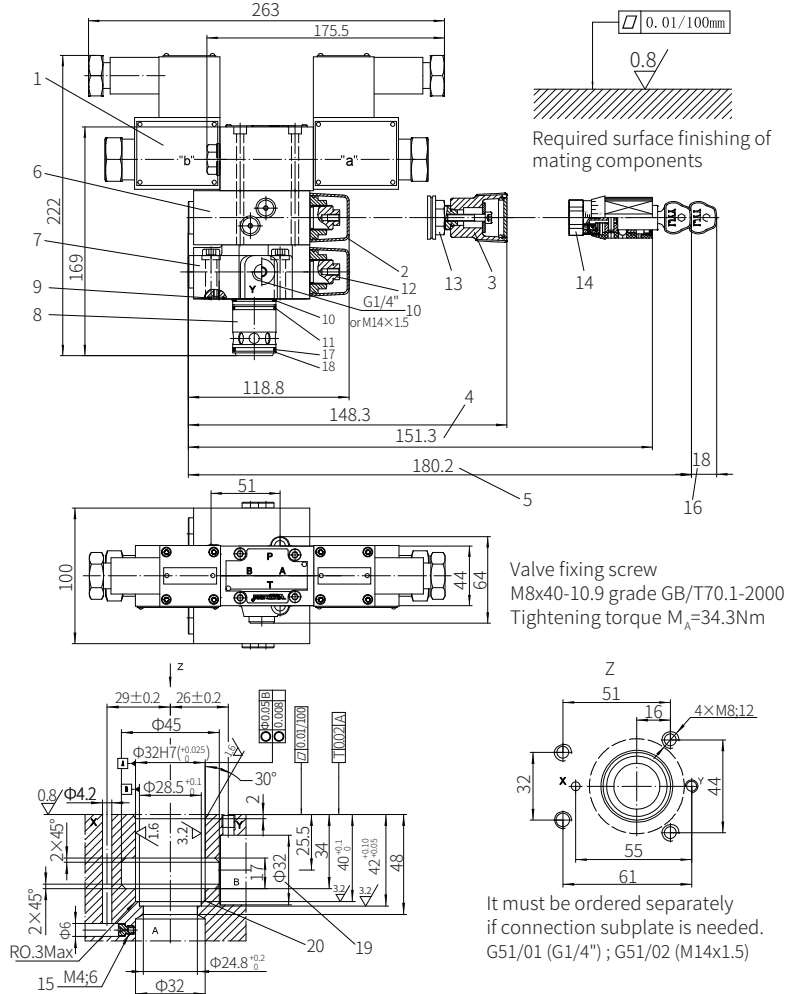


Component size

Size unit: mm

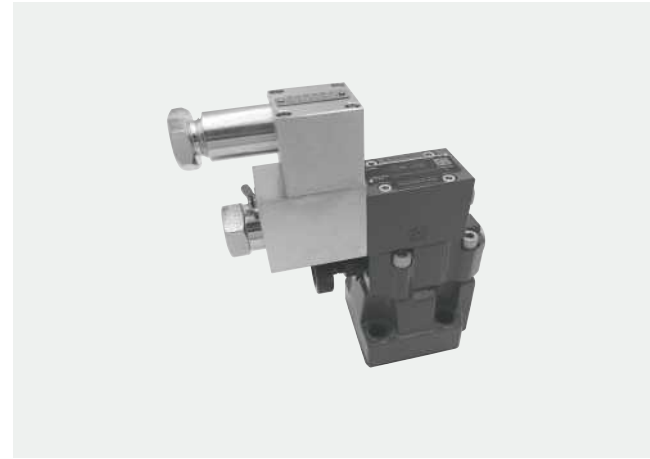
With (G-DBC3U10 or 30) or without (G-DBC3U)



- 1 Solenoid directional valve (type H, type D, optional)
- 2 Adjustment form "2"
- 3 Adjustment form "1"
- 4 Adjustment form "3"
- 5 Adjustment form "7"
- 6 Secondary or tertiary pilot 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 order separately
- 16 Space required to remove the key
- 17 O ring 27.3x2.4
- 18 Retainer ring 32x28.4x0.8
- 19 The Φ32 hole can intersect Φ45 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 position

