CEBM018703

Shop Manual

KOMATSU®

PC300LC-8
PC300HD-8

HYDRAULIC EXCAVATOR

SERIAL NUMBERS	PC300LC-8	A90001	and UP
	PC300HD-8	A87001	

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CA778 - Engine BKUP Speed Sensor Error

Action code	Failure code	Trouble	Engine Bkup speed sensor error (Engine controller system)
E15	**CA778**		
Contents of trouble	• There is error in signal from engine Bkup speed sensor.		
Action of controller	• Continues control with signal from engine Ne speed sensor.		
Problem that appears on machine	• Engine does not start easily. • Engine output lowers.		
Related information	• 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 sensor power supply 2 system	If failure code [**CA187**] is also indicated, carry out troubleshooting for it first.		
	2	Defective engine Bkup speed sensor	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.		
			C13 (male)		Voltage
			Between (1) – (2)	Power supply	4.75 – 5.25 V
			Voltage is measured with wiring harness connected. Accordingly, if voltage is abnormal, check wiring harness and controller, too, for another cause of trouble, and then judge.		
	3	Breakage or improper clearance of engine Bkup speed sensor	Engine Bkup speed sensor may be broken or may have improper clearance. Check it.		
	4	Breakage of rotation sensor ring	Rotation sensor ring may be broken. Check it.		
	5	Disconnection in wiring harness (Disconnection in wiring or defective contact in connector)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Wiring harness between CE01 (female) (26) – C13 (female) (3)	Resistance	Max. 10 Ω
	6	Ground fault in wiring harness (Short circuit with GND circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Wiring harness between CE01 (female) (26) – C13 (female) (3) and chassis ground	Resistance	Min. 100 kΩ
	7	Hot short (Short circuit with 5V/24V circuit) in wiring harness	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.		
			Wiring harness between CE01 (female) (26) – C13 (female) (3) and chassis ground	Voltage	Max. 1 V
	8	Short circuit in wiring harness (with another wiring harness)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Wiring harness between CE01 (female) (26) – C13 (female) (3) and between CE01 (female) (37) – C13 (female) (1)	Resistance	Min. 100 kΩ
			Wiring harness between CE01 (female) (26) – C13 (female) (3) and between CE01 (female) (47) – C13 (female) (2)	Resistance	Min. 100 kΩ

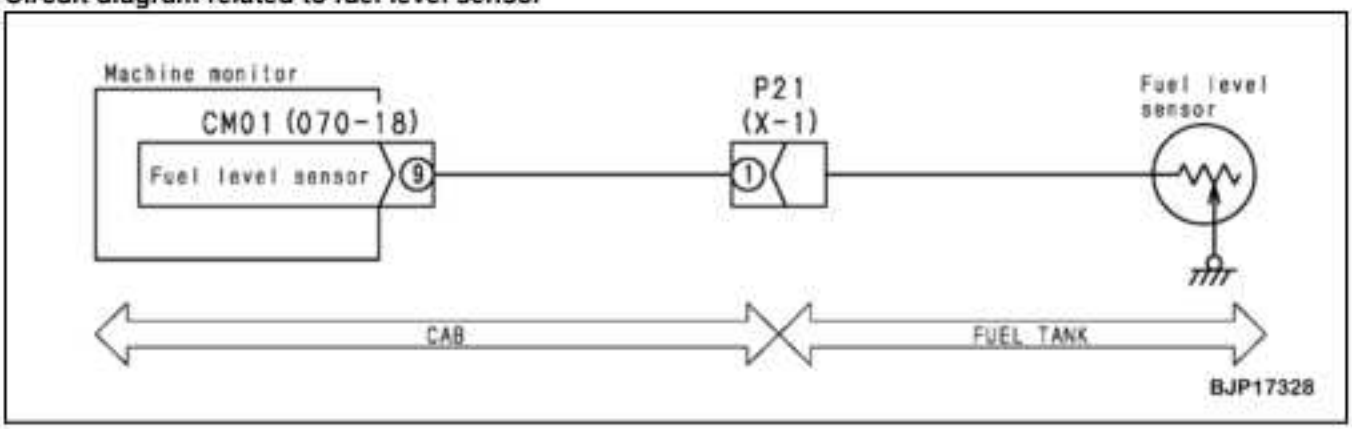
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E-13 Fuel Level Gauge Does Not Indicate Normally

