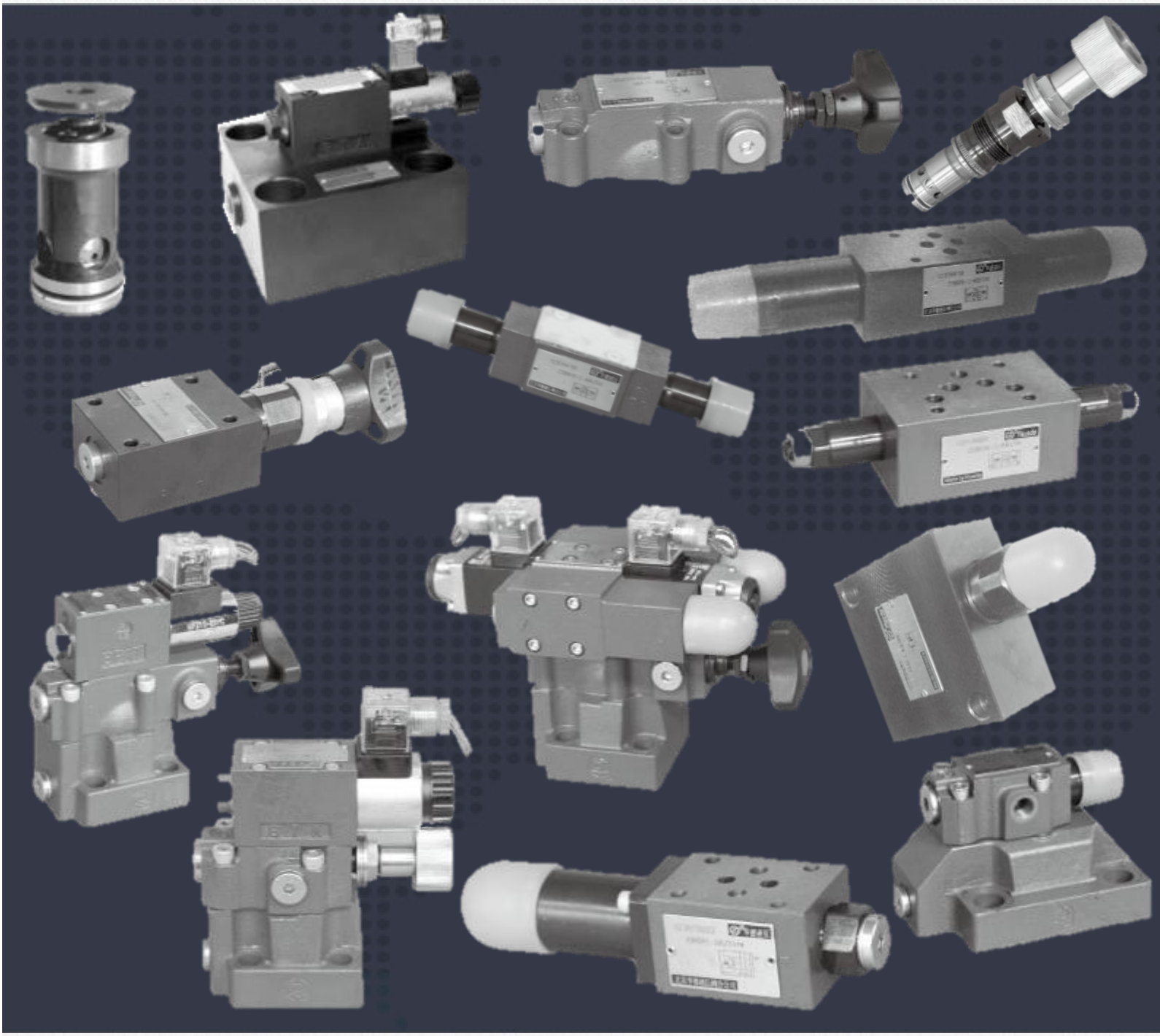
HUADE AMÉRICA

Catálogo de Produtos

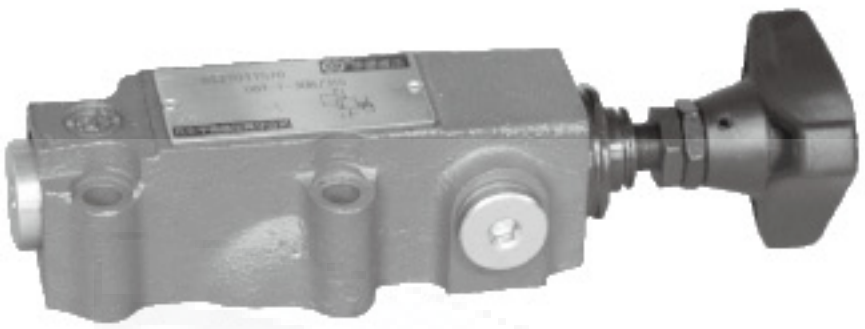


Pressure Valves – Huade América

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure remote relief valve, types DBT/DBWT**		RE 25833/12.2004
	up to 31.5 MPa	up to 3L/min	Replaces: RE 25833/05.2001

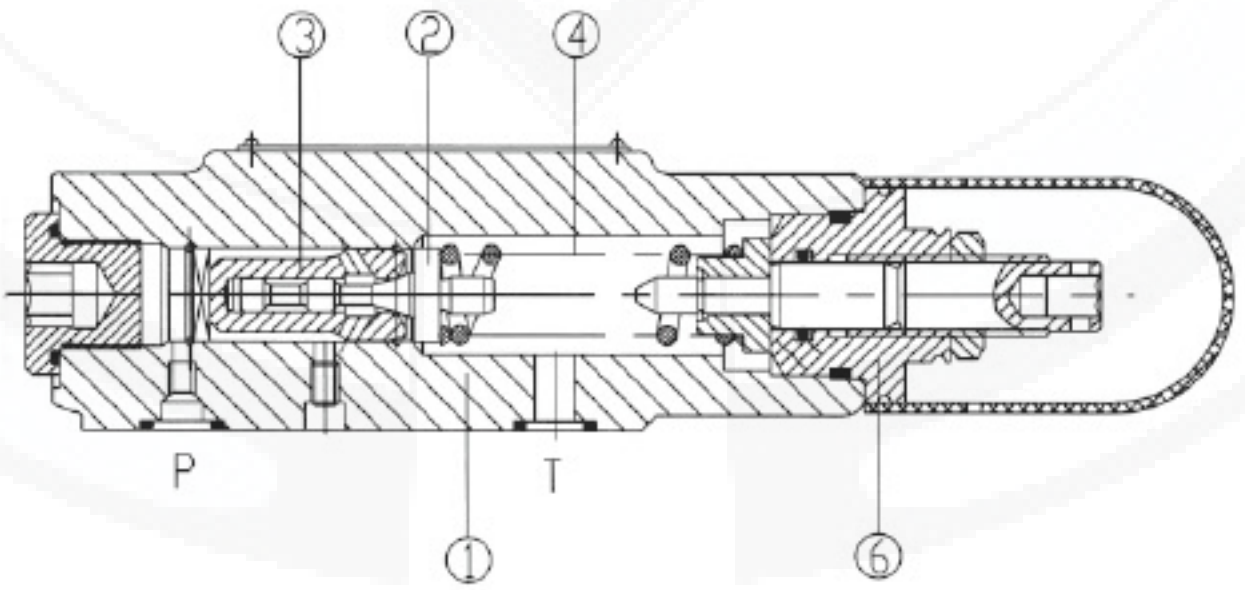
Features:

- long distance remote control
- subplate mounting
- three adjustment elements:
  · Rotary knob
  · Hex. head screw with protective cap
  · Lockable rotary knob with scale



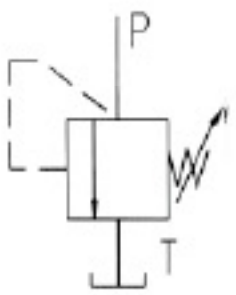
Function, section,symbols

Types DBT and DBWT remote control pressure valves are pilot operated pressure relief valves.
Type DBT is apply to remote control the pressure of system.
Type DBT :
Type DBT consist mainly of the main valve (1), main spool (2), valve seat (3), and adjustment (6).
The pressure of system acts on the spool(2) via orifice. If the pressure exceeds the valve set at the spring, the pressure fluid drain to tank from port T(or drain external).

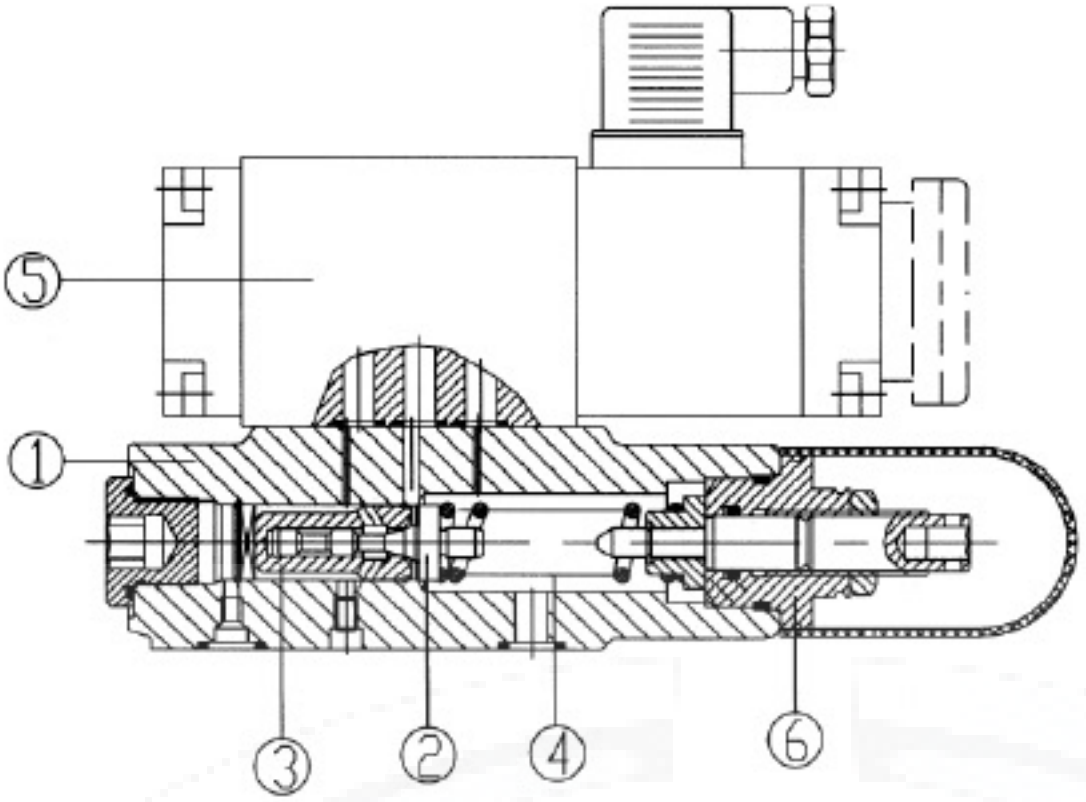


Type DBT...30/...

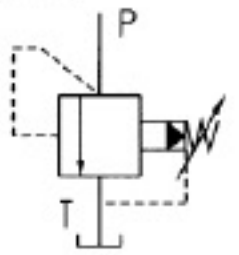
Symbol



Type DBWT:
Type DBWT consist mainly of the main valve (1), main spool (2), valve seat (3), electrically operated valve (5), and adjustment (6).
Type DBWT is apply to remote control the pressure of system and drain by actuating the electrically operated valve.



symbol



Type DBWT

ordering details

DB | | T | | | - 30 | B | / | | | | / | | | *

Without electrically operated valve =No code
With electrically operated valve =W

Normally closed = A
Normally open = B

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

Series 30 to 39 (30 to 39: =30
unchanged installation and connection dimensions)

Technology of Beijing Huade Hydraulic = B

Settable pressure up to 10 MPa = 100
Settable pressure up to 31.5 MPa = 315

Further details in clear text

No code = mineral oils
V = phosphate ester

No code = British
2 = Metric

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

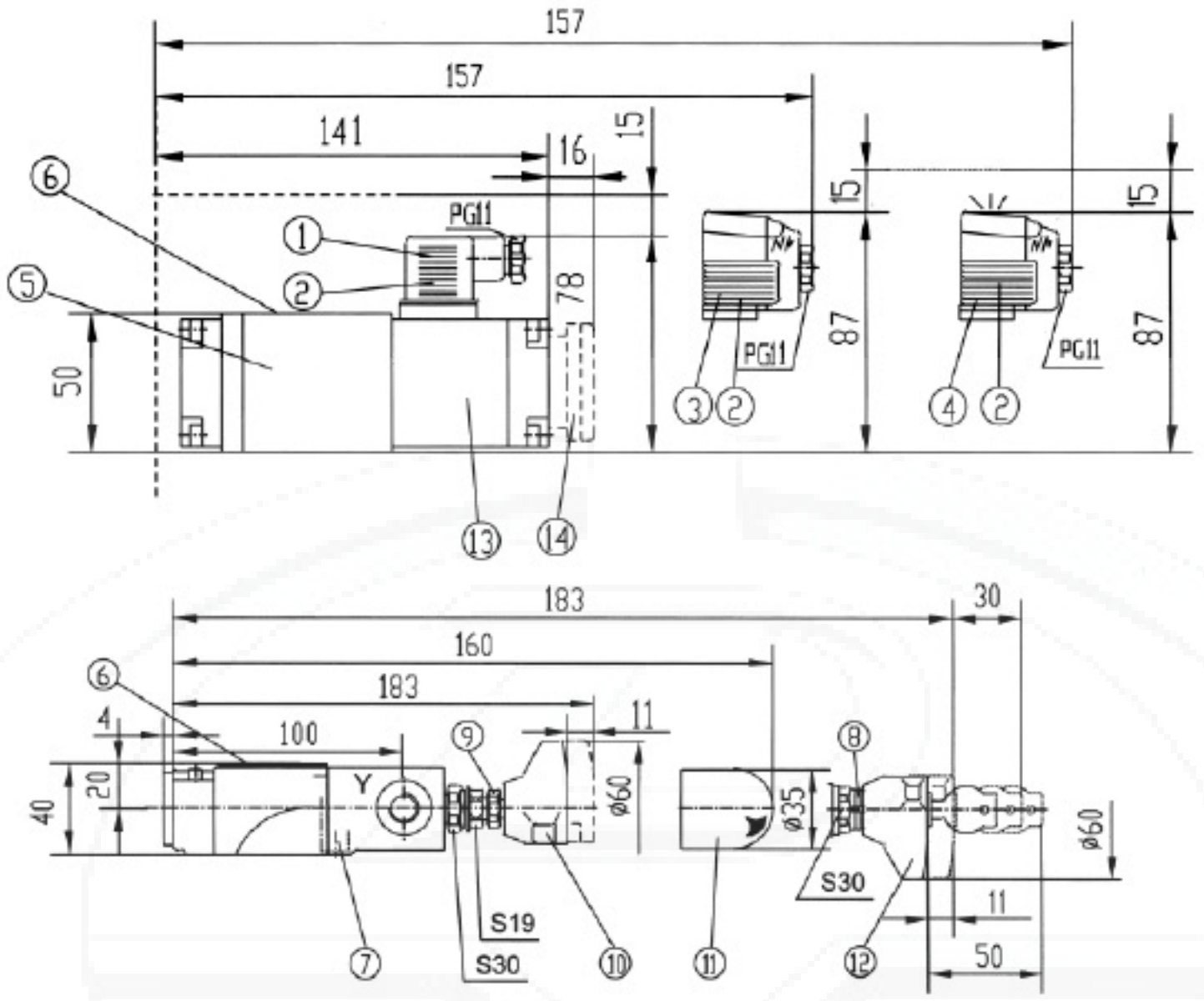
No code = Without hand override
N = With hand override

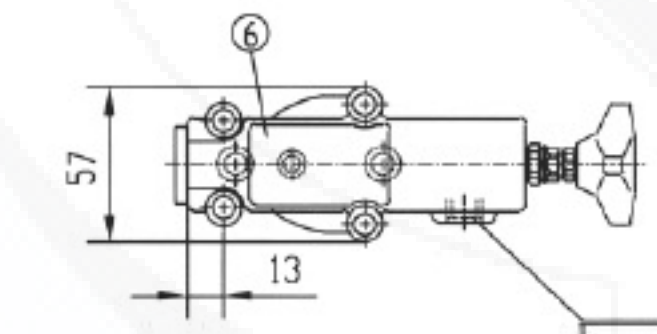
W220-50 = 220V 50Hz AC
G24 = 24 V DC
W220R =Solinoid commuting automatically 220V AC

Technical data

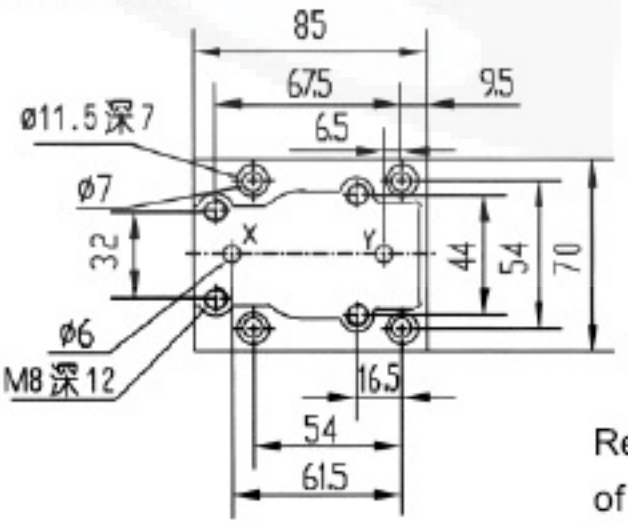
Pressure fluid			Mineral oil (for NBR seal),or phosphate ester (for FPM seal)
Temperature range		(℃)	-30～+80
Viscosity range		(mm²/S)	10～800
max. flow		(L/min)	3
max. operating pressure		(MPa)	31.5
max. Setting pressure		(MPa)	up to10 or 31.5
Back pressure	DBT	(MPa)	up to 31.5
	DBWT	(MPa)	up to 10 (AC) ; up to 16 (DC)
Pilot valve			see directional valve WE5

Unit dimensions: **(Dimensions in mm)**

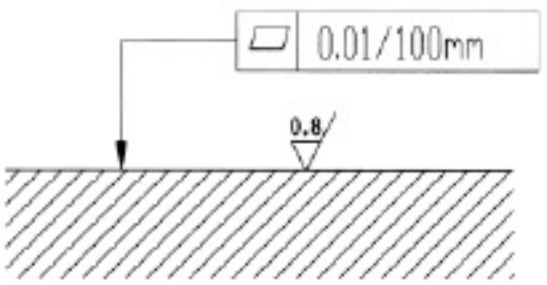




subplate for:



Required surface finish of mating piece



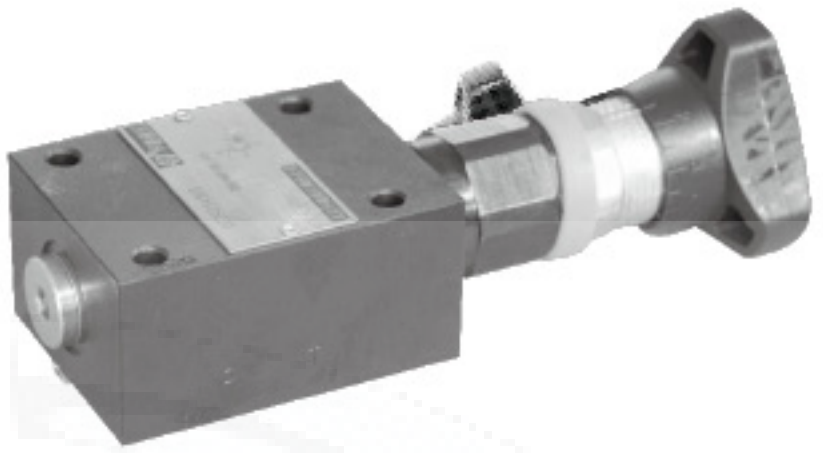
1 Plug-in connector without light "Z4"
2 Plug-in connector: colour gray
3 Plug-in connector large "Z5"
4 Plug-in connector with large light "Z5L"
5 Directional valves, type WE5
6 Nameplate
7 Port Y for drain external
8 Repeat adjusting scale
9 Only apply to 31.5 MPa
10 Adjustment element "1"
11 Adjustment element "2"
12 Adjustment element "3"
13 Solenoid "a"
14 Hand override, optional

Subplate G51/01, G51/02 ,see page 148
O-ring 9.25X1.78
Valve fixing screw (GB/T-70.1-2000)
4-M8X40-10.9

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure relief valve, direct operated, type DBD**			RE 25402/12.2004
	Size 6 to 30	up to 63 MPa	up to 330L/min	Replaces: RE25402/05.2001

Features:

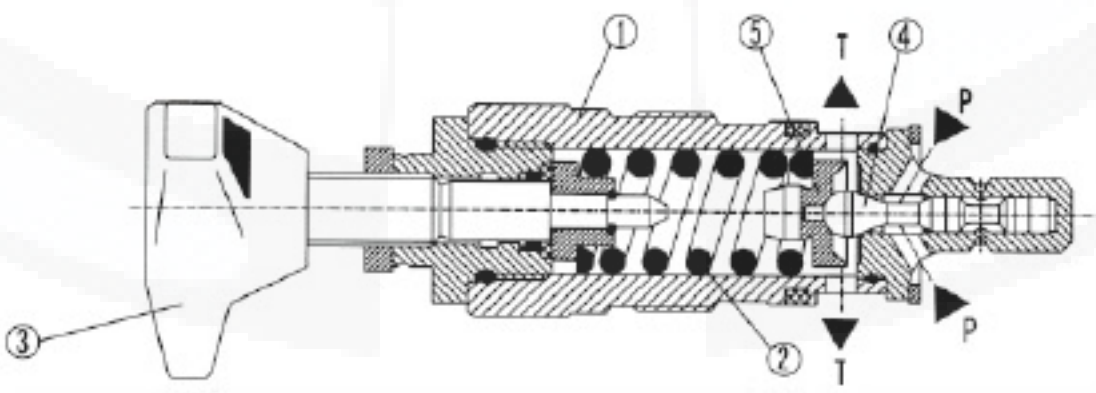
- As cartridge valve
- For threaded connections
- for subplate mounting
- 3 pressure adjustment elements, optional:
  - · Rotary knob
  - · Hex. head screw with protective cap
  - · Lockable rotary knob with scale



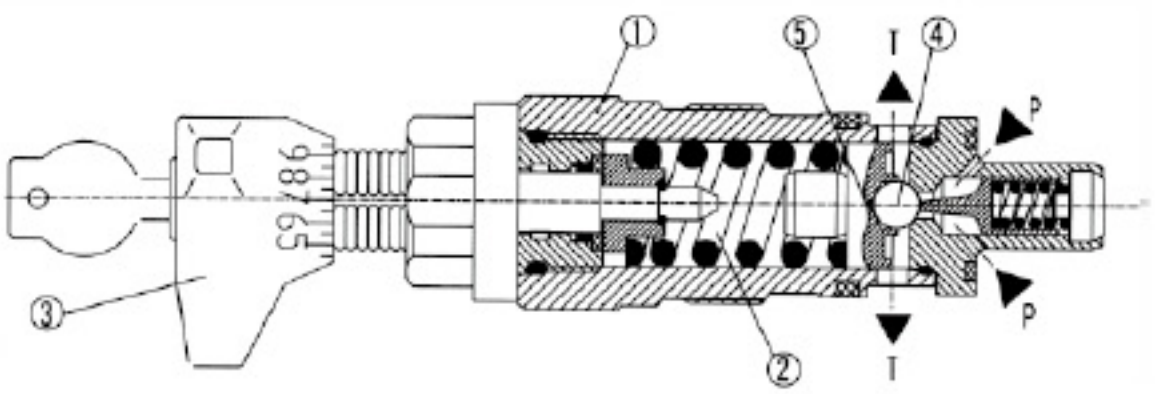
Function, section

The DBD pressure relief valves are direct operated poppet valves.
They are used to limit the pressure in a hydraulic system.
The valves mainly consist of sleeve (1), spring (2), poppet with damping spool (4) (pressure stages 2.5 to 40 MPa) or ball (4) (pressure stage 63 MPa) and adjustment element (3). The setting of the system pressure is infinitely variable via the adjustment element (3). The spring (2) pushes the poppet (4) onto the seat. The P channel is connected to the system. The pressure present in the system is applied to the poppet area (or ball).

If the pressure in channel P rises above the valve set at the spring (2), the poppet (4) opens against the spring (2). Now pressure fluid flows form channel P into channel T. The stroke of the poppet (4) is limited by a pin.
In order to maintain a good pressure settings over the entire pressure range the pressure range is split into 7 pressure stages. One pressure stage corresponds to a certain spring for a maximum operating pressure which may be set with it.



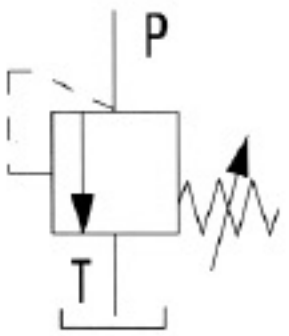
DBDH...K...10B/...(poppet valve)



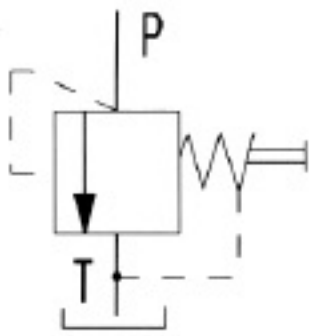
DBDA...K...10B/...(ball valve)

Type DBD ,direct operated pressure relief valve

Symbols



Simpled



Detailed

Ordering details

DBD				10	B	/	/	/		*

Pressure relief valve direct operated = DBD

Adjustment element

Grub screw with hexagon and protective cap	= S
Rotary knob	= H
Lockable rotary knob (only to size 6.8 and 10)	= A

Size			
Nominal size	G	K	P
6=	6	6	6
8=	8	-	-
10=	10	10	10
15=	15	-	-
20=	20	20	20
25=	25	-	-
30=	30	30	30

Type of connection

As cartridge valve (cartridge)	= K
For threaded connections	= G
For subplate mounting	= P

Series 10 = 10

(10 to 19: unchanged installation and connection dimensions)

Further details in clear text

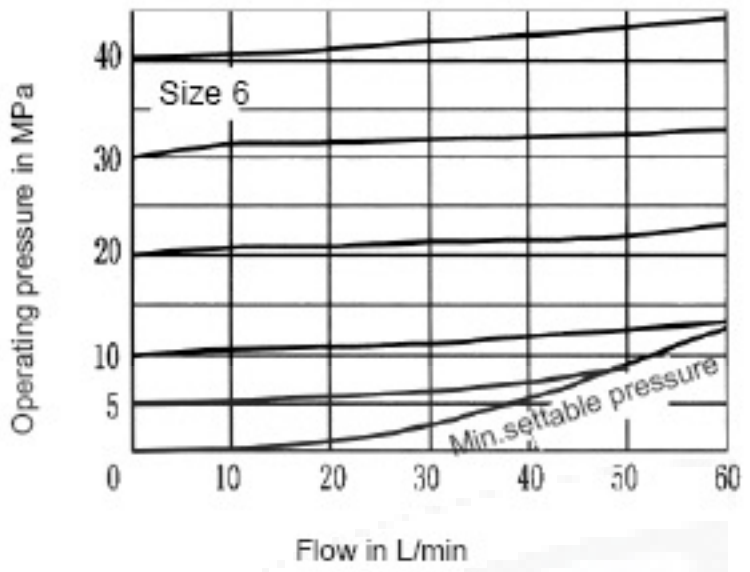
No code =	mineral oils
V =	phosphate ester

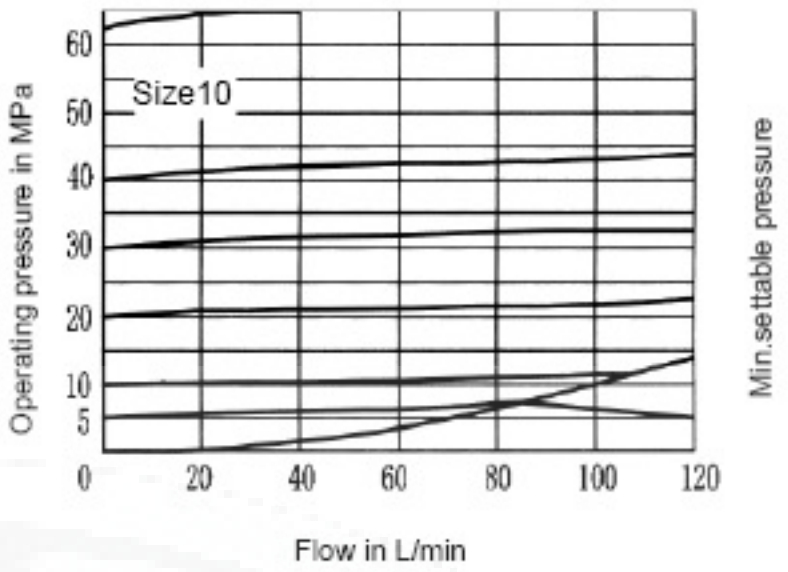
No code=	British
2=	metric

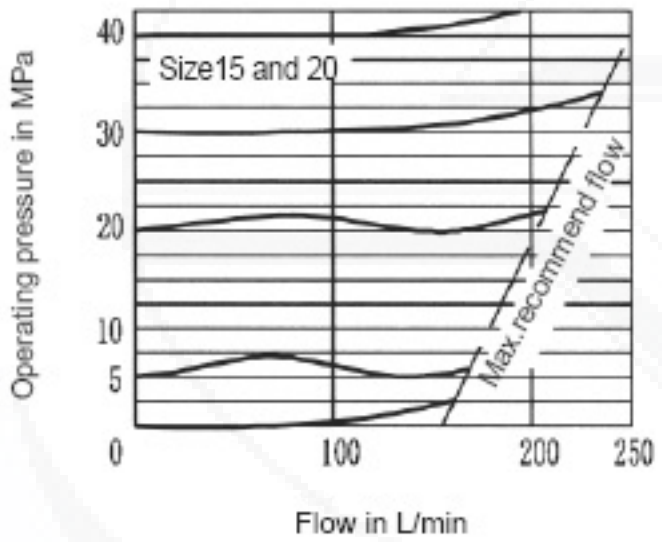
Pressure stage		
NG10	NG 6 to 20	NG 25 to 30
25	25	25
50	50	50
100	100	100
200	200	200
315	315	315
400	400	-
-	-	-

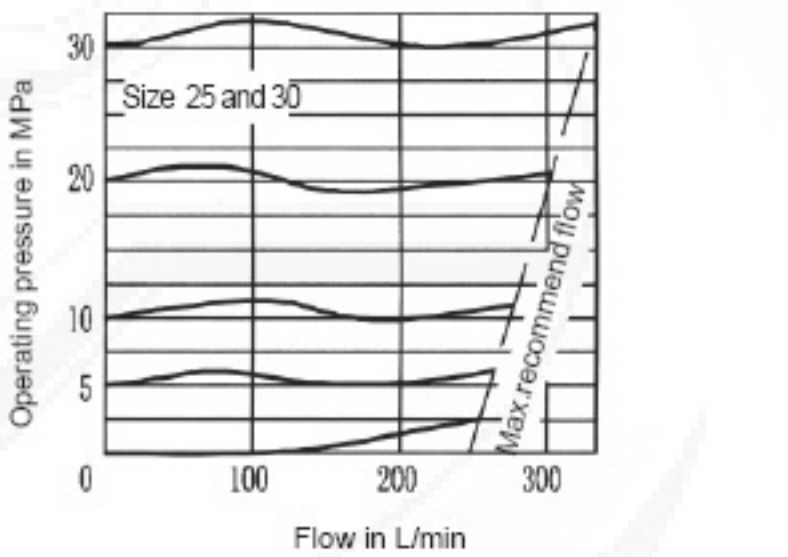
B= Technology of Beijing Huade Hydraulic

Characteristic curves (measured at v = 41mm² /s,t=50℃)





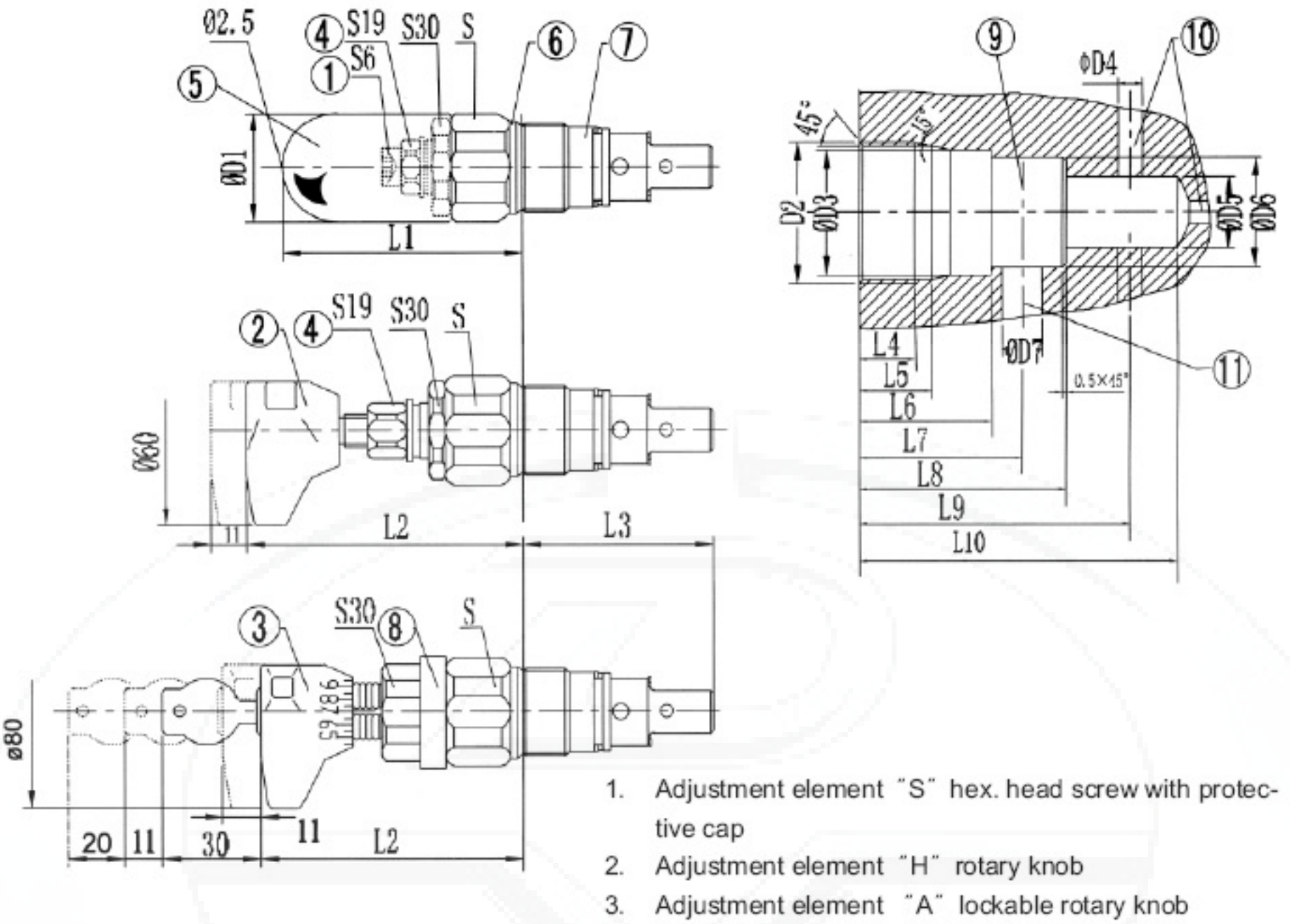




Hydraulic technical data

Size		6	8、10	15、20	25、30
Operating pressure (MPa)	Port P	40	63	40	31.5
	Port T	31.5			
flow (L/min)		50	120	250	350
Pressure fluid		Mineral oil (for NBR seal),or phosphate ester (for FPM seal)			
Pressure fluid temperature range (℃)		-30 ～ +80			
Viscosity range (mm²/s)		10～800			