Explosion-proof Solenoid Pilot Relief Valve

Model: G-DBW...5XJ



- ◆ Size 10 to 32
- ◆ Maximum working pressure 350 bar
- ◆ Maximum flow rate 650 L/min

Contents

Function description, sectional drawing	02-03
Models and specifications	04-05
Functional symbols	06
Technical parameters	06
Characteristic curve	07
Component size	08-10

Features

- Subplate mounting, threaded connection, manifolds installation
- 5 setting pressure ranges
- Pressure adjusting elements: Rotary knob
- Inner hexagon screw with protective cap

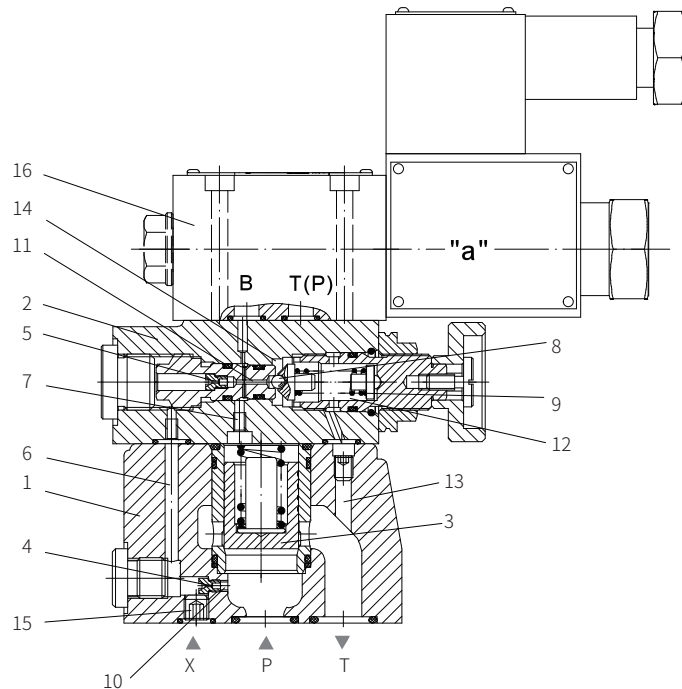
Function description, sectional drawing

The G-DBW pressure control valve is pilot operated relief valve, it is used to limit and unload working pressure by solenoids.

The valve is basically composed of main valve (1) with main spool inserted (3) and pilot valve (2) with pressure adjustment element.

The pressure of port P acts on the main spool (3), meanwhile, the pressure is applied via control lines (6) and (7) with orifices (4) and (5) to the spring loaded side of the main spool (3) and on the ball (8) in the pilot valve (2). When the pressure in port P rises excess the spring setting pressure, the ball (8) overcomes the spring pressure (9) to open the pilot valve.

The signal is obtained internally via the control channels (10) and (6) from port P. The oil fluid on the spring loaded side of the main spool (3) flows into spring chamber (12) via control line (7), throttle (11) and ball (8). Thus, hydraulic oil external drain via control line (14) into the tank for model DBW...Y. Because of throttles (4) and (5), the pressure drop occurs at the main spool (3) and the connection from port P to port T is opened. The fluid flows from port P to port T while the setting working pressure is no changing. The pressure relief valve can unload or shift the different pressure (second pressure stage) by "X" port.



Model G-DBW10-1-5XJ/

Function description, sectional drawing

Solenoid pilot relief valve with switching shock damping(sandwich), model G-DBW.../..S...R12

The connection from B2 to B1 opens with delay when switching shock damping valve (17) used, it can prevent pressure peaks and unloading shocks in the return line. The valve is installed between pilot valve and directional control valve (16). The degree of damping (unloading shock) depends on the size of throttle (18). Throttle $\varnothing 1.2\text{mm}$ is used as standard size (ordering code...R12...).

