SEN00239-20

Shop Manual

ARTICULATED
DUMP TRUCK

HM400-2

SERIAL NUMBERS 2001 and up

ecot3

KOMATSU®

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Failure code [CA432] Trouble in idle validation process

Action code	Failure code	Trouble	Trouble in idle validation process (Engine controller system)
E03	**CA432**		
Contents of trouble	• Throttle potentiometer signal of accelerator pedal is different from idle validation switch signals 1 and 2.		
Action of controller	• Turns caution lamp ON and sounds alarm buzzer. • When throttle is fixed to low idle or pedal is released, engine speed is set to low idle. When pedal is pressed, engine speed is set to medium speed.		
Problem that appears on machine	• When accelerator pedal is pressed, engine speed does not rise from low idle or does not rise above medium speed.		
Related information			

Possible causes and standard value in normal state	Cause	Standard value in normal state/Remarks on troubleshooting
	Carry out troubleshooting for failure code [**CA431**].	

Failure code [CA441] Abnormally low voltage in power supply

Action code	Failure code	Trouble	Abnormally low voltage in power supply (Engine controller system)
E03	**CA441**		
Contents of trouble	• Voltage in power supply circuit of engine controller is abnormally low.		
Action of controller	• None in particular.		
Problem that appears on machine	• Machine continues operation normally but may stop suddenly or may not able to restart.		
Related information	• Source voltage of engine controller can be checked with monitoring function. (Monitoring code: ENGINE - POWER SUPPLY - 03200)		

Possible causes and standard value in normal state	Cause	Standard value in normal state/Remarks on troubleshooting
	Carry out troubleshooting for failure code [**CA111**].	

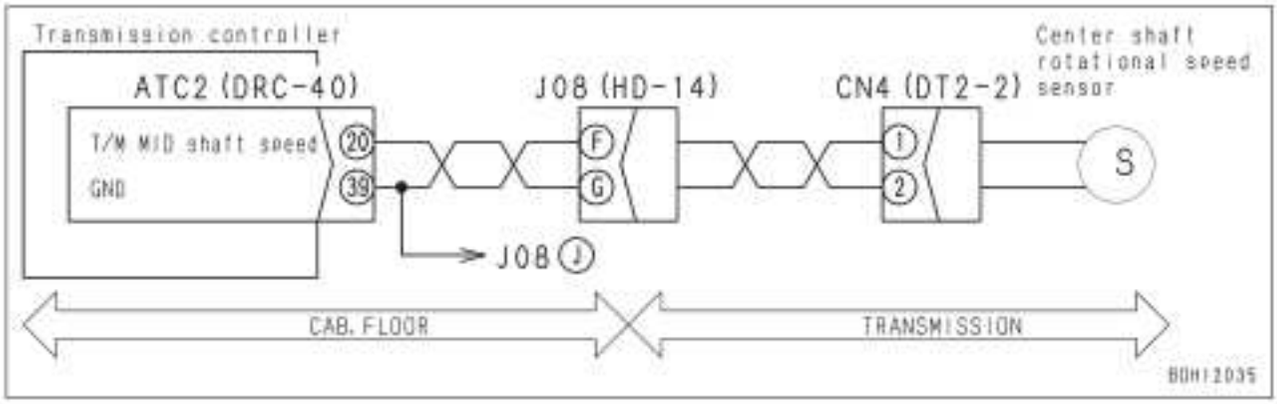
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Failure code [DLF2LC] Disconnection in transmission intermediate shaft speed sensor system

Action code	Failure code	Trouble	Disconnection in transmission intermediate shaft speed sensor system (Transmission controller system)
E03	DLF2LC		
Contents of trouble	• Speed calculated from engine speed sensor signal, transmission input shaft speed sensor signal, and transmission output shaft speed sensor signal is different from signal speed of transmission intermediate shaft speed sensor.		
Action of controller	• Keeps current gear speed. • If gearshift lever is set in "N", gear speed is kept in neutral.		
Problem that appears on machine	• Gear cannot be shifted. • If gearshift lever is set in "N", machine cannot restart until it stops.		
Related information	• Signal from intermediate shaft speed sensor can be checked with monitoring function. (Monitoring code: TRANSMISSION - TRANSMISSION SPEED: MID - 31300) • Method of reproducing failure code: Start engine + travel.		