Unit dimensions: cartridge valve **(Dimensions in mm)**



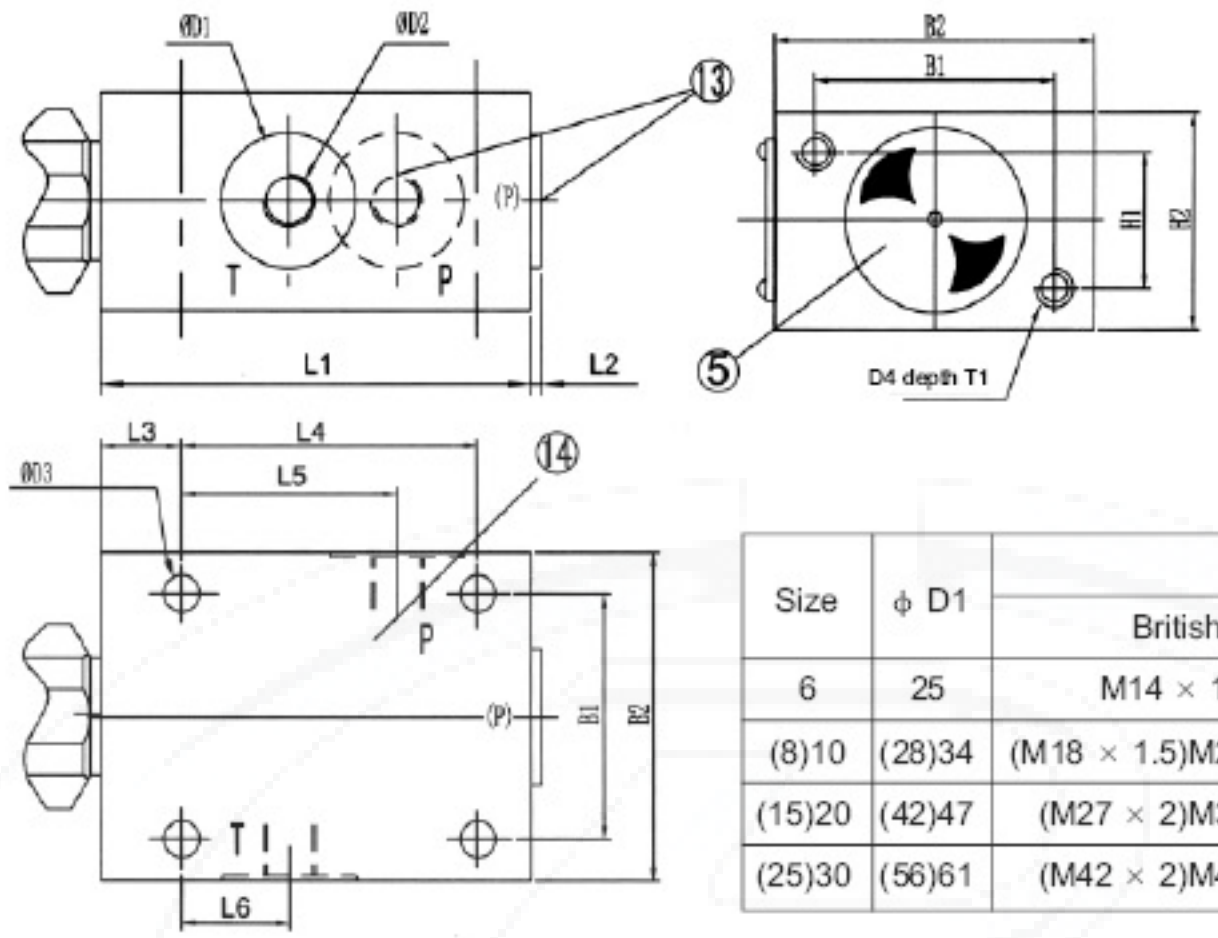
1. Adjustment element "S" hex. head screw with protective cap
2. Adjustment element "H" rotary knob
3. Adjustment element "A" lockable rotary knob (only to size 6、8 、10)
4. Lock nut
5. Protective cap
6. Type code
7. Pressure rating (stamped on)
8. Marking (adjustment of zero position after the valve has been screwed in; subsequent fixing of the ring by a horizontal movement until it locks into place on the 6 A/F plug)
9. Fitting depth
10. Connection port P, optional
11. Connection port T, optional

Size	ϕ D1	D2	ϕ D3H9	ϕ D4
6	34	M28 × 1.5	25	6
10	38	M35 × 1.5	32	10
20	48	M45 × 1.5	40	20
30	63	M60 × 1.5	55	30

Size	ϕ D5	ϕ D6H9	ϕ D7	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	S	Light (kg)
6	15	24.9	6	72	83	64.5	15	19	30	35	45	56.5	65	32	approx.0.4
10	18.5	31.5	10	68	79	75	18	23	35	41	52	67.5	80	36	approx.0.5
20	24	39.9	20	65	77	106	21	27	45	54	70	91.5	110	46	approx.1
30	38.75	54.9	30	83	-	131	23	29	45	60	84	113.5	140	60	approx.2.2

Unit dimensions: for pipe mounting (Dimensions in mm)

Adjustment element see front page

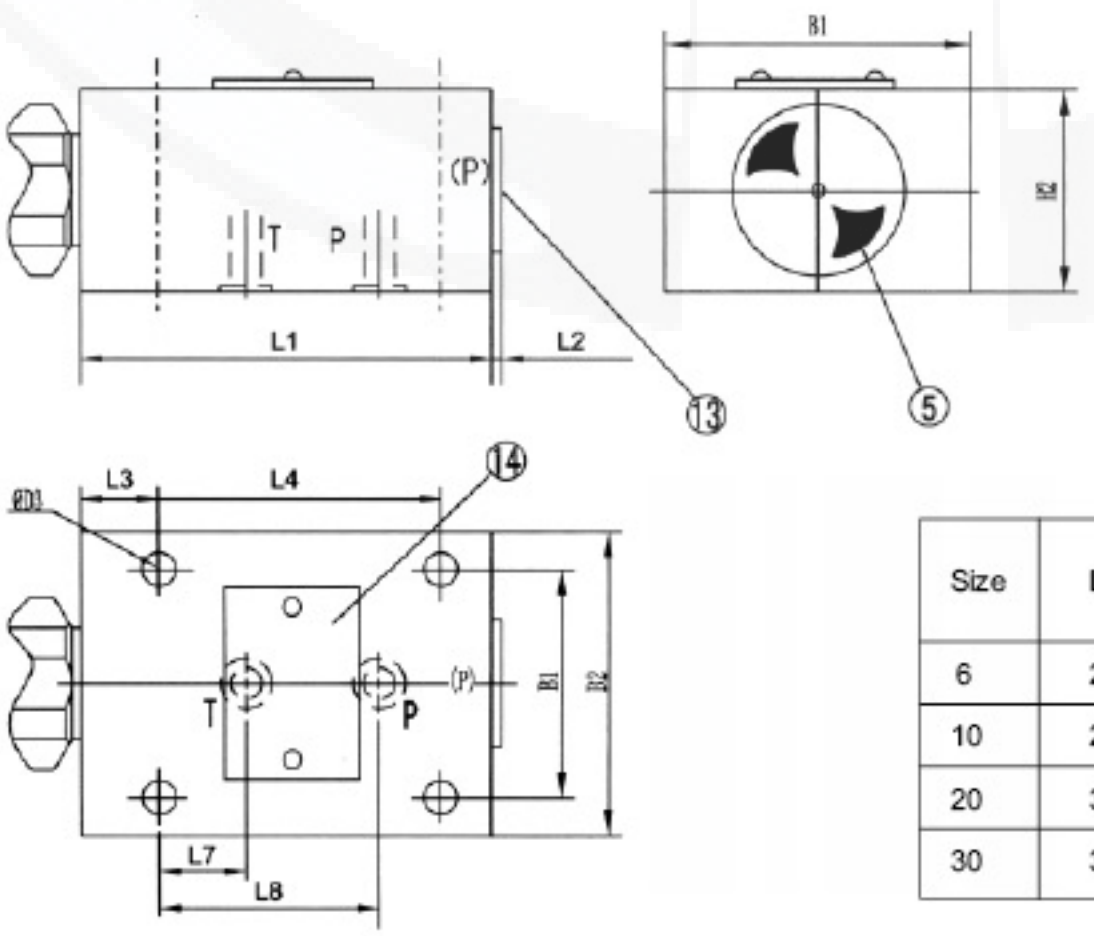


Size	ϕ D1	D2	
		British	Metric
6	25	M14 × 1.5	G1/4"
(8)10	(28)34	(M18 × 1.5)M22 × 1.5	(G3/8")G1/2"
(15)20	(42)47	(M27 × 2)M33 × 2	(G3/4")G1"
(25)30	(56)61	(M42 × 2)M48 × 2	(G1 1/4")G1 1/2"

Size	ϕ D3	D4	B1	B2	H1	H2	L3	L4	L5	L6	L7	L8	T1	Weight (Kg)
6	6.6	M6	45	60	25	40	80	4	15	55	40	20	10	approx. 1.5
(8)10	9	M8	60	80	40	60	100	4	20	70	49	21	20	approx. 3.7
(15)20	9	M8	70	100	50	70	135	5.5	20	100	65	34	20	approx. 6.4
(25)30	11	M10	100	130	60	90	180	5.5	25	130	85	35	25	approx. 13.9

Unit dimensions: for pipe mounting (Dimensions in mm)

Adjustment element see front page



Rest dimension see the pipe mounting

1. Adjustment element "S" hex. head screw with protective cap
13. Connection port "P", optional (e.g. for pressure measuring)
14. Nameplate

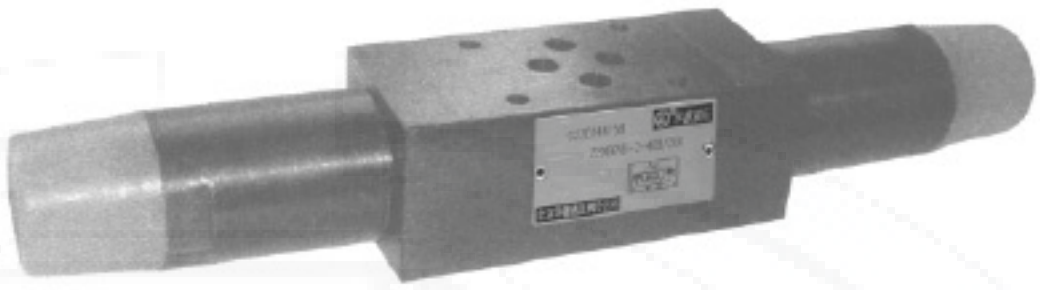
Subplate see page148

Size	L7	L8	Subplate	Valve fixing screws GB/T 70.1-2000
6	20	40	G300/1	M6 × 50-10.9
10	21	45	G302/1	M8 × 70-10.9
20	34	65	G304/1	M8 × 90-10.9
30	35	85	G306/1	M10 × 110-10.9

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	Direct operated pressure relief valve, sandwich plate,type Z2DBD6			RE 25410/12.2004
	Size 6	up to 31.5 MPa	up to 35 L/min	

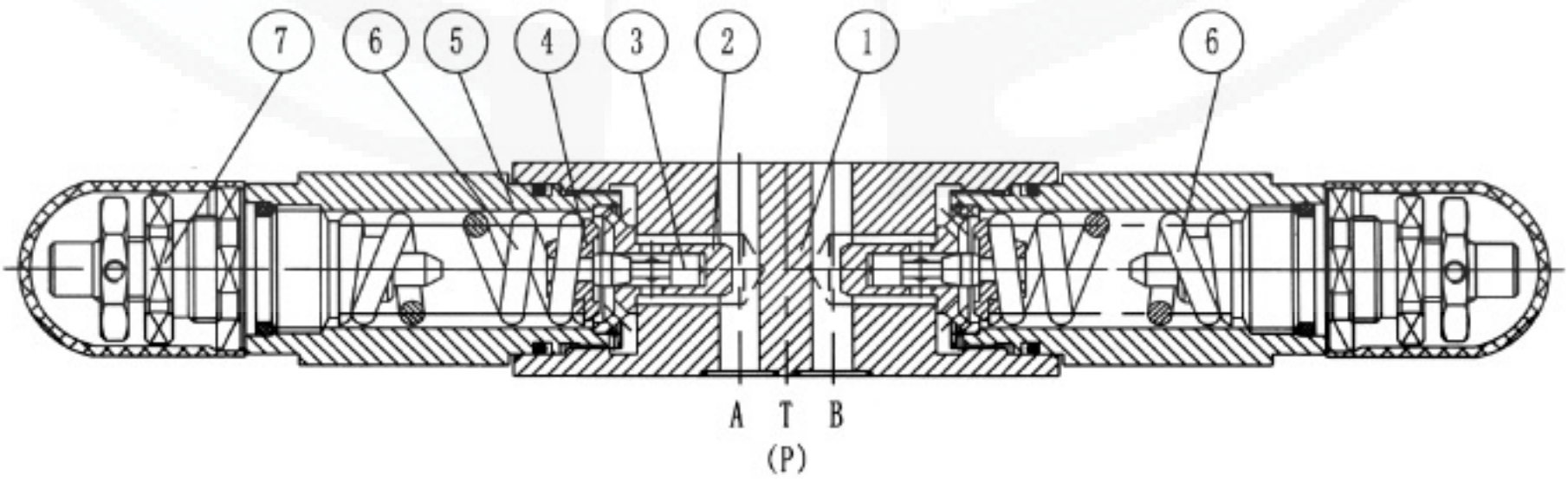
Features:

- Sandwich plate valve
- With one or two pressure relief cartridges



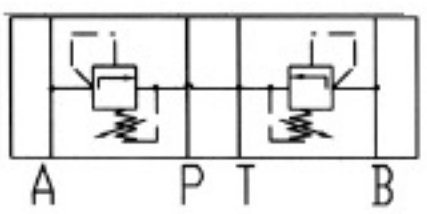
Functional, section,symbol

Pressure relief valve type Z2DBD6 is pilot operated and is of sandwich plate design.
They are used to limit the pressure within a hydraulic system.
They basically consist of the housing (1), together with two pressure relief valve cartridges.
The system pressure is set by means of adjustment element (7).
At rest, the valve is closed. Pressure in port A (or B) acts on the spool (3).
If the pressure in port A rises above the pressure set on spring (6), the spool (3) opens, fluid can now flows from a channel into port T.
Similarly,the mode is apply to port B.



Type Z2DBD6

Symbol



Ordering code

Z	2	DBD	6	VC-		-10	B	/			*

Sandwich plate = Z

With 2 pressure relief valve cartridges = 2

Pressure relief valve, direct operated = DBD

Nominal size 6 = 6

Relief function form:
A - T and B - T = VC

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

Series 10 to 19 = 10
(10 to 19 = unchanged installation and connection dimensions)

B = Technology of Beijing Huade Hydraulic

100 = Pressure adjustable up to 10 MPa
200 = Pressure adjustable up to 20 MPa
315 = Pressure adjustable up to 31.5 MPa

No code = mineral oils
V = phosphate ester

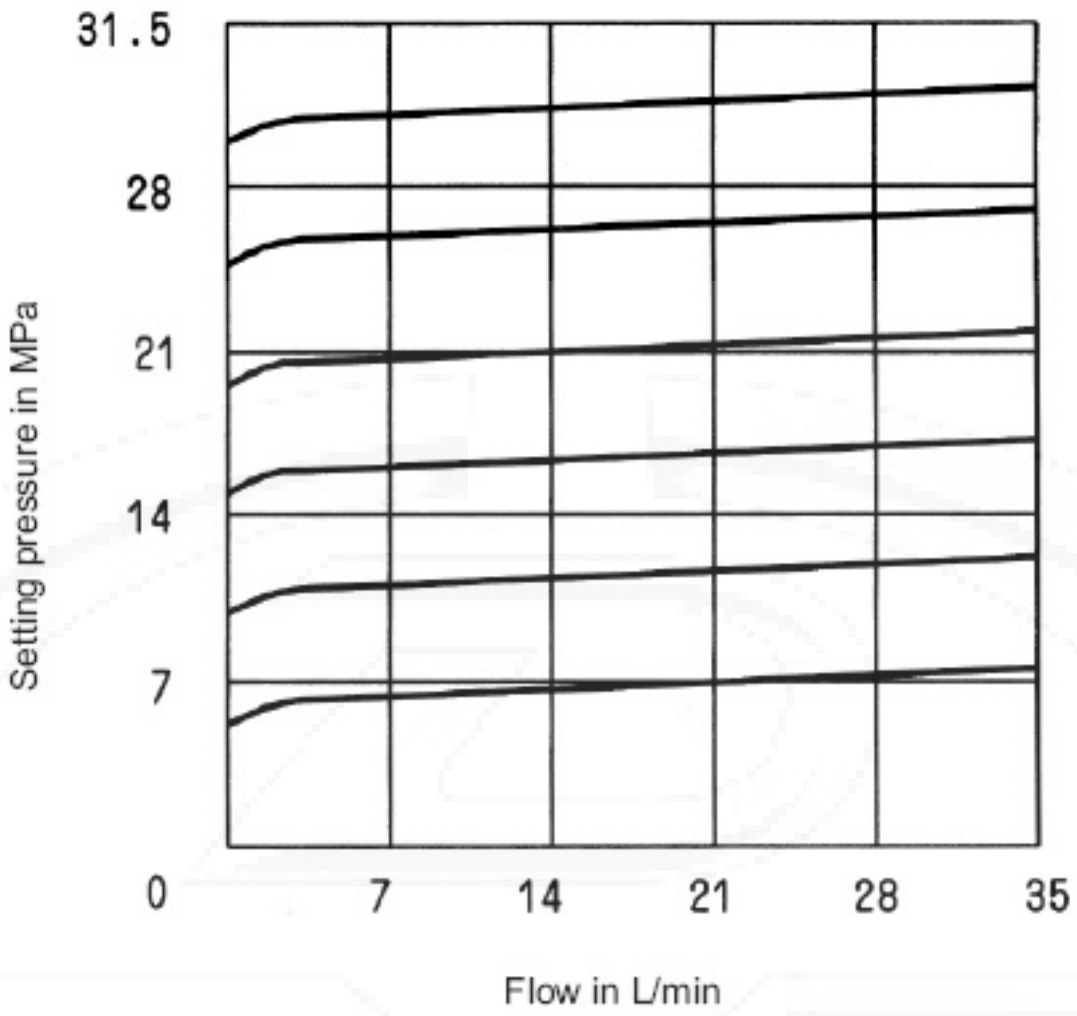
Further details in clear text

Technical data (for applications outside these parameters, please consult us!)

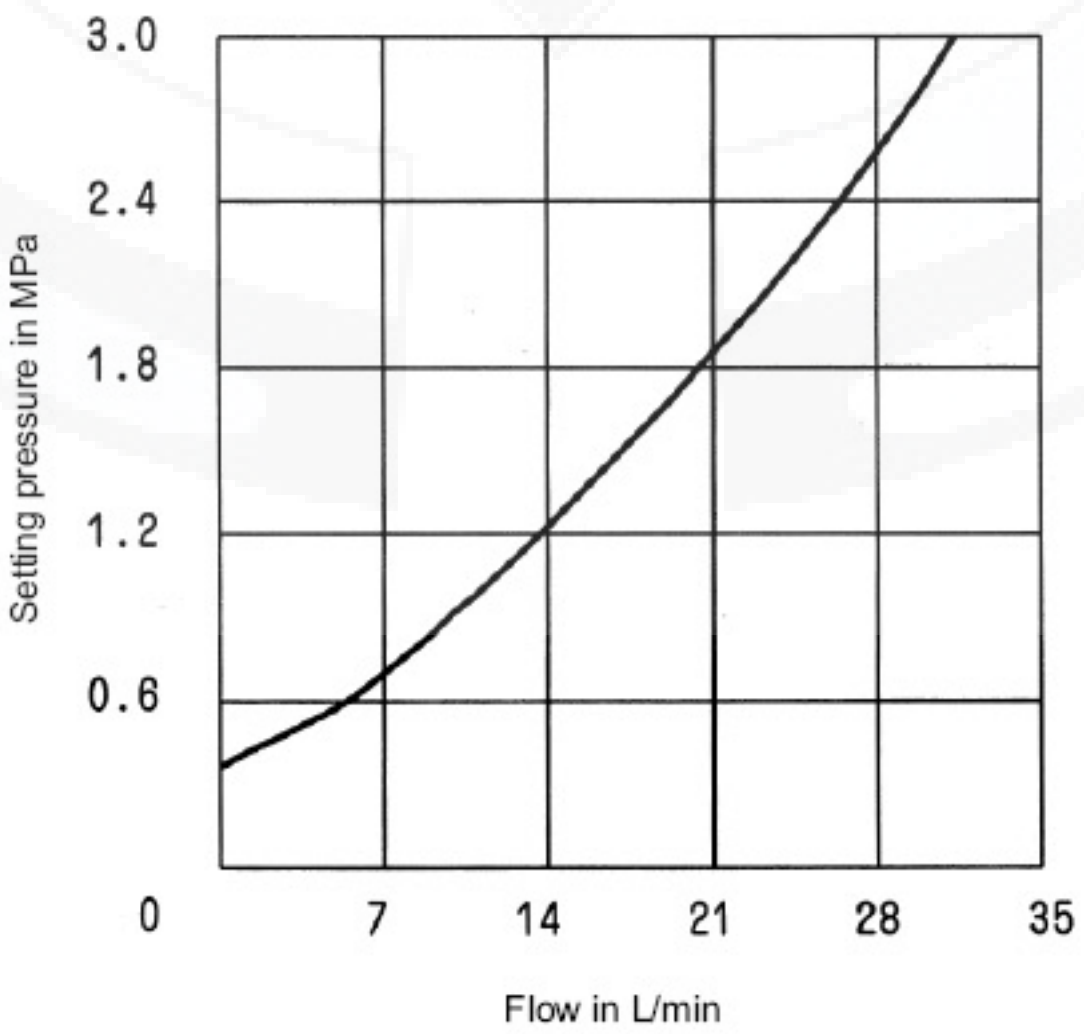
Operating pressure, max.	(MPa)	up to 31.5
Viscosity range	(mm^2/s)	10-800
Flow, max.	(L/min)	up to 35
Pressure fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)
Pressure fluid temperature range	(°C)	-30 to +80
Degree of fluid contamination		Maximum permissible degree of contamination of the fluid is to NAS 1638, class 9. $\beta_{10} \geqslant 75$

Characteristic curves (measured at v = 41 mm²/s and t = 50°C)

Pressure-flow characteristic curve

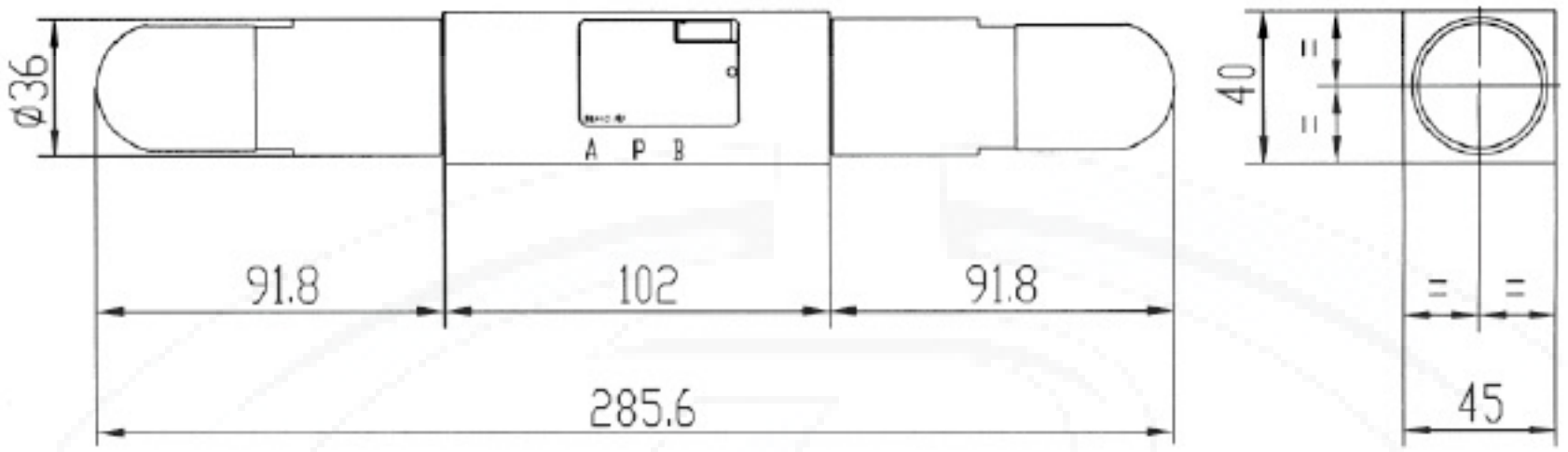


Min.pressure-flow characteristic curve

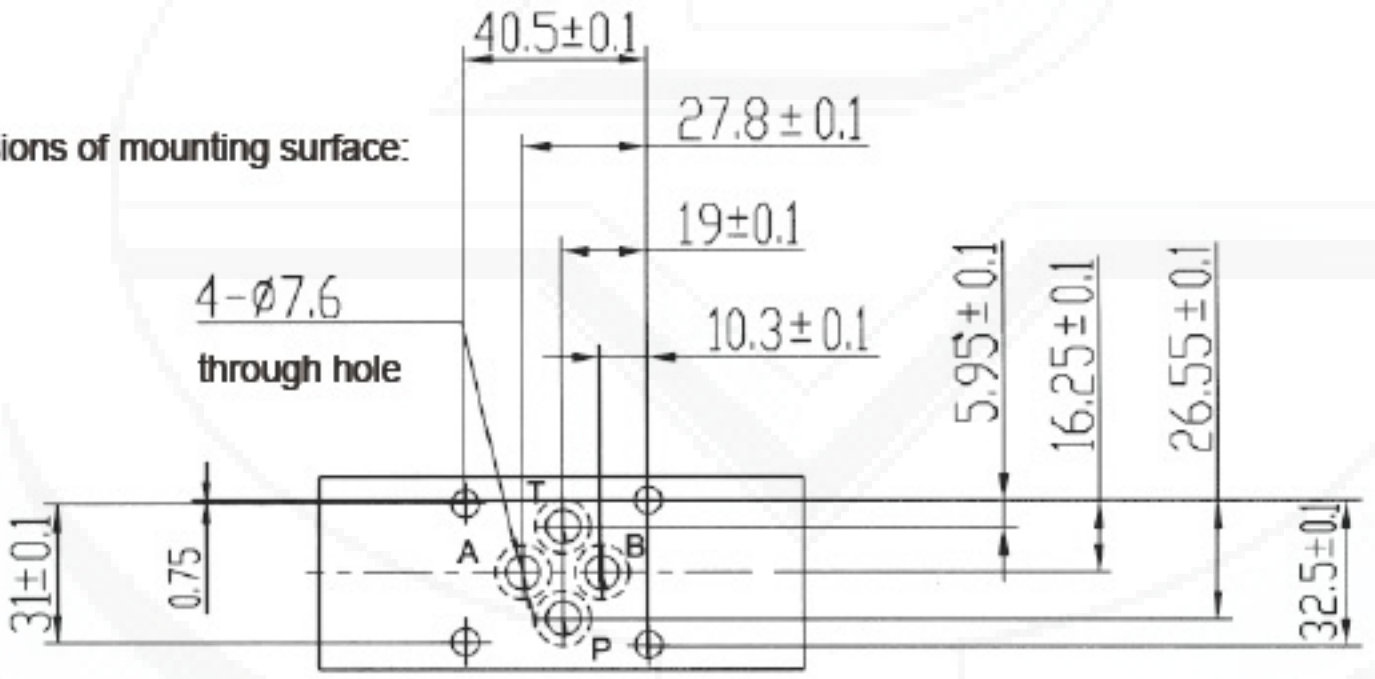


Unit dimensions:Type ZDB 6 ...-40... **(Dimensions in mm)**

Type Z2DBD6VC-2-10B/.

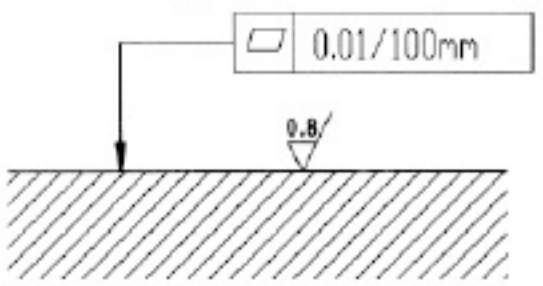


Dimensions of mounting surface:



Size	O-rings for port A、B、P、T
6	9.25X1.78

Required surface finish of mating piece



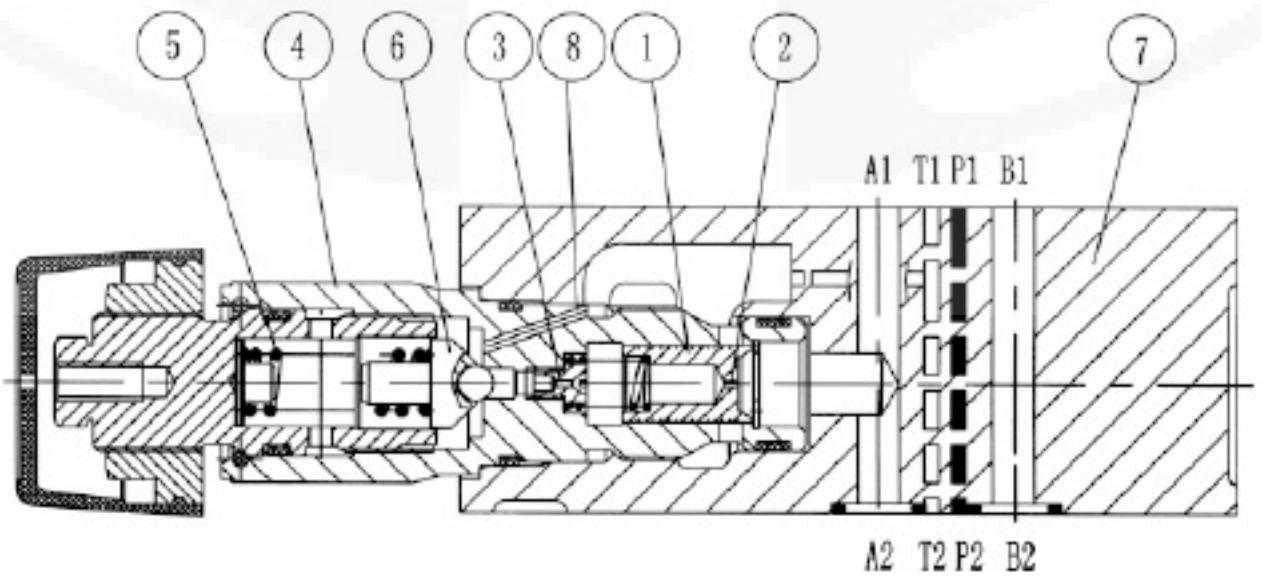
BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	Pilot operated pressure relief valve sandwich plate,type ZDB/Z2DB6			RE25750/12.2004
	Size 6	up to 31.5 MPa	up to 60 L/min	Replaces：RE25750/05.2001

Features:

- Sandwich plate valve
- 4 pressure ranges
- 5 circuit options
- With one or two pressure relief cartridges
- 4 adjustment elements:
  - Rotary knob
  - Sleeve with hexagon and protective cap
  - Lockable rotary knob with scale
  - Lockable rotary knob

Functional, section

Pressure relief valve types ZDB and Z2DB are pilot operated and are of sandwich plate design.
They are used to limit the pressure within a hydraulic system.
They basically consist of the housing (7), together with one or two pressure relief valve cartridges.
The system pressure is set by means of adjustment element (4).
At rest, the valve is closed. Pressure in port A acts on the spool (1). At the same time pressure passes through orifice (2) on to the spring loaded side of spool (1) and via orifice (3) to the pilot poppet (6). If the pressure in port A rises above the value set on spring (5), the pilot poppet (6) opens. Fluid can now flow from the spring loaded side of spool (1), orifice (3), and channel (8) into port T. The resulting pressure drop then moves spool (1), causing this to open connection A to T, while the pressure set at spring (5) is maintained.
Pilot oil from the two spring chambers return externally to tank via port T.



Type ZDB 6 VA2 - 40B/..

