CEBM007700

Shop Manual

KOMATSU®

HM300-2

ARTICULATED DUMP TRUCK

SERIAL NUMBERS **HM300-2 A11001 and up**

ENGINE **SAA6D125E-5**

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Failure code [CA731] (Abnormal engine Bkup speed sensor phase)

Action code	Failure code	Trouble	Abnormal engine Bkup speed sensor phase (Engine controller system)
E03	**CA731**		
Contents of trouble	• A problem phase has been detected in the engine Bkup sensor circuit.		
Action of controller	• Operates using engine Ne speed sensor signal.		
Problem that appears on machine	• Engine stops during operation (when Ne speed sensor is defective at the same time). • Engine cannot be started while stopping (when Ne speed sensor is defective at the same time).		
Related information			

Possible causes and standard value in normal state	Cause		Standard value in normal state/Remarks on troubleshooting
	1	Defective engine Ne speed sensor circuit	Since a defect of engine Ne speed sensor can be suspected, perform troubleshooting for the following code. [**CA689**]
	2	Defective engine Bkup speed sensor system	Since a defect of engine Bkup speed sensor can be suspected, perform troubleshooting for the following code. [**CA778**]

Failure code [CA757] (Loss of all engine controller data)

Action code	Failure code	Trouble	Loss of all engine controller data (Engine controller system)
E03	**CA757**		
Contents of trouble	• Loss of all data in engine controller has been detected.		
Action of controller	• Takes no particular action.		
Problem that appears on machine	• Though the engine can operate normally, it may stall during the operation and may not start when the engine is stopped.		
Related information			

Possible causes and standard value in normal state	Cause	Standard value in normal state/Remarks on troubleshooting
	Perform troubleshooting of [**CA111**].	

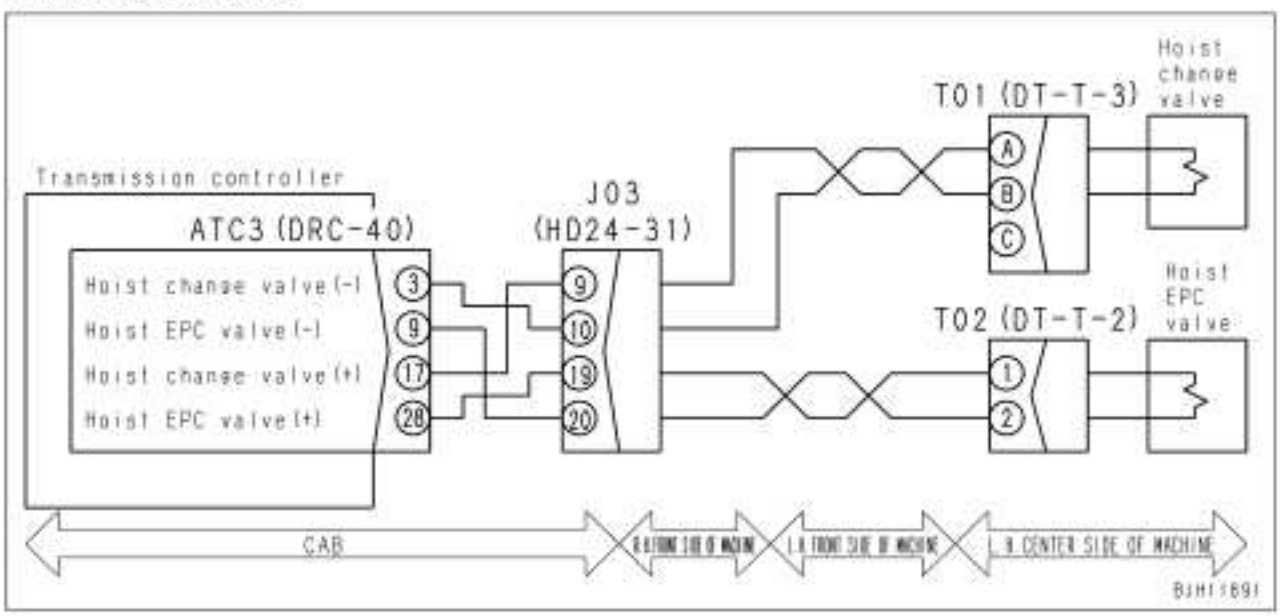
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Failure code [DX13KY] (Hoist EPC valve output circuit: Short circuit in power source line)