Trouble	• While fuel is added, fuel level gauge does not rise from red range (E). • While fuel level is low, fuel level gauge does not lower from green range (F)
Related information	• Input signal (voltage) from the fuel level sensor can be checked with monitoring function. (Code 04200: Fuel level sensor voltage)

	Cause		Standard value in normal state/Remarks on troubleshooting			
Possible causes and standard value in normal state	1	Defective fuel level sensor (Internal disconnection or short circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			P21 (male)	Fuel level	Resistance	
			Between (1) – chassis ground	FULL (Upper limit)	Approx. 12 Ω	
				EMPTY (Lower limit)	85 – 110 Ω	
	2	Disconnection in wiring harness (Disconnection in wiring or defective contact in connector)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			Wiring harness between CM01 (female) (9) – P21 (female) (1)		Resistance	Max. 1 Ω
	3	Ground fault in wiring harness (Short circuit with GND circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			Wiring harness between CM01 (female) (9) – P21 (female) (1) and chassis ground		Resistance	Min. 1 MΩ
	4	Hot short (Short circuit with 24V circuit) in wiring harness	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.			
			Wiring harness between CM01 (female) (9) – P21 (female) (1) and chassis ground		Voltage	Max. 1 V
	5	Defective machine monitor	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			CM01	Fuel level	Resistance	
			Between (9) – chassis ground	FULL (Upper limit)	Approx. 12 Ω	
				EMPTY (Lower limit)	85 – 110 Ω	

Circuit diagram related to fuel level sensor



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Installation

- Install in reverse order of removal.

[*1]

Counterweight mounting bolt: 1,715 - 1,911 N•m (1,264.9 - 1,409.4 lbf ft)

[*2]

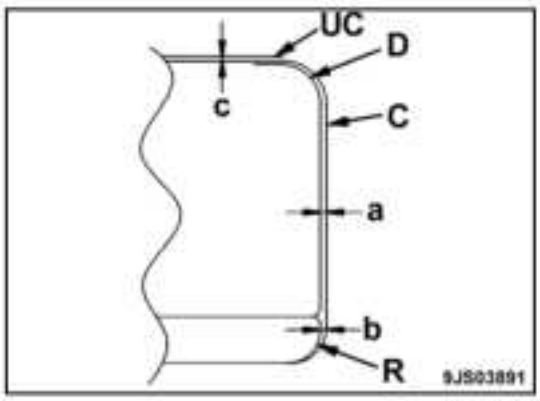
★ Installing and adjusting counterweight.

A. Adjust the level difference from the exterior part (vertical clearance) with the shim between the counterweight and revolving frame.

Set shim thickness: . . . . . .1.0 mm, 2.0 mm

B. Install counterweight in such a way that clearance between the door and counterweight as well as clearance between the revolving frame and counterweight is 10 ±5 mm (0.3936 ±0.1968 in).

C. The difference in level in left to right direction between the exterior of door (D) and counterweight (C)
(a): 10 ± 4 mm (0.3936 ±0.1574 in)
The difference in level in left to right direction between revolving frame (R) and counterweight (C)
(b): 5 mm (0.1968 in) or less
The difference in level in up and down direction between exterior upper cover (UC) and counterweight (C)
(c): 0 ±5 mm (0 ±0.1968 in)
are the respective limits for the mounting adjustment.

