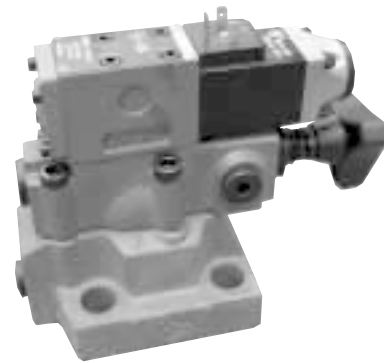


Features:

- Subplate mounting
- Pipe connection
- Insert connection
- Three adjustment elements:
 - Rotary knob
 - Hex. head screw with protective cap
 - Lockable rotary knob with scale
- Solenoid operated unloading via a built-in directional spool valve



Function, section

General

Types DB and DBW pressure valves are pilot operated pressure relief valves.

They are used for the limitation (DB) or limitation and solenoid actuated unloading (DBW) of the control pressure.

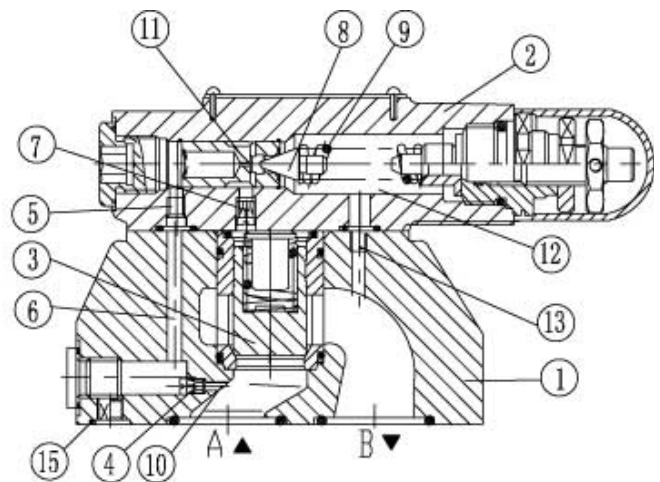
The pressure relief valves (DB) consist mainly of the main valve (1) with main spool assembly (3) and pilot operated valve (2) with pressure adjustment element.

Pressure relief valve type DB:

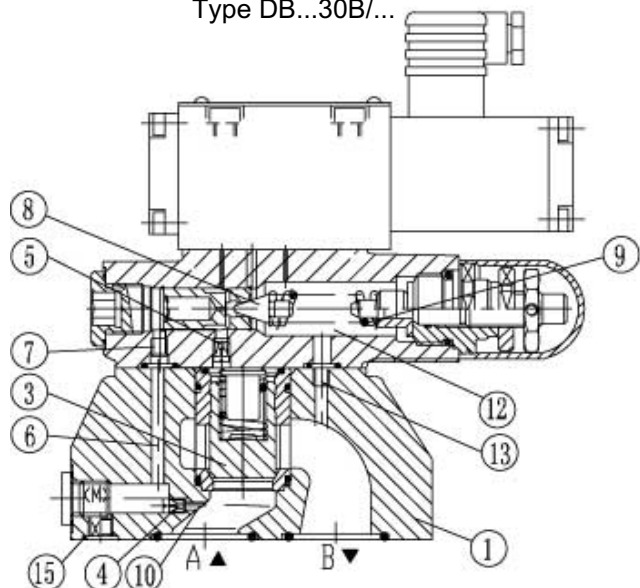
The pressure present in port A acts on the main spool (3). At the same time pressure is applied via the control lines (6) and (7), which are fitted with orifices (4) and (5), on the spring loaded side of the main spool (3) and at the poppet (8) in the pilot control valve (2). If the pressure in port A exceeds the value set at the spring (9), the poppet (8) opens against the spring (9).

The signal for this comes internally via the control lines (10) and (6) from port A. The pressure fluid on the spring loaded side of the main spool (3) now flows via the control line (7), orifice bore (11) and poppet (8) into the spring chamber (12). In type DB...30/... it flows internally via the control line (13) to tank, or in type DB..30/..Y.. externally via the port Y. Due to the orifices (4) and (5) a pressure drop occurs at the main spool (3), the connection from port A to port B is open. Now the pressure fluid flows from port A to port B while maintaining the valve set operating pressure.

