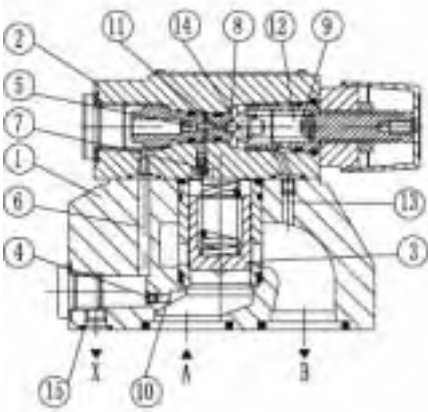
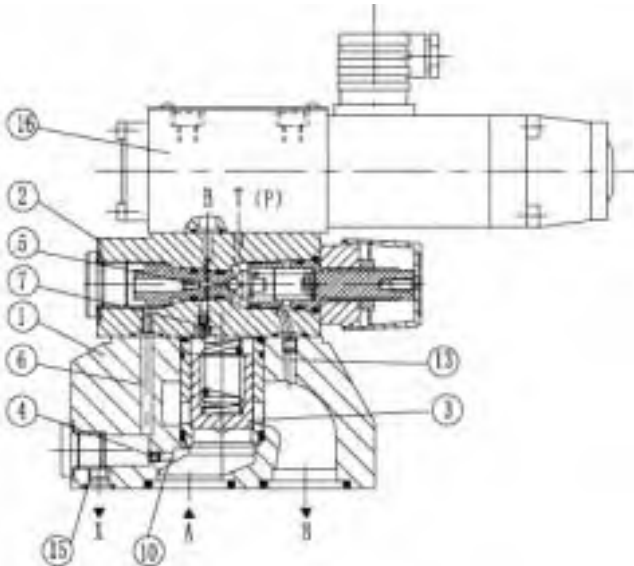




	Pressure relief valve, type DB/DBW...50B/ (New Series)			RE25805 /12.2004
	Size 10 to 32	up to 35 MPa	up to 650 L/min	Replaces: RE25805/05.2001
Features: - Subplate mounting - Porting pattern to DIN 24 340, form E,ISO 6264 and CETOP-RP 121H - Pipe connection - Insert connection - Three adjustment elements: · Rotary knob · Hex. head screw with protective cap · Lockable rotary knob with scale - Solenoid operated unloading via built-in directional spool valve 				
Function, section: type DB...				
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 ball (8) in the pilot control valve (2). If the pressure in port A exceeds the valve set at the spring (9), the ball (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 ball (8) into the spring chamber (12). In type DB...50B/... it flows internally via the control line (13) to tank, or in type DB..50/..Y.. externally via the control line (14). 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 whilst maintaining the 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 DBW...50B/...				

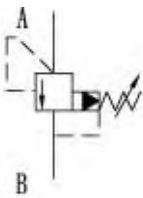
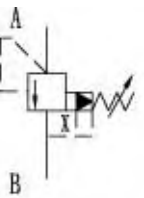
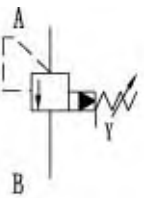
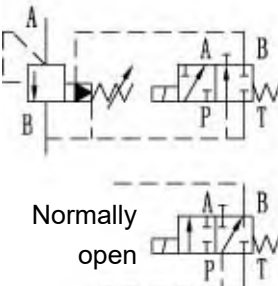
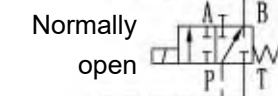
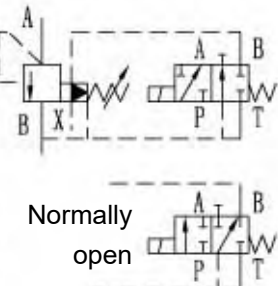
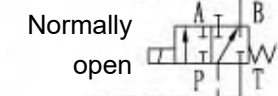
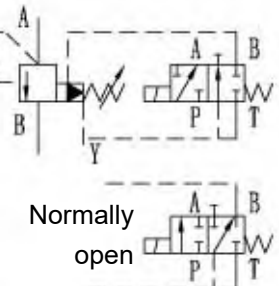
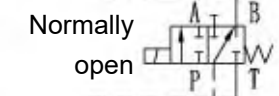
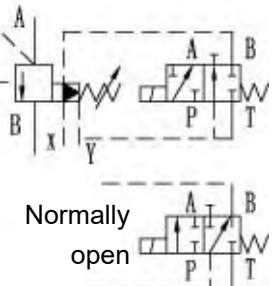
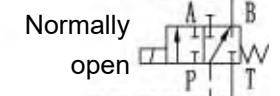
Pressure relief valve type DBW

The function of this valve is basically same as the valve type DB.
 The unloading at the main spool(3),however,is achieved by actuating the built-in directional valve(16).



