PART NO. TTDAY90-EN-00

HITACHI

Reliable solutions

Technical Manual
Troubleshooting

ZX135US-5A
Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODAY90-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDAY90-EN
Workshop Manual	: Vol. No.WDAY90-EN
Engine Manual	: Vol. No.EDBL-EN

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SECTION 4

OPERATIONAL PERFORMANCE TEST

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SECTION 5 TROUBLESHOOTING

Group 1 Diagnosing Procedure

Introduction

Refer to the inspection and troubleshooting procedures after any machine trouble has occurred. The inspection and troubleshooting procedures are presented in an orderly fashion in this section to quickly find the cause of the machine trouble and solution.

The troubleshooting section in this manual consists of seven groups as follows.

1. Diagnosing Procedure

   This group explains procedures of troubleshooting and precautions and/or information for the electrical system inspection.

   Example: Fuse Inspection

2. Monitor

   This group contains the display screen of monitor and the operating procedures of service menu.

3. e-Service

   This group contains as follows. Procedures of downloading and uploading data from the monitor controller. Procedures when starting communication, when installing the communication controller and when replacing the monitor controller. Explanation for the communication system.

4. Component Layout

5. Troubleshooting A (Base Machine Diagnosis By Using Fault Codes)

   Refer to these procedures if any fault codes are displayed when each controller is diagnosed by using MPDr. (or the service menu of monitor).

IMPORTANT: The monitor controller receives and records the electrical signal system malfunction of each controller in the form of fault codes by using the CAN communication. The monitor controller records the electrical signal system malfunction in the form of fault codes by the self-diagnosing function.

Example: Fault Code 11000-2: Abnormal EEPROM

6. Troubleshooting B (Machine Diagnosis by Using Trouble Symptom)

   Refer to troubleshooting B for diagnosis by using trouble symptom.

   Refer to these procedures when no fault codes are displayed after diagnosing the machine by using MPDr. (or the service menu of monitor).

   Example: Even if engine control dial is rotated, engine speed does not change.

7. Air Conditioner

   This group explains air conditioner system, troubleshooting, and procedure of charging refrigerant to the air conditioner.

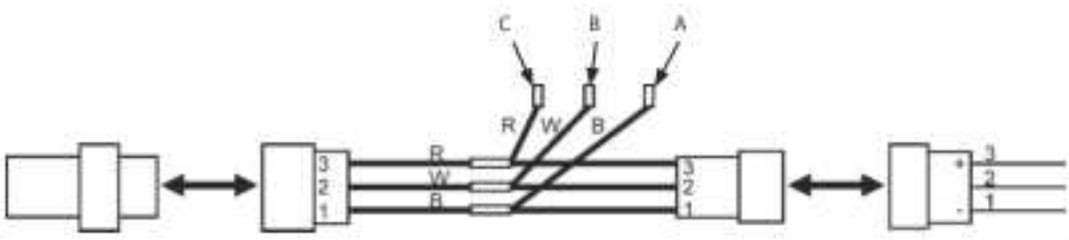
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MC Fault Codes 11200 to 11202

Preparation

- Check the wiring connections first.
- Connect the test harness (ST 6701) and dummy sensor equivalent to #4703324.
- Before inspection, set the key switch to the ON position.

Fault Code	Details	Procedure	Inspection Method	Evaluation:	Cause
11200-3	Pump 1 Delivery Pressure Sensor Circuit High Input	1	Measure voltage between B and the body.	more than 4.5 V	YES: Short circuit in wire harness #2 and #3.
					NO: Go to Procedure No. 2
		2	Measure voltage between C and A (GND).	0 V	YES: Open circuit in wire harness #1.
					NO: Faulty sensor
11200-4	Pump 1 Delivery Pressure Sensor Circuit Low Input	1	Retry by using MPDr..	Un-displayed fault code	YES: Faulty sensor
					NO: Go to Procedure No. 2
		2	Measure voltage between C and the body.	0 V	YES: Open circuit in wire harness #3.
					NO: Open circuit in wire harness #2.
11202-3	Pump 2 Delivery Pressure Sensor Circuit High Input	1	Measure voltage between B and the body.	more than 4.5 V	YES: Short circuit in wire harness #2 and #3.
					NO: Go to Procedure No. 2
		2	Measure voltage between C and A (GND).	0 V	YES: Open circuit in wire harness #1.
					NO: Faulty sensor
11202-4	Pump 2 Delivery Pressure Sensor Circuit Low Input	1	Retry by using MPDr..	Un-displayed fault code	YES: Faulty sensor
					NO: Go to Procedure No. 2
		2	Measure voltage between C and the body.	0 V	YES: Open circuit in wire harness #3.
					NO: Open circuit in wire harness #2.



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Swing System Troubleshooting

S-1 Swing speed is slow or is not operated.

	Specification (sec/3 rev)	Remark
Swing Speed	13.5±1.0	The bucket should be empty.

Preparation

- Check whether the pilot system is faulty or the main circuit is faulty.
- If other functions (front attachment and travel) are operated normally, the pilot pump (primary pilot pressure) is considered to be normal. If the pilot system is faulty, the cause of trouble may exist in the circuit downstream of the pilot valve.
- If travel (left) is also slow, also refer to A-4.

Procedure	Inspection Method	Condition	Evaluation	Cause
1	Monitor Swing Pilot Pressure.	Fully swing	The measured values are out of the specification. (Specification: 3.4-4.0 MPa)	YES: Faulty pilot valve NO: Go to Procedure No. 2
2	Monitor Pump 2 Control Pressure.	Fully swing	The measured values are out of the specification. (Specification: 2.9-3.9 MPa)	YES: Stuck pump 2 flow rate control valve in signal control valve NO: Go to Procedure No. 3
3	Monitor Front ATT Pilot Pressure.	When relieving arm	The measured values are out of the specification. (Specification: 3.5-5.0 MPa)	YES: Faulty swing parking brake release spool in signal control valve NO: Go to Procedure No. 4
4	Disassemble and inspect the parking brake release valve in the swing motor.	-	There is abnormality.	YES: Faulty swing parking brake release valve in swing motor NO: Go to Procedure No. 5
5	Monitor Pump 2 Delivery Pressure.	When relieving swing	The measured values are out of the specification. (Specification: 32.8-35.6 MPa)	YES: Faulty swing relief valve NO: Go to Procedure No. 6
6	Measure the swing motor drainage.	With constant speed	The measured values are out of the specification. (Specification: 0.2-0.5 L/min)	YES: Faulty swing motor NO: Faulty swing reduction gear

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