PART NO. TTNHJ40-EN-00

HITACHI

Reliable solutions

Technical Manual
Troubleshooting

ZW

370-6
Wheel Loader

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TONHJ40-EN
Technical Manual (Troubleshooting)	: Vol. No.TTNHJ40-EN
Workshop Manual	: Vol. No.WNHJ40-EN

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Contents of Diagnosis

Fault Code

Preparation

Tools for a diagnosis and contents needing inspection beforehand are explained.

How to Read Table

Fault Code	Trouble or MP Dr. Message	Inspection Method	Evaluation	Cause
(A)	(B)	(C)	(D)	(E)
		(F)	(G)	(H)

- A: Fault code
- B: Trouble details or message displayed on the Maintenance Pro Dr.
- C, F: Inspection method for trouble cause
- D, G: Evaluation specification of check results
- E, H: Trouble cause for the fault code

Procedure:

1. Check an applicable line depending on displayed fault cord (A).
2. After checking or measuring on Inspection Method (C), refer to Evaluation (D) and judge the results.
3. In case the results are satisfied with Evaluation (D), the trouble cause becomes Cause (E).
   In case the results are not satisfied with Evaluation (D), go to the next procedure, Inspection Method (F).

Circuit Diagram of Test Harness

A connection point of the test harness and a point to check are explained.
(Only Pressure Sensor System Troubleshooting)

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SC Fault Code List

Controller Hardware Failure

Fault Code	Trouble or MP Dr. Message	Cause	Symptoms in Machine Operation When Trouble Occurs.	Remedy
111000-2	Abnormal EEPROM	Faulty SC	-	Replace SC.
111001-2	Abnormal RAM	Faulty SC	-	Replace SC.
111002-2	Abnormal A/D Converter	Faulty SC	-	Replace SC.
111003-3	Abnormal Sensor Voltage	Faulty SC Faulty sensor Faulty harness	Although the accelerator pedal is operated, the engine speed does not change.	Check the sensor connected to SC. Check the harness. Replace SC.

Engine Failure

Fault Code	Trouble or MP Dr. Message	Cause	Symptoms in Machine Operation When Trouble Occurs.	Remedy
111105-3	Abnormal Engine Speed Sensor	Torque converter input speed sensor = 0 min^{-1} and Engine speed sent from ECM (CAN) > 500 min^{-1}	Although the accelerator pedal is operated, aftertreatment device manual regeneration control cannot be deactivated.	Check the harness. Check and adjust the engine speed sensor.

NOTE: SC (Sub-Controller) refers to the Main Controller (Sub). These error codes are observed on the Service Menu - Troubleshooting - Main (Sub) screen.

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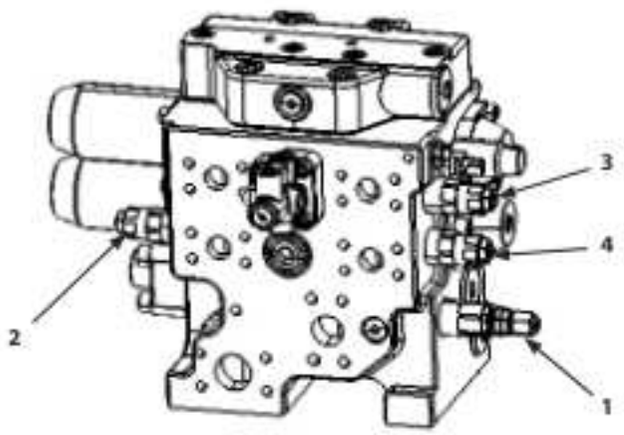
F-2 Some cylinders are not operated or speeds are slow.

Overload Relief Valve Set Pressure	Specification	Remark
Lift Arm Lower	37.3 ± 0.5 MPa (5410 ± 73 psi)	
Bucket	37.3 ± 0.5 MPa (5410 ± 73 psi)	

Preparation

- When parking brake is released normally, the primary pilot pressure is considered to be normal.

Procedure	Inspection Method	Condition	Evaluation	Cause
1	Monitor Bucket Roll Back Pilot Pressure, Bucket Dump Pilot Pressure, Lift Arm Raise Pilot Pressure	Full operation of bucket roll back/ dump and lift arm raise	The measured values are out of the specified range. (Normal range: 3.0 ~ 3.7 MPa (435 ~ 537 psi))	Faulty pilot valve
2	Replace overload relief valves, of which the set pressure are the same	-	Symptom is observed with the replaced relief valve.	Faulty overload relief valve
3	-	-	The above checks resulted all normal.	Faulty control valve spool (stuck) Faulty cylinder (faulty seal kit)