Type DBW...50B/...

symbols

DB ...-50B/.. 	DB ...-50B/..X.. 	DB ...-50B/..Y.. 	DB ...-50B/..XY.. 
DBW ...-50B/.. Normally closed  Normally open 	DBW ...-50B/..X.. Normally closed  Normally open 	DBW ...-50B/..Y.. Normally closed  Normally open 	DBW ...-50B/..XY.. Normally closed  Normally open 

Ordering details

DB						-	-	50	B	/		/					/	/	*
----	--	--	--	--	--	---	---	----	---	---	--	---	--	--	--	--	---	---	---

Without directional valve	= No code
With built-in directional spool valve	= W

Further details in clear text

Pilot operated valve (complete) = No code
 Pilot operated valve without main spool assembly (do not enter nom. size) = C
 Pilot operated valve with main spool assembly (enter valve size 10 or 30) = C
 * C: without main valve

No code = mineral oils
V = phosphate ester

No code = British
2 = metric

Nomina Size	Ordering details		
	Threaded connec- tion	Subplate mounting	
10	10	10	G1/2" or M22 × 1.5
15		15	G3/4" or M27 × 2
20	20	20	G1" or M33 × 2
25		25	G1 1/4" or M42 × 2
32	30	30	G1 1/2" or M48 × 2

Normally closed	= A
Normally open	= B

For subplate mounting	= No code
For threaded connection	=G

Adjustment elements	
Rotary knob	= 1
Sleeve with hexagon and protective cap	= 2
Lockable rotary knob with scale	= 3

Series 50 to 59 (50 to 59: unchanged installation and connection dimensions) = 50

Technology of Beijing Huade Hydraulic =B

Settable pressure up to 5.0 MPa	= 50	3)
Settable pressure up to 10.0 MPa	= 100	
Settable pressure up to 20.0 MPa	= 200	
Settable pressure up to 31.5 MPa	= 315	
Settable pressure up to 35.0 MPa	= 350	

5)

R10 = orifice ϕ 1.0mm in port
B of the directional valve

1.4)

Z4 =	Plug-in connector
Z5 =	Large Plug-in connector
Z5L =	Large Plug-in connector with light

No code = Without hand override
N 2) = With hand override

W220-50 =	220V 50Hz AC
G24 =	24 V DC
W220R =	Solnoid commuting automatically 220V AC

No code =	Without directional valve
6A =	With directional spool valve
6B =	With directional spool valve(high capability solenoid)

No code =	Standard version
U =	Minimum cracking pressure see characteristic curves

No code = Poilt fluid feed internal ,return internal
X= Ordering details Poilt fluid feed external,return internal
Y= to symbols Poilt fluid feed internal,return external
XY= on page 5 Poilt fluid feed external,return external

- 1) Ordering details only required for the version with built-in directional valve (DBW).
- 2) Key within the scope of supply.
- 3) Type DBW.../350...must use high capability solenoid " 6B".
- 4) Plug in connectors must be specially ordered.
- 5) only used for directional valve

Technical data

General

Installation			optional				
Weight			DB10	DB15	DB20	DB25	DB30
	Subplate mounting	DB (Kg)	2.6	-	3.5	-	4.4
		DBW (Kg)	3.8	-	4.7	-	5.6
		DBC (Kg)	1.2 (type DBWC add 1.2Kg)				
		DBC10 or 30 (Kg)	1.5 (DBWC10 or 30 add 1.2Kg)				
	Threade connection	DB..G.. (Kg)	5.3	5.2	5.1	5.0	4.8
		DBW..G.. (Kg)	6.5	6.4	6.3	6.2	6.0
Technical data for the directional valves			see WE6.../...				

