PART NO. TTJBE-EN-00

HITACHI

Reliable solutions

Technical Manual
Troubleshooting

ZX
870-5G
870LC-5G
870H-5G
870LCH-5G
870LCR-5G
Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TOJBE-EN
Technical Manual (Troubleshooting)	: Vol. No.TTJBE-EN
Workshop Manual	: Vol. No.WJBE-EN

MidWestTech | Hitachi ZX870-5G, ZX870LC-5G, ZX870H-5G, ZX870LCH-5G, ZX870LCR-5G, Excavator Troubleshooting Technical Service Manual | Publication TTJBE-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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CAN Data Reception Failure

Fault Code	Trouble	Cause	Symptoms in Machine Operation When Trouble Occurs	Remedy
11006-2	Engine Controller Communication Error	Faulty harness Faulty ECF	Speed sensing control cannot be performed	Check the harness Replace ECF
11007-2	Monitor Controller (Information) Communication Error 1 (CAN0)	Faulty harness Faulty monitor controller	-	Check the harness Replace the monitor controller
11008-2	Monitor Controller (Information) Communication Error 2 (CAN1)	Faulty harness Faulty monitor controller	The machine movement is slow (Coolant temperature signal cannot be received. Overheat Prevention Control)	Check the harness Replace the monitor controller
11009-2	Monitor Controller (Monitor) Communication Error 1 (CAN0)	Faulty harness Faulty monitor controller	-	Check the harness Replace the monitor controller
11010-2	Monitor Controller (Monitor) Communication Error 2 (CAN1)	Faulty harness Faulty monitor controller	-	Check the harness Replace the monitor controller

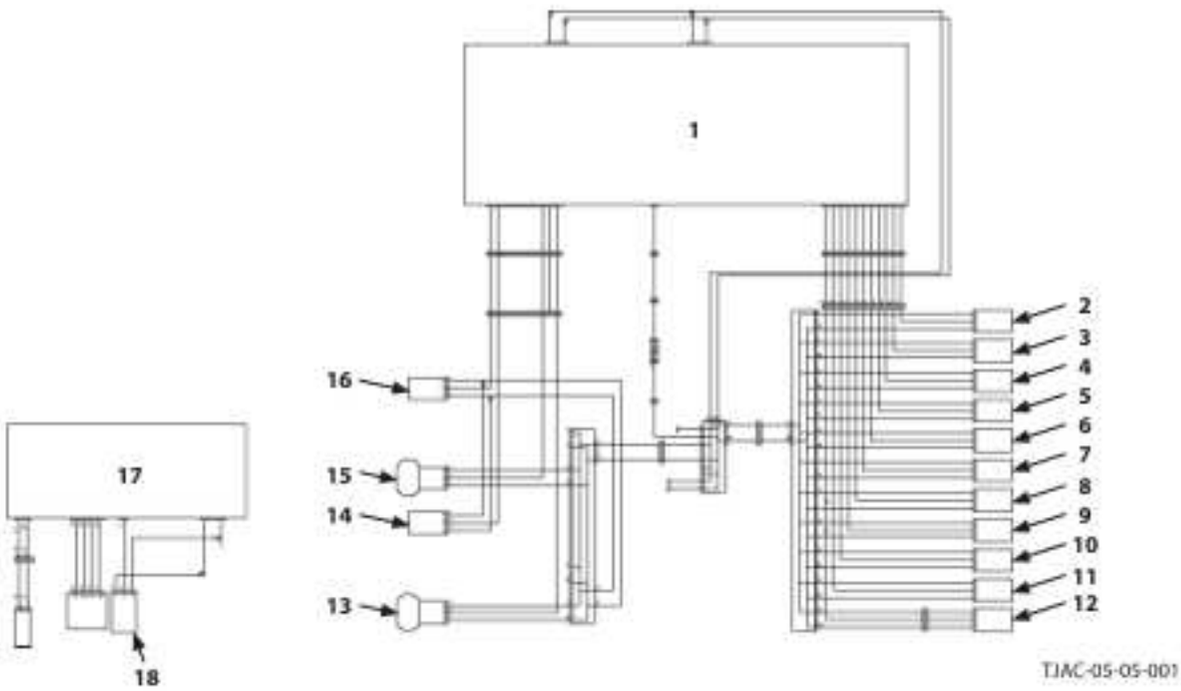
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MC Fault Code 11003

ECF Fault Code 16603

IMPORTANT: When fault codes 11003-3 and 16603-3 (Abnormal Sensor Voltage) are displayed with other fault code, diagnose on fault codes 11003-3 and 16603-3 first.

Fault Code	Trouble	Inspection Method	Evaluation	Cause
11003-3 16603-3	Abnormal Sensor Voltage	Disconnect connectors from all sensors and switch panel. Retry the troubleshooting by using MPDr.	Fault codes 11003-3 and 16603-3 are not displayed	Faulty sensor
		Measure voltage between sensor harness end #1 and body.	0 V	Open circuit in harness #1
		Check shorted circuit in harness between sensor harness end #1 and #3.	0 Ω	Shorted circuit in harness #1 and #3
		-	Normal in above check	Faulty controller



1- MC
2- Pressure Sensor (Boom Raise)
3- Pressure Sensor (Boom Lower)
4- Pressure Sensor (Arm Roll-In)
5- Pressure Sensor (Arm Roll-In)
6- Pressure Sensor (Bucket Roll-In)
7- Pressure Sensor (Bucket Roll-Out)
8- Pressure Sensor (Swing)
9- Pressure Sensor (Travel)
10- Pressure Sensor (4-Spool Side)
11- Pressure Sensor (5-Spool Side)
12- Pressure Sensor (Attachment) (OP)
13- Pump 1 Delivery Pressure Sensor
14- Pump 1 Control Pressure Sensor
15- Pump 2 Delivery Pressure Sensor
16- Pump 2 Control Pressure Sensor
17- ECF
18- EC Sensor

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