CEBM015302

Shop Manual

KOMATSU®

HM400-1L

ARTICULATED DUMP TRUCK

SERIAL NUMBERS **HM400-1L A10001 and up**

ENGINE **6D140E-3**

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October 2013

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CATEGORIES AND METHOD OF USING TROUBLESHOOTING CHARTS

1. Categories of troubleshooting codes
   - ★ If the machine monitor displays a failure code, the name of the controller is also displayed at the same time, so the troubleshooting codes are categorized according to the name of each controller. (This may also includes some failure codes for the electrical system that are not displayed)
   - ★ Failures of the hydraulic and mechanical system that the machine monitor cannot display are categorized as H mode.

Troubleshooting Code	Troubleshooting system
ENG	Troubleshooting of engine controller system
TM	Troubleshooting of transmission controller system
BK	Troubleshooting of retarder controller system
MON	Troubleshooting of machine monitor system
H	Troubleshooting of hydraulic, mechanical system

2. Procedure for troubleshooting
   - ★ If a problem occurs on the machine, or if any problem is felt, carry out troubleshooting as follows.

   A. When failure code is displayed on machine monitor.
   If a failure code is displayed on the machine monitor at the same time as the problem occurs, check the content of the display, then go to the applicable troubleshooting for the failure code.

   B. If no failure code is displayed on the machine monitor but the failure is recorded in memory.
   If it is impossible to check the failure code display on the machine monitor when a problem occurs, use the troubleshooting history display function in the service mode of the machine monitor to check if there is a failure code.
   If a failure code is recorded, it is probable that it is the cause, so go to the applicable troubleshooting for the failure code.

   C. If no failure code is displayed and no failure history is recorded.
   If it is impossible to check the failure display on the machine monitor when a problem occurs, and there is also no failure code recorded in the troubleshooting history display function in the service mode of the machine monitor, it is probable that are problem has occurred in the hydraulic or mechanical system or in the electrical system that the controller cannot detect.
   In such a case, check the condition of the failure carefully, then go to the applicable troubleshooting for the failure.

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(ENG-33) FAILURE CODE [DDE2L6]

ENGINE OIL PRESSURE DROP (L6)

Contents Of Trouble	• Engine oil pressure indicating poorly • ENG code 33 displayed. • Pressure switch indication irregular

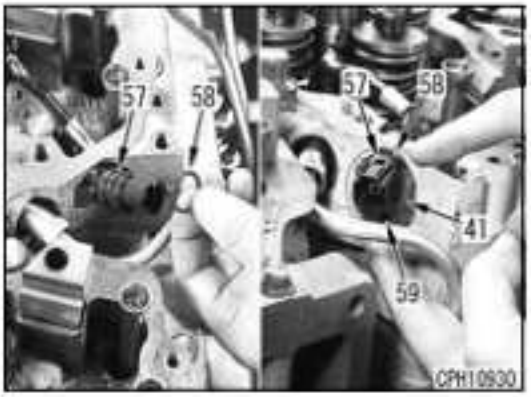
Tools and Procedures	• Digital Volt Ohm Meter. T-adapter kit. • Do not mark on original page of service manual. Remove this page from the service manual and make a copy for recording information while performing these tests. • If you are unable to copy this page, record readings on a separate paper referring 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 [B@BAZG]		Specifications	No.	Readings
Engine Oil Pressure	—	Perform a live oil pressure test on engine. (If engine oil pressure is not within listed specifications do not continue with electrical testing. See ENGINE SHOP MANUAL)	High idle 12 to 18 MPa (30 to 26 psi) Low idle 07 MPa (10 psi)	1	High idle Low idle
1. Defective Pressure Switch • With ignition switch in the "OFF" position. • Disconnect (EG5) pressure switch connector and isolate switches. • Zero meter leads for proper Ω readings.					
A. Pressure switch	Resistance Ω	At switch EG5 between (12) and chassis ground, engine OFF.	0.0 to 1.0Ω	2	
		At switch EG5 between (12) and chassis ground, engine running at a low idle speed.	(OL) open	3	
		At switch EG5 between (12) and chassis ground, engine running at a high idle speed.	(OL) open	4	
		At switch EG5 between (13) and chassis ground, engine OFF.	0.0 to 1.0Ω	5	
		At switch EG5 between (13) and chassis ground, engine running at a low idle speed.	(OL) open	6	
		At switch EG5 between (13) and chassis ground, engine running at a high idle speed.	(OL) open	6	
2. Wiring Harness Assembly Test • With ignition switch in the "OFF" position. • Disconnect (EG5) pressure switches. • Disconnect (CN4) connector from engine controller and install T-adapter on (CN4) wiring harness connector only.					
A. Open or high resistance	Resistance Ω	Between pressure switch EG5, (12) and CN4, (5)	0.0 to 1.0Ω	8	
		Between pressure switch EG5, (13) and CN4, (6)	0.0 to 1.0Ω	9	
B. Short to chassis ground or within harness	Resistance Ω	At connector EG5, (12) and chassis ground.	(OL) open	10	
		At connector EG5, (13) and chassis ground.	(OL) open	11	
		At connector EG5, between (12) and (13)	(OL) open	12	
3. Engine Controller Unit • No testing procedure for the controller. ***Remark*** *If all test results fall within the specifications listed above in the testing procedures, the error may be in your Engine Controller Unit. Be sure all steps are completed correctly before faulting the controller unit.*					

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★ It is difficult to insert the connector from inside with the O-ring fitted to it.

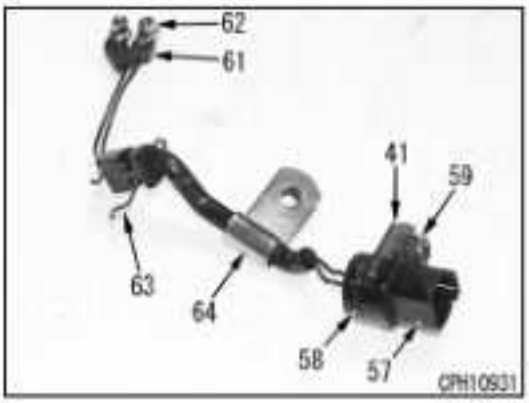
K. Remove O-ring (58) from wiring harness connector (57). Take wiring harness connector (57) out of the connector hole and install O-ring (58) and apply engine oil SAE No. 30 to them. Install connector holder (41) and push it in and secure it with mounting bolt (59).



L. Install wring harness terminal (61) to injector terminal (60) and tighten two nuts (62). Insert wiring harness holder clamp (63) in the injector connection and secure wiring harness clamp (64) with bolt (65).

N•m Terminal nut: 1.8 - 2.2 N•m

★ Eliminate the slack of the wiring harness and press it against the body of the injector.





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TO TRANSMISSION CONTROLLER (2/2)



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