PART NO. WAFD90-EN-00

HITACHI

Reliable solutions

Workshop Manual

ZX65USB-5B

Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual	: Vol. No.TAFD90-EN
Workshop Manual	: Vol. No.WAFD90-EN
Engine Manual	: Vol. No.ETDEP-EN, EWDEP-EN

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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.

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Cylinder

Rod

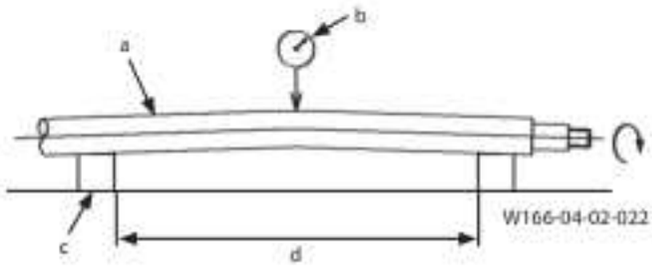


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Unit: mm (in)

Cylinder Name	Recommended Size After Re-manufacturing (A)
Boom	$60^{-0.030}_{-0.076}$ ($2.36^{-0.0012}_{-0.0030}$)
Arm	$55^{-0.030}_{-0.076}$ ($2.17^{-0.0012}_{-0.0030}$)
Bucket	$50^{-0.030}_{-0.076}$ ($1.97^{-0.0012}_{-0.0030}$)
Boom Swing	$55^{-0.030}_{-0.076}$ ($2.17^{-0.0012}_{-0.0030}$)
Blade	$70^{-0.010}_{-0.050}$ ($2.76^{-0.0004}_{-0.0020}$)

Rod Bend and Run Out



a- Cylinder Rod
b- Dial Gauge
c- V Block
d- 1 m (39.4 in)

Unit: mm (in)

Bend	Run Out	Remedy
0.5 (0.02)	1.0 (0.04)	Repair
1.0 (0.04)	2.0 (0.08)	Replace

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Installation

CAUTION: Front attachment weight: 750 kg (1660 lb)

1. Hoist the front attachment. Fit the boom foot part to the mounting hole of the swing post. Insert the thrust plates to both right and left of the boom foot parts and adjust the right and left clearances within 1 mm.

CAUTION: Metal fragments may fly off when a hammer is used. Wear necessary protection, such as goggles, helmets, etc in order to prevent personal injury.

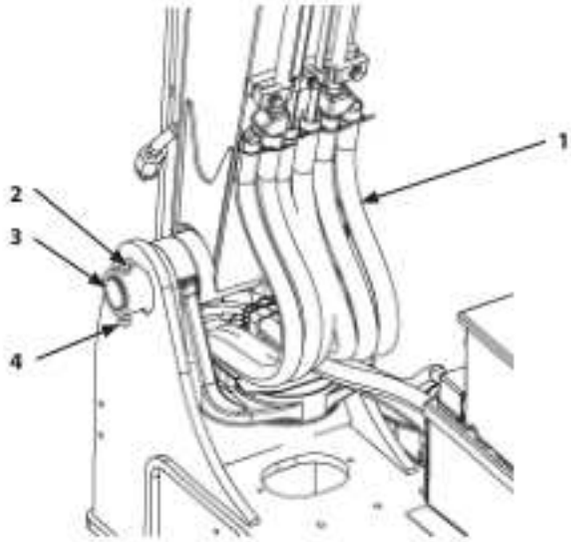
2. Install boom foot pin (3) by using a hammer.

IMPORTANT: Install nut (4) so that the clearance between nut (4) and the swing post boss should be 3 to 5 mm.

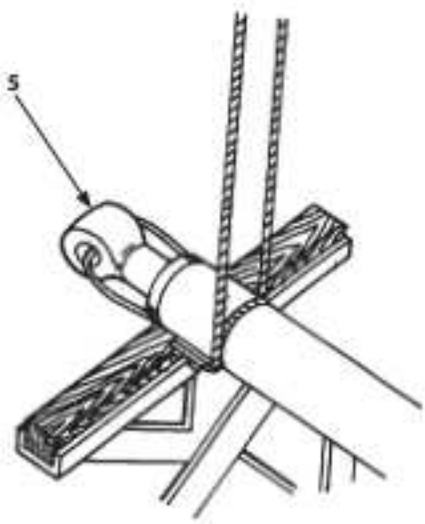
3. Apply LOCTITE #262 onto bolt (2). Install bolt (2) and nuts (4) (2 used).
   - : 24 mm
   - : 270 N·m (27 kgf·m, 200 lbf·ft)
4. Connect hoses (1) (6 used).
   - : 22 mm
   - : 40 N·m (4 kgf·m, 29.5 lbf·ft)
   - : 27 mm
   - : 80 N·m (8 kgf·m, 59 lbf·ft)

CAUTION: Boom cylinder (5) weight: 78 kg (175 lb)

5. Attach nylon slings onto boom cylinder (5). Hoist and hold boom cylinder (5).



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