PART NO. TONHB-E-00

HITACHI

Technical Manual
Operational Principle

ZW

370-G
Wheel Loader

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TONHB-E
Technical Manual (Troubleshooting)	: Vol. No.TTNHB-E
Workshop Manual	: Vol. No.WNHB-E

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Failure code (T/M controller)

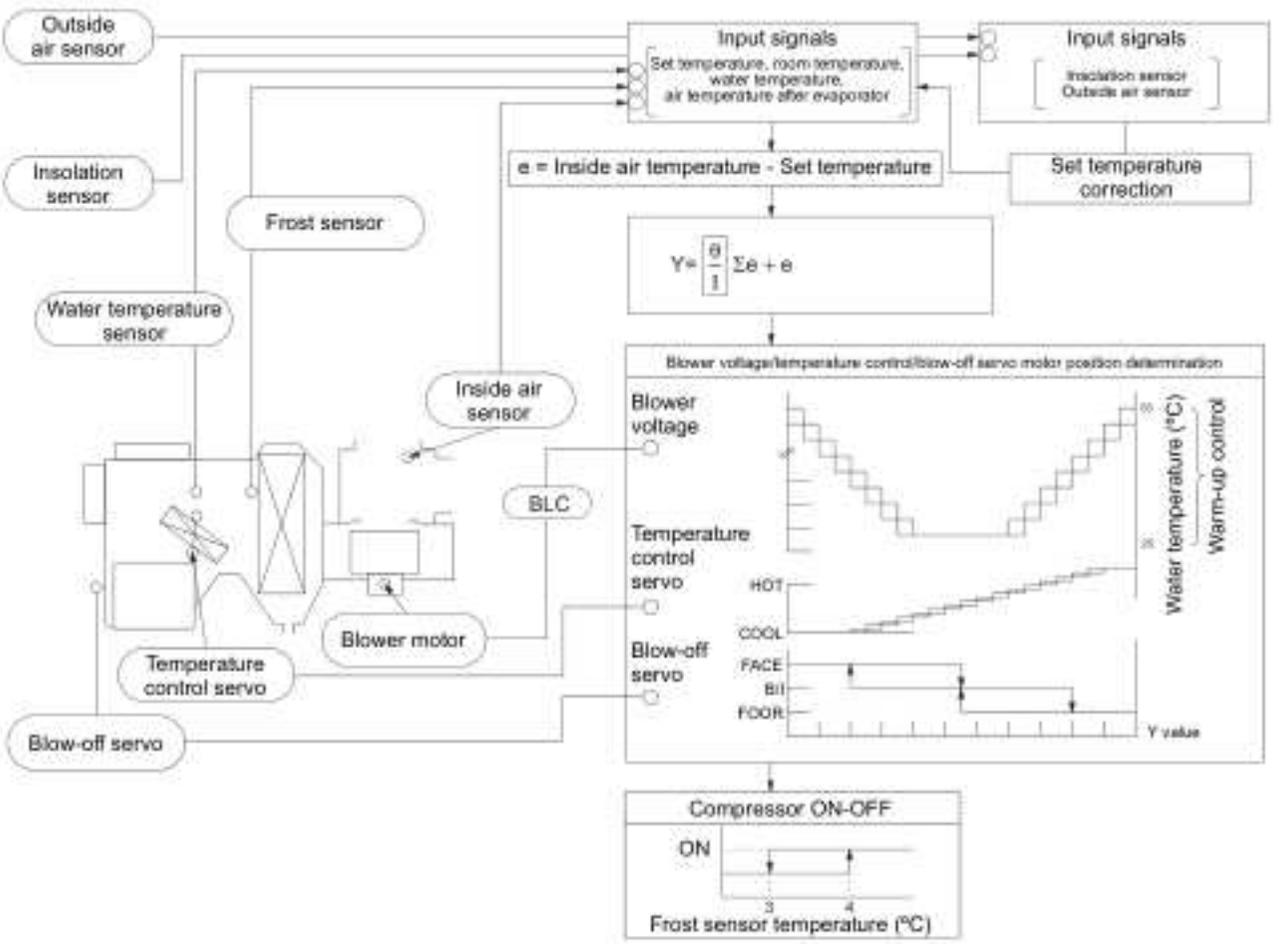
The failure code is displayed on the failure code indication window on the T/M controller.