Ordering code

Z		DB	6		-		-	40	B	/			*

Sandwich plate = Z

Only applies to models VC and VD:
With 1 pressure relief valve cartridges = no code
With 2 pressure relief valve cartridges = 2

Pressure relief valve = DB

Nominal size 6 = 6

Relief function form:
A → T = VA
P → T = VP
B → T = VB
A → T and B → T = VC
A → B and B → A = VD

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

40= Series 40 to 49
(40 to 49 = unchanged installation and connection dimensions)

B= Technology of Beijing Huade Hydraulic

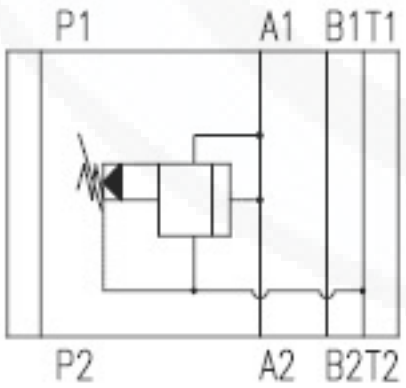
50 = Pressure adjustable up to 5 MPa
100 = Pressure adjustable up to 10 MPa
200 = Pressure adjustable up to 20 MPa
315 = Pressure adjustable up to 31.5 MPa

No code = mineral oils
V = phosphate ester

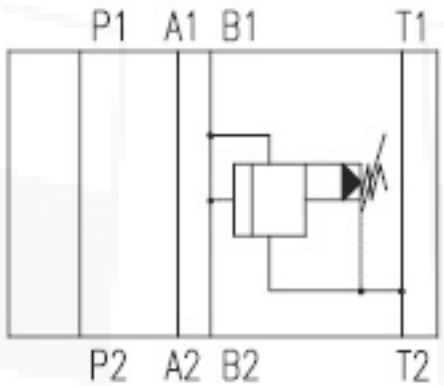
Further details in clear text

Symbols: 1-valve side, 2-subplate side

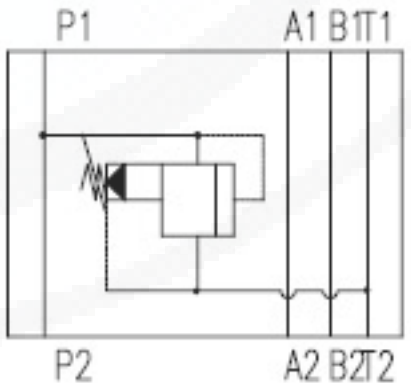
ZDB 6 VA ..



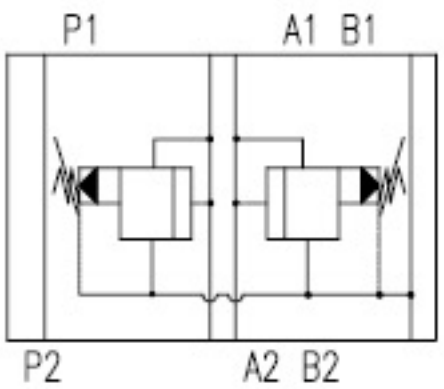
ZDB 6 VB ..



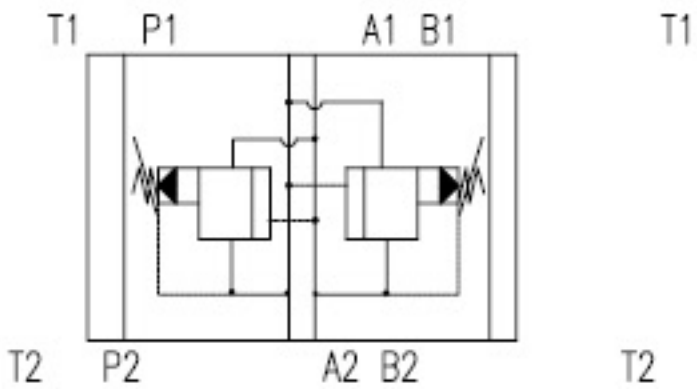
ZDB 6 VP ..



Z2DB 6 VC ..



Z2DB 6 VD ..

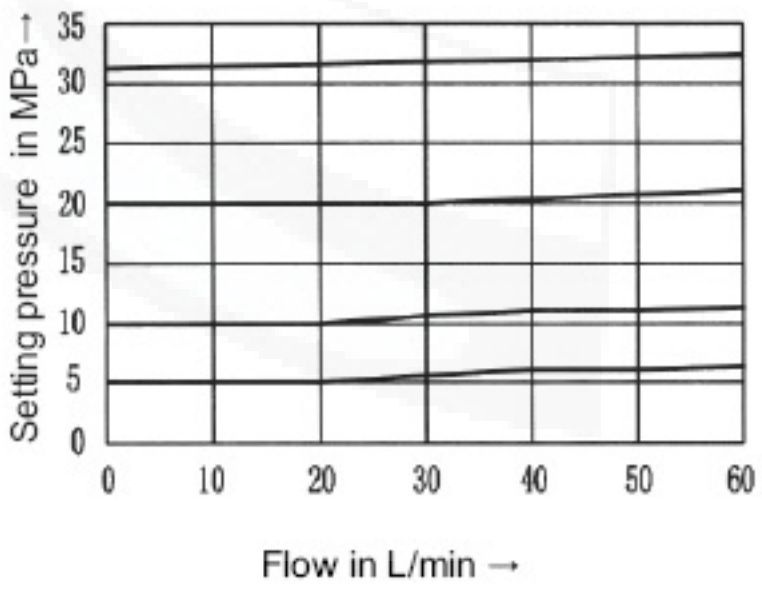


Technical data (For applications outside these parameters, please consult us!)

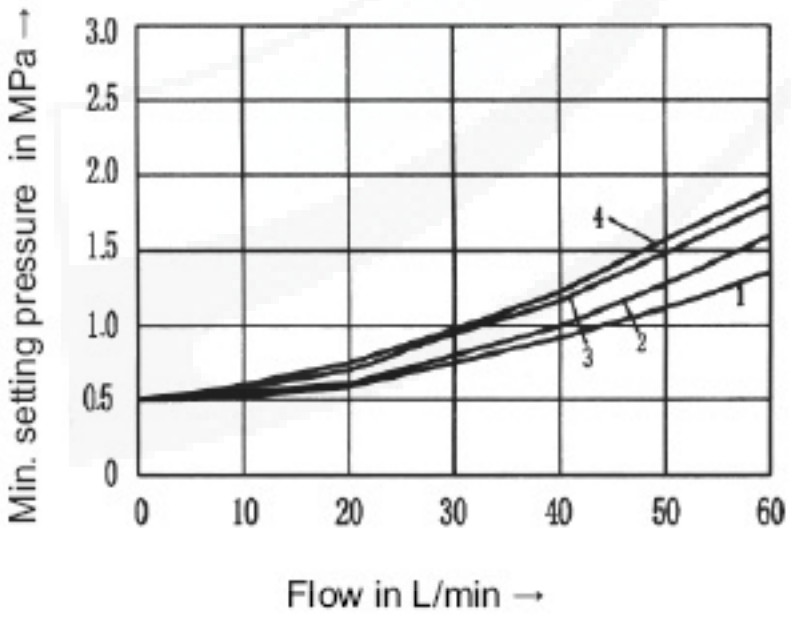
Pressure fluid			Mineral oil (for NBR seal),or phosphate ester (for FPM seal)
Pressure fluid - temperature range		(℃)	-30～+80
Viscosity range		(mm²/s)	10～800
Degree of fluid contamination			Maximum permissible degree of contamination of the fluid is to NAS 1638, class 9. $\beta_{10} \geqslant 75$
Operating pressure, max.		(MPa)	up to 31.5
Pressure adjustable, max. setting		(MPa)	up to 5、to 10、to 20、to 31.5
Flow, max.		(L/min)	up to 60
Weight	Type ZDB 6	(Kg)	approx. 1
	Type Z2DB 6	(Kg)	approx. 1.2

Characteristic curves (measured at v = 41 mm² /s and t = 50℃)

P_E - Q characteristic curve



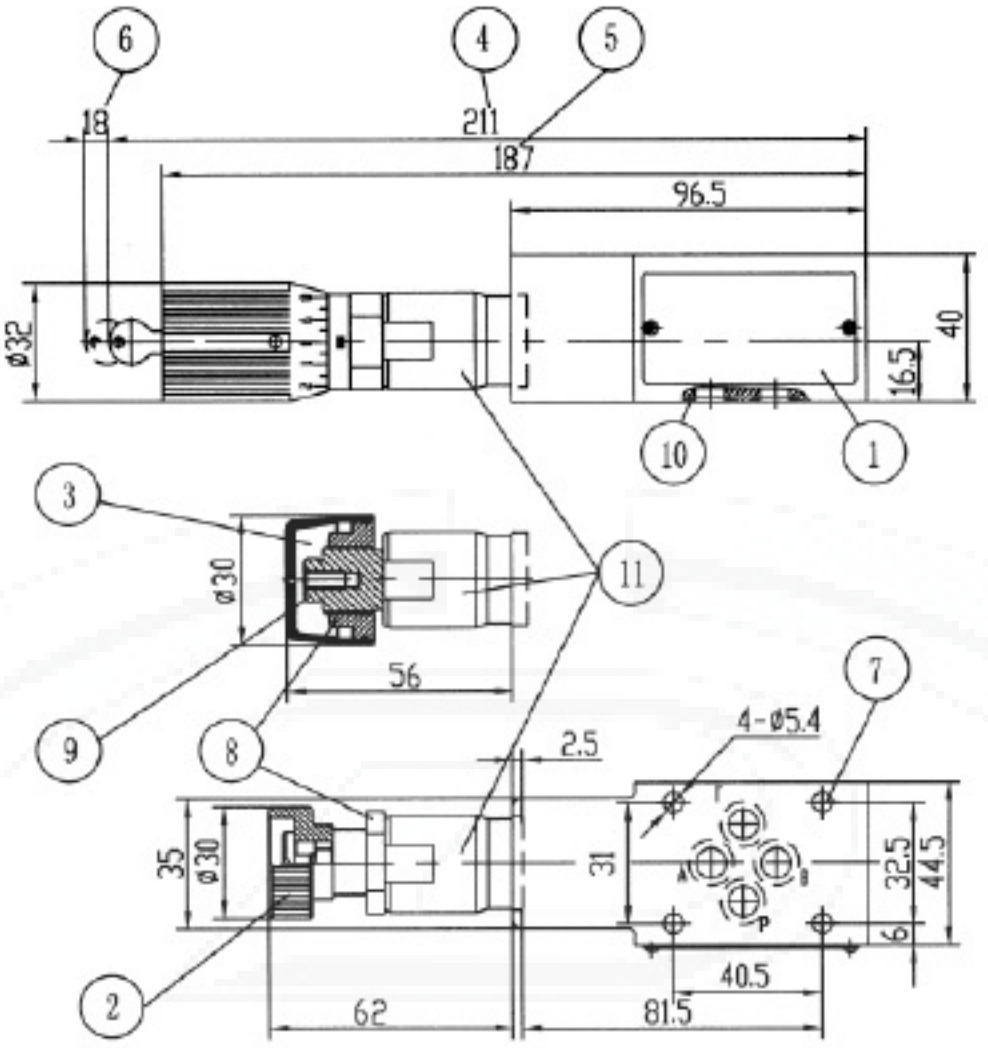
P_{Emin} - Q characteristic



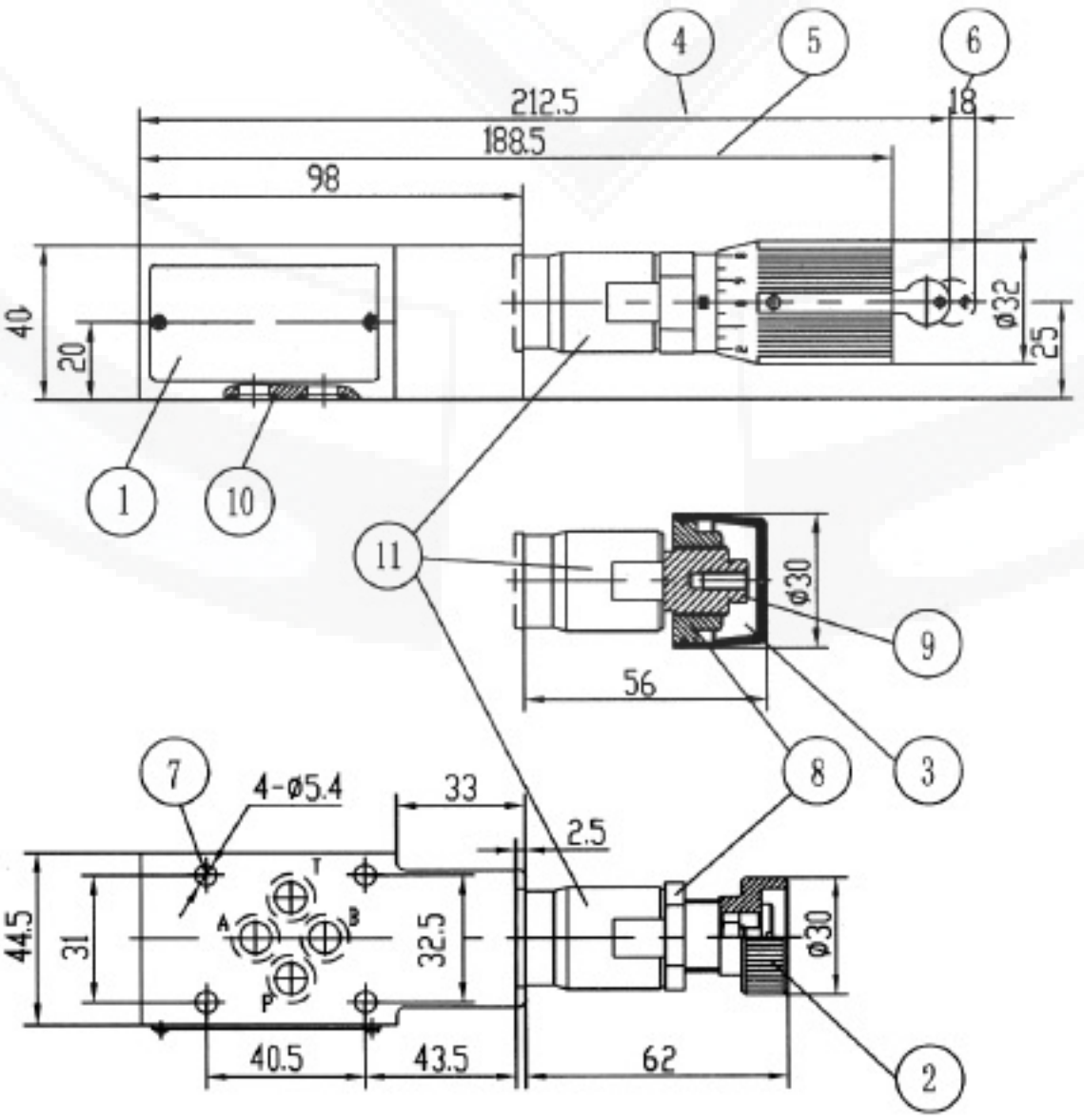
1 VD (A to B)
2 VA
3 VB , VC
4 VP , VD (B to A)

Unit dimensions: Type ZDB 6 ...-40B... **(Dimensions in mm)**

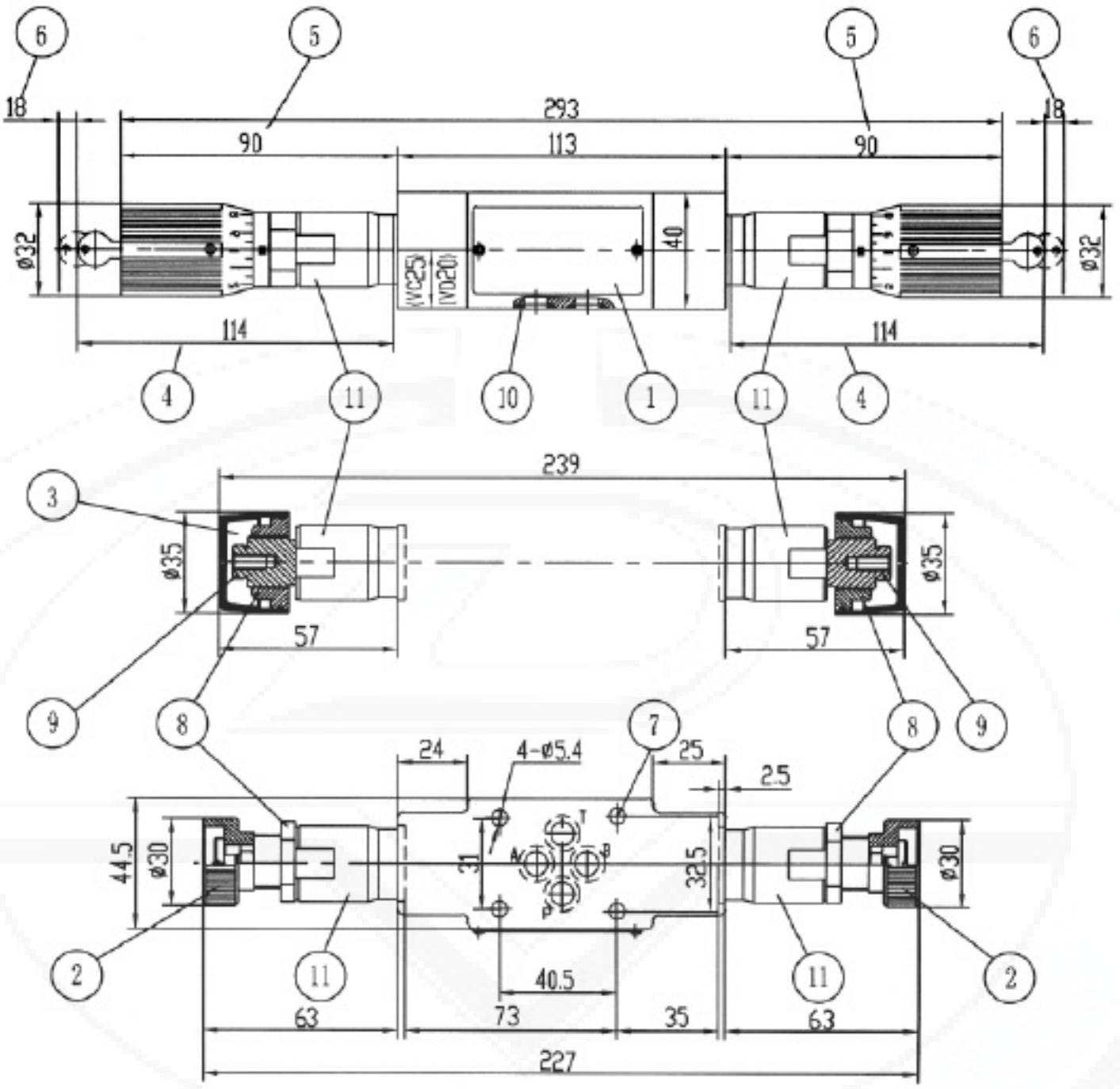
Type ZDB6 VA..



Type ZDB6 VB.. and ZDB6 VP..

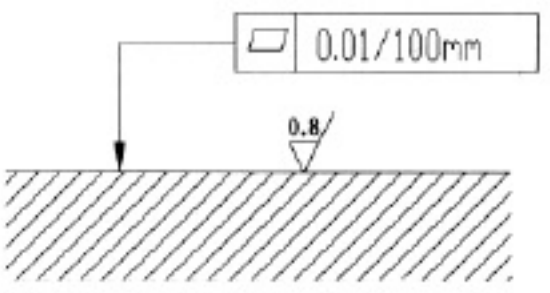


Type Z2DB6 VC..and Z2DB6 VD..



1 Nameplate
2 Adjustment element 1
3 Adjustment element 2
4 Adjustment element 3
5 Adjustment element 7
6 Space required to remove key
7 Valve fixing screw holes
8 Lock nut 24 A/F
9 Hexagon 10 A/F
10 O-ring 9.25 x 1.78 for ports A2, B2, P2, T2
11 Hexagon 24 A/F
Tightening torque M_A = 50 Nm

Required surface finish of mating piece



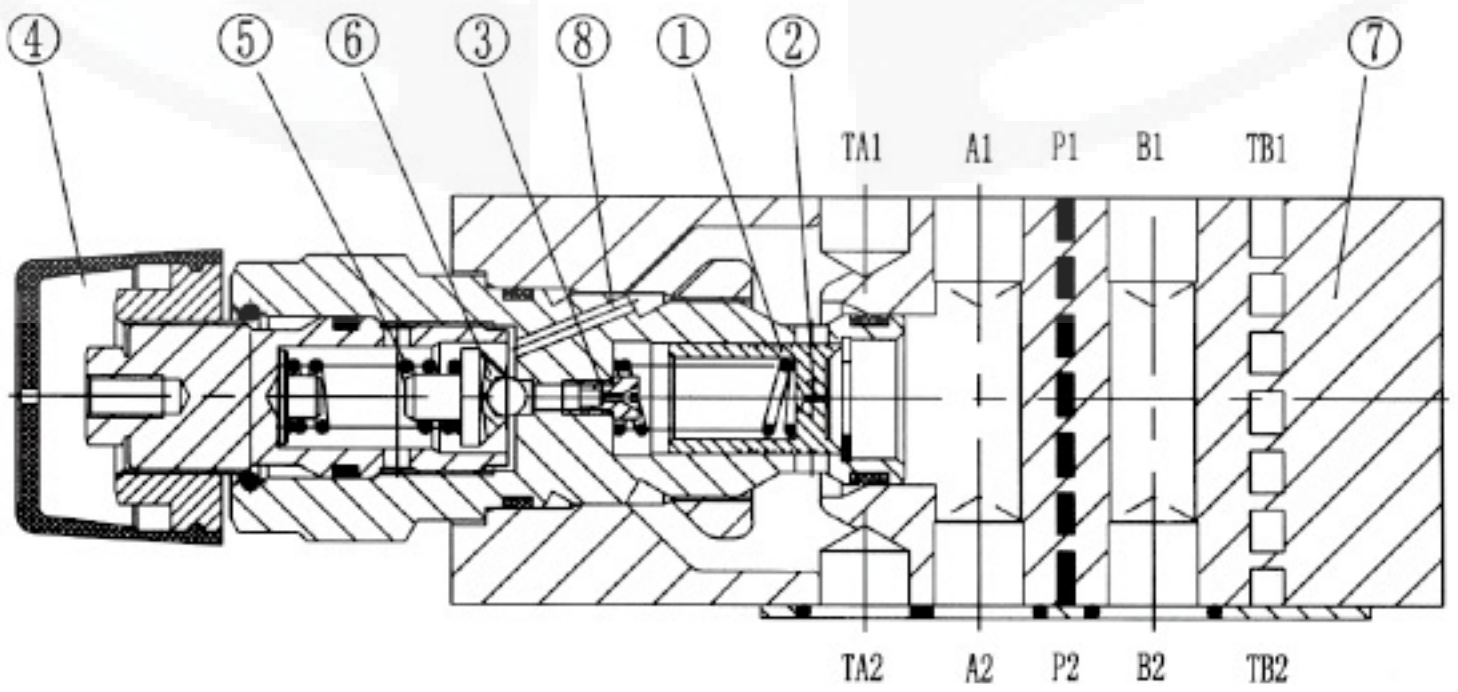
BEIJING HUADE HYADRAULIC INDUSTRIAL GROUP CO.,LTD.	Pilot operated pressure relief valve, sandwich plate,type ZDB/Z2DB10			RE 25761/12.2004
	Size10	up to 31.5 MPa	up to 100 L/min	Replaces: RE25750/05.2001

Features:

- Sandwich plate valve
- 4 pressure ranges
- 5 circuit options
- With one or two pressure relief cartridges
- 4 adjustment elements:
  - · Rotary knob
  - · Sleeve with hexagon and protective cap
  - · Lockable rotary knob with scale
  - · Lockable rotary knob

Functional, section

Pressure relief valve types ZDB and Z2DB are pilot operated and are of sandwich plate design.
They are used to limit the pressure within a hydraulic system, together with one or two pressure relief valve cartridges.
The system pressure is set by means of adjustment element (4).
At rest, the valve is closed. Pressure in port A acts on the spool (1). At the same time pressure passes through orifice (2) on to the spring loaded side of spool (1) and via orifice (3) to the pilot poppet (6). If the pressure in port A rises above the value set on spring (5), the pilot poppet (6) opens. Fluid can now flow from the spring loaded side of spool (1), orifice (3), and channel (8) into port T. The resulting pressure drop then moves spool (1), causing this to open connection A to T, while the pressure set at spring (5) is maintained.
Pilot oil return from the two spring chambers is taken externally via port T.



Type ZDB 6 VA2 - 40B/..

Ordering code

Z		DB	10	-	-	-	B	/			*

Sandwich plate = Z

Only applies to models VC and VD:
With 1 pressure relief valve cartridges = No code
With 2 pressure relief valve cartridges = 2

Pressure relief valve = DB

Nominal size 10 = 10

Relief function from to:

A	⟶	T	= VA
B	⟶	T	= VB
P	⟶	T	= VP
A	⟶	T and B ⟶ T	= VC
A	⟶	B and B ⟶ A	= VD
TB1	⟶	TA2	= VT

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

40 = Series 40 to 49
(40 to 49 = unchanged installation and connection dimensions)

B= Technology of Beijing Huade Hydraulic

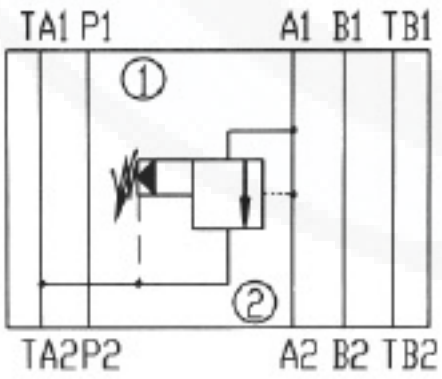
50 = Pressure adjustable up to 5 MPa
100 = Pressure adjustable up to 10 MPa
200 = Pressure adjustable up to 20 MPa
315 = Pressure adjustable up to 31.5 MPa

No code = mineral oils
V = phosphate ester

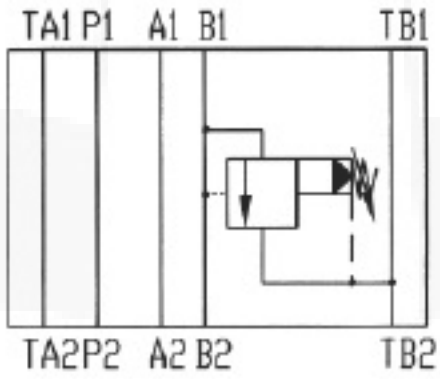
Further details in clear text

Symbols

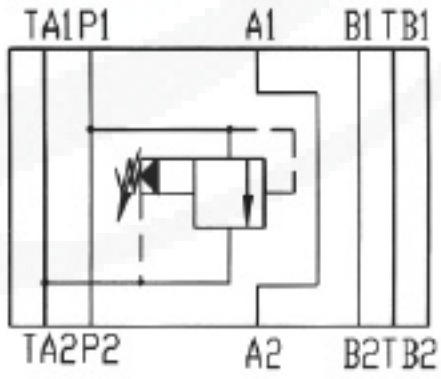
Type ZDB 10 VA ..



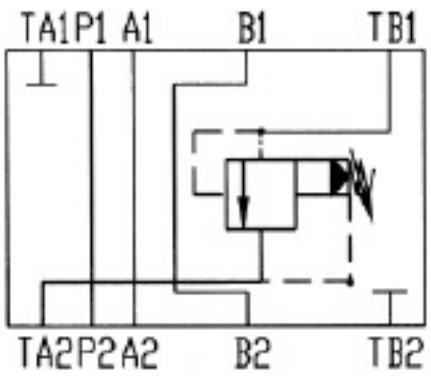
Type ZDB 10 VB ..



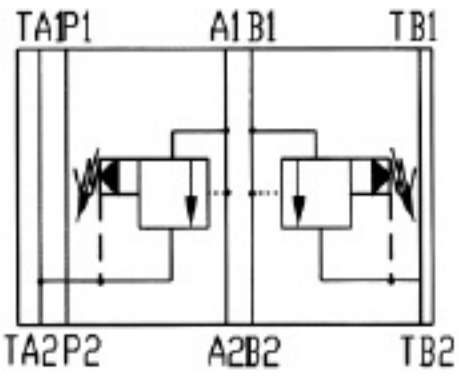
Type ZDB 10 VP ..



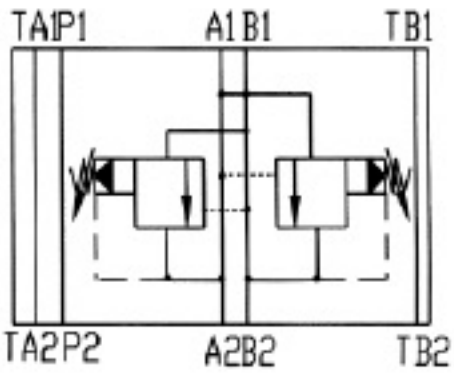
Type ZDB 10 VT ..



Type Z2DB 10 VC ..



Type Z2DB 10 VD ..

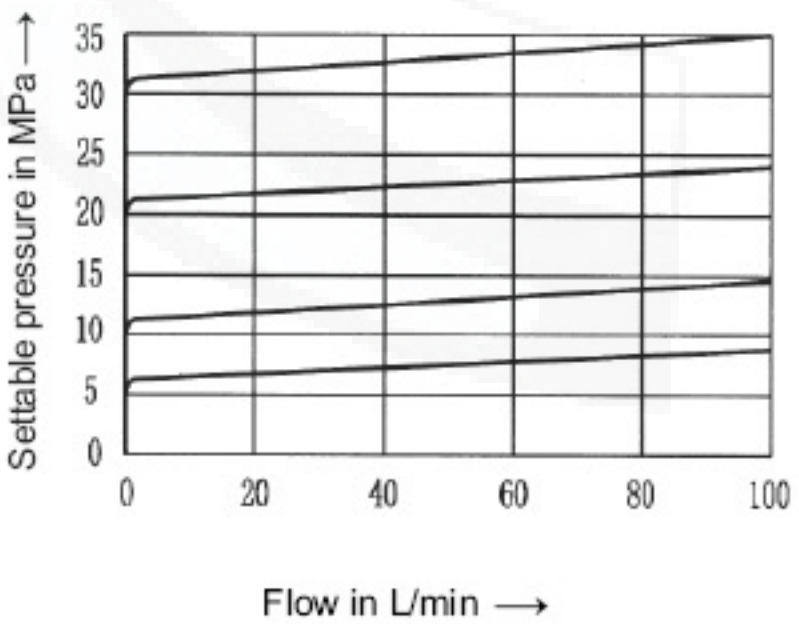


Technical data (for applications outside these parameters, please consult us!)

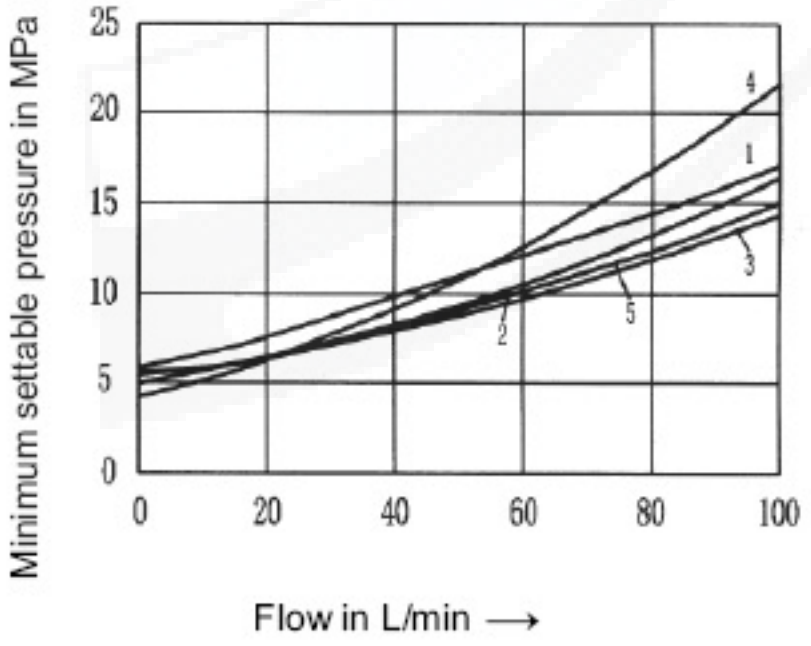
Pressure fluid		Mineral oil (for NBR seal),or phosphate ester (for FPM seal)
Pressure fluid - temperature range (°C)		-30 to +80
Viscosity range (mm²/s)		10-800
Degree of fluid contamination		Maximum permissible degree of contamination of the fluid is to NAS 1638, class 9. $\beta_{10} \geqslant 75$
Operating pressure, max. (MPa)		up to 31.5
Pressure adjustable, max. setting (MPa)		up to 5, up to 10, up to 20, up to 31.5
Flow, max. (L/min)		up to 100
Weight (Kg)	Type ZDB 10	approx. 2.4
	Type Z2DB 10	approx. 2.6

Characteristic curves (measured at v = 41 mm ²/s and t = 50° C)

p_E-q_V characteristic curve



p_E-q_V characteristic curve



1 VA , VB

2 VP

3 VC

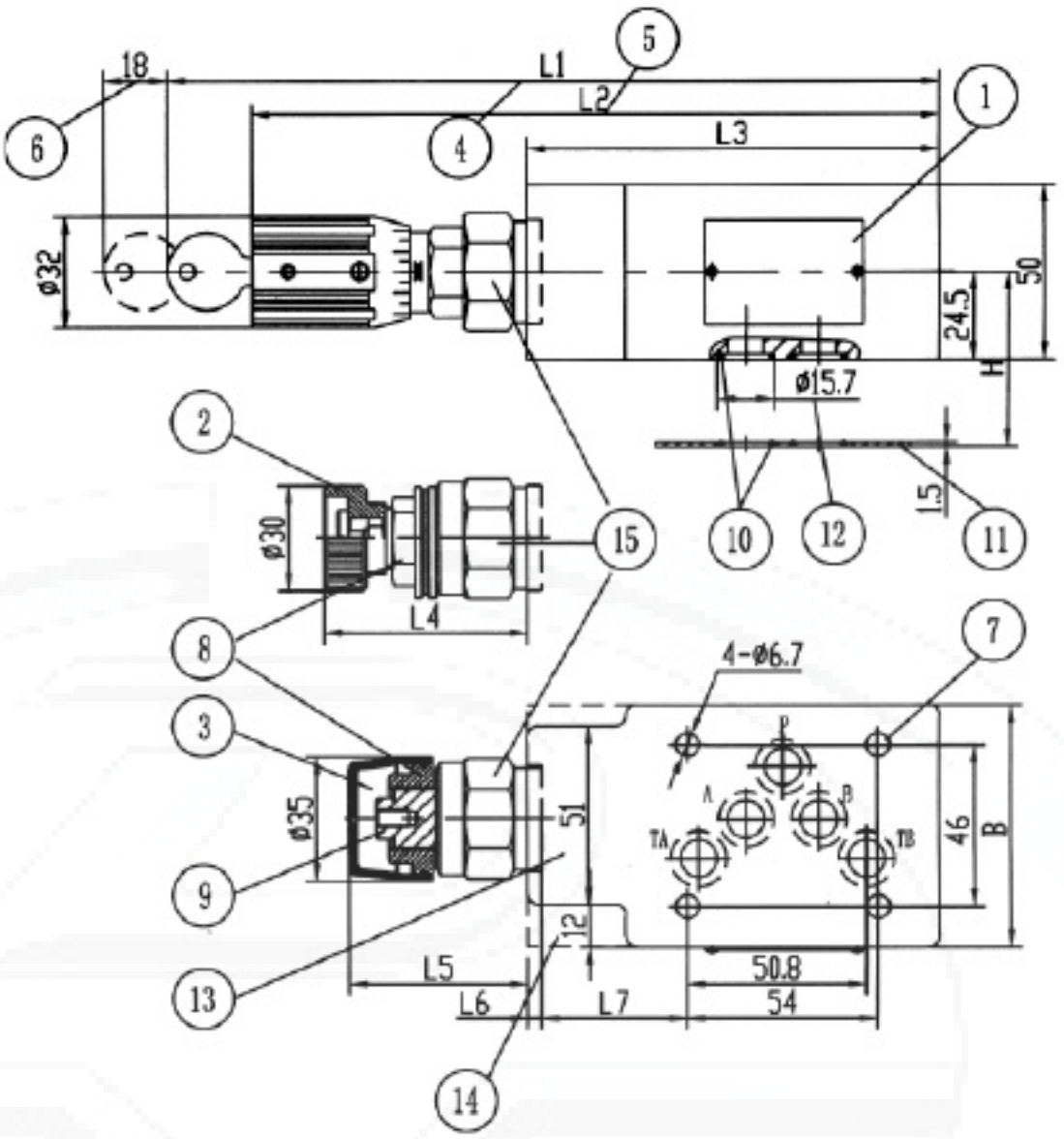
4 VD (A to B)

5 VD (B to A)

Unit dimensions: Type ZDB 10 ...-40... (Dimensions in mm)

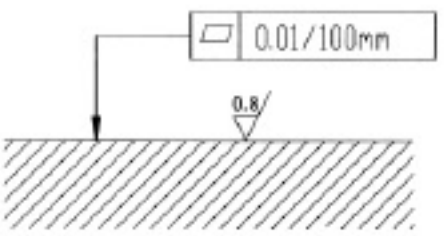
Type ZDB10 VA...
Type ZDB10 VT...
Type ZDB10 VP...

