CEBM015200

Shop Manual

KOMATSU®

HM300-1L

ARTICULATED TRUCK

SERIAL NUMBERS **HM300-1L** **A10001** and UP

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(ENG-24) FAILURE CODE [D182KZ]

OPEN OR SHORT CIRCUIT IN PRE-HEATING RELAY COIL (KZ)

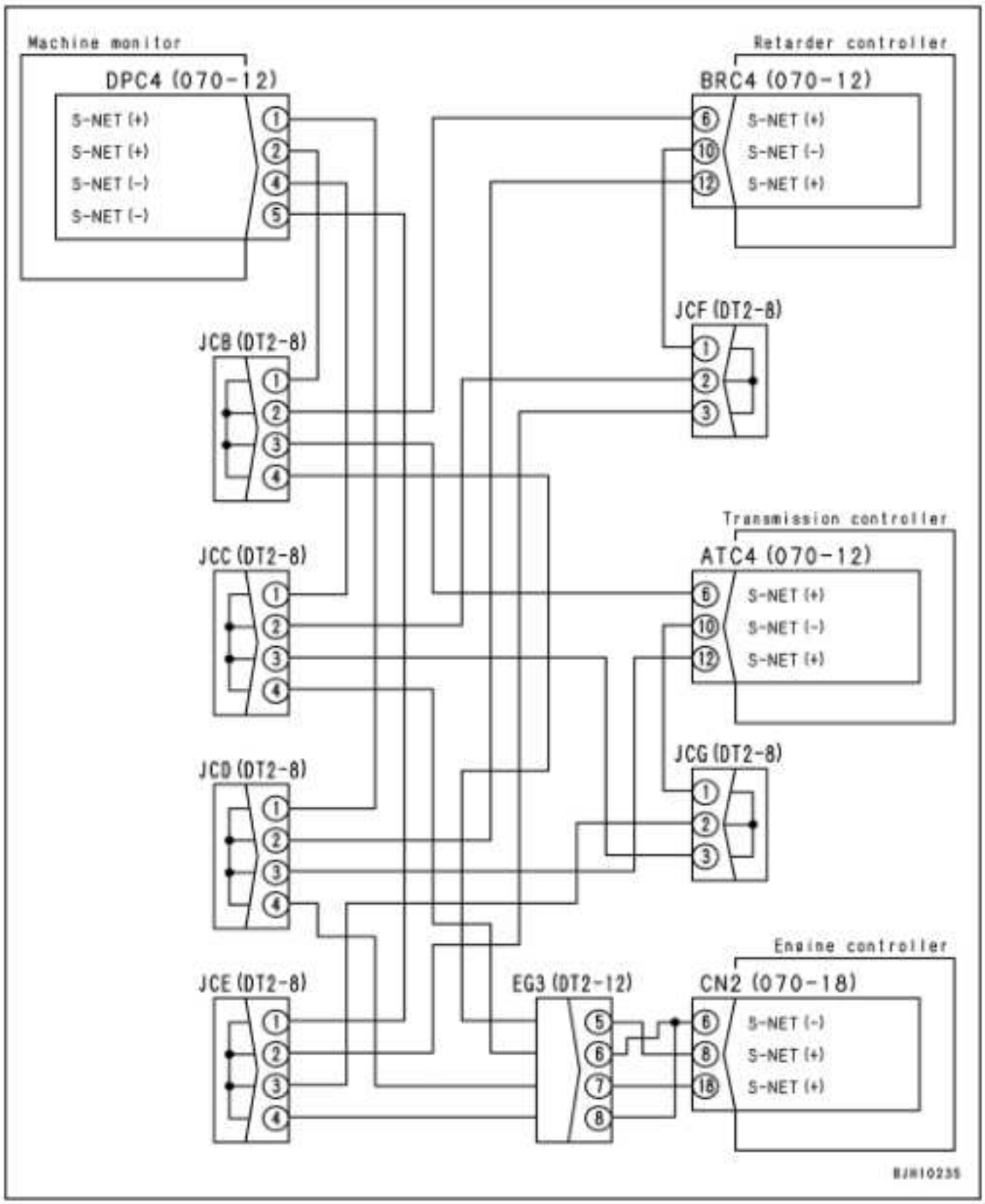
Contents Of Trouble	• Open in or short in pre-heat relay system. • ENG code 24 displayed. • Engine does not start easily at lower temperatures.

Tools and Procedures	• Digital Volt Ohm Meter. T-adapter kit. • Do not mark on original page of service manual. Remove this page from the service manual and make a copy for recording information while performing these tests. • If you are unable to copy this page, record readings on a separate paper referring to the (**No.**) numbers listed on the right of the procedure. • Follow each step throughout this procedure, do not skip steps, jump ahead or stop when a fault is found unless otherwise instructed to in the procedure. It is important to complete all steps and record information for final analyzing.

