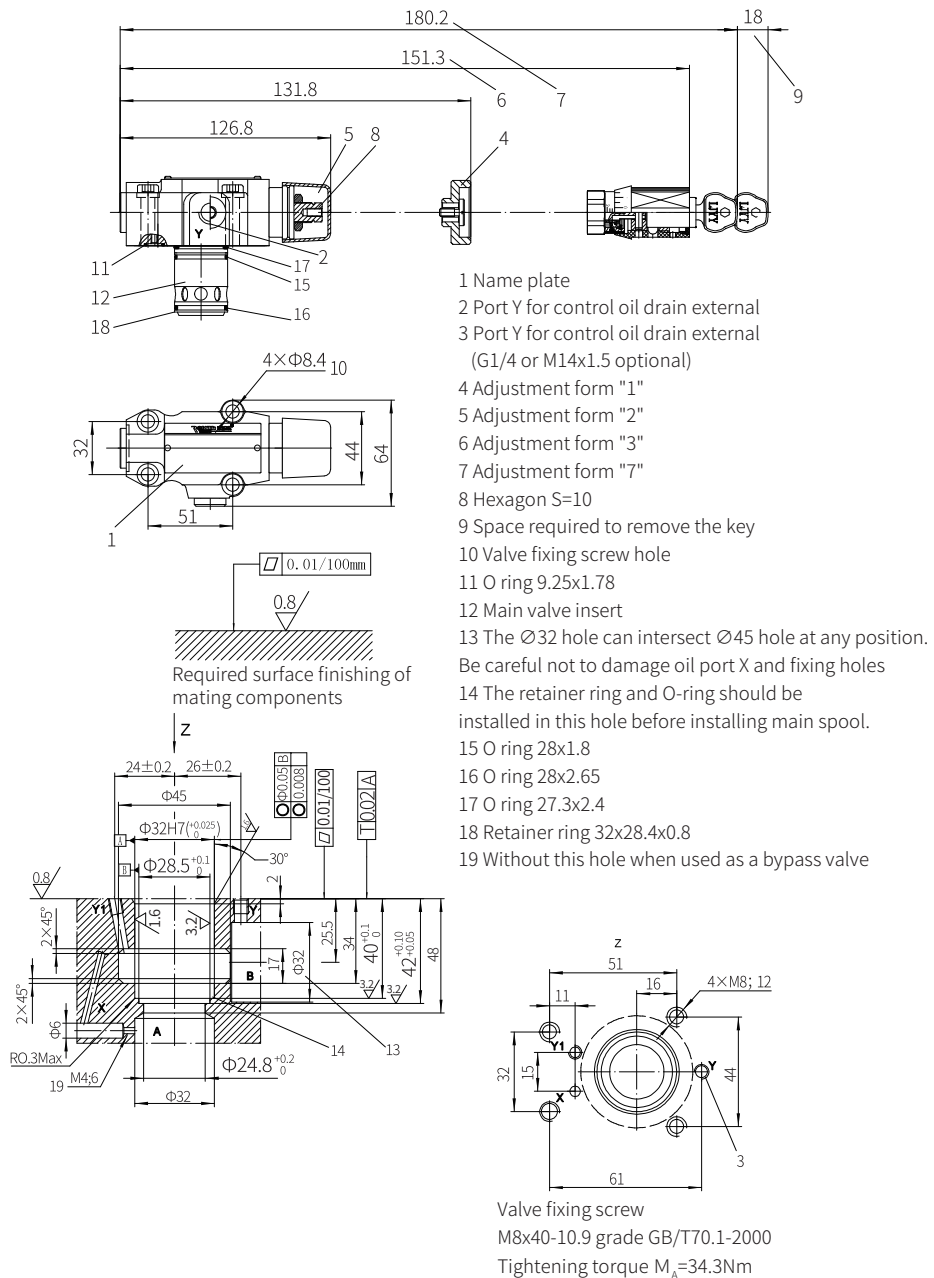


Component size

Size unit: mm

With (DZC10 or 30) or without DZC



Pilot Operated Unloading Pressure Relief Valve

Model: DA/DAW...3XJ



- ◆ Size 10, 25, 32
- ◆ Maximum working pressure 315 bar
- ◆ Maximum flow rate 250 L/min

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Features

- For subplate mounting
- 3 adjusting elements
 - Rotary knob
 - Hexagon screw with sleeve and protective cap
 - Lockable rotary knob with scale
- 3 pressure ranges
- Solenoid operated unloading by a built-on directional valve

Function description, sectional drawing

The DA/DAW pressure control valve is pilot operated pressure shut-off valve. It is used to switch the pump flow to pressureless bypass when the accumulator loading pressure is reached. The other applications of the valve is in high/low pressure pump system. In this application, the low pressure pump is switched to pressureless bypass when the pressure reaches the high pressure setting value.

