PART NO. WNEJ-EN-00

HITACHI

Reliable solutions

Workshop Manual

ZW220-5A

Wheel Loader

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TONEJ-EN
Technical Manual (Troubleshooting)	: Vol. No.TTNEJ-EN
Workshop Manual	: Vol. No.WNEJ-EN

MidWestTech | Hitachi ZW220-5A Wheel Loader Workshop Service Manual | Publication WNEJ-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.

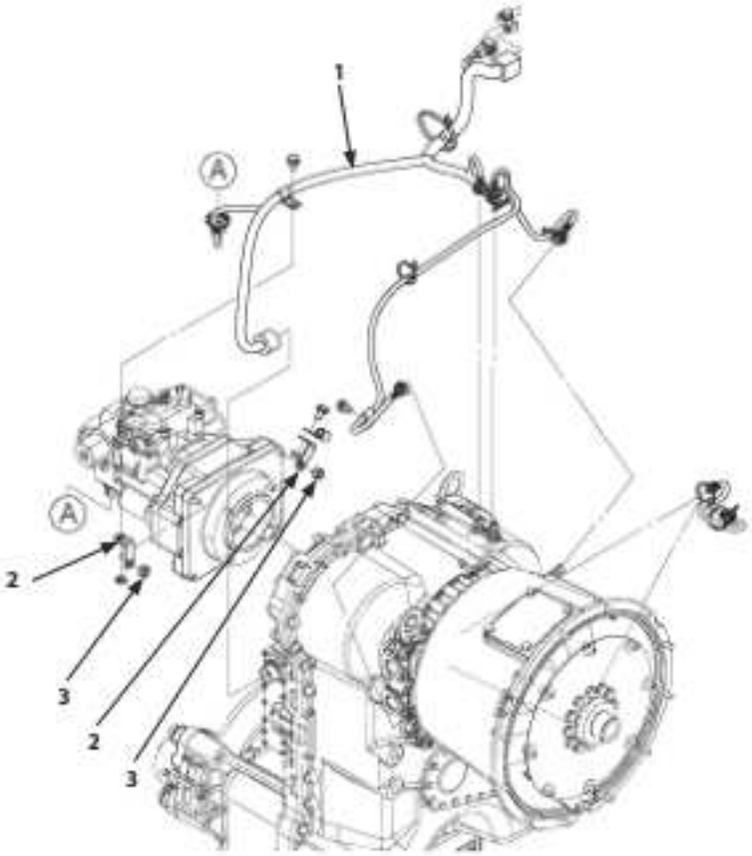
Example: 24.5 MPa (250 kgf/cm², 3560 psi)

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 ZW220-5A Wheel Loader Workshop Service Manual | Publicati... Order the manual at mid-west-tech.com >



WNEC-03-08-016

8. Install wire harness (1) with the bracket (2) assemblies (2 used) and nuts (3) (2 used).

: 19 mm

: 90 N·m (9 kgf·m, 66 lbf·ft)

MidWestTech | Hitachi ZW220-5A Wheel Loader Workshop Service Manual | Publicati... Order the manual at mid-west-tech.com >

Disassembly of Steering Valve

IMPORTANT: Do not disassemble the overload relief valve. If it has been disassembled, pressure should be adjusted. (Refer to TROUBLESHOOTING/ Operational Performance Test in the separated volume, Technical Manual.)

1. Remove overload relief valves (17) (2 used) from valve housing (01).

   : 32 mm

2. Remove plug (12) and O-ring (13) from valve housing (01).

   : 36 mm

IMPORTANT: Spring (07) may fly out due to the spring force when removing cap (08).

3. Remove socket bolts (09) (2 used) from cap (08). Remove spring (07) and spring seat (06) from valve housing (01). Remove O-rings (10, 14, and 15) from cap (08).

   : 6 mm

IMPORTANT: Spring (07) may fly out due to the spring force when removing cap (11).

4. Remove socket bolts (09) (2 used) from cap (11). Remove spring (07) and spring seat (06) from valve housing (01). Remove O-rings (10, 14, and 15) and sleeve (16) from cap (11).

   : 6 mm

IMPORTANT: Put the matching marks on valve housing (01) and spool (02) before disassembling.

