Manual No. :KM-18D-E
Vol. No. :TT18D-E-00

Technical Manual

(Troubleshooting)

EX3600-5

Excavator

CUMMINS ENGINE SPEC.

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

Technical Manual (Operational Principle)	:Vol. No. TO18D-E
Technical Manual (Troubleshooting)	:Vol. No. TT18D-E

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Oil Temperature Gauge
White: 50 °C (122 °F) or lower
Green: 50 to 95 °C (122 to 203 °F)
Red: 95 °C (203 °F) or more



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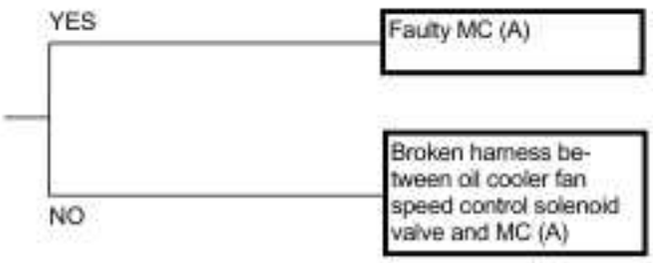
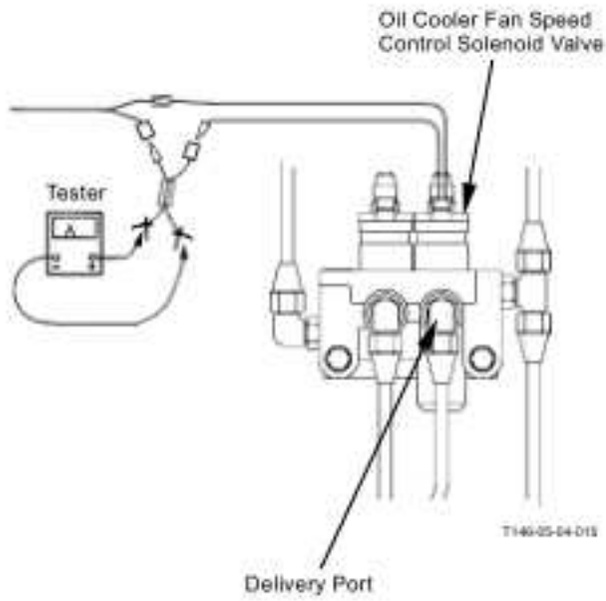


Table 1: Relationship between Hydraulic Oil Temperature and Hydraulic Oil Temperature Sensor 2 (Oil cooler Fan Motor Speed Control) Resistance

Hydraulic Oil Temperature	Resistance (kΩ)
-30 °C (-22 °F)	28.6
-20 °C (-4 °F)	16.2±1.6
-10 °C (14 °F)	9.56
0 °C (32 °F)	5.88
10 °C (52 °F)	3.73
20 °C (68 °F)	2.45±0.24
30 °C (86 °F)	1.65
40 °C (104 °F)	1.14
50 °C (122 °F)	0.808
60 °C (140 °F)	0.534
70 °C (158 °F)	0.430
80 °C (176 °F)	0.322±0.032
90 °C (194 °F)	0.245
100 °C (212 °F)	0.189
110 °C (230 °F)	0.148
120 °C (248 °F)	0.117



T140-05-04-013

Table 2: Relationship between Hydraulic Oil temperature and Oil cooler Fan Speed

Hydraulic Oil Temperature	Pilot Pressure from Solenoid Valve (Output Current from MC)	Oil Cooler Fan Motor Speed (min^{-1})
49 °C (120 °F) or Less	3.9 MPa (40 kgf/cm^2, 569 psi) [700 mA]	290
50 to 69 °C (121 to 156 °F)	1.74 MPa (17.7 kgf/cm^2, 252 psi) [332 mA]	760
70 to 79 °C (157 to 174 °F)	1.39 MPa (14.2 kgf/cm^2, 202 psi) [310 mA]	950
80 °C (175 °F) or More	0	1260±50

NOTE: Oil cooler fan speeds shown above correspond to those obtained at engine rated speed (1800 min^{-1}).

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* Please fill in all sections and return this AIR CONDITIONER TROUBLE REPORT to Hitachi Tsuchiura Works Quality Assurance Dept. after experiencing a problem with your machine's air conditioning system.

< AIR CONDITIONER TROUBLE REPORT >

File No.

(1) What

Model	(Serial No.)		
Operation Type	Manual	Semi-Auto	Full-Auto
Delivery Date	Year Month		

Checked by:

(2) When

Date	Year	Month	Day	Operating Hour (h)
Time	Morning	Daytime	Evening	Night
Frequency	Every Day	Once a Week	Once a Month	Times per

(3) Where

Job Site Address	State	County	Town	
Access Road Condition	Paved	Not Paved (Gravel	Sand	Soil)

(4) How (Operating Conditions)

