PART NO. TOJBE-EN-00

HITACHI

Reliable solutions

Technical Manual
Operational Principle

ZX
870-5G
870LC-5G
870H-5G
870LCH-5G
870LCR-5G
Hydraulic Excavator

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TOJBE-EN
Technical Manual (Troubleshooting)	: Vol. No.TTJBE-EN
Workshop Manual	: Vol. No.WJBE-EN

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GENERAL

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CYLINDER		Boom	Arm	Bucket
	Rod Diameter	150 mm (5.91")	160 mm (6.30")	140 mm (5.51")
	Cylinder Bore	215 mm (8.47")	225 mm (8.59")	200 mm (7.87")
	Stroke	1835 mm (6'0.2")	2225 mm (7'3.6")	1555 mm (5'1.2")
	Fully Retracted Length	2640 mm (8'7.9")	3120 mm (10'2.8")	2390 mm (7'10.1")
	Plating Thickness	30 µm (1.18 µm)	30 µm (1.18 µm)	30 µm (1.18 µm)

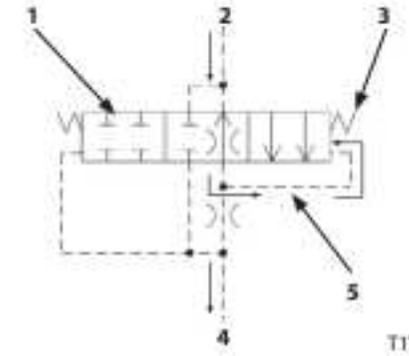
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Shockless Valve

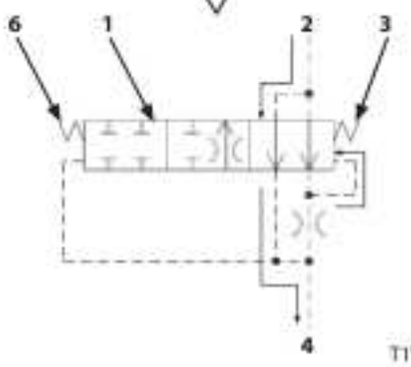
The shockless valve is provided in the boom raise circuit and functions during boom lowering operation or when stopping boom raise operation.

During boom raise operation

1. Boom raise pilot pressure is routed to spool (1) through port A (2).
2. Immediately after operation is started, low pilot pressure is routed to the spring B (3) chamber through clearance C between spool (1) and housing (7).In addition, pilot pressure is also routed to port 1 (4) through inner passage 2 (5) at the same time.
3. When pilot pressure increases, pressure in the spring B (3) chamber also increases. Spool (1) pushes spring A (6) and is moved to the left.
4. As spool (1) is moved, port A (2) is connected to port 1 (4) and pressure in the port 1 (4) increases, so that the control valve spool is moved.



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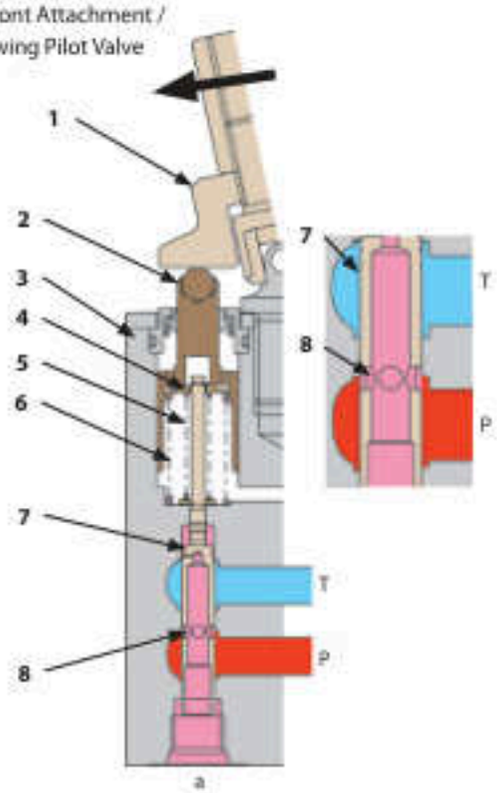


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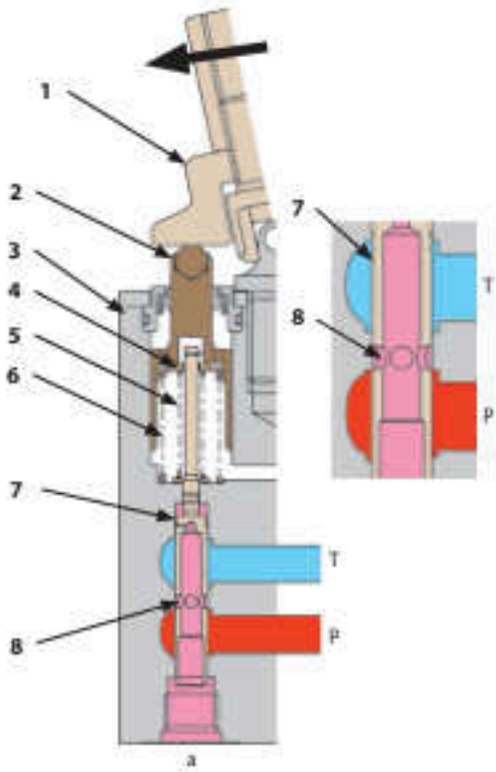
1- Spool
2- Port A
3- Spring B
4- Port 1
5- Inner Passage 2
6- Spring A

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Front Attachment / Swing Pilot Valve

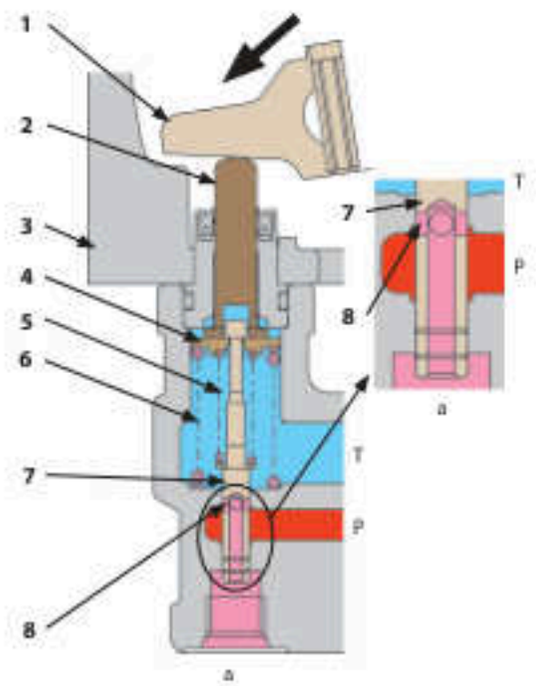


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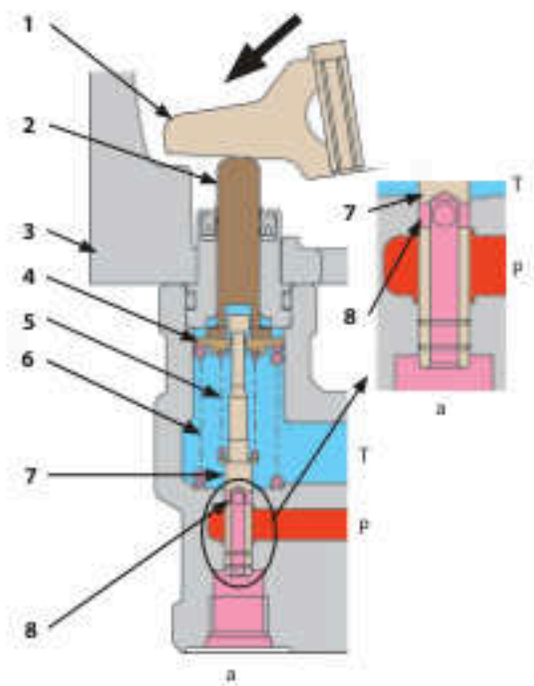


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Travel Pilot Valve



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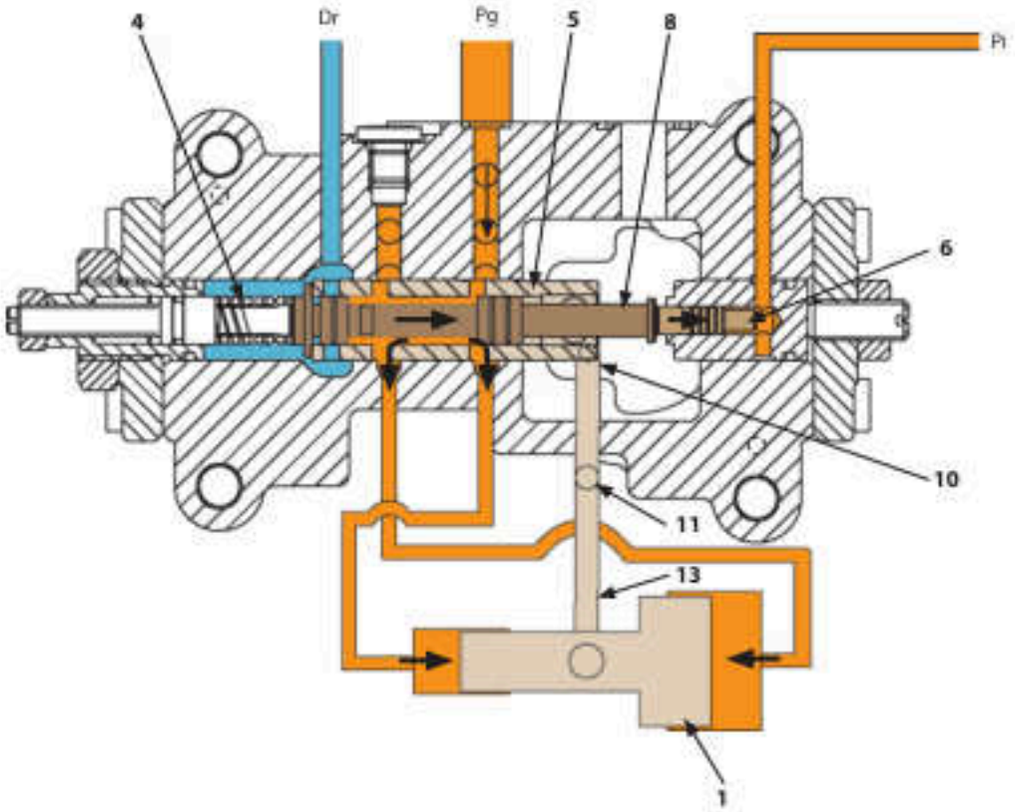


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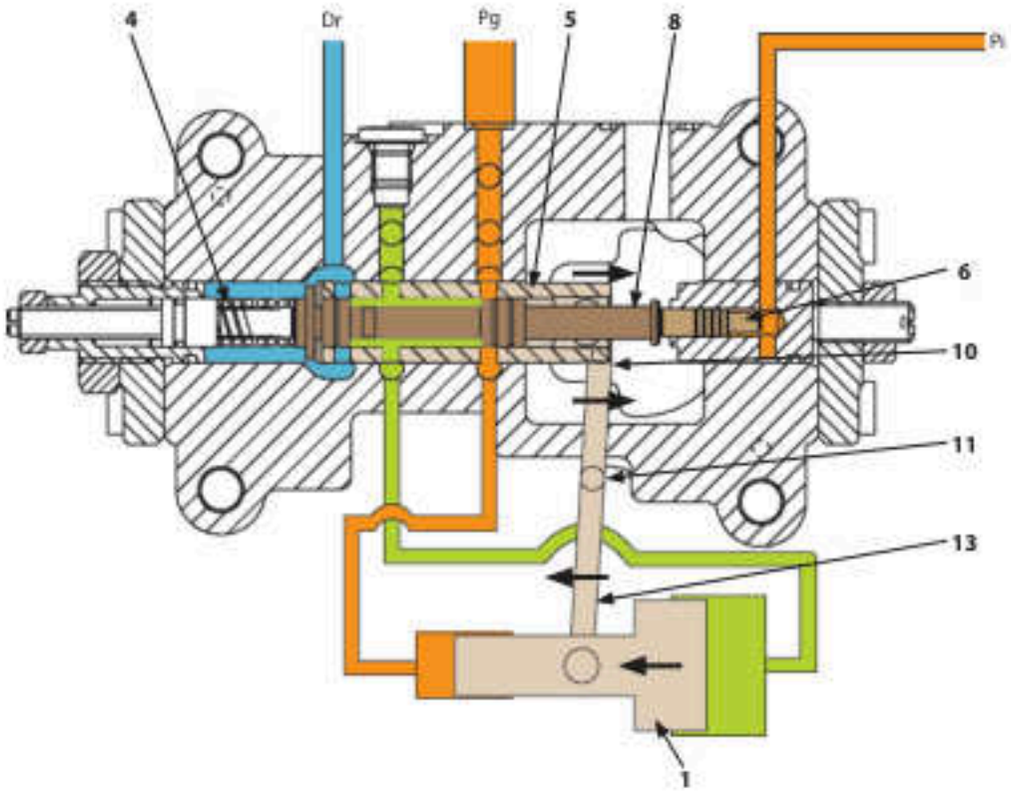
P- Port P
T- Port T
a- Output Port

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

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TJBA-03-01-022

Dr- Returning to Hydraulic Oil Tank
Pi- Flow Rate Control Pressure
Pg- Primary Pilot Pressure (From Pilot Pump)

1- Servo Piston
4- Spring
5- Sleeve
6- Piston
8- Spool
10- Pin
11- Pin
13- Link

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