Dimensions	ZDB10	
	VA VP	VT
B	69	70
H	26	25
L1	227	218
L2	203	194
L3	117	105
L4	57.6	60.9
L5	50.3	53.6
L6	4	0.7
L7	41.5	31.8



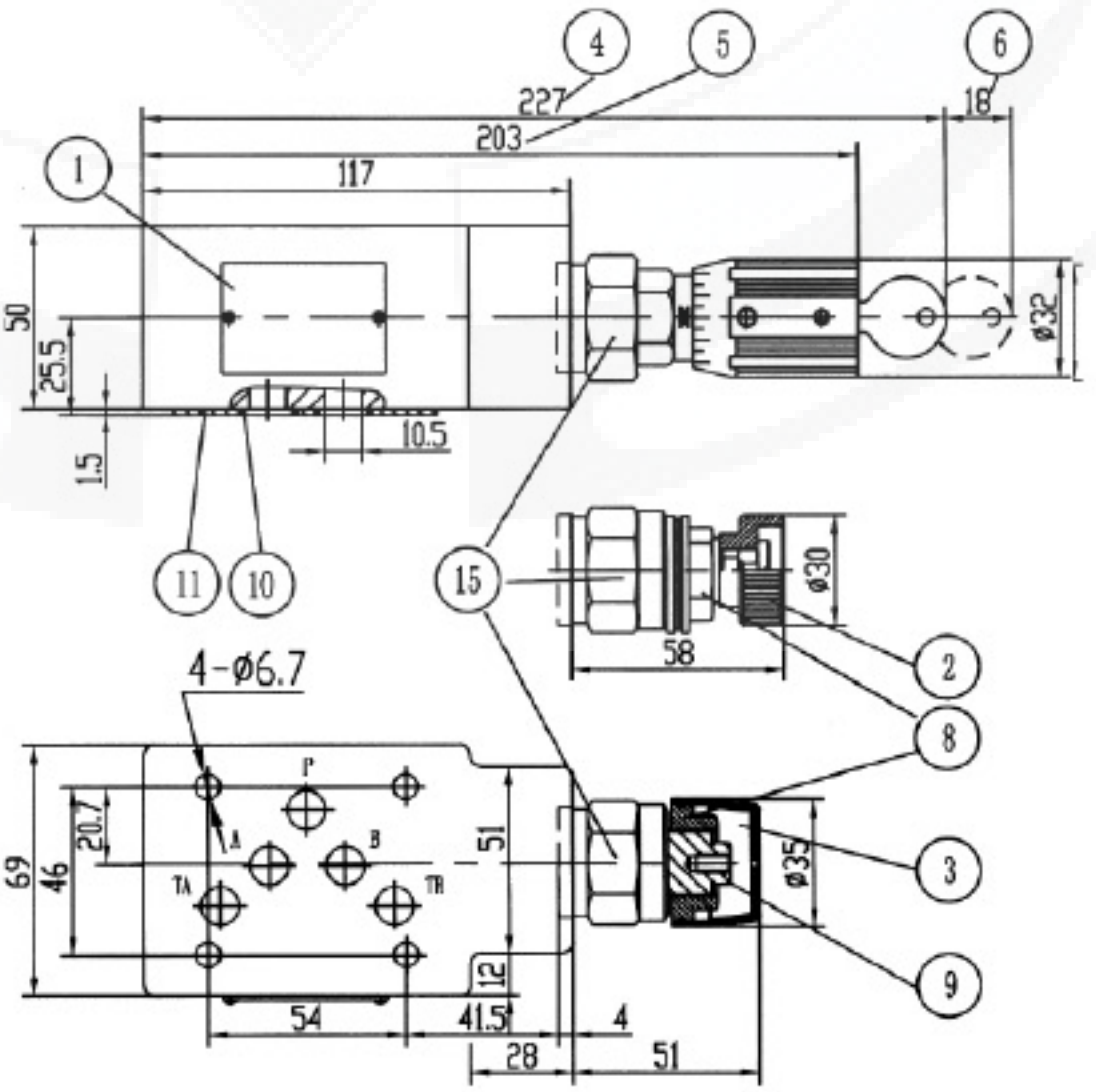
1 Nameplate
2 Adjustment element 1
3 Adjustment element 2
4 Adjustment element 3
5 Adjustment element 7
6 Space required to remove key
7 Valve fixing screw holes
8 Lock nut 24 A/F
9 Hexagon 10 A/F
10 O-rings 12 x 2 for ports A2, B2, P2, TA2, TB2
11. O-ring plate 72 x 60 x 1.5 (only for models VA, VB and VP)
12 Counter bores only for models VC, VD and VT
13 Models ZDB 10 VA and VP
14 Model ZDB 10 VT
15 Hexagon 30 A/F, Tightening torque M_A = 50 Nm

Valve fixing screws M6
Tightening torque M_A = 15.5Nm



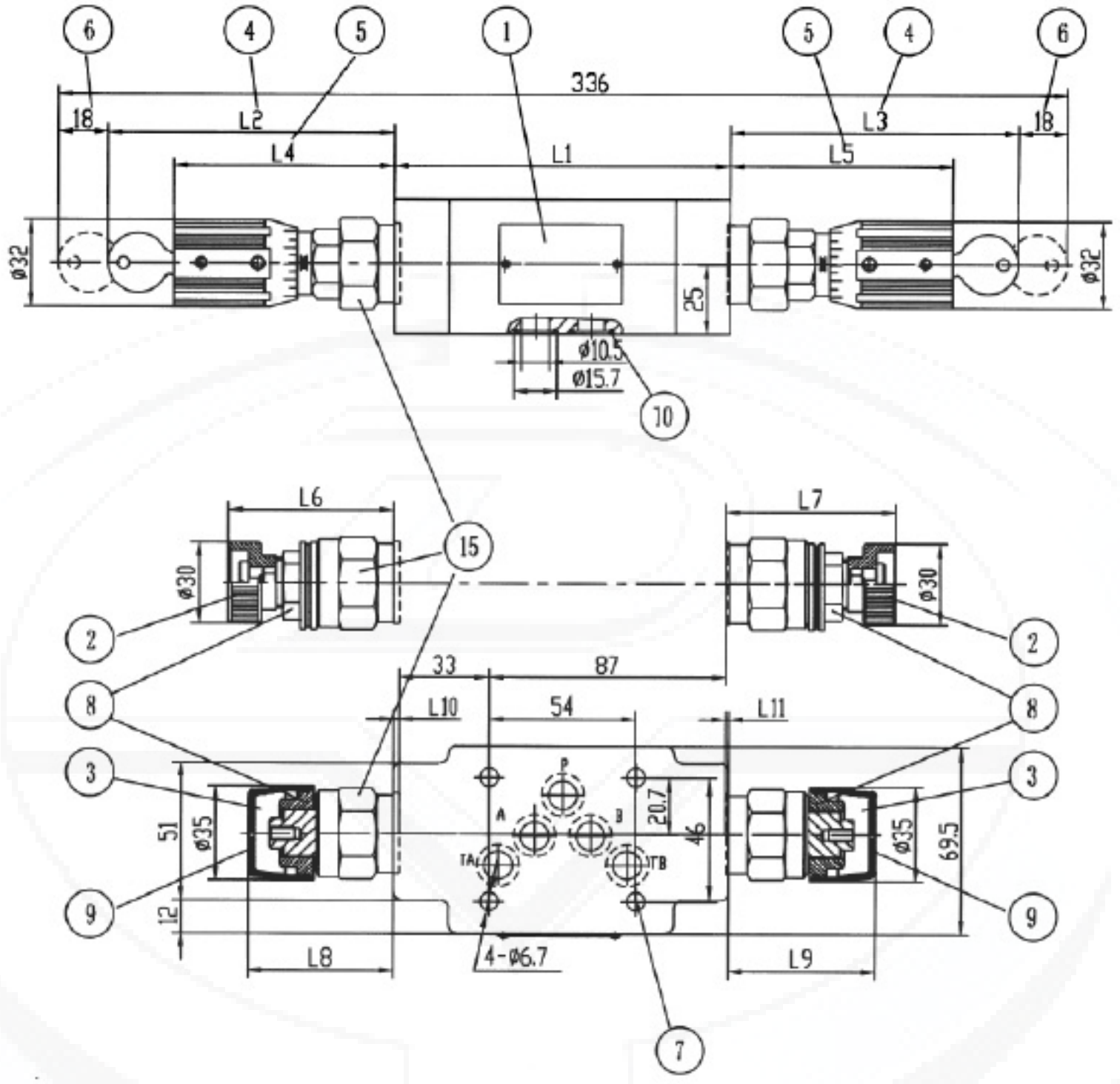
Required surface finish of mating piece

Type ZDB10 VB...



Type Z2DB10 VC...

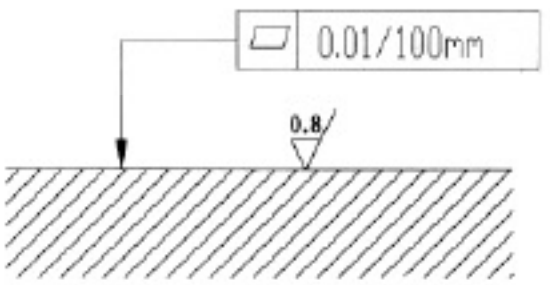
Type Z2DB10 VD...



1 Nameplate
2 Adjustment element 1
3 Adjustment element 2
4 Adjustment element 3
5 Adjustment element 7
6 Space required to remove key
7 Valve fixing screw holes
8 Lock nut 24 A/F
9 Hexagon 10 A/F
10 O-rings 12 x 2 for ports A2, B2, P2, TA2, TB2
15 Hexagon 30 A/F, Tightening torque M_A = 50 Nm

Valve fixing screws M6
Tightening torque M_A = 15.5 Nm,

Required surface finish of mating piece



dimensions	Z2DB10	
	VC	VD
L1	123	132
L2	111	107
L3	112	112
L4	89	85
L5	90	90
L6	59	56
L7	60	56
L8	52	49
L9	53	49
L10	2	6
L11	1	6

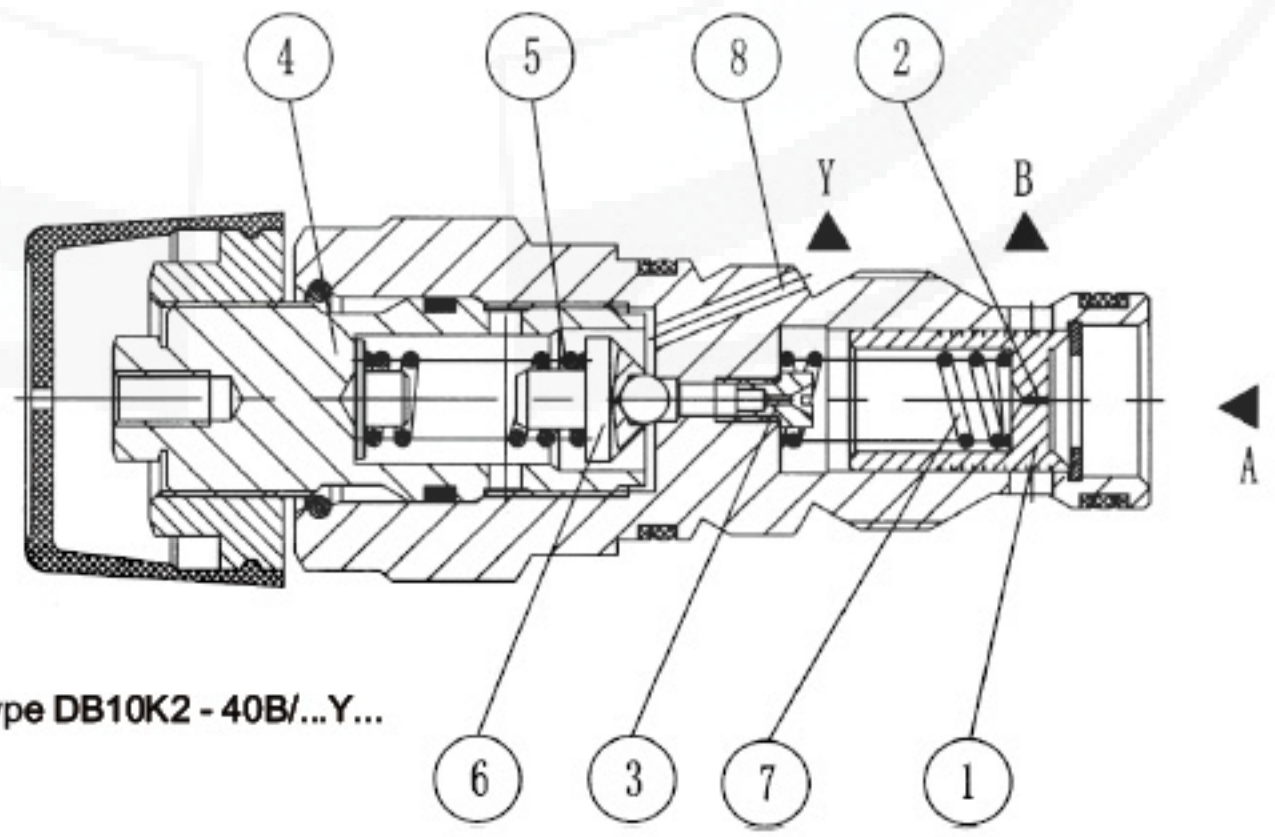
BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pilot operated pressure relief valve, cartridge connection,type DB..K**			RE 25730/12.2004
	Size 6、10、20	up to 31.5MPa	up to 330L/min	Replaces: RE25730/05.2001

Features:

- Cartridge valve
- 4 pressure ranges
- 4 adjustment elements:
  - · Rotary knob
  - · Sleeve with hexagon and protective cap
  - · Lockable rotary knob with scale
  - · Rotary knob with scale

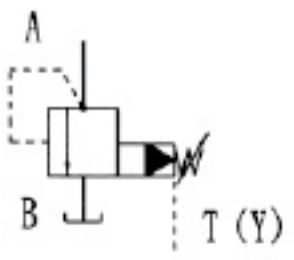
Functional, section, symbol

Pressure relief valves type DB..K.. are pilot operated pressure relief valves for installation in cartridge. They are used to limit the pressure in a hydraulic system. Setting of the system pressure is via adjustment element (4). At rest, the valves are closed. Pressure in port A acts on the spool (1). At the same time, pressure is passed through orifice (2) on to the spring loaded side of the spool (1) and through orifice (3) to the pilot poppet (6). If the pressure in port A rises above the value set at spring (5), the pilot poppet (6) opens. Fluid can now flow from the spring loaded side of spool (1), orifice (3), and channel (8) into port Y. The resulting pressure drop moves spool(1) causing this to open the connection from A to B, while the pressure set at spring (5) is maintained.
Pilot oil return from the two spring chambers is taken externally via port Y.



Type **DB10K2 - 40B/...Y...**

Symbol



Ordering code

DB		K		B				*

Pressure relief valve = DB

Nominal size 6 = 6
Nominal size 10 = 10
Nominal size 20 = 20

Cartridge valve = K

Adjustment element
Rotary knob = 1
Sleeve with hexagon and protective cap = 2
Lockable rotary knob with scale = 3
Rotary knob with scale = 7

Series 40 to 49 = 40(size 6 and 10)
(40 to 49: unchanged installation and connection dimensions)
Series 10 to 19 = 10 (size 20)
(10 to 19: unchanged installation and connection dimensions)

B= Technology of Beijing Huade Hydraulic

50 = Pressure adjustable up to 5 MPa
100 = Pressure adjustable up to 10 MPa
200 = Pressure adjustable up to 20 MPa
315 = Pressure adjustable up to 31.5 MPa

Y = Pilot oil supply internal, drain external
XY = Pilot oil supply external,drain external
(only to DB20K)

No code = mineral oils
V = phosphate ester

Further details in clear text

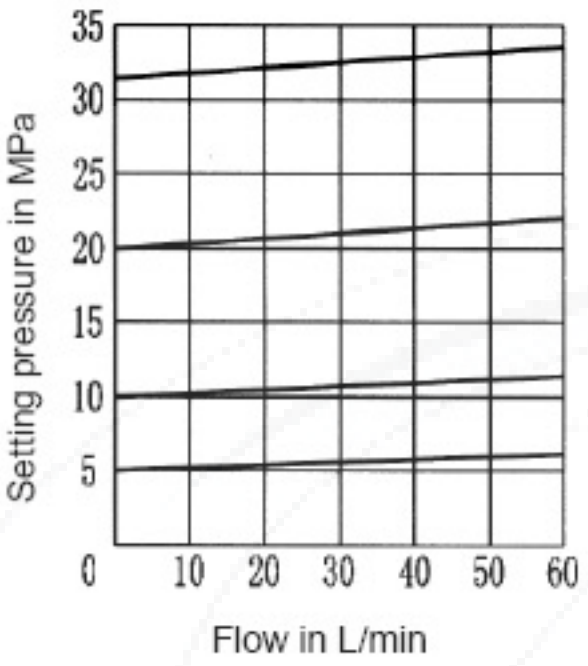
Technical data

Nominal size	6	10	20
Pressure fluid	Mineral oil (for NBR seal),or phosphate ester (for FPM seal)		
Pressure fluid - temperature range (°C)	-30 to +80		
Viscosity range (mm²/s)	10 to 800		
Degree of fluid contamination	Maximum permissible degree of contamination of the fluid is to NAS 1638, class 9.		
Operating pressure, max. (MPa)	up to 31.5		
Pressure adjustable, max. (MPa)	up to 5、up to 10、up to 20、up to 31.5		
Flow, max. (L/min)	up to 60	up to 100	up to 300
Weight (Kg)	approx.0.15	approx.0.2	approx.0.35

Characteristic curves (measured at v = 41 mm²/s and t = 50° C)

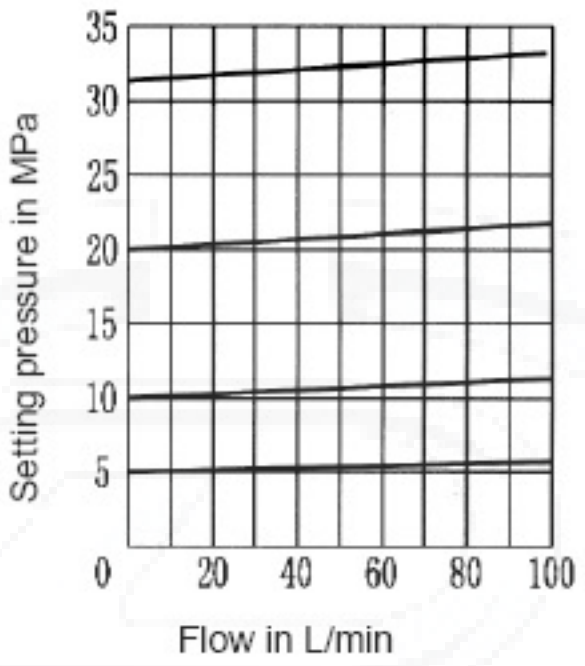
DB6K

p_E-q_v characteristic curve



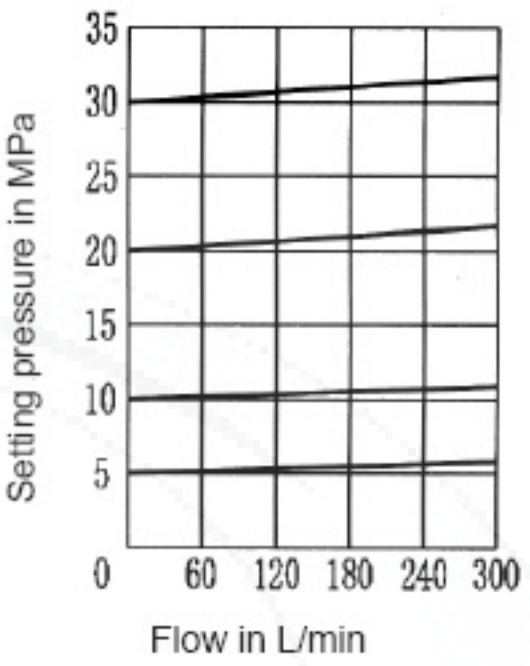
DB10K

p_E-q_v characteristic curve



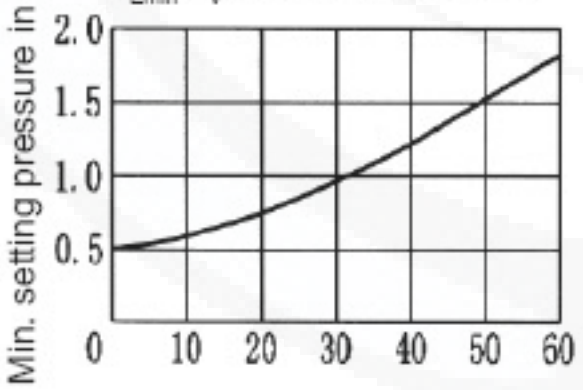
DB20K

p_E-q_v characteristic curve



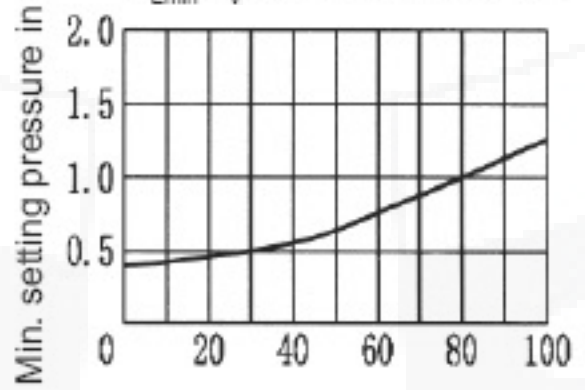
DB6K

p_{Emin}-q_v characteristic curve



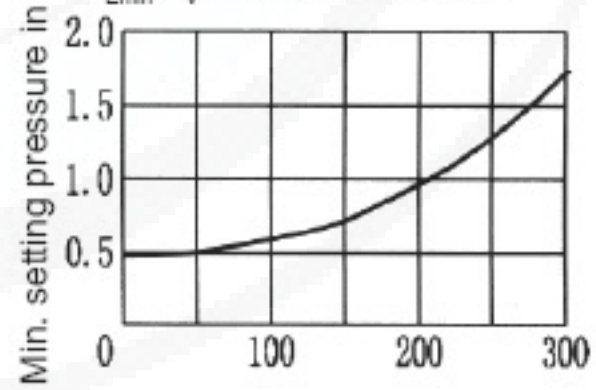
DB10K

p_{Emin}-q_v characteristic curve



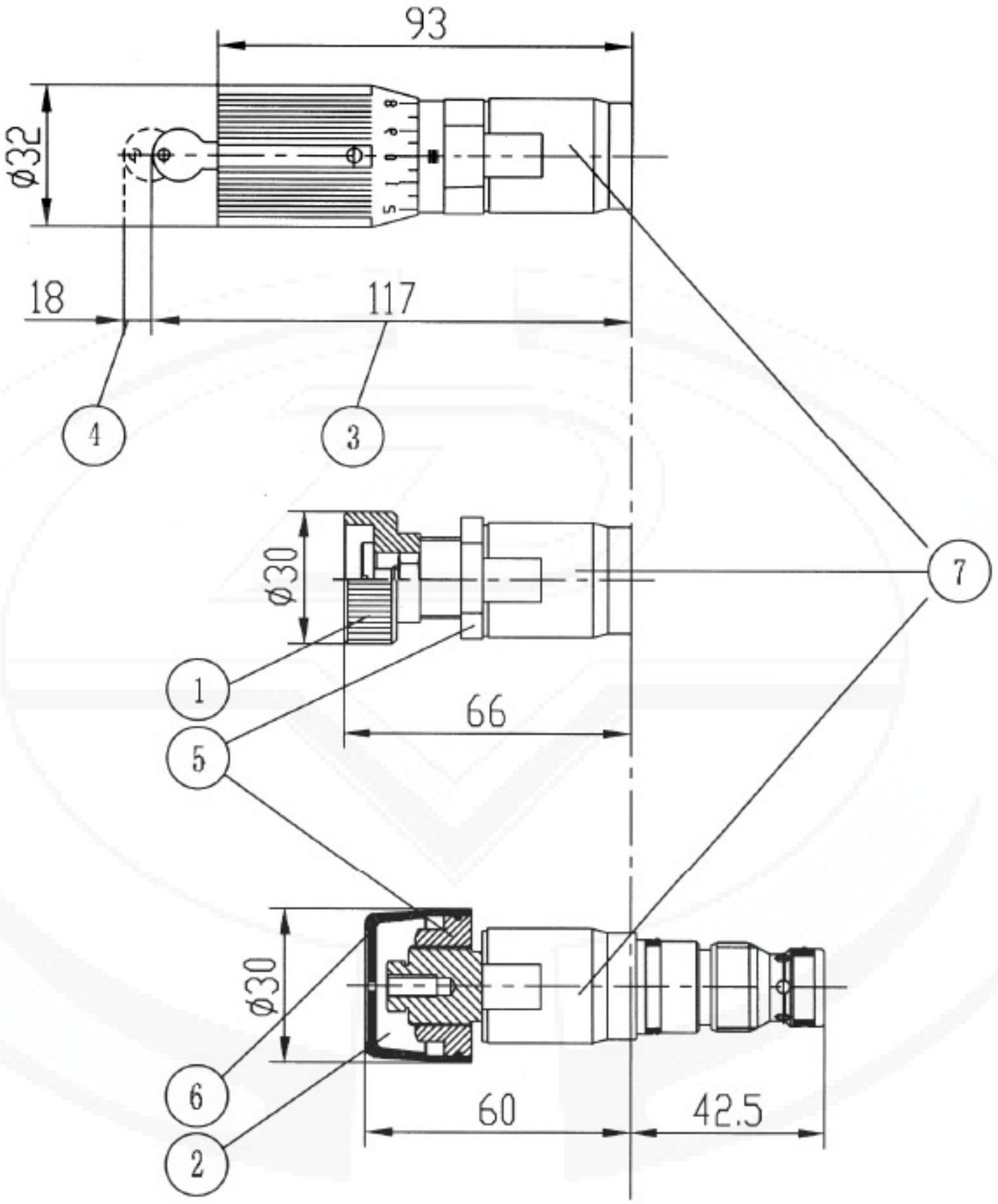
DB20K

p_{Emin}-q_v characteristic curve



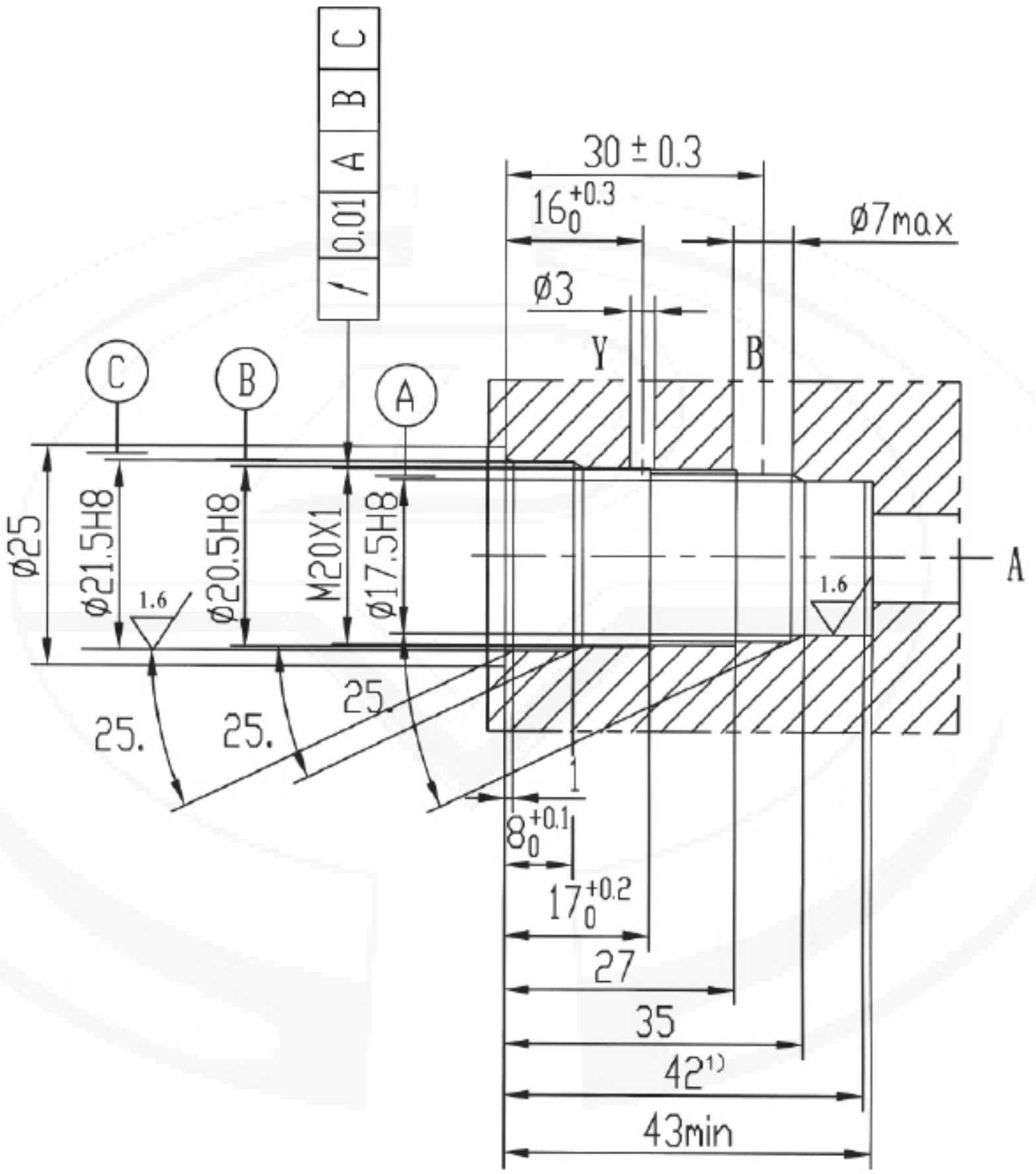
The characteristic curves are valid for an initial outlet pressure of zero over the entire flow range!