Weather		Fine	Cloudy	Rain	Snow	
Atmospheric Temperature		Very Hot	Hot	Cold	Very Cold	
Operating Conditions		Parking	Traveling	Working		
Control Panel	Temperature Control	Paint blanks equal to red indicators. / Fill in set-temperature when full-auto operation				
	A/C	ON		OFF		
	Air Induction	Re-Circulation		Fresh Air Circulation		
	AUTO	ON	OFF	Not Available		
	Fill following items when operated in manual mode or when manual control type unit is used.					
	Vent Position	Front	Front / Rear	Foot	Front / Rear and Foot	
	Fan	First	Second	Third	Fourth	Fifth Sixth

(5) How (Problem Symptom)

Abnormal Compressor Operation	
Symptom	Not turned ON
	Not turned OFF
	Others
Uncontrollable air temperature	
Symptom	No cool air
	No warm air
	Others
Uncontrollable air volume	
Symptom	Air flows in Hi mode only
	No air flows
	Small air volume
	Others
Uncontrollable vent hole	
Symptom	Vent hole isn't selected
	Others
Abnormal panel indication	
Faulty Indicator	Vent Hole
	A/C
	AUTO
	Fresh Air Circulation
	Fan OFF
	Fan (Lo • •• Hi)
	Temperature Control
Symptom	Stays OFF
	Stays ON
	Blinks
	Others

<Check Result>

(1) Is problem reproducible ?

Reproducible
Not reproducible

(1) Pressure (To be measured at gauge manifold)

Low Pressure
High Pressure

(1) Which parts have been replaced ?

1
2

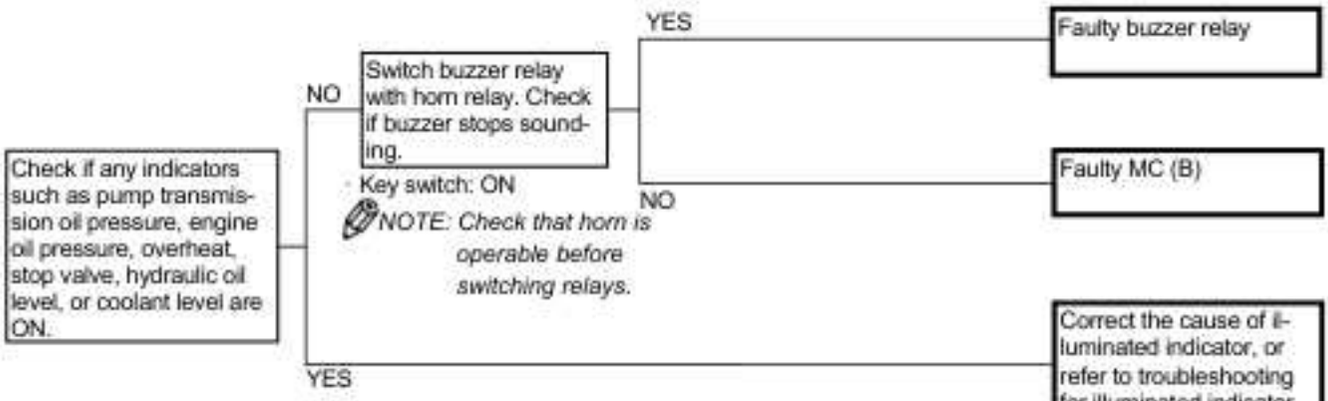
* Before replacing the control amplifier, be sure to check that the connectors are correctly connected while repeatedly disconnecting and reconnecting connectors.

