PART NO. TTDBS50-EN-00

HITACHI

Reliable solutions

Technical Manual
Troubleshooting

ZX
190LC-6
190LCN-6

Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODBS50-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDBS50-EN
Workshop Manual	: Vol. No.WDBS50-EN
Engine Manual	: Vol. No.ETDC150-EN, EWDC150-EN

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SECTION 4

OPERATIONAL PERFORMANCE TEST

CONTENTS

Group 1 Introduction
Operational Performance Tests T4-1-1
Preparation for Performance Tests T4-1-2

Group 2 Standard
Operational Performance Standard Table T4-2-1
Main Pump P-Q Diagram (P1, P2) T4-2-11
Main Pump P-Q Diagram (P3) T4-2-12
Sensor Activating Range T4-2-14
MPDr. Monitor Indicating Values T4-2-16

Group 3 Engine Test
Engine Speed T4-3-1
Lubricant Consumption T4-3-4

Group 4 Machine Performance Test
Travel Speed T4-4-1
Track Revolution Speed T4-4-2
Mistrack Check T4-4-3
Travel Parking Leakage T4-4-4
Swing Speed T4-4-5
Swing Function Drift Check T4-4-6
Swing Motor Leakage T4-4-8
Maximum Swingable Slant Angle T4-4-10
Swing Bearing Play T4-4-12
Hydraulic Cylinder Cycle Time T4-4-14
Dig Function Drift Check T4-4-16
Control Lever Operating Force T4-4-19
Control Lever Stroke T4-4-20
Combined Operation of Boom Raise and Swing Function Check T4-4-21
Combined Operation of Boom Raise and Arm Roll-In Function Check T4-4-22
Clearance of Front Attachment Connecting Part T4-4-23

Group 5 Component Test
Primary Pilot Pressure T4-5-1
Secondary Pilot Pressure T4-5-3
5-Spool Solenoid Valve Set Pressure T4-5-4
2-Spool Solenoid Valve (Aftertreatment Device Regeneration Control) Set Pressure T4-5-5
Main Pump Delivery Pressure T4-5-7
Main Relief Set Pressure T4-5-8
Relief Pressure (when relieving swing) T4-5-12
Overload Relief Valve Set Pressure T4-5-14
Main Pump Flow Rate Measurement T4-5-16
Swing Motor Drainage T4-5-26
Travel Motor Drainage T4-5-28

Group 6 Adjustment
Rewrite of Aftertreatment Device Serial No. T4-6-1
How to Clear Fault Code T4-6-2
Procedure after Replacing DCU and ECM T4-6-3
Air Bleeding from the Diesel Exhaust Fluid Defrosting Piping T4-6-4
How to Check Manual Regeneration Switch T4-6-5
Remedy at DEF Pressure Decrease T4-6-6
Remedy at DEF Abnormal Quality T4-6-8
Clean DEF Tank T4-6-10
Remedy when Mixing Oil in DEF Tank T4-6-12

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SECTION 5

TROUBLESHOOTING

CONTENTS

Group 1 Diagnosing Procedure

Introduction T5-1-1
Diagnosis Procedure T5-1-2
Electrical System Inspection T5-1-5
Precautions for Inspection and Maintenance T5-1-6
Instructions for Disconnecting Connectors T5-1-8
Fuse Inspection T5-1-10
Fusible Link Inspection T5-1-13
Battery Voltage Check T5-1-14
Alternator Check T5-1-15
Continuity Check T5-1-16
Voltage and Current Measurement T5-1-18
Check by False Signal T5-1-26
Test Wire Harness T5-1-27

Group 2 Monitor

Outline T5-2-1
Operating Procedures of Service Menu T5-2-2
Setting Menu T5-2-43
Inspection of Engine Oil Level, Coolant Level, Hour Meter, and Fuel Gauge T5-2-48
Fuel Gauge, Coolant Temperature Gauge, DEF Gauge T5-2-49

Group 3 e-Service

Outline T5-3-1
List of Operation Data T5-3-2
Communication System T5-3-4

Group 4 Component Layout

Main Component T5-4-1
Electrical System (Overview) T5-4-3
Electrical System (Rear Tray) T5-4-4
Electrical System (Switch Panel) T5-4-5
Electrical System (Utility Space) T5-4-6
Electrical System (Relays) T5-4-7
Engine T5-4-8
Aftertreatment Device T5-4-9
Pump Device T5-4-10
Around Pump Device T5-4-11
Control Valve T5-4-12
Signal Control Valve T5-4-12
Swing Device T5-4-14
Travel Device T5-4-14
5-Spool Solenoid Valve Unit T5-4-15
2-Spool Solenoid Valve Unit (Aftertreatment Device Regeneration Control) T5-4-15
DEF Tank T5-4-16
DEF Supply Module T5-4-16
Layout of Attachment Spec. Parts T5-4-18
Components Related with Breaker T5-4-20
Components in Control Valve T5-4-24
Pilot Port T5-4-46
Port Layout of Control Valve (Main Circuit) T5-4-50
Port Layout of Control Valve (Pilot Circuit) T5-4-52

