PART NO. TABA50-EN-00

HITACHI

Reliable solutions

Technical Manual

ZX
17U-5A
19U-5A
Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual	: Vol. No.TABA50-EN
Workshop Manual	: Vol. No.WABA50-EN
Engine Manual	: Vol. No.EABA-EN

MidWestTech | Hitachi ZX1711-5A, ZX19U-5A Excavator Troubleshooting Technical Service Manual | Publication TABA50-EN-00

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

Safety Alert Symbol and Headline Notations

In this manual, the following safety alert symbol and signal words are used to alert the reader to the potential for personal injury of machine damage.

⚠ This is the safety alert symbol. When you see this symbol, be alert to the potential for personal injury.
Never fail to follow the safety instructions prescribed along with the safety alert symbol.
The safety alert symbol is also used to draw attention to component/part weights.
To avoid injury and damage, be sure to use appropriate lifting techniques and equipment when lifting heavy parts.

⚠ **CAUTION:**
Indicates potentially hazardous situation which could, if not avoided, result in personal injury or death.

IMPORTANT:
Indicates a situation which, if not conformed to the instructions, could result in damage to the machine.

NOTE:
Indicates supplementary technical information or know-how.

Units Used

SI Units (International System of Units) are used in this manual. MKSA system units and English units are also indicated in parentheses just behind SI units.

Example: 24.5 MPa (250 kgf/cm², 3560 psi)

A table for conversion from SI units to other system units is shown below for reference purposes.

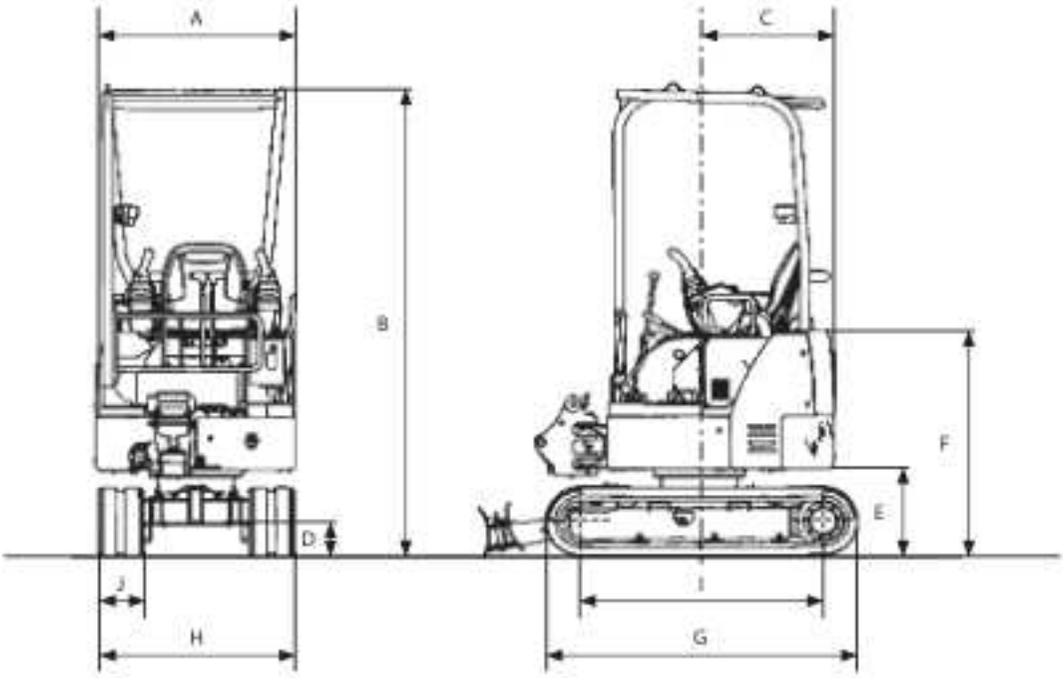
Quantity	To Convert From	Into	Multiply By
Length	mm	in	0.03937
	mm	ft	0.003281
Volume	L	US gal	0.2642
	L	US qt	1.057
	m^3	yd^3	1.308
Weight	kg	lb	2.205
Force	N	kgf	0.10197
	N	lbf	0.2248
Torque	N·m	kgf·m	0.10197
Pressure	MPa	kgf/cm^2	10.197
	MPa	psi	145.0
Power	kW	PS	1.360
	kW	HP	1.341
Temperature	°C	°F	°C×1.8+32
Velocity	km/h	mph	0.6214
	min^{-1}	rpm	1.0
Flow rate	L/min	US gpm	0.2642
	mL/rev	cc/rev	1.0