DB6K,Unit dimensions: size 6 **(Dimensions in mm)**

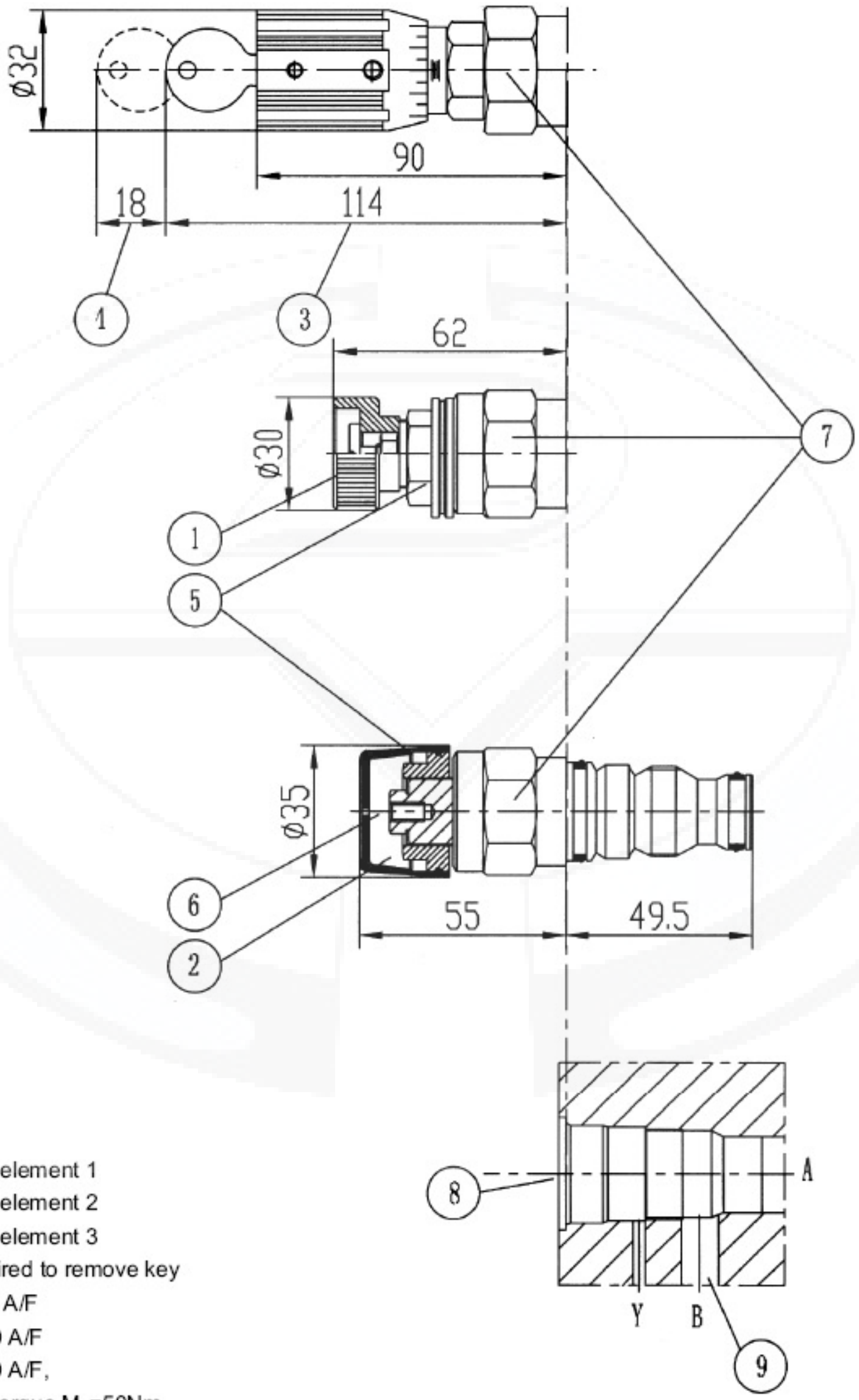


1. Adjustment element 1
2. Adjustment element 2
3. Adjustment element 3
4. Space required to remove key
5. Lock nut 24 A/F
6. Hexagon 10 A/F
7. Hexagon 30 A/F,
   Tightening torque M_A=50Nm
8. Fixing hole
9. Port B arranged as required around periphery

DB6K,Unit dimensions for cartridge: size 6 **(Dimensions in mm)**

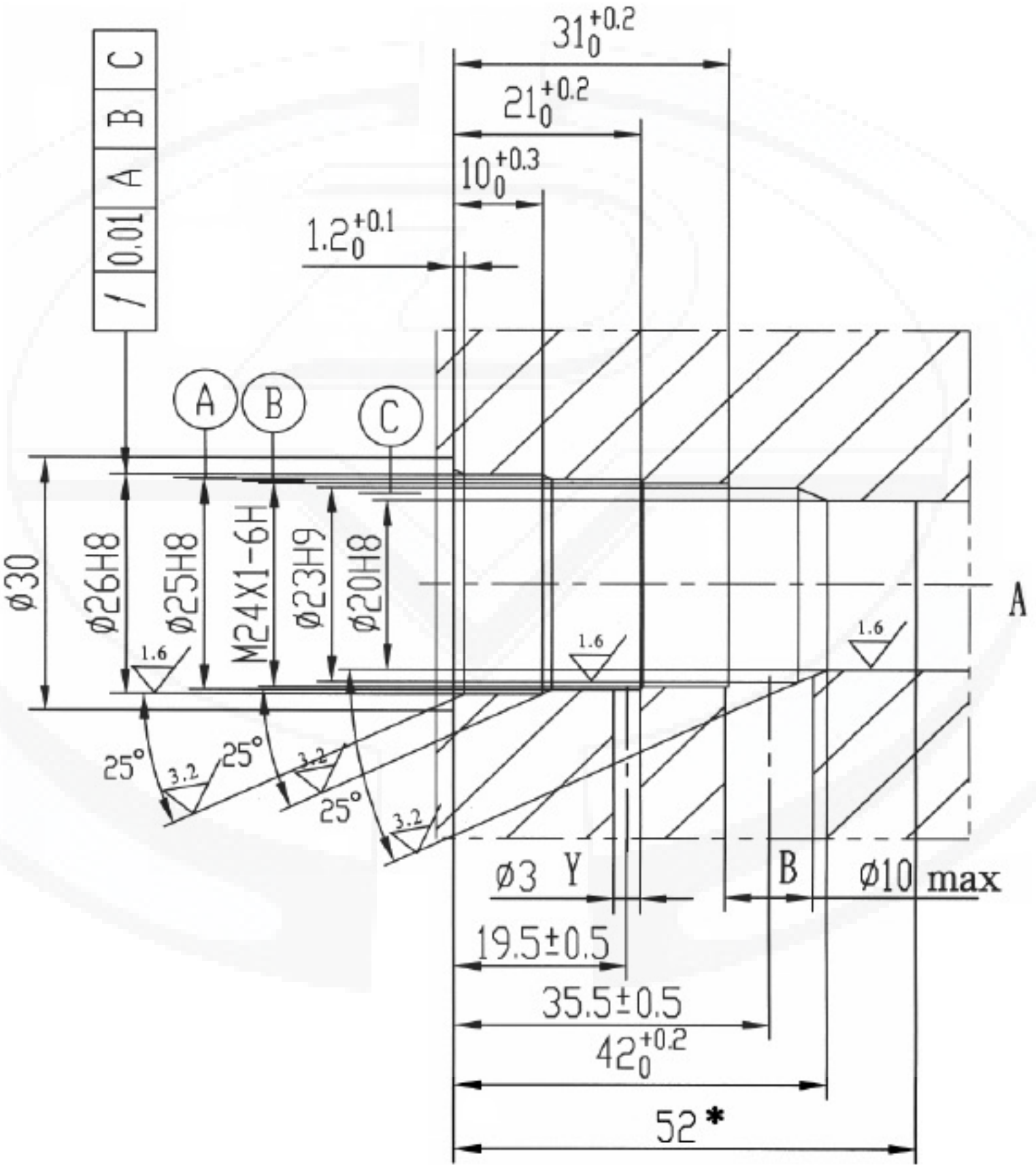


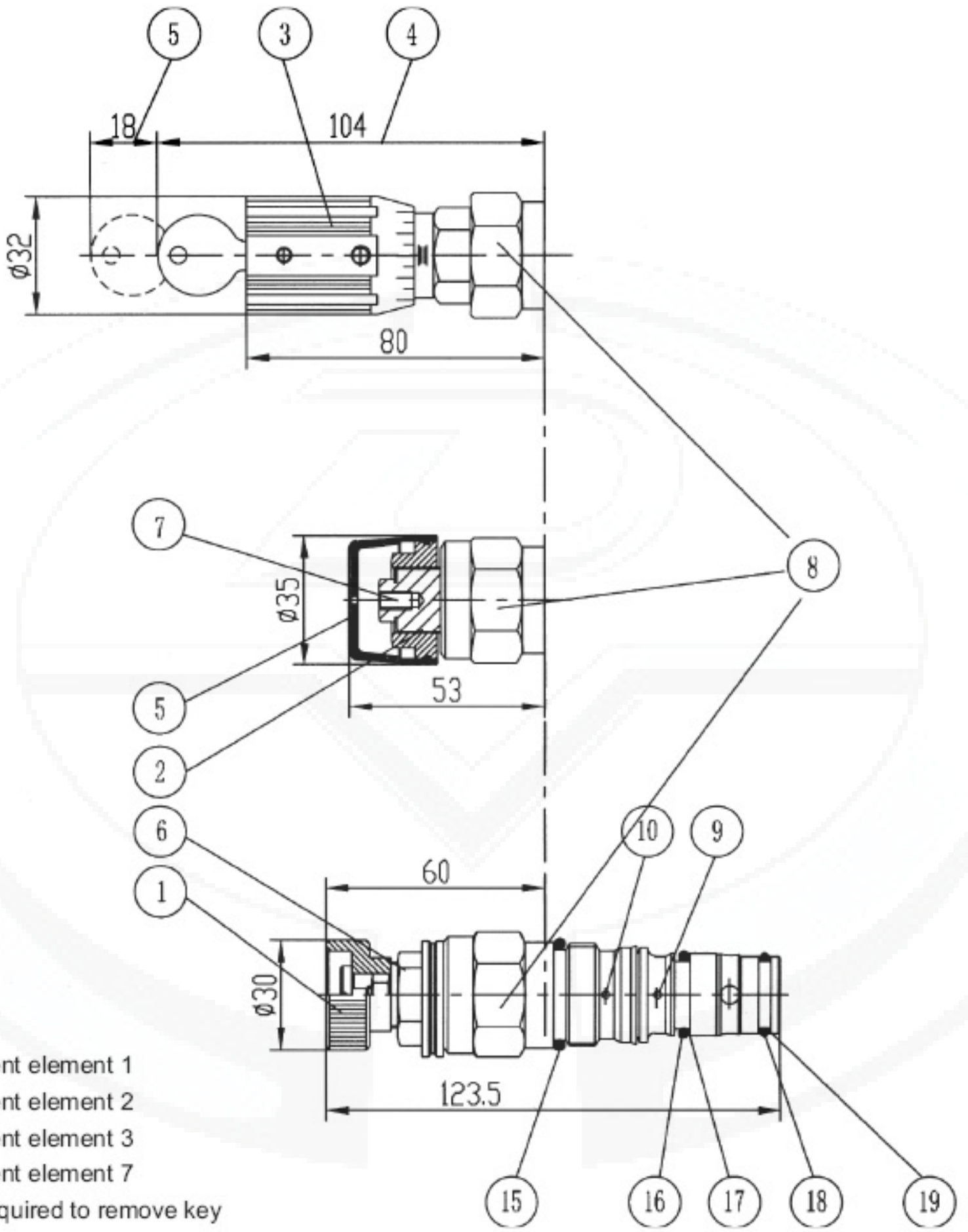
DB10K,Unit dimensions: size 10 **(Dimensions in mm)**



1. Adjustment element 1
2. Adjustment element 2
3. Adjustment element 3
4. Space required to remove key
5. Lock nut 24 A/F
6. Hexagon 10 A/F
7. Hexagon 30 A/F,
   Tightening torque M_A=50Nm
8. Fixing hole
9. Port B arranged as required around periphery

DB10K,Unit dimensions for cartridge: size 10 **(Dimensions in mm)**

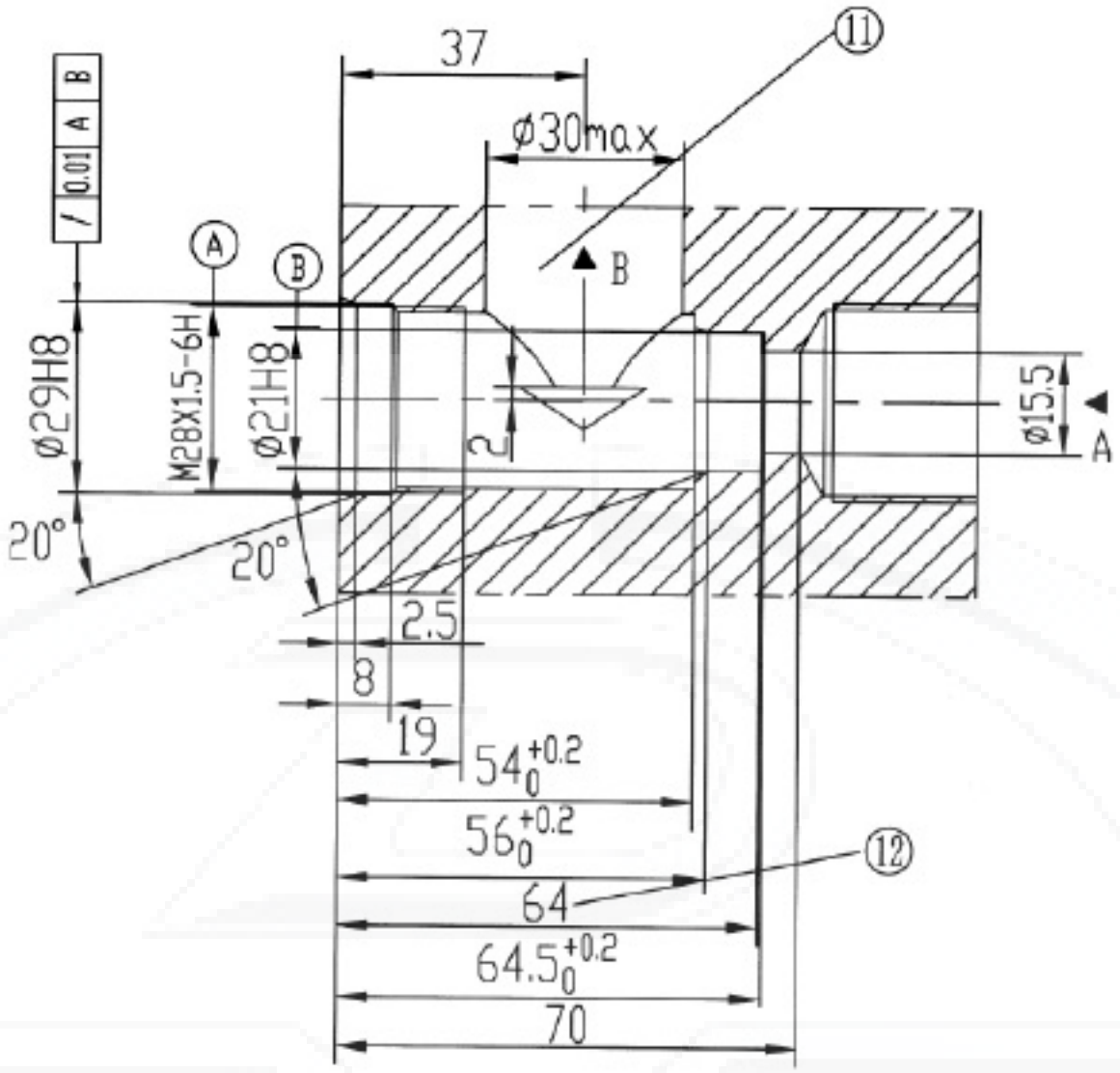




1. Adjustment element 1
2. Adjustment element 2
3. Adjustment element 3
4. Adjustment element 7
5. Space required to remove key
6. Lock nut 22 A/F
7. Hexagon 10 A/F
8. Hexagon 30 A/F
   Tightening torque M_A=50Nm
9. Port B arranged as required around periphery
10. Hole is used for port Y of DB20K...-10/..XY and DB20K..-10/...Y...
11. The collecation of hole B, as follows:DB...K...-10/... Y... X、Y and the collocation of hole B, as follows drawing (=) DB...K...-10/...XY...
12. Fit for depth
13. Drilling hole Φ 2.5 as required (type X and Y)
14. Hole A ,optional
15. O-ring 23.47X2.62
16. O-ring 17.12X2.62
17. Retainer ring 18.4X22.6X0.6
18. O-ring 17.17X1.78
19. Retainer ring 18.2X21.1X0.6

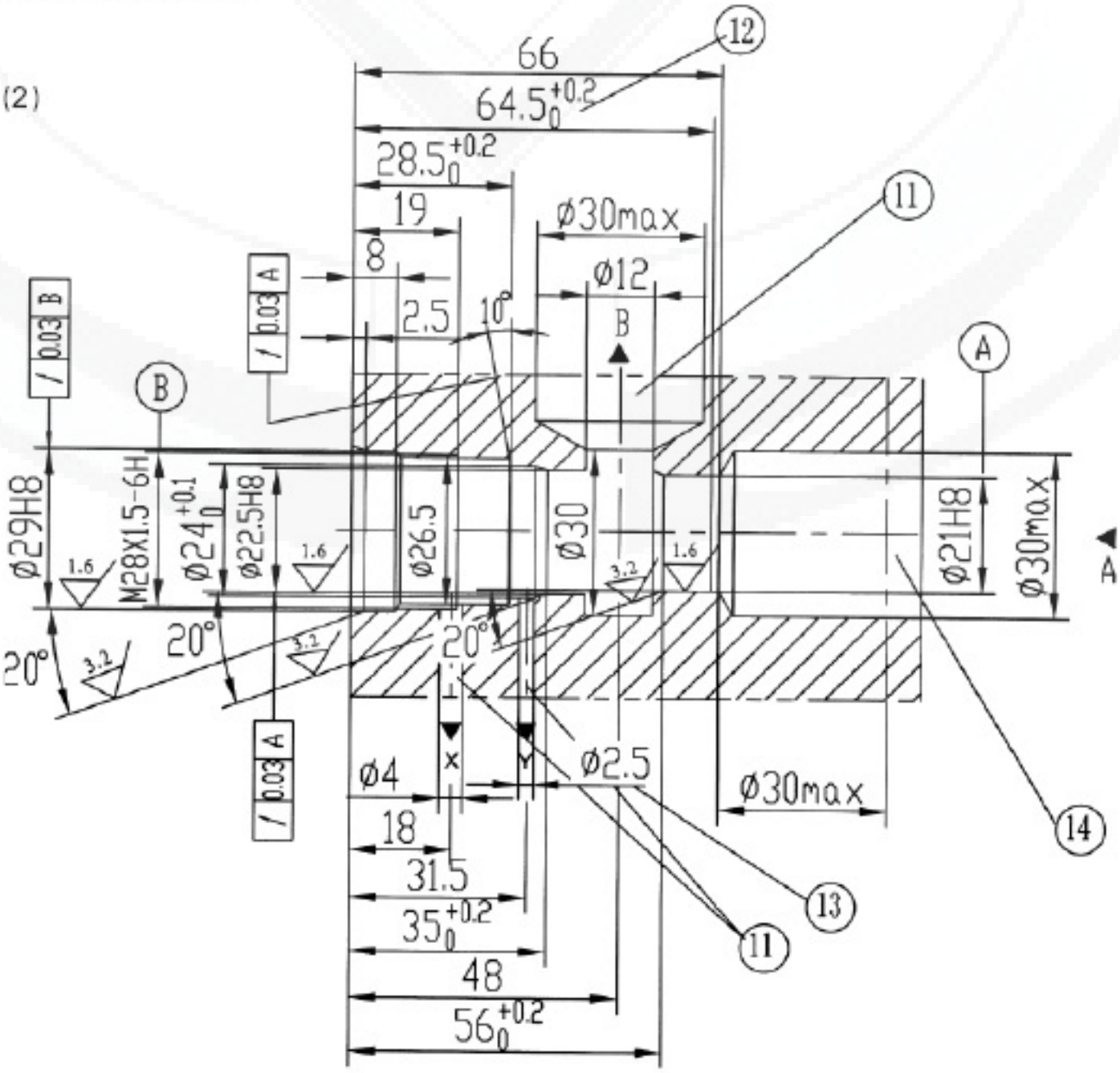
Type DB20K-10B/...Y...

drawing (1)



Type DB20K-10B/...XY...

drawing (2)



BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure relief valve, type DB/DBW...30B/**			RE 25863/12.2004
	Size 10 to 30	up to 31.5 MPa	up to 600 L/min	Replaces: RE25803/05.2001

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.

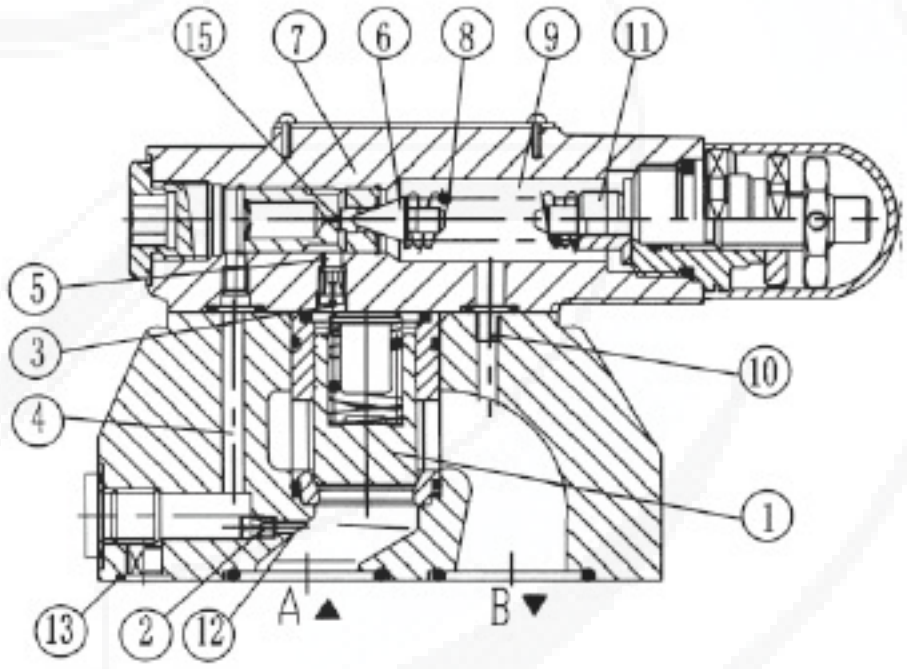
The pressure relief valves (DB) consist mainly of the main valve (1) with main spool assembly (3) and pilot operated valve (2) with pressure adjustment element.

Pressure relief valve type DB:

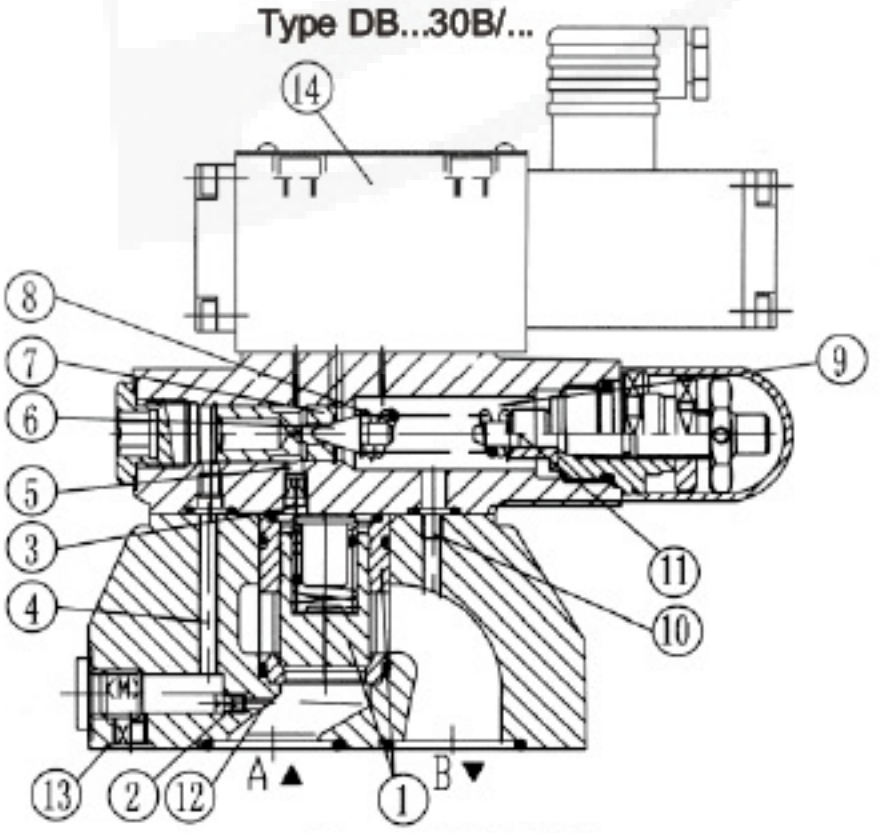
The pressure present in port A acts on the main spool (3). At the same time pressure is applied via the control lines (6) and (7), which are fitted with orifices (4) and (5), on the spring loaded side of the main spool (3) and at the poppet(8) in the pilot control valve (2). If the pressure in port A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

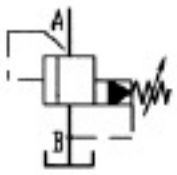


Type DBW...30B/...

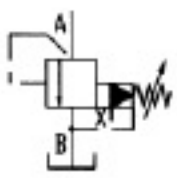
Symbols and Technical data

symbols

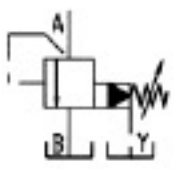
DB...30B/...



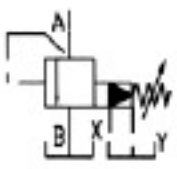
DB...30B/...X...



DB...30B/...Y...

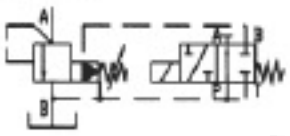


DB...30B/...XY...



DBW...30B/...

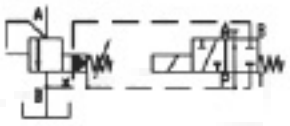
Normally closed



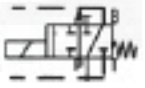
Normally open

DBW...30B/...X...

Normally closed

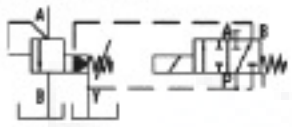


Normally open

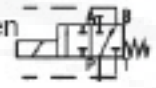


DBW...30B/...Y...

Normally closed

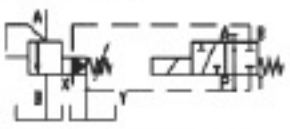


Normally open

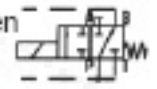


DBW...30B/...XY...

Normally closed



Normally open



Ordering details

DB | | | | | + | 30 | B / | | | | | | / | / | *

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

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

Norminal Size	Ordering details	
	Subplate mounting	Pipe connection
8	–	8 (M18 × 1.5 or G3/8")
10	10	10 (M22 × 1.5 or G1/2")
15	–	15 (M27 × 2 or G3/4")
20	20	20 (M33 × 2 or G1")
25	–	25 (M42 × 2 or G1 1/4")
32	30	30 (M48 × 2 or G1 1/2")

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 30 to 39 (30 to 39: =30
unchanged installation and connection dimensions)

Further details in clear text

No code = mineral oils
V = phosphate ester

No code = British
2 = metric

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

No code= Without hand override
N= With hand override

W220-50 = 220V 50Hz AC
G24 = 24 V DC
W220R=Solenoid commouting automatically 220V AC

No code =Valve for minimum cracking pressure 0.5MPa
U = Valve for minimum cracking pressure 0.25MPa

No code = Pilot flutd feed internal ,neturn internal
X = Poilt fluid feed external,return internal
Y = Poilt fluid feed internal,return external
XY = Poilt fluid feed external,return external

100= Settable pressure up to 10.0 MPa
315= Settable pressure up to 31.5 MPa

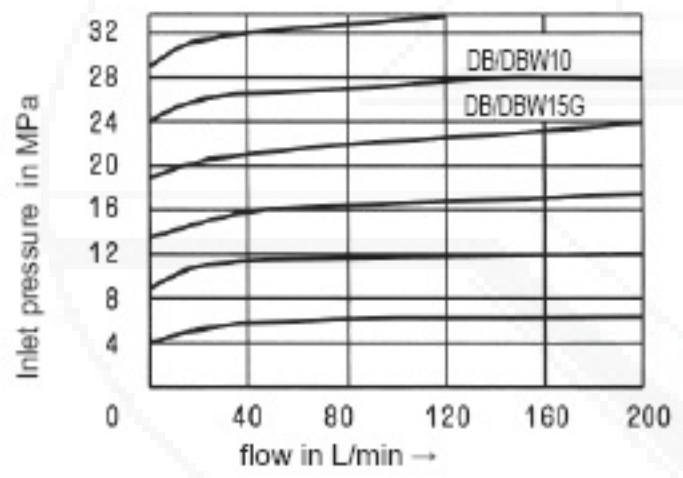
B= Technology of Beijing Huade Hydraulic

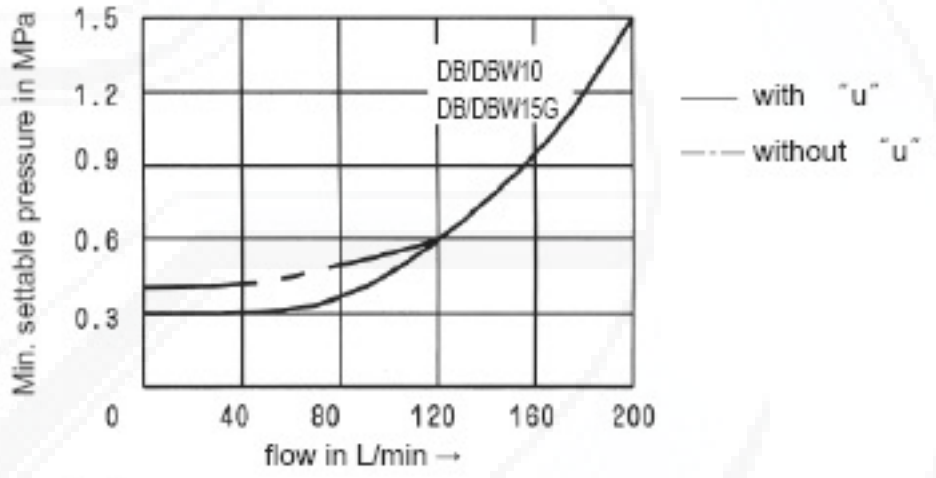
Hydraulic technical data

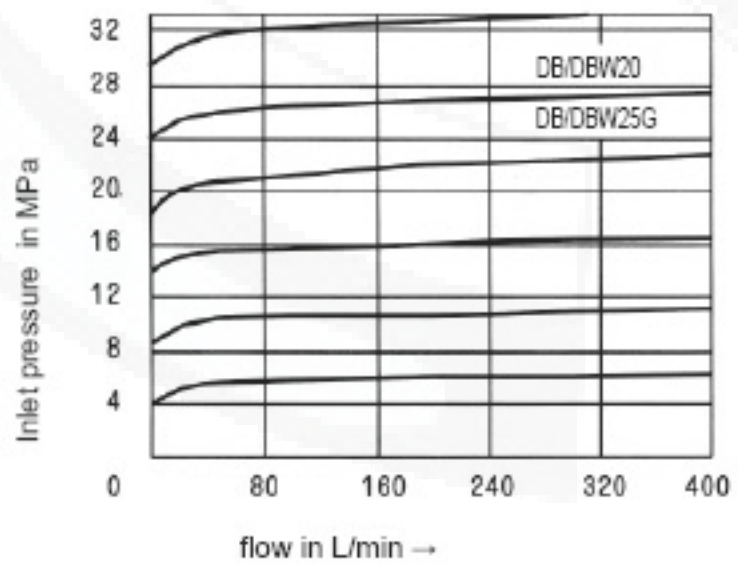
Size		8	10	15	20	25	30
Maximum flow (L/min)	Threaded connections	100	200	200	400	400	600
	Subplate mounting	-	200	-	400	-	600
Maximum operating pressure at ports A, B, X (MPa)		up to 31.5					
Maximum back pressure at port Y	DB (MPa)	up to 31.5					
	DBW (MPa)	up to 6					
Settable pressure	Min. (MPa)	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 (mm²/s)		10 to 800					
Pressure fluid temperature range (°C)		-30 to +80					
the characteristic of solenoid		See directional valves, type WE5					

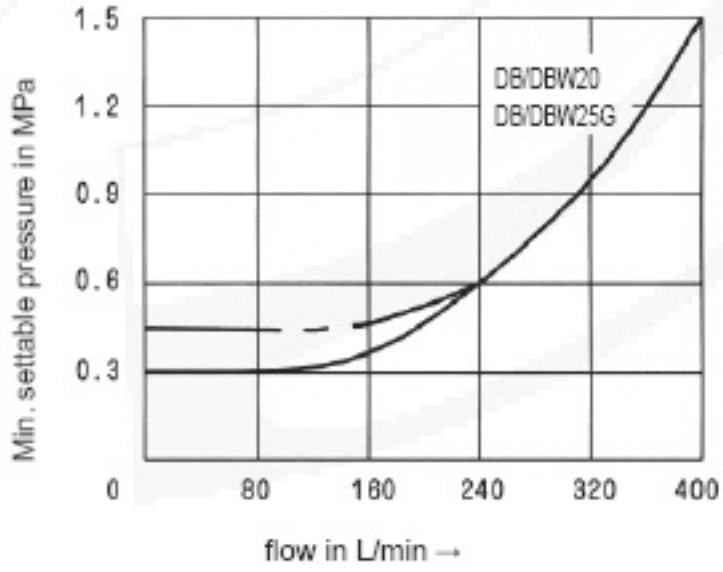
Characteristic curves (measured at v = 41 mm² /s and t = 50°C)

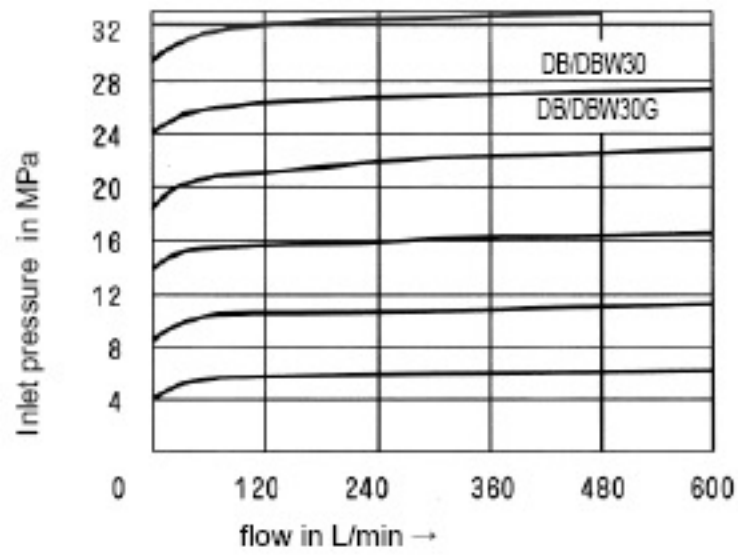
The characteristic curves were measured with external, at zero pressure, pilot oil drain.
With internal pilot oil drain the inlet pressure increases by the outlet pressure present at port B.