Code	Failure	Detection condition
11	Shift lever F and R contact ON at the same time	In case the failure continues for more than "3 seconds"
12	Shift lever all 1 • 2 • 3 • 4 contacts ON at the same time	The same as the above
13	Shift lever 1 • 2 • 3 contacts ON at the same time	The same as the above
14	Shift lever 1 • 2 • 4 contacts ON at the same time	The same as the above
15	Shift lever 1 • 3 • 4 contacts ON at the same time	The same as the above
16	Shift lever 2 • 3 • 4 contacts ON at the same time	The same as the above
17	Shift lever 1 • 2 contacts ON at the same time	The same as the above
18	Shift lever 1 • 3 contacts ON at the same time	The same as the above
19	Shift lever 1 • 4 contacts ON at the same time	The same as the above
20	Shift lever 2 • 3 contacts ON at the same time	The same as the above
21	Shift lever 2 • 4 contacts ON at the same time	The same as the above
22	Shift lever 3 • 4 contacts ON at the same time	The same as the above
23	Shift lever all 1 • 2 • 3 • 4 contacts OFF	In case all 1 • 2 • 3 • 4 signal OFF continues for more than "3 seconds"
25	QUAD switch malfunction	In case the switch is ON for more than "10 seconds"
26	Inching (Declutch) switch malfunction	In case the switch is ON for more than "3 minutes"
51	1st solenoid coil or wiring circuit is open or disconnected	In case the failure continues for more than "1 second"
52	2nd solenoid coil or wiring circuit is open or disconnected	The same as the above
53	3rd solenoid coil or wiring circuit is open or disconnected	The same as the above
54	H solenoid coil or wiring circuit is open or disconnected	The same as the above
55	L solenoid coil or wiring circuit is open or disconnected	The same as the above
56	R solenoid coil or wiring circuit is open or disconnected	The same as the above
57	Modulator valve (2) solenoid coil or wiring circuit is open or disconnected	The same as the above
58	Auto-brake solenoid coil or wiring circuit is open or disconnected	The same as the above
59	Modulator valve (1) solenoid coil or wiring circuit is open or disconnected	In case the current value less than "5 mA" continues for more than "10 seconds"
60	Pressure difference sensor malfunction (1) - The problem may be an electrical malfunction of the sensor or wiring. - The problem may be a mechanical malfunction (sticking) of the switch.	E/G revolution is more than "1,500 min^{-1} (rpm)" and the shift lever is changed more than "10 times", however the sensor voltage never reaches more than "2 V"
61	Pressure difference sensor malfunction (2) - The problem is probably a mechanical malfunction (sticking) of the switch.	In case the signal voltage is more than "3 V" and it continues for more than "10 seconds"
71	E/G speed sensor malfunction	In case the E/G revolution detection value is more than "3,000 min^{-1} (rpm)"
72	Machine speed sensor malfunction	In case all the machine speed detection value is more than "50 km/h (31 mph)"
E1	EPROM write frequency limitation	In case the write frequency is more than "80 thousands"
FF	No failure record memorized	

