PART NO. TONHE-EN-00

HITACHI

Reliable solutions

Technical Manual
Operational Principle

ZW

370-5B
Wheel Loader

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TONHE-EN
Technical Manual (Troubleshooting)	: Vol. No.TTNHE-EN
Workshop Manual	: Vol. No.WNHE-EN
Engine Manual	: Vol. No.ENHE-EN

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SECTION 1

GENERAL

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Hydraulic Component

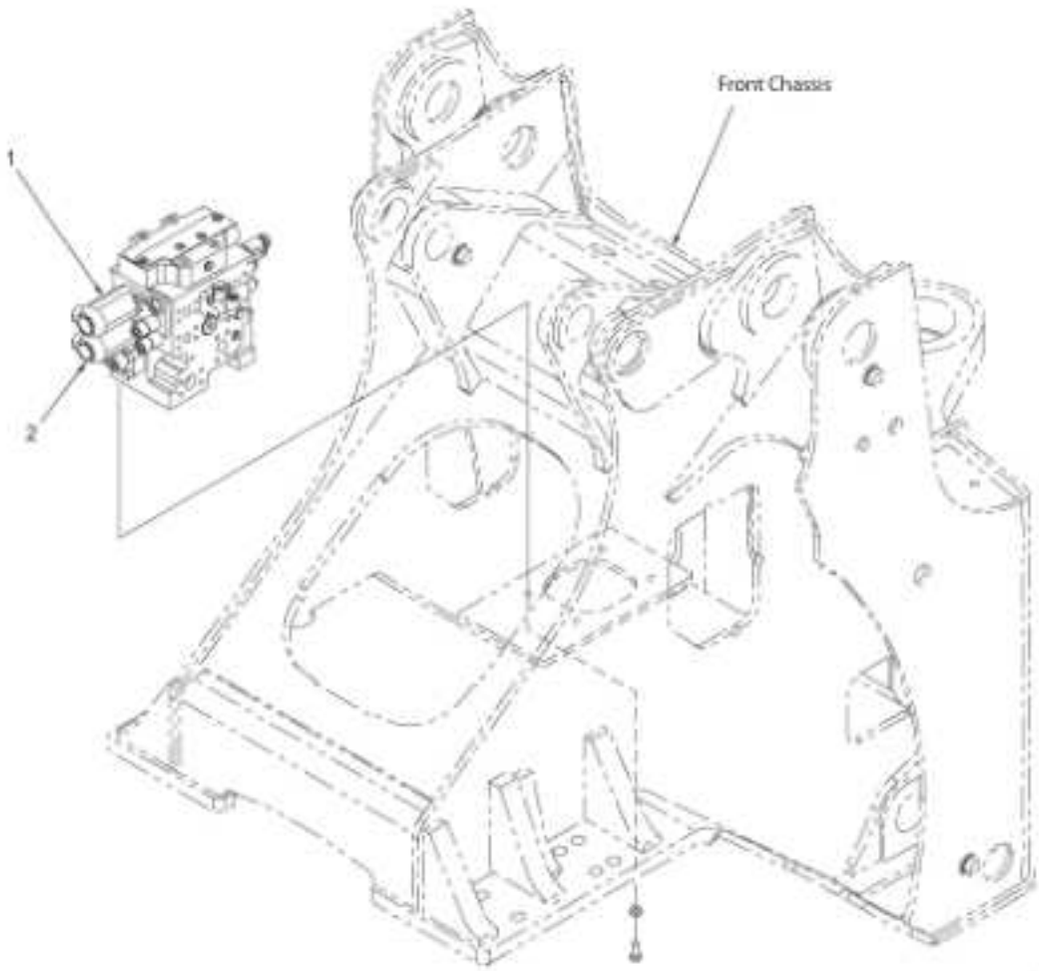
FAN MOTOR	Theoretical Displacement	63.1 cm^3/rev (3.85 in^3/rev)
FAN CONTROL SOLENOID VALVE	Function	Fan Motor Reverse Control, Fan Motor Speed Control
RIDE CONTROL ACCUMULATOR	Capacity	6.0 L (366 in^3)
	Charging Pressure	4.2 MPa (42.8 kgf/cm^2, 609 psi) at 20 °C
CHARGING (UNLOADER) VALVE	Charging Pressure	Cut In Pressure : 6.9 MPa (70 kgf/cm^2, 995 psi)
		Cut Out Pressure : 11.8 MPa (120 kgf/cm^2, 1706 psi)
MANIFOLD VALVE (COMBINATION VALVE)	Function	Parking Brake ON/OFF Control Lock the Front Attachment
SOLENOID VALVE (COMBINATION VALVE)	Function	Parallel/Tandem Circuit Switching Control Auto Brake Control
SERVICE BRAKE ACCUMULATOR	Capacity	3.0 L (183 in^3) x 2
	Charging Pressure	2.9 MPa (29.6 kgf/cm^2, 421 psi) at 20 °C (68 °F)
STEERING VALVE	Type	Flow Amp Type
	Main Relief Set Pressure	27.4 MPa (279 kgf/cm^2, 3970 psi)
	Over Load Relief Set-Pressure	32.5 MPa (331 kgf/cm^2, 4710 psi) at 15 L/min (4 US gpm)
STEERING PILOT VALVE	Type	Orbitrol ® Type
	Gerotor Capacity	80 cm^3/rev (4.9 in^3/rev)
STEERING ACCUMULATOR	Capacity	0.2 L (12 in^3)
	Charging Pressure	5 MPa (51 kgf/cm^2,725 psi) at 20 °C (68 °F)
BRAKE VALVE	Brake Pressure	4.0 MPa (41 kgf/cm^2, 580 psi)