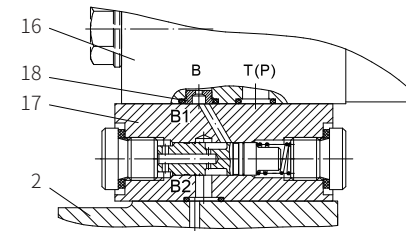
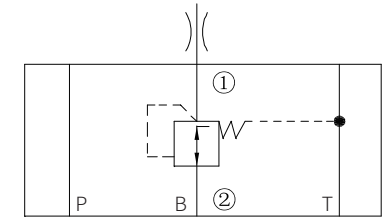
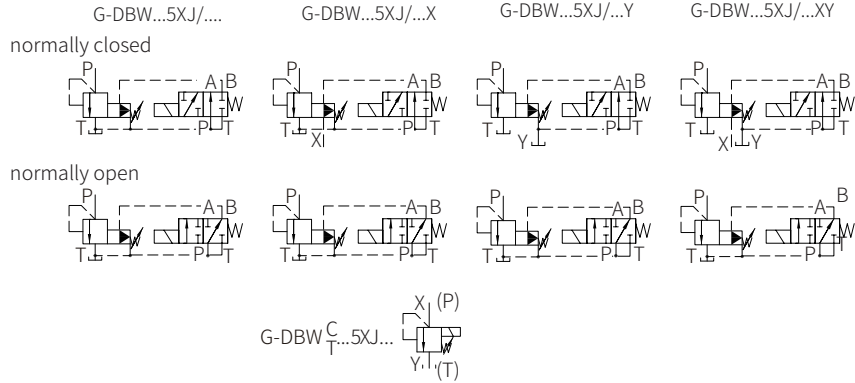


Illustration: directional valve opened



- The unloading function (directional valve function of DBW) cannot be used as safety function!
- When power off or cable breakage, Model DBW... B.. 5XJ/... should use the minimum setting pressure (circulation pressure).
- When power off or cable breakage, the pressure relief function of model DBW...A...5XJ/...is launched.
- The back pressure of pilot oil internal drain in port T or external drain in port Y is 1:1 added in pilot control pressure.

