PART NO. TODDQ50-EN-00

HITACHI

Reliable solutions

Technical Manual
Operational Principle

ZX
350LC-6
350LCN-6
Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODDQ50-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDDQ50-EN
Workshop Manual	: Vol. No.WDDQ50-EN
Engine Manual	: Vol. No.ETDDN50-EN, EWDDN50-EN

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IMPORTANT: This list shows design specifications, which are not servicing standards.

Performance	without fan	with fan
Fuel Consumption Ratio	214±13.6 g/kW·h at 210±4.2 kW/(at Full Load: 1900 min^{-1})	220±13.6 g/kW·h at 202$^{+6.2}_{-2.2}$ kW/(at Full Load: 1900 min^{-1})
	211±13.6 g/kW·h at 199.8±10 kW/(at Working Load: 1800 min^{-1})	217±13.6 g/kW·h at 195±10 kW/(at Working Load: 1800 min^{-1})
Maximum Output Torque	1080±60 N·m at 1500 min^{-1}	
Compression Pressure	3.04 MPa at 200 min^{-1}	
Valve Clearance (Intake/ Exhaust)	0.4/0.4 mm (when cool)	
No Load Speed	Slow: 800±20 min^{-1}	
	Fast: 1800±20 min^{-1}	

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Pump Torque Restriction Control (During Engine Output Restriction)

Purpose:
The pump torque restriction control (during engine output restriction) decreases pump driving torque according to the step of engine output restriction.

Operation:

1. When any following conditions exist and a specified time has passed, MC (10) activates pump 1 and 2 torque control solenoid valve (26) and pump 3 torque control solenoid valve (27).

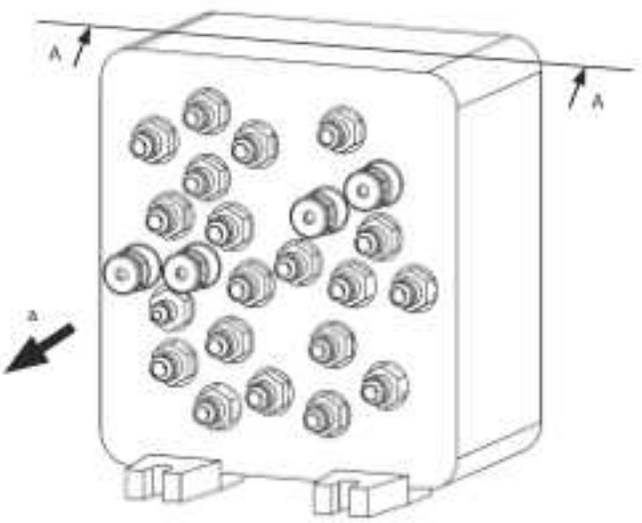
- DEF level is severely low
- SCR system is abnormal
- EGR system is abnormal

2. Pump 1 and 2 torque control solenoid valve (26) and pump 3 torque control solenoid valve (27) deliver the pilot pressure according to the signals to the regulators, reduces the pump delivery flow rate, and decreases pump driving torque.

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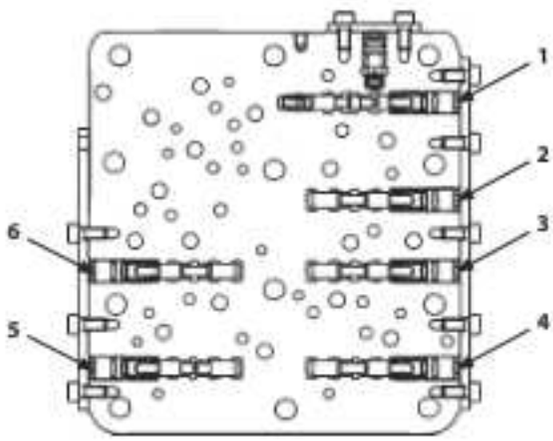
Outline

The signal control valve is provided in the pilot circuit between the pilot valve and the control valve, and controls various signal pressure used to regulate the pumps and valves.
The signal control valve consists of the shuttle valves, shockless valve (1), pump 1 flow rate control valve (6), pump 2 flow rate control valve (3), pump 3 flow rate control valve (2), flow combiner valve control spool (4), and swing parking brake release spool (5).