The pressure relief valve may be unloaded or switched over to a different pressure (second pressure stage) via port "X" (15).



Type DB...30B/...



Type DBW...30B/...

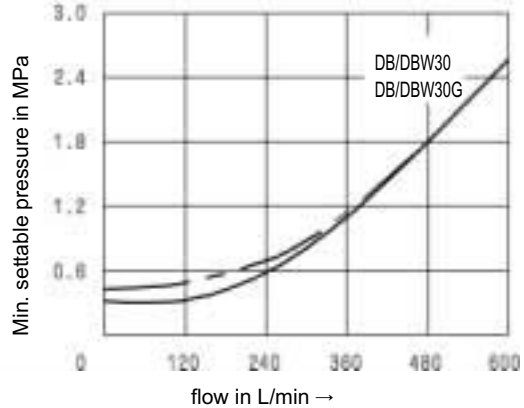
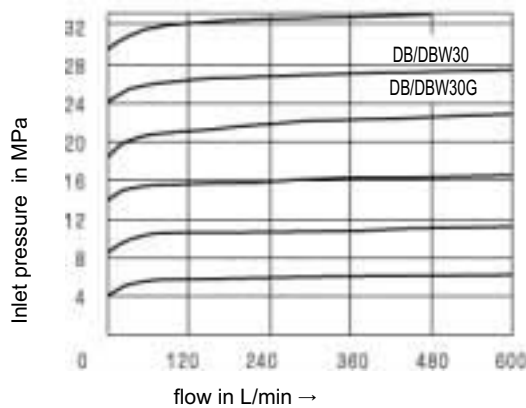
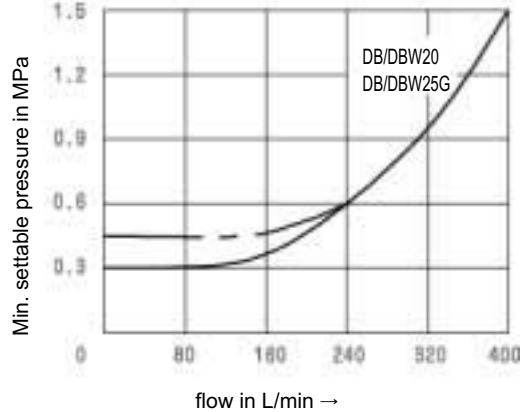
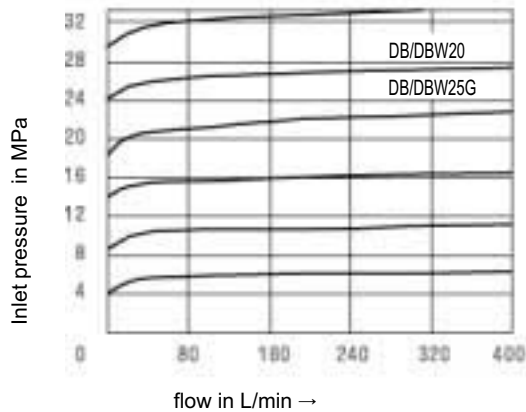
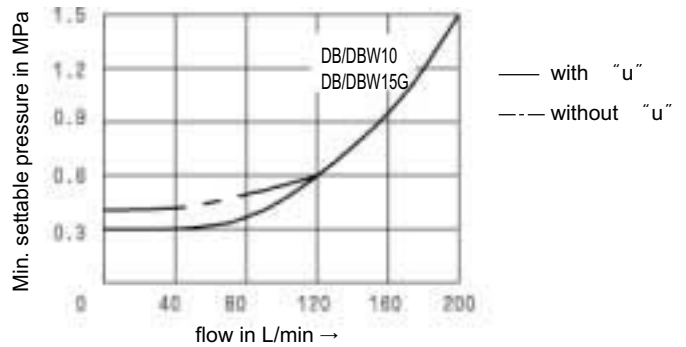
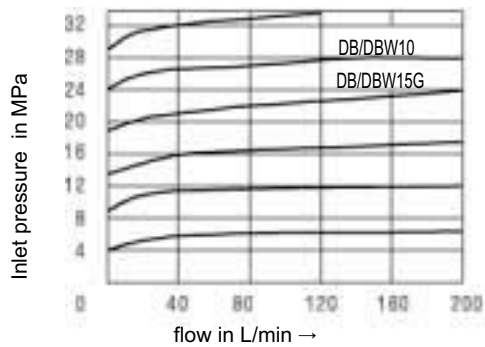
Hydraulic technical data