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Outline

The control valve controls the oil pressure, flow rate, and flow direction in the hydraulic circuit.
The major parts are the main relief valve, overload relief/ make-up combination valve, flow rate control valve, pump control valve, and spools. The spools are operated by pilot oil pressure.

Control Valve Location

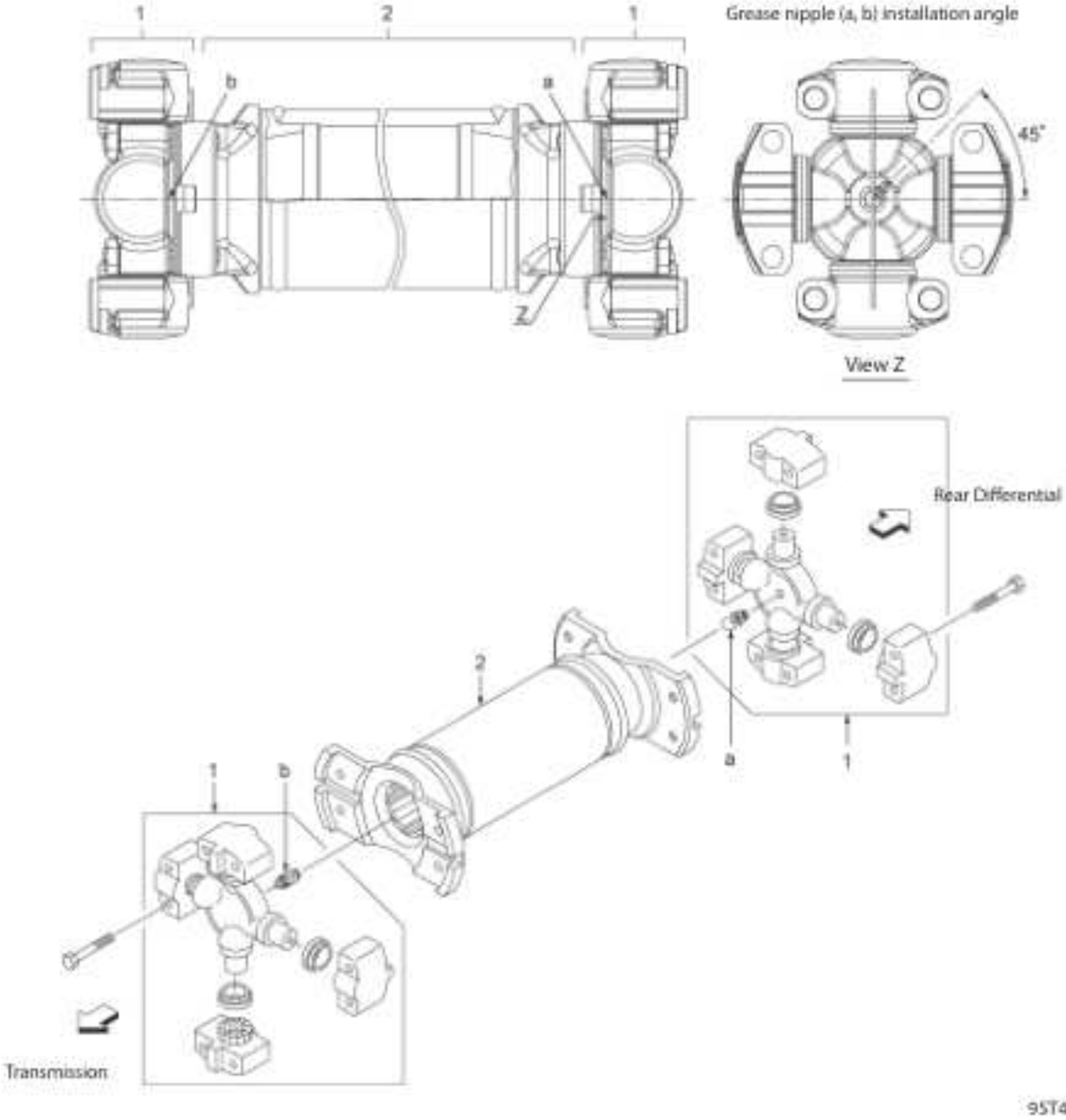


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1- Lift Arm Spool
2- Bucket Spool

