PART NO. TONHF-EN-00

HITACHI

Reliable solutions

Technical Manual
Operational Principle

ZW

550-5B
Wheel Loader

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TONHF-EN
Technical Manual (Troubleshooting)	: Vol. No.TTNHF-EN
Workshop Manual	: Vol. No.WNHF-EN
Engine Manual	: Vol. No.ENHE-EN

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GENERAL

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Hydraulic Component

MAIN PUMP	Type	Variable Piston Pump
	Theoretical Displacement	80 cm^3/rev (4.9 in^3/rev) x 2
	Rated Pressure	31.4 MPa (320 kgf/cm^2, 4550 psi)
REGULATOR	Type	Hydraulic Pressure Operated Type
SOLENOID VALVE (MAIN PUMP)	Function	Main Pump Torque Control
PILOT PUMP	Type	Variable Piston Pump
	Theoretical Displacement	74 cm^3/rev (4.5 in^3/rev)
CONTROL VALVE	Type	Pilot Pressure Operated Type (2-Spools)
	Main Relief Set-Pressure	31.4 MPa (320 kgf/cm^2, 4550 psi)
	Overload Relief Set-Pressure	37.3 MPa (380 kgf/cm^2, 5400 psi) (Lift Arm and Bucket)

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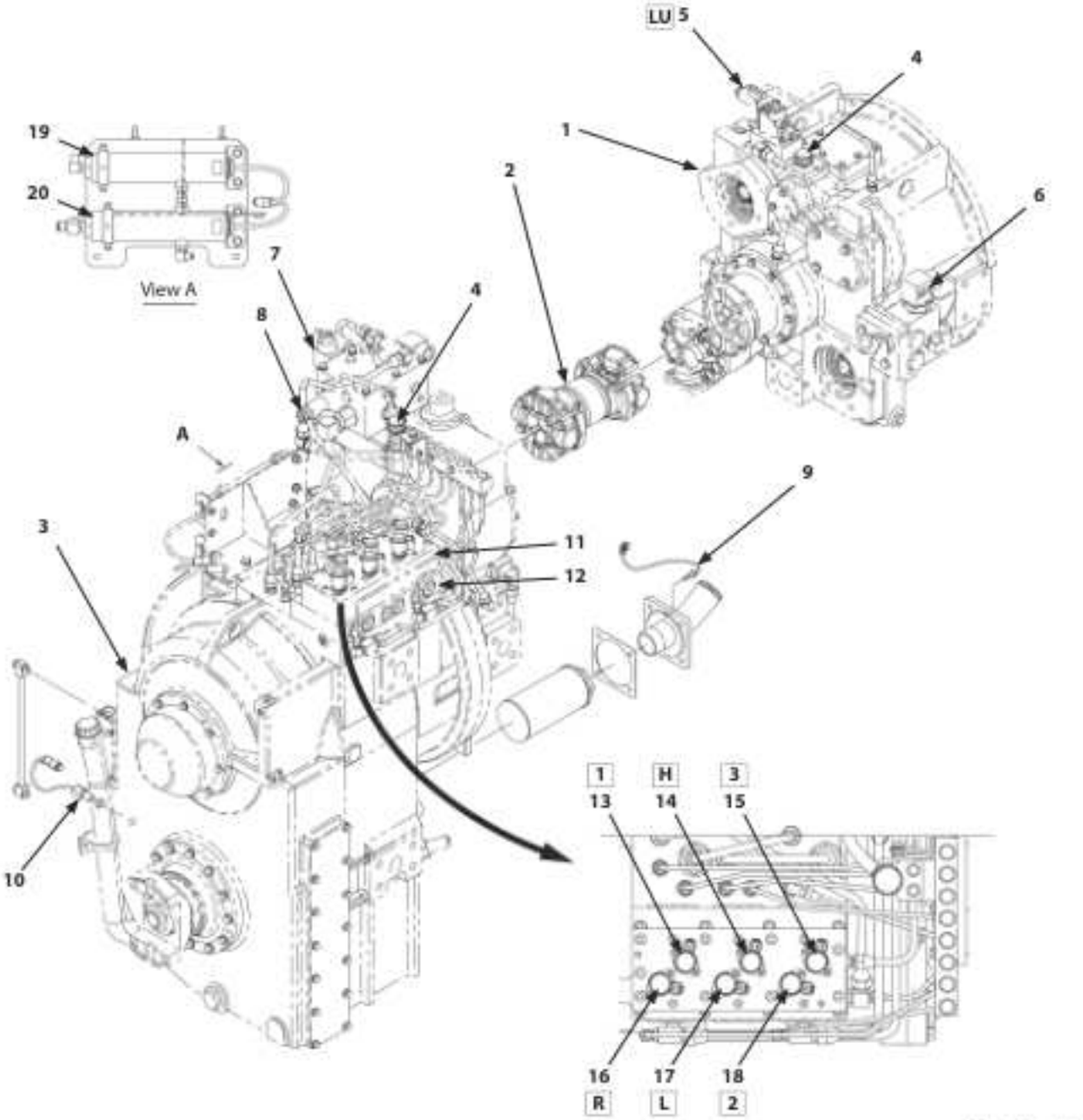
Outline

The electrical circuit is generally divided into the main circuit, monitor circuit, steering column monitor circuit, accessory circuit, and control circuit.

