PART NO. TODDW90-EN-00

HITACHI

Reliable solutions

Technical Manual

Operational Principle

ZX
300-5A
300LC-5A
300LCH-5A

Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODDW90-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDDW90-EN
Workshop Manual	: Vol. No.WDDW90-EN
Engine Manual	: Vol. No.ETDDK-EN, EWDDK-EN

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GENERAL

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CYLINDER		Boom	Arm	Bucket
	Rod Diameter	95 mm	105 mm	90 mm
	Cylinder Bore	135 mm	150 mm	135 mm
	Stroke	1422 mm	1659 mm	1070 mm
	Fully Retracted Length	2005 mm	2259 mm	1660 mm
	Plating Thickness	30 µm	30 µm	30 µm

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Pump Torque Decrease Control (Hydraulic Oil Temperature)

Purpose:
When the hydraulic oil temperature increases, the pump torque decrease control (hydraulic oil temperature) decreases the pump delivery flow rate and pump driving torque so that the engine overheating is prevented.

Operation:

1. When the hydraulic oil temperature increases, MC (8) activates torque control solenoid valve (22).
2. Torque control solenoid valve (22) supplies the pilot pressure to the regulator according to the signal, and decrease the pump delivery flow rate. Therefore, the engine overheating is prevented when the hydraulic oil temperature increases.

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Hydraulic Circuit

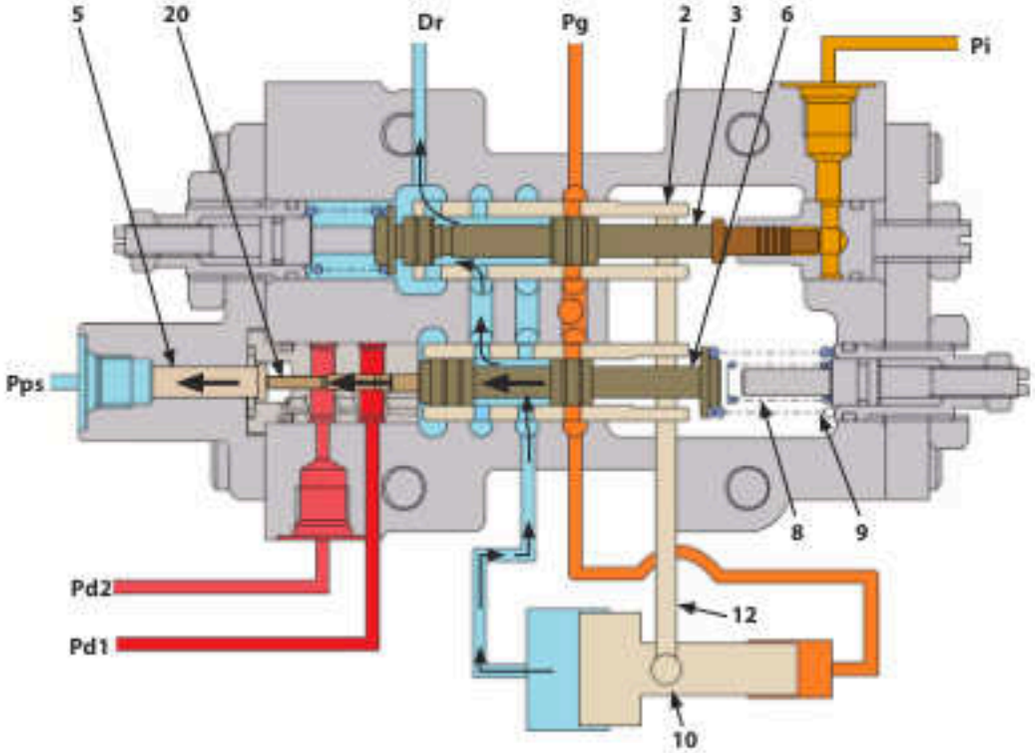
Main Circuit

Pressure oil from pump 1 (8) flows to the 4-spool section control valve. Pressure oil from pump 2 (9) flows to the 5-spool section control valve.
The parallel circuits (2), (10) are provided in each main circuit of 4-spool section and 5-spool section, and make the combined operation possible. In addition, the flow combiner circuit (7) is provided in both boom and arm circuits so that pressure oil from pump 1 (8) and pump 2 (9) are combined during a single operation.