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Electrical circuit

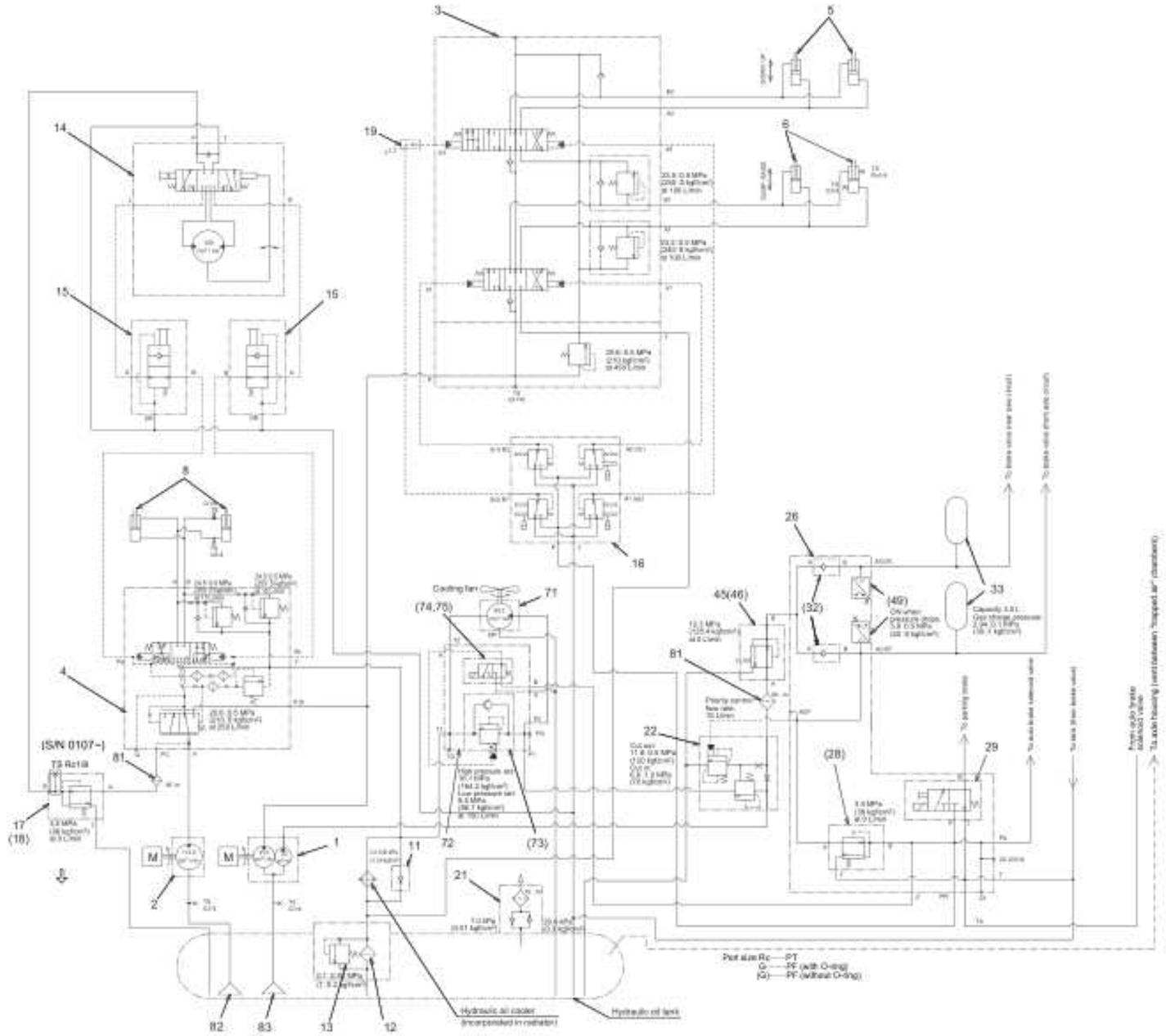
Control schematic drawing



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Loading/Steering Hydraulic Line (S/N 0101~0230)