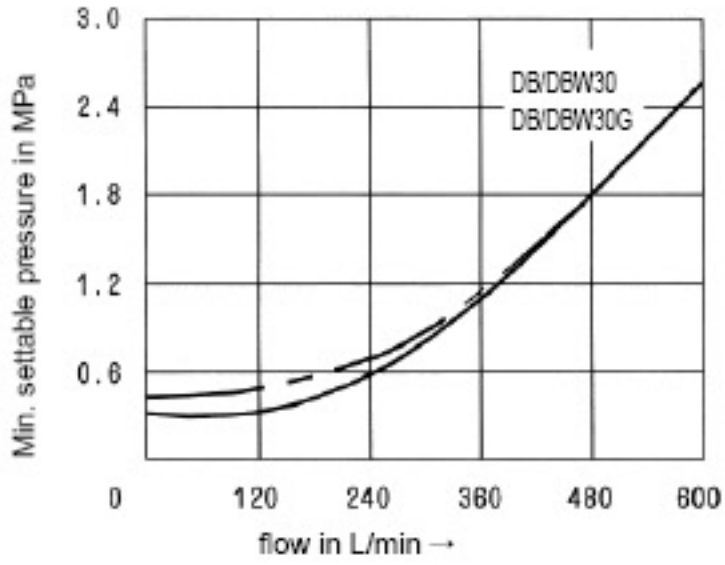




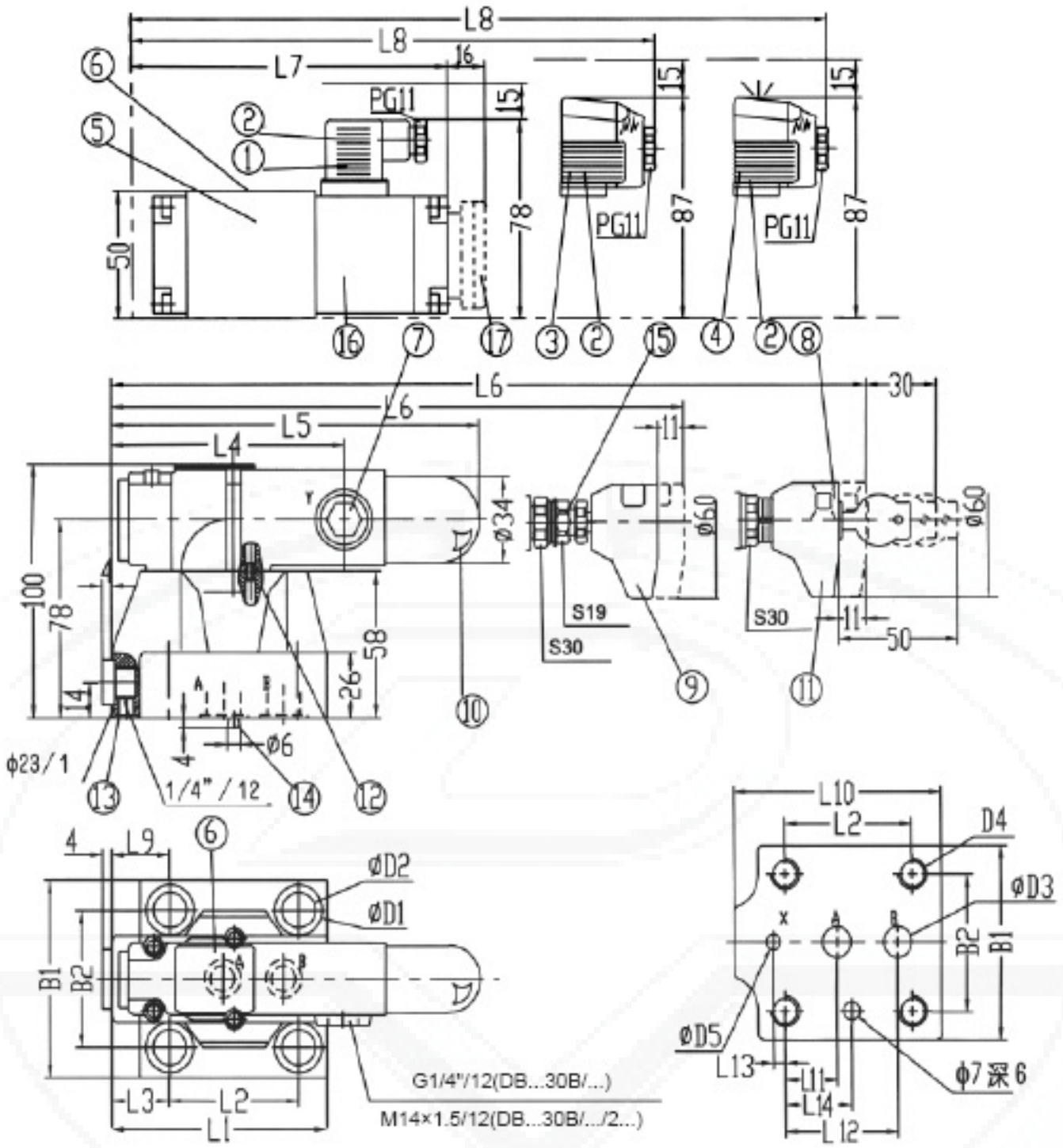








DB/DBW Unit dimensions (series 50): for subplate mounting **(Dimensions in mm)**



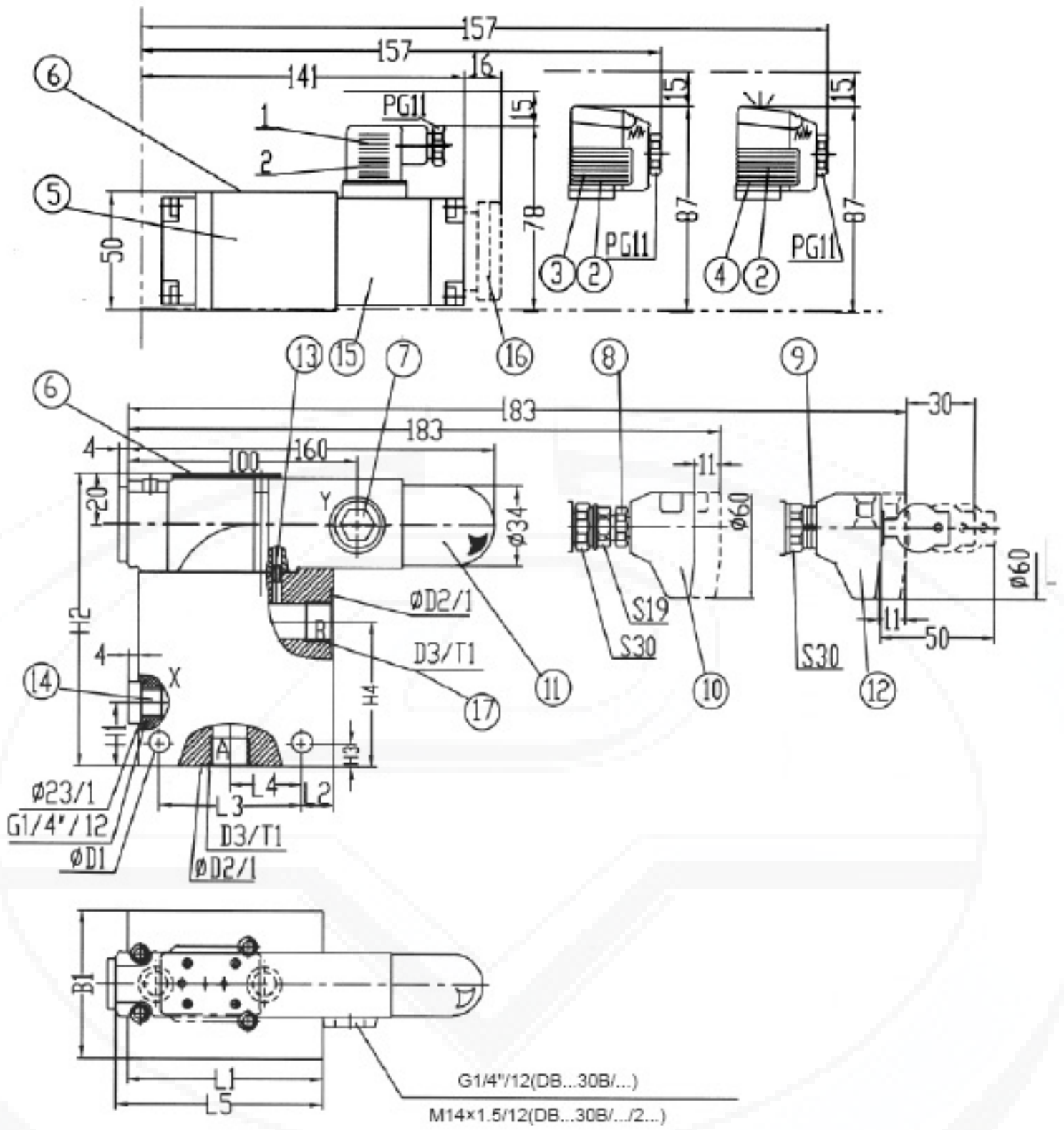
1 Plug-in connector "Z4"
2 Plug-in connector: colour gray
3 Large plug-in connector" Z5"
4 Large plug-in connector with light "Z5L
5 Directional valves, type WE5
6 Nameplate
7 Port Y for external pilot oil drain
8 Repeat adjusting scale
9 Adjustment element 1
10 Adjustment element 2
11 Adjustment element 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

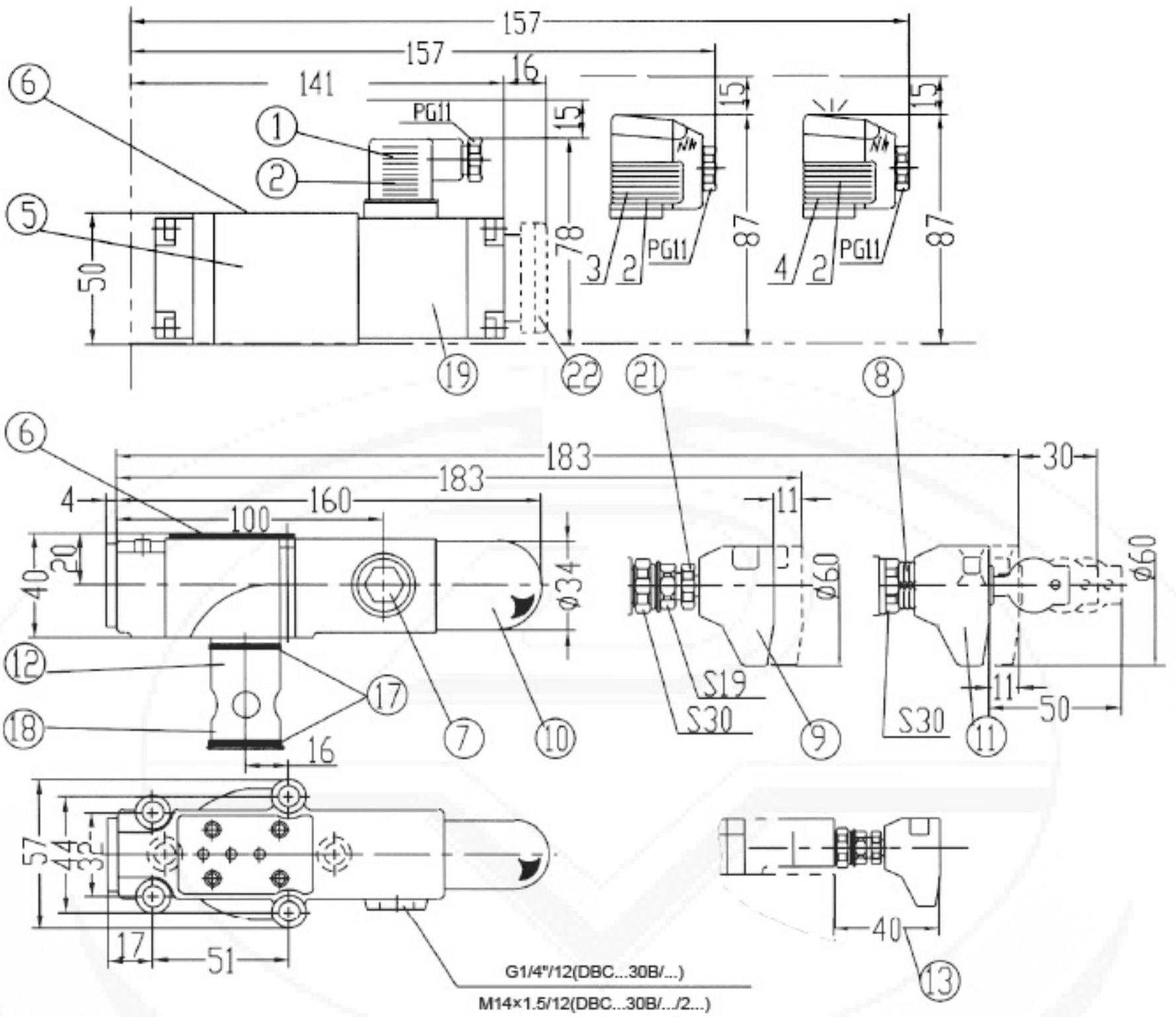
Unit dimensions: for threaded connection **(Dimensions in mm)**



1 Plug-in connector " Z4"
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 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, con nect 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		M18 × 1.5	G3/8"	27	125	10	62	85	14	62	31	90	14	4.8	5.9
10			34	M22 × 1.5	G1/2"												
15			42	M27 × 2	G3/4"				57						16		
20			47	M33 × 2	G1"										28	4.6	5.7
25	70	11	56	M42 × 2	G11/4"	42	138	13	66	100	18	72	36	99	20	5.6	6.7
30			61	M48 × 2	G11/2"										22	5.3	6.4

Unit dimensions: for threaded connection **(Dimensions in mm)**



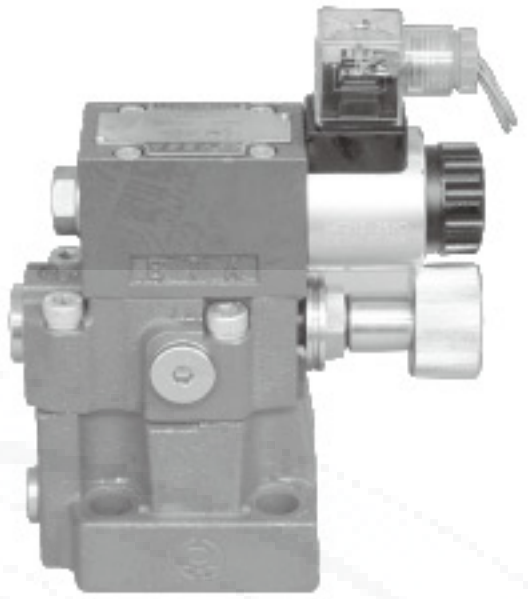
1 Plug-in connector
2 Plug-in connector: colour gray
3 Large plug-in connector
4 Large plug-in connector with light
5 Directional valves, type WE5
6 Nameplate
7 Port Y for external pilot oil drain
8 Repeat adjusting scale
9 Adjustment element 1
10 Adjustment element 2
11 Adjustment element 3
12 Main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

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			

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**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 dirctional 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.

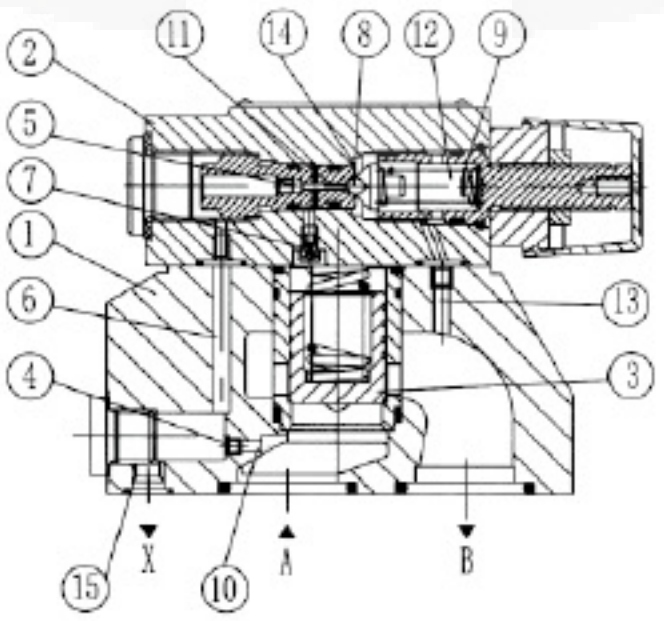
The pressure relief valves (DB) consist mainly of the main valve (1) with main spool assembly (3) and pilot operated valve (2) with pressure adjustment element.

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).

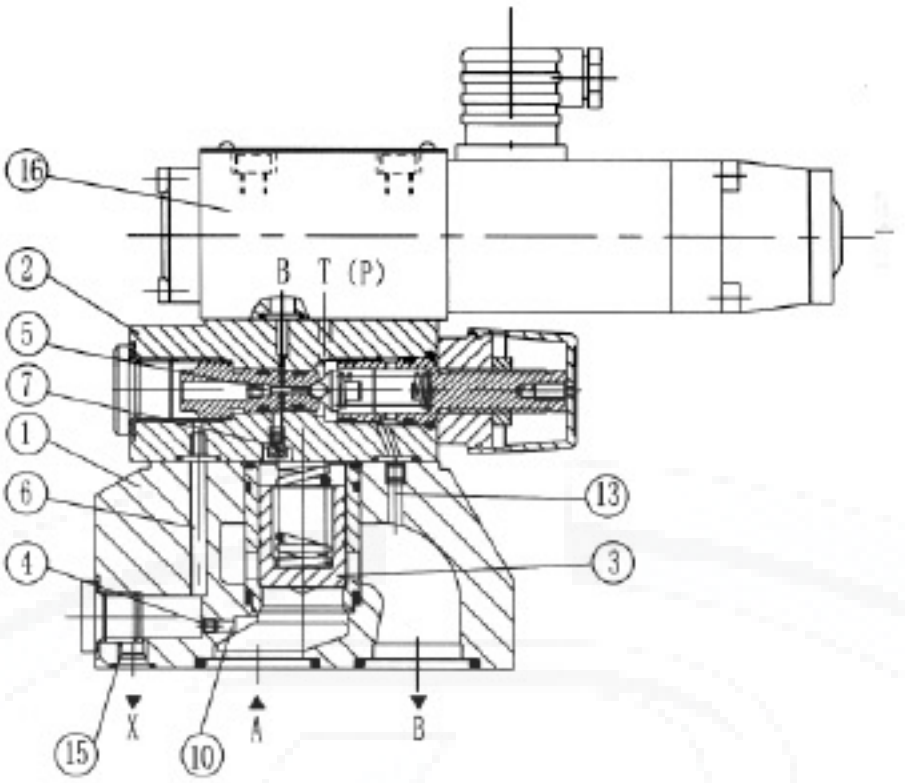


Type DBW...50B/...

Pressure relief valve type DBW

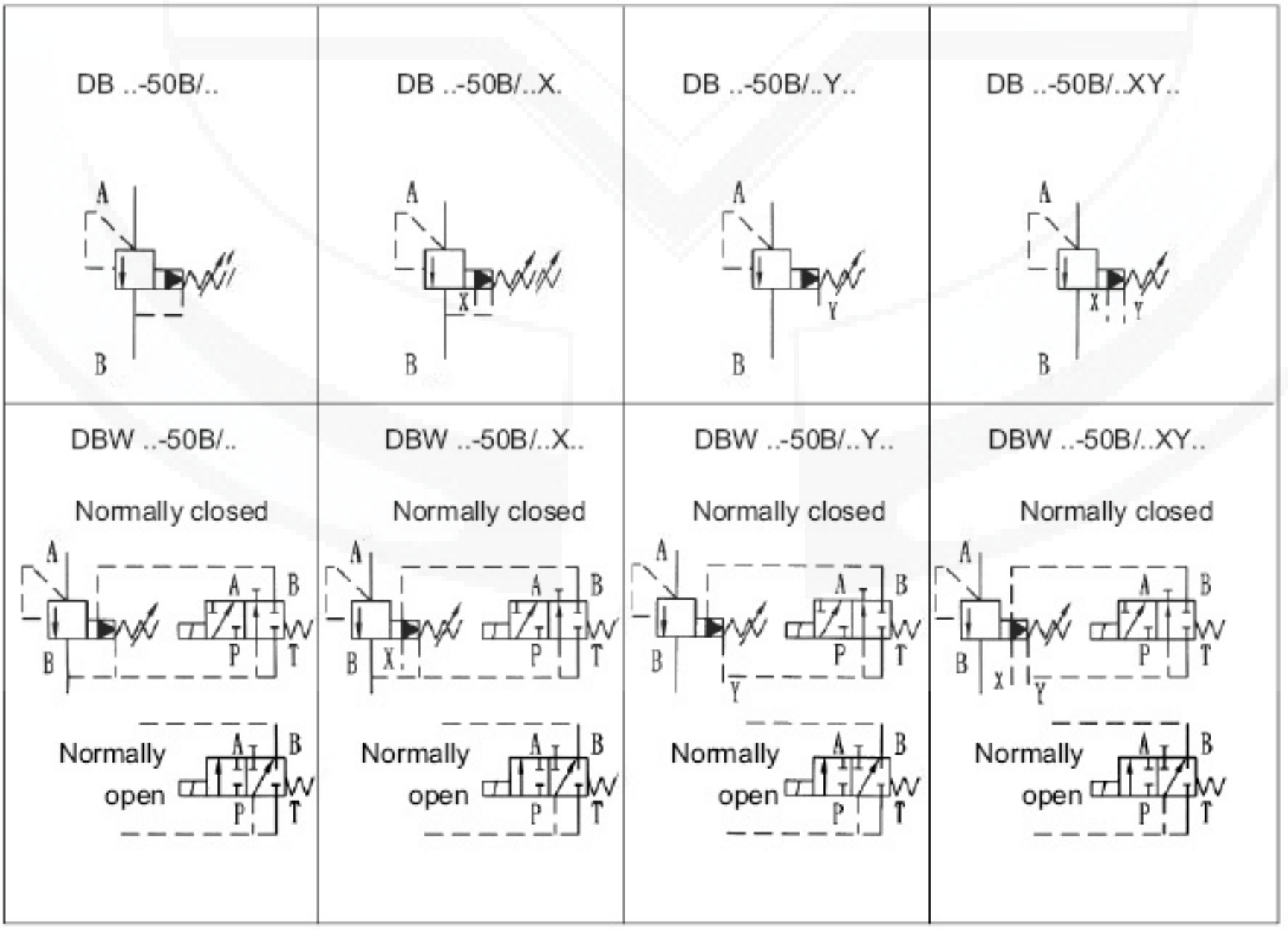
The function of this valve is basically same as the valve type DB.

The unloading at the main spool(3),however,is achieved by actuating the built-in directional valve(16).



Type DBW...50B/...

symbols



Ordering details

DB | | | | | | – | – | 50 | B | / | | | / | | | | | / | / | | *

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

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

Nomina Size	Ordering details		
	Threaded connection	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	G11/4" or M42 × 2
32	30	30	G11/2" 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 2)

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
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 3)

Further details in clear text

No code = mineral oils
V = phosphate ester

No code = British
2 = metric

5)
R10 = oriftce 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 = Solinoid 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 flutd feed internal ,neturn 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.../...				

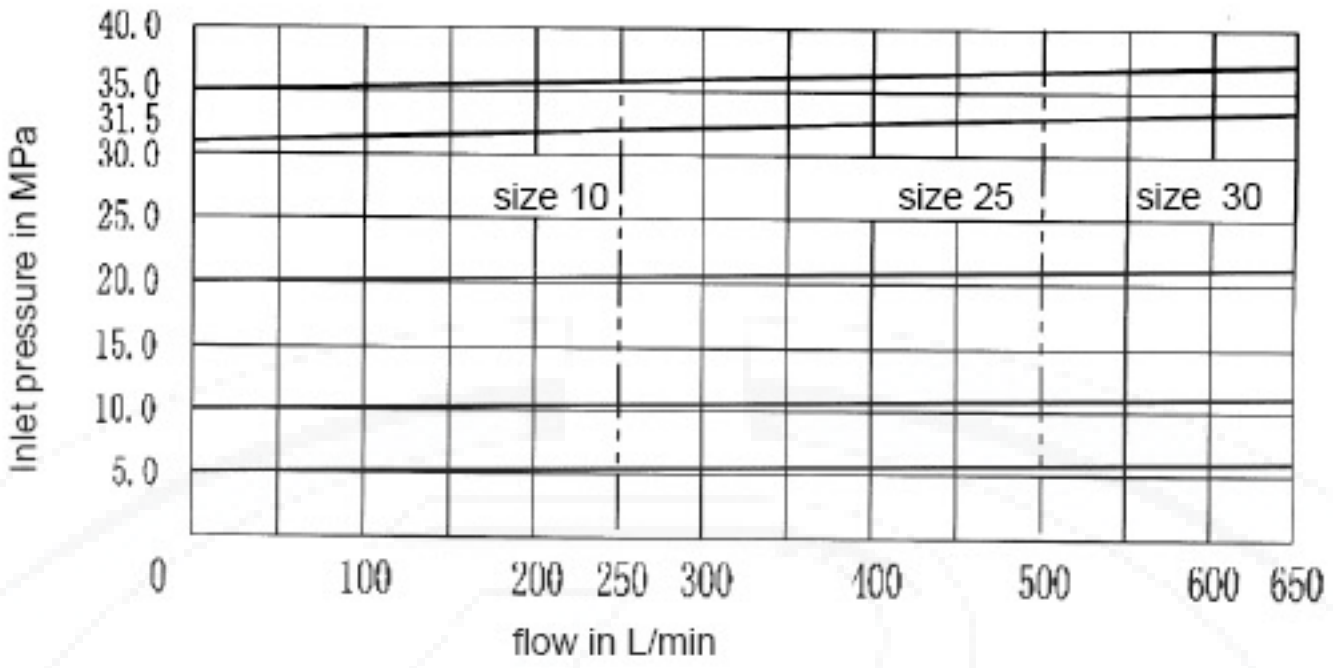
Hydraulic technical data

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 (mm^2/s)			10 to 800				
Degree of contamination			NAS 1638 class 9.				

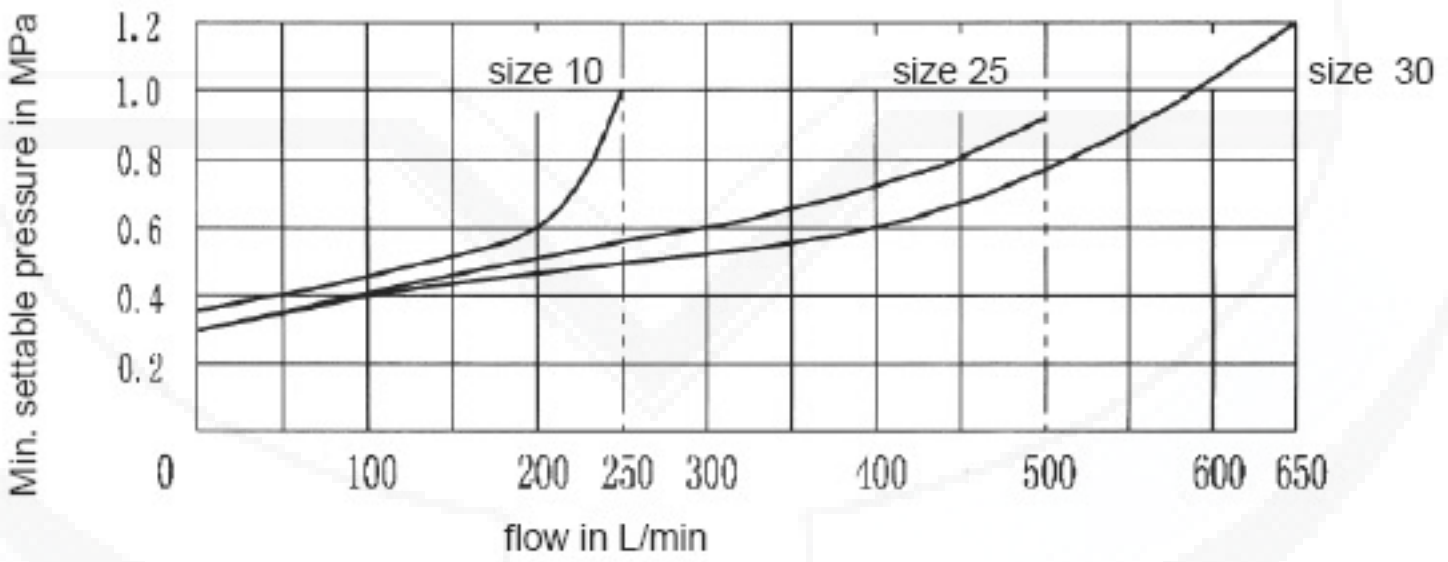
Characteristic curves (measured at v = 41 mm²/s and t = 50°C)

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.

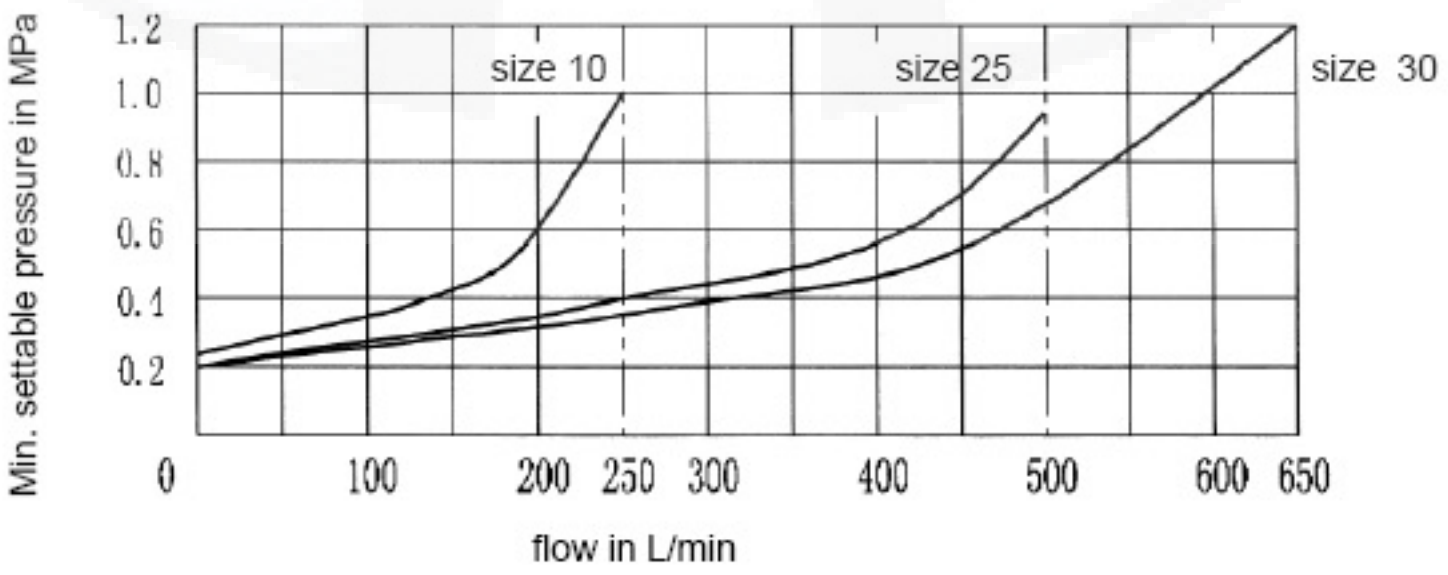
Inlet pressure in relation to the flow



Minimum settable pressure and bypass pressure in relation to the flow
Standard version

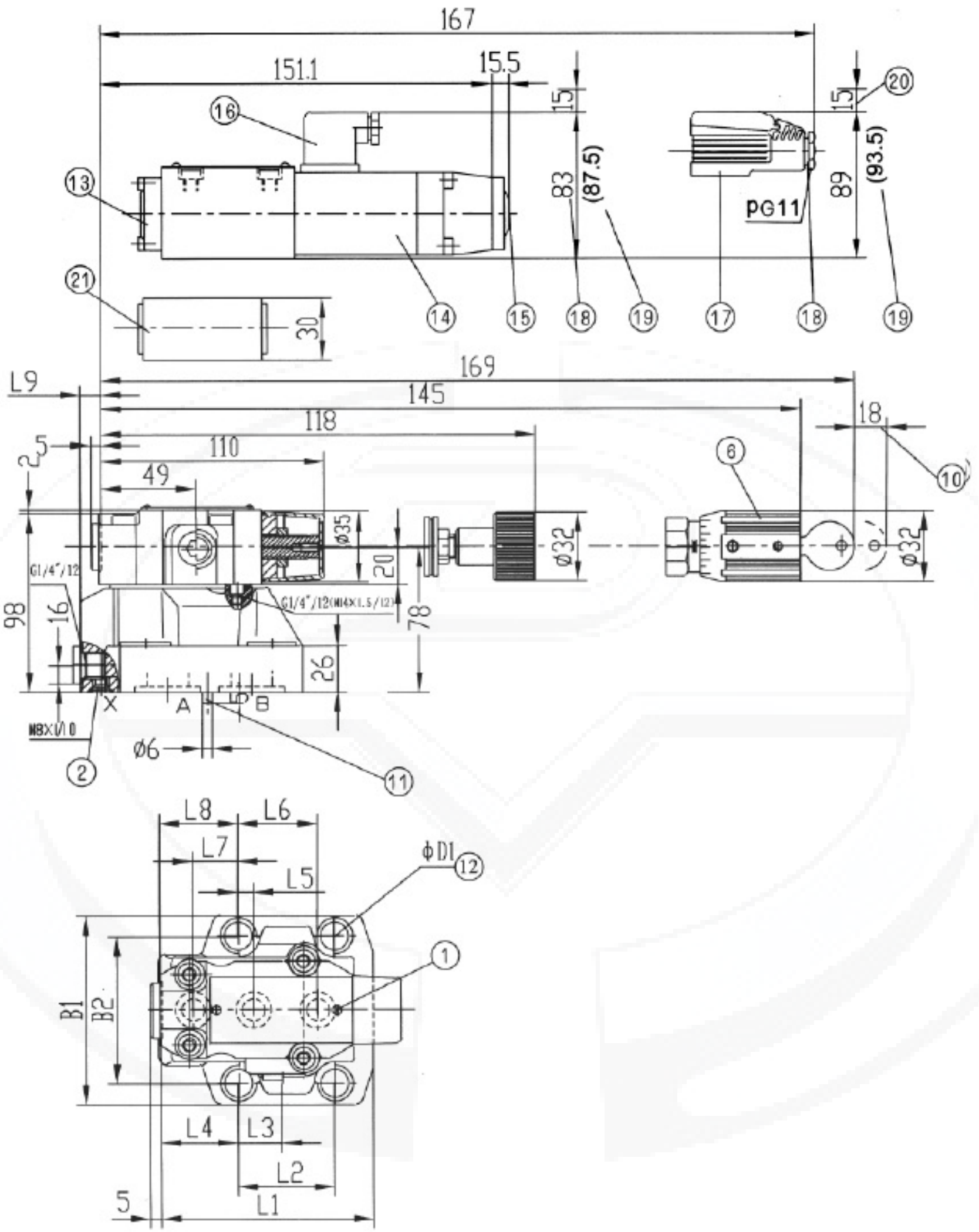


Minimum settable pressure and bypass pressure in relation to the flow
Version "U"



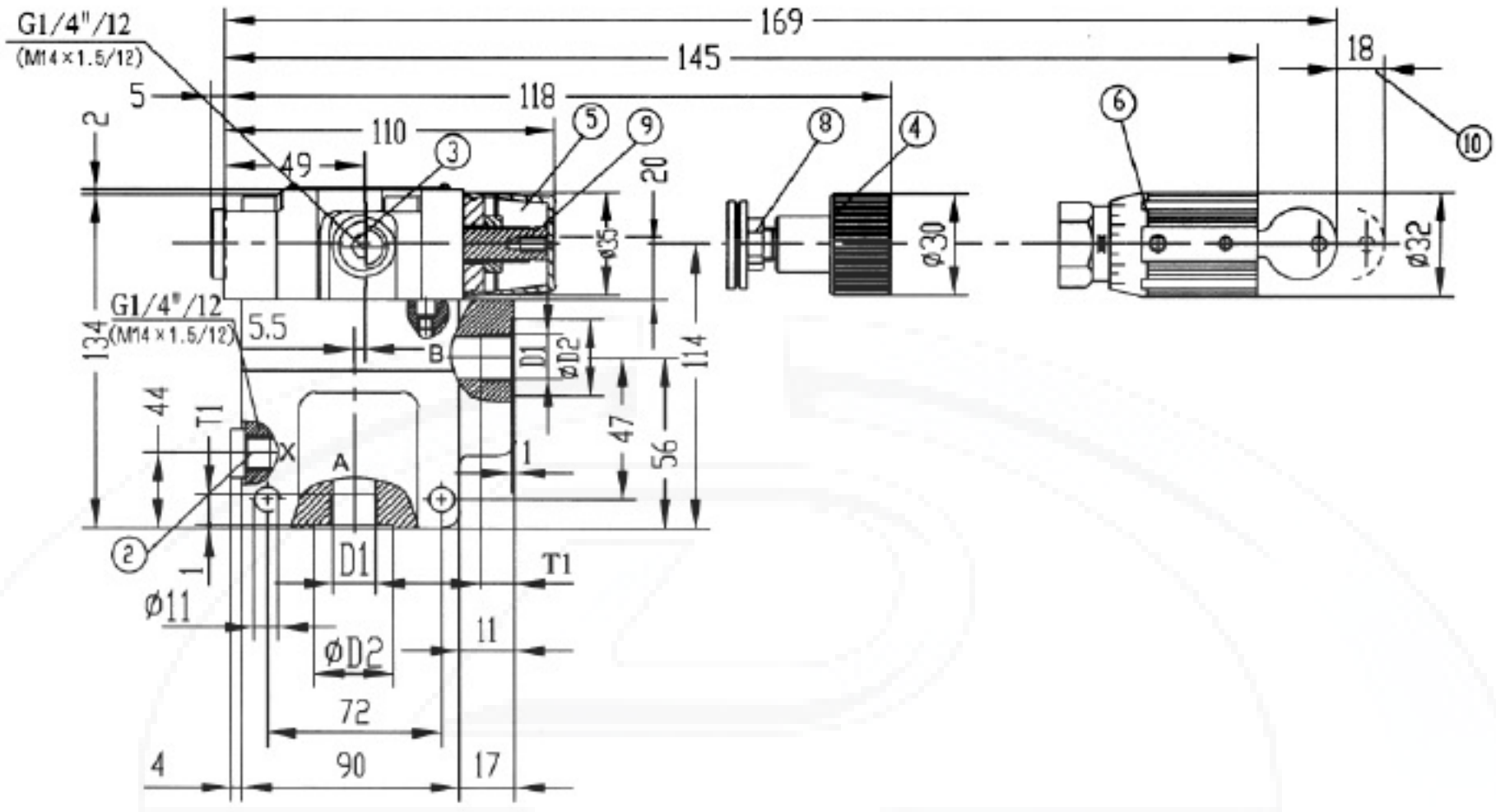
The characteristic curves are valid for outlet pressure B = 0 over the entire flow range!