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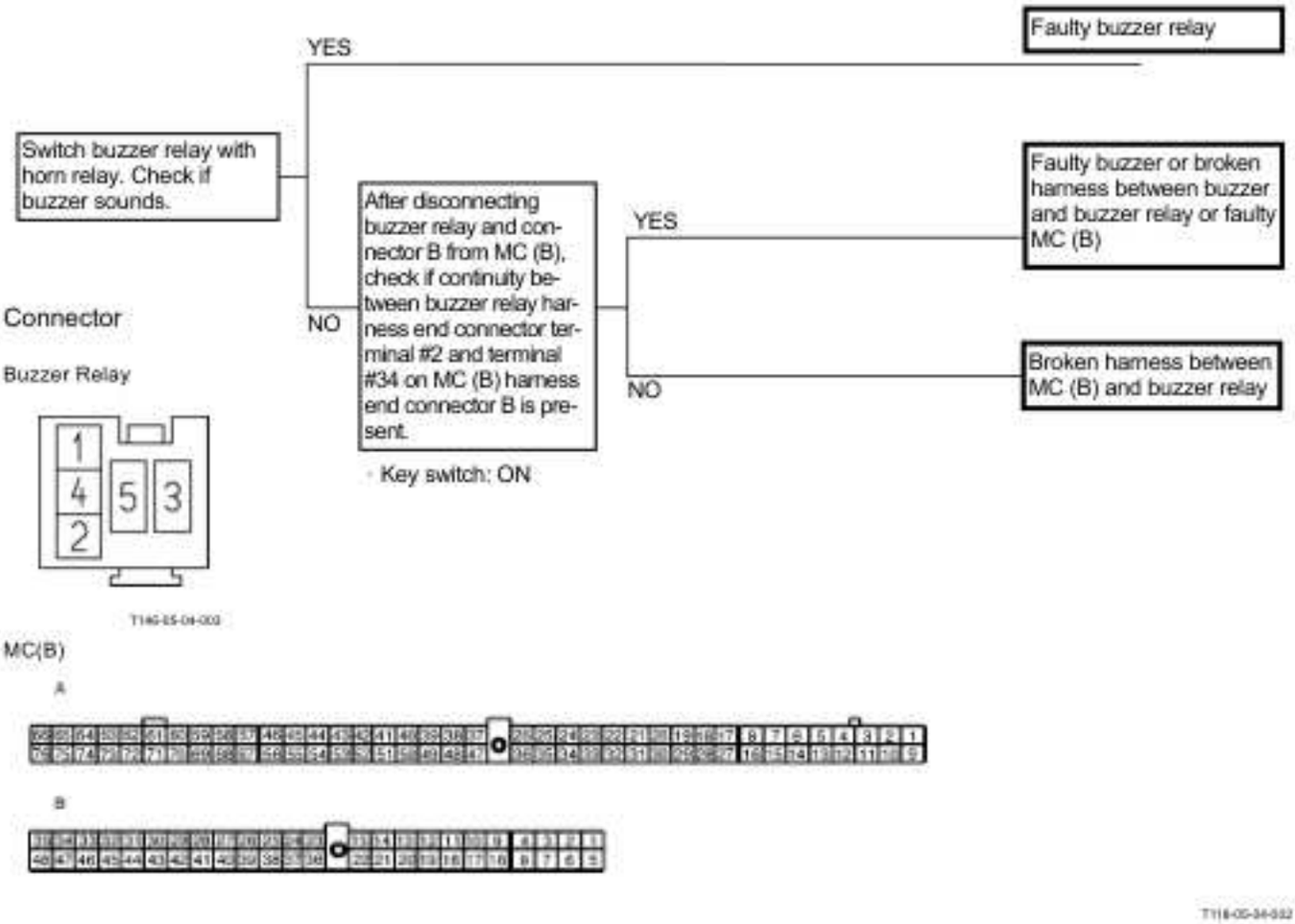
MALFUNCTION OF BUZZER

- Check for loose harness connections beforehand.

Buzzer continues sounding after engine starts.



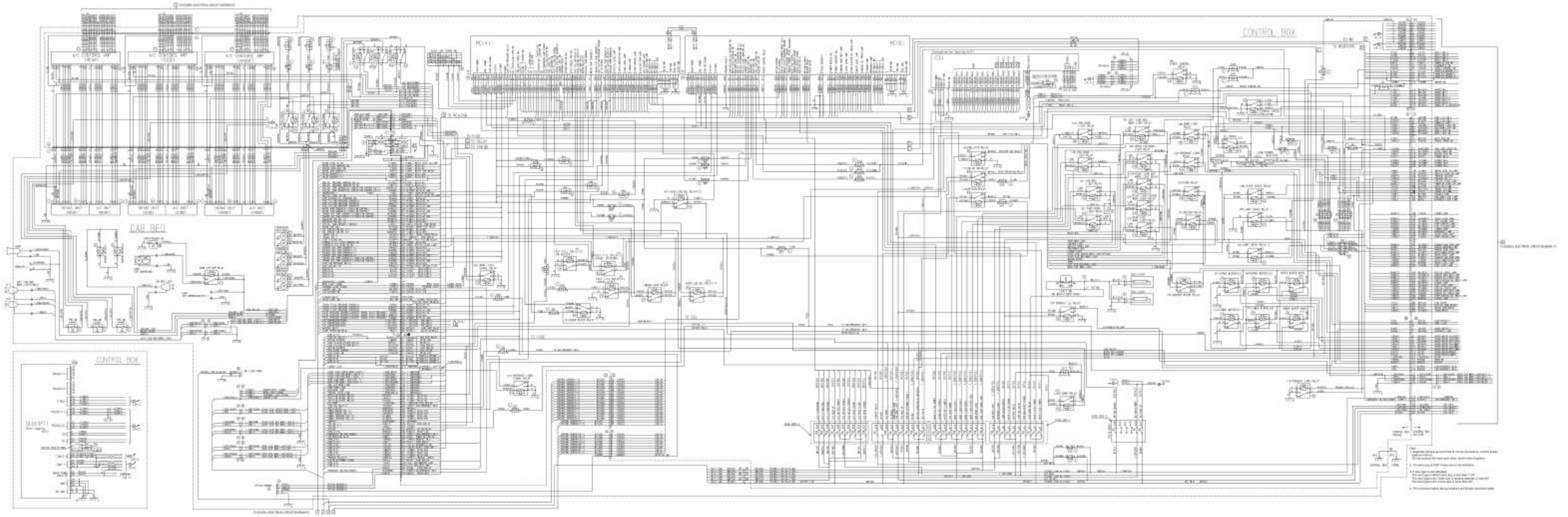
Buzzer doesn't sound even if pump transmission oil pressure, engine oil pressure, overheat, stop valve, hydraulic oil level, or coolant level are ON. (Engine: Running)



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Attach to Vol. No. : TT146E-00

EX3600-5 ELECTRICAL CIRCUIT DIAGRAM 2/3



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