Manual No. : KM-18FE
Vol.No. : TT18F-E-00

Technical Manual

(Troubleshooting)

EX1200-5D Excavator

Service Manual (Manual No. KM-18FE) consists of the following three separate volumes;

Technical Manual (Operational Principle)	:Vol. No. TO18F-E
Technical Manual (Troubleshooting)	:Vol. No. TT18F-E
Workshop Manual	:Vol. No. W18F-E

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SECTION 4

OPERATIONAL PERFORMANCE TEST



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IMPORTANT: The No. indicates the component number in the circuit diagram.
The position indicates the component's position in the circuit diagram. The number at left side is horizontal lines of drawing frame, the alphabet at right side is vertical lines of drawing frame.
Refer to the page and item number in the following group.

ELECTRICAL CIRCUIT DIAGRAM

No.	Position	Component Name	Page	Item Number	Note
001	1G	Work Light (on Cab Roof)	T5-3-2	1	
002	1G	Work Light (at the right side of Frame)	T5-3-2	4	
003	2G	Work Light (Under Cab Floor)	T5-3-2	31	
004	1H	Horn	T5-3-2	8	
005	2K	Fresh Air Sensor (Air Conditioner)	T5-3-2	10	
006	2B	DLU (Cummins)	T5-3-4	10	
007	4C	Data Link Connector	T5-3-3	-	
008	4I	RADIO	-	-	
009	5C	DLU (Mitsubishi)	T5-3-4	10	
010	5F	Sunlight Sensor	T5-3-2	32	
011	6H	Wiper Relay (Low)	T5-3-4	26	
012	6H	Wiper Relay (High 1)	T5-3-4	25	
013	6I	Wiper Relay (High 2)	T5-3-4	24	
014	5J	Air Conditioner Unit	-	-	
015	8C	Monitor	T5-3-2	2	
016	7C	Coolant Temperature Gauge	T5-3-9	14	
017	7C	Fuel Gauge	T5-3-9	15	
018	7D	Liquid Crystal Display (LCD)	T5-3-9	33	
019	7D	Switch Panel 1	T5-3-9	16	
020	7D	Auto-Idle Indicator	T5-3-9	34	
021	7D	Quick-Idle Indicator	T5-3-9	35	
022	7E	Lubrication Mode Indicator (OFF)	T5-3-9	32	
023	7E	Lubrication Mode Indicator (Manual)	T5-3-9	32	
024	7E	Lubrication Mode Indicator (Auto)	T5-3-9	32	
025	8D	Overheat Indicator (L1)	T5-3-9	30	
026	8D	Air Filter Restriction Indicator (L2)	T5-3-9	31	
027	8D	Fuel Level Indicator (L3)	T5-3-9	17	
028	8D	Preheat Indicator (L4)	T5-3-9	28	
029	8D	Download Indicator (L5)	T5-3-9	29	
030	8D	Alternator Indicator (L6)	T5-3-9	18	
031	8D	Engine Oil Pressure Indicator (L7)	T5-3-9	27	
032	8D	Pump Transmission Oil Pressure Indicator (L8)	T5-3-9	26	
033	8D	Exhaust Gas Temperature Indicator (L9)	T5-3-9	19	

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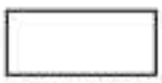
TROUBLESHOOTING A PROCEDURE

Refer to troubleshooting A procedure in case any fault codes are displayed after diagnosing the main controller A and/or B using the built-in diagnosing system.

- How to Read Troubleshooting Flow Charts



After completing the checking and/or measuring procedures in box (1), select YES (OK) or NO (NOT OK) and proceed to box (2) or (3).



· Key switch: ON

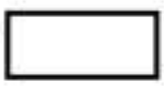
Instructions, reference, and/or inspection methods and/or measurements are occasionally described under the box. If incorrectly checked or measured, not only will troubleshooting be unsuccessful but also damage to the components may result.



Refer to "Electrical System Inspection" group (Group 8) for descriptions in the dotted-line box.