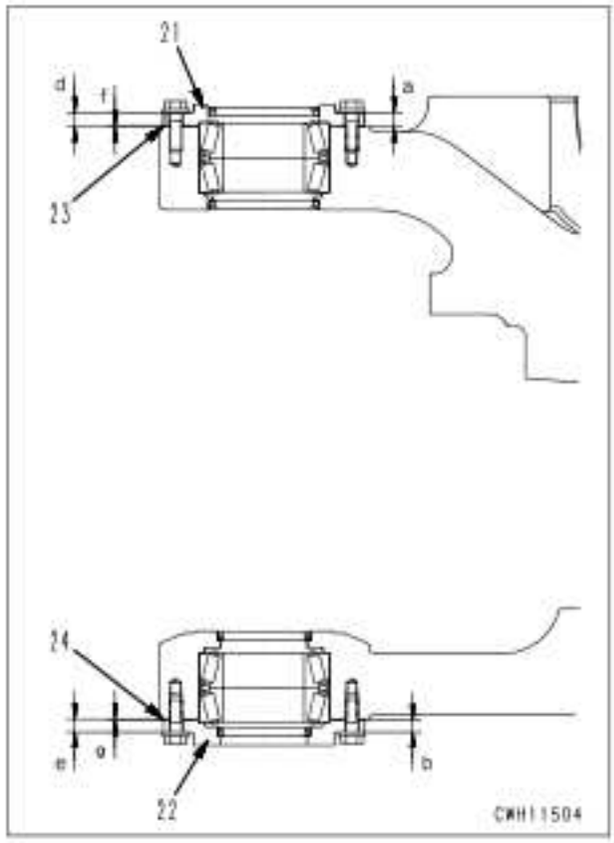
	Cause		Standard value in normal state/Remarks on troubleshooting			
Possible causes and standard value in normal state	1	Defective transmission intermediate shaft speed sensor	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			CN4 (male)	Resistance		
			Between (1) – (2)	500 – 1,000 Ω		
			Between (1), (2) – chassis ground	Min. 1 MΩ		
	2	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 ATC2 (female) (20) – CN4 (female) (1)	Resistance	Min. 1 MΩ	
	3	Hot short (Short circuit with 24 V circuit) in wiring harness	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.			
			Wiring harness between ATC2 (female) (20) – CN4 (female) (1)	Voltage	Max. 1 V	
	4	Defective transmission controller	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			ATC2 (female)	Resistance		
			Between (20) – (39)	500 – 1,000 Ω		

Circuit diagram related to transmission intermediate shaft speed sensor

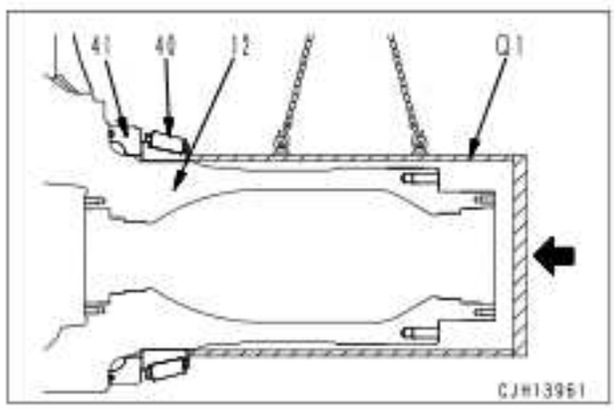


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4) Install retainers (21) and (22) after adjusting the shims.
   i) Measure respective thickness (a) and (b) of retainers (21) and (22) of the hitch frame.
   ii) Install retainer (21) to the hitch frame upper side with 5 mounting bolts.
   Retainer mounting bolt:
   98.1 Nm {10 kgm} ± 10%
   iii) Install retainer (22) to the hitch frame underside with 3 mounting bolts.
   Retainer mounting bolt:
   58.8 Nm {6 kgm} ± 10%
   iv) Measure respective dimensions (d) and (e) of clearance between retainer (21) and the hinge plate, and retainer (22) and the hinge plate.
   v) Select and make a combination of the shims so that the total shim thickness is (f), i.e. the difference between (d) and (a) dimensions (**f = d – a**) minus 0.02 to 0.12mm, and likewise (g), i.e. the difference between (e) and (b) dimensions (**g = e – d**) minus 0.02 to 0.12 mm.
   ★ Kind of shim thickness:
   0.1 mm and 0.5 mm
   vi) Install a combination of the shims to retainers (21) and (22), and tighten all the mounting bolts.
   Retainer mounting bolt:
   Adhesive (LT-2)
   Retainer mounting bolt:
   157 – 196 Nm {16.0 – 20.0 kgm}