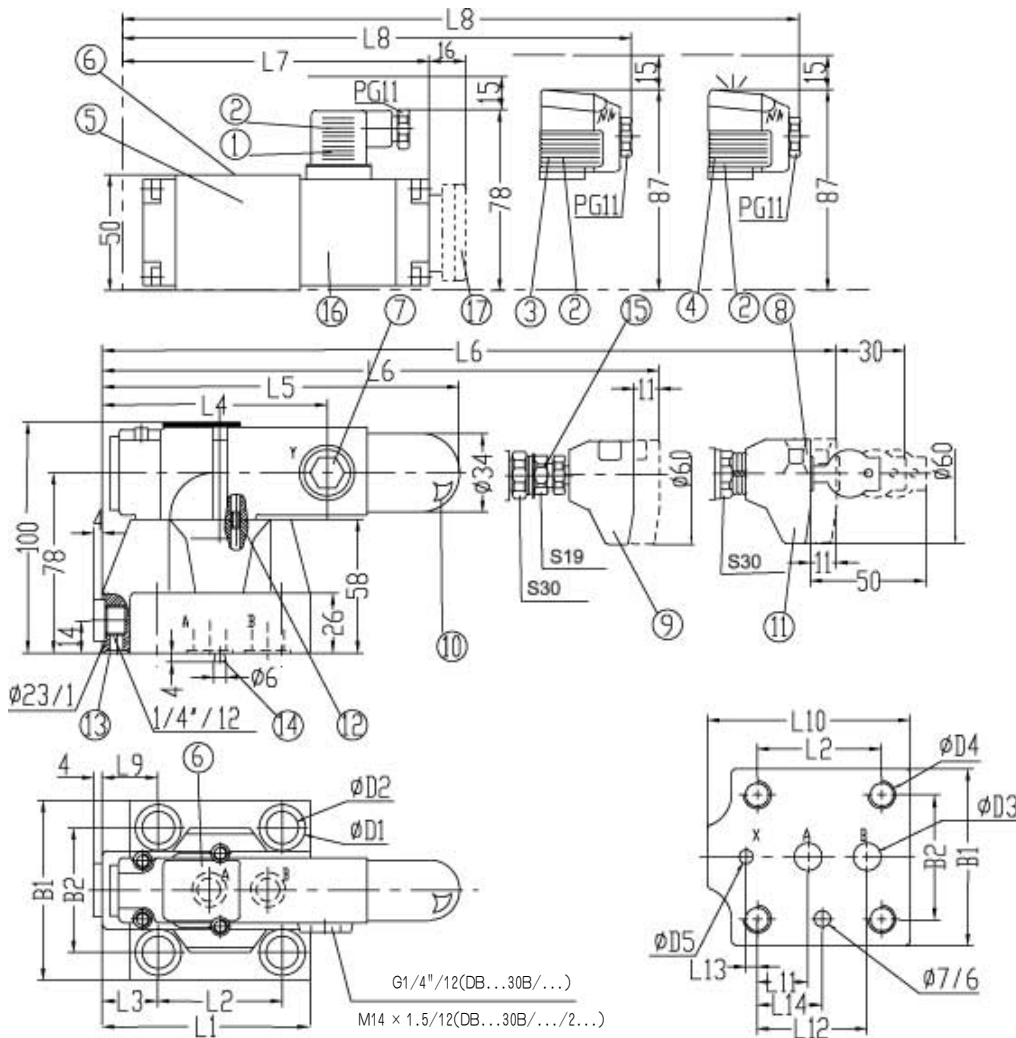
Size		8	10	15	20	25	30
Maximum flow (L/min)	Threaded connections	100	200	200	400	400	600
	Subplate mounting	-	200	-	400	-	600
Maximum operating pressure at ports A, B, X (MPa)		up to 31.5					
Maximum back pressure at port Y	DB (MPa)	up to 31.5					
	DBW (MPa)	up to 6					
Settable pressure	Min. (MPa)	flow dependent (see characteristic curves)					
	Max. (MPa)	to 10.0 or 31.5					
Pressure fluid		Mineral oil (for NBR seal) or phosphate ester (for FPM seal)					
Viscosity range (mm ² /s)		10 to 800					
Pressure fluid temperature range (°C)		-30 to +80					
the characteristic of solenoid		See directional valves, type WE5					

Characteristic curves (measured at $v = 41 \text{ mm}^2/\text{s}$ and $t = 50^\circ\text{C}$)

The characteristic curves were measured with external, at zero pressure, pilot oil drain.