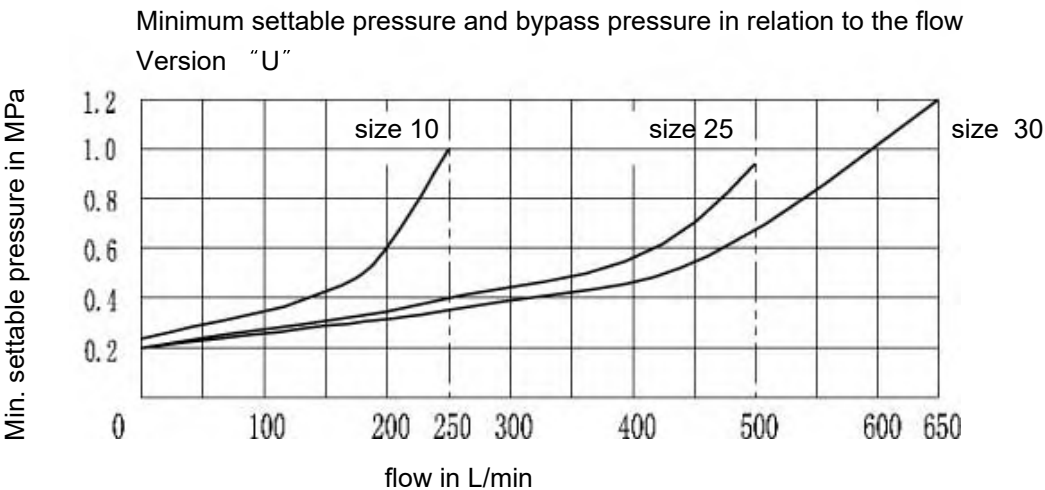
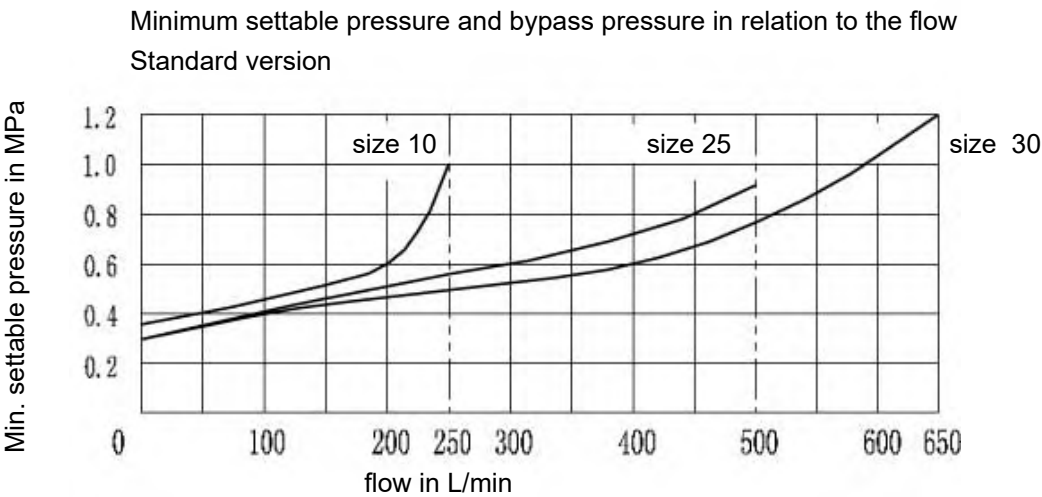
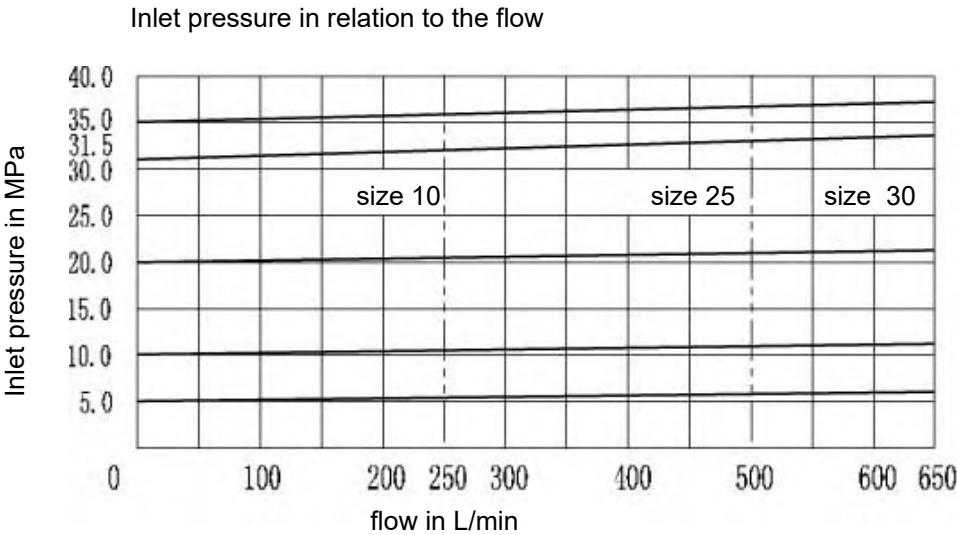
Hydraulic technical data

