PART NO. TTJAG50-EN-00

HITACHI

Reliable solutions

Technical Manual

Troubleshooting

ZX

470-6
470LC-6
490H-6
490LCH-6
490R-6
490LCR-6
530LCH-6

Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TOJAG50-EN
Technical Manual (Troubleshooting)	: Vol. No.TTJAG50-EN
Workshop Manual	: Vol. No.WJAG50-EN
Engine Manual	: Vol. No.ETJAG50-EN, EWJAG50-EN

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Sensor Activating Range

1. Checking Method

- Hydraulic Oil Temperature: 50±5 °C
- Unless specified:

Engine Control Dial	Power Mode Switch	Work Mode	Auto-Idle Switch
Maximum Speed	HP Mode	Digging Mode	OFF

- Monitor each sensor using MPDr.

2. Sensor Activating Range

Sensor	Operation	Specification
Engine Control Dial	Slow Idle Speed	0.3 to 1.0 V
	Fast Idle Speed	4.0 to 4.7 V
Pilot Operation Pressure Sensor	Control Lever: Neutral Pilot Shut-Off Lever: LOCK	0 to 0.5 MPa
	Control Lever: Full Stroke Pilot Shut-Off Lever: UNLOCK	2.45 to 3.9 MPa
Pump Regulator Pressure Sensor	Control Lever: Neutral	Pump 1: *0.5 MPa Pump 2: *0.5 MPa
	Jack-up, Travel Lever: Full Stroke (Jack-up Side)	*2.55 MPa
Pump Delivery Pressure Sensor	Control Lever: Neutral	*0.3 to 0.7 MPa
	Boom Raise Relief	$35.3^{+2}_{-0.5}$ MPa

*: Reference Value

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Monitor Controller (Information) Fault Code List

Fault Code	Trouble	Cause	Remedy:
14001-2	ICF: Flash Memory: Read / Write Error	The internal memory of monitor controller is abnormal.	After initializing the monitor controller (information) by using MPDr., retry the troubleshooting. If the fault code is displayed after retry, the monitor controller may be broken. Replace the monitor controller. When initializing the monitor controller (information), all stored data is deleted.
14002-2	ICF: External RAM: Read / Write Error	The internal memory of monitor controller is abnormal.	After initializing the monitor controller (information) by using MPDr., retry the troubleshooting. If the fault code is displayed after retry, the monitor controller may be broken. Replace the monitor controller. When initializing the monitor controller (information), all stored data is deleted.
14003-2	Abnormal EEPROM	The internal memory of monitor controller is abnormal.	Retry the troubleshooting by using MPDr.. If the fault code is displayed after retry, the monitor controller may be broken. Replace the monitor controller.
14006-2	ICF: Communication Terminal: Communication Error	Communication error with communication equipment	Check the communication line, power line, and fuses for communication terminal. Then, retry the troubleshooting by using MPDr.. If the fault code is displayed after retry, the communication equipment may be broken. Replace the communication equipment.
14008-2	ICF: Abnormal internal RAM	The internal memory of monitor controller is abnormal.	Retry the troubleshooting by using MPDr.. If the fault code is displayed after retry, the monitor controller may be broken. Replace the monitor controller.
14021-2	Communication Terminal Security Error	Security failure of mobile communication equipment	Check the communication line for communication terminal. Check the GPS antenna. In case the communication equipment has been replaced, it may be judged faulty. After disabling the checking function for mobile phone number by MPDr. (security), enable it again. Retry the troubleshooting by using MPDr. after turning OFF the key switch. If the fault code is displayed after retry, the communication equipment may be broken. Replace the communication equipment.
14022-2	SIM Card Error	Abnormal SIM card in mobile communication equipment	Retry the troubleshooting by using MPDr.. If the fault code is displayed after retry, the communication equipment may be broken. Replace the communication equipment.
14023-2	Security Error	Communication error with MC	Check the CAN1 harness. Retry the troubleshooting by using MPDr.. If the fault code is displayed after retry, MC may be broken. Replace MC.

