PART NO. TT4GD-E-00

HITACHI

Technical Manual

Troubleshooting

ZW180

Wheel Loader

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle) : Vol. No.TO4GD-E

Technical Manual (Troubleshooting) : Vol. No.TT4GD-E

Workshop Manual : Vol. No.W4GD-E

MidWestTech | Hitachi ZW180 Wheel Loader Troubleshooting Technical Service Manual | Publication TT4GD-E-00

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 Curve T4-2-7
Sensor Activating Range T4-2-9

Group 3 Engine Test

Engine Speed T4-3-1
Lubricant Consumption T4-3-3

Group 4 Wheel Loader Test

Travel Speed T4-4-1
Service Brake Function Check T4-4-2
Service Brake Wear Amount T4-4-3
Parking Brake Function Check T4-4-4
Bucket Stopper and Bell Crank Stopper Clearance T4-4-6
Hydraulic Cylinder Cycle Time T4-4-8
Cylinder Drift Check T4-4-10
Bucket Levelness T4-4-11
Control Lever Operating Force T4-4-12
Control Lever Stroke T4-4-13

Group 5 Component Test

Primary Pilot Pressure T4-5-1
Secondary Pilot Pressure T4-5-3
Solenoid Valve Set Pressure T4-5-4
Main Pump Delivery Pressure T4-5-6
Main Relief Pressure T4-5-8
Steering Relief Pressure T4-5-10
Overload Relief Pressure T4-5-12
Main Pump Flow Rate T4-5-14
Regulator Adjustment T4-5-18
Service Brake Pressure (Front and Rear) T4-5-20
Parking Brake Pressure T4-5-22
Brake Accumulated Pressure T4-5-24
Service Brake Warning Set Pressure (Decrease) T4-5-26
Service Brake Warning Set Pressure (Increase) T4-5-28
Transmission Clutch Pressure T4-5-30
Torque Converter Pressure (Inlet and Outlet) T4-5-31

Group 6 Adjustment

Transmission Learning T4-6-1
Lift Arm Angle Sensor Learning (Optional) T4-6-6
Drive Belt Tension Adjustment T4-6-8

MidWestTech | Hitachi ZW180 Wheel Loader Troubleshooting Technical Service Manua... Order the manual at mid-west-tech.com >

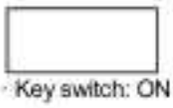
TROUBLESHOOTING A PROCEDURE

Refer to troubleshooting A in case any fault codes are displayed after diagnosing by using Dr. ZX or the service mode of the monitor unit.

- How to Read Troubleshooting Flow Charts



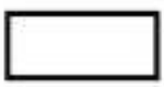
After completing the checking and/or measuring procedures in box (1), select YES (OK) or NO (NOT OK) and proceed to box (2) or (3).



Instructions, reference, and/or inspection methods and/or measurements are occasionally described under the box. If incorrectly checked or measured, not only will troubleshooting be unsuccessful but also damage to the components may result.

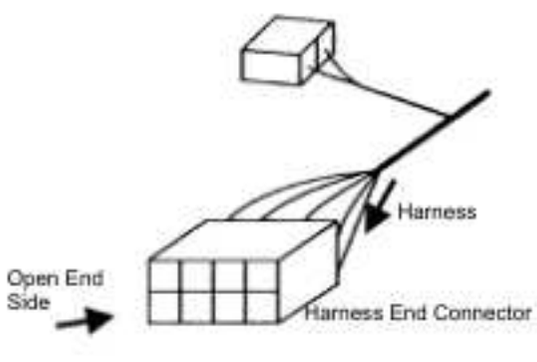


Use Dr. ZX for descriptions in the double-line box.



Causes of machine problems are stated in the thick-line box. Scanning quickly through the thick-line boxes allows you to estimate the possible causes before actually following the flow chart.

NOTE: Harness end connector viewed from the open end side by the all connectors image shown in this section.