Maximum operating pressure at ports A, B, X		(MPa)	up to 35.0				
Maximum back pressure at port Y	DB	(MPa)	up to 31.5				
	DBW.6A. (standard solenoids)	(MPa)	AC(DC) 10.0 AC(DC) 16.0				
	DBW.6B. (high-power solenoids)	(MPa)	AC(DC) 16.0				
Settable pressure	Minimum	(MPa)	flow dependent (see characteristic curves)				
	Maximum	(MPa)	Maximum 5.0 , 10.0 , 20.0 , 31.5 , 35.0				
Maximum flow			DB10	DB15	DB20	DB25	DB30
	Subplate mounting	(L/min)	250	-	500	-	650
	Threaded connections	(L/min)	250	500	500	500	650
Pressure fluid			Mineral oil (for NBR seal)or phosphate ester(for FPM seal)				
Pressure fluid temperature range			-30 to + 80				
Viscosity range			10 to 800				
Degree of contamination			NAS 1638 class 9.				



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

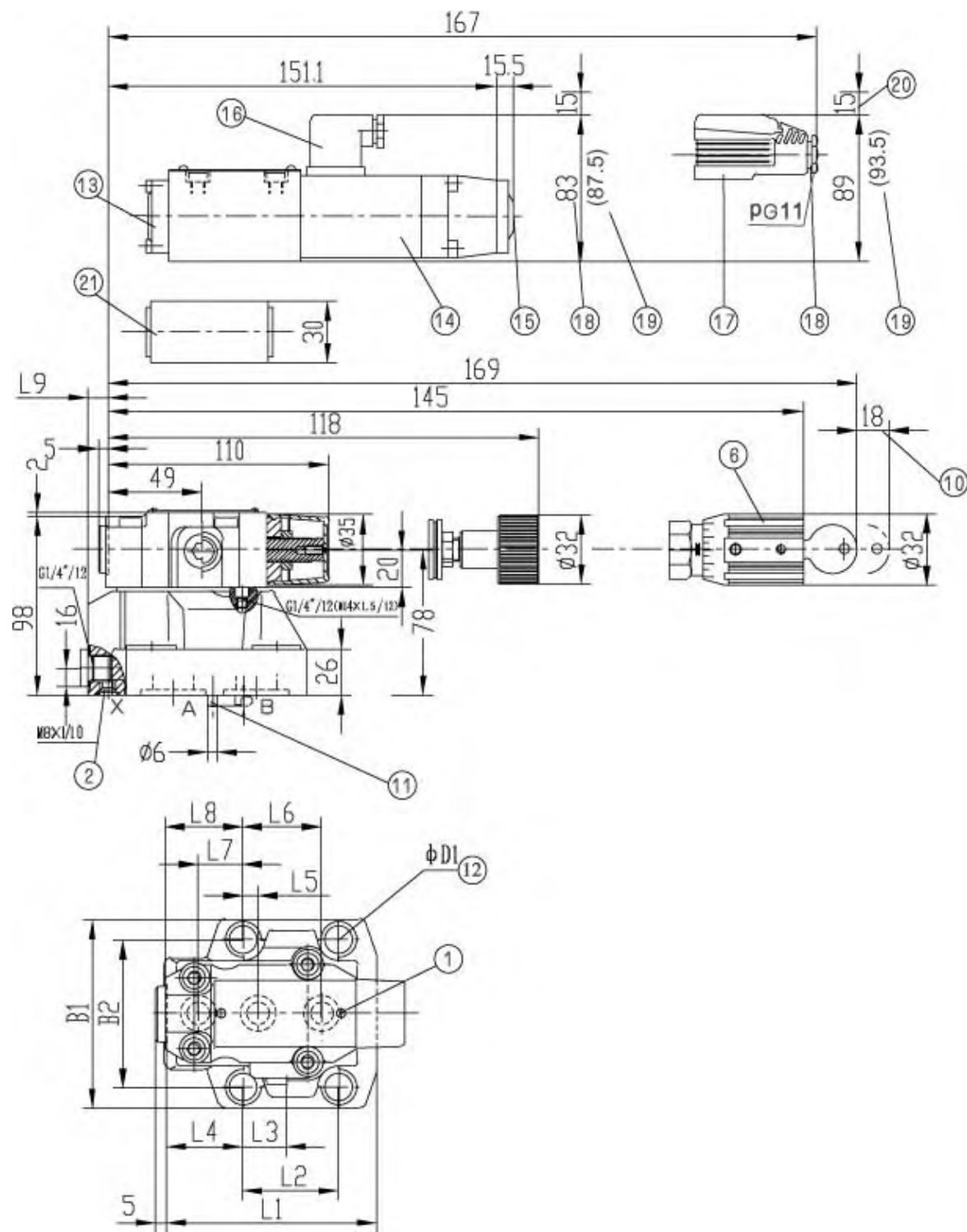


The characteristic curves are valid for outlet pressure $B = 0$ over the entire flow range!



DB/DBW Unit dimensions (series 50) : for subplate mounting

(Dimensions in mm)

