PART NO. WNDG-EN-01

HITACHI

Reliable solutions

Workshop Manual

ZW
150-5B
150PL-5B
Wheel Loader

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TONDG-EN
Technical Manual (Troubleshooting)	: Vol. No.TTNDG-EN
Workshop Manual	: Vol. No.WNDG-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)

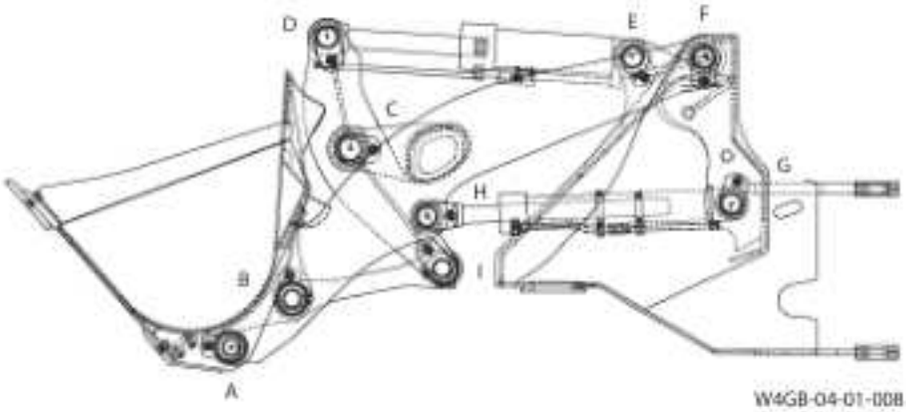
A table for conversion from SI units to other system units is shown below for reference purposes.

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

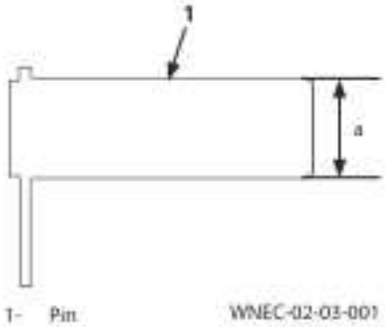
NOTE: The numerical value in this manual might be different from the above-mentioned table.

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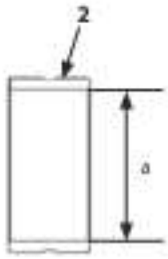
Pin and Bushing



W4GB-04-01-008



1- Pin
WNEC-02-03-001



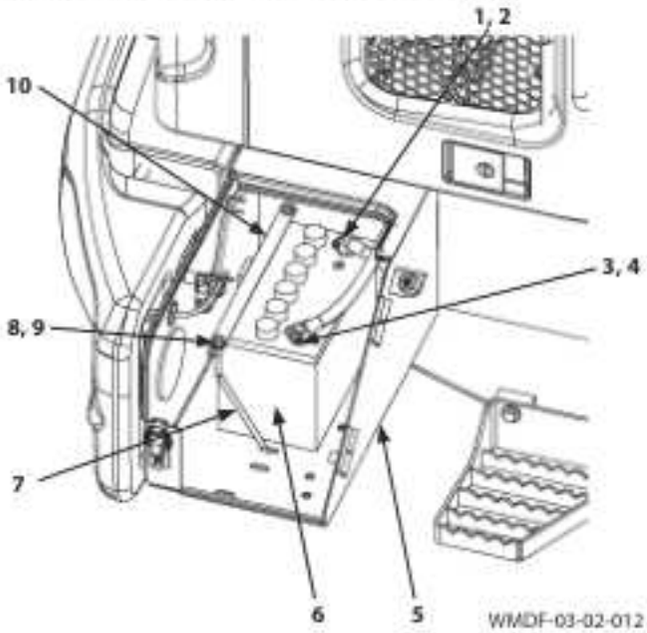
2- Bushing
WNEC-02-03-002

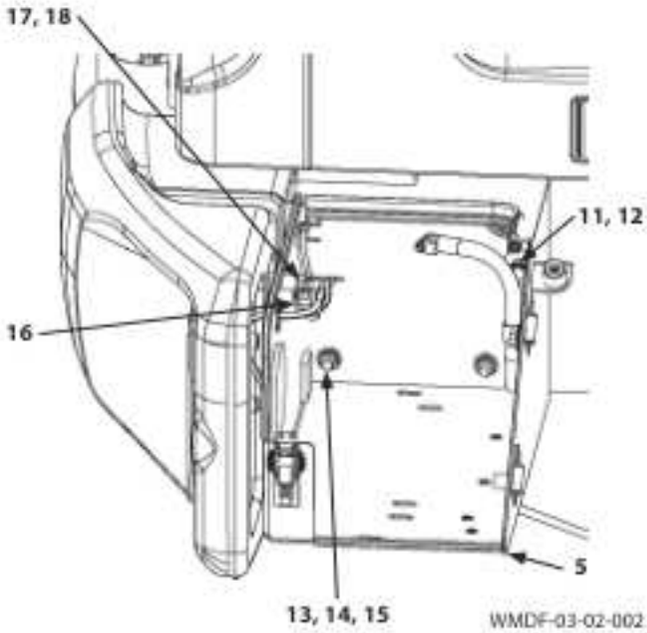
Unit: mm (in)