95Z7BTT05-06-10

1- Main Relief Valve
2- Overload Relief Valve (Bucket Bottom Side, Roll Back)
3- Overload Relief Valve (Lift Arm Rod Side, Lower)
4- Overload Relief Valve (Bucket Rod Side, Dump)

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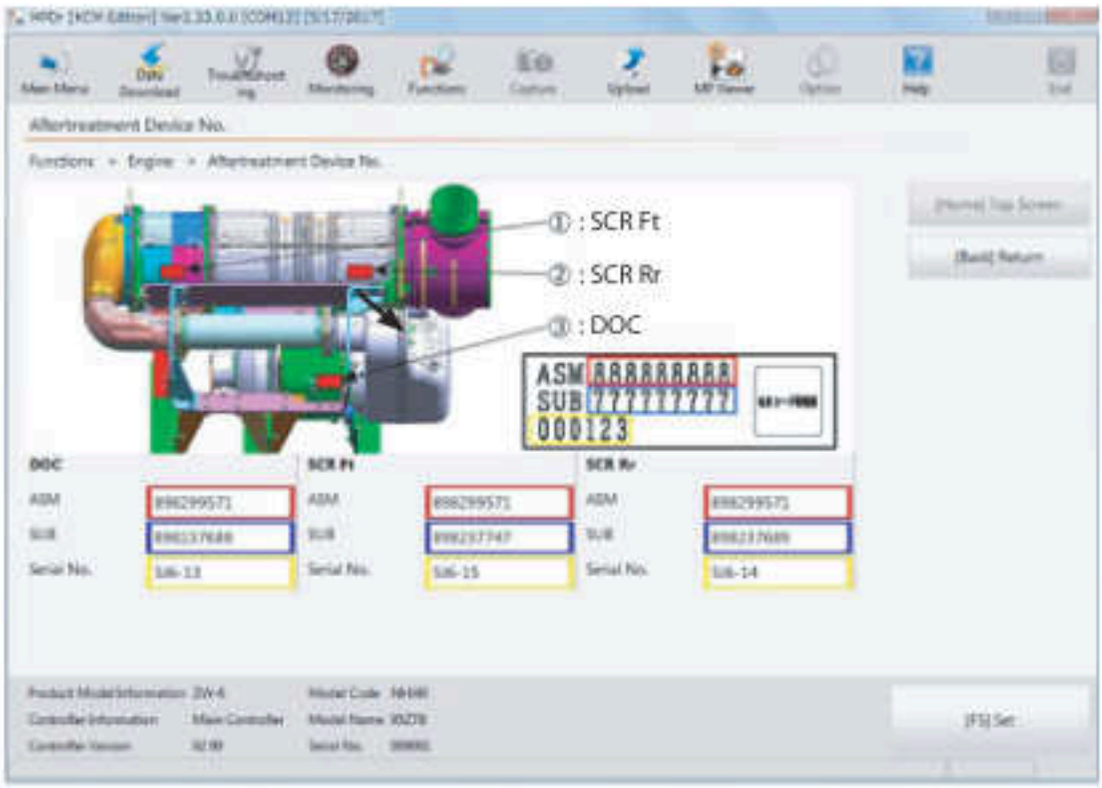
Rewrite of Aftertreatment Device Serial No.

After replacing the aftertreatment device (DOC/SCR), rewrite their serial Nos. and upload the data to e-Service.

1. Connect the Maintenance Pro Dr. (MPDr.)
2. Set the key switch to the ON position.
3. Select Functions - Engine - Aftertreatment Device No.
4. Input the following items of Oxidation Catalyst (DOC) and Front SCR (SCR Fr) and Rear SCR (SCR Fr).
   - ASM
   - SUB
   - Serial No.
5. After inputting, select [F5] Set.