- Main Circuit:
  Operates the engine and the accessory related circuits.
- Monitor Circuit:
  Displays the machine operating conditions. Consists of monitor controller, monitor, relays, and switches.
- Column Monitor Circuit:
  Is operated during machine operation. Consists of head lights, turn signal lights, brake lights, and horn.
- Accessory Circuit (Option):
  Operates the accessory circuit. Consists of the column display controller, relays, and switches.
- Control Circuit:
  Controls the engine, pump, transmission, and loading control valve. Consists of the actuators such as solenoid valves, Main Controller (MC) (Man), MC (Sub), Engine Control Module (ECM), sensors, and switches. (Refer to SYSTEM / Control System.)

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Transmission and Torque Converter Assy

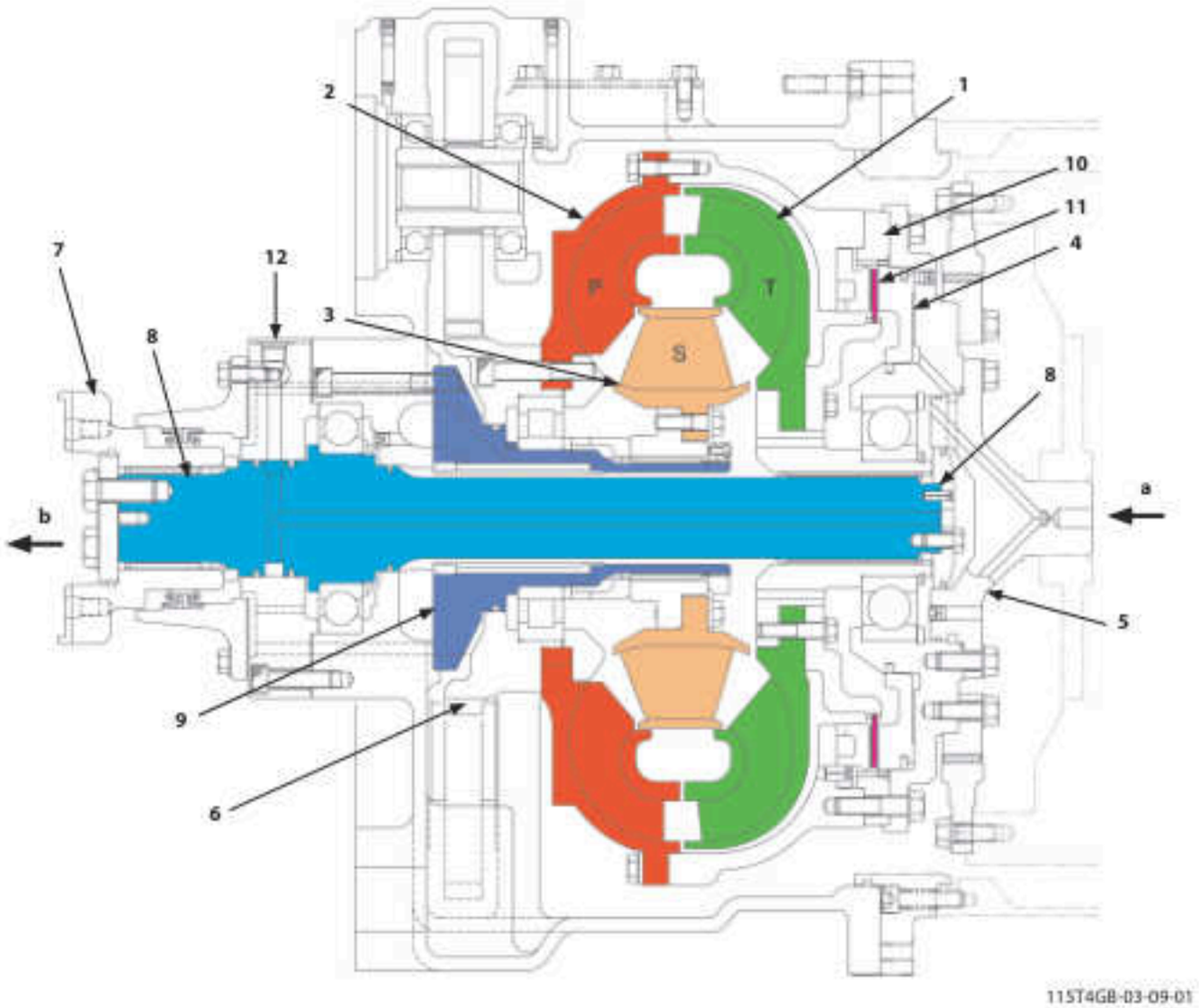


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1- Torque Converter
2- First Propeller Shaft (Main)
3- Transmission
4- Air Breather
5- Proportional Solenoid Valve (For Lock-Up Clutch)
6- Torque Converter Oil Temperature Sensor
7- Modulator Valve Mount
8- Direct Charge Valve
9- Transmission Oil Temperature Sensor
10- Speed Sensor (Switch Proximity)
11- T/M Control Valve (Clutch Solenoid Valve)
12- T/M Control Valve (Clutch Valve)
13- Proportional Solenoid Valve (For 1st Speed Clutch)
14- Proportional Solenoid Valve (For High Clutch)
15- Proportional Solenoid Valve (For 3rd Speed Clutch)
16- Proportional Solenoid Valve (For Reverse Clutch)
17- Proportional Solenoid Valve (For Low Clutch)
18- Proportional Solenoid Valve (For 2nd Speed Clutch)
19- Accumulator (1, R)
20- Accumulator (2, 3, L, H)