Functional symbols



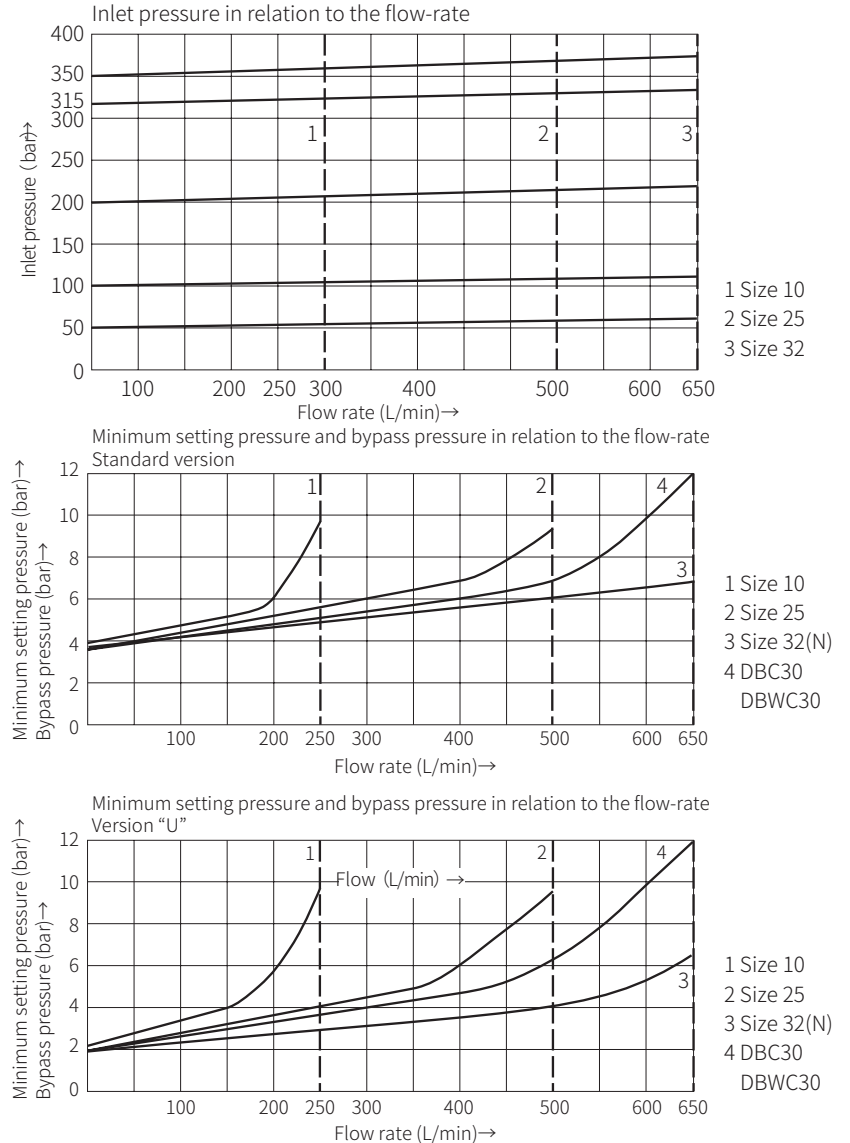
Technical parameters

Installation position		Optional					
		G-DBW...10	G-DBW...15	G-DBW...20	G-DBW...25	G-DBW...30	
Weight	Subplate mounting G-DBW	kg	About 5.6	-	About 6.5	-	About 7.9
	Threaded connection G-DBW..G..	kg	About 7.9	About 7.8	About 7.7	About 8.5	About 8.4
	Switching shock damping	kg	About 0.6				
Technical parameters of directional valve		Directional valve is explosion- proof solenoid directional valve. G-3WE6A for normally closed type; G-3WE6B for normally open type					
Hydraulic							
Maximum working pressure	port P, X	MPa	35.0				
	port T	MPa	21				
Maximum setting pressure		MPa	5.0; 10.0; 20.0; 31.5; 35.0				
Minimum setting pressure		MPa	Interrelated with flow (see the curve)				
Maximum flow	Subplate mounting	L/min	250	-	500	-	650
	Threaded connection	L/min	250	500	500	500	650
Oil fluid	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) -20 to +80 (FRM seal)				
Viscosity range		mm ² /s	10 to 800				
Cleanliness of oil ³⁾	The maximum allowable pollution level of oil is ISO4406 Class 20/18/15						

- 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

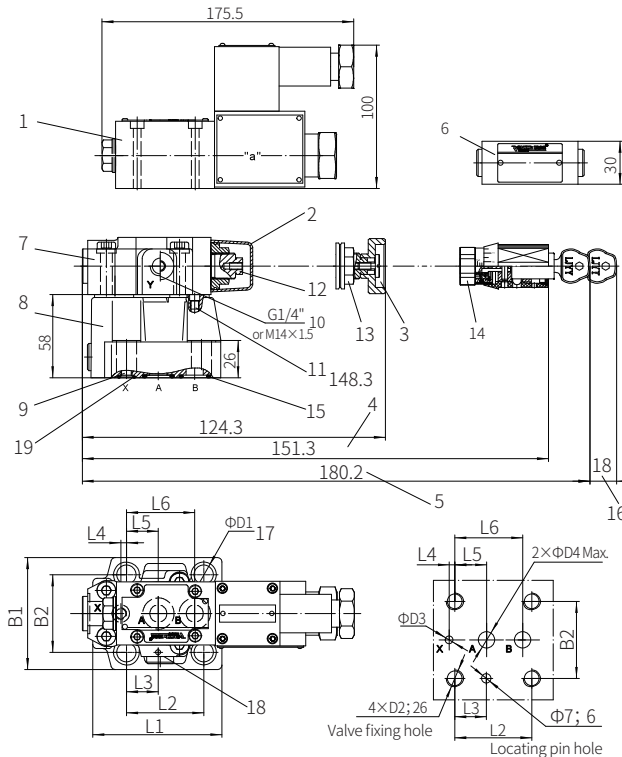
(Measured when using HLP46, $\vartheta_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$)



Component size

Size unit: mm

Subplate mounting valve, model G-DBW...-5XJ/...



