PART NO. WDFX50-EN-00

HITACHI

Reliable solutions

Workshop Manual

ZH
210-6
210LC-6
Hybrid Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODFX50-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDFX50-EN
Workshop Manual	: Vol. No.WDFX50-EN
Engine Manual	: Vol. No.EDFX50-EN

Order the manual at mid-west-tech.com >

SECTION 1

GENERAL

CONTENTS

Group 1 Precautions for Disassembling and Assembling

Precautions for Disassembling and Assembling W1-1-1-1

Group 2 Tightening

Tightening Bolts and Nuts W1-2-1-1
Piping Joint W1-2-1-4

Group 3 Painting

Painting W1-3-1-1

Group 4 Air Bleeding

Bleeding Air from Hydraulic System W1-4-1-1
Bleeding Air from Fuel System W1-4-1-3

Group 5 Preparation

Preparation before Inspection and Maintenance W1-5-1-1
Hydraulic Circuit Pressure Release Procedure W1-5-1-3
Pressure Release from Hydraulic Oil Tank W1-5-1-4
Pressure Release from Expansion Tank W1-5-1-5
Pressure Release from radiator (for hybrid systems) W1-5-1-6
Precautions for Inspection and Maintenance W1-5-1-7
Instructions for Disconnecting Connectors W1-5-1-8

Group 6 Precautions for the Hybrid System

Hybrid Component Inspection W1-6-1-1
Precautions for Inspection and Maintenance W1-6-1-2
Voltage Detection W1-6-1-6
Appearance Check W1-6-1-8
Ground check W1-6-1-9
Removal and installation of lithium-ion battery disconnect switch W1-6-1-10
How to Connect/Disconnect of Power Connector W1-6-1-14
How to Disconnect Control Connector W1-6-1-16

MidWestTech | Hitachi ZH210-6, ZH210LC-6 Hybrid Excavator Workshop Service Manu... Order the manual at mid-west-tech.com >

SECTION 2

MAINTENANCE STANDARDS

CONTENTS

Group 1 Upper structure

Pump Device W2-1-1-1
Swing Hydraulic Motor W2-1-2-1

Group 2 Undercarriage

Travel Motor W2-2-1-1
Sprocket W2-2-1-3
Front Idler W2-2-2-1
Upper Roller W2-2-3-1
Lower Roller W2-2-3-2
Track W2-2-4-1

Group 3 Front Attachment

Pin and Bushing W2-3-1-1
Side Cutter (2014503, 2014504) W2-3-1-3
Point (4427919) W2-3-1-4
Standard Dimensions for Arm and Bucket Connection W2-3-1-5
Standard Dimensions for Arm and Boom Connection W2-3-1-6
Cylinder W2-3-2-1

MidWestTech | Hitachi ZH210-6, ZH210LC-6 Hybrid Excavator Workshop Service Manu... Order the manual at mid-west-tech.com >

SECTION 3

UPPER STRUCTURE

CONTENTS

Group 1 Cab
- Removal and Installation of the cab W3-1-1-1
- Dimensions of Cab Glass W3-1-2-1

Group 2 Counterweights
- Removal and Installation of Counterweights W3-2-1-1

Group 3 Main Frame
- Removal and Installation of Main Frame W3-3-1-1

Group 4 Engine
- Removal and Installation of the Engine W3-4-1-1
- Removal and Installation of Timing Belt Cover W3-4-2-1

Group 8 Pump Device
- Removal and Installation of Pump Device W3-8-1-1
- Removal and Installation of Coupling W3-8-2-1
- Disassembly of Pump Device W3-8-3-1
- Assembly of Pump Device W3-8-3-9
- Disassembly of Regulator W3-8-4-1
- Assembly of Regulator W3-8-4-3
- Disassembly of Solenoid Valve Unit W3-8-5-1
- Assembly of Solenoid Valve Unit W3-8-5-3
- Structure of Pilot Pump W3-8-6-1

Group 9 Control Valve
- Removal and Installation of Control Valve W3-9-1-1
- Disassembly of Housing W3-9-2-1
- Assembly of Housing W3-9-2-3
- Disassembly of Control Valve (A side) W3-9-3-1
- Assembly of Control Valve (A side) W3-9-3-9
- Disassembly of Control Valve (B side) W3-9-4-1
- Assembly of Control Valve (B side) W3-9-4-9

