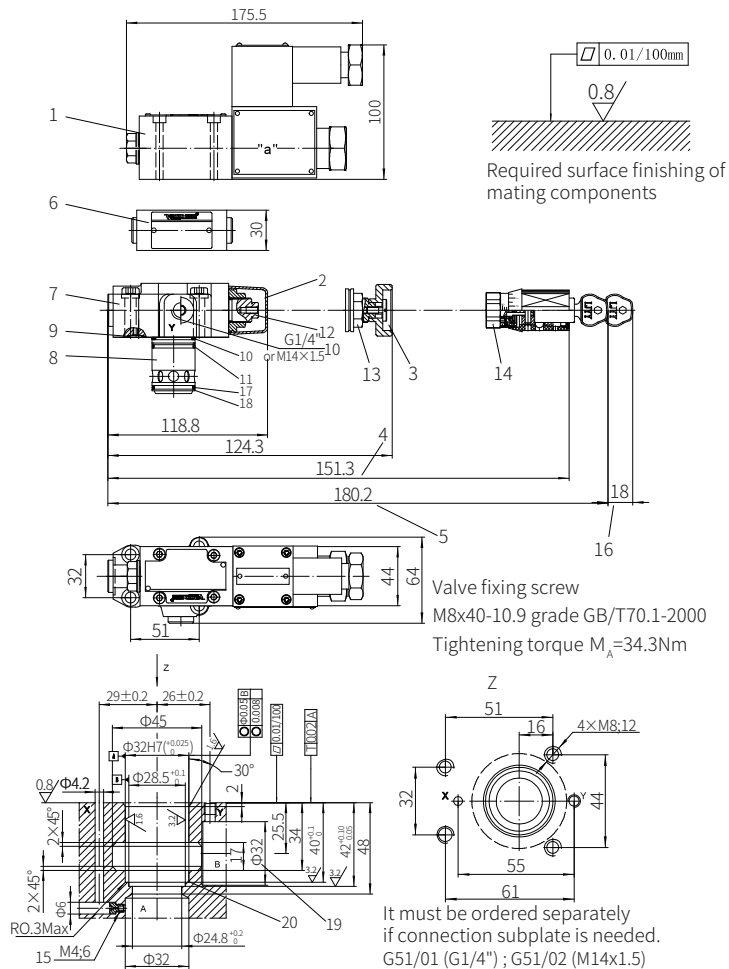


Component size

Size unit: mm

With(G-DBWC10 or 30) or without (G-DBWC)



- 1 Solenoid valve
- 2 Adjustment form "2"
- 3 Adjustment form "1"
- 4 Adjustment form "3"
- 5 Adjustment form "7"
- 6 With switching shock damping valve
- 7 Primary pilot valve
- 8 Main spool
- 9 O ring 9.25x1.78
- 10 O ring 28x2.65
- 11 O ring 28x1.8

- 12 External hexagon screw S=10
- 13 Hexagon nut S=24
- 14 External hexagon screw S=24
- 15 Throttle must be ordered separately
- 16 Space required to remove the key
- 17 O ring 27.3x2.4
- 18 Retainer ring 32x28.4x0.8
- 19 The $\varnothing 32$ hole can intersect $\varnothing 45$ hole at any position.
Be careful not to damage oil port X and fixing holes.
- 20 The retainer ring and O-ring should be installed in this hole before install main spool.

Explosion-proof Pilot Operated Unloading Pressure Relief Valve

Model: G-DAW...5XJ



- ◆ Size 10 to 32
- ◆ Maximum working pressure 315 bar
- ◆ Maximum flow rate 240 L/min

Contents

Function description, sectional drawing	02
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Models and specifications	03
Technical parameters	04
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Component size	06-08
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Features

- For subplate mounting
- For manifolds mounting
- 4 adjusting elements
- 4 pressure ranges
- Unload by the installed explosion-proof directional valve

Function description, sectional drawing

The G-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 application of the valve is in high/low pressure pump system. In this application, the low pressure is switched to pressureless bypass when pressure reaches the high pressure setting value.