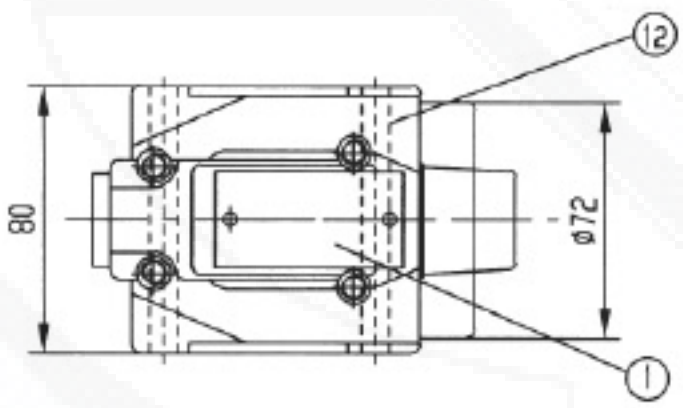
DB/DBW Unit dimensions (series 50) : for subplate mounting **(Dimensions in mm)**



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)**

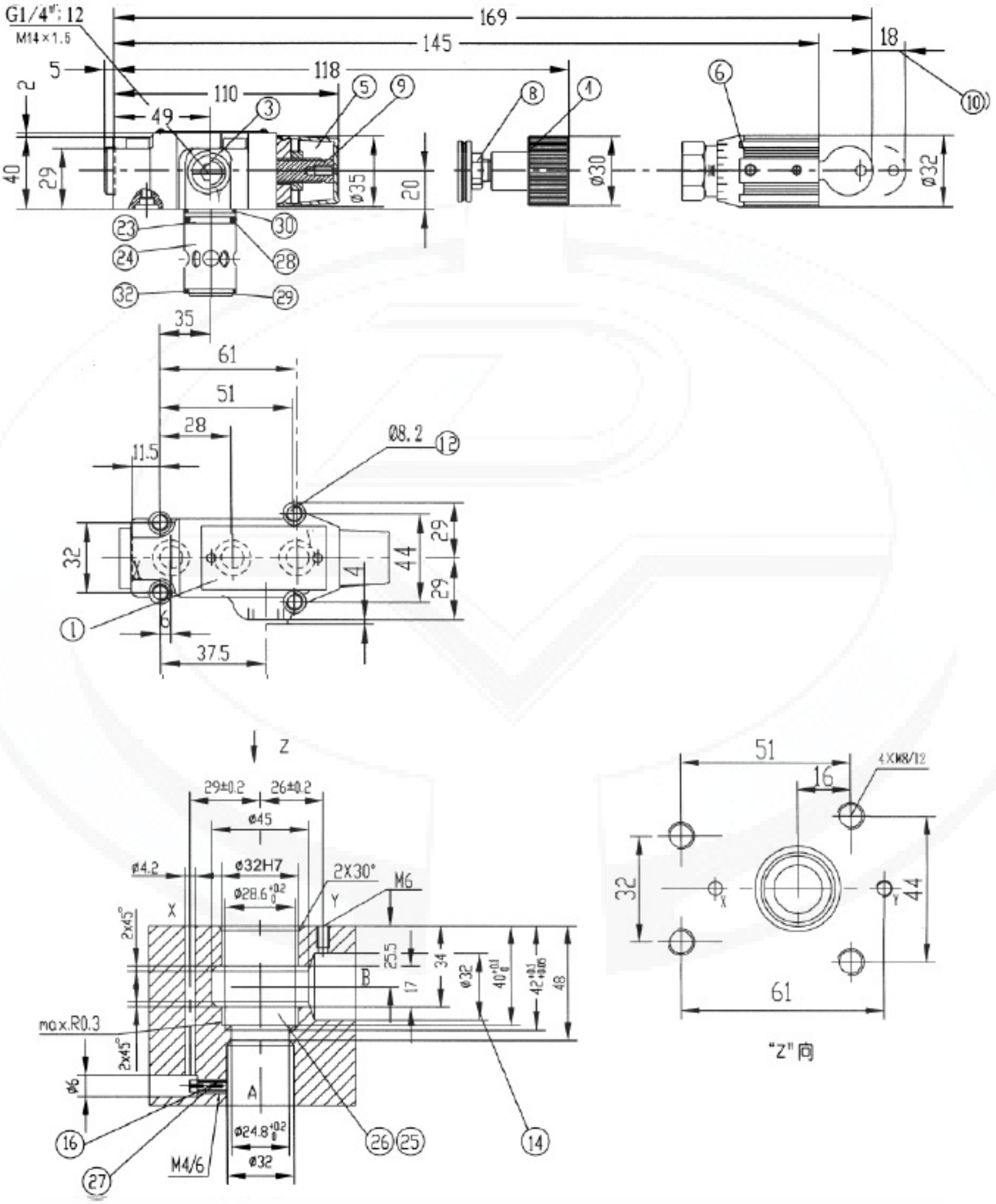




Type	D1	ϕD2	T
DB(DBW)10G	G1/2" (M22 × 1.5)	34	14
DB(DBW)15G	G3/4" (M27 × 2)	42	16
DB(DBW)20G	G1" (M33 × 2)	47	18
DB(DBW)25G	G11/4" (M42 × 2)	58	20
DB(DBW)30G	G11/4" (M48 × 2)	65	22

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 orrfice 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

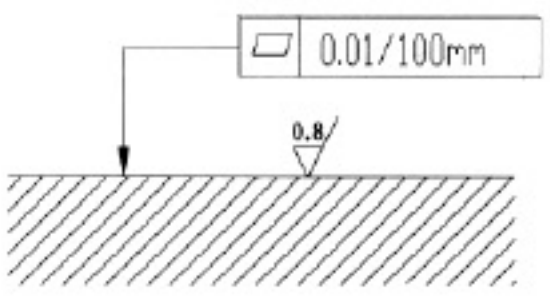
Subplates for:

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

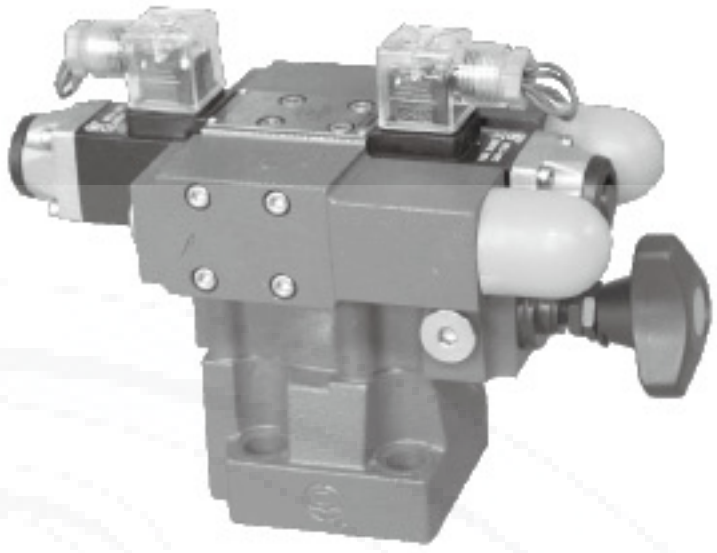
Required surface finish
of mating piece



BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure relief valves,type DB3U**			RE 25825/12.2004
	Size 10 to 30	up to 31.5 MPa	up to 600 L/min	Replaces: RE25825/05.2001

Features:

- Subplate mounting
- Threaded connection
- Installation in manifolds
- 3 adjustment elements:
  - · Rotary knob
  - · Screw with internal hexagon and protective cap
  - · Rotary knob with scale
- Solenoid operated control via mounted directional valve



Functional description, section

Types DB3U pressure valves are pilot operated pressure relief valves.

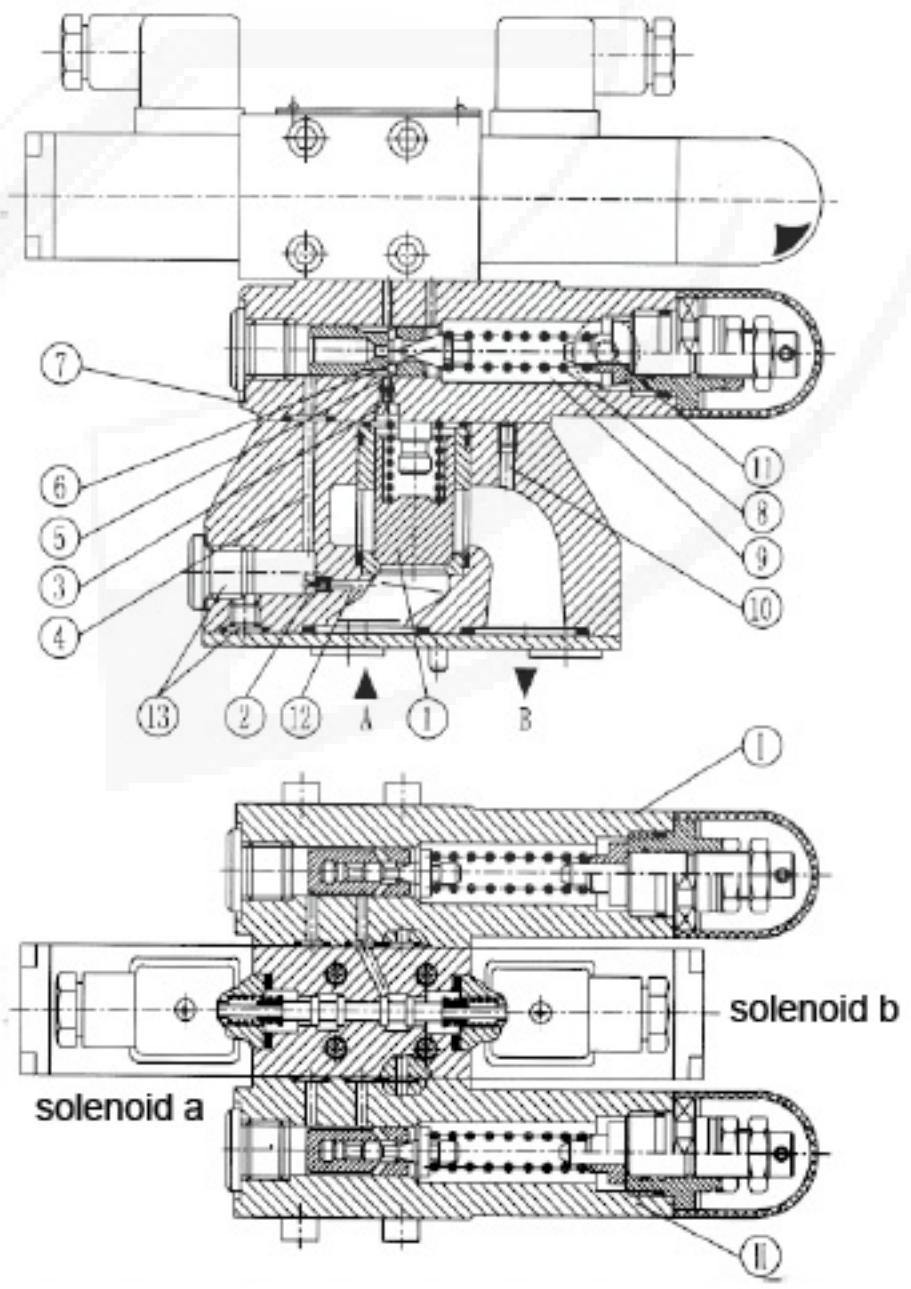
They are used for the limitation of the operating pressure, and they may be switched over to different(2 or 3 pressure stage)by solenoids actuated.

The pressure relief valves consist mainly of the main valve、4/3,4/1-Directional control valve(Type WE5...)and three pilot valves.

In the de-energised condition the pressure in port A is set by pilot valve(7).

The pressure present in port A acts on the main spool(1). At the same time pressure is applied via the control lines (12) and (4),which are fitted with orifices (2) and (3),on the spring loaded side of the main spool(1) and at the poppet(6) in the pilot control valve (7).If the pressure in port A exceeds the value set at the spring (8),the poppet (6) opens against the spring (8).

The signal for this comes internally via the control lines (12) and (4) from port A.The pressure fluid on the spring loaded side of the main spool(1) now flows via the control line (3),poppet (6) into the spring chamber(9).In type DB3U...30/...it flows internally via the control line (10) to tank,or in type DB3U..30/..Y..externally via the port Y. Due to the orifices (2) and (3) a pressure drop occurs at the main spool(1),the connection from port A to port B is open. Now the pressure fluid flows from port A to port B while maintainning the valve set operating pressure.



When solenoid "a" is energised:

The pressure in port A is set by pilot valve Ⅱ.

When solenoid " b" is energised:

The pressure in port A is set by pilot valve Ⅰ.

The setting pressure of pilot valve(7) should be higher than the setting pressure of the pilot Ⅰ and Ⅱ.

Type DB2U:

Type DB2U pressure valves consise mainly of a directional control valve (Type WE5...)and three pilot valves the function of this valve is bascically the same as the valve type DB3U.

Ordering code

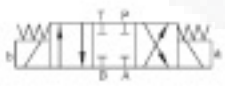
DB | | | | | | | | 30 | B | / | | | | | *

Pilot operated
valve (complete) = No Code
Pilot operated valve:
with main spool assembly = C
(Size is stated 10 or 32)
remote control valve = T

apply to DB and DBC = 3U
apply to DBT = 2U

Size	Ordering Code	
	Subplate mounting	Threaded connection
8	–	8(M18 ×1.5 or G3/8")
10	10	10(M22 ×2 or G1/2")
15	–	15(M27 ×2 or G3/4")
20	20	20(M33 ×2 or G1")
25	–	25(M42 ×2 or G11/4")
32	30	30(M48 × 2 or G11/2")

Subplate mounting = No code
Threaded connection = G


= E


= H


= N

Rotary knob = 1
Screw with internal hexagon and protective cap = 2
Rotary knob with scale = 3

Further details in clear text

No Code = mineral oils
V = phosphate ester

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

No Code = Without hand override
N = With hand override

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

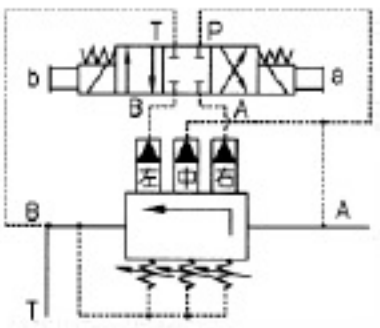
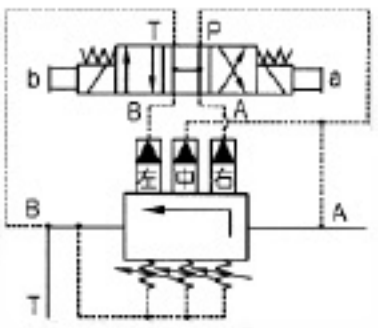
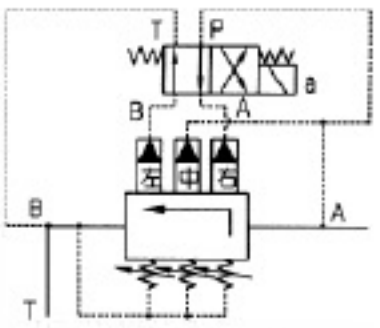
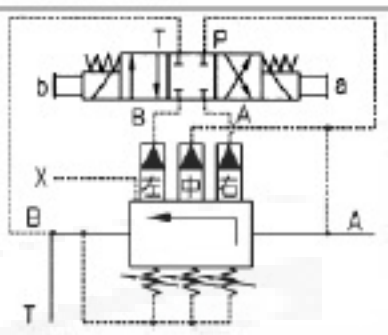
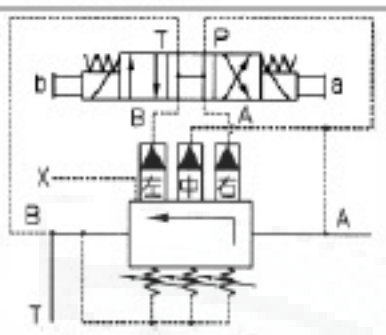
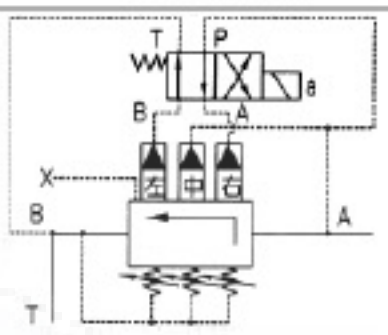
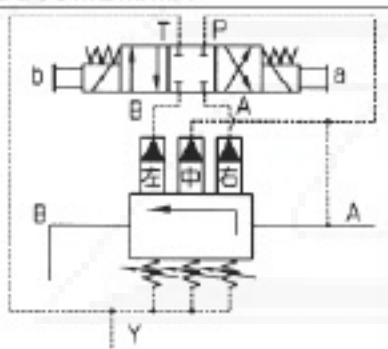
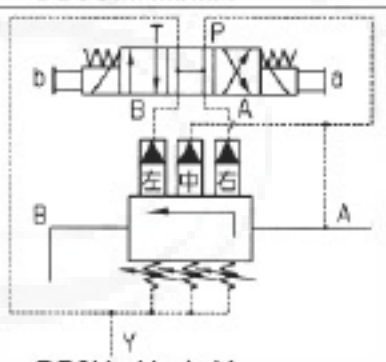
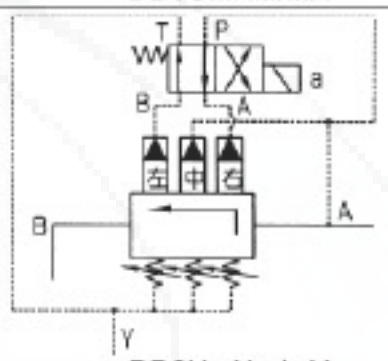
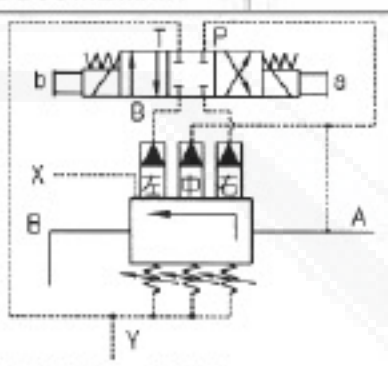
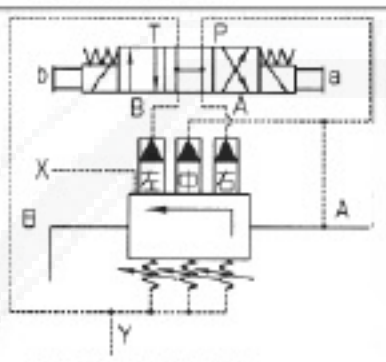
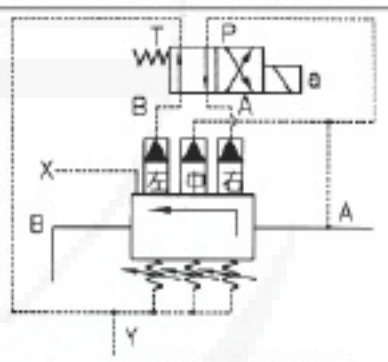
No code = Poilt flutd feed internal ,retum internal
X = Poilt fluid feed external,retum internal
Y = Poilt fluid feed internal,retum external
XY = Poilt fluid feed external,retum external

100 = Pressure setting up to 10 MPa
315 = Pressure setting up to 31.5 MPa

B = Technology of Beijing Huade Hydraulic

30 = Series 30 to 39 (30 to 39: unchanged installation and connection dimensions)

Symbols

No Code	 DB3U...E.../...	 DB3U...H.../...	 DB3U...N.../...
Model "X"	 DB3U...E.../...X	 DB3U...H.../...X	 DB3U...N.../...X
Model "Y"	 DB3U...E.../...Y	 DB3U...H.../...Y	 DB3U...N.../...Y
Model "XY"	 DB3U...E.../...XY	 DB3U...H.../...XY	 DB3U...N.../...XY

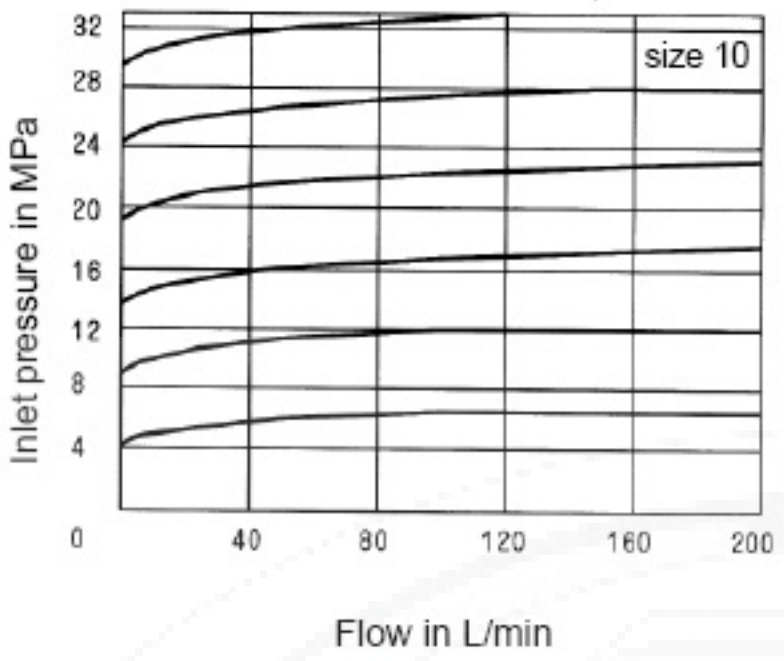
Technical data

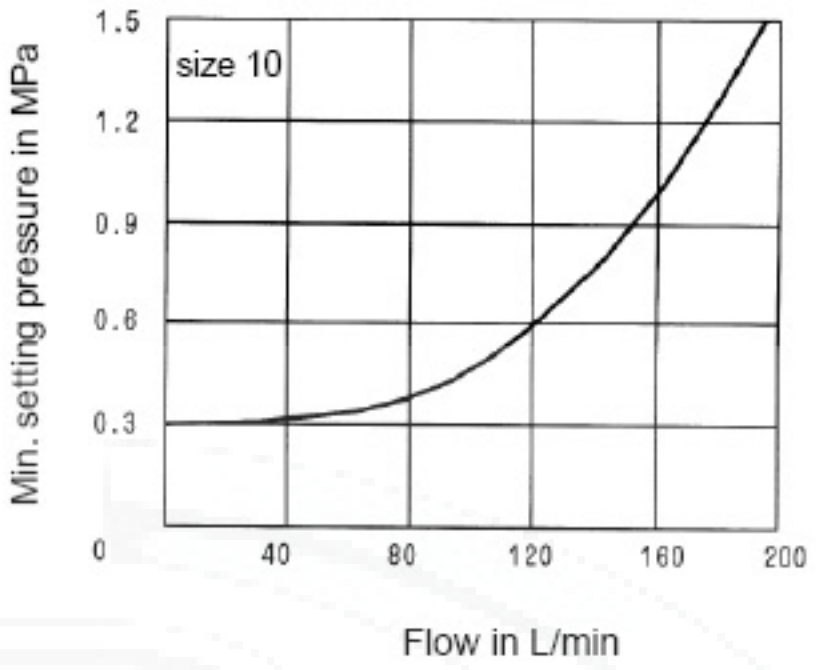
		Size	8	10	15	20	25	30
Flow (L/min)	Threaded connection		100	200		400		600
	Subplate mounting		-	200	-	400	-	600
Operating pressure		(MPa)	ports A, B, X, up to 31.5					
Back pressure (port Y)		(MPa)	up to 31.5					
Min. Setting pressure		(MPa)	see operating curves					
Max. Setting pressure		(MPa)	up to10 or 31.5					
Pressure fluid			Mineral oil (for NBR seal)or phosphate ester(for FPM seal)					
Viscosity range		(mm^2/s)	10 to 800					
Temperature range		(℃)	-30 to +80					
Size of directional valve			see directional valve 4WE5					

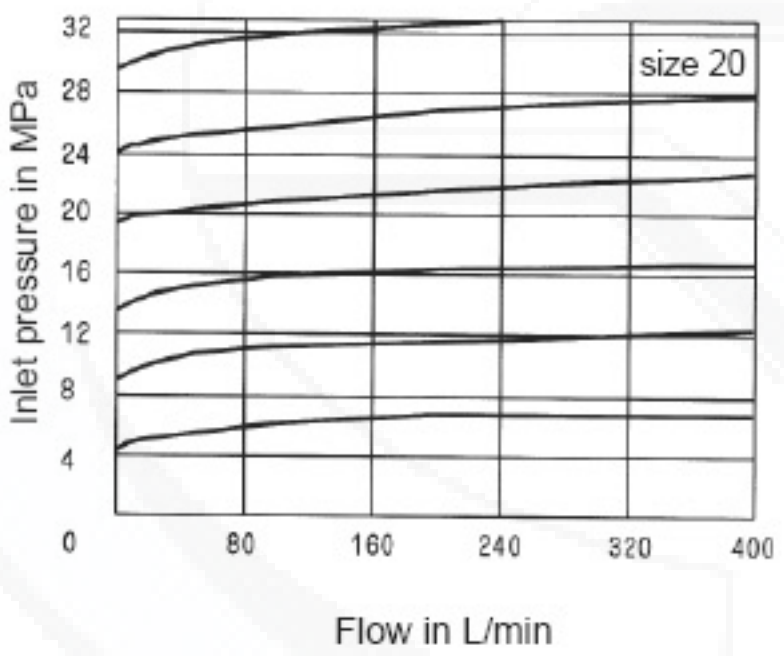
Operating Curves (measured at v = 41 mm²/s and t = 50 °C)

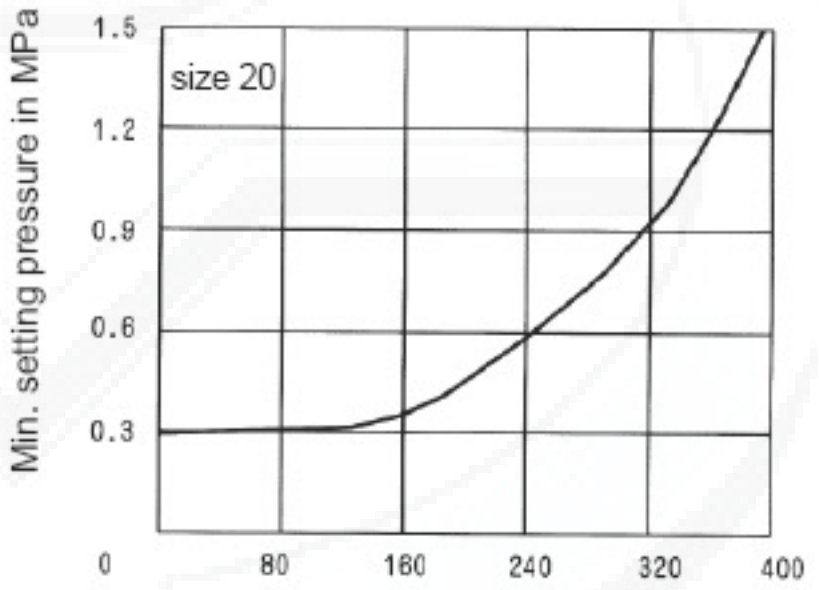
The operating curves were measured with an external pilot oil, zero pressure return.

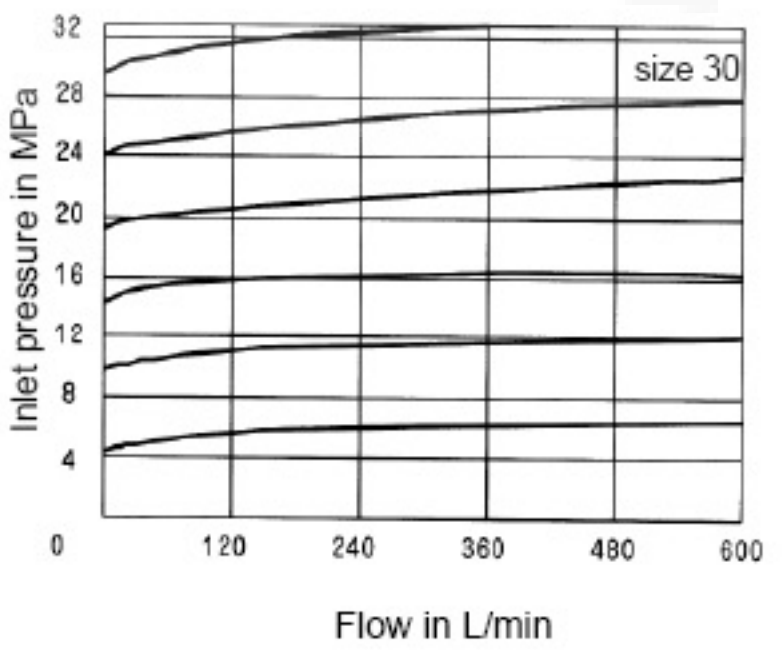
With internal pilot oil return the input pressure is increased by the output pressure present at port B.