Group 10 Swing Device
- Removal and Installation of Swing Device W3-10-1-1
- Disassembly of Swing Device W3-10-2-1
- Assembly of Swing Device W3-10-2-4
- Disassembly of Swing Reduction Gear W3-10-3-1
- Assembly of Swing Reduction Gear W3-10-3-6
- Disassemble of Swing Hydraulic Motor W3-10-4-1
- Assembly of Swing Hydraulic Motor W3-10-4-4

Group 11 Pilot Valve
- Removal and Installation of Pilot Valve (Left) W3-11-1-1
- Removal and Installation of Pilot Valve (Right) W3-11-2-1
- Removal and Installation of Travel Pilot Valve W3-11-3-1
- Disassembly of Pilot Valves (Right and Left) W3-11-4-1
- Assembly of Pilot Valves (Right and Left) W3-11-4-4
- Disassembly of Travel Pilot Valve W3-11-5-1
- Assembly of Travel Pilot Valve W3-11-5-5

Group 12 Solenoid Valve
- Removal and Installation of Pilot Shut-Off Solenoid Valve W3-12-1-1
- Removal and Installation of the 5-spool Solenoid Valve Unit W3-12-2-1
- Removal and Installation of 3-spool Solenoid Valve W3-12-3-1
- Disassembly of Pilot Shut-Off Solenoid Valve W3-12-4-1
- Assembly of Pilot Shut-Off Solenoid Valve W3-12-4-3
- Structure of 5-Spool Solenoid Valve Unit W3-12-5-1
- Structure of 3-spool Solenoid Valve Unit W3-12-6-1

Group 13 Signal Control Valve
- Removal and Installation of Signal Control Valve W3-13-1-1
- Structure of Signal Control Valve W3-13-2-1

Group 14 Muffler Filter
- Removal and Installation of Muffler Filter W3-14-1-1

MidWestTech | Hitachi ZH210-6, ZH210LC-6 Hybrid Excavator Workshop Service Manu... Order the manual at mid-west-tech.com >

How to Connect/Disconnect of Power Connector

CAUTION: During the disconnection and connection of the power connector, remove the lithium-ion battery disconnect switch and shut off the power circuit first. (Refer to Removal of Lithium-ion Battery Disconnect Switch.)

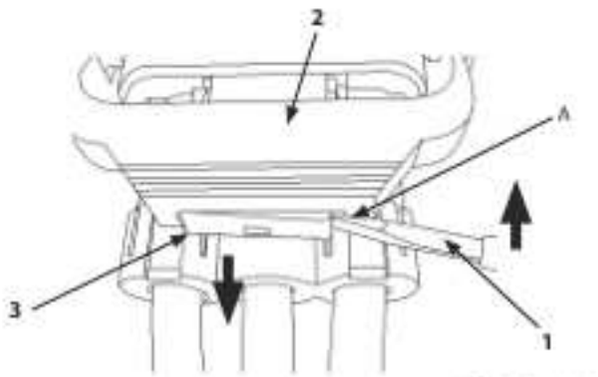
During the disconnection, connection, and covering of the power connector, there is the risk of electric shock. Wear insulated gloves.

The power connector is a harness connector for supplying and receiving energy between hybrid components. A high voltage is applied to the power wire harness. Therefore, the cable and the corrugated tube are orange to distinguish it from the signal line. During the disconnection and connection of the power Connector, follow the predetermined procedures.

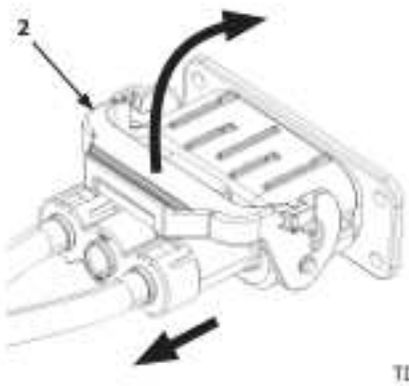
Disconnection of Power Connector

CAUTION: Turn the key switch to the OFF position, wait for 10 minutes or longer, and then start work.

