PART NO. TTJAC-EN-00

HITACHI

Reliable solutions

Technical Manual
Troubleshooting

ZX
470-5G
470LC-5G
470H-5G
470LCH-5G
470R-5G
470LCR-5G
Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TOJAC-EN
Technical Manual (Troubleshooting)	: Vol. No.TTJAC-EN
Workshop Manual	: Vol. No.WJAC-EN

MidWestTech | Hitachi ZX470-5G, ZX470LC-5G, ZX470H-5G, ZX470LCH-5G, ZX470R-5G, ZX470LCR-5G Excavator Troubleshooting Technical Service Manual | Publication TTJAC-EN-00

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Safety Alert Symbol and Headline Notations

In this manual, the following safety alert symbol and signal words are used to alert the reader to the potential for personal injury of machine damage.

⚠ This is the safety alert symbol. When you see this symbol, be alert to the potential for personal injury.
Never fail to follow the safety instructions prescribed along with the safety alert symbol.
The safety alert symbol is also used to draw attention to component/part weights.
To avoid injury and damage, be sure to use appropriate lifting techniques and equipment when lifting heavy parts.

⚠ **CAUTION:**
Indicated potentially hazardous situation which could, if not avoided, result in personal injury or death.

IMPORTANT:
Indicates a situation which, if not conformed to the instructions, could result in damage to the machine.

NOTE:
Indicates supplementary technical information or know-how.

Units Used

SI Units (International System of Units) are used in this manual. MKSA system units and English units are also indicated in parentheses just behind SI units.

Example: 24.5 MPa (250 kgf/cm², 3560 psi)

A table for conversion from SI units to other system units is shown below for reference purposes.

Quantity	To Convert From	Into	Multiply By
Length	mm	in	0.03937
	mm	ft	0.003281
Volume	L	US gal	0.2642
	L	US qt	1.057
	m^3	yd^3	1.308
Weight	kg	lb	2.205
Force	N	kgf	0.10197
	N	lbf	0.2248
Torque	N·m	kgf·m	0.10197
Pressure	MPa	kgf/cm^2	10.197
	MPa	psi	145.0
Power	kW	PS	1.360
	kW	HP	1.341
Temperature	°C	°F	°C×1.8+32
Velocity	km/h	mph	0.6214
	min^{-1}	rpm	1.0
Flow rate	L/min	US gpm	0.2642
	mL/rev	cc/rev	1.0

NOTE: The numerical value in this manual might be different from the above-mentioned table.

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TECHNICAL MANUAL (Operational Principle)	WORKSHOP MANUAL
SECTION 1 GENERAL Group 1 Specification Group 2 Component Layout Group 3 Component Specifications SECTION 2 SYSTEM Group 1 Controller Group 2 Control System Group 3 Hydraulic System Group 4 Electrical System SECTION 3 COMPONENT OPERATION Group 1 Pump Device Group 2 Swing Device Group 3 Control Valve Group 4 Pilot Valve Group 5 Travel Device Group 6 Signal Control Valve Group 7 Others (Upperstructure) Group 8 Others (Undercarriage)	SECTION 1 GENERAL INFORMATION Group 1 Precautions for Disassembling and Assembling Group 2 Tightening Torque Group 3 Painting Group 4 Bleeding Air from Hydraulic Oil Tank Group 5 Hydraulic Circuit Pressure Release Procedure Group 6 Preparation SECTION 2 MAINTENANCE STANDARD Group 1 Upperstructure Group 2 Undercarriage Group 3 Attachment SECTION 3 UPPERSTRUCTURE Group 1 Cab Group 2 Counterweight Group 3 Main Frame Group 4 Engine Group 5 Radiator Group 6 Hydraulic Oil Tank Group 7 Fuel Tank Group 8 Pump Device Group 9 Control Valve Group 10 Swing Device Group 11 Pilot Valve Group 12 Solenoid Valve Group 13 Signal Control Valve Group 14 Shockless Valve SECTION 4 UNDERCARRIAGE Group 1 Swing Bearing Group 2 Travel Device Group 3 Center Joint Group 4 Track Adjuster Group 5 Front Idler Group 6 Upper and Lower Roller Group 7 Track SECTION 5 ATTACHMENT Group 1 Front Attachment Group 2 Cylinder

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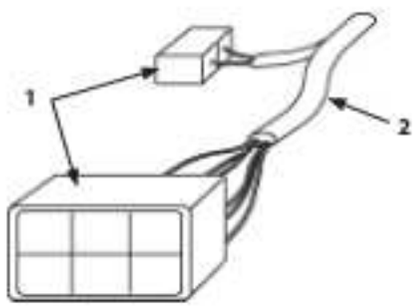
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Troubleshooting B (Machine Diagnosis by Using Troubleshooting Symptom) Procedure

Refer to troubleshooting B procedures for diagnosis by using trouble symptom when no fault codes are displayed.

- Diagnosis Procedure
  - The diagnosis procedures for the displayed fault codes are explained in this group.
  - Perform diagnosis by using MPDr. or the service menu of monitor first.
  - In case any fault code has not been displayed by diagnosis, perform inspection according to the procedures when diagnosing.
  - When the fault code is displayed, refer to the troubleshooting A group and diagnose.
  - On the front section pages of this group, there are the tables indicating the relationship between machine trouble symptoms and related parts which may cause such trouble if failed. Start the troubleshooting with more probable causes selected by referring to these tables.

NOTE: Harness end connector viewed from the open end side by the all connectors image shown in this section.



T6L4-05-03-001

1- Harness End Connector 2- Harness

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Air Conditioner Controller Fault Codes 43 to 92

Preparation

- Check the wiring connections first.
- Before inspection, set the key switch to the ON position.

Fault Code	Trouble	Inspection Method	Evaluation	Cause
43	Abnormal air vent damper servo motor	Measurement of voltage between air vent damper servo motor harness end 7C and body. (AUTO/OFF switch / blower switch: ON)	0 V	Faulty controller or open circuit in harness between controller and air vent damper servo motor.
		Measurement of voltage between air vent damper servo motor harness end 7C and 25D. (AUTO/OFF switch / blower switch: ON)	0 V	Faulty controller or open circuit in harness between controller and air vent damper servo motor.
		-	Normal in above check.	Faulty air vent damper servo motor.
44	Abnormal air mix damper servo motor	Measurement of voltage between air mix damper servo motor harness end 7D and body. (AUTO/OFF switch / blower switch: ON)	0 V	Faulty controller or open circuit in harness between controller and air mix damper servo motor.
		Measurement of voltage between air mix damper servo motor harness end 7D and 25E. (AUTO/OFF switch / blower switch: ON)	0 V	Faulty controller or open circuit in harness between controller and air mix damper servo motor.
		-	Normal in above check.	Faulty air mix damper servo motor.
51	Abnormal high/ low refrigerant pressure	Measurement of voltage between high/low pressure switch harness end A21 and A05. (AUTO/OFF switch / blower switch: ON)	0 V	Faulty controller or open circuit in harness between controller and high/low pressure switch.
		-	Normal in above check.	Faulty high/low pressure switch.
91	CAN communication error	Continuity check in CAN1 harness.	Normal	Faulty controller.
			Abnormal	Faulty CAN1 harness.
92	CAN bus off error	Continuity check in CAN1 harness.	Normal	Faulty controller.
			Abnormal	Faulty CAN1 harness.

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