PART NO. TTDCR-EN-00

HITACHI

Reliable solutions

Technical Manual
Troubleshooting

ZX220LC-GI
Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODCR-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDCR-EN
Workshop Manual	: Vol. No.WDCR-EN

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SECTION 4

OPERATIONAL PERFORMANCE TEST

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Dig Function Drift Check

- Maximum Reach Position

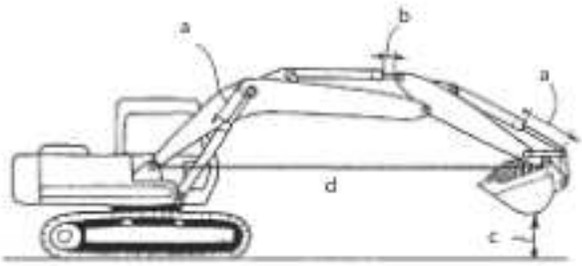
Summary:

1. Measure dig function drift, which can be caused by oil leakage in the control valve and boom, arm and bucket cylinders, with the bucket loaded.
2. When measuring the drift just after cylinder replacement, slowly operate the cylinder for ten minutes and bleed air from the cylinder.

Preparation:

1. Load the bucket with either soil or a weight equivalent to the weight standard.

   Weight: 1050 kg (2320 lb)
2. With the arm cylinder fully retracted and the bucket cylinder fully extended, hold the bucket so that height of the arm end pin is the same as the boom foot pin.
3. Position the arm cylinder and the bucket cylinder with the rod 50 mm (2 in) away from the full stroke end position.
4. Maintain the hydraulic oil temperature at 50±5 °C (122±9 °F).



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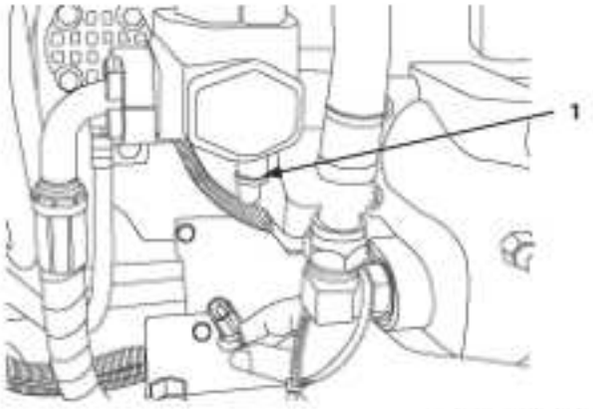
a - Retraced Distance
b - Extended Distance
c - Dig Function Drift Amount
d - height is the same as boom foot pin.

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Connecting Procedure of Test Harness

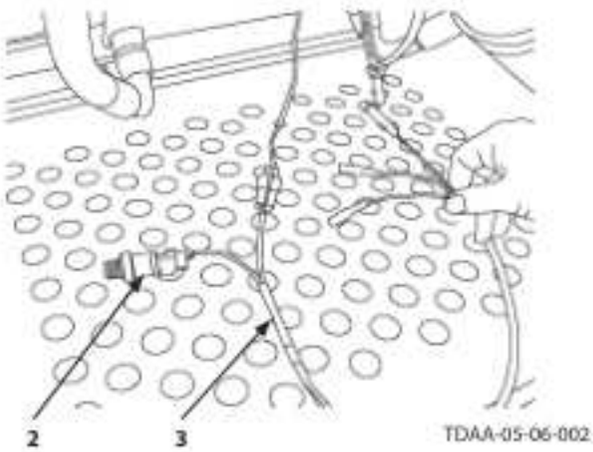
NOTE: The connecting procedures of test harness of pump 2 delivery pressure sensor (1) are explained.

