PART NO. TODFB50-EN-00

HITACHI

Reliable solutions

Technical Manual
Operational Principle

ZX
225USLC-6
225USRLC-6
Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODFB50-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDFB50-EN
Workshop Manual	: Vol. No.WDFB50-EN
Engine Manual	: Vol. No.ETDC150-EN, EWDC150-EN

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COOLING SYSTEM	Cooling Fan	Dia. 650 mm, 5 Blades, Draw-in Type, HF, with Fan Ring and Safety Net
	Fan Pulley Ratio	Belt Driven Rotation Ratio : 1.01
	Thermostat	Cracking Temperature at Atmospheric Pressure: No.1: 76.5 °C, No.2: 82 °C
		Full Open (Stroke: over 8 mm): No.1: 90 °C, No.2: 95 °C
	Water Pump	Centrifugal Type
LUBRICATION SYSTEM	Lubrication Pump Type	Gear Pump
	Oil Filter	Full-Flow Paper Element Type with Bypass
	Oil Cooler	Water Cooled Integral 5-Stage Type
STARTING SYSTEM	Motor	Magnetic Pinion Shift Reduction Type
	Voltage/Output	24 V/5 kW
PREHEAT SYSTEM	Preheating Method	Glow Plug (24V, QOS II Type)
ENGINE STOP SYSTEM	Stop Method	Fuel Shut-Off (Electronic Control)
ALTERNATOR	Type	Regulator Integrated AC Type, Brushless
	Voltage/Output	24 V/50 A
SUPERCHARGING SYSTEM	Type	Exhaust-Turbocharger Type RHF55V Type with Lubrication, Water-Cooled Type
FUEL SYSTEM	Type	Common Rail Type HP3 Type
	Governor	Electronic All Speed Control
	Injection Nozzle	Electrical Multi-Hole Injector (G3 Type)

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Pump Control

The pump control consists of the followings.

- Speed Sensing Control
- Swing Relief Cut Control
- Pump Torque Decrease Control (Radiator Coolant Temperature)
- Travel Torque-Up Control
- Pump Torque Restriction Control (During Engine Output Restriction)
- Pump 1 Flow Rate Control
- Pump 2 Flow Rate Control
- Pump 3 Flow Rate Control
- * Pump 1 Flow Rate Limit Control
- * Pump 2 Flow Rate Limit Control
- * Pump 3 Flow Rate Limit Control

*NOTE: * This control is for only the machine with the optional parts equipped.*

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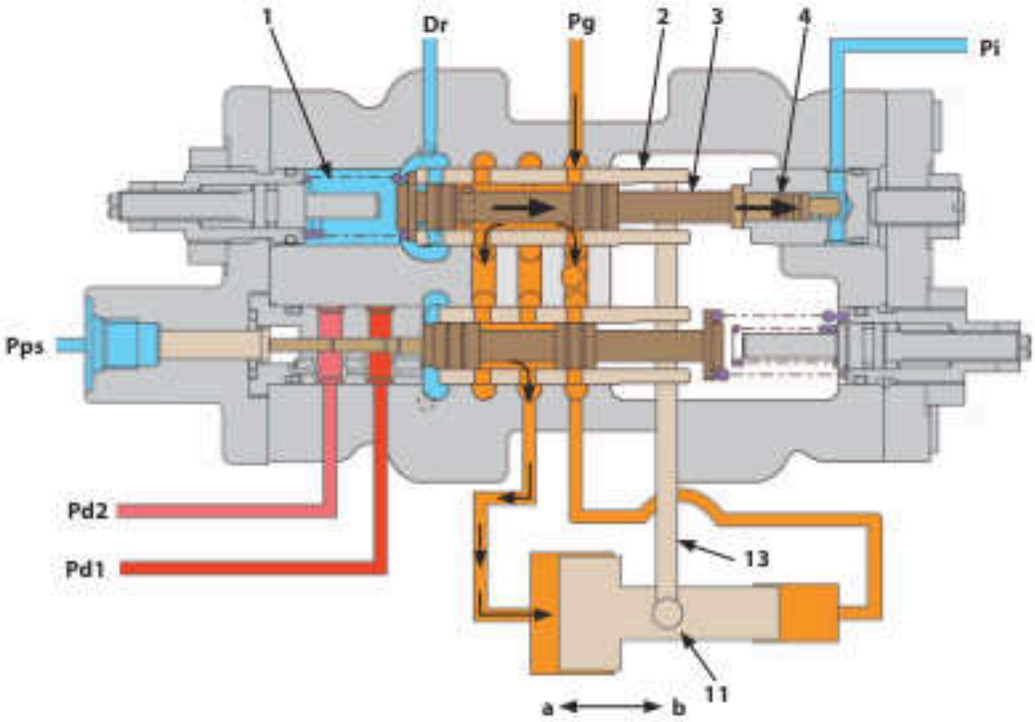
Outline

The electrical circuit is broadly divided into the main circuit, monitor circuit, accessory circuit, and control circuit.