T1S5-05-03-001

MidWestTech | Hitachi ZW180 Wheel Loader Troubleshooting Technical Service Manua... Order the manual at mid-west-tech.com >

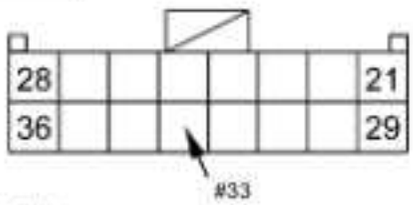
- Monitor Unit

  Between CAN Circuit (High Side) and Ground Circuit

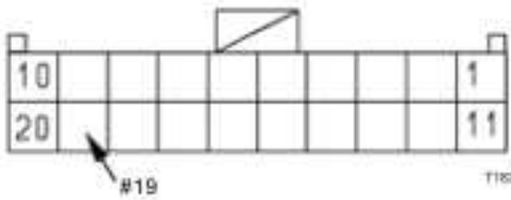
  Check for continuity between terminal #33 of harness end of connector monitor-2B and terminal #19 of harness end of connector monitor-2A.

  Check for continuity between terminal #33 of harness end of connector monitor-2B and terminal #4 of harness end of connector monitor-1A.

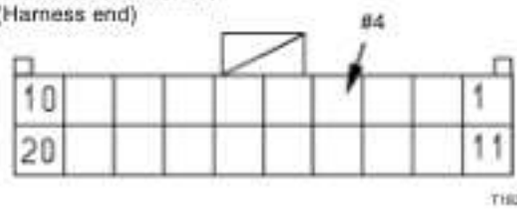
Monitor Unit
Connector Monitor-2B
(Harness end)



Monitor Unit
Connector Monitor-2A
(Harness end)



Monitor Unit
Connector Monitor-1A
(Harness end)

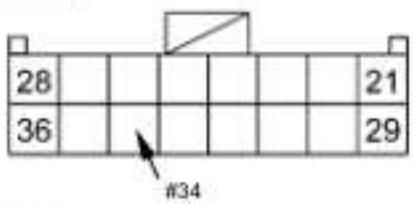


Between CAN Circuit (Low Side) and Ground Circuit

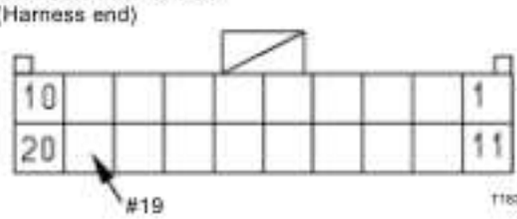
Check for continuity between terminal #34 of harness end of connector monitor-2B and terminal #19 of harness end of connector monitor-2A.

Check for continuity between terminal #34 of harness end of connector monitor-2B and terminal #4 of harness end of connector monitor-1A.

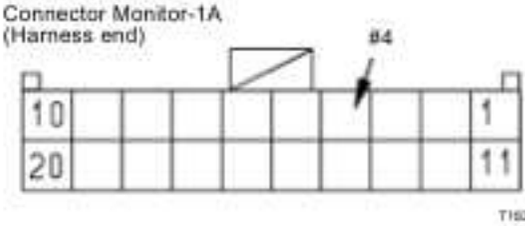
Monitor Unit
Connector Monitor-2B
(Harness end)



