PART NO. TADH90-EN-00

HITACHI

Reliable solutions

Technical Manual

ZX30U-5B

Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual	: Vol. No.TADH90-EN
Workshop Manual	: Vol. No.WADH90-EN
Engine Manual	: Vol. No.ETDEP-EN, EWADH-EN

MidWestTech | Hitachi ZX30U-5B Excavator Troubleshooting Technical Service Manual | Publication TADH90-EN-00

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

SECTION 1

GENERAL

CONTENTS

Group 1 Specifications

Std. Specification T1-1-1
Working Ranges T1-1-2

Group 2 Component Layout

Main Component T1-2-1
Electrical System (Overview) T1-2-2
Electrical System (Relays) T1-2-3
Electrical System (Relays) (Cab Spec. Machine) T1-2-4
Electrical System (Monitor, Switches) T1-2-5
Electrical System (Battery Room) T1-2-6
Engine T1-2-7
Swing Device T1-2-8
Control Valve T1-2-8
Travel Device T1-2-8
2-Spool Solenoid Valve T1-2-9
Torque Control Solenoid Valve (Only machine with the air conditioner (optional) attached) T1-2-9

Group 3 Component Specifications

Engine T1-3-1
Engine Accessories T1-3-5
Hydraulic Component T1-3-6
Electrical Component T1-3-10

MidWestTech | Hitachi ZX30U-5B Excavator Troubleshooting Technical Service Manual... Order the manual at mid-west-tech.com >

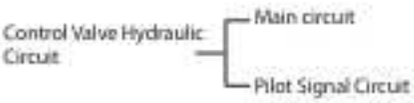
Hydraulic Component

MAIN PUMP 1, MAIN PUMP 2	Type	Swash Plate Type Variable Displacement Axial Plunger Pump
	Theoretical Displacement	16.0 cm^3/rev (1.0 in^3/rev)×2
MAIN PUMP 3	Type	Gear Pump
	Theoretical Displacement	9.5 cm^3/rev (0.6 in^3/rev)
PILOT PUMP	Type	Gear Pump
	Theoretical Displacement	4.5 cm^3/rev (0.3 in^3/rev)
CONTROL VALVE	Type	Pilot Pressure Operated Type (10-Spool)
	Main Relief Set-Pressure (P1, P2)	Normal: 25.5±0.3 MPa (260±3.06 kgf/cm^2, 3700±44 psi) at 22 L/min
	Main Relief Set-Pressure (P3)	21.6±0.3 MPa (220±3.06 kgf/cm^2, 3130±44 psi) at 22 L/min
	Overload Relief Set-Pressure (Boom, Arm, and Bucket)	27.5^{+1}_{0} MPa ($280^{+10.2}_{0}$ kgf/cm^2, 3990^{+145}_{0} psi) at 20 L/min

MidWestTech | Hitachi ZX30U-5B Excavator Troubleshooting Technical Service Manual... Order the manual at mid-west-tech.com >

Hydraulic Circuit

The hydraulic circuit in control valve is divided into main circuit and pilot signal circuit.



Main Circuit

Pressure oil from main pumps (P1, P2, and P3) flow to the control valve respectively. When the spool is in neutral (control lever is in neutral), pressure oil from the main pump returns to hydraulic oil tank (25) through neutral circuits (6, 9, and 10). When the spool is operated (control lever is operated), pressure oil from the main pump flows to the actuator through the spool. (When the combined operation of travel and front attachment is done, flow combiner valve (12) is shifted.) The main circuit has parallel circuits (13, 15, 16, and 26). The combined operation of actuator becomes possible by using this circuit.

The pressure in the main circuit (between pump and actuator) is controlled by main relief valves (11, 17) and is prevented from exceeding the set pressure when the spool (control lever) is operated. The pressure in the actuator circuit (between control valve and actuator) is controlled by overload relief valves (8, 20) and is prevented from exceeding the set pressure by external force when the spool (control lever) is in neutral.

MidWestTech | Hitachi ZX30U-5B Excavator Troubleshooting Technical Service Manual... Order the manual at mid-west-tech.com >

Fault Code W: 1304

Preparation

- Check the wiring connections first.

Fault Code	Trouble	Inspection Method	Evaluation	Cause
W: 1304	Engine Control Dial Failure (CAN Signal)	Measure resistance between E-ECU#40 and terminal M1-20 in monitor controller.	0/∞ Ω	Faulty CAN (High side) harness between E-ECU and monitor controller
		Measure resistance between E-ECU#39 and monitor controller terminal M1-21.	0/∞ Ω	Faulty CAN (Low side) harness between E-ECU and monitor controller
		-	The check mentioned above is normal.	Faulty monitor controller

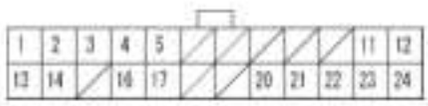
Connector (Wire harness end)