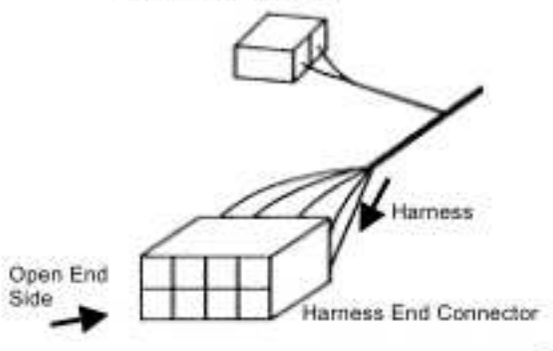


Use the built-in diagnosing system for descriptions in the double-line box.



Causes of machine problems are stated in the thick-line box. Scanning quickly through the thick-line boxes allows you to estimate the possible causes before actually following the flow chart.

NOTE: All harness end connectors are seen from the open end side.



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Table 1: Relationship of Sensor (Fan Motor Speed Control) Resistance (Hydraulic oil temperature sensor and fuel temperature sensor are same.)

Temperature (°C)	Temperature (°F)	Resistance (kΩ)
-30	-22	28.6
-20	-4	16.2±1.6
-10	14	9.56
0	32	5.88
10	50	3.73
20	68	2.45±0.24
30	86	1.65
40	104	1.14
50	122	0.808
60	140	0.534
70	158	0.430
80	176	0.322±0.032
90	194	0.245
100	212	0.189
110	230	0.148
120	248	0.117

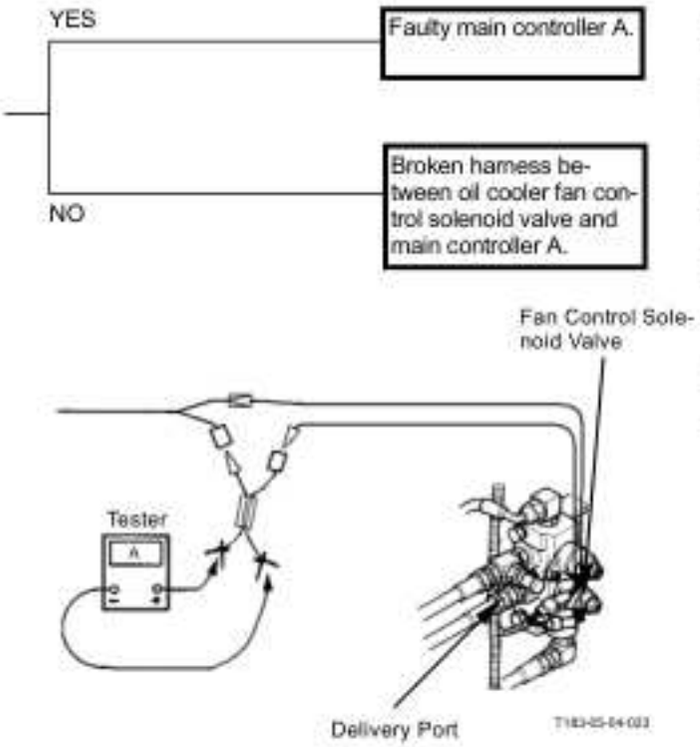


Table 2: Relationship between Temperature and Fan Motor Speed

Fuel Temperature	Fan Motor Speed	Hydraulic Oil Temperature	Pilot Pressure from Fan Control Solenoid Valve [Current from MC]	Fan Motor Speed Mode
66 °C (151 °F)	800→1100 min^{-1}	70 °C (157 °F)	0.99 Mpa (10 kgf/cm^2, 142 psi) [285 mA]	Low→Middle
69 °C (156 °F)	1100→1400±50 min^{-1}	80 °C (176 °F)	0 MPa (0 kgf/cm^2, 0 psi) [200 mA]	Middle→High
63 °C (145 °F)	1100→800 min^{-1}	65 °C (149 °F)	1.36 Mpa (14 kgf/cm^2, 199 psi) [309 mA]	Middle→Low
66 °C (151 °F)	1400±50→1100 min^{-1}	75 °C (167 °F)	0.99 Mpa (10 kgf/cm^2, 142 psi) [285 mA]	High→ Middle

NOTE: The above fan motor speed shows the motor speed at rated engine speed (1650 min^{-1}).

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