Steps	Circuit Diagnostic Procedures For Error Code [D182KZ]			Specifications	No.	Readings
1.	**Defective Pre-heating Relay** • With ignition switch in the "OFF" position. • Replace the relay (R37) with another one of the same type. • Turn ignition switch "ON"					
	A. (R37) relay check	Voltage	Check for voltage at EG1, (3) (check for blown fuse (4)	20 to 30V	1	
		—	Error code [D182KZ] is displayed.	Relay (R37) good	2	
		—	Error code [D182KZ] is not displayed.	Relay (R37) defective	3	
2.	**Defective Heater Relay** • With ignition switch in the "OFF" position. • Locate all connections on (Heater Relay 1,2, and 3). • Turn ignition switch to "PREHEAT" position					
	A. Relay voltage supply	Voltage	At preheat relay connection (1) and chassis ground.	20 to 30V	4	
			At preheat relay connection (2) and chassis ground.	20 to 30V	5	
			At preheat relay connection (3) and chassis ground.	20 to 30V	6	
3.	**Wiring Harness Assembly Test** • With ignition switch in the "OFF" position. • Disconnect (R37) connector from relay. • Disconnect (EG4 and EG5) power supply wire to the pre-heater unit. • Disconnect (CN2 and CN4) connector from engine controller and install T-adapter on (CN2 and CN4) wiring harness connector only. • ✱ For the voltage test in this step, the ignition switch must be in the "ON" position.					
	A. Open or high resistance	Resistance Ω	Between connectors R37, (2) and CN2, (5)	0.0 to 1.0Ω	5	
			Between connectors R37, (5) and EG4, (31)	0.0 to 1.0Ω	6	
			Between connectors CN4, (3) and EG5, (11)	0.0 to 1.0Ω	7	
		Voltage	✱ At connector R37, (1) and (3) to chassis ground.	20 to 30V	8	
	B. Short to chassis ground or within harness	Resistance Ω	Between connectors R37, (2) and chassis ground.	(OL) open	9	
			Between connectors R37, (5) and chassis ground.	(OL) open	10	
			Between connectors R37, (3)/(5) and chassis ground.	(OL) open	11	
			Between connectors R37, (3)/(2) and chassis ground.	(OL) open	12	

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Related circuit diagram



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M. Adjust the clearance between case (37) and plate (40).

i. Measure dimension "**a**" from case (54) to plate (40).

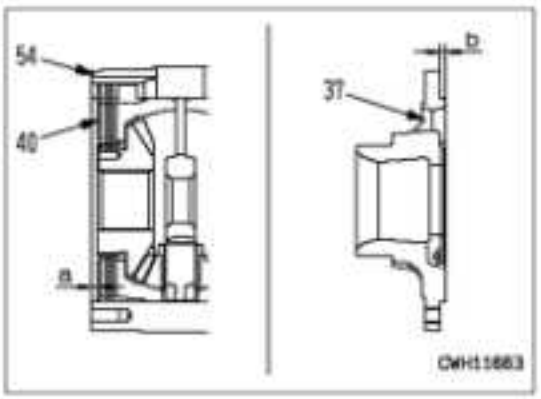
ii. Measure thickness "**b**" of case (37).

iii. Calculate value "**d**" of dimension "**a**" minus dimension "**b**". (Dimension of clearance between case (37) and plate (40))

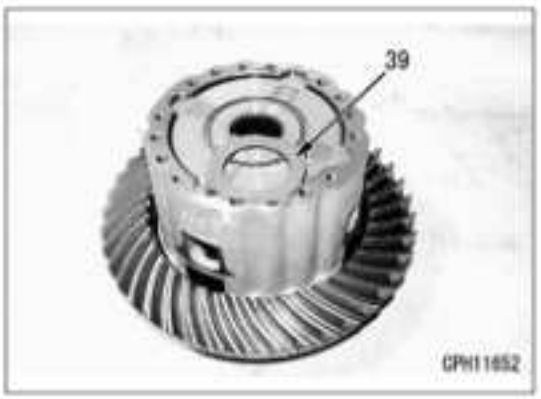
iv. Select suitable ones out of plates (40) and install them so that clearance "**d**" is 0.2 - 0.75 mm.

v. The total thickness of 3 plates on either side must be identical.

vi. Plate (40) thickness: 3.0 mm and 3.1 mm



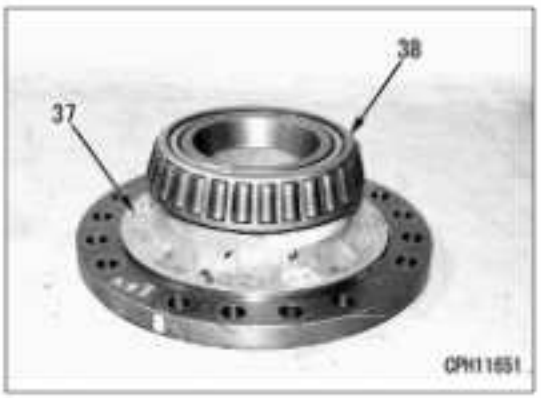
N. Install washer (39).