Group 5 Troubleshooting A

Troubleshooting A (Base Machine Diagnosis By Using Fault Codes) Procedure T5-5-1
MC Fault Code List T5-5-3
ECM Fault Code List T5-5-24
DCU Fault Code List T5-5-38
Monitor Controller (Monitor) Fault Code List T5-5-45
Monitor Controller (Information) Fault Code List T5-5-46
Air Conditioner Controller Fault Code List T5-5-49
Communication Terminal Fault Code List T5-5-50
MC Fault Codes 11000 to 11002 ..... T5-5-51
MC Fault Code 11003 ..... T5-5-52
MC Fault Codes 11006, 11007,11009 ..... T5-5-55
Monitor Controller (Monitor) Fault Codes 13002, 13003, 13005 ..... T5-5-55
CAN0 Harness Check T5-5-56
ISO-CAN (Engine) Harness Check T5-5-60
MC Fault Codes 11008, 11010 ..... T5-5-63
Monitor Controller (Monitor) Fault Codes 13004, 13006, 13007 ..... T5-5-63
CAN1 Harness Check T5-5-64
MC Fault Code 11100 ..... T5-5-67
MC Fault Code 11101 ..... T5-5-68
MC Fault Codes 11200 to 11202 ..... T5-5-69
MC Fault Code 11203 ..... T5-5-70
MC Fault Codes 11206 to 11208 ..... T5-5-71
MC Fault Codes 11301 to 11303 ..... T5-5-72
MC Fault Codes 11304, 11307, 11325 ..... T5-5-73
MC Fault Codes 11995, 11997 ..... T5-5-74
MC Fault Code 11400 ..... T5-5-75
MC Fault Code 11401 ..... T5-5-76
MC Fault Code 11402 ..... T5-5-77
MC Fault Code 11403 ..... T5-5-78
MC Fault Code 11406 ..... T5-5-79
MC Fault Code 11407 ..... T5-5-80
MC Fault Code 11408 ..... T5-5-81

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MC Fault Code 11409 ..... T5-5-82
MC Fault Code 11410 ..... T5-5-83
MC Fault Code 11411 ..... T5-5-84
MC Fault Codes 11434, 11435 ..... T5-5-85
MC Fault Code 11436 ..... T5-5-86
MC Fault Codes 11458, 11459 ..... T5-5-87
MC Fault Code 11427 ..... T5-5-88
MC Fault Code 11428 ..... T5-5-89
MC Fault Code 11901 ..... T5-5-90
MC Fault Codes 20010 to 20012 ..... T5-5-91
Monitor Controller (Information)
Fault Codes 13304, 13310 ..... T5-5-92
Monitor Controller (Information)
Fault Code 13311 ..... T5-5-93
Monitor Controller (Information)
Fault Codes 20100 to 20114 ..... T5-5-94
Monitor Controller (Information)
Fault Codes 20109 to 20149 ..... T5-5-95
Air Conditioner Controller Fault Codes 11 to 22 ..... T5-5-96
Air Conditioner Controller Fault Codes 43 to 92 ..... T5-5-97

Group 6 Troubleshooting B

Troubleshooting B (Machine Diagnosis by Using Trouble Symptom) Procedure T5-6-1
Relationship between Machine Trouble Symptoms and Related Parts T5-6-3
Correlation between Trouble Symptoms and Part Failures T5-6-30
Engine System Troubleshooting T5-6-48
All Actuator System Troubleshooting T5-6-58
Front Attachment System Troubleshooting T5-6-66
Swing System Troubleshooting T5-6-81
Travel System Troubleshooting T5-6-83
Other System Troubleshooting T5-6-89
Exchange Inspection Method T5-6-94
How to Lowering Boom When Emergency and When Engine Stops without Hose Rupture Valve T5-6-97
How to Lowering Boom When Emergency and When Engine Stops with Hose Rupture Valve T5-6-98
Attachment Circuit Pressure Release Procedure T5-6-99

Group 7 Air Conditioner

Outline T5-7-1
Functions of Main Parts T5-7-4
Troubleshooting T5-7-9
Air Conditioner Controller Fault Code List T5-7-10
Air Conditioner Controller Fault Codes 11 to 22 ..... T5-7-11
Air Conditioner Controller Fault Codes 43 to 92 ..... T5-7-12
Work after Replacing Components T5-7-34
Refill Compressor Oil T5-7-35
Charge Air Conditioner with Refrigerant T5-7-36
Hose and Pipe Tightening Torque T5-7-44

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ECM Fault Code List

(Refer to the Engine Manual for ECM Fault Codes.)