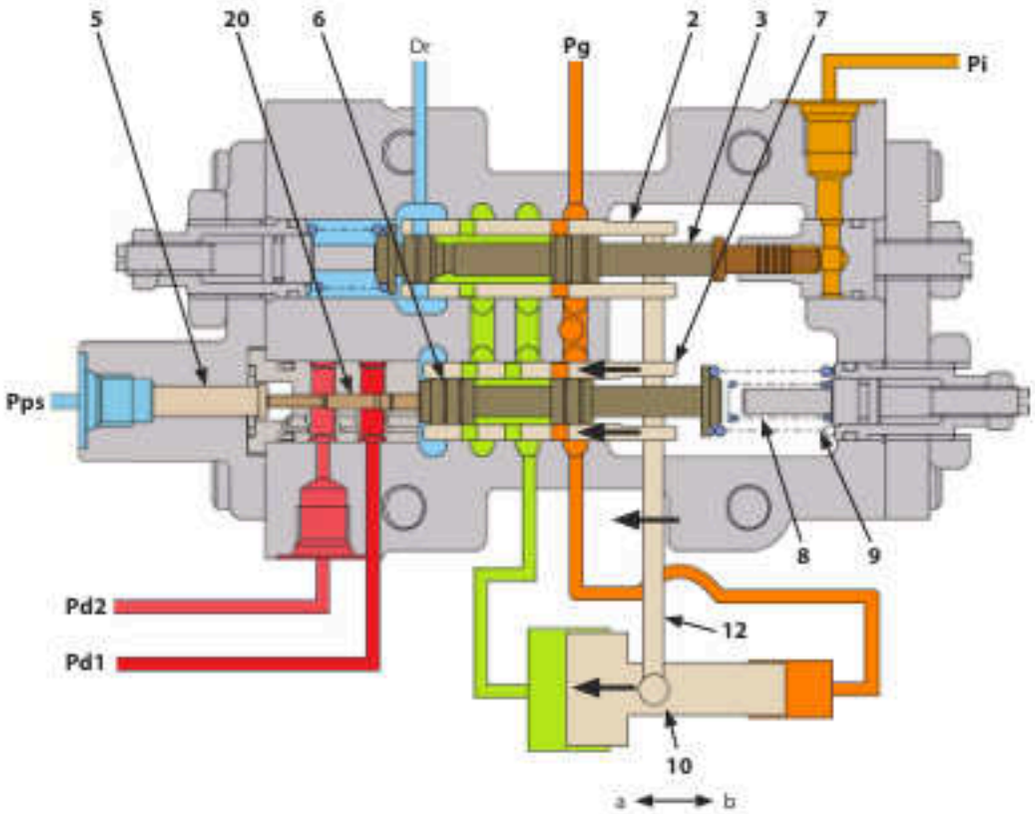
The main relief valve (1) is provided in the main circuit (between the pump and the actuator). The main relief valve (1) prevents the pressure in the main circuit from exceeding the set pressure when the spool is operated (or when the control lever is operated).
The overload relief valves (5), (12) are is provided in the actuator circuits (between the control valve and the actuator) of boom, arm, bucket. The overload relief valves (5), (12) prevent surge pressure caused by external force in the actuator circuit does not exceed the set pressure when the spool is in neutral (with the control lever set in neutral).

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NOTE: The illustration shows the pump2 regulator.



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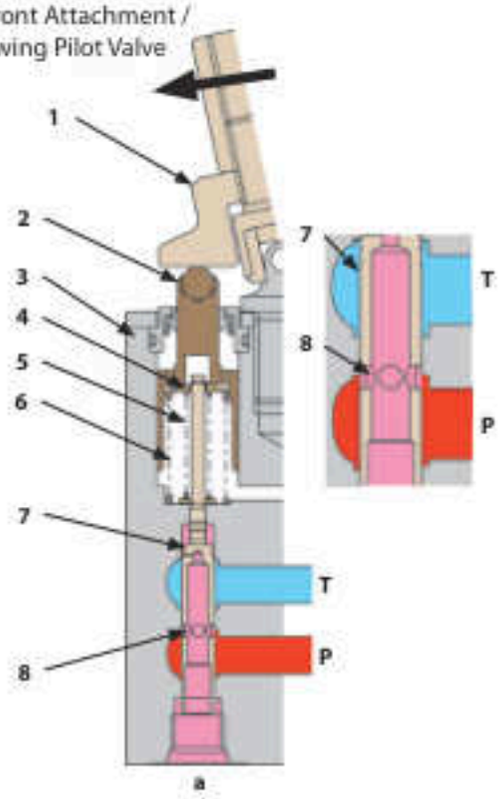