The valve is composed of main valve (1) with main spool assembly (3), pilot valve (2) with pressure adjusting element and check valve (4). For size 10 valve, the check valve (4) is installed in main valve (1). For size 25 and 32, the check valve (4) is built into a separate subplate installed under the main valve (1).

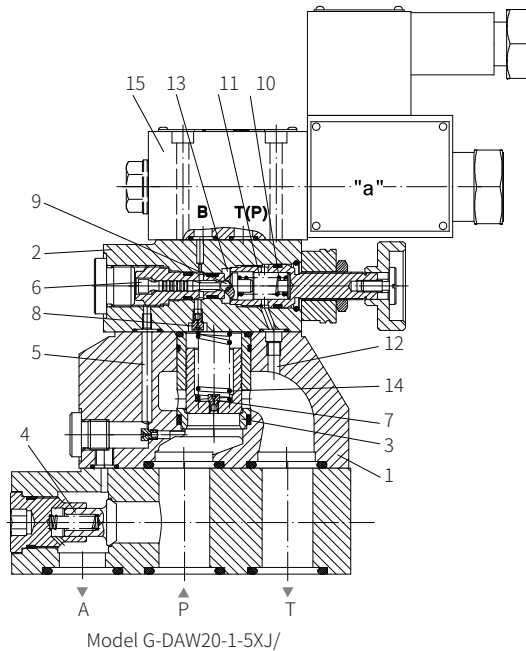
Diverting the pump flow from P to A - P to T

The pump supply oil for hydraulic system (P to A) via check valve (4). The pressure in port A acts on pilot valve spool (6) via control line (5). At same time, pressure in port P passes to the spring chamber of main spool (3) and conical spool (9) of pilot valve (2) via orifices (7) and (8). The conical spool lifts its valve seat against the spring force (10) when the setting cut-off pressure of the hydraulic system is reached. The fluid flows into spring chamber (11) via orifices (7) and (8), or the oil returns to tank external via control line (12) in model G-DAW...5XJ...Y.

Due to orifices (7) and (8), there is pressure drop in the main spool (3). The main spool (3) lifts off its seat and opens the connection from P to T. and the check valve (4) closes the connection from A to P. Now the poppet valve (9) is kept opening by the system pressure via pilot valve spool (6).

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

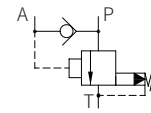
The area of the pilot spool (6) is 10% or 17% greater than the effective area of the conical spool (9), thus the effective force on the pilot valve spool (6) is 10% or 17% greater than the effective force on the conical spool (9). When the actuator pressure drop to equal the cut-off pressure of the valve that corresponds to the switching pressure differential, the spring (10) 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). The solenoid direction valve (15) can switch the setting shut-off pressure of the pilot valve (2) either from P to A or P to T.



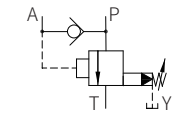
Model G-DAW20-1-5XJ/

Functional symbols

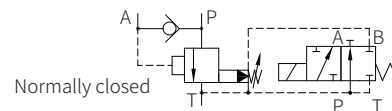
Model DA...-5XJ/...



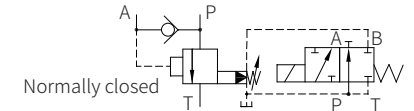
Model DA...-5XJ/...Y...



Model DAW...A...-5XJ/...



Model DAW...A...-5XJ/...Y...



Model DAW...B...-5XJ/...