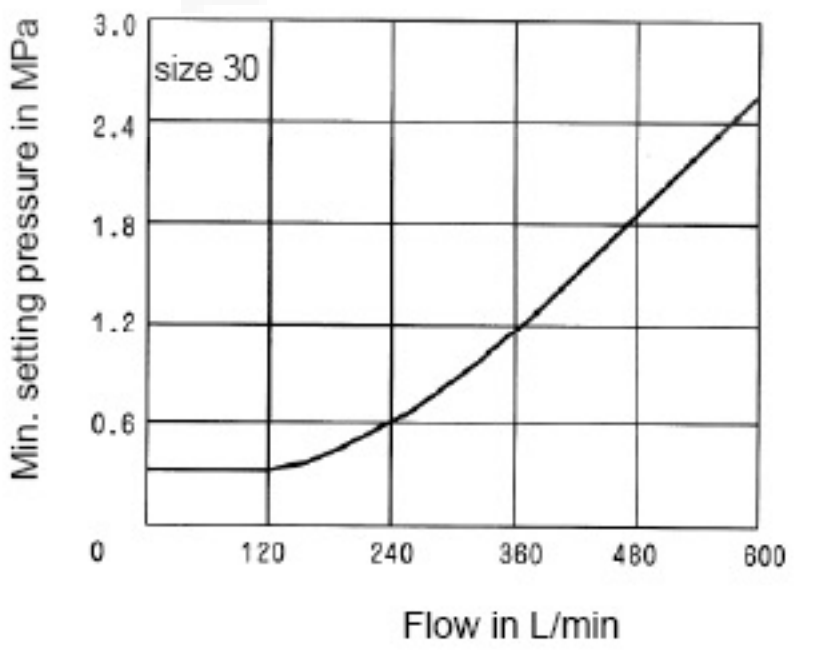




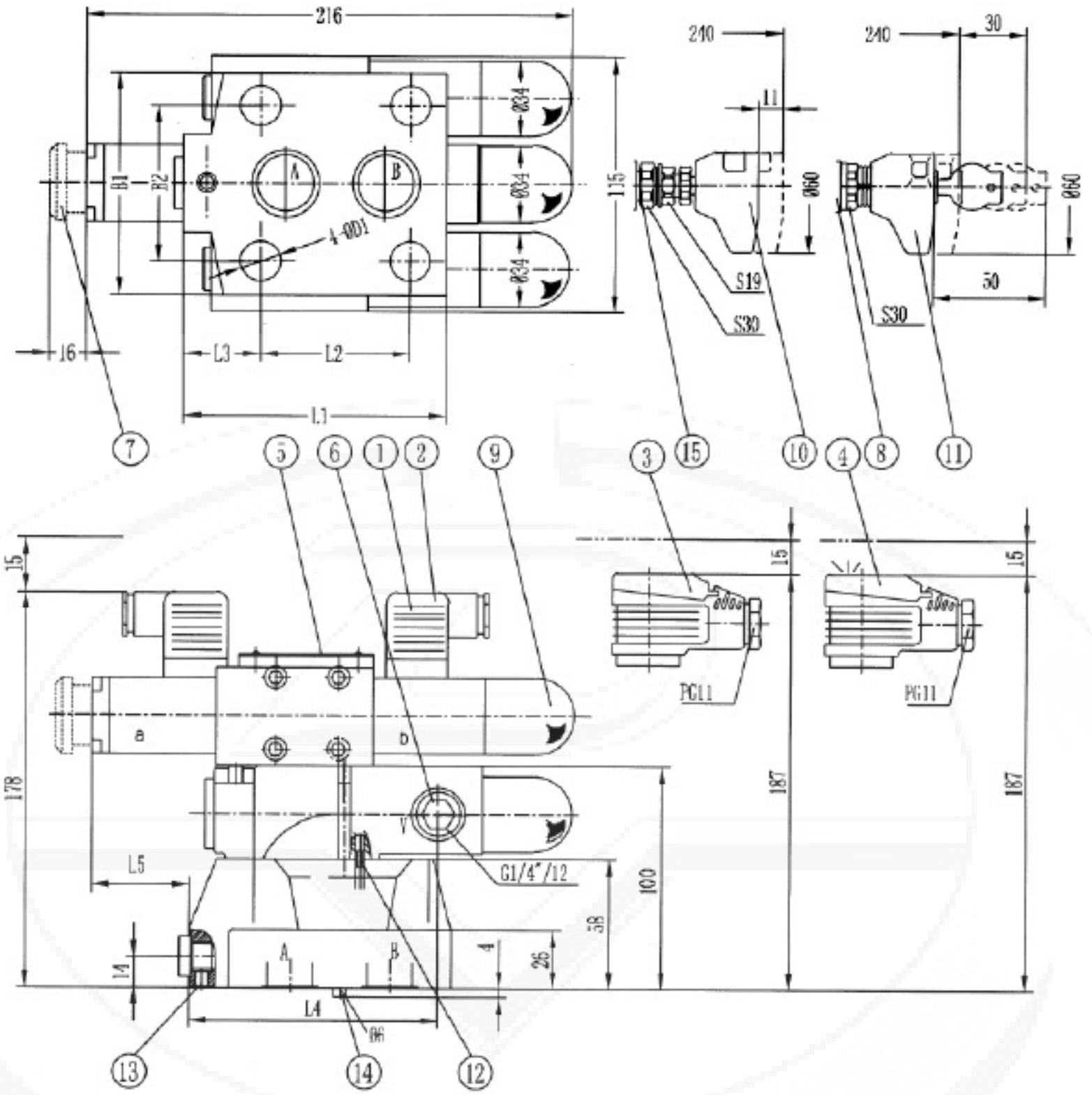








Unit dimensions: For subplate mounting **(Dimensions in mm)**



Subplate: see page149

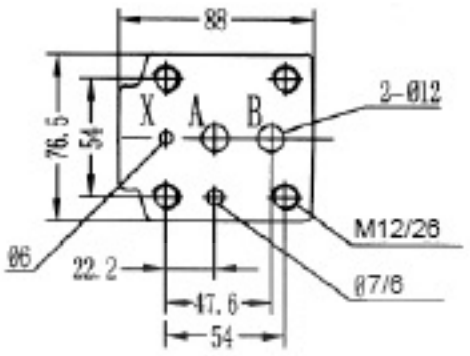
G545/01 G545/02	G408/01 G408/02	G410/01 (G1/4 ″)G410/02
G546/01 G546/02(NG10)	G409/01 G409/02(NG20)	G411/01 (M14X1.5)G411/02

1 Plug-in connector ″ Z4 ″
2 Plug-in connector: color gray
3 Large plug-in connector ″ Z5 ″
4 Large plug-in connector with light ″ Z5L ″
5 Nameplate
6 Port Y for external pilot oil drain
7 Hand override, optional
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

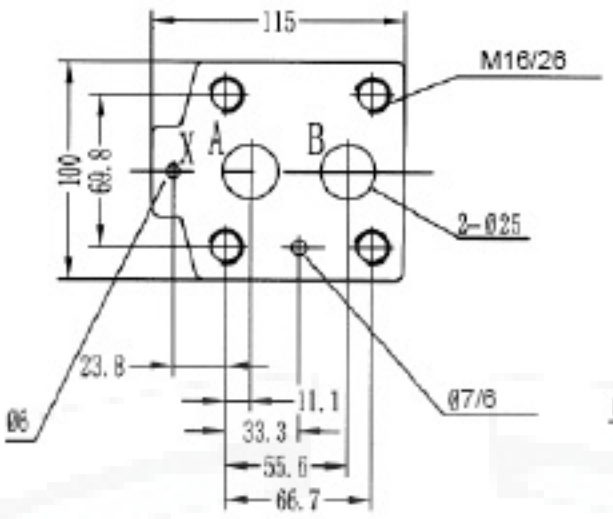
NG	D1	B1	B2	L1	L2	L3	L4	L5	Weight	Port X, O-ring	Ports A、B, O-ring
10	14	78	54	90	54	23.5	97.5	59.5	7.8kg	9.25 × 1.78	17.12 × 2.62
20	18	100	69.8	117	66.7	34	111	46	8.5Kg	9.25 × 1.78	28.17 × 3.53
30	20	115	82.5	148	89	41.5	121	36	9.8Kg	9.25 × 1.78	34.52 × 3.53

DB3U unit dimensions of ports

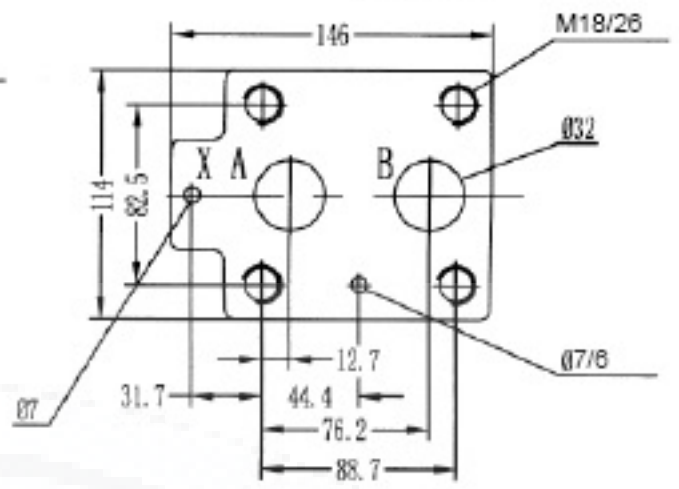
Size 10



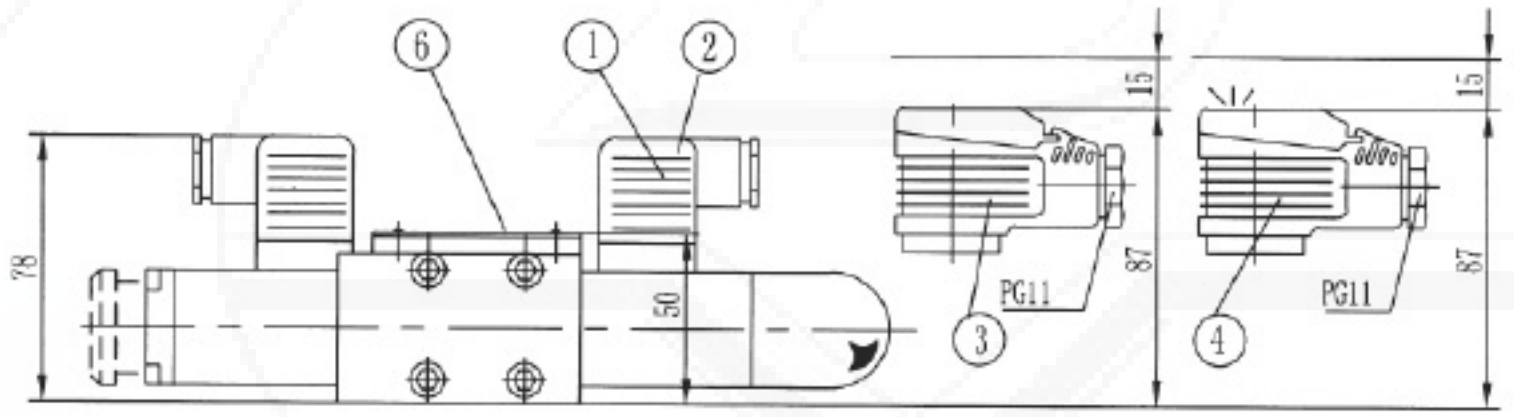
Size 20

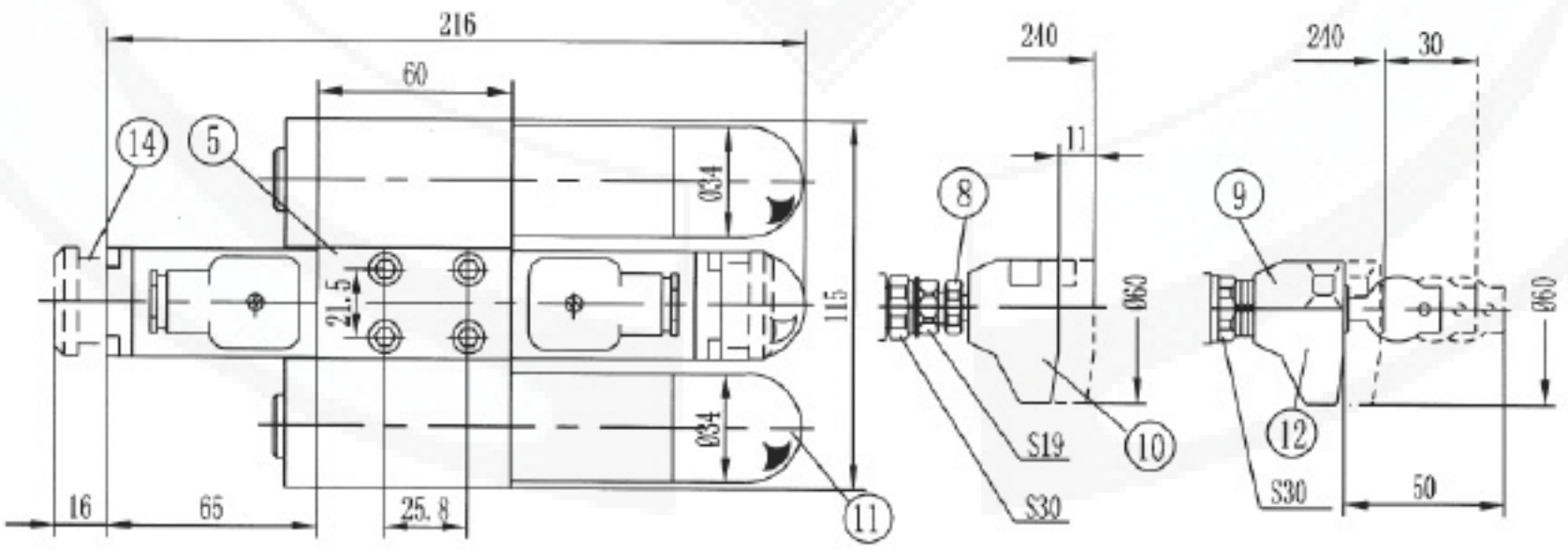


Size 30



Remote control valve DBT2U,unit dimensions:





1. Plu-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
8. Only apply to up to 31.5MPa
9. Repeat adjusting scale
10. Adjustment element 1
11. Adjustment element 2
12. Adjustment element 3
14. Hand override optional

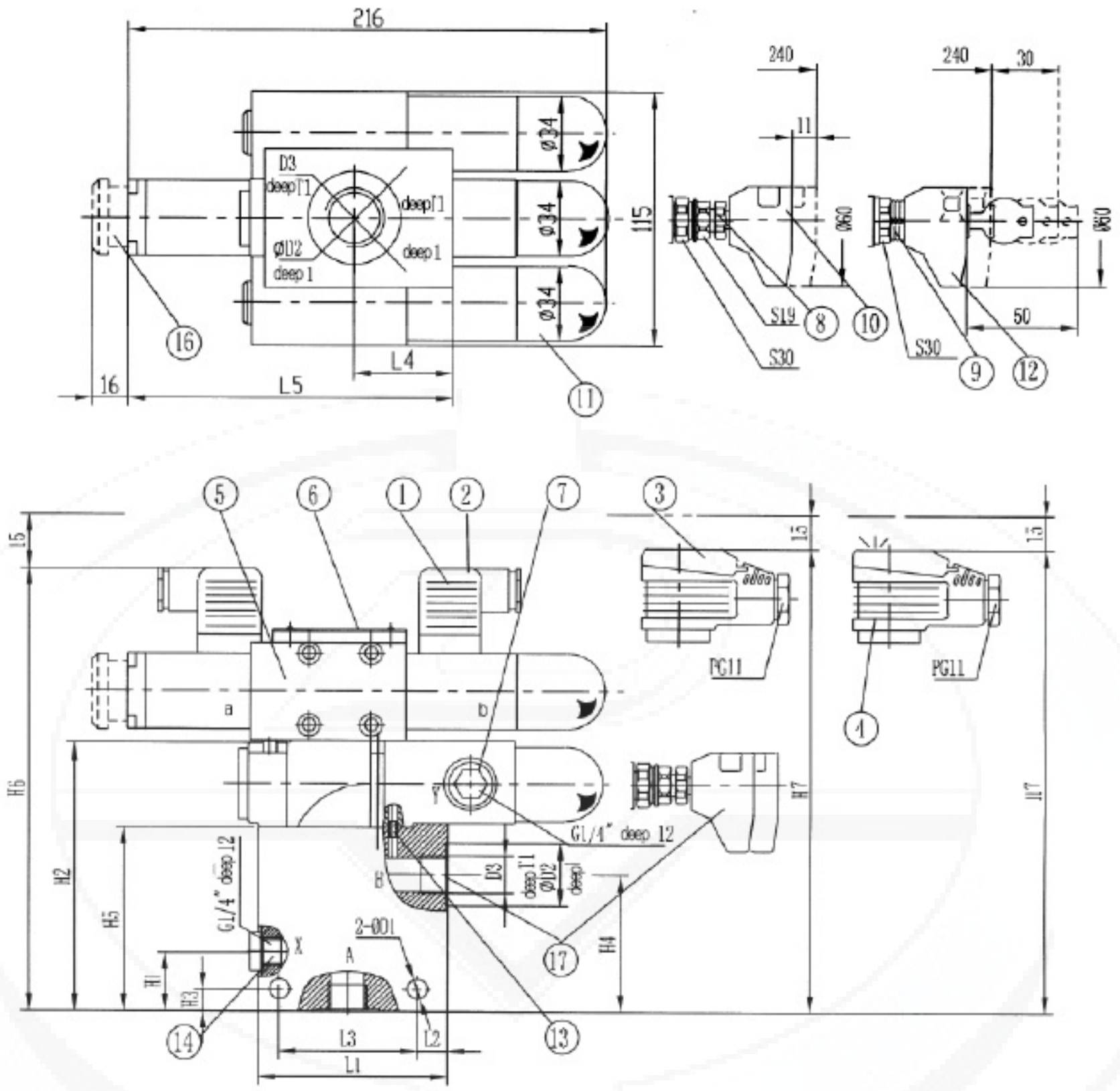
Subplate:

G51/01

G51/02

see page 148

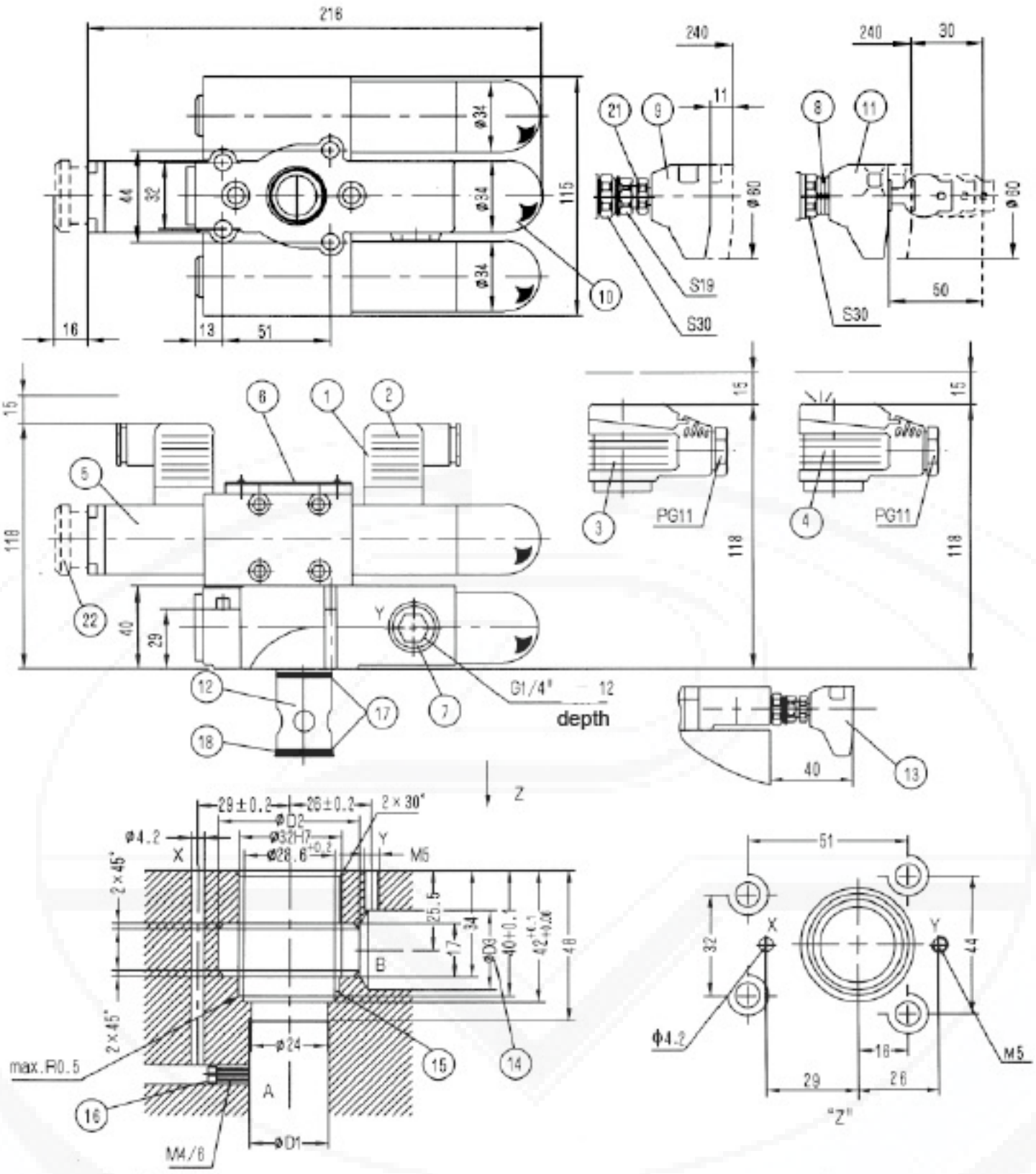
Unit dimensions: Threaded connection (Dimensions in mm)



1. Plug-in connector without circuitry
2. Plug-in connector: colour gray
3. Large plug-in connector
4. Large plug-in connector with light
5. Directional valves, type WE5
6. Nameplate
7. Port Y for external pilot oil drain
8. Only apply to up to 31.5MPa
9. Repeat adjusting scale
10. Adjustment element 1
11. Adjustment element 2
12. Adjustment element 3
13. When internal pilot oil drain, is not need
14. Pilot oil drain X
16. Hand override, optional
17. When use adjustment element 1 or 3, connect with B,must need right angle elbow

NC	B1	Φ D1	Φ D2	D3	H1	H2	H3	H4	H5	H6	H7	L1	L2	L3	L4	L5	L6	T1	Weight(Kg)
8	63	9	28	G3/8"(M18 × 1.5)	27	125	10	62	85	203	212	85	14	62	45	146	10	12	8.5
10			34	G1/2"(M22 × 1.5)														14	8.5
15			42	G3/4"(M27 × 2)														16	8.7
20			47	G1"(M33 × 2)				57										18	8.7
25	70	11	56	G1 1/4"(M42 × 2)	42	138	13	66	98	216	225	100	18	72	54	155	1	20	9.4
30			61	G1 1/2"(M48 × 2)														22	9.4

Unit dimensions: for cartridge connection (Dimensions in mm)



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. Main spool assembly
13. Min. distance when use adjustment element 1 or 3 fixing the integration block
14. The D3 bore may enter the D2 bore at any position.However, care must be taken that X port and the fixing screw holes do not intersect.
15. Back-up ring and O-ring must be fitted into the main bore before assembling the main spool.
16. Orifice
17. O-ring 27.3X2.4
18. Retainer ring 32x28.4x0.8
21. Only apply to 31.5 MPa
22. Hand override, optional

NC	Φ D1	Φ D2	Φ D3	Weight DB3UC	Fixing screw (GB/T70.1-2000)	Torque
10	10	40	10	6Kg	4-M8 × 40 -10.9	31
20	25	50	25			
30	32		32			

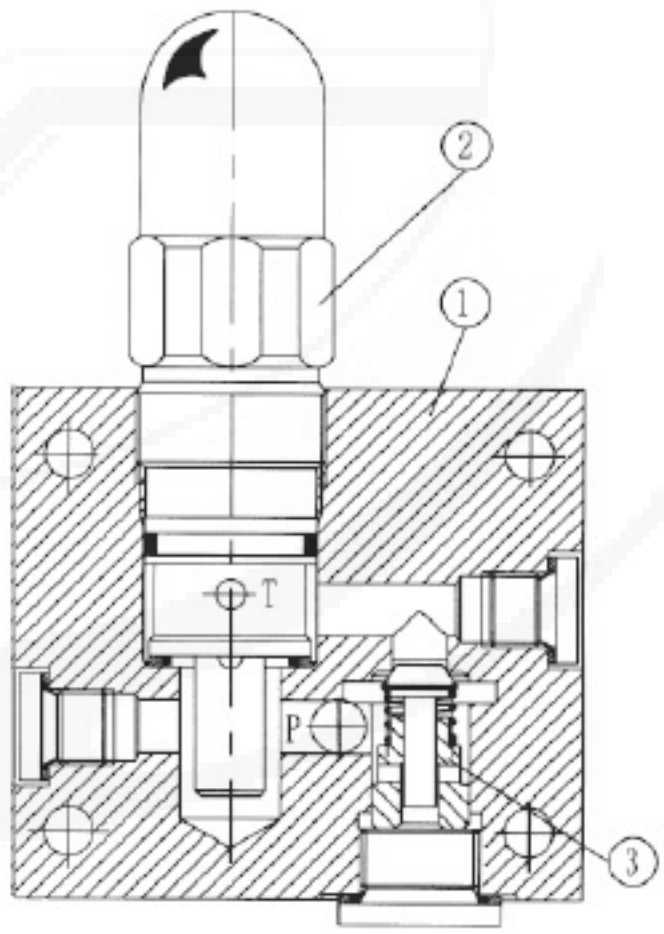
BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	Check-Q-meter, type DC			RE 25810/12.2004
	Size 10 to 30	up to 31.5 MPa	up to 330 L/min	Replaces: RE25810/05.2001

Features:

- For subplate mounting
- For pipe connections
- 5 pressure ranges
- 3 adjustment elements:
  - · Rotary knob
  - · Sleeve with hexagon and protective cap
  - · Lockable rotary knob with scale

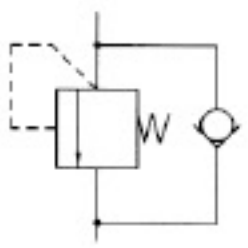
Functional,section

The valves consist basically of the housing(1), direct operated poppet valve(2), and check valve(3).
Check-Q-meters are used in hydraulic systems to prevent negative loads causing hydraulic cylinders or motors "running away",They may also act as anti-burst valves.



Type DC...10B/...

Symbols



Type DC...10/...

Ordering Code

DC			-	-	10	B	/	-		*

Size	Subplate mounting	Pipe connections
6	-	M14X1.5: G1/4"
10	10	M22X1.5: G1/2"
15	-	M27X2:G3/4"
20	20	M33X2: G1"
25	-	M42X2: G11/4"
30	30	M48X2: G11/2"

Subplate mounting =P
Pipe connections =G

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

10 = Series 10 to 19
(10 to19 = unchanged installation and connection dimensions)

B= Technology of Beijing Huade Hydraulic

25 = Pressure adjustable up to 2.5 MPa
50 = Pressure adjustable up to 5 MPa
100 = Pressure adjustable up to 10 MPa
200 = Pressure adjustable up to 20 MPa
315 = Pressure adjustable up to 31.5 MPa

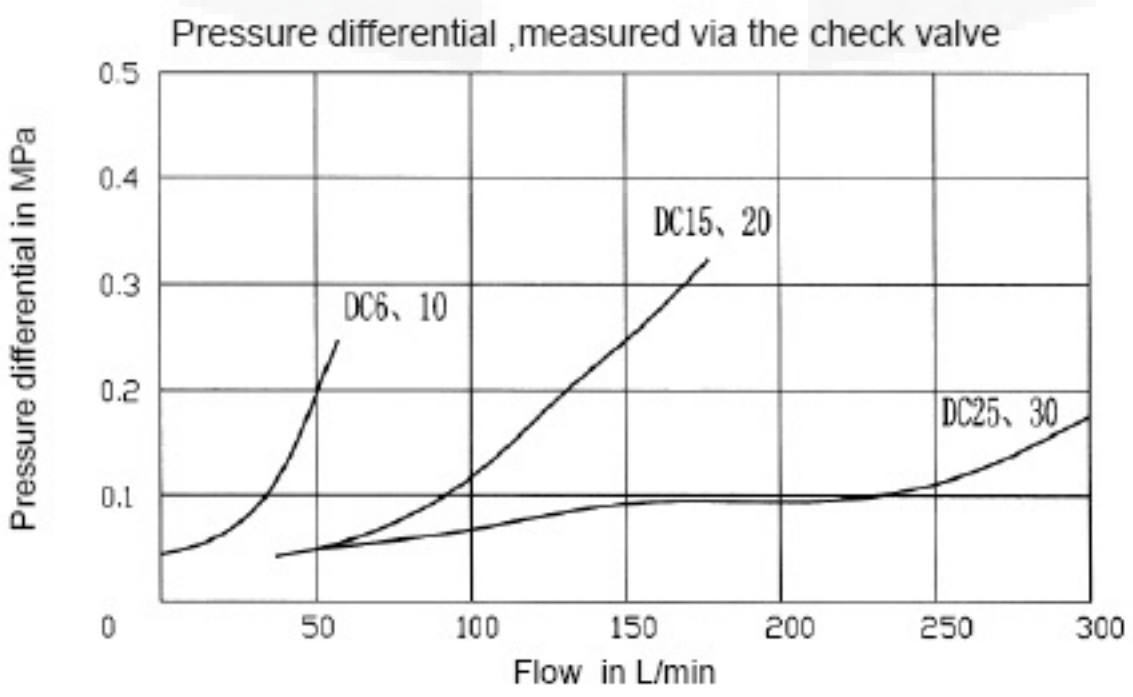
No code = mineral oils
V = phosphate ester

Further details in clear text

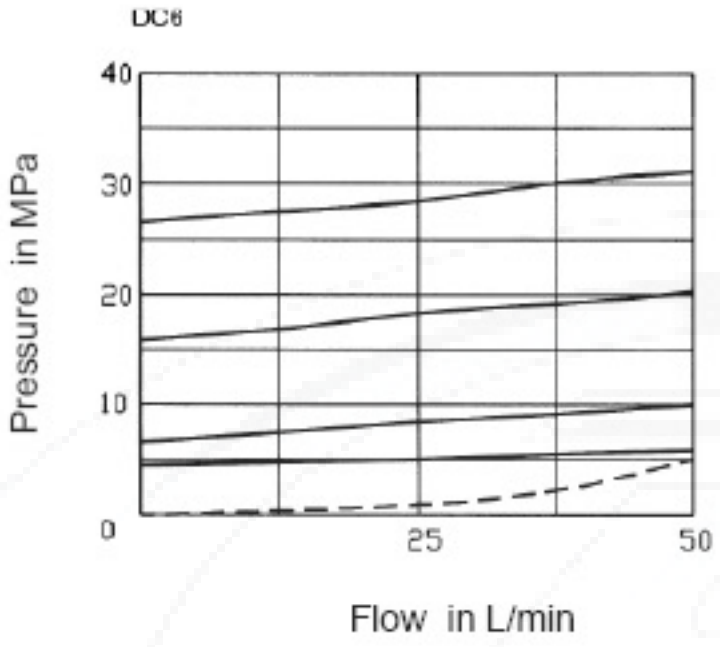
Technical data (For applications outside these parameters, please consult us!)

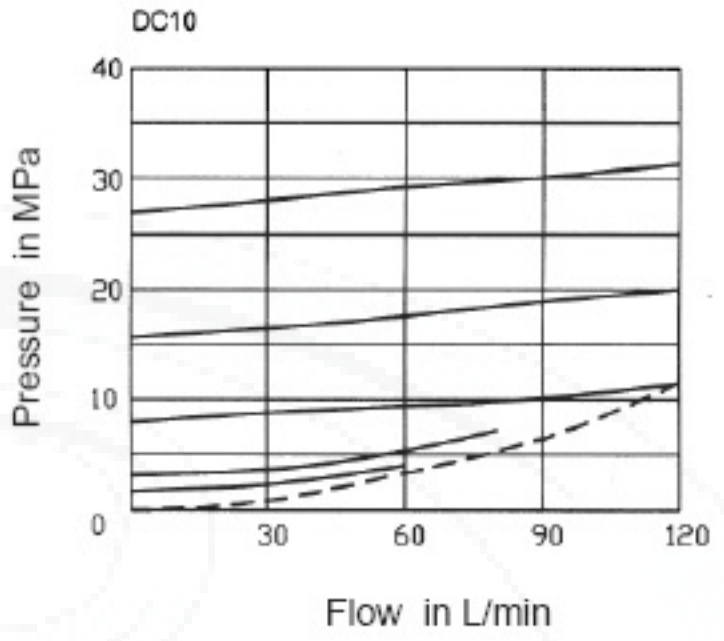
Pressure fluid	Mineral oil (for NBR seal)or phosphate ester(for FPM seal)					
Pressure fluid - temperature range (°C)	-30 to +80					
Viscosity range (mm²/s)	10～800					
Size	6	10	15	20	25	30
Operating pressure, ports A and B (MPa)	up to 31.5					
Cracking pressure (MPa)	up to 0.05					
Flow, max. (L/min)	45	110	230		330	
Degree of fluid contamination (μm)	Maximum permissible degree of contamination of the fluid is to NAS 1638, class 9. $\beta_{10} \geqslant 75$					

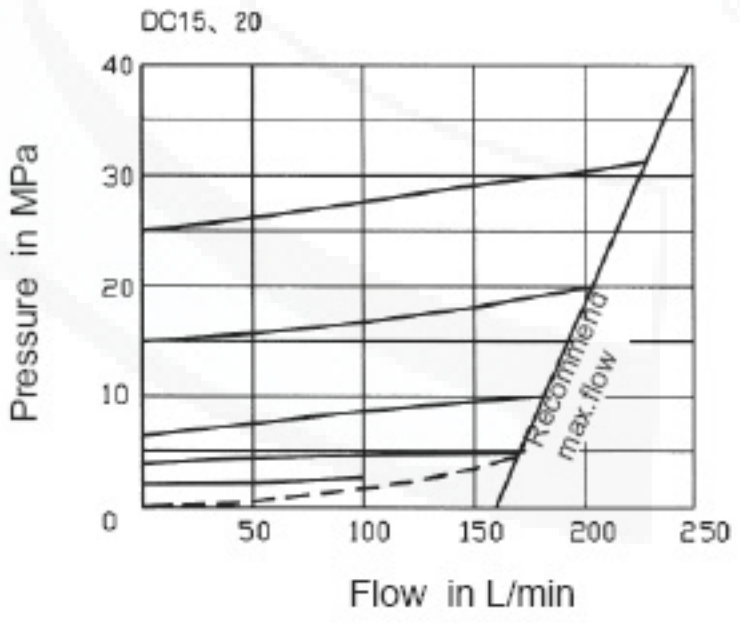
Characteristic curves (measured at V = 41 mm²/s and t = 50°C)

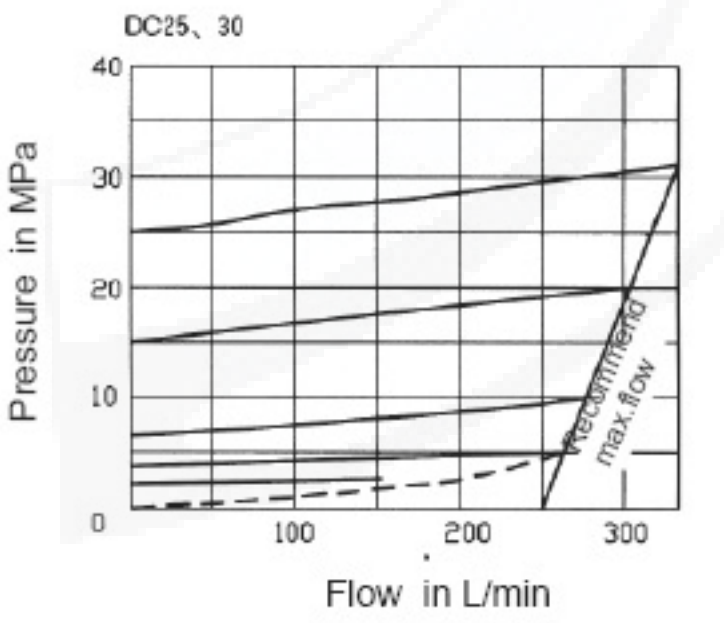


Characteristic curves (measured at V = 41 mm² /s and t = 50°C)