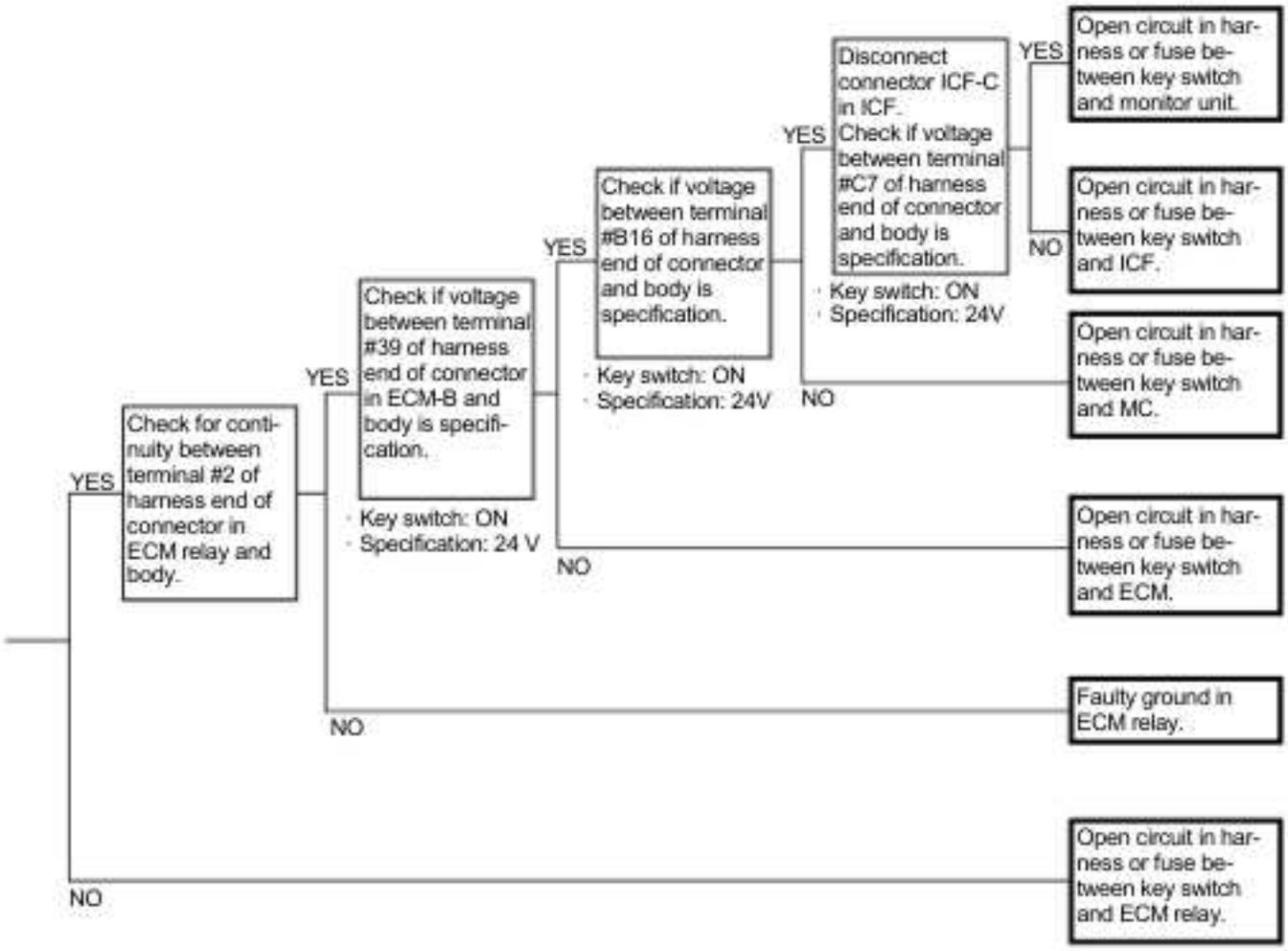
Monitor Unit
Connector Monitor-2A
(Harness end)

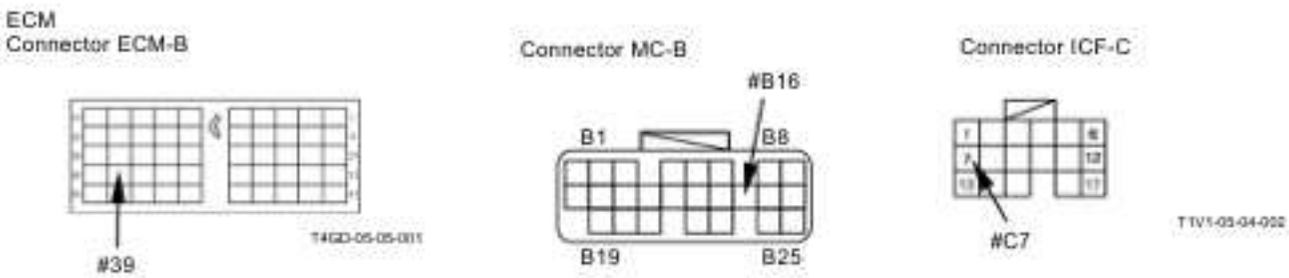


Monitor Unit
Connector Monitor-1A
(Harness end)