Model DAW...B...-5XJ/...Y



Models and specifications

explosion-proof class I =G1	explosion-proof class II =G2	with directional valve =W	pilot valve =No code	pilot valve without main spool insert (no mark for size) =C	pilot valve with main spool insert (mark with size 30) =C	size 10 =10	size 25 =20	size 32 =30	DA	5X	J	*	more information in text
													sealing material
													No code= NBR seals
													V= FKM seals (consult for other seals)
													N9= with hidden manual emergency operation
													G24= DC 24V
													B36= AC rectified 36V
													B127= AC rectified 127V
													B220= AC rectified 220V
													C= with directional valve
													No code= pilot control oil drain internal
													Y= pilot control oil drain external
													switching pressure differential (P-A)
													10= on average 10 %
													17= on average 17 %
													pressure range
													50= pressure setting up to 50 bar
													100= pressure setting up to 100 bar
													200= pressure setting up to 200 bar
													315= pressure setting up to 315 bar
													Note:
													G1 explosion-proof grade EXD I
													G2 explosion-proof grade EXD II CT4
													Rekith =J

Technical parameters

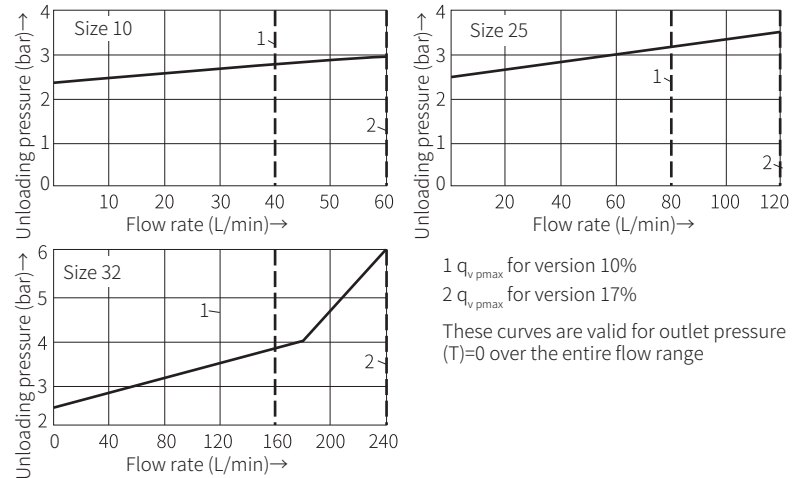
Hydraulic			
Maximum working pressure	port P	bar	315
	port A	bar	315(after switching from P to T)
Hydraulic oil		Mineral oil (HL, HLP) ¹⁾ in accordance with DIN 51524; Fast living organisms degraded oil according to VDMA 24568; HETG (Rapeseed oil) ¹⁾ ; HEPG(Polyethyleneglycol) ²⁾ ; HEES (Synthetic Fats) ²⁾	
Oil temperature range		°C	-30 to +80 (NBR seal)
		°C	-20 to +80 (FKM seal)
Viscosity range		mm ² /s	10 to 800
Maximum flow	Type 10%	L/min	40
	Type 17%	L/min	60
Cleanliness of oil ³⁾	The maximum allowable pollution level of oil is ISO4406 Class 20/18/15		
Maximum setting pressure	50; 100; 200; 315		

- 1) For NBR seal and FKM seal.
- 2) Only for FKM seal.
- 3) The oil must meet the cleanliness degree requested by the components in the hydraulic system. Effective oil filtration can prevent failure and increase the service life of the components.

Characteristic curve

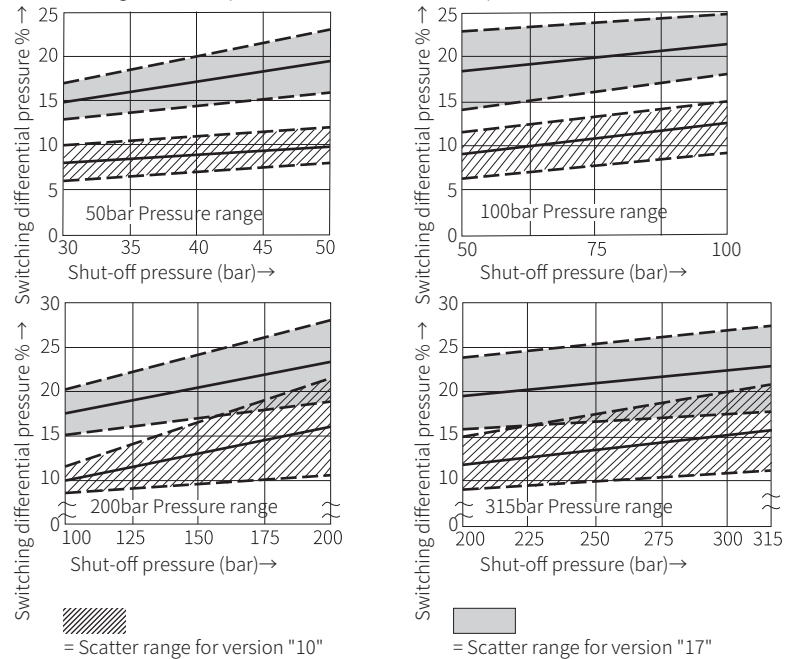
(Measured when using HLP46, $\vartheta_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$)

