PART NO. TTLCDE0-EN-00

HITACHI

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# Technical Manual
## Troubleshooting

# ZX210W-5A
## Wheeled Excavator

Service Manual consists of the following separate Part No.

| | |
|---|---|
| Technical Manual (Operational Principle) | : Vol. No.TOLCDE0-EN |
| Technical Manual (Troubleshooting) | : Vol. No.TTLCDE0-EN |
| Workshop Manual | : Vol. No.WLCDE0-EN |
| Engine Manual | : Vol. No.ETDCY0-EN, EWDCY-EN |

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# SECTION 4

# OPERATIONAL PERFORMANCE TEST

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- Pilot Characteristics

**Summary:**

Install hydraulic tester (5) to the delivery port of the main pump to be measured. Main pump performance is checked by measuring the pump flow rate. Use MPDr. and pressure gauge (18) at the same time.

**IMPORTANT: This measurement procedure is a simple method. In order to measure accurately, disconnect the return circuit from the control valve and connect it to the hydraulic oil tank.**

**Preparation:**

1. While referring to step 1 to step 4 on T4-5-19, install hydraulic tester (5) to the main pump to be measured.
2. Disconnect the hose from regulator port Pi (21) of the pump to be measured. Install plug (4174545) to the hose disconnected from the regulator.

   : 19 mm, 22 mm
3. Install adapters (15) (3 used) to reducing valve (16). Remove plug (23) from the pilot filter. Install adapter (13) and hose (14) to the pilot filter.

   Connect hose (14) to port P1 of reducing valve (16).

   : 19 mm, 22 mm
4. Install tee (17) to port P2 of reducing valve (16). Connect adapter (24), pressure gauge (18) and hose (14) to tee (17). Connect hose (14) to the regulator.

   : 19 mm, 22 mm
5. Connect hose (19) and adapter (20) to port T of reducing valve (16). Remove plug (L) from return pipe (22). Connect hose (19).

   : 19 mm, 22 mm
6. Remove the vacuum pump. Loosen plug (12) on top of the pump casing. Bleed air from the casing until oil comes out.
7. Fully open the loading valve of hydraulic tester (5).
8. Start the engine. Confirm that no oil leakage is observed at the pipe connection.



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## Monitor Controller (Information) Fault Codes 20109 to 20149

| Fault Code | Trouble | Procedure | Inspection Method | Evaluation | Cause |
|---|---|---|---|---|---|
| 20109-2 | Pilot Control Shut-Off Lever Alarm | 1 | Check the pilot shut-off switch. | Correct | YES: Faulty wire harness |
| | | | | | NO: Faulty pilot shut-off switch |
| 20110-2 | Fuel Filter Restriction Alarm | 1 | Check the fuel filter restriction switch. | Correct | YES: Faulty wire harness |
| | | | | | NO: Faulty fuel filter restriction switch |
| 20141-2 | Exhaust Temperature Alarm | 1 | Diagnose on fault codes of ECM. | - | - |
| 20142-2 | Intake Air Temperature Alarm | 1 | Diagnose on fault codes of ECM. | - | - |
| 20145-2 | Boost Temperature Increase Alarm | 1 | Diagnose on fault codes of ECM. | - | - |
| 20146-2 | Fuel Temperature Increase Alarm | 1 | Diagnose on fault codes of ECM. | - | - |
| 20149-2 | EGR Gas Temperature Alarm | 1 | Diagnose on fault codes of ECM. | - | - |



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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 | Procedure | Inspection Method | Evaluation | Cause |
|---|---|---|---|---|---|
| 43 | Abnormal air vent damper servo motor | 1 | Measure voltage between air vent damper servo motor harness end #4 and the body. (AUTO/OFF switch / blower switch: ON) | 0 V | YES: Faulty controller or open circuit in wire harness between controller and air vent damper servo motor |
| | | | | | NO: To Procedure No. 2 |
| | | 2 | Measure voltage between air vent damper servo motor harness end #4 and #6. (AUTO/OFF switch / blower switch: ON) | 0 V | YES: Faulty controller or open circuit in wire harness between controller and air vent damper servo motor |
| | | | | | NO: Faulty air vent damper servo motor |
| 44 | Abnormal air mix damper servo motor | 1 | Measure voltage between air mix damper servo motor harness end #4 and the body. (AUTO/OFF switch / blower switch: ON) | 0 V | YES: Faulty controller or open circuit in wire harness between controller and air mix damper servo motor |
| | | | | | NO: To Procedure No. 2 |
| | | 2 | Measure voltage between air mix damper servo motor harness end #4 and #6. (AUTO/OFF switch / blower switch: ON) | 0 V | YES: Faulty controller or open circuit in wire harness between controller and air mix damper servo motor |
| | | | | | NO: Faulty air mix damper servo motor |
| 91 | CAN communication error | 1 | Check continuity in CAN1 harness. | Normal | YES: Faulty controller |
| | | | | | NO: Faulty CAN1 harness |
| 92 | CAN bus off error | 1 | Check continuity in CAN1 harness. | Normal | YES: Faulty controller |
| | | | | | NO: Faulty CAN1 harness |



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