With internal pilot oil drain the inlet pressure increases by the outlet pressure present at port B.





- 1 Plug-in connector "Z4"
- 2 Plug-in connector: colour gray
- 3 Large plug-in connector "Z5"
- 4 Large plug-in connector with light "Z5L"
- 5 Directional valves, type WE5
- 6 Nameplate
- 7 Port Y for external pilot oil drain
- 8 Repeat adjusting scale
- 9 Adjustment element 1
- 10 Adjustment element 2
- 11 Adjustment element 3
- 12 Inside pilot oil drain is not need
- 13 Port X for pilot oil drain
- 14 Locating pin
- 15 Only apply to up to 31.5MPa
- 16 Solenoid "a"
- 17 Hand override

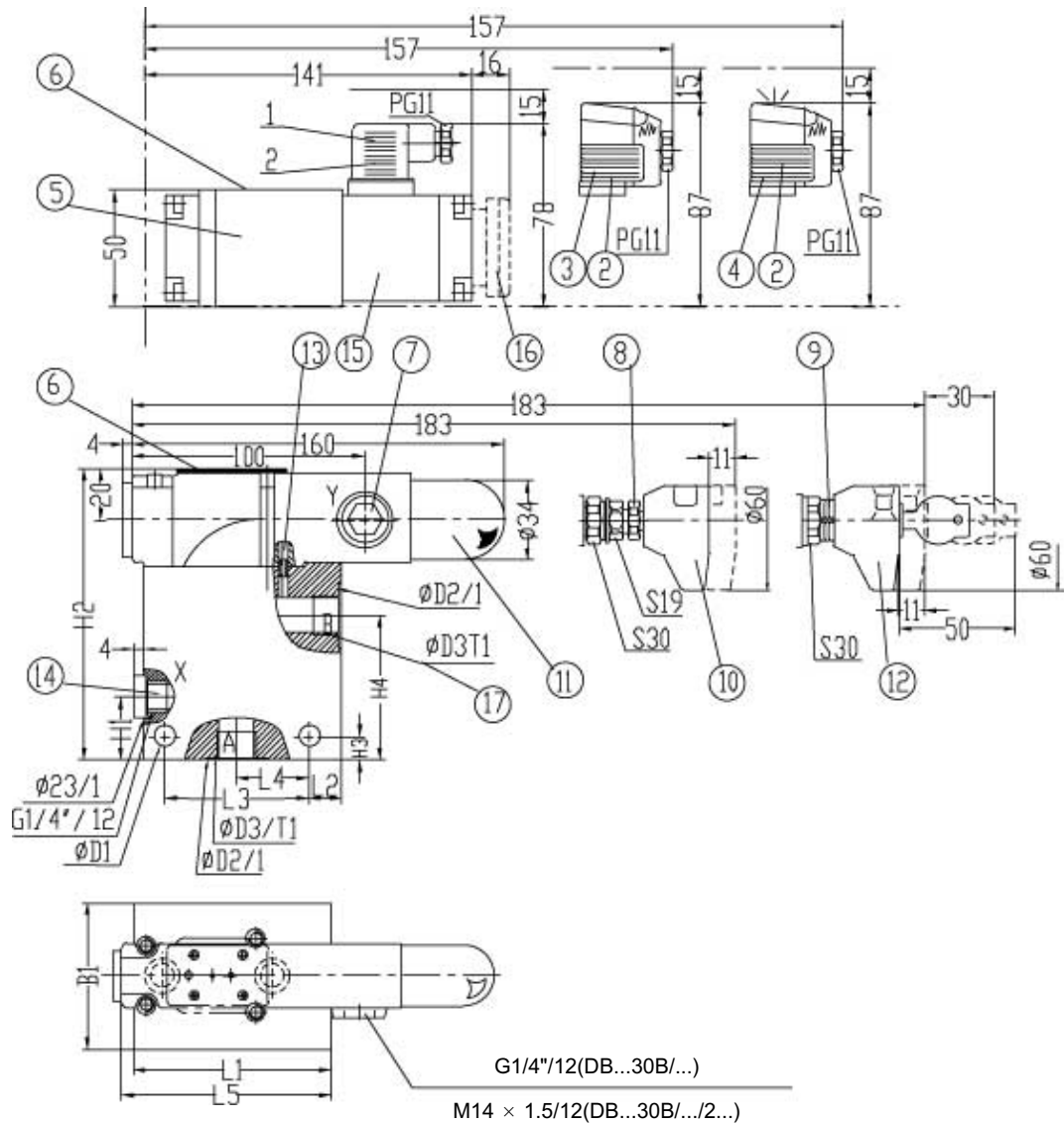
Subplates for: G545/01 G545/02 G408/01 G408/02 G410/01 G410/02 G546/01 G546/02(NG10); G409/01 G409/02(NG20); G411/01 G411/02(NG30), see page149