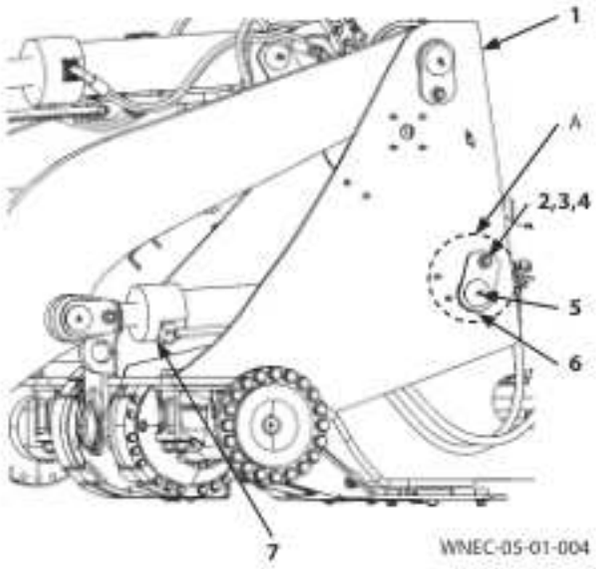
5. Remove the spool (02) assembly from valve housing (01).

MidWestTech | Hitachi ZW220-5A Wheel Loader Workshop Service Manual | Publicati... Order the manual at mid-west-tech.com >

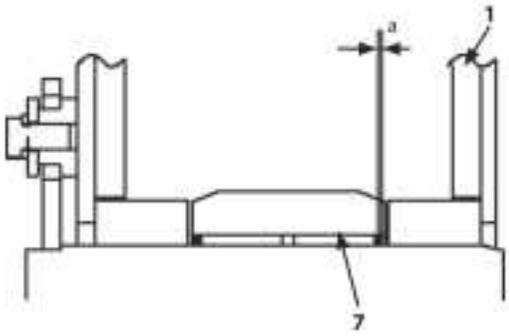
Detail A



WNEJ-05-02-101



WNEC-05-01-004



WND8-05-02-005

a- Clearance

CAUTION: Lift arm cylinder (7) weight: 165 kg (365 lb)

1. Attach nylon slings onto lift arm cylinder (7). Hoist and hold lift arm cylinder (7). Fit the mounting holes on the bottom side of lift arm cylinder (7) to front frame (1).

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

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

2. Fit spacer (8) and shim (9) to the lift arm cylinder (7) mounting holes so that clearance (a) is adjusted within 1.5 mm (0.059 in). Install pin (6) to front frame (1) by using a hammer.

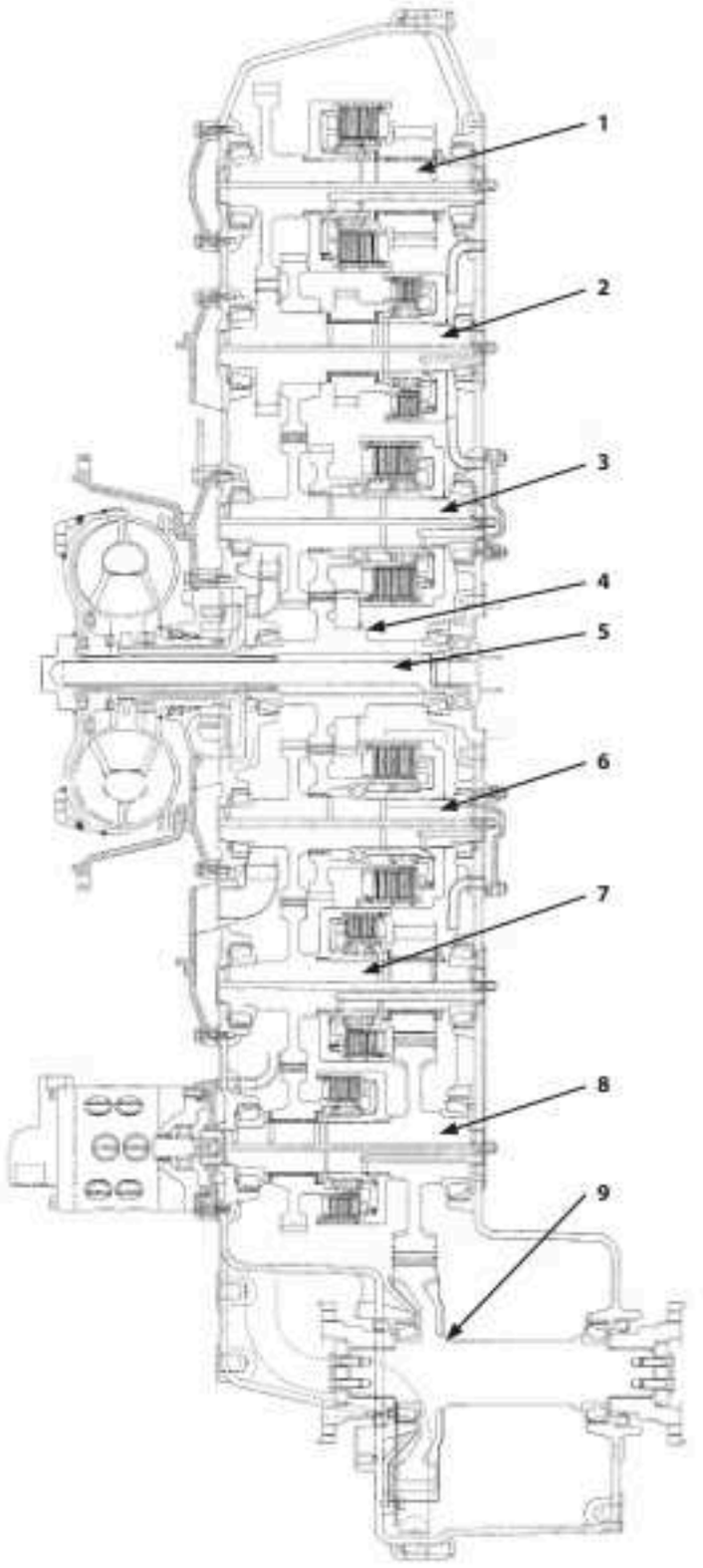
NOTE: Fit at least one spacer (8) or shim (9) to the both sides of the lift arm cylinder (7) mounting hole.