The valve is composed of main valve (12) with main spool assembly (6), pilot valve (2) with pressure adjusting element and check valve (1). For size 10 valve, the check valve (1) is installed in the main valve (12). For size 25 and 32, the check valve (1) is built into a separate subplate installed under the main valve (12).

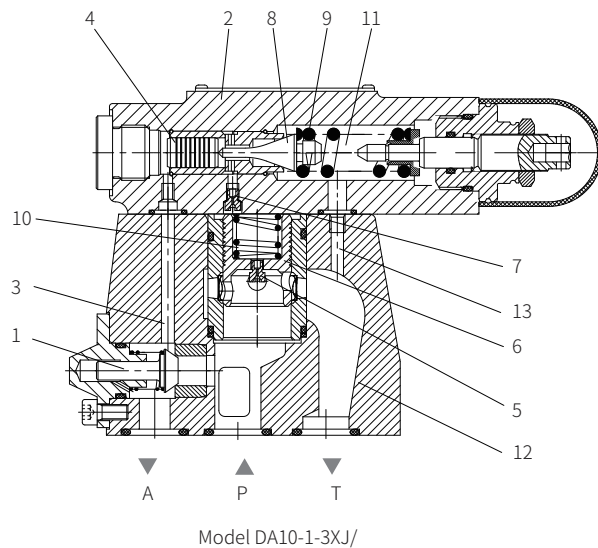
Pressure shut-off valve mode DA

Diverting the pump flow from P to A - P to T.

The pump supply oil for hydraulic system (P to A) via check valve (1). The pressure in port A acts on pilot valve spool (4) via control line (3). At same time, pressure in port P passes to the spring chamber of main spool (6) and conical spool (8) of pilot valve (2) via orifices (5) and (7). The conical spool lifts off its valve seat against the spring (9) when the setting cut-off pressure of hydraulic system is reached. The fluid flows into spring chamber (11) via orifices (5) and (7), or the fluid returns to tank external via control line (13) in model DA...3XJ...Y.

Due to orifices (5) and (7), there is pressure drop in the main spool (6). Then the main valve spool (6) lifts off its seat and opens the connection from P to T. And the check valve (1) closes the connection from A to P.

Now the poppet valve (8) is kept opening by the system pressure via pilot valve spool (4).



Function description, sectional drawing

Diverting the pump flow from P to T - P to A.

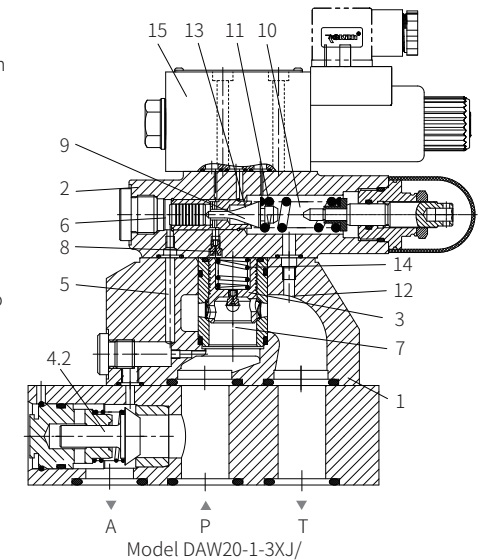
The area of the pilot valve spool (6) is 17% greater than the effective area of the conical spool (9), thus the effective force on the pilot valve spool (6) is 17% greater than the effective force on the conical spool (9).