Size	B1	B2	φD1	φD2	φD3	D4	φD5	L1	L2	L3	L4	L5	L6	L7
10	78	54	20	14	12	M12 depth 25	6	90	54	23.5	97.5	155.5	179	133.5
20	100	69.8	26	18	25	M16 depth 26	6	117	66.7	34	111	168	193	147
30	115	82.5	30	20	32	M18 depth 26	7	148	88.7	41.5	121	179	203	157

Size	L8	L9	L10	L11	L12	L13	L14	O-ring		Valve fixing screw (GB/T70.1-2000)	weight (kg)	
								Port X	Ports A, B		DB	DBW
10	139.5	27	88	22.2	47.6	0	22.2	9.25 × 1.78	17.12 × 2.63	4-M12 × 50-10.9	2.6	3.7
20	153	24.3	116	11.1	55.6	23.8	33.3	9.25 × 1.78	28.17 × 3.53	4-M16 × 50-10.9	3.5	4.6
30	163	21.6	146	12.7	76.2	31.7	44.4	9.25 × 1.78	34.52 × 3.53	4-M18 × 50-10.9	4.4	5.5

Unit dimensions: for threaded connection

(Dimensions in mm)

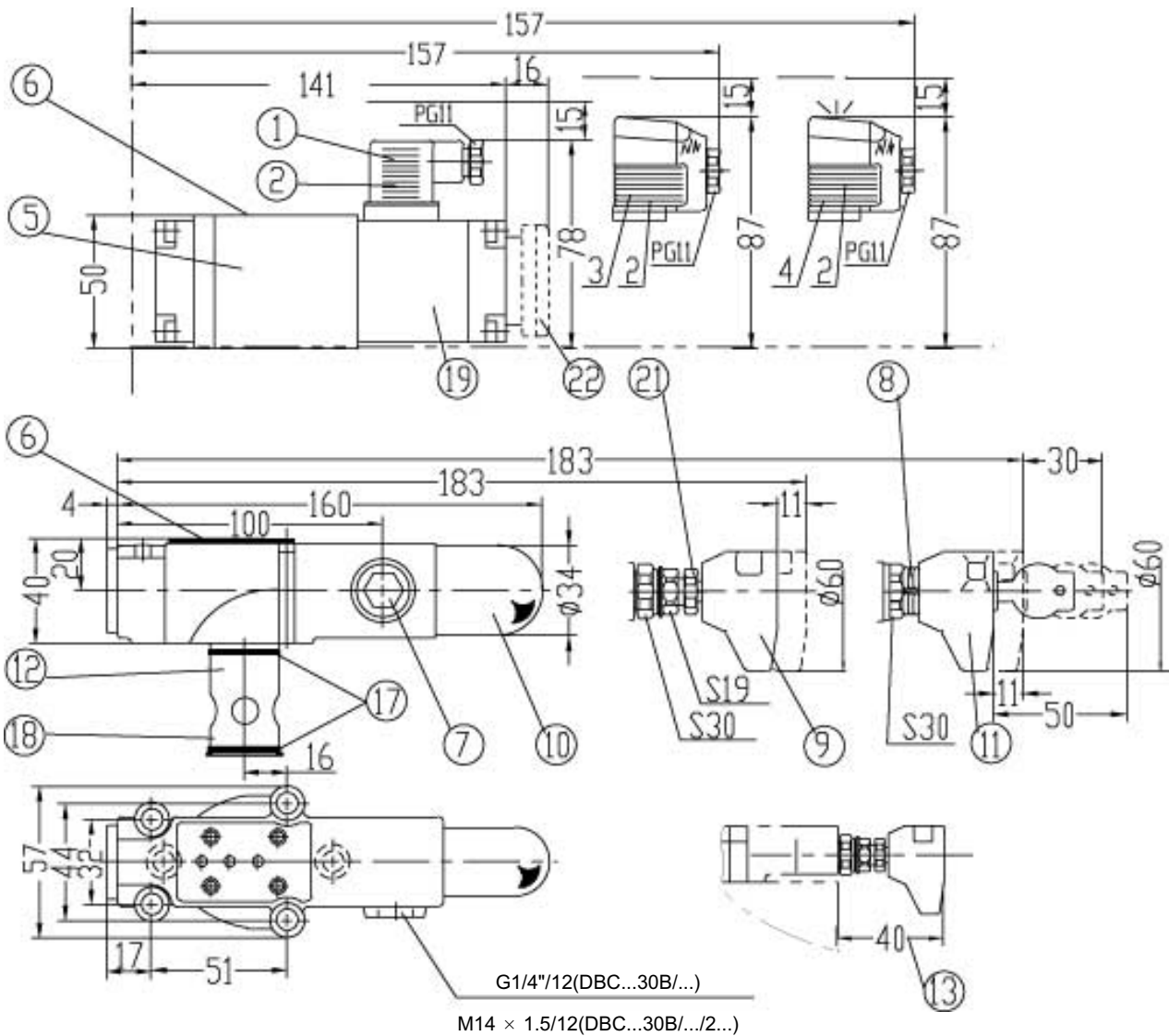


- 1 Plug-in connector " Z4"
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- 6 Nameplate
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- 8 Only apply to 31.5 MPa
- 9 Repeat adjusting scale
- 10 Adjustment element 1
- 11 Adjustment element 2
- 12 Adjustment element 3
- 13 Inside pilot oil drain is not need
- 14 Port X for pilot oil drain
- 15 Solenoid "a"
- 16 Hand override, optional
- 17 When use adjustment element 1 or 3, connect with B, must need elbow

Size	B1	φD1	φD2	D3		H1	H2	H3	H4	L1	L2	L3	L4	L5	T1	Weight (kg)	
				Metric	British											DB	DBW
8	63	9	34	M18 × 1.5	G3/8"	27	125	10	62	85	14	62	31	90	14	4.8	5.9
10				M22 × 1.5	G1/2"												
15				M27 × 2	G3/4"												