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3rd Propeller Shaft (Between Transmission and Rear Axle)

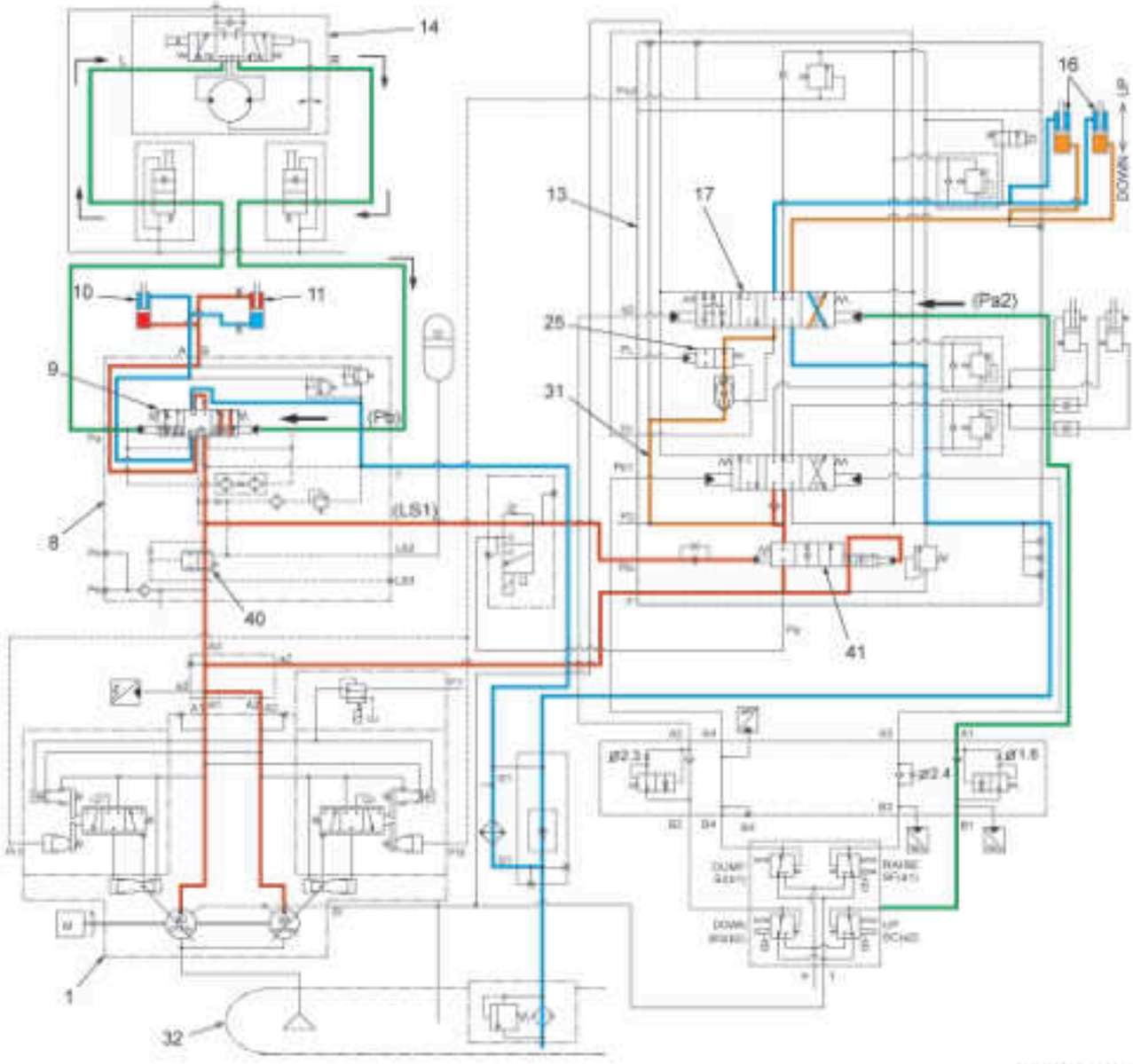


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1- Journal Spider Assembly
2- Propeller Shaft Assembly

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- Combined operation of steering right / lift arm raise