Fault Code		Trouble	Cause	Symptoms in Machine Operation When Trouble Occurs	Operating Rank					
SPN-FMI	DTC				A	B	C	D	E	F
100-3	P0523	Engine Oil Pressure Sensor Circuit High Input	Voltage: more than 4.9 V.	Nothing special.	○					
100-4	P0522	Engine Oil Pressure Sensor Circuit Low Input	Voltage: less than 0.1 V.	Nothing special.	○					
102-0	P0234	Over Boost-Pressure	Boost pressure is 20 kPa higher than the max. target boost pressure.	The output power decreases.		○				
102-3	P0238	Boost Pressure Sensor Circuit High Input	Voltage: more than 4.9 V.	Engine power decreases. Engine speed decreases.					○	
102-4	P0237	Boost Pressure Sensor Circuit Low Input	Voltage: less than 0.1 V.	Engine power decreases. Engine speed decreases.					○	
105-3	P1098	Boost Temperature Sensor (Intercooler Outlet) High Input	Voltage: more than 4.9 V.	Nothing special.	○					
105-4	P1097	Boost Temperature Sensor (Intercooler Outlet) Low Input	Voltage: less than 0.1 V.	Nothing special.	○					
108-3	P2229	Abnormal Atmospheric Pressure Sensor Circuit (High Input)	Voltage: more than 4.9 V.	The output power decreases.		○				
108-4	P2228	Abnormal Atmospheric Pressure Sensor Circuit (Low Input)	Voltage: less than 0.1 V.	The output power decreases.		○				

Operating Rank

A: Digging is operable.

B: Machine can travel with the boom raised.

C: The engine only runs. (Only operation with light load is possible.)

D: The engine cannot stop/start.

E: Malfunction of urea SCR system (Engine output power and speed are restricted in a phased manner. Finally engine output power and speed are set to operating rank (C).) * Malfunction of urea SCR system (first time): Engine output power and speed are set to operating rank (C) after 3.5 hours, Malfunction of urea SCR system (second time): Engine output power and speed are set to operating rank (C) after 0.5 hours.

F: Malfunction of EGR system (Engine output power and speed are restricted in a phased manner. Finally engine output power and speed are set to operating rank (C).) * Malfunction of EGR system (first time): Engine output power and speed are set to operating rank (C) after 100 hours, Malfunction of EGR system (second time): Engine output power and speed are set to operating rank (C) after 5 hours.

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Fault Code	Trouble	Cause	Remedy
20100-2	Overheat Alarm	Coolant temperature is high while the engine runs.	Check the wire harness. Replace the overheat switch.
20101-2	Engine Warning Alarm	Faulty engine system.	Refer to Engine Troubleshooting Manual.
20102-2	Engine Oil Pressure Alarm	Engine oil pressure decreases.	Check the wire harness. Replace the engine oil pressure sensor.
20105-2	Hydraulic Oil Filter Restriction Alarm	Clogged hydraulic oil filter. Open circuit in wire harness.	Check the wire harness. Replace the hydraulic oil filter restriction switch.
20106-2	Air Cleaner Restriction Alarm	Clogged air cleaner.	Check the wire harness. Replace the air cleaner restriction switch.
20107-2	Water Separator Alarm	The water separator is full.	Check the wire harness. Replace the water separator alarm switch.
20109-2	Pilot Control Shut-Off Lever Alarm	Faulty pilot shut-off switch.	Check the wire harness. Replace the pilot shut-off switch.
20110-2	Fuel Filter Restriction Alarm	Clogged fuel filter.	Check the wire harness. Replace the fuel filter restriction switch.
20114-2	Overheat Alarm (Immediately after the key is turned ON)	Coolant temperature is high within ten seconds after the engine starts.	Check the wire harness. Replace the overheat switch.
20141-2	Exhaust Temperature Alarm	Exhaust temperature is high.	Check the wire harness. Replace the exhaust temperature sensor.
20142-2	Intake Air Temperature Alarm	Intake air temperature increases.	Check the wire harness. Replace the intake-air temperature sensor.
20145-2	Boost Temperature Increase Alarm	Boost temperature increases.	Check the wire harness. Replace the boost temperature sensor.
20146-2	Fuel Temperature Increase Alarm	Fuel temperature increases.	Check the wire harness. Replace the fuel temperature sensor.
20149-2	EGR Gas Temperature Alarm	EGR gas temperature increases.	Check the wire harness. Replace the intake manifold temperature sensor.

