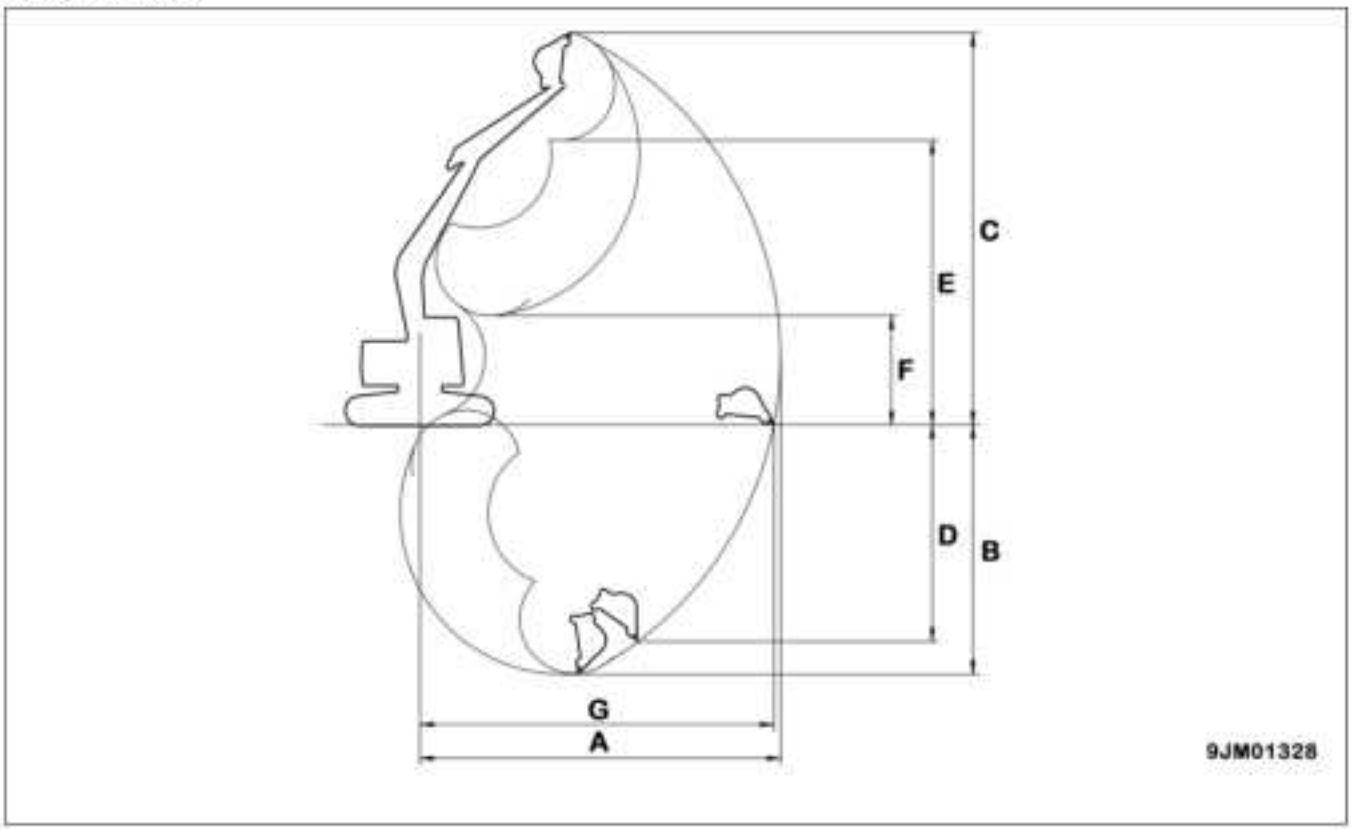
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Working Ranges