When the actuator pressure drop to equal the cut-off pressure of the valve that corresponds to the switching pressure differential, the spring (11) pushes the poppet valve (9) on to its seat. The pressure is

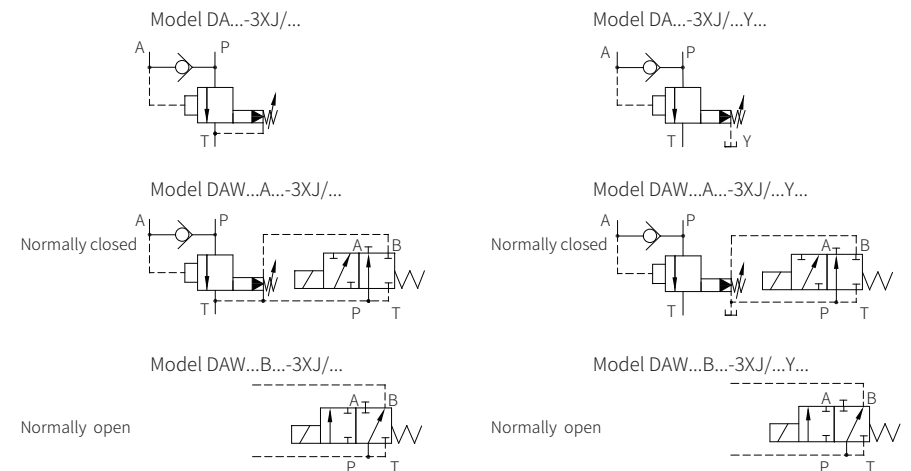
built up on the spring loaded side of the main spool (3). In conjunction with spring (14), the main spool (3) is closed and the connection from port P to T is isolated. The pump flow passes again via the check valve (4) into the hydraulic system (P to A).

Pressure shut-off valve model DAW

The function of this valve is basically the same as the DA valve but a solenoid valve (15) is installed on the pilot valve. The switch from P to A or P to T can be achieved under the set pressure by the pilot valve.



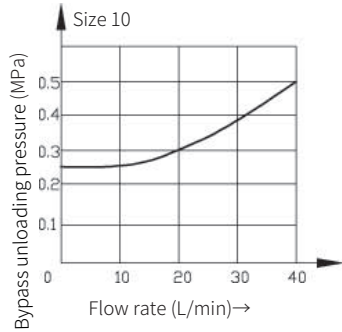
Functional symbols



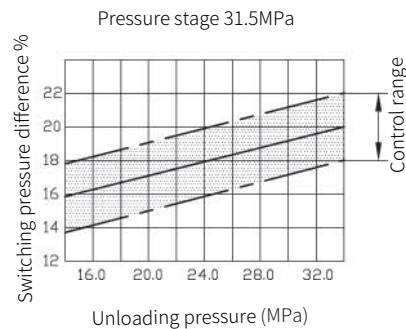
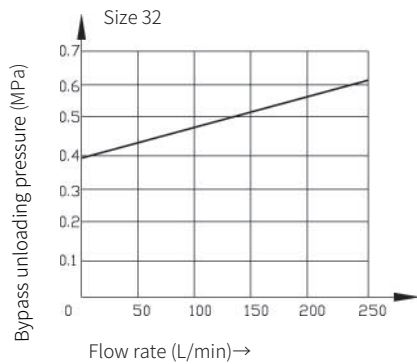
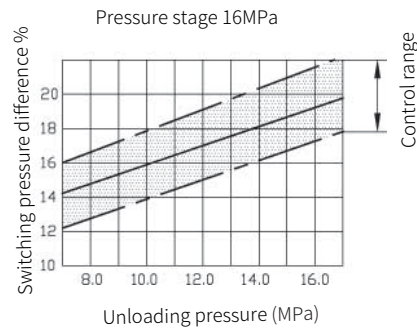
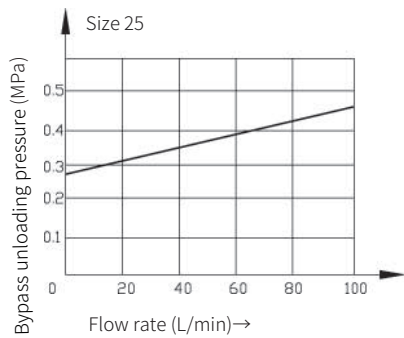
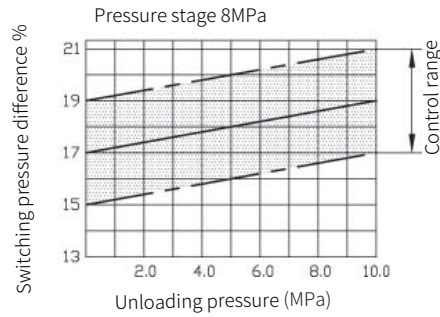
Characteristic curve