NOTE: The numerical value in this manual might be different from the above-mentioned table.

MidWestTech | Hitachi ZX1711-5A, ZX19U-5A Excavator Troubleshooting Technical Se... Order the manual at mid-west-tech.com >

Specifications

ZX17U-5A



MABC-12-001

Model		ZX17U-5A
Specification		3-Pillars Canopy
Type of Front-End Attachment	-	Boom Swing Type
Bucket Capacity (Heaped)	m^3 (yd^3)	0.044 (0.06)
Operating Weight	kg (lb)	1640 (3620)
Base Machine Weight	kg (lb)	1320 (2920)
Engine	kW/min^{-1} (PS/rpm)	3TNV70 10.6/2400 (14.4/2400)
A: Overall Width	mm (ft-in)	990 (3' 3")
B: Overall Height	mm (ft-in)	2380 (7' 10")
C: Rear End Swing Radius	mm (ft-in)	680 (2' 3")
D: Minimum Ground Clearance	mm (ft-in)	165 (7")
E: Counterweight Clearance	mm (ft-in)	450 (1' 6")
F: Engine Cover Height	mm (ft-in)	1150 (3' 9")
G: Undercarriage Length	mm (ft-in)	1570 (5' 2")
H: Undercarriage Width	mm (ft-in)	980 (3' 3")/1280 (4' 2")
I: Sprocket Center to Idler Center	mm (ft-in)	1210 (4')
J: Track Shoe Width	mm (ft-in)	230 (9")
Ground Pressure	kPa (kgf/cm^2, psi)	26.6 (0.27, 3.9)
Swing Speed	min^{-1} (rpm)	9.4 (9.4)
Travel Speed (fast/slow)	km/h (mph)	4.2/2.4 (2.6/1.7)
Gradeability		25° (tan θ = 0.47)

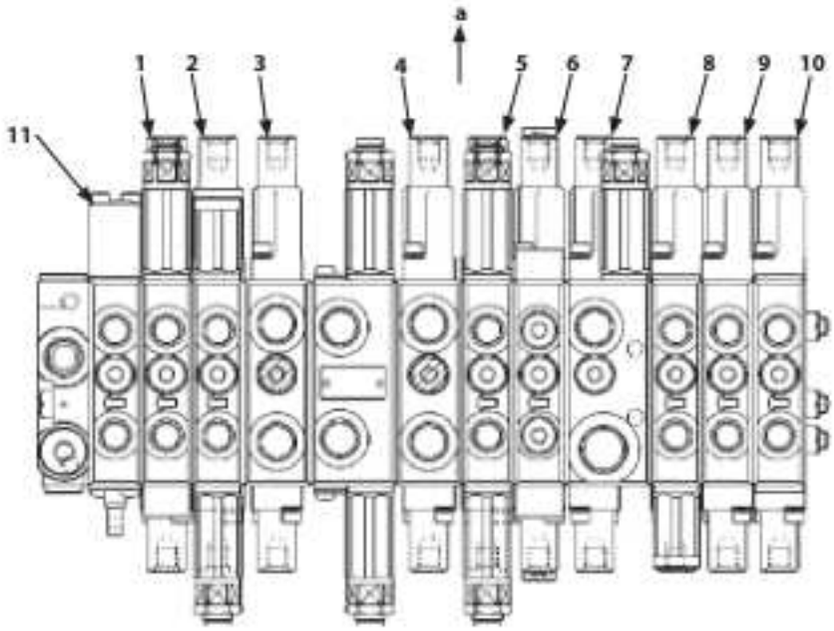
NOTE: The dimensions do not include the height of the shoe lug. The dimensions of the machine equipped with rubber crawlers are shown.