Road Builder



	Working Ranges	Unit	PC200LL-8 Road Builder	PC220LL-8 Road Builder
A	Max. digging reach	mm (ft)	9,845 (32ft 3in)	10,195 (33ft 5in)
B	Max. digging depth	mm (ft)	6,209 (20ft 4in)	6,525 (21ft 4in)
C	Max. digging height	mm (ft)	10,350 (33ft 11in)	10,510 (34ft 5in)
D	Max. vertical wall digging depth	mm (ft)	5,565 (18ft 3in)	5,510 (18ft 1in)
E	Max. dumping height	mm (ft)	7,465 (24ft 6in)	7,530 (24ft 8in)
F	Min. dumping height	mm (ft)	3,005 (9ft 10in)	3,030 (9ft 11in)
G	Max. reach at ground level	mm (ft)	9,605 (31ft 6in)	9,940 (32ft 7in)

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AB00KE - Charge Voltage Low

User code	Failure code	Trouble	Charge voltage low (Machine monitor system)
---	**AB00KE**		
Contents of trouble	• While engine is running, signal circuit of alternator detected low charge voltage (below 7.8 V).		
Action of machine monitor	• Displays charge level monitor on machine monitor. • Even if cause of failure disappears, system does not reset itself until starting switch is turned OFF.		
Problem that appears on machine	• If machine is operated as it is, battery may not be charged.		
Related information	• Signal voltage of alternator can be checked with monitoring function. (Code: 04300 Charge voltage) • Method of reproducing failure code: Start engine.		

		Cause	Standard value in normal state/Remarks on troubleshooting		
Possible causes and standard value in normal state	1	Defective charge of alternator (when system is normal)	★ Prepare with starting OFF, then start engine and perform troubleshooting.		
			E12 (male)	Engine speed	Voltage
			Between (1) - chassis ground	Min. medium speed	27.5 - 29.5 V
	2	Defective charge level monitor	If cause 1 is not detected, charge level monitor system may be defective. Perform troubleshooting for "E-7 Caution item flashes while engine is running" in E-mode.		

Remark

The following pages are based on a one-piece main harness used on the excavator. The forestry machine utilizes a two-piece main harness with additional group connectors under the floor frame area. This two piece harness allows the use of a harness extension to accommodate different cab riser heights.

When troubleshooting the harness, if the circuit in question passes between the operator's cab and the revolving frame, then the circuit will also include the wiring harness extension.

In this case, it will be necessary to refer to the Diagrams and Drawings in Section 90 to analyze the additional circuit.

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DHSDMA - Bucket Dump PPC Press Sensor Abnormality

User code	Failure code	Trouble	Bucket dump PPC pressure sensor abnormality (Pump controller system)
—	**DHS4MA**		
Contents of trouble	• Signal voltage of bucket dump PPC pressure sensor circuit is below 0.3 V or above 4.5 V.		
Action of machine monitor	• Fixes bucket dump PPC pressure at 0 kg/cm^2 (0 psi) and continues control. • If cause of failure disappears, system resets itself.		
Problem that appears on machine	• Automatic decelerator cannot be reset. • Bucket dump performance lowers.		
Related information	★ If 5V circuit (3) and ground circuit (1) of pressure sensor are connected inversely, pressure sensor will be broken. Accordingly, take extreme care when checking. • Bucket dump PPC pressure can be checked with monitoring function. (Code: 07301 Bucket dump PPC pressure) • Method of reproducing failure code: Turn starting switch ON or start engine.		