20				M33 × 2	G1"												
25	70	11	56	M42 × 2	G1 1/4"	42	138	13	66	100	18	72	36	99	20	5.6	6.7
30				M48 × 2	G1 1/2"												

Unit dimensions: for threaded connection

(Dimensions in mm)



- | | | | |
|---------------------------------------|---------------------------------|---------------------------------------|-------------------------------|
| 1 Plug-in connector | 9 Adjustment element 1 | bore at any position. | screw and main spool assembly |
| 2 Plug-in connector: colour gray | 10 Adjustment element 2 | However, care must be taken that X | 17 O-ring 27.3X2.4 |
| 3 Large plug-in connector | 11 Adjustment element 3 | port and the fixing screw holes do | 18 Retainer ring 32x28.4x0.8 |
| 4 Large plug-in connector with light | 12 Main spool assembly | not intersect. | 19 Solenoid "a" |
| 5 Directional valves, type WE5 | 13 Min. distance when use ad- | 15 Back-up ring and O ring must be | 21 Only apply to 31.5 MPa |
| 6 Nameplate | justment element 1 or 3 fixing | fitted into the main bore before as- | 22 Hand override, optional |
| 7 Port Y for external pilot oil drain | the integration block | sembling the main spool. | |
| 8 Repeat adjusting scale | 14 The D3 bore may enter the D2 | 16 Cartridge assembly contain orifice | |

Size	φD1	φD2	φD3	Fixing screw		Weight (Kg)	
				(GB/T70.1-2000)		DBC	DBWC
10	10	40	10	4-M8 × 40-10.9	1.4	2.5	
20	25	45	25				
30	32		32				