PART NO. WDDF-EN-00

HITACHI

Reliable solutions

Workshop Manual

ZX
280-5G
280LC-5G

Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODDF-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDDF-EN
Workshop Manual	: Vol. No.WDDF-EN
Engine Manual	: Vol. No.EDCD-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:**
Indicated 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)

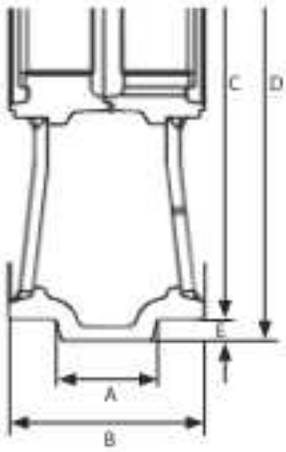
A table for conversion from SI units to other system units is shown below for reference purposes.

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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Front Idler



W166-03-05-001

Unit: mm (in)

	Standard	Allowable Limit	Remedy
A	102 (4.0)	[82 (3.22)]	Build up welding and hand finishing or replace
B	204 (1.64)	-	
C	572 (22.5)	[558 (22.0)]	
D	617 (24.3)	-	
E	22.5 (0.89)	29.5 (1.16)	

Axle and Bushing

Unit: mm (in)

		Standard	Allowable Limit	Remedy
Axle	Outer Diameter	85.0 (3.35)	[84.2 (3.31)]	Replace
Bushing	Inner Diameter	85.0 (3.35)	[86.0 (3.39)]	
	Flange Thickness	2.0 (0.02)	[1.2 (0.05)]	

NOTE: Values in [ ] are just for reference.

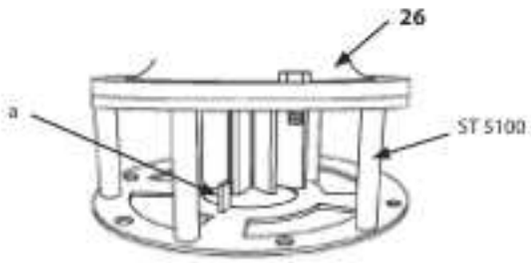
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CAUTION: The housing (26) assembly weight: 175 kg (390 lb)

IMPORTANT: Check that the flange surface of housing (26) does not touch the special tool (ST 5100).

15. Hoist and place the housing (26) assembly on the special tool (ST 5100). Install the housing (26) assembly with bolts (M22, Pitch 2.5 mm) (2 used) so that the stopper at the bottom of special tool (ST 5100) should be inserted into the clearance between teeth of the pinion gear in shaft (31). Secure the special tool (ST 5100) on a workbench in order to receive the reaction force.

: 32 mm



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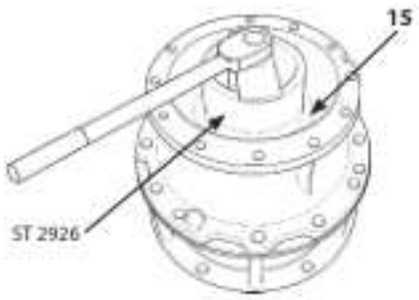
a: Stopper

IMPORTANT: Check the direction to install bearing nut (15).

16. Apply grease onto the thread part of bearing nut (15). Place the thread part of bearing nut (15) onto shaft (31). At this time, face the stepped side of bearing nut (15) to the roller bearing (14) side.

17. Tighten bearing nut (15) by using the special tool (ST 2926).

: 600 N·m (60 kgf·m, 440 lbf·ft)



W178-02-11-146

18. Remove the bolts (M22, Pitch 2.5 mm) (2 used) which secure housing (26) and the special tool (ST 5100).

: 32 mm

19. Turn housing (26) to both sides five times. Tap housing (26) several times by using a plastic hammer.

20. Install housing (26) to the special tool (ST 5100) with bolts (M22, Pitch 2.5 mm) (2 used).

: 32 mm

21. Tighten bearing nut (15) by using the special tool (ST 2926).

: 600 N·m (60 kgf·m, 440 lbf·ft)

22. Repeat step 18 and step 21 two to three times so that bearings of bearing nut (15) and roller bearings (14, 27) can fit.

23. Remove the bolts (M22, Pitch 2.5 mm) (2 used) which secure housing (26) and the special tool (ST 5100).

: 32 mm

CAUTION: The housing (26) assembly weight: 178 kg (395 lb)

24. Hoist and place the housing (26) assembly on a flat stand. When the housing (26) assembly is placed, check that the contacting position of oil seal (28) on the sleeve (29) outer surface does not move. In case the contacting position of oil seal (28) moves, bearing nut (15) is tightened insufficiently. Perform step 17 to step 23 again.

25. Install housing (26) to the special tool (ST 5100) with bolts (M22, Pitch 2.5 mm) (2 used).

: 32 mm

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6. Stop the engine.

CAUTION: Bleed air from the hydraulic oil tank. (Refer to W1-4-1.)

CAUTION: Release any pressure in the hydraulic circuit. (Refer to W1-5-1.)

7. Disconnect hoses (12) (2 used) and hoses (13) (2 used) from the bottom of boom cylinder (2). Cap the open ends.

: 36 mm, 41 mm

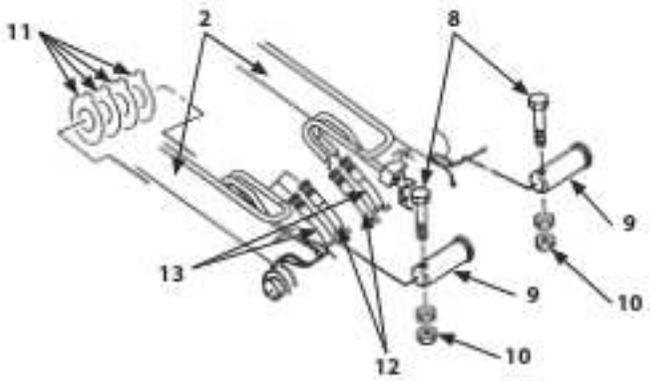
CAUTION: Metal fragments may fly off when a hammer is used. Wear necessary protection, such as goggles, helmets, etc in order to prevent personal injury.

8. Remove nuts (10) (2 used) and bolt (8) from the cylinder bottom side. Remove pin (9) by using a bar and a hammer. Remove thrust plates (11).

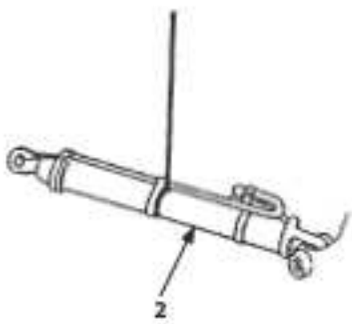
: 30 mm

CAUTION: Boom cylinder (2) weight: 250 kg (555 lb)

9. Hoist and remove boom cylinder (2).
10. Remove the other boom cylinder in the same way.



W178-04-02-009



W105-04-02-040

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