PART NO.

HITACHI

Technical Manual

Troubleshooting

ZX

ZX180W

Hydraulic Excavator

Service Manual consists of the following separate Part No.
Technical Manual (Operational Principle)
Technical Manual (Troubleshooting)
Workshop Manual

MidWestTech | Hitachi ZX180W Excavator Troubleshooting Technical Service Manual | Pu... Order the manual at mid-west-tech.com >

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 T4-2-6
Injection Pump T4-2-8
Dr.ZX Monitor Indicating Values T4-2-9
Sensor Activating Range T4-2-14

Group 3 Engine Test

Engine Speed T4-3-1
Engine Compression Pressure T4-3-4
Valve Clearance Adjustment T4-3-6
Nozzle Check T4-3-8
Injection Timing T4-3-10
Lubricant Consumption T4-3-12

Group 4 Excavator Test

Travel Speed T4-4-1
Service Brake Function Check T4-4-2
Parking Brake Function Check T4-4-3
Swing Speed T4-4-4
Swing Function Drift Check T4-4-5
Swing Motor Leakage T4-4-6
Maximum Swingable Slant Angle T4-4-7
Swing Bearing Play T4-4-8
Hydraulic Cylinder Cycle Time T4-4-10
Dig Function Drift Check T4-4-12
Control Lever Operating Force T4-4-14
Control Lever Stroke T4-4-15
Combined Boom Raise/Swing Function Check T4-4-16

MidWestTech | Hitachi ZX180W Excavator Troubleshooting Technical Service Manual |... Order the manual at mid-west-tech.com >

Group 5 Component Test

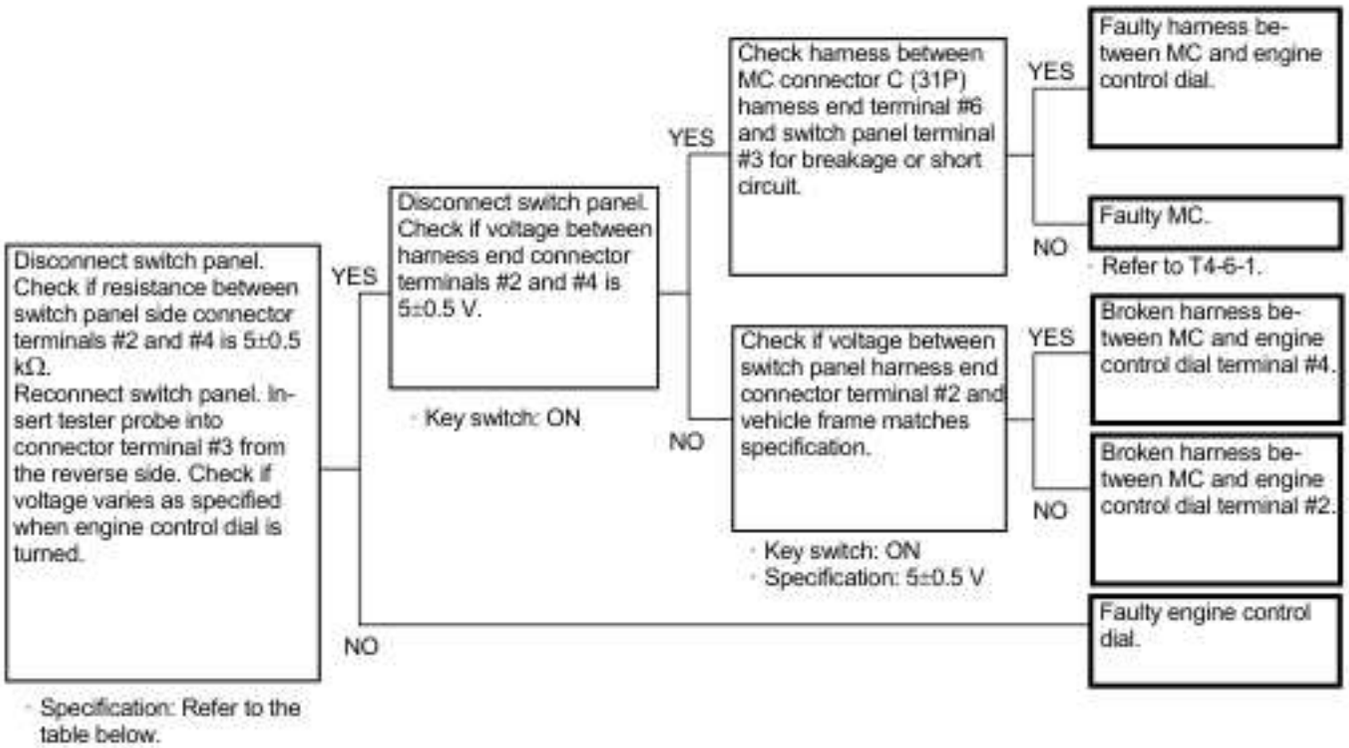
Primary Pilot Pressure.....T4-5-1
Secondary Pilot Pressure.....T4-5-4
Solenoid Valve Set Pressure.....T4-5-6
Main Pump Delivery Pressure.....T4-5-9
Main Relief Valve Set Pressure.....T4-5-10
Relief Pressure (When relieving Swing) T4-5-13
Relief Pressure (When relieving Travel) T4-5-14
Overload Relief Valve Set Pressure.....T4-5-15
Main Pump Flow Rate Measurement.....T4-5-18
Regulator Adjustment.....T4-5-22
Swing Motor Drainage.....T4-5-25
Travel Motor Drainage.....T4-5-27
Steering Valve Relief Valve Set Pressure ..T4-5-30
Brake Pressure (Front and Rear).....T4-5-32
Brake Accumulate Pressure.....T4-5-34
Brake Warning Set Pressure (Decrease)...T4-5-36
Brake Warning Set Pressure (Increase) T4-5-38