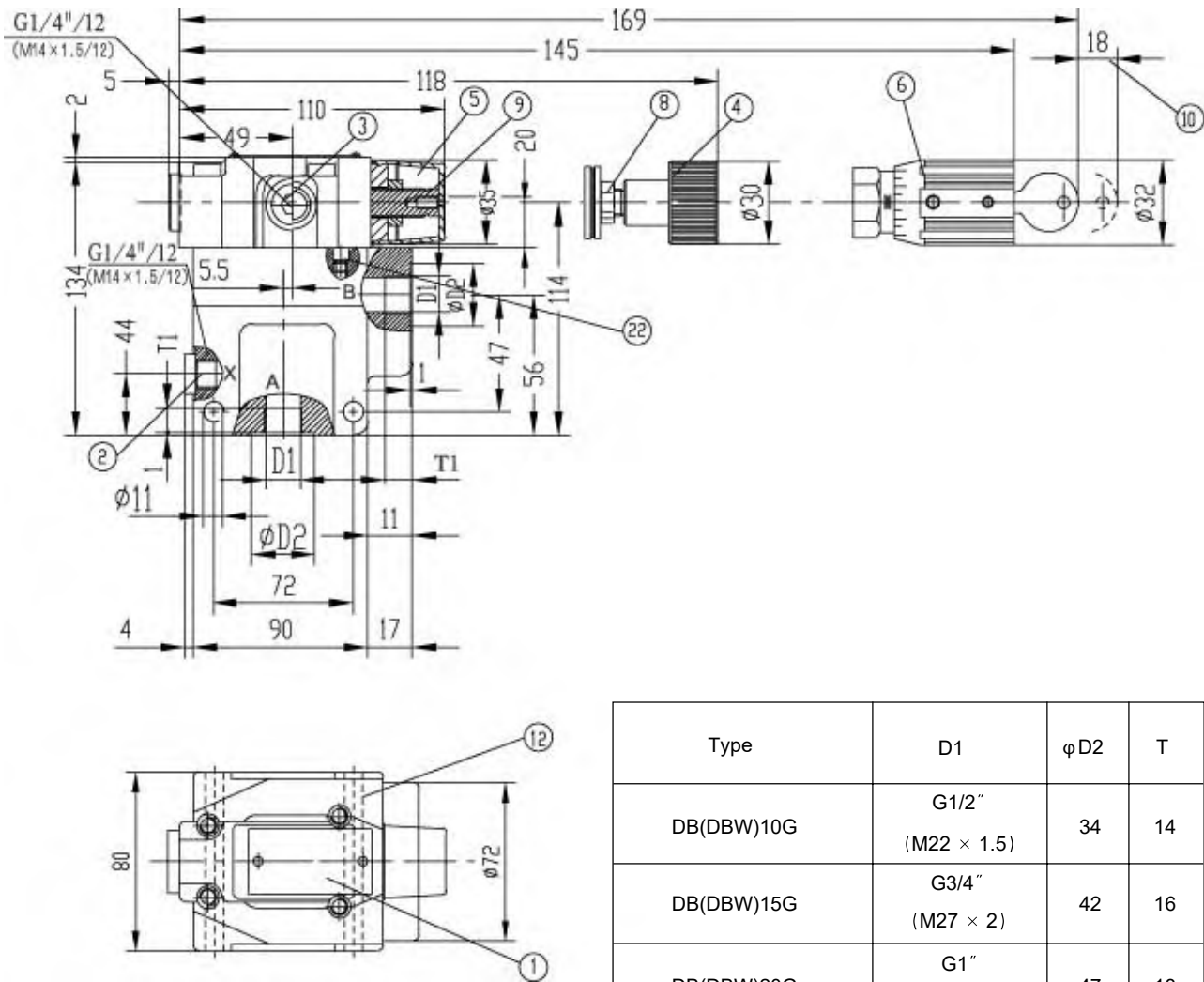


Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	B1	B2	φD1	Ports A,B	Port Y
DB/DBW10	91	53.8	22.1	27.5	22.1	47.5	0	25.5	2	78	53.8	14	17.12 × 2.62	9.25 × 1.78
DB/DBW20	116	66.7	33.4	33.3	11.1	55.6	23.8	22.8	10.5	100	70	18	28.17 × 3.53	9.25 × 1.78