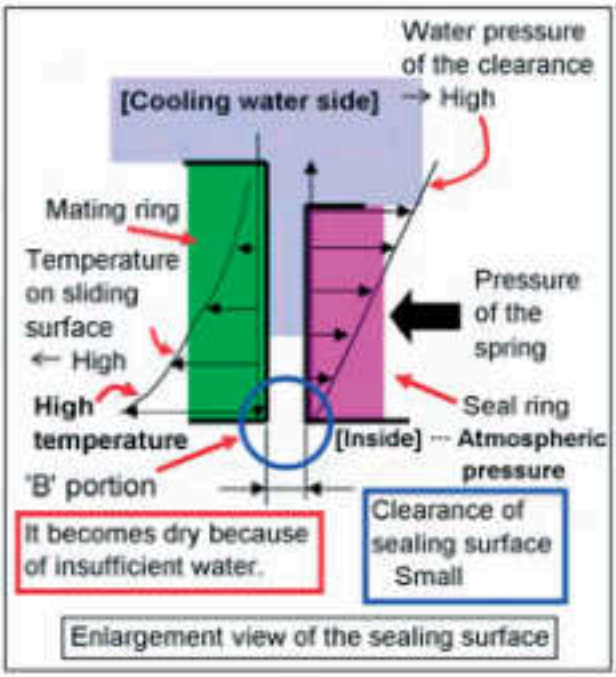
	Cause		Standard value in normal state/Remarks on troubleshooting		
Possible causes and standard value in normal state	1	Defective 5V sensor power supply 1 system	★ If failure code [**DA25KP**] is also displayed, perform troubleshooting for it first.		
	2	Defective bucket dump PPC pressure sensor (Internal defect)	★ Prepare with starting switch OFF, then turn starting switch ON or start engine and perform troubleshooting in each case.		
			P05		Voltage
			Between (3) - (1)	Power supply	4.5 - 5.5 V
			Between (2) - (1)	Signal	0.3 - 4.5 V
			If voltage is abnormal, replace bucket dump PPC pressure sensor with another PPC pressure sensor and check failure code. (If "E" of failure code goes off at this time, bucket dump PPC pressure sensor is defective.)		
	3	Disconnection in wiring harness (Disconnection in wiring or defective contact in connector)	★ Prepare with starting switch OFF, then perform troubleshooting without turning starting switch ON.		
			Wiring harness between C01 (female) (18) - P05 (female) (1)	Resistance	Max. 1 Ω
			Wiring harness between C01 (female) (34) - P05 (female) (2)	Resistance	Max. 1 Ω
			Wiring harness between C01 (female) (9) - J06 - P05 (female) (3)	Resistance	Max. 1 Ω
	4	Ground fault in wiring harness (Short circuit with GND circuit)	★ Prepare with starting switch OFF, then perform troubleshooting without turning starting switch ON.		
			Wiring harness between C01 (female) (34) - P05 (female) (2) and chassis ground	Resistance	Min. 1 MΩ
	5	Hot short (Short circuit with 24V circuit) in wiring harness	★ Prepare with starting switch OFF, then turn starting switch ON and perform troubleshooting.		
			Wiring harness between C01 (female) (34) - P05 (female) (2)	Voltage	Max. 1 V
	6	Defective pump controller	If causes 1 - 5 are not detected, pump controller may be defective. (Since trouble is in system, troubleshooting cannot be performed.)		

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6. If the clearance between sliding surfaces is small.
If the clearance of sliding surfaces is small because of certain a reason (defective mounting of the water seal, etc.) lubrication by water will be insufficient. As a result, mating ring and seal ring are contacting fully and sliding with dry condition on "B portion".

⇓

Seal ring is made of carbon whose self lubricating ability is good. But if this condition continues, abnormal wear and crack(s) will occur by heat, and water leakage occur.

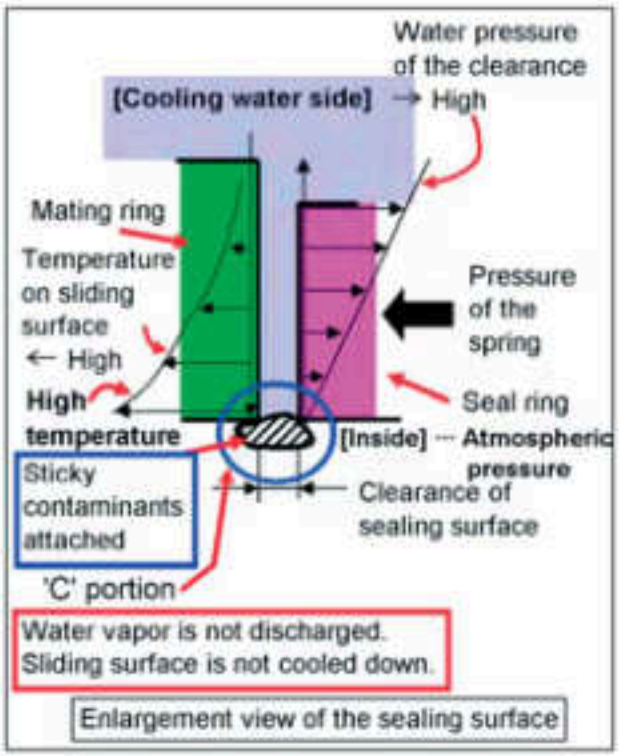


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7. If any sticky contaminants attach inside the water seal (oil, dirt, etc.
Water vapor is not discharged at "C portion" and cooling down of the sliding surfaces becomes insufficient.