Group 6 Adjustment

Engine Speed Adjustment and Engine Learning.....T4-6-1
Governor Lever and Fuel Cut Lever Position.....T4-6-4

MidWestTech | Hitachi ZX180W Excavator Troubleshooting Technical Service Manual |... Order the manual at mid-west-tech.com >

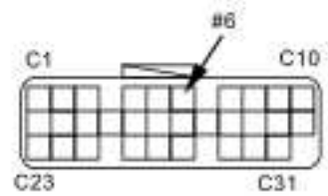
FAULT CODE 07 (ABNORMAL ENGINE CONTROL DIAL ANGLE)



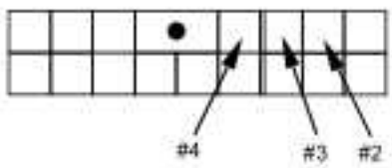
Engine Control Dial Specification	
Minimum Speed	0.3 to 1.0 V
Maximum Speed	4.0 to 4.7 V

Connector (Harness End Connector Viewed from the Open End Side)

MC Connector C

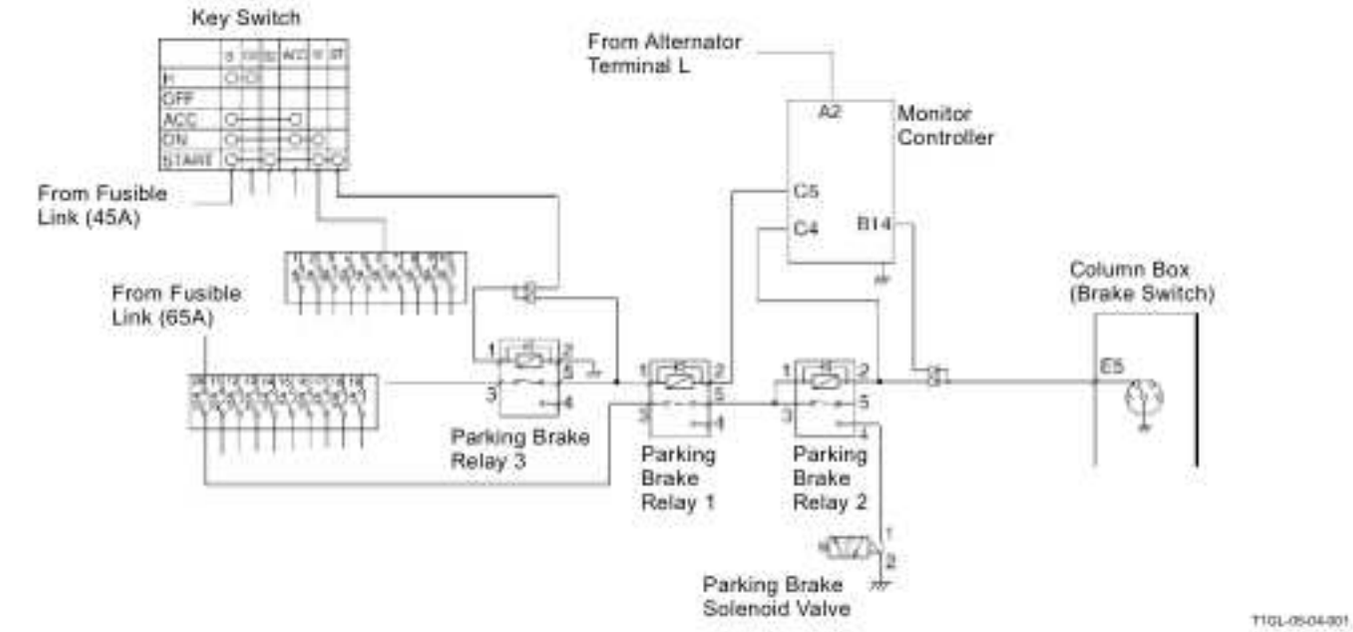


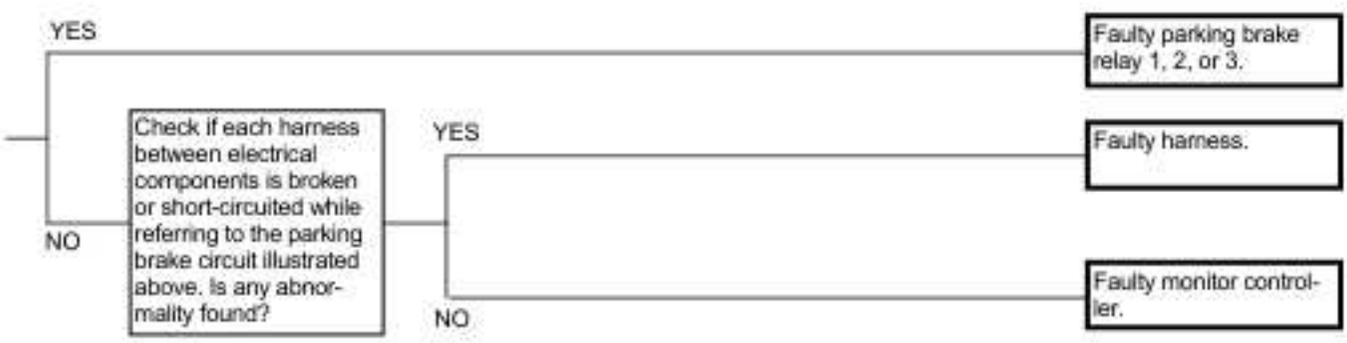
Switch Panel



MidWestTech | Hitachi ZX180W Excavator Troubleshooting Technical Service Manual |... Order the manual at mid-west-tech.com >

Parking Brake Circuit Diagram





MidWestTech | Hitachi ZX180W Excavator Troubleshooting Technical Service Manual |... Order the manual at mid-west-tech.com >

Trouble List

Fault Code	Trouble	Details
01	Abnormal EEPROM	Occurrence time and date of fault code 01