TDAA-03-06-003

Section A-A



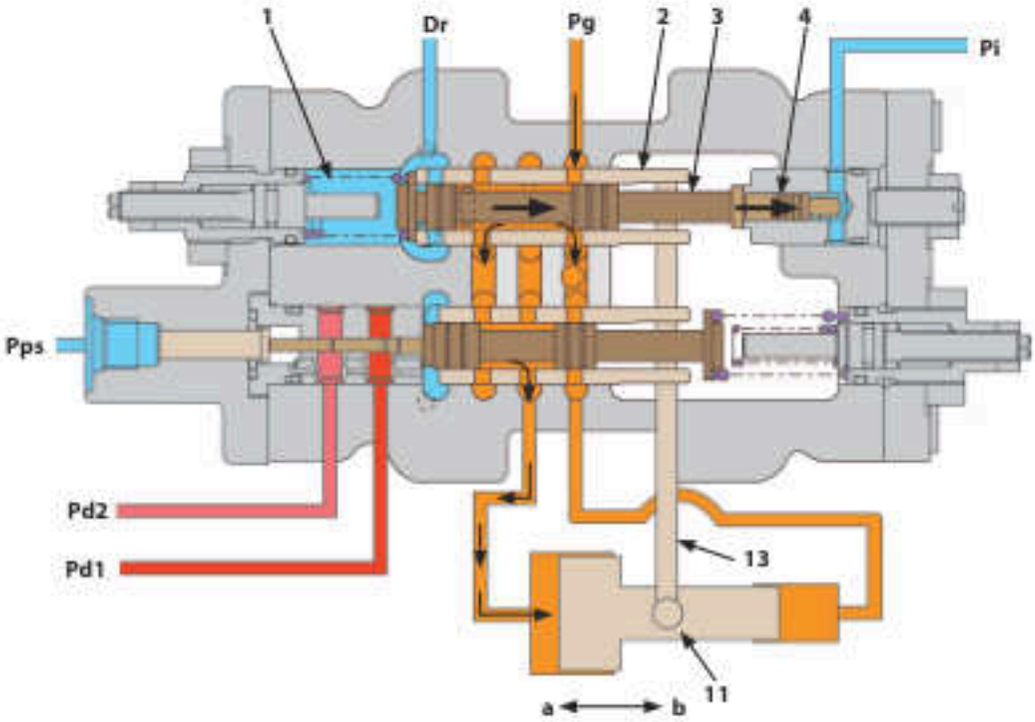
TDAA-03-06-004

a- Pilot Valve Side

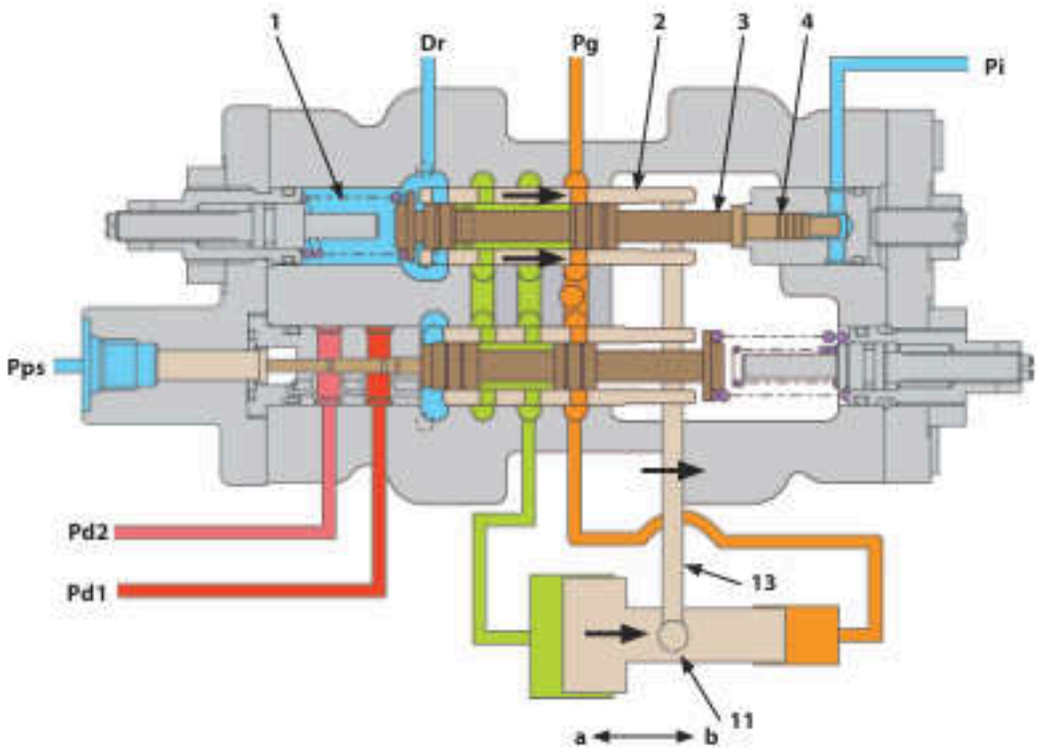
1- Shockless Valve
2- Pump 3 Flow Rate Control Valve
3- Pump 2 Flow Rate Control Valve
4- Flow Combiner Valve Control Spool
5- Swing Parking Brake Release Spool
6- Pump 1 Flow Rate Control Valve

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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