1. Disconnect a connector of pump 2 delivery pressure sensor (1).

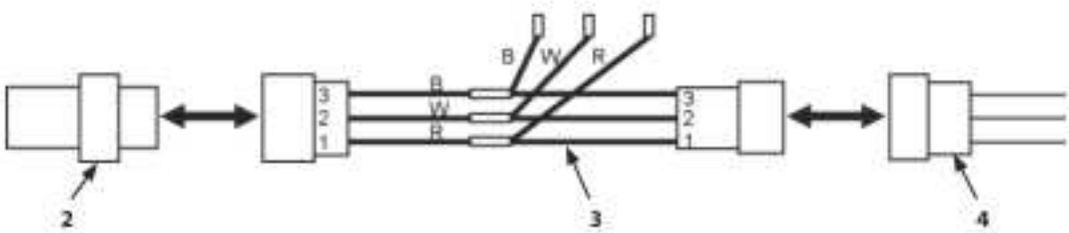


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2. Connect the male end connector of test harness (3) (ST 6701) to harness end connector (4) of pump 2 delivery pressure sensor (1).
3. Connect dummy sensor (2) equivalent to #4436271 to the female end connector of test harness (3) (ST 6701).



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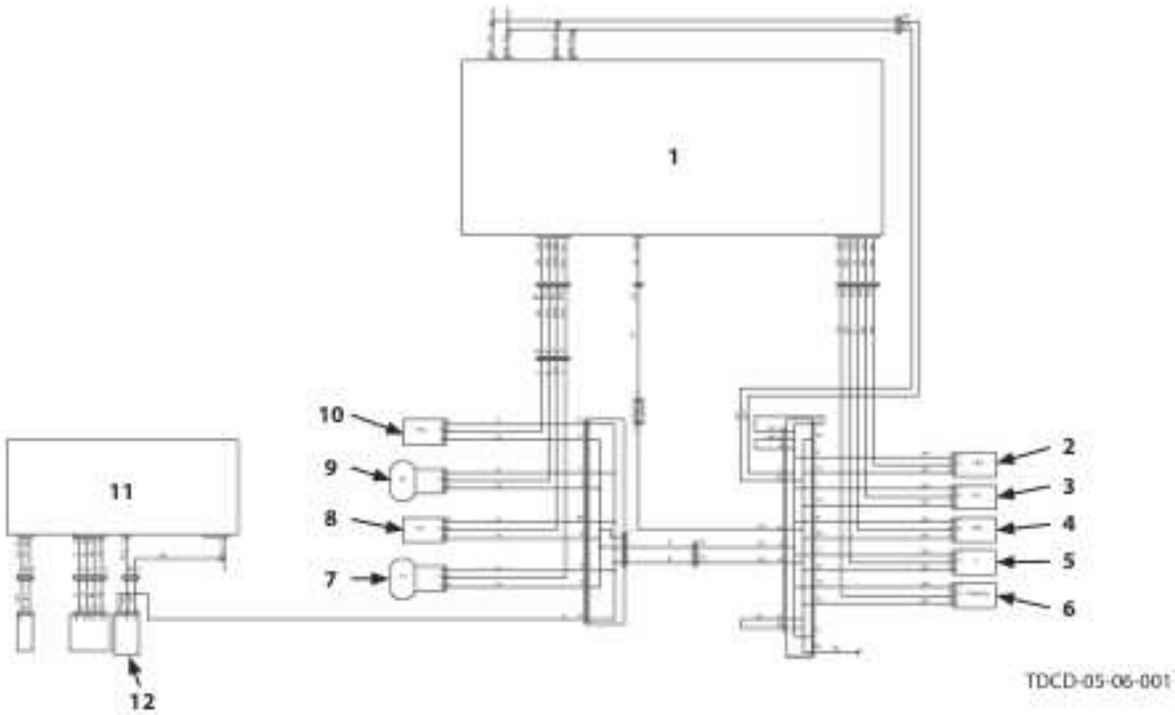
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MC Fault Code 11003
ECF Fault Code 16603

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 (Arm Roll-In)
4- Pressure Sensor (Front Attachment)
5- Pressure Sensor (Swing)
6- Pressure Sensor (Travel)
7- Pump 1 Delivery Pressure Sensor
8- Pump 1 Control Pressure Sensor
9- Pump 2 Delivery Pressure Sensor
10- Pump 2 Control Pressure Sensor
11- ECF
12- EC Sensor

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