Unloading pressure (P→T)



1 $q_{v_{pmax}}$ for version 10%
2 $q_{v_{pmax}}$ for version 17%
These curves are valid for outlet pressure (T)=0 over the entire flow range

Switching differential pressure in relation to shut-off pressure (P→A)



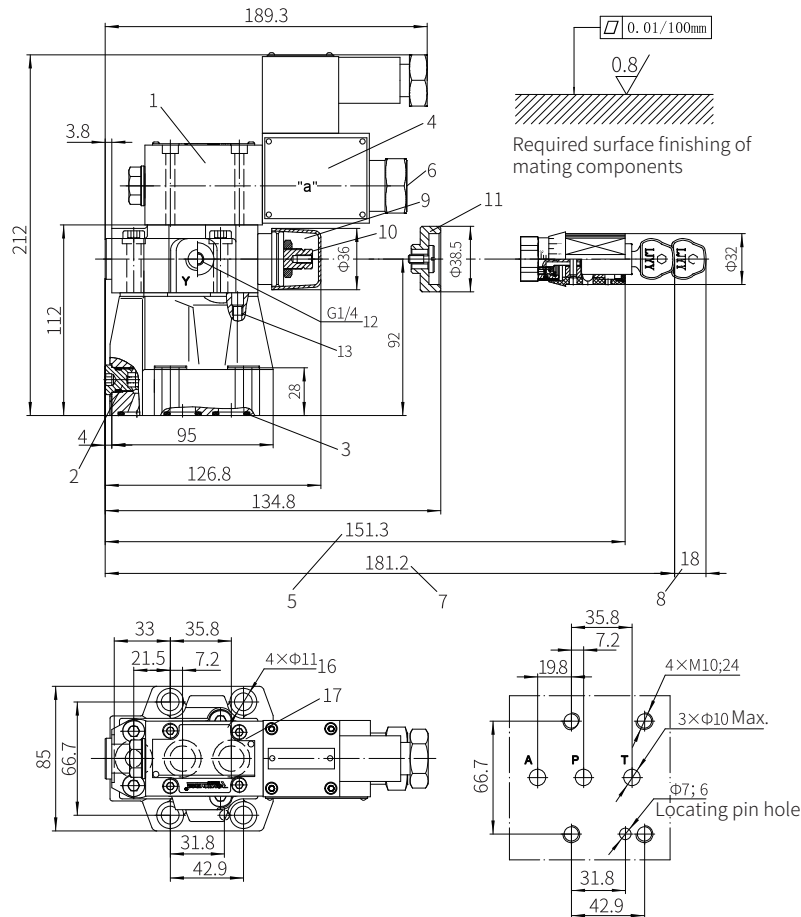
= Scatter range for version "10"

= Scatter range for version "17"

Component size

Size unit: mm

Model G-DAW10...-5XJ/...