(Measured when using HLP46, $t_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$)

Bypass pressure in relation to the pump flow $q_{vp}(P \rightarrow T)$



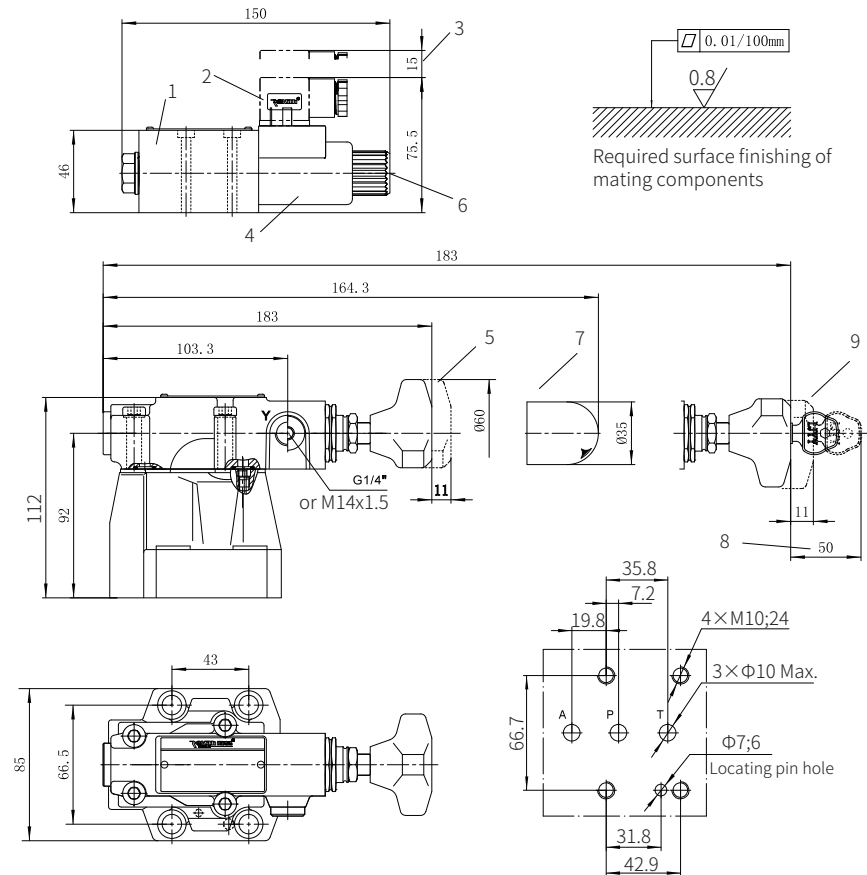
Switching pressure difference in relation to the unloading pressure (P → A)



Component size

Size unit: mm

Model DA/DAW10...-3XJ/...