MidWestTech | Hitachi ZX1711-5A, ZX19U-5A Excavator Troubleshooting Technical Se... Order the manual at mid-west-tech.com >

Outline

The control valve controls the pressure, flow rate, and flow direction in the hydraulic circuit. The main components are the main relief valve, overload relief valve, flow combiner valve (7), and spools.

The spool of side frame extend/retract (11) is operated directly, and other spools are operated by pilot oil pressure. Viewed from the machine left side, the spools are arranged as follows: side frame extend/retract (11), bucket (1), boom (2), travel (left) (3), travel (right) (4), arm (5), auxiliary (6), flow combiner valve (7), boom swing (8), blade (9), and swing (10).



TABA50-03-03-001

a- Machine Front
1- Bucket
2- Boom
3- Travel (Left)
4- Travel (Right)
5- Arm
6- Auxiliary
7- Flow Combiner Valve
8- Boom Swing
9- Blade
10- Swing
11- Side Frame Extend/Retract

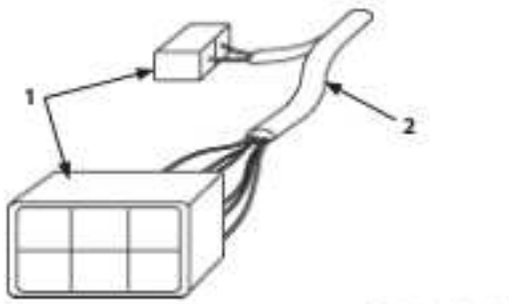
MidWestTech | Hitachi ZX1711-5A, ZX19U-5A Excavator Troubleshooting Technical Se... Order the manual at mid-west-tech.com >

Troubleshooting B (Machine Diagnosis by Using Troubleshooting Symptom) Procedure

Refer to troubleshooting B procedures for diagnosis by using trouble symptom.

- Diagnosis Procedure
  - The diagnosis procedures for the displayed fault codes are explained in this group.

NOTE: All connector images in this section are viewed from the open end side of wire harness end.