Valve fixing screw
 M10x50-10.9 grade GB/T70.1-2000
 Tightening torque $M_A=75\text{Nm}$
 It must be ordered separately
 if connection subplate is needed.
 G467/01; G467/02
 G468/01; G468/02

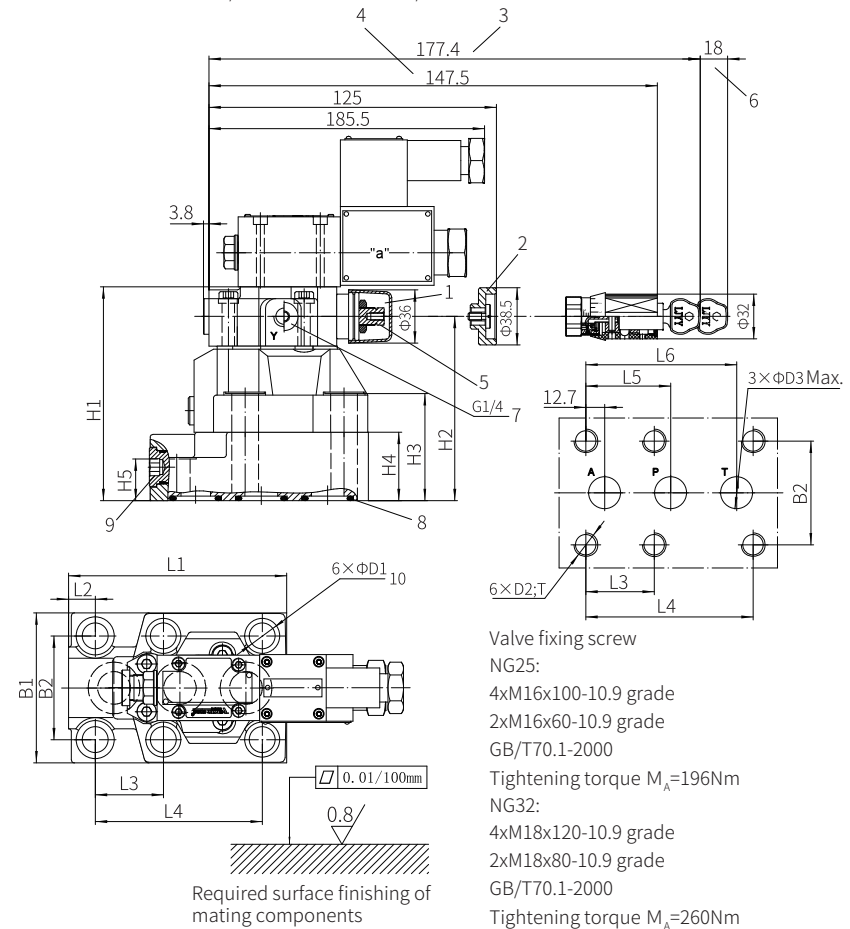
1 Solenoid pilot valve
 2 Built-in check valve
 3 O ring 17.12x2.62
 4 Solenoid
 5 Adjustment form "7"
 6 Hidden emergency
 operation
 7 Adjustment form "5"
 8 Space required to remove the key
 9 Adjustment form "2"

10 Hexagon S=10
 11 Adjustment form "1"
 12 Port Y for control oil drain
 external
 13 Omitted with internal
 pilot oil drain

Component size

Size unit: mm

Model G-DAW20...-5XJ/...and G-DAW30...-5XJ/...



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 $M_A=260\text{Nm}$

Size	L1	L2	L3	L4	L5	L6	H1	H2	H3
25	147	18	46	112.7	57.1	101.6	144	124	72
32	189.2	32	50.8	139.7	63.5	127	165	145	93
Size	H4	H5	B1	B2	D1	D2	D3	T	
25	46	28	101	69.9	18	M16	22	34	
32	67	45	116	82.5	20	M18	30	37	