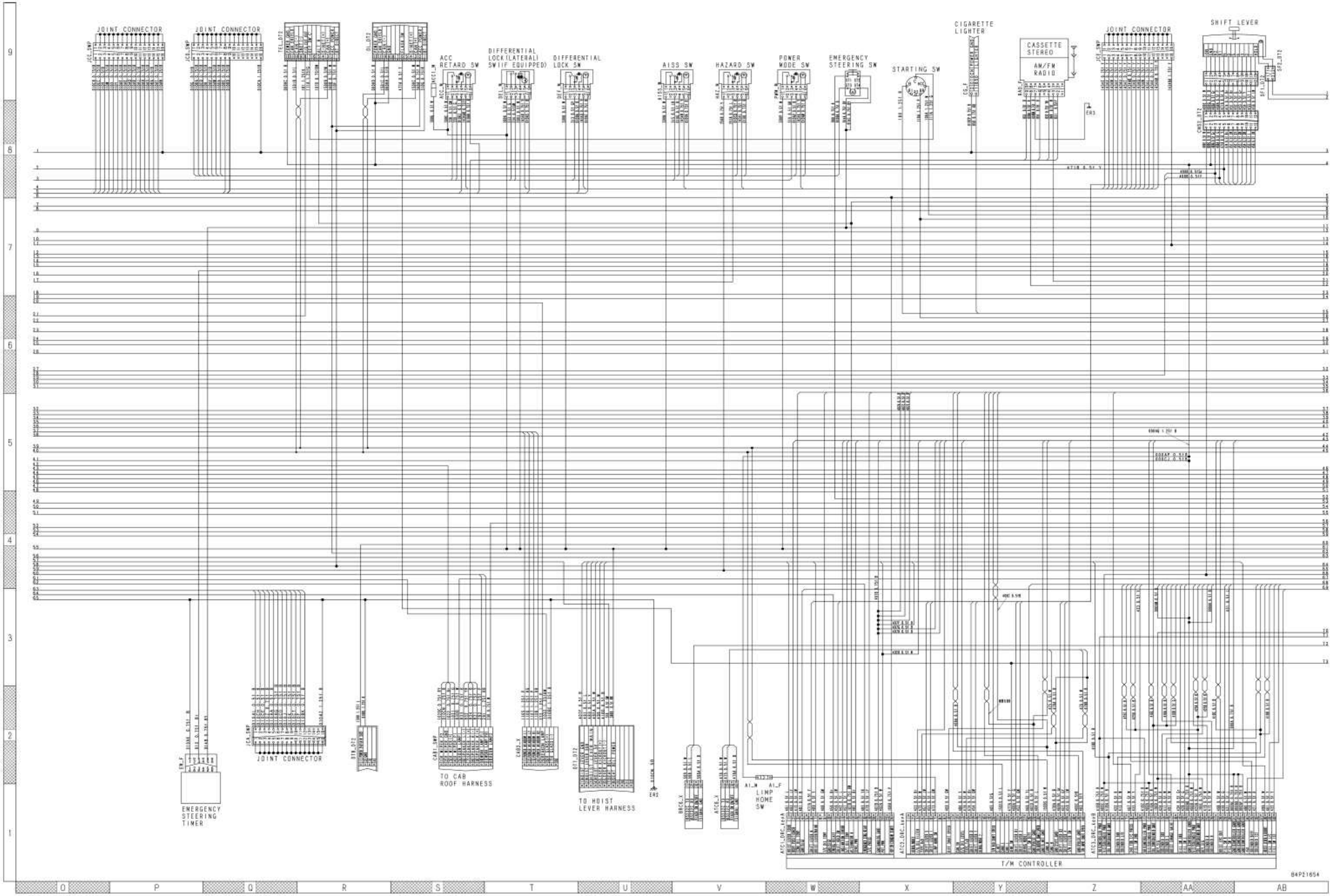


2. Subassembly of hitch frame
1) Install spacer (41) to hitch frame (12).
2) Press-fit bearing (40), using tool **Q1**.
★ Fill inner space of bearing (40) with **hub grease** 100% full. (1,195 g)
Inner space of bearing (40):
Hub grease 100% full (1,195 g)



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Electrical circuit diagram for inside cab (2/4)
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