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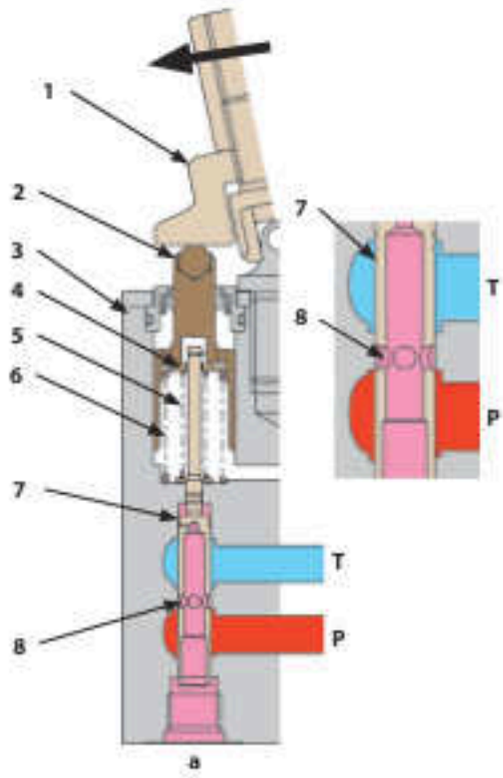
Pd1- Pump 1 Delivery Pressure
Pd2- Pump 2 Delivery Pressure
2- Sleeve A
3- Spool A
5- Load Piston 1
Dr- Returning to Hydraulic Oil Tank
6- Spool B
7- Sleeve B
8- Inner Spring
Pi- Pump Control Pressure
Pps- Torque Control Pressure
9- Outer Spring
10- Servo Piston
12- Link
Pg- Primary Pilot Pressure (From Pilot Pump)
20- Load Piston 2

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Front Attachment / Swing Pilot Valve

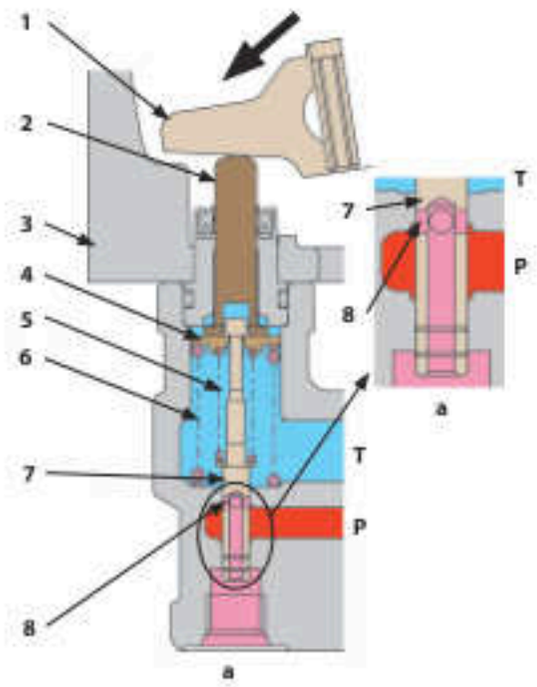


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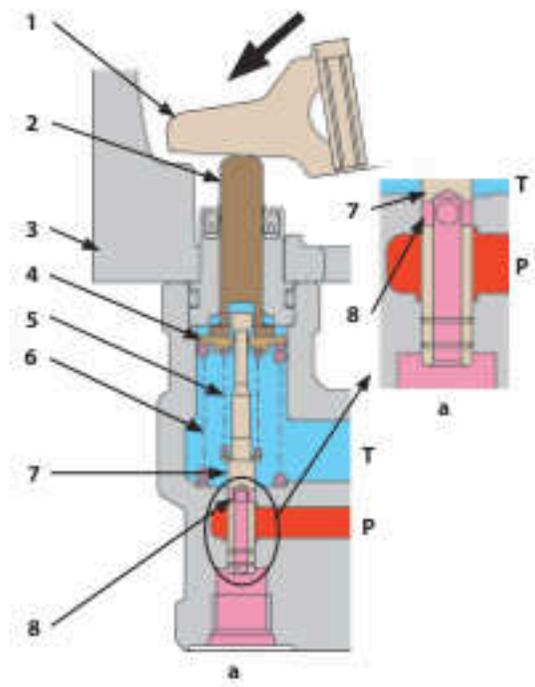


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Travel Pilot Valve



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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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