02	Abnormal RAM	Occurrence time and date of fault code 02
03	Abnormal A/D Conversion	Occurrence time and date of fault code 03
04	Abnormal Sensor Voltage	Occurrence time and date of fault code 04
06	Abnormal EC Sensor	Occurrence time and date of fault code 06
07	Abnormal Engine Control Dial	Occurrence time and date of fault code 07
18	Abnormal Travel Lever Stroke	Occurrence time and date of fault code 18
64	MC Communication Error	Time and date when communication error between MC and ICX occurred.
65	Monitor Communication Error	Time and date when communication error between monitor and ICX occurred.
66	Satellite Terminal Communication Error	Time and date when communication error between satellite terminal and ICX occurred.

NOTE: In case the above fault codes are recorded, refer to troubleshooting A.

MidWestTech | Hitachi ZX180W Excavator Troubleshooting Technical Service Manual |... Order the manual at mid-west-tech.com >

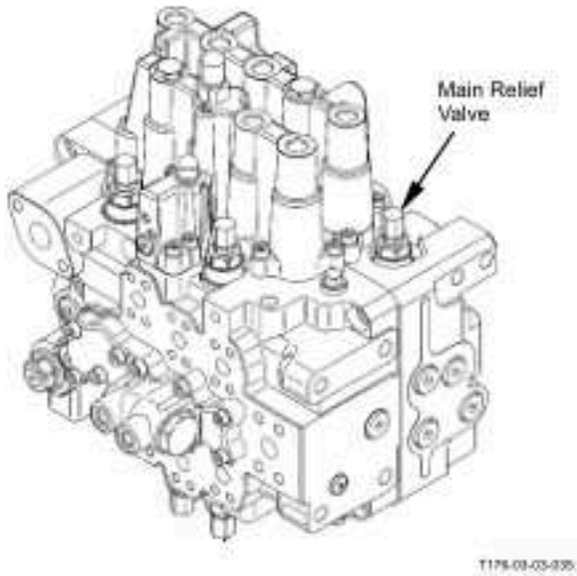
Main Relief Pressure Setting Adjustment Procedure

Adjustment:

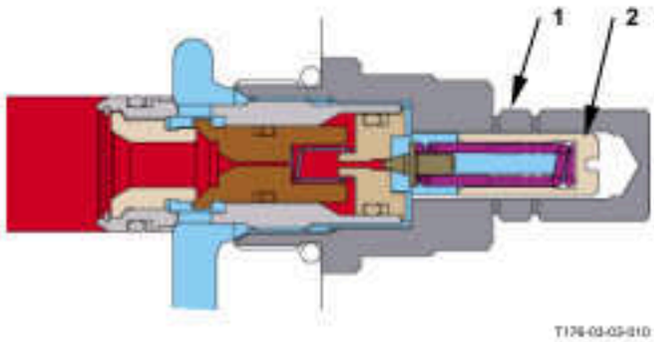
1. Loosen lock nut (1).
   : 17 mm
   : 19.5 N·m (2 kgf·m, 14.5 lbf·ft)
2. Turn adjusting screw (2) to adjust the main relief set pressure referring to the table below.
3. Retighten lock nut (1).
4. Recheck the set pressures.

NOTE: Standard Change in Pressure (Reference)

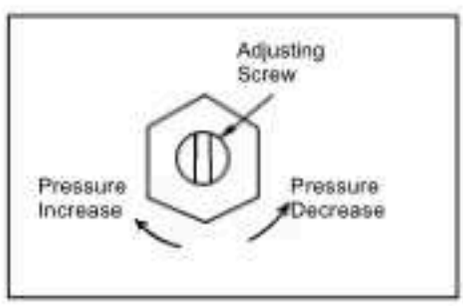
Plug Turns		1/4	1/2	3/4	1
Change in Relief Pressure	MPa	2.79	5.59	8.36	11.2
	(kgf/cm²)	(28.5)	(57)	(85.2)	(114)
	(psi)	(405)	(811)	(1212)	(1620)



T176-03-03-035



T176-03-03-010



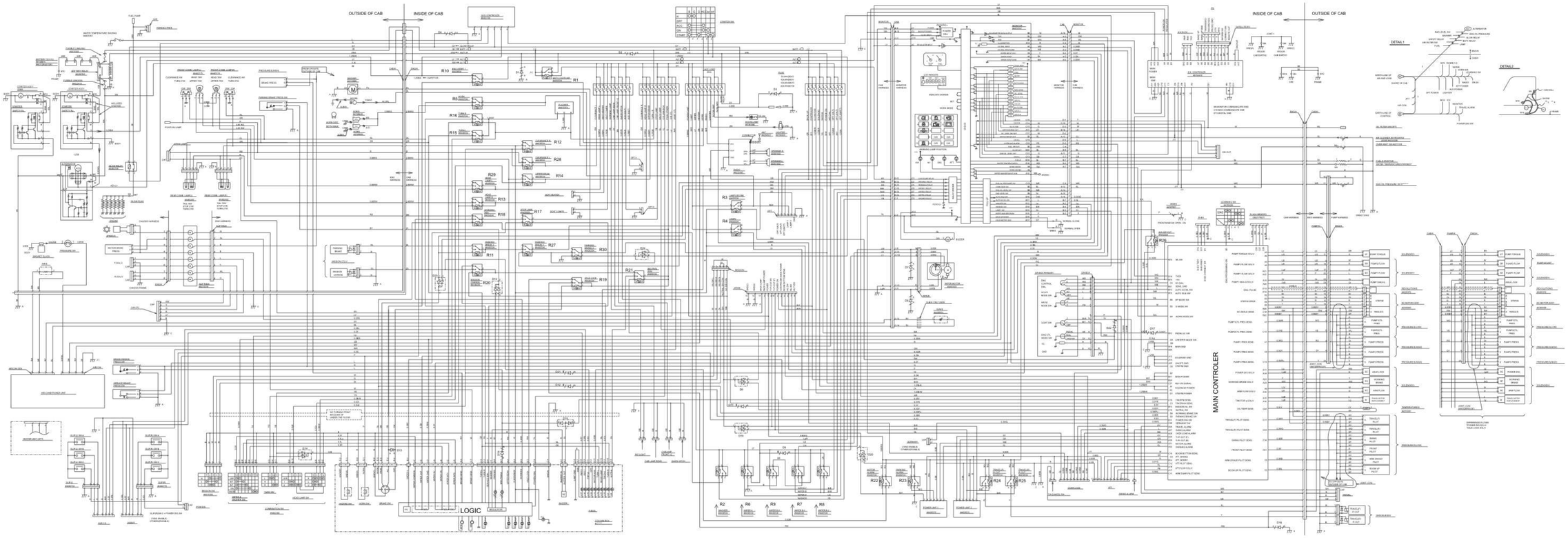
T169-06-05-002

MidWestTech | Hitachi ZX180W Excavator Troubleshooting Technical Service Manual |... Order the manual at mid-west-tech.com >

Attach to Vol. No. : TTCABE-00, TTCCBE-00

ZAXIS 130W/160W/180W/210W ELECTRICAL CIRCUIT DIAGRAM (ALL)

⚠ 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.



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