- E-ECU



TADH90-05-03-001

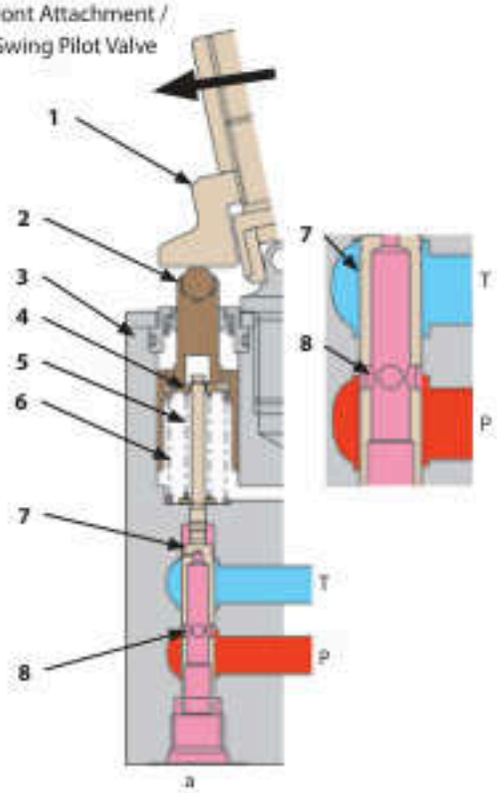
- Monitor Controller M1



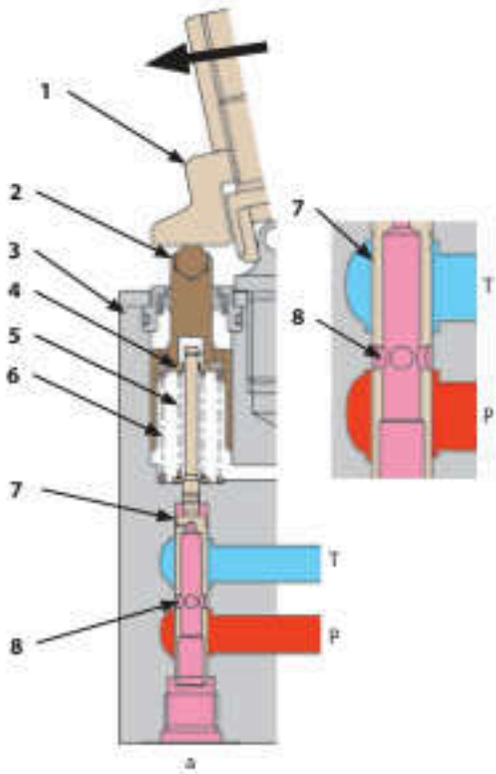
TADB-05-03-002

MidWestTech | Hitachi ZX30U-5B Excavator Troubleshooting Technical Service Manual... Order the manual at mid-west-tech.com >

Front Attachment / Swing Pilot Valve

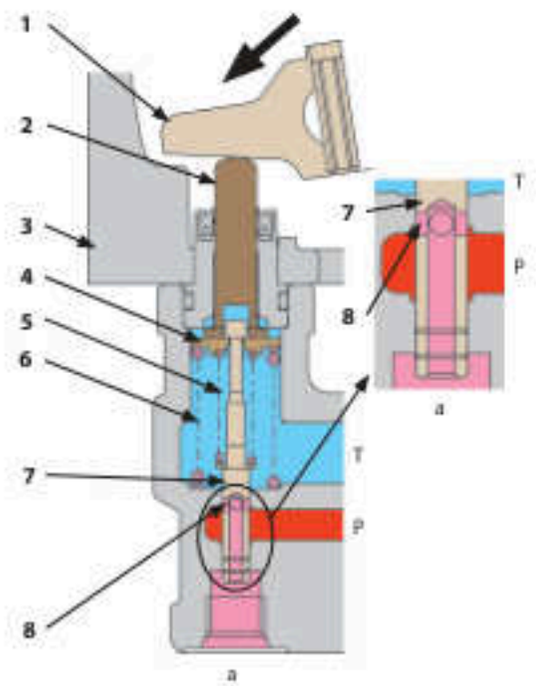


TPPP-03-04-007

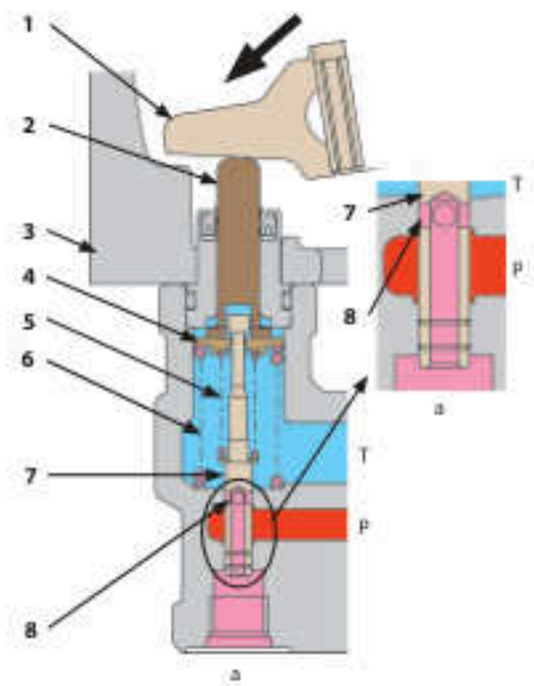


TPPP-03-04-008

Travel Pilot Valve



TPPP-03-04-012



TPPP-03-04-013

P- Port P
T- Port T
a- Output Port

1- Cam
2- Pusher
3- Casing
4- Spring Guide
5- Balance Spring
6- Return Spring
7- Spool
8- Hole

MidWestTech | Hitachi ZX30U-5B Excavator Troubleshooting Technical Service Manual... Order the manual at mid-west-tech.com >