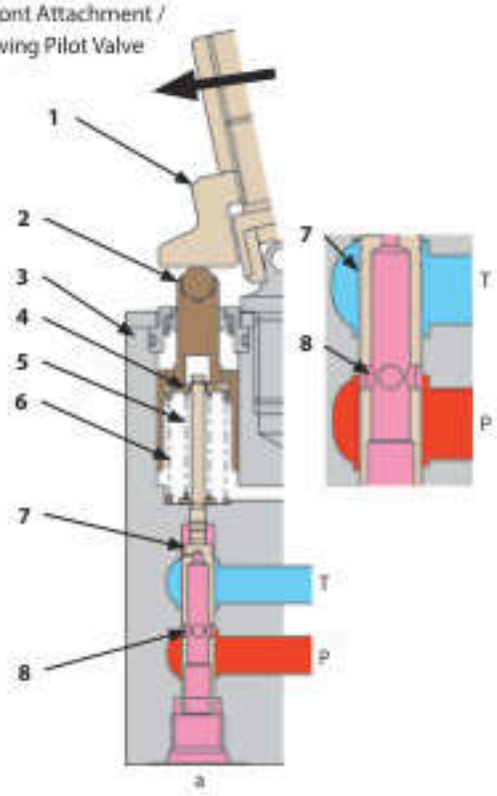
3- Spool A
4- Piston

11- Servo Piston

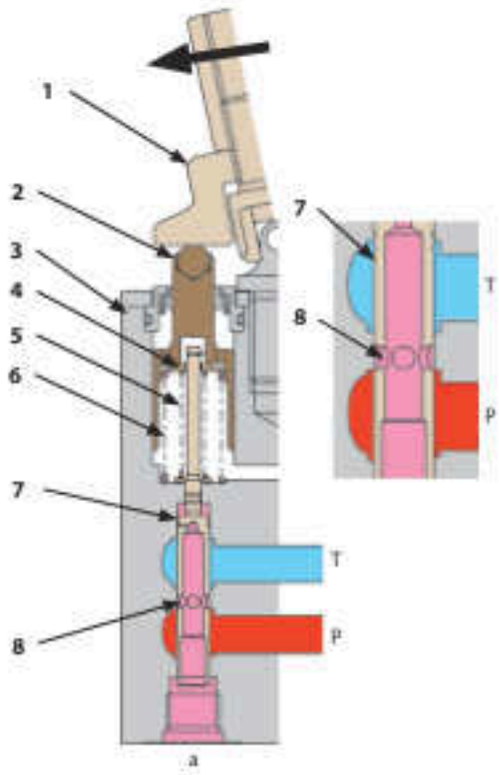
13- Link

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Front Attachment / Swing Pilot Valve

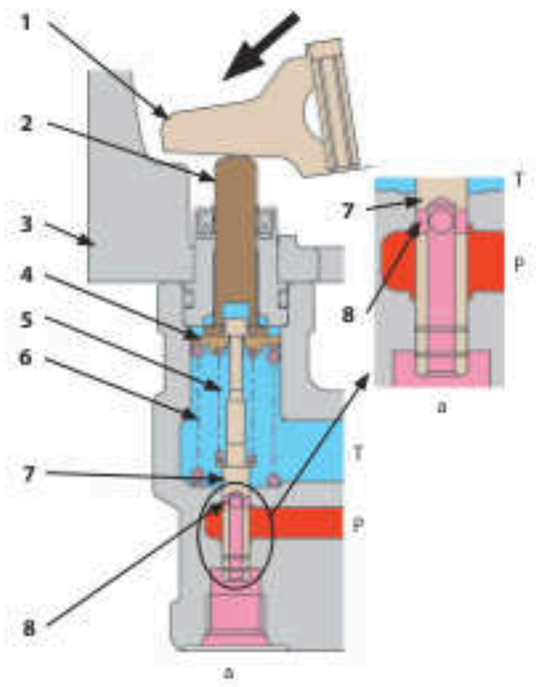


TPPP-03-04-007

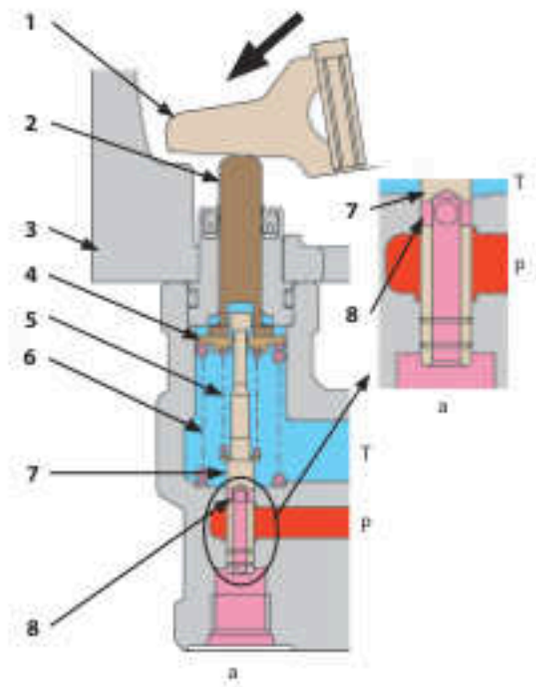


TPPP-03-04-008

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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