Valve fixing screw
 NG10:
 M12x50-10.9 grade
 GB/T70.1-2000
 Tightening torque $M_A=95\text{Nm}$
 NG25:
 M16x50-10.9 grade
 GB/T70.1-2000
 Tightening torque $M_A=196\text{Nm}$
 NG32:
 M18x50-10.9 grade
 GB/T70.1-2000
 Tightening torque $M_A=260\text{Nm}$

Size	L1	L2	L3	L4	L5	L6	B1	B2	D1	D2	D3	D4
10	90	53.8	22.1	0	22.1	47.5	78	53.8	14	M12	6	12
20	117	66.7	33.4	23.8	11.1	55.6	100	70	18	M16	6	22
30	149.3	88.9	44.5	31.8	12.7	76.2	115	82.6	20	M18	7	30

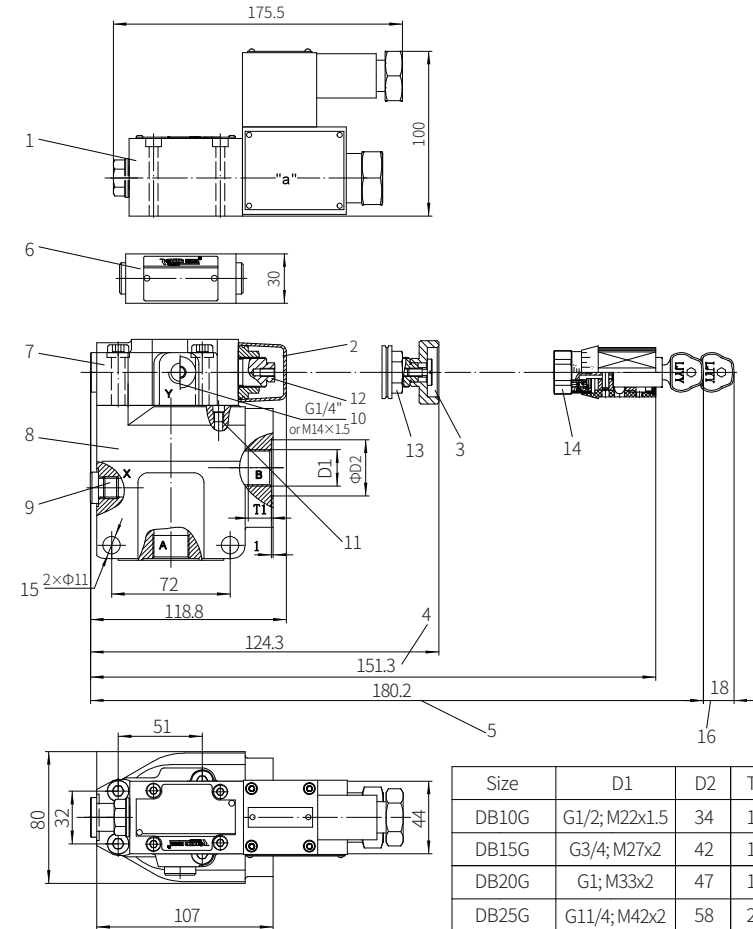
- 1 Solenoid valve
- 2 Adjustment form "2"
- 3 Adjustment form "1"
- 4 Adjustment form "3"
- 5 Adjustment form "7"
- 6 With switching shock damping valve, optional
- 7 Pilot valve
- 8 Main valve
- 9 Port X for external pilot oil supply
- 10 Port Y for external pilot oil drain (G1/4" and M14x1.5 optional)
- 11 Omitted with internal pilot oil drain
- 12 External hexagon screw S=10
- 13 Hexagon nut S=24
- 14 External hexagon screw S=24
- 15 O-ring 17.12x2.62 (for port A, B)
- 16 Space required to remove the key
- 17 Valve screw fixing holes
- 18 Locating pin hole
- 19 O-ring 9.25x1.78 (for port X)

It must be ordered separately if connection subplate is needed.
 NG10 subplate model:
 G545/01 (G3/8"); G545/02 (M18x1.5)
 G546/01 (G1/2"); G546/02 (M22x1.5)
 NG25 subplate model:
 G408/01 (G3/4"); G408/02 (M27x2)
 G409/01 (G1"); G409/02 (M33x2)
 NG32 subplate model:
 G410/01 (G1 1/4"); G410/02 (M42x2)
 G411/01 (G1 1/2"); G411/02 (M48x2)

Component size

Size unit: mm

Threaded connection valve, model G-DBW...-5XJ/...