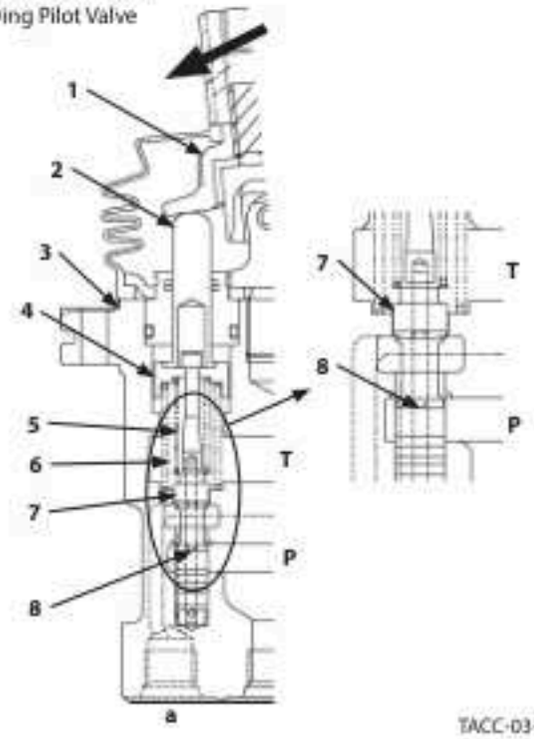


T6L4-05-03-001

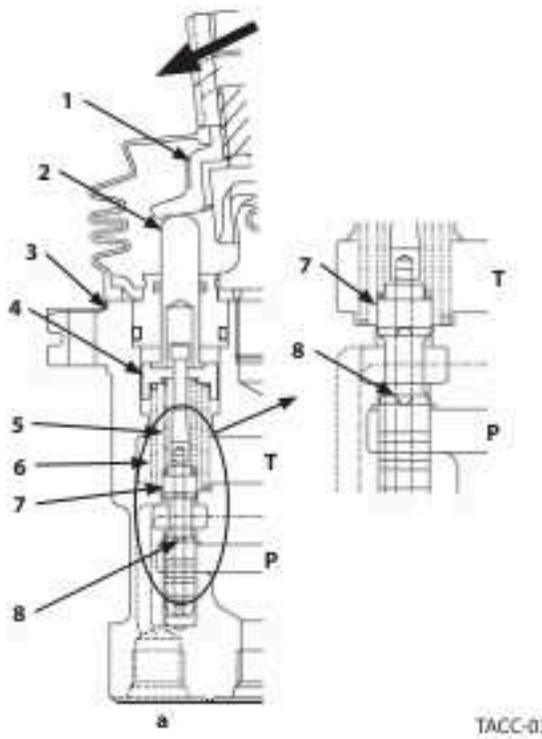
1- Wire Harness End Connector 2- Wire Harness

MidWestTech | Hitachi ZX1711-5A, ZX19U-5A Excavator Troubleshooting Technical Se... Order the manual at mid-west-tech.com >

Front Attachment/
Swing Pilot Valve

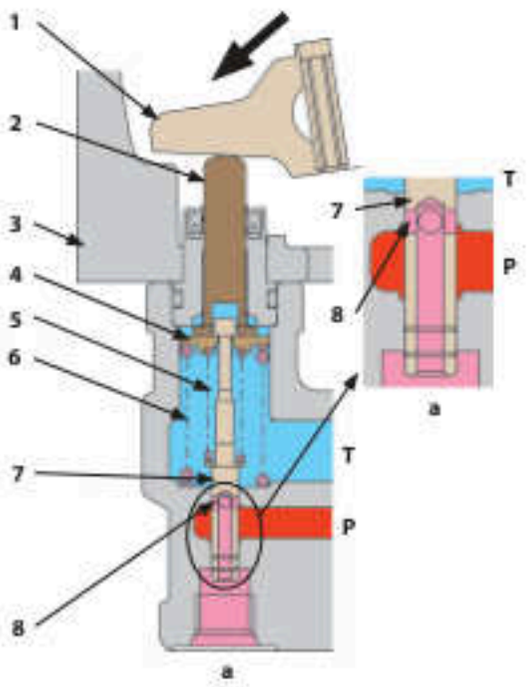


TACC-03-04-005

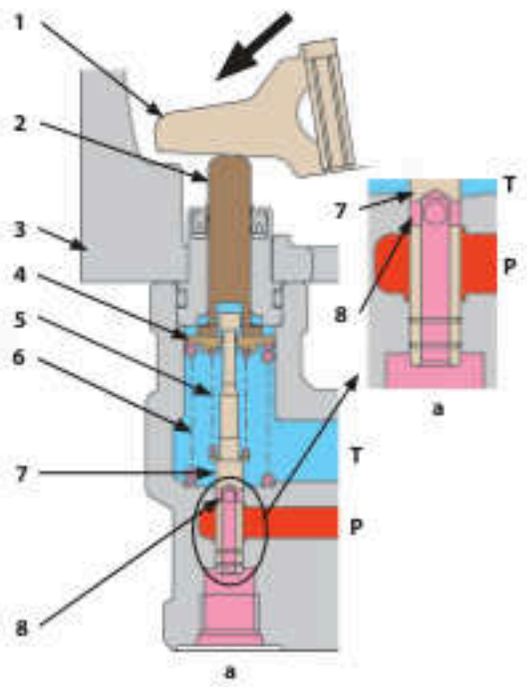


TACC-03-04-006

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 ZX1711-5A, ZX19U-5A Excavator Troubleshooting Technical Se... Order the manual at mid-west-tech.com >