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MC Fault Codes 11974, 11975

Fault Code	Trouble	Inspection Method	Evaluation:	Cause
11974-2	Engine Torque Un-calibration	Engine Torque Learning	Success	Engine torque not learned
			Failed	Refer to 11975-2
		Continuity check (open circuit)	→	Open circuit in harness.
		Discontinuity check	→	Short circuit in wire harness.
11975-2	Engine torque Learning Failed	Retry by using MPDr.	Other fault codes are displayed at the time.	Perform troubleshooting for the displayed fault code.
		When learning timeout Engine torque learning switch: OFF Pump learning: Completed Engine Control Dial : Maximum Power Mode Switch: HP Mode Auto-Idle Switch: OFF Pilot Shut-Off Solenoid Valve: Ensure it is open (ON). After checking above items, set temporary release of the cooling fan by using MPDr., and then perform engine torque learning again.	Abnormal Engine Speed	Misassembling of Engine, Pump
		Continuity check (open circuit)	→	Open circuit in harness.
		Discontinuity check	→	Short circuit in wire harness.

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Rewrite of Aftertreatment Device Serial No.

When the aftertreatment device has been replaced, rewrite the serial No. of aftertreatment device and upload the data to e-Service.

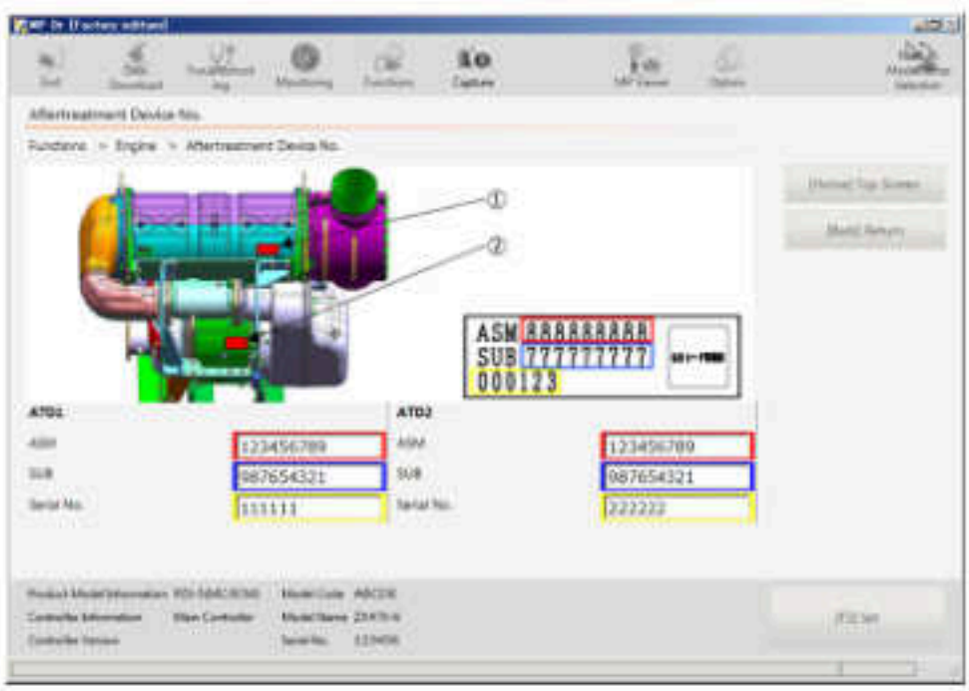
Procedure

1. Connect MPDr..
2. Set the key switch to the ON position.
3. Select Functions-Engine-Aftertreatment Device No. with MPDr..
4. Input the serial No. after the replacement to the following items of Oxidation Catalyst (DOC) and SCR Catalyst.

- ASM
- SUB
- Serial No.