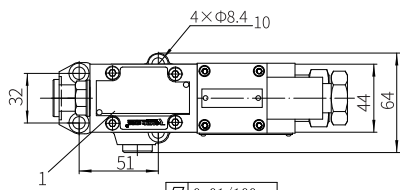
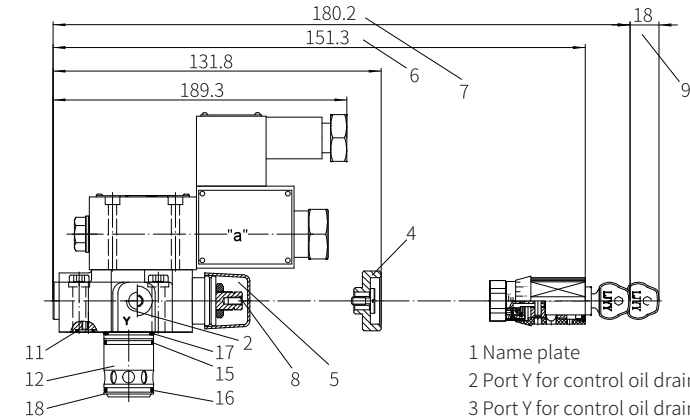
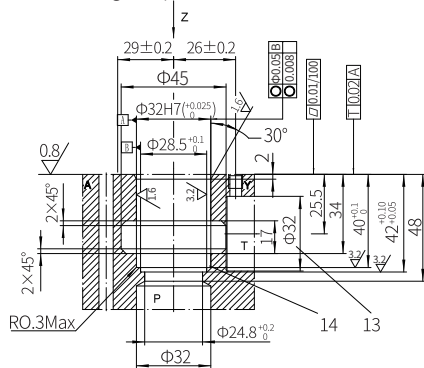
It must be ordered separately if connection subplate is needed.
 Subplate model:
 NG25: G469/01; G469/02; G470/01; G470/02
 NG32: G471/01; G471/02; G472/01; G472/02

1 Adjustment form "1"
 2 Adjustment form "2"
 3 Adjustment form "5"
 4 Adjustment form "7"
 5 Hexagon S=10
 6 Space required to remove the
 key
 7 Port Y for control oil drain
 external
 8 O ring
 9 Built-in check valve
 10 Valve fixing screw hole

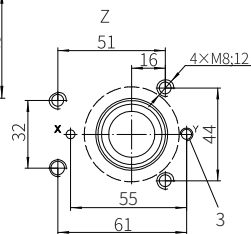
Component size

Size unit: mm

With (G-DAWC10 or 30) or without (G-DAWC)


 Required surface finishing of
 mating components


- 1 Name plate
- 2 Port Y for control oil drain external
- 3 Port Y for control oil drain external
(G1/4 or M14x1.5 optional)
- 4 Adjustment form "1"
- 5 Adjustment form "2"
- 6 Adjustment form "5"
- 7 Adjustment form "7"
- 8 Hexagon S=10
- 9 Space required to remove the key
- 10 Valve fixing screw hole
- 11 O ring 9.25x1.78
- 12 Main valve insert
- 13 The Ø32 hole can intersect Ø45 hole at any position
Be careful not to damage oil port X and fixing holes
- 14 The retainer ring and O-ring should be installed in
this hole before installing main spool.
- 15 O ring 28x1.8
- 16 O ring 28x2.65
- 17 O ring 27.3x2.4
- 18 Retainer ring 32x28.4x0.8

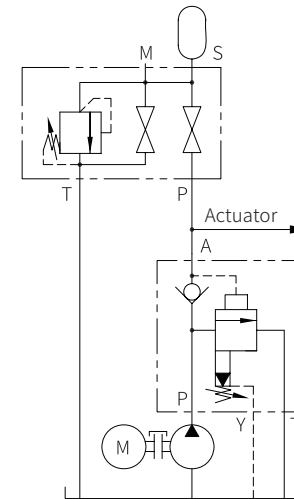
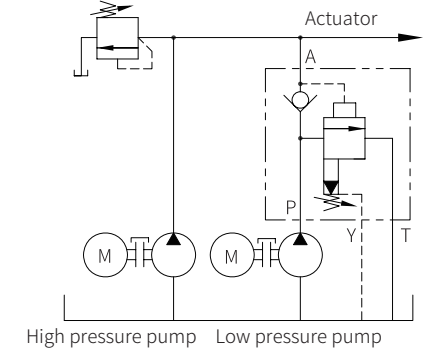

 Valve fixing screw
 M8x40-10.9 grade GB/T70.1-2000
 Tightening torque $M_A=34.3\text{Nm}$

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.


High pressure pump Low pressure pump