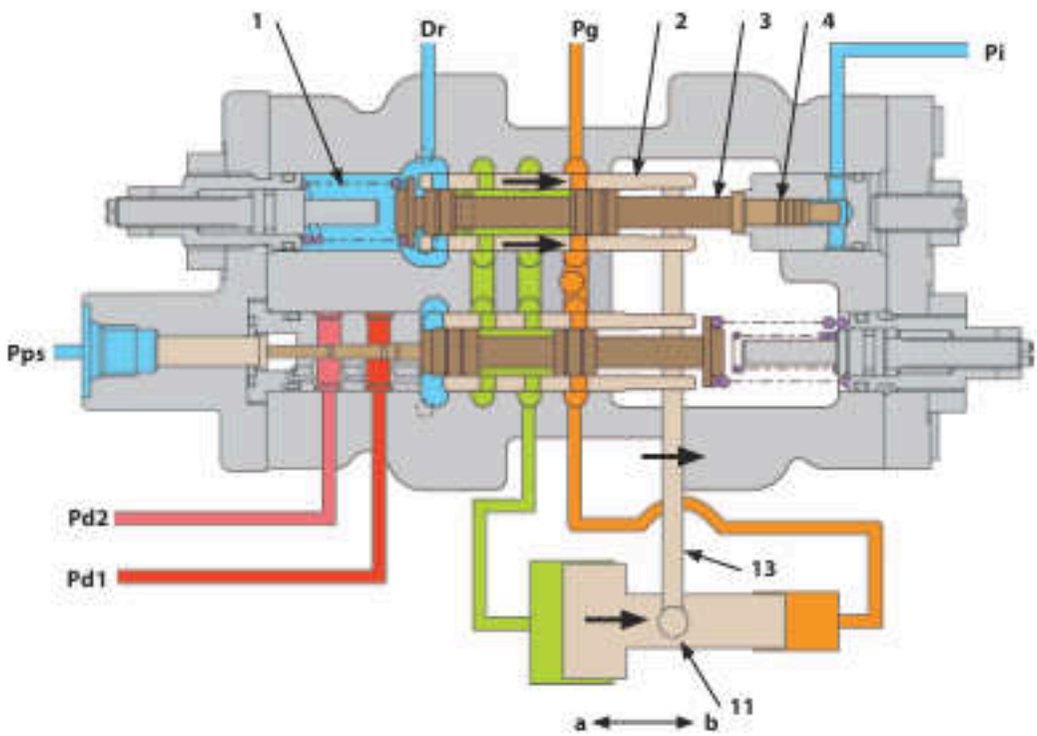
- The main circuit consists of the engine and the accessory related circuits.
- The monitor circuit displays the machine operating conditions. The monitor circuit consists of the monitor controller, monitor, relays, and switches.
- The accessory circuit controls the various lights, the wiper, and the washer. The accessory circuit consists of the wiper/light controller, relays, and switches.
- The control circuit controls the engine, pump, and valve. The control circuit consists of the actuators such as solenoid valves, MC, ECM, sensors, and switches.
  (Refer to SYSTEM/Control System.)

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NOTE: The illustration shows the pump1 regulator.



TPPP-03-01-018



TPPP-03-01-019

Pd1- Pump 1 Delivery Pressure
Pd2- Pump 2 Delivery Pressure

Dr- Returning to Hydraulic Oil Tank
Pi- Pump Control Pressure

Pps- Torque Control Pressure
Pg- Primary Pilot Pressure (From Pilot Pump)