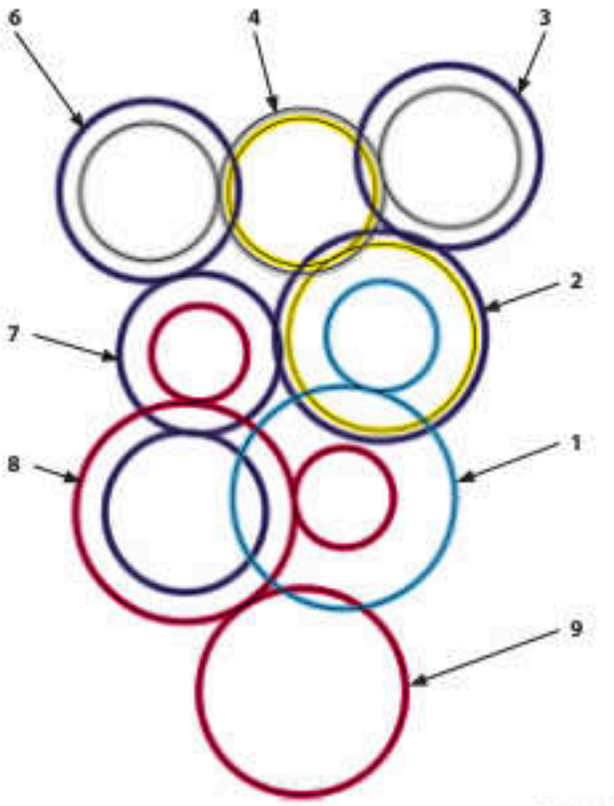
NOTE: Thickness of spacer (8): 2.3 mm (0.091 in), Thickness of shim (9): 1.6 mm (0.063 in)

3. Install washers (3, 4) and bolt (2).
   - : 24 mm
   - : 210 N-m (21 kgf-m, 155 lbf-ft)
4. Install grease fitting (5). Apply grease.
   - : 10 mm
   - : 4 N-m (0.4 kgf-m, 0.3 lbf-ft)
5. Place lift arm cylinder (7) on stands.
6. Install another lift arm cylinder (7) in the same way as step 1 to step 5.

MidWestTech | Hitachi ZW220-5A Wheel Loader Workshop Service Manual | Publicati... Order the manual at mid-west-tech.com >

Detail of Transmission Assembly (2)





T106954

T4GB-03-09-004

1- First Speed Clutch (K1)
2- Fast-Speed Forward Clutch (K4)
3- Reverse Clutch (KR)
4- Input Shaft (AN)
5- Hydraulic Pump Drive
6- Slow-Speed Forward Clutch (KV)
7- Second Speed Clutch (K2)
8- Third Speed Clutch (K3)
9- Output Shaft (AB)

MidWestTech | Hitachi ZW220-5A Wheel Loader Workshop Service Manual | Publicati... Order the manual at mid-west-tech.com >