Action code	Failure code	Trouble	Hoist EPC valve output circuit: Short circuit in power source line (Transmission controller system)
E03	**DX13KY**		
Contents of trouble	• Current flows when output to hoist EPC valve solenoid circuit is OFF.		
Action of controller	• Turns output to hoist selector valve solenoid OFF. • Turns output to hoist EPC valve solenoid OFF.		
Problem that appears on machine	• Body does not operate.		
Related information	• Can be checked with monitoring function (code: **45601**).		

	Cause		Standard value in normal state/Remarks on troubleshooting		
Possible causes and standard value in normal state	1	Defective hoist EPC valve solenoid	★ Prepare with starting switch OFF and troubleshoot with starting switch OFF.		
			Between T02 (female) (1) – (2)	Resistance	15 – 20 Ω
			Between T02 (female) (1), (2) – body ground	Resistance	Min. 1 MΩ
	2	Hot short in wiring harness (a contact with 24 V circuit)	★ Prepare with starting switch OFF and troubleshoot with starting switch ON.		
			Between ground and wiring harness between ATC3 (female) (28) – T02 (female) (1)	Voltage	Max. 1 V
			Between ground and wiring harness between ATC3 (female) (9) – T02 (female) (2)	Voltage	Max. 1 V
	3	Defective transmission controller	★ Prepare with starting switch OFF and troubleshoot with starting switch OFF.		
			Between ATC3 (female) (28) – (9)	Resistance	15 – 20 Ω

Circuit diagram related



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H-7 Time lag is excessive when starting or shifting gear

Trouble	Time lag is excessive when starting or shifting gear.
Related information	• Make sure the transmission oil level is correct. • If a failure code related to the machine is displayed, first troubleshoot the displayed code. • Check for oil leaking from the piping to the outside.