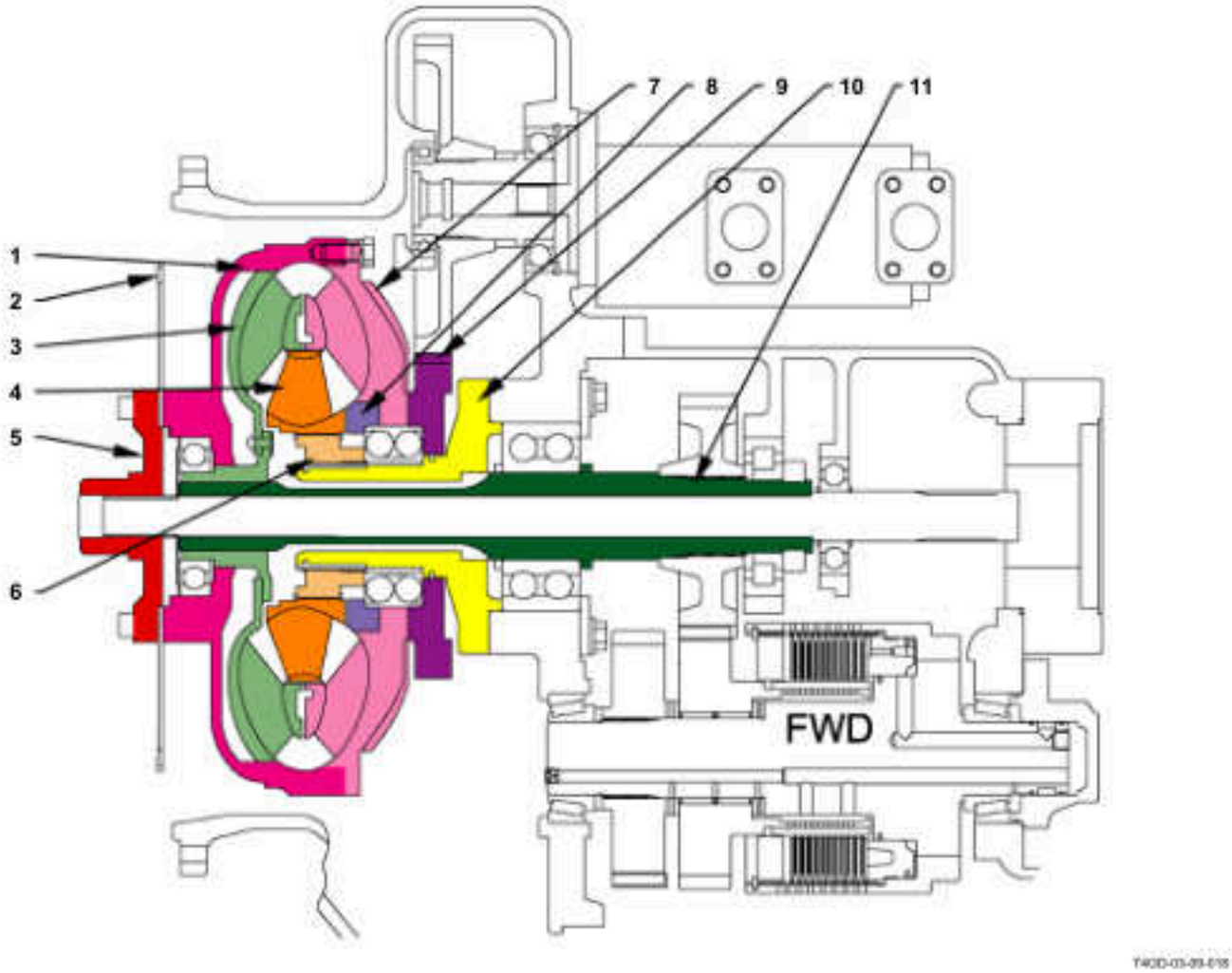
MidWestTech | Hitachi ZW180 Wheel Loader Troubleshooting Technical Service Manua... Order the manual at mid-west-tech.com >





MidWestTech | Hitachi ZW180 Wheel Loader Troubleshooting Technical Service Manua... Order the manual at mid-west-tech.com >

CROSS-SECTIONAL DRAWING OF TORQUE CONVERTER



1 - Cover Wheel
2 - Input Plate
3 - Turbine Wheel
4 - Stator Wheel
5 - Input Guide
6 - Stator Hub
7 - Impeller Wheel
8 - Impeller Hub
9 - Pump Drive Gear
10 - Guide Carrier
11 - Turbine Shaft

MidWestTech | Hitachi ZW180 Wheel Loader Troubleshooting Technical Service Manua... Order the manual at mid-west-tech.com >