DB/DBW30	147.5	88.9	44.5	41	12.7	76.2	31.8	20	21	115	82.6	20	34.52 × 3.53	9.25 × 1.78



Unit dimensions: For threaded connection

(Dimensions in mm)



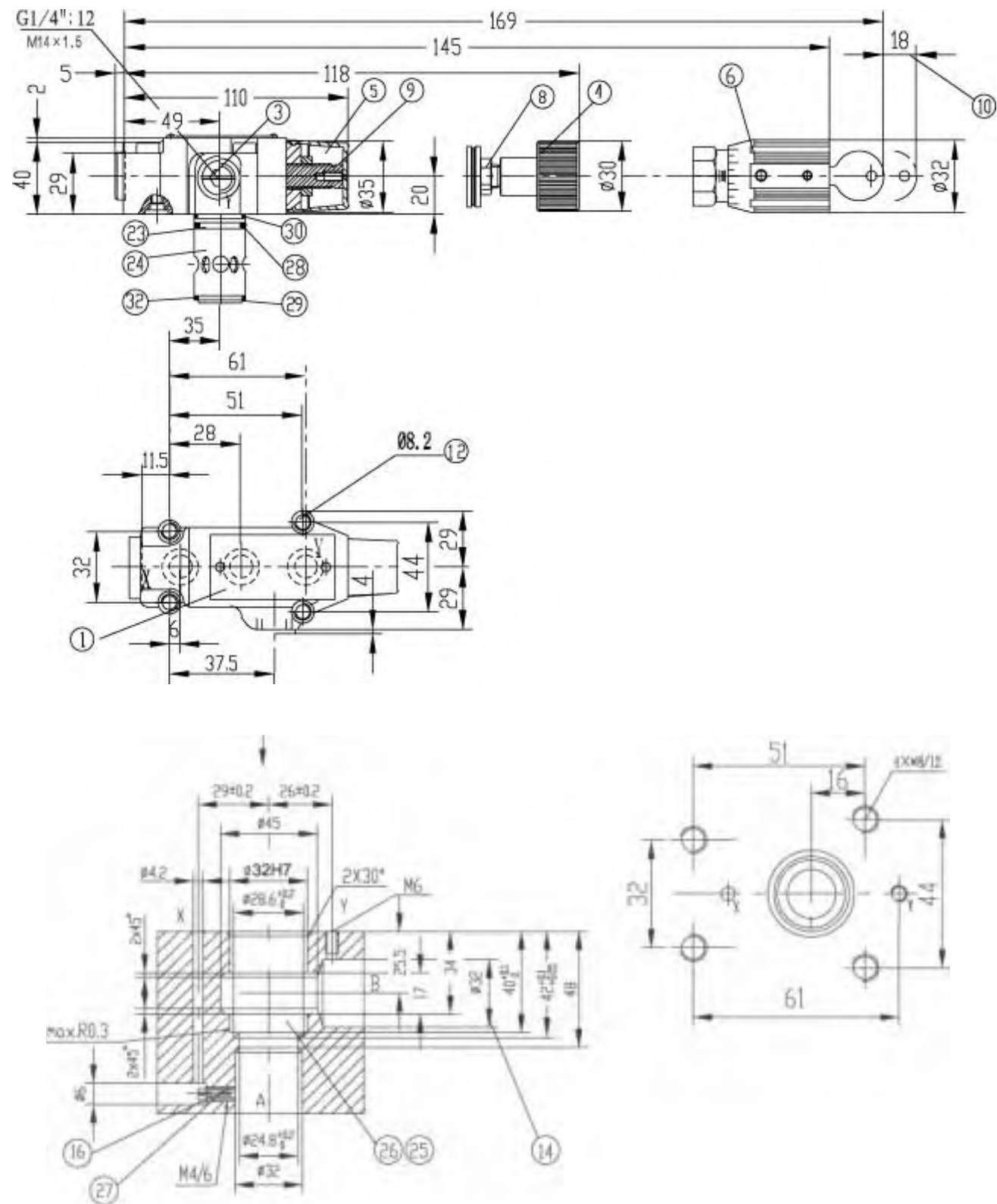
Type	D1	φ D2	T
DB(DBW)10G	G1/2" (M22 × 1.5)	34	14
DB(DBW)15G	G3/4" (M27 × 2)	42	16
DB(DBW)20G	G1" (M33 × 2)	47	18
DB(DBW)25G	G1 1/4" (M42 × 2)	58	20
DB(DBW)30G	G1 1/2" (M48 × 2)	65	22