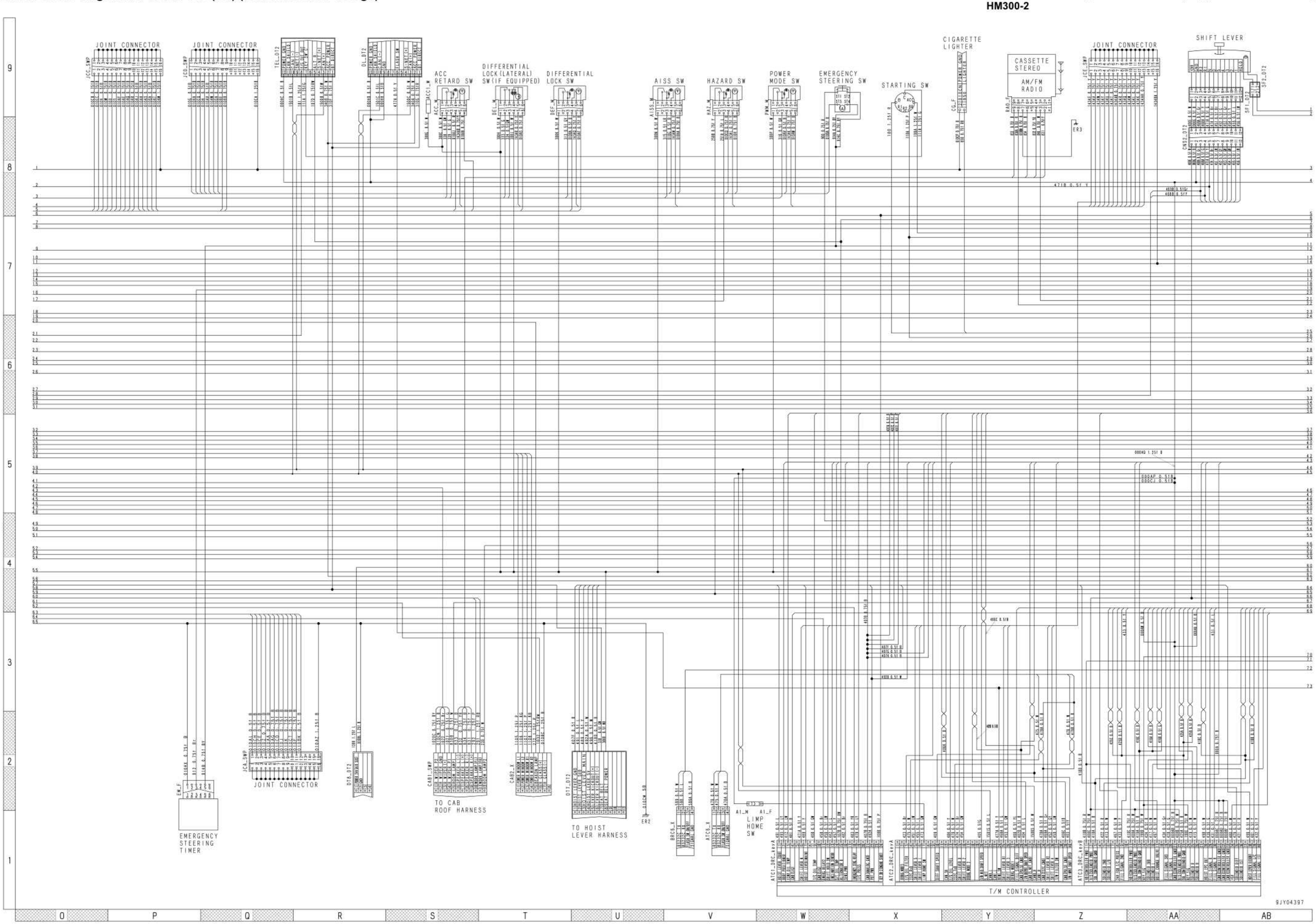
	Cause		Standard value in normal state/Remarks on troubleshooting		
Possible causes and standard value in normal state	1	Defective power train pump strainer	Since the power train pump strainer can be suspected of being clogged, check it.		
	2	Air sucked in at the suction side of the power train pump	Since air is potentially sucked in from the suction piping of the power train pump; visually check it.		
	3	Defective power train pump main relief valve	★ Prepare with the engine stopped and troubleshooting with engine running at low idle and high idle.		
			Relief oil pressure	Low idle	2.55 ± 0.2 MPa {26.0 ± 2.0 kg/cm²}
				High idle	2.55 ± 0.2 MPa {26.0 ± 2.0 kg/cm²}
	4	Defective gear speed clutch ECMV	★ Prepare with the engine stopped and troubleshooting with the engine running at high idle.		
			Hi clutch ECMV output pressure		2.45 ± 0.15 MPa {25.0 ± 1.5 kg/cm²}
			Lo clutch ECMV output pressure		2.45 ± 0.15 MPa {25.0 ± 1.5 kg/cm²}
			1st clutch ECMV output pressure		2.45 ± 0.15 MPa {25.0 ± 1.5 kg/cm²}
			2nd clutch ECMV output pressure		2.35 ± 0.15 MPa {24.0 ± 1.5 kg/cm²}
			3rd clutch ECMV output pressure		2.45 ± 0.15 MPa {25.0 ± 1.5 kg/cm²}
			R clutch ECMV output pressure		2.45 ± 0.15 MPa {25.0 ± 1.5 kg/cm²}
			• It can be also diagnosed by replacing the ECMV.		
			* A gear speed clutch operates using a combined operations of two clutches; check the combination referring to Table 1.		
	5	Defective gear speed clutch	• If the oil pressure is low in item 4, wear of the gear speed clutch piston seal ring or wear of the ring groove can be suspected. • If the oil pressure is within the range in item 4, a slip of the gear speed clutch can be suspected.		
	6	Defective power train pump	• If a defect is found in item 3, the power train pump can be suspected to be defective. Check for aluminum worn powder etc. in the line filter.		

Table 1

		Operated clutches					
		Hi	Lo	1st	2nd	3rd	R
Gear speed	R2				●		●
	R1			●			●
	N						
	F1		●	●			
	F2	●		●			
	F3		●		●		
	F4	●			●		
	F5		●			●	
	F6	●				●	

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Electrical circuit diagram for inside cab (2/4) (Serial No.: New Design)



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