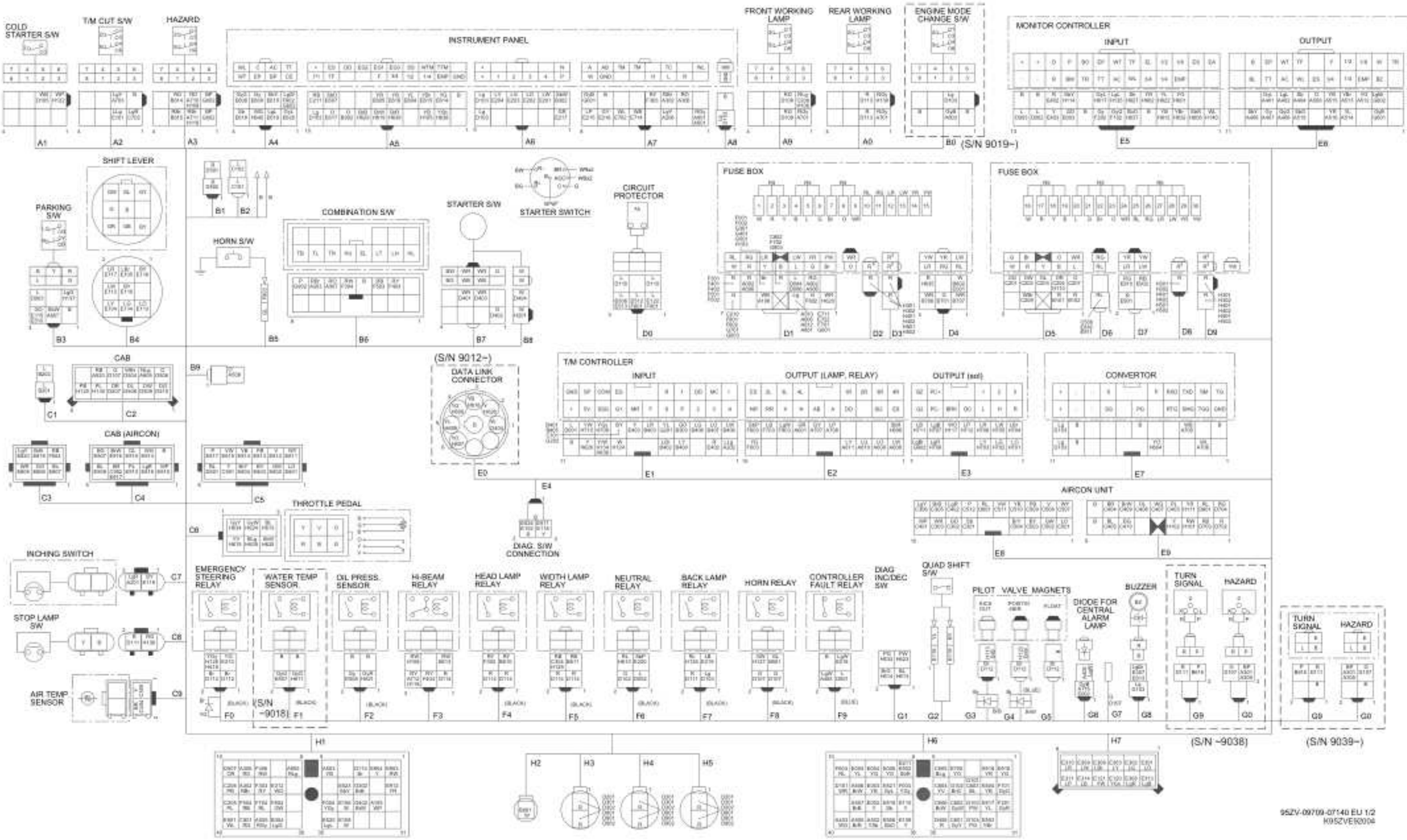


1. Hydraulic pump (loading + pilot & brake)
2. Hydraulic pump (steering)
3. Multiple control valve (loading circuit)
4. Steering valve
5. Boom cylinders
6. Bucket cylinders
8. Steering cylinders
11. Check valve (oil cooler bypass)
12. Return filter element
13. Relief valve (return filter bypass)
14. Orbitrol®
15. Stop valve
16. Pilot valve (for loading)
17. Valve assembly
    (18) Reducing valve (Orbitrol® circuit)
19. Adapter (orifice, slow spool return)
21. Breather valve (oil filling port)
22. Unloader valve
26. Valve assembly (main brake manifold block)
    (28) Reducing valve
        (pilot, parking brake, auto-brake)
    (29) Solenoid valve for parking (R)
    (32) Check valve
    (49) Pressure switch (for brake oil pressure)
33. Accumulator
45. Valve assembly
    (46) Reducing valve (for accumulator circuit)
71. Fan motor
72. Valve assembly (for fan motor)
    (73) Relief valve (two-step relief)
    (74) Solenoid valve
    (75) Solenoid valve
81. Line filter
82. Suction strainer
83. Suction strainer

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Electrical Wiring Diagram (1/2) (S/N 9011~9064)



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