Unit dimensions: for cartridge connection

(Dimensions in mm)

Pilot control valves with cartridge element (DBC 30) or without cartridge element (DBC).





Item explanations

- 1

Nameplate
- 2

Port X for external pilot oil supply
- 3

Port Y for external pilot oil drain
- 4

Adjustment element 1
- 5

Adjustment element 2
- 6

Adjustment element 3
- 8

Lock nut 22 A/F
- 9

Hexagon 10 A/F
- 10

Space required to remove key
- 11

Locating pin
- 12

Valve fixing holes
- 13

Directional spool valve WE6
- 14

Solenoid "a"
- 15

Hand override, optional
- 16

Plug-in connector" Z4"
- 17

Large plug-in connector "Z5" and "Z5L"
- 18

The dimension of the standard solenoid "A"
- 19

The dimension of the high-power solenoid "B"
- 20

Space required to remove plug-in connector
- 21

Switching shock damping valve,optional
- 22

Omitted with internal pilot oil drain
- 23

O-ring 9.25X1.78
- 24

Main spool assembly
- 25

The Φ 32 bore may connect the Φ 45 bore at any position.Please take care that the connection hole X and the fixing holes are not damaged.
- 26

Back-up ring and O-ring must be inserted into this bore before assembling the main spool.
- 27

Cartridge element include orifice and main spool assembly
- 28

O-ring 28x 1.8
- 29

O-ring 27.3 x 2.4
- 30

O-ring 28 x 2.65
- 32

Back-up ring 28.4X32X0.8

Subplates for:

DB/DBW10	DB/DBW20	DB/DBW30	DBC/DBWC
G545/01 (G3/8")	G408/01 (G3/4")	G410/01 (G11/4")	G51/01 (G1/4")
G545/02 (M18 × 1.5)	G408/02 (M27 × 2)	G410/02 (M42 × 2)	G51/02 (M14 × 1.5)
G546/01 (G1/2")	G409/01 (G1")	G411/01 (G11/2")	
G546/02 (M22 × 1.5)	G409/02 (M33 × 2)	G411/02 (M48 × 2)	
See page 148、 149			

Valve fixing screws for:

Types DB/DBW 10
4-M12 x 50 -10.9(GB/T70.1-2000); M_A = 130 Nm

Types DB/DBW 20
4-M16 x 50 -10.9(GB/T70.1-2000); M_A = 310 Nm

Types DB/DBW 30
4-M18 x 50 -10.9(GB/T70.1-2000); M_A = 430 Nm

Types DBC/DBWC, DBT/DBWT
Types DBC 10/DBWC 10 and types DBC 30/DBWC 30
4-M8 x 40 -10.9(GB/T70.1-2000); M_A = 37 Nm

Required surface finish
of mating piece