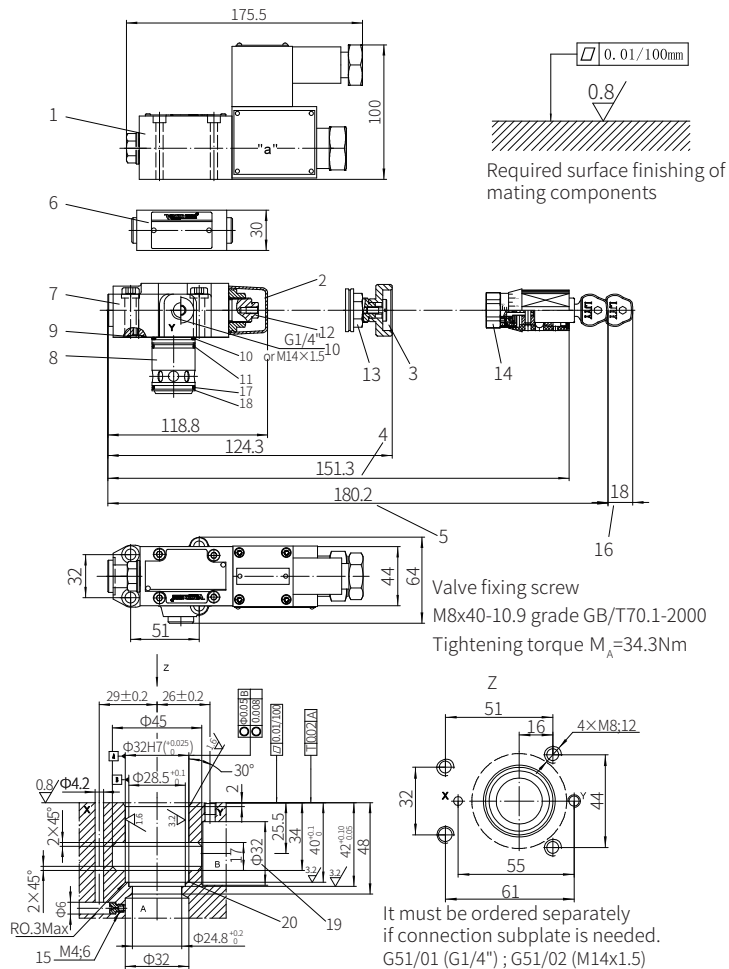
- 1 Solenoid valve
- 2 Adjustment form "2"
- 3 Adjustment form "1"
- 4 Adjustment form "3"
- 5 Adjustment form "7"
- 6 With switching shock damping valve, optional
- 7 Pilot valve
- 8 Main valve
- 9 Port X for external pilot oil supply
- 10 Port Y for external pilot oil drain (G1/4" and M14x1.5 optional)
- 11 Omitted with internal pilot oil drain
- 12 External hexagon screw S=10
- 13 Hexagon nut S=24
- 14 External hexagon screw S=24
- 15 Valve screw fixing holes
- 16 Space required to remove the key

Size	D1	D2	T1
DB10G	G1/2; M22x1.5	34	14
DB15G	G3/4; M27x2	42	16
DB20G	G1; M33x2	47	18
DB25G	G1 1/4; M42x2	58	20
DB30G	G1 1/2; M48x2	65	22

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 $\Phi 32$ hole can intersect $\Phi 45$ 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
Functional symbols	03
Models and specifications	03
Technical parameters	04
Characteristic curve	05
Component size	06-08
Application example	09

Features

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