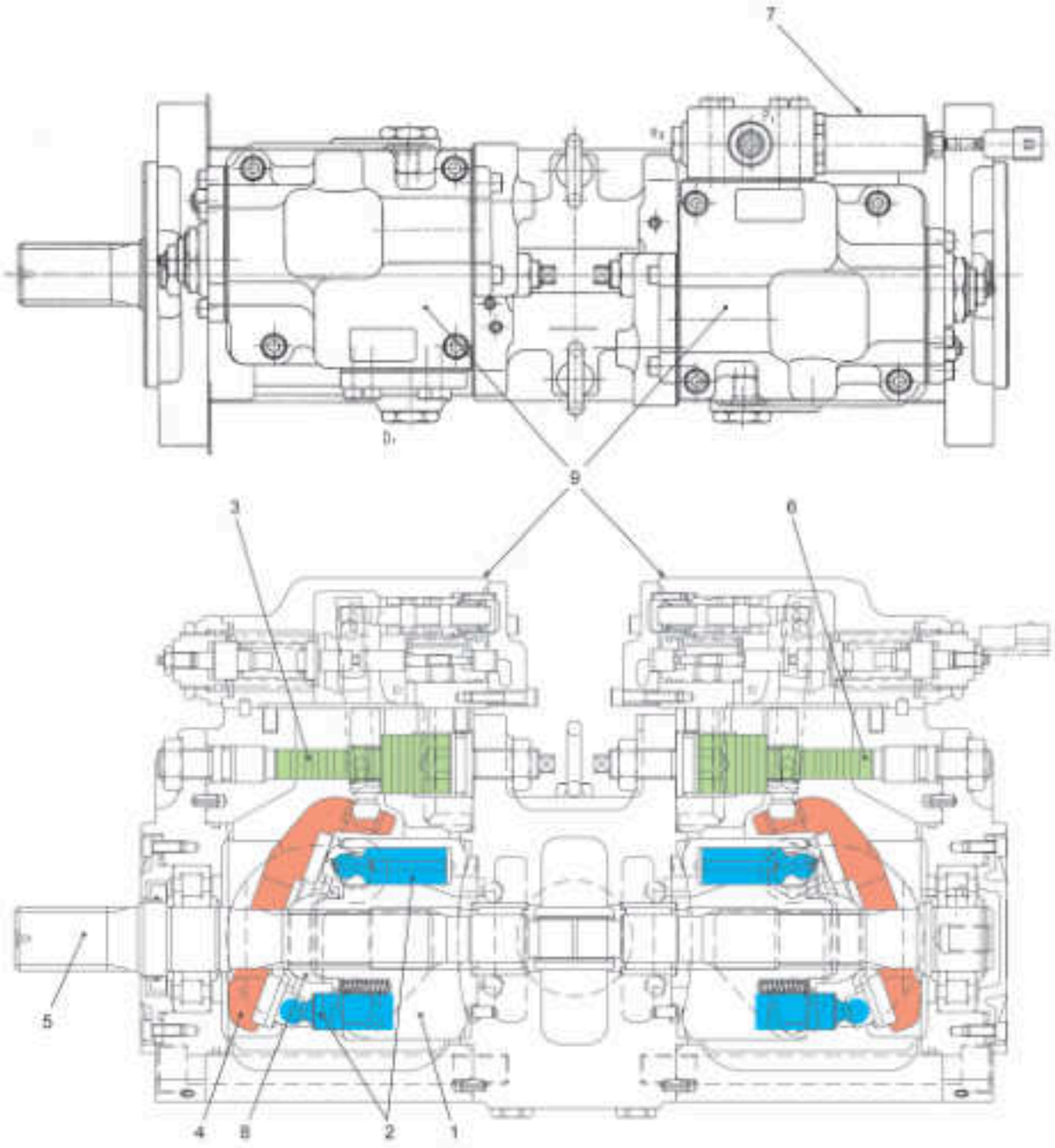
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Pb- Steering (Right) (Pilot Pressurized Oil)
Pa2- Lift Arm Raise (Pilot Pressurized Oil)

1- Main Pump
8- Steering Valve
9- Steering Spool
10- Steering Cylinder (Left)
11- Steering Cylinder (Right)
13- Control Valve
14- Steering Pilot Valve
16- Lift Arm Cylinder
17- Lift Arm Spool
25- Lift Arm Flow Rate Control Valve
31- Parallel Circuit
32- Hydraulic Tank
40- Meter-in Compensation Valve
41- Bleed-off Compensation Valve

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Main Pump Cross Section



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1- Cylinder Block
2- Piston
3- Servo Piston 1
4- Swash Plate
5- Shaft
6- Servo Piston 2
7- Pump Torque Control Solenoid Valve
8- Spherical Bush
9- Regulator

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