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Same as above, if this condition continues, abnormal wear and crack(s) will occur by heat, and water leakage will occur.



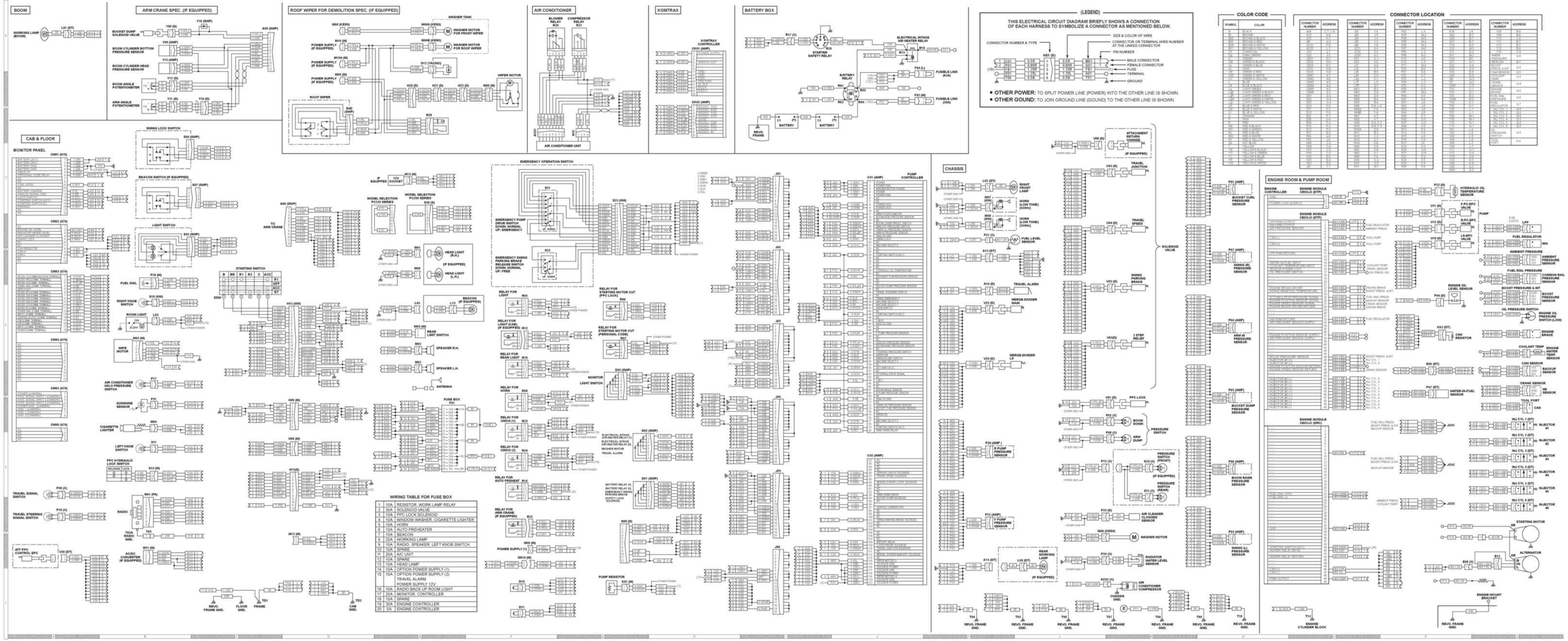
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When replacing the water seal, observe the following:

- Install the water seal to the specified position when assembling the water pump.
If the seal ring of the water seal is installed floated, installed length of the spring of the seal ring becomes too small. And then, surface pressure of the sliding surface becomes high which leads to the failures described above.
- Take care not to allow any oil, dust, etc. to attach the sliding surface of the water seal.

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ELECTRICAL CIRCUIT DIAGRAM (1/2)



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