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Air Conditioner Controller Fault Codes 11 to 22

Preparation

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

Fault Code	Trouble	Procedure	Inspection Method	Evaluation	Cause
11	Open circuit in re-circulated air temperature sensor	1	Measure resistance between sensor #25H and #6B.	∞ Ω (Specification: 300 to 430 kΩ)	YES: Faulty sensor.
					NO: Go to Procedure No. 2.
		2	Measure voltage between sensor harness end #25H and the body.	0 V	YES: Open circuit in wire harness #25H.
					NO: Open circuit in wire harness #6B.
12	Short circuit in re-circulated air temperature sensor	1	Measure resistance between sensor #25H and #6B.	0 Ω (Specification: 300 to 430 kΩ)	YES: Faulty sensor.
					NO: Short circuit in wire harness #25H and #6B.
13	Open circuit in ambient temperature sensor	1	Measure resistance between sensor #A25T and #A4T.	∞ Ω (Specification: 100 to 210 kΩ)	YES: Faulty sensor.
					NO: Go to Procedure No. 2.
		2	Measure voltage between sensor harness end #A25T and the body.	0 V	YES: Open circuit in wire harness #A25T.
					NO: Open circuit in wire harness #A4T.
14	Short circuit in ambient temperature sensor	1	Measure resistance between sensor #A25T and #A4T.	0 Ω (Specification: 100 to 210 kΩ)	YES: Faulty sensor.
					NO: Short circuit in wire harness #A25T and #A4T.
18	Short circuit in solar radiation sensor	1	Check continuity between sensor harness end #A7T and #A3T.	0 Ω	YES: Short circuit in wire harness #A7T and #A3T.
					NO: Faulty sensor.
21	Open circuit in frost sensor	1	Measure resistance between sensor #25C and #5E.	∞ Ω (Specification: 100 to 115 kΩ)	YES: Faulty sensor.
					NO: Go to Procedure No. 2.
		2	Measure voltage between sensor harness end #25C and the body.	0 V	YES: Open circuit in wire harness #25C.
					NO: Open circuit in wire harness #5B.
22	Short circuit in frost sensor	1	Measure resistance between sensor #25C and #5B.	0 Ω (Specification: 100 to 115 kΩ)	YES: Faulty sensor.
					NO: Short circuit in wire harness #25C and #5B.

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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.

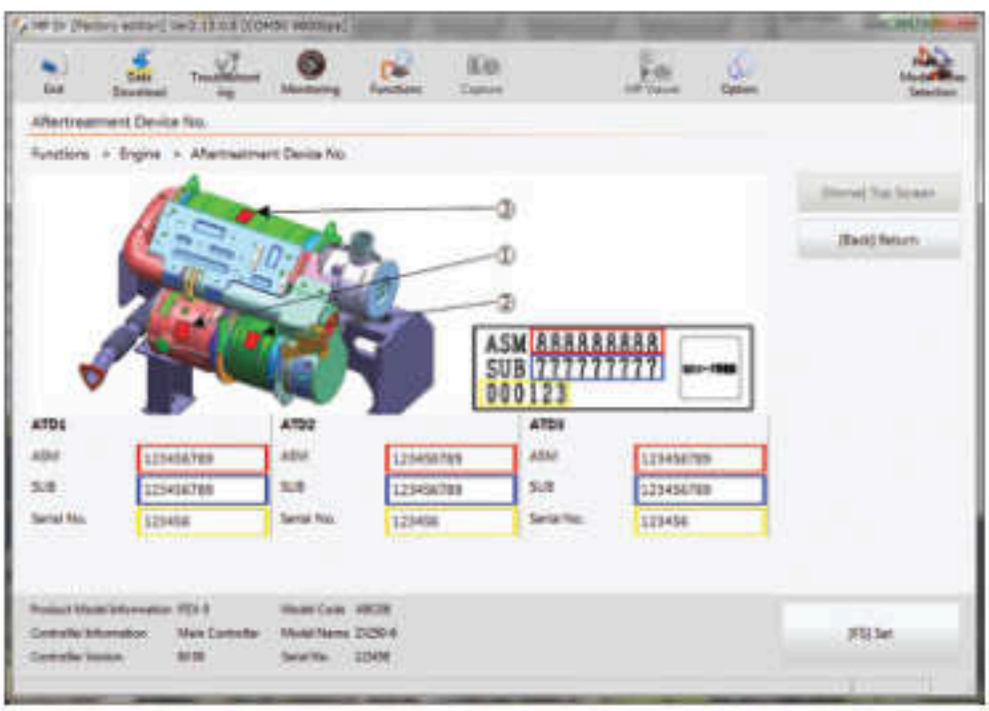
Procedure

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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