	Part Name	Standard (a)	Allowable Limit (a)	Remedy
A	Pin	75 (2.95)	74.0 (2.91)	Replace
	Bushing (Lift Arm)	75 (2.95)	76.5 (3.01)	
B	Pin	75 (2.95)	74.0 (2.91)	
	Bushing (Bucket Link)	75 (2.95)	76.5 (3.01)	
C	Pin	100 (3.94)	99.0 (3.40)	
	Bushing (Bell Crank)	100 (3.94)	101.5 (4.00)	
D	Pin	75 (2.95)	74.0 (2.91)	
	Bushing (Bucket Cylinder)	75 (2.95)	76.5 (3.01)	
E	Pin	75 (2.95)	74.0 (2.91)	
	Bushing (Bucket Cylinder)	75 (2.95)	76.5 (3.01)	
F	Pin	85 (3.35)	84.0 (3.31)	
	Bushing (Lift Arm)	85 (3.35)	86.5 (3.41)	
G	Pin	75 (2.95)	74.0 (2.91)	
	Bushing (Lift Arm Cylinder)	75 (2.95)	76.5 (3.01)	
H	Pin	75 (2.95)	74.0 (2.91)	
	Bushing (Lift Arm Cylinder)	75 (2.95)	76.5 (3.01)	
I	Pin	75 (2.95)	74.0 (2.91)	
	Bushing (Bucket Link)	75 (2.95)	76.5 (3.01)	

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Removal and Installation of Battery Box (Without Battery Disconnect Switch)





Removal

1. Set the machine position for inspection and maintenance. (Refer to W1-6-1.)

Removal of Battery Box (Right)

2. Open the cover of battery box (5).
3. Loosen nut (1). Disconnect ground (2).

   : 10 mm
4. Loosen nut (3). Disconnect terminal (4).

   : 10 mm

CAUTION: Battery (6) weight: 20 kg (45 lb)

5. Remove nuts (8) (2 used) and washers (9) (2 used). Remove rods (7) (2 used) and bracket (10). Remove battery (6).

   : 17 mm
6. Remove bolt, washer (11). Disconnect ground (12).

   : 17 mm
7. Remove bolt, washer (17) and bracket (18).

   : 17 mm
8. Disconnect connector (16). Remove the harnesses from all clips of battery box (5).

CAUTION: Battery box (5) weight: 25 kg (56 lb)

9. Remove nuts (13) (4 used) and washers (14, 15) (4 used for each). Remove battery box (5) while pulling connector (16) and terminal (4) out of it.

   : 19 mm

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- Disassembly of Load Check Valve (Bucket Circuit) (d) and Check Valve (Bucket Flow Rate Control Valve) (e)

21. Remove plug (24) from housing (01). Remove spring (23) and poppets (21, 22) from housing (01) by using a magnet. Remove O-ring (25) from plug (24).

: 36 mm

- Disassembly of Load Check Valve (Lift Arm Circuit) (c)

22. Remove plug (90) from housing (01). Remove spring (23) and poppet (91) from housing (01) by using a magnet. Remove O-ring (25) from plug (90).

: 36 mm

- Disassembly of Load Check Valves (Muffler Filter Regeneration/ Quick Coupler) (n) and (Neutral Circuit) (m)

23. Remove plug (24) from housing (56). Remove spring (23) and poppets (21, 22) from housing (56) by using a magnet. Remove O-ring (25) from plug (24).

: 36 mm

24. Remove socket bolts (68) (4 used) from end plate (58). Remove housing (56) and end plate (58) from housing (01). Remove O-rings (65, 66) (2 used for each) from housing (56) and end plate (58).

: 10 mm

25. Remove plugs (53, 75) (2 used for each) from housing (01). Remove O-rings (53A, 75A) (2 used for each) from plugs (53, 75) (2 used for each).

: 10 mm

26. Remove plug (79) from housing (56). Remove plug (79). Remove O-ring (79A) from plug (79).

: 36 mm

27. Remove plug (76) from housing (56). Remove O-ring (76A) from plug (76).

: 12 mm

28. Remove plug (61) from end plate (58). Remove O-ring (61A) from plug (61).

: 12 mm

29. Remove plugs (74) (2 used) from end plate (58). Remove O-rings (74A) (2 used) from plugs (74) (2 used).

: 8 mm

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