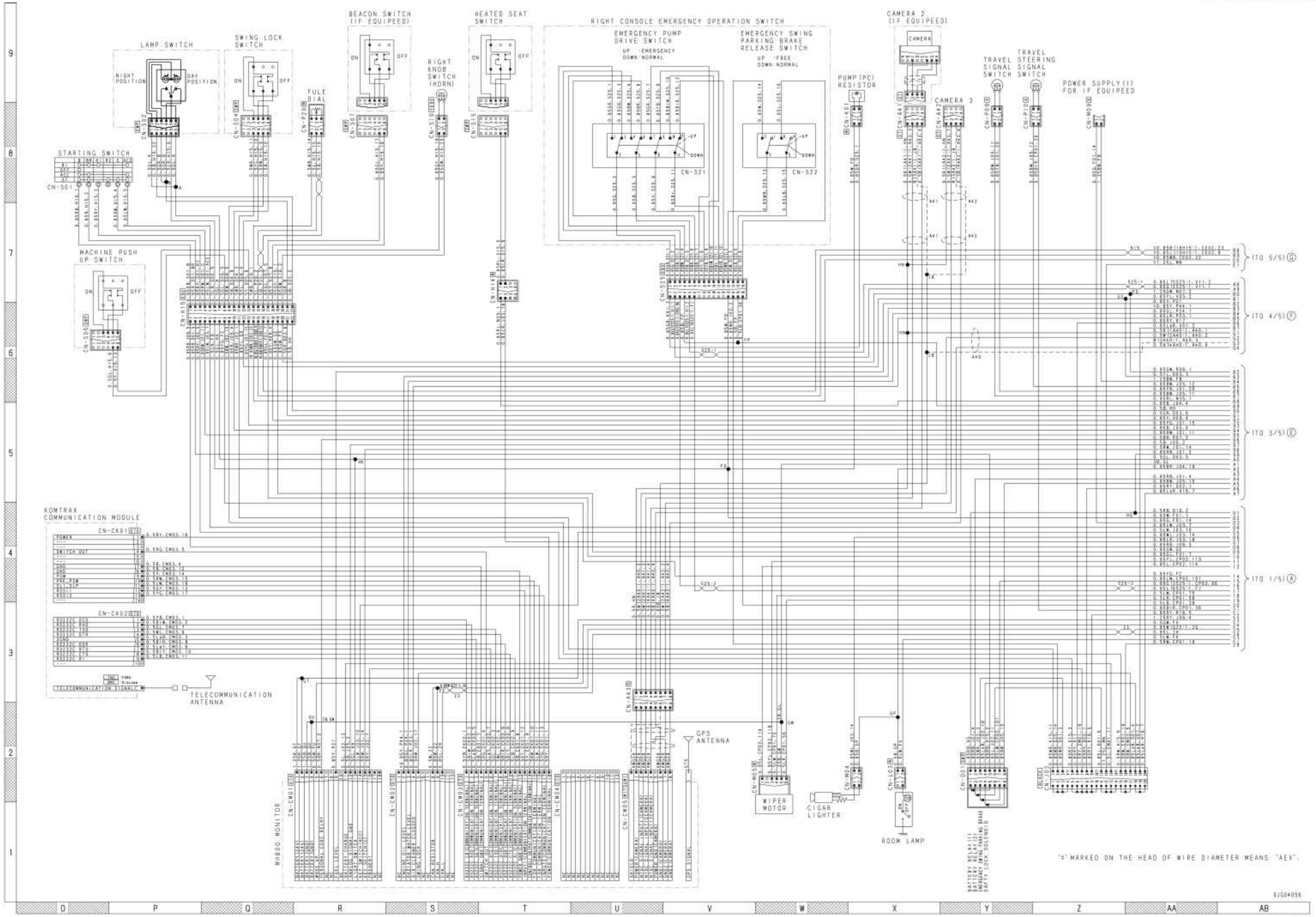


★ Rear view (Enlarged view for right hand side of the machine)

★ Precaution when installing the mounting bolts.
Tight the mounting bolts by using the hand wrench until counterweight mating surface contacts the counter part. Then, tight the mounting bolts to the specified torque by using large impact wrench or large wrench.

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Electrical circuit diagram (2/5)



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