a- Displacement Angle Increase
b- Displacement Angle Decrease

1- Spring
2- Sleeve A

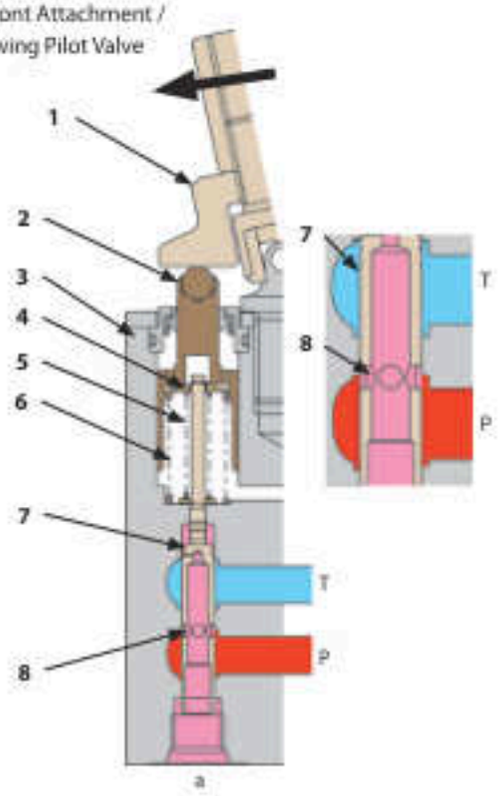
3- Spool A
4- Piston

11- Servo Piston

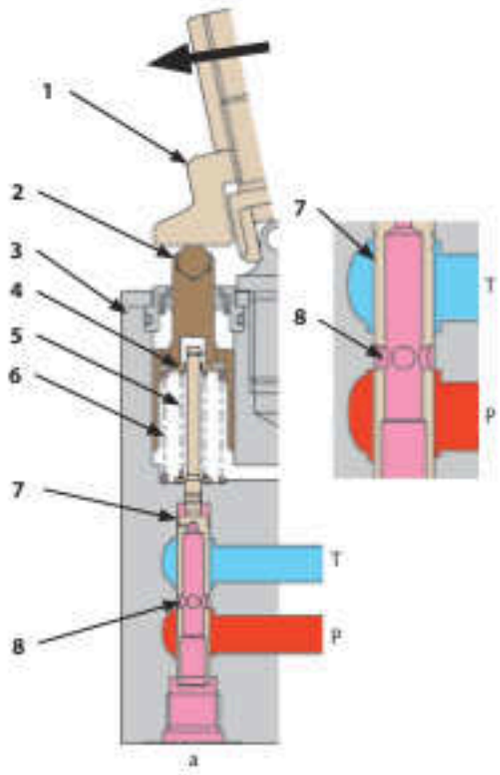
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Front Attachment / Swing Pilot Valve

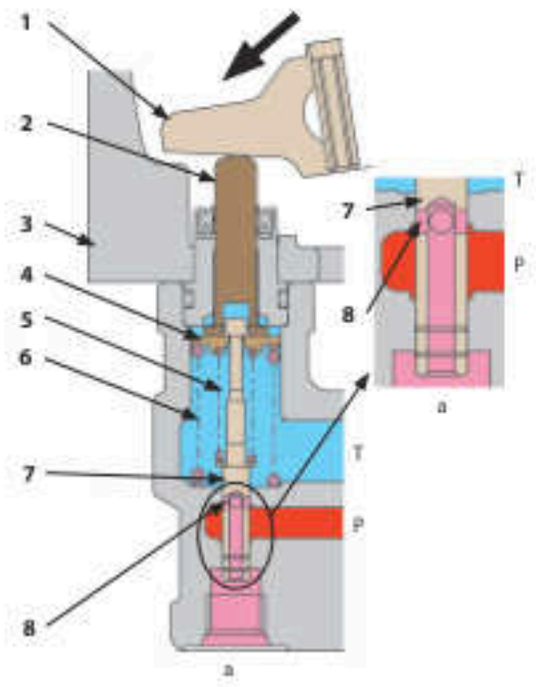


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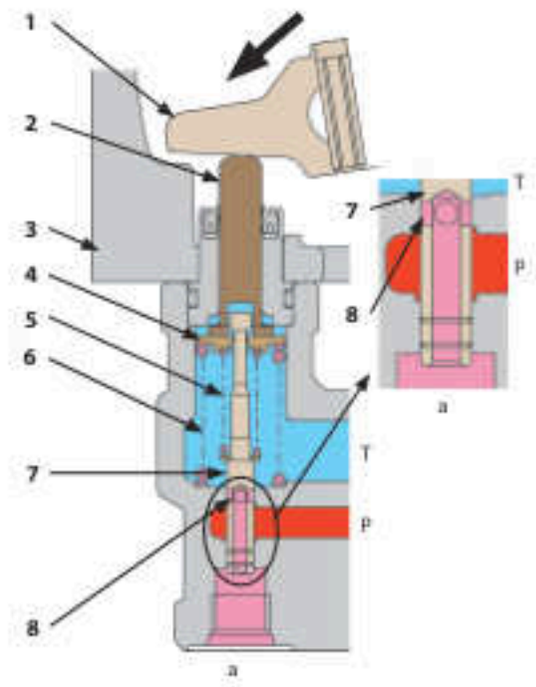


TPPP-03-04-008

Travel Pilot Valve



TPPP-03-04-012



TPPP-03-04-013

P- Port P
T- Port T
a- Output Port

1- Cam
2- Pusher
3- Casing
4- Spring Guide
5- Balance Spring
6- Return Spring
7- Spool
8- Hole

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