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Cross Section View of Torque Converter

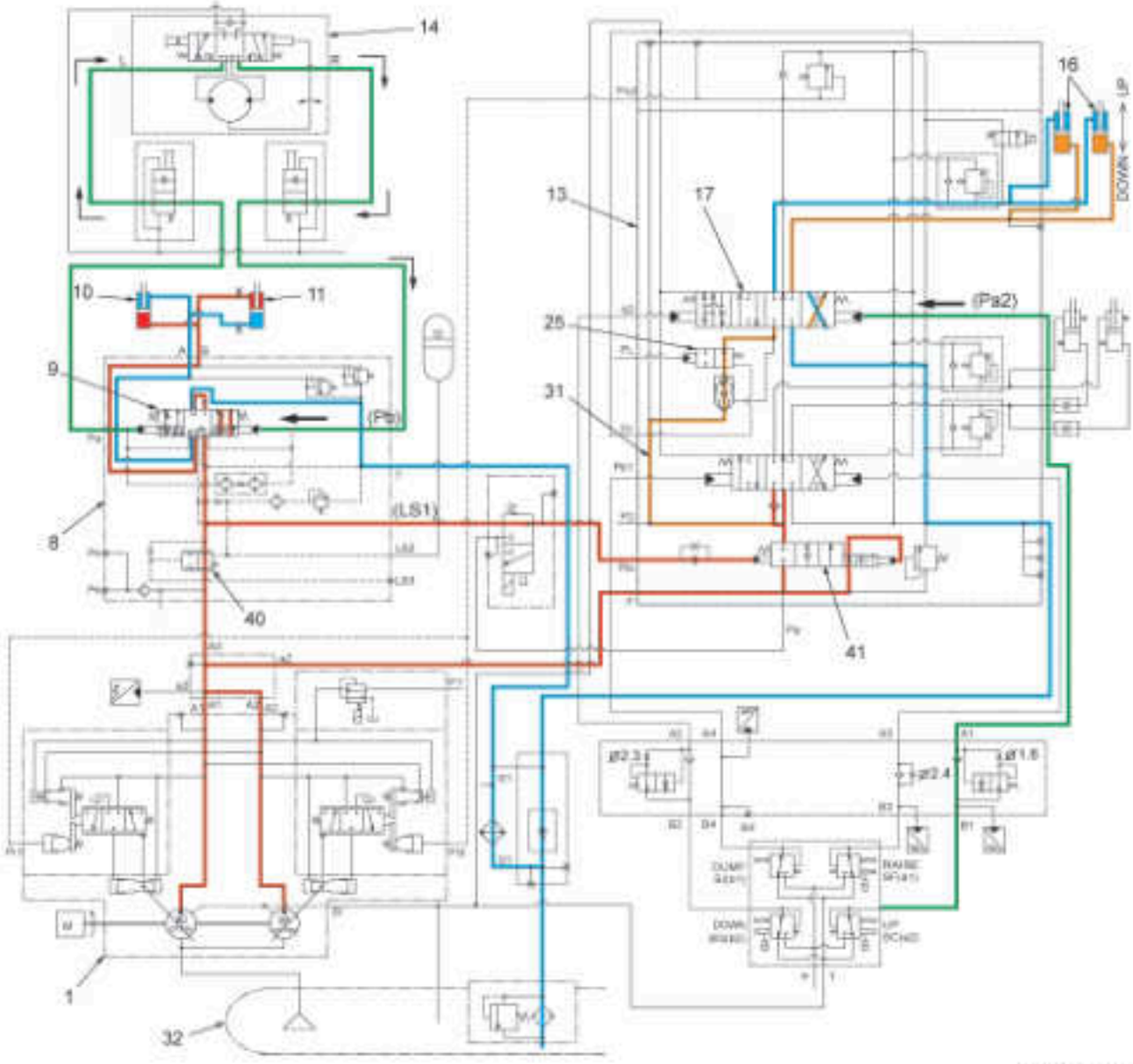


a- Input (Engine) Side
b- Output (Propeller Shaft) Side

1- Turbine impeller Assy
2- Pump Impeller
3- Stator
4- Lock-Up Piston
5- Drive Cover
6- P.T.O. Drive Gear
7- Torque Converter Output Flange
8- Turbine Shaft
9- Stator Shaft
10- Lock-Up Clutch Gear
11- Friction Disc
12- Lock-Up Clutch Control Pressure Input Port

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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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