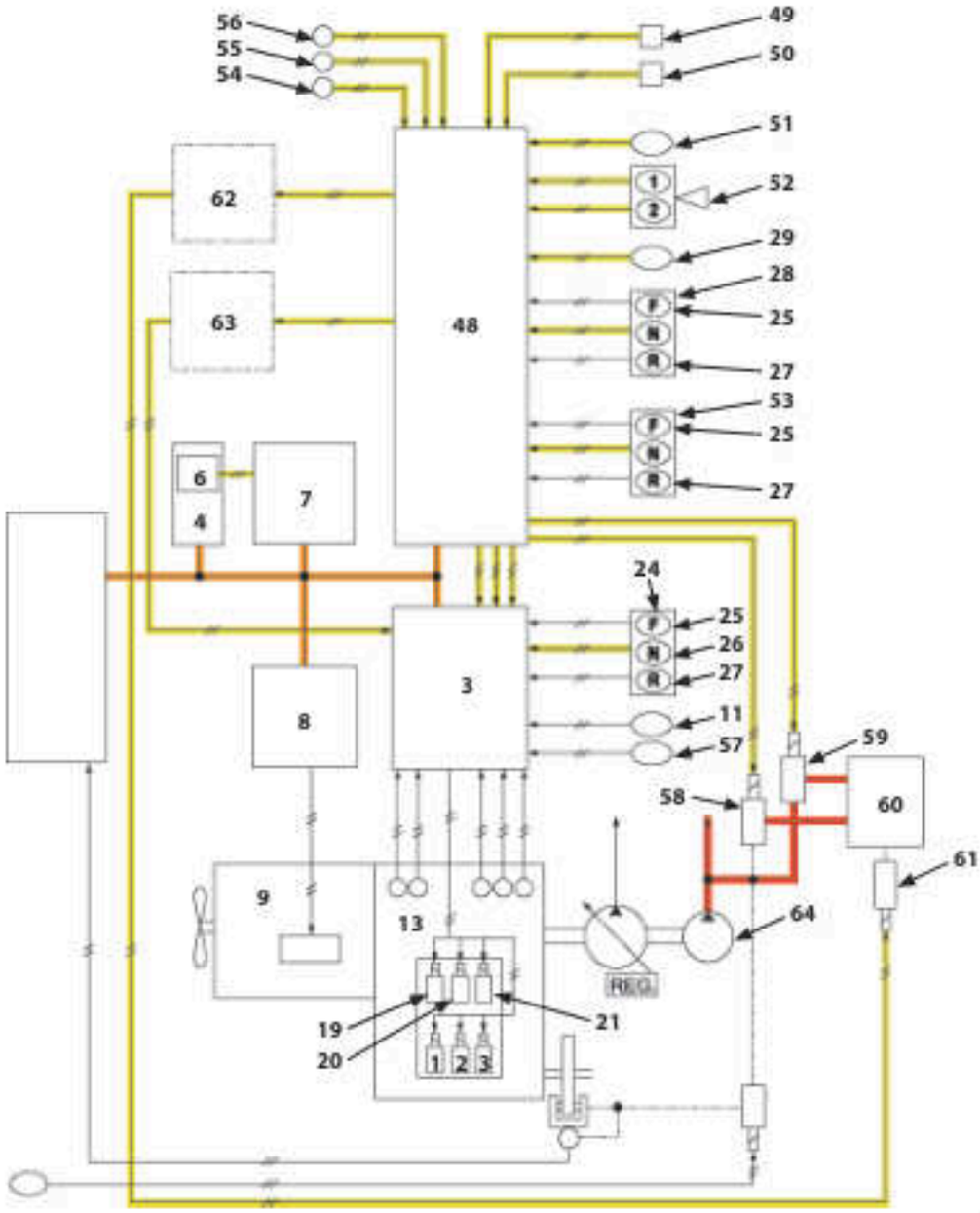
IMPORTANT: After finishing aftertreatment device serial No. input, upload the data to e-Service.

NOTE: When the input data is uploaded to e-Service, the M-Find product specification and history will be updated.



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TNEK-05-08-001

3- MC (Main)
4- Column Display Controller
5- CAN Communication
6- Monitor
7- Monitor Controller
8- ECM
9- Engine
11- Downshift Switch
13- Transmission
19- Slow-Speed Forward Clutch Solenoid Valve (YS)
20- Fast-Speed Forward Clutch Solenoid Valve (Y1)
21- Reverse Clutch Solenoid Valve (Y2)
24- Forward/Reverse Lever
25- Forward Position
26- Neutral Position
27- Reverse Position
28- Forward/Reverse Switch (OP)
29- Forward/Reverse Selector Switch (OP)
48- JCU (OP)
49- Armrest Switch 1 (OP)
50- Armrest Switch 2 (OP)
51- Joystick Steering Selector Switch (OP)
52- Joystick Steering Lever (OP)
53- Forward/Reverse Switch (Left) (OP)
54- Pressure Sensor (Steering Pilot Pressure) (OP)
55- Pressure Sensor (Right Steering Pilot Pressure) (OP)
56- Pressure Sensor (Left Steering Pilot Pressure) (OP)
57- Downshift Switch (JSS) (OP)
58- Right Steering Proportional Solenoid Valve (2-Spool Solenoid Valve Unit) (OP)
59- Left Steering Proportional Solenoid Valve (2-Spool Solenoid Valve Unit) (OP)
60- Joystick Steering Valve (OP)
61- Cut Off Solenoid Valve (OP)
62- Electrical Circuit (Joystick Steering)
63- Electrical Circuit (Forward/Reverse Switch)
64- Pilot Pump

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