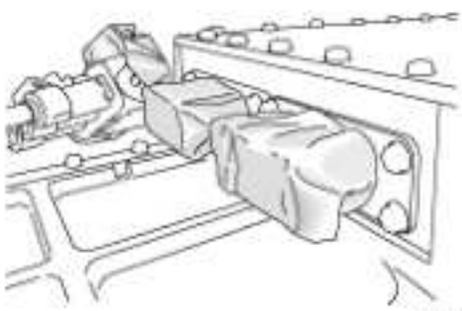
1. Remove the lithium-ion battery disconnect switch. (Refer to Removal and Installation of Lithium-ion Battery Disconnect Switch.)
2. Insert the screwdriver (1) tip 2 to 3 mm between handle (2) and lock part (3), tilt screwdriver (1) upward with part A of handle (2) as the fulcrum, and pull out lock part (3) downward shown in the figure.
3. While pulling the whole power wire harness lightly, slowly raise handle (2) to disconnect the power connector. At this time, take care not to apply an unreasonable force only to handle (2), or handle (2) may be damaged.
4. Cover the power connector and the connector on each unit side with plastic bags or tape.



TDCF-07-01-003

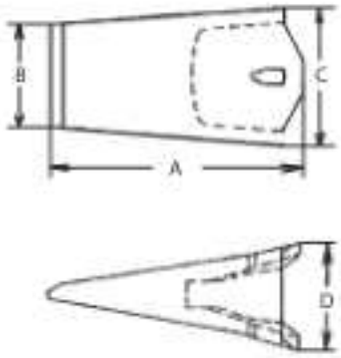


TDFX-05-01-011


TDFX-05-01-030

MidWestTech | Hitachi ZH210-6, ZH210LC-6 Hybrid Excavator Workshop Service Manu... Order the manual at mid-west-tech.com >

Point (4427919)

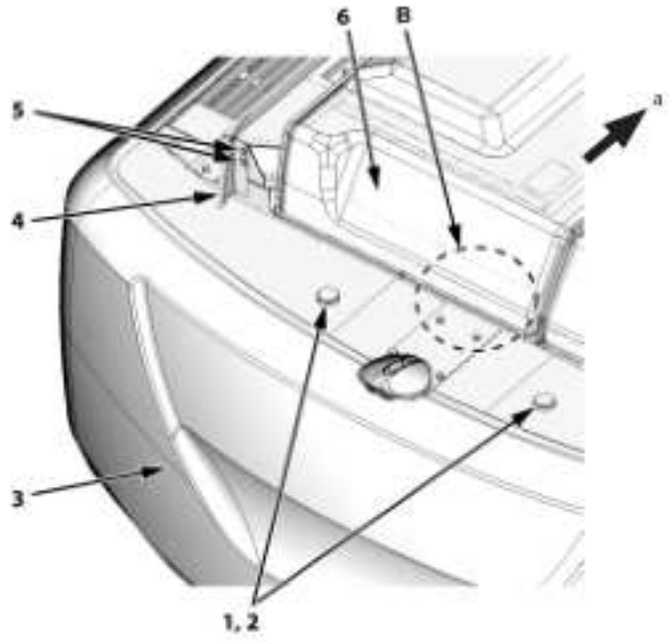


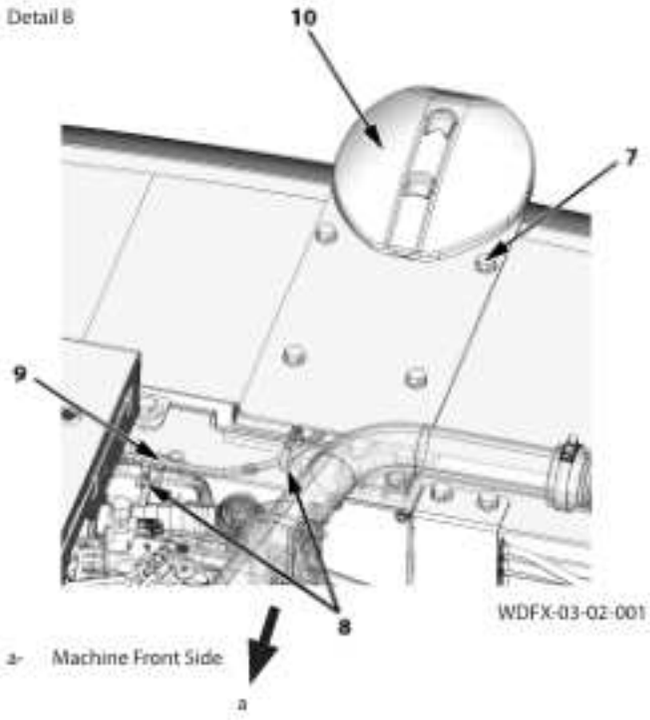
W105-04-01-020

Unit: mm

	Standard	Allowable limit	Remedy
A	215	107.5	Replace
B	95	-	
C	108	-	
D	95	-	

MidWestTech | Hitachi ZH210-6, ZH210LC-6 Hybrid Excavator Workshop Service Manu... Order the manual at mid-west-tech.com >