O. Shrink-fit bearing (38) to case (37).

★ Bearing shrink fit temperature: For 30 minutes at 120°C (248°F).

P. Apply axle oil (SHELL DONAX TD) on the bearing after installing.



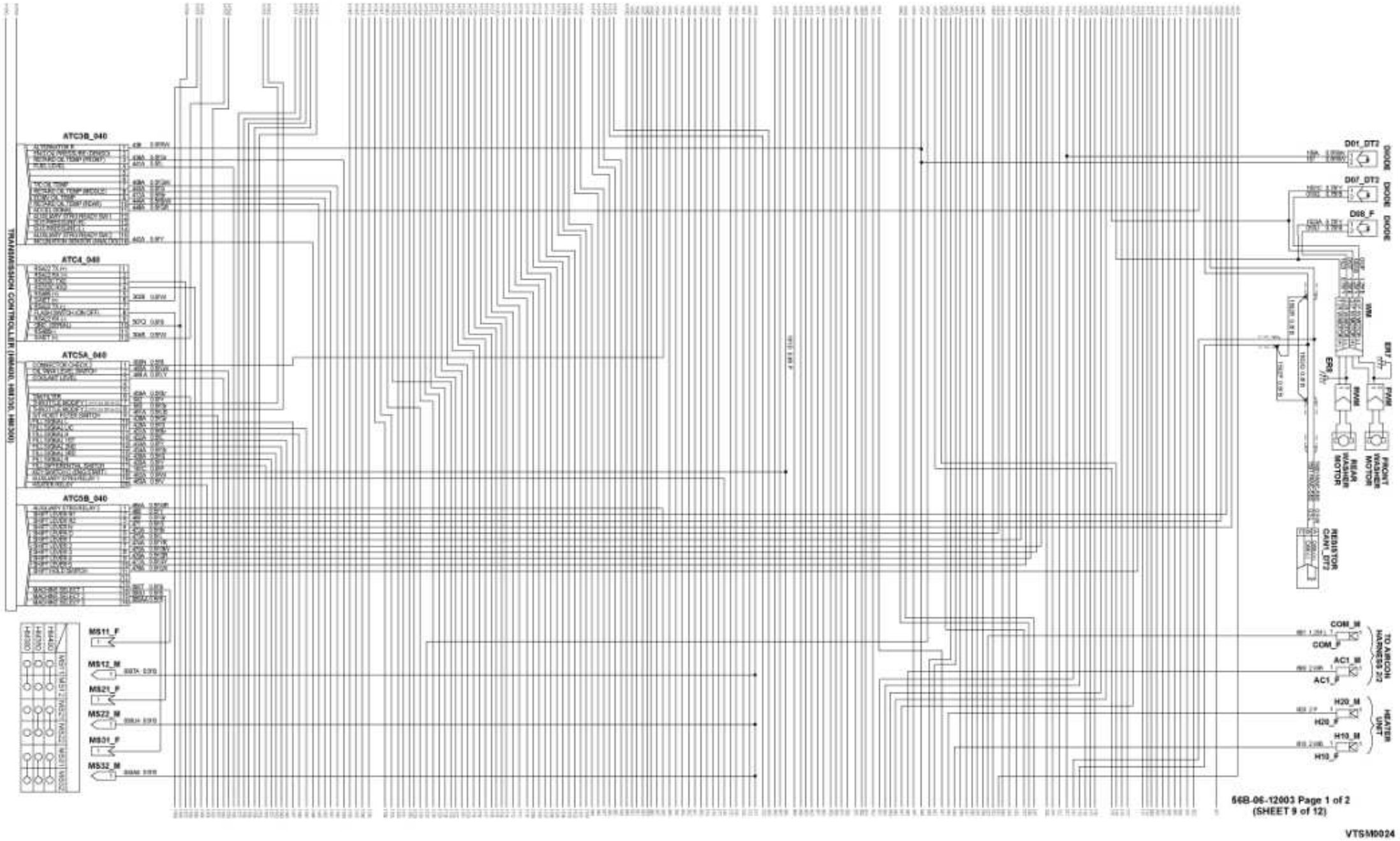
Q. Install case and bearing assembly (36).

Mounting bolt: **98 - 123 Nm (72 - 91 ft/lbs)**



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TRANSMISSION CONTROLLER



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