5. After inputting, select Set.
6. Upload the input 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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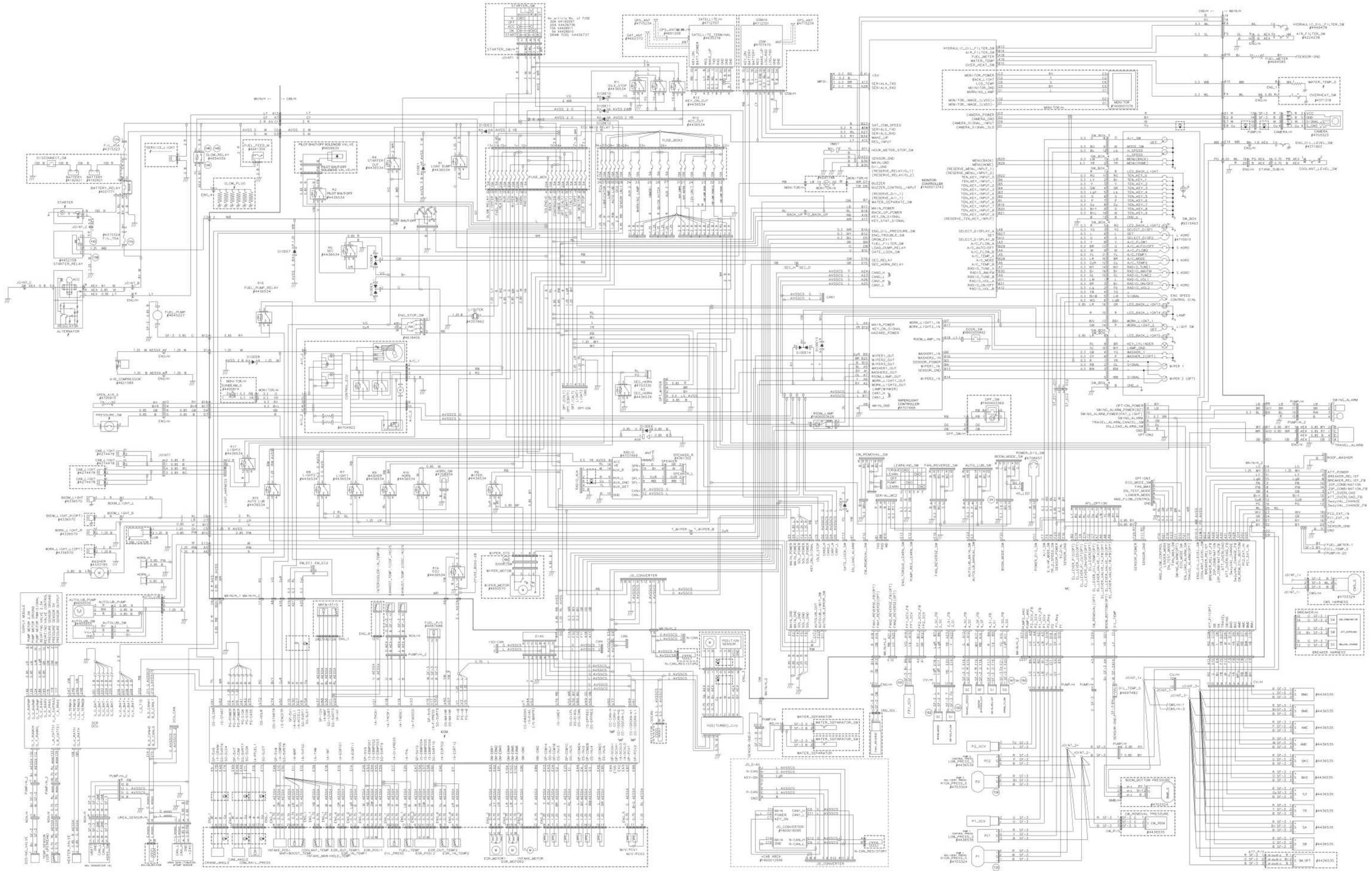
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ELECTRICAL CIRCUIT DIAGRAM

⚠ CAUTION: Parts numbers on the drawing are provided only for reference purpose.
To order parts on the drawing, be sure to consult the Parts Catalog.

Applicable Machine

Attach to Vol. No.	Model
TTJAG50-EN-00	ZX470-6/470LC-6/490H-6/490LCH-6/490R-6/490LCR-6/530LCH-6



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