5. Remove bolts, washers (5) (2 used). Remove cover (4).

   : 17 mm

6. Remove clip bands (8) (2 used). Disconnect connector (9).

   : 17 mm

7. Close engine cover (6).
8. Remove bolts, washers (7) (4 used). Remove the rear camera (10) assembly.

   : 17 mm

CAUTION: Counterweight (3) weight: 3710 kg

9. Remove caps (1) (2 used) and packings (2) (2 used). Install Freno-Linkbolts (B-42: M42, pitch 4.5 mm) (2 used) to the cap (1) mounting holes (2 places). Attach wire ropes onto the Freno-Linkbolt. Hoist and hold counterweight (3).

MidWestTech | Hitachi ZH210-6, ZH210LC-6 Hybrid Excavator Workshop Service Manu... Order the manual at mid-west-tech.com >

CAUTION: The ring gear (4) assembly weight: 84 kg

8. Install eyebolts (M10, Pitch 1.5 mm) (2 used) to the bolt (26) holes (2 places) of ring gear (4). Attach nylon slings onto the eyebolts. Hoist ring gear (4). Place ring gear (4) straight on travel motor (1). At this time, check that the clearance between travel motor (1) and ring gear (4) is even all around.
9. While applying a load and shaking ring gear (4), push ring gear (4) into travel motor (1) straight.
10. Install the inner race of roller bearing (3) to travel motor (1) by using special tool (ST 8354) and a press.

NOTE: Install roller bearing (3) until the inner race side of roller bearing (3) of the cover (25) side reaches two threads for bearing nut (6).

NOTE: Check that the inner race of roller bearing (3) of the cover (25) side is installed completely.



a- Approx. Two Threads WDFX-04-02-022

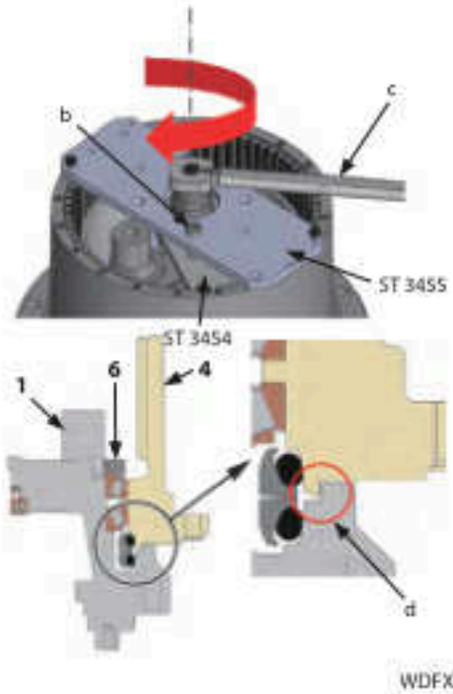
IMPORTANT: Check the direction to install bearing nut (6).

11. Apply a small amount of grease onto the thread part of bearing nut (6). Install bearing nut (6) onto travel motor (1) by hand with the machining surface side facing to the roller bearing (3) side.
12. Tighten bearing nut (6) by using special tools (ST 3454, ST 3455), and a torque wrench.

: 8 mm, 12 mm

: 46 mm

: 980±140 N·m



WDFX-04-02-023

b- Retainer Bolt (M16) d- Labyrinth Part
c- Torque Wrench

13. After tightening bearing nut (6), loosen retainer bolt (b) of special tool (ST 3455) and turn ring gear (4) clockwise and counterclockwise approx. 10 turns so that the bearing can fit.

: 12 mm

14. Tighten bearing nut (6) in the same way as step 12 again.

: 46 mm

: 980±140 N·m

15. Remove special tools (ST 3455, ST 3454).

: 8 mm

MidWestTech | Hitachi ZH210-6, ZH210LC-6 Hybrid Excavator Workshop Service Manu... Order the manual at mid-west-tech.com >