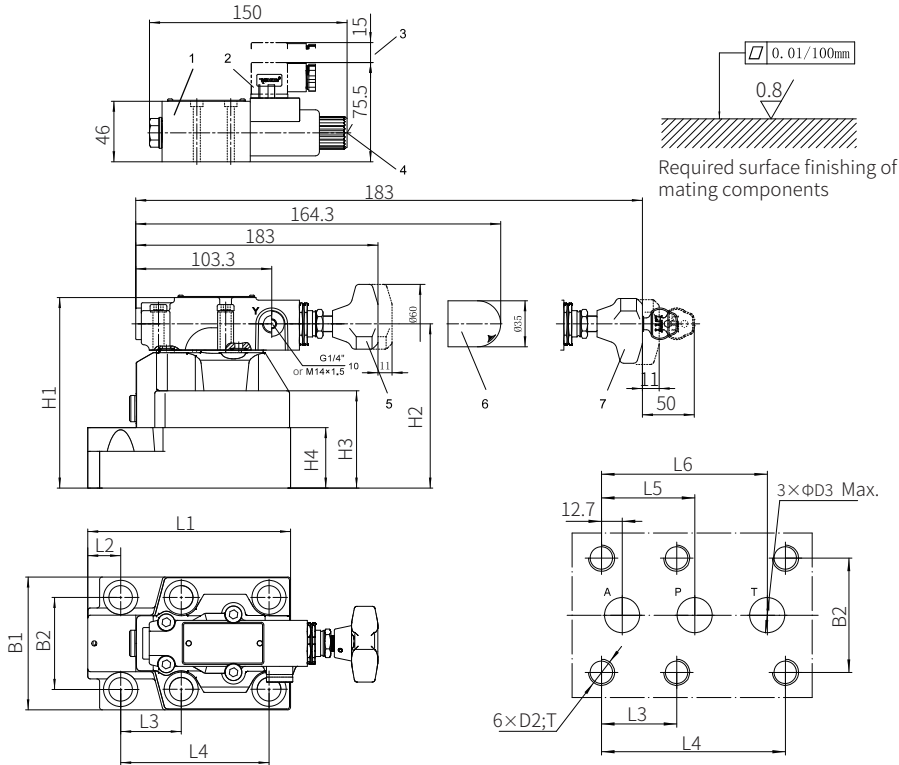
Valve fixing screw
M10x50-10.9 grade GB/T70.1-2000
Tightening torque $M_A=60\text{Nm}$
It must be ordered separately
if connection subplate is needed.
Subplate model:
G467/01; G467/02
G468/01; G468/02

1 Solenoid pilot valve
2 Plug
3 Space required to remove the plug
4 Solenoid
5 Adjustment form "1"
6 Hidden emergency operation
7 Adjustment form "2"
8 Space required to remove the key
9 Adjustment form "3"

Component size

Size unit: mm

Model DA/DAW20...-3XJ/...and DA/DAW30...-3XJ/...



Size	L1	L2	L3	L4	L5	L6	H1	H2	H3
25	162	25	46	112.7	57.1	101.6	144	124	72
32	198.7	41.5	50.8	139.7	63.5	127	165	145	93
Size	H4	B1	B2	D1	D2	D3	T		
25	46	101	69.9	18	M16	22	34		
32	67	116	82.5	20	M18	30	37		

- 1 Solenoid pilot valve
- 2 Plug
- 3 Space required to remove the key
- 4 Hidden emergency operation
- 5 Adjustment form "1"
- 6 Adjustment form "2"
- 7 Adjustment form "3"

It must be ordered separately if connection subplate is needed.

Subplate model:

NG25: G469/01; G469/02;

G470/01; G470/02

NG32: G471/01; G471/02;

G472/01; G472/02

Valve fixing screw

NG25:

4xM16x100-10.9 grade

2xM16x60-10.9 grade

GB/T70.1-2000

Tightening torque $M_A=196\text{Nm}$

NG32:

4xM18x120-10.9 grade

2xM18x80-10.9 grade

GB/T70.1-2000

Tightening torque $M_A=260\text{Nm}$

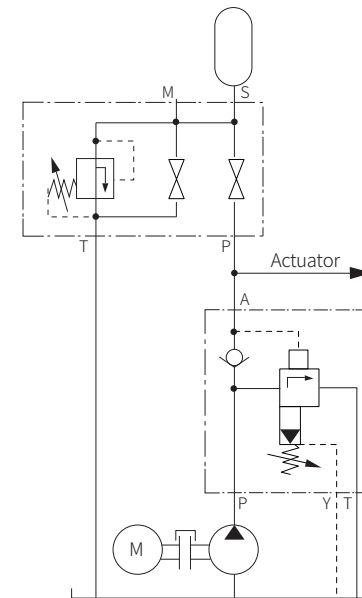
Application example

Hydraulic system with accumulator:

installation notes:

- The connection resistance between DA valve and accumulator must be as low as possible

The pilot valve of DA is separately connected to the accumulator when the resistance is high.



Hydraulic system with high and low pressure pump: With high pump flow and small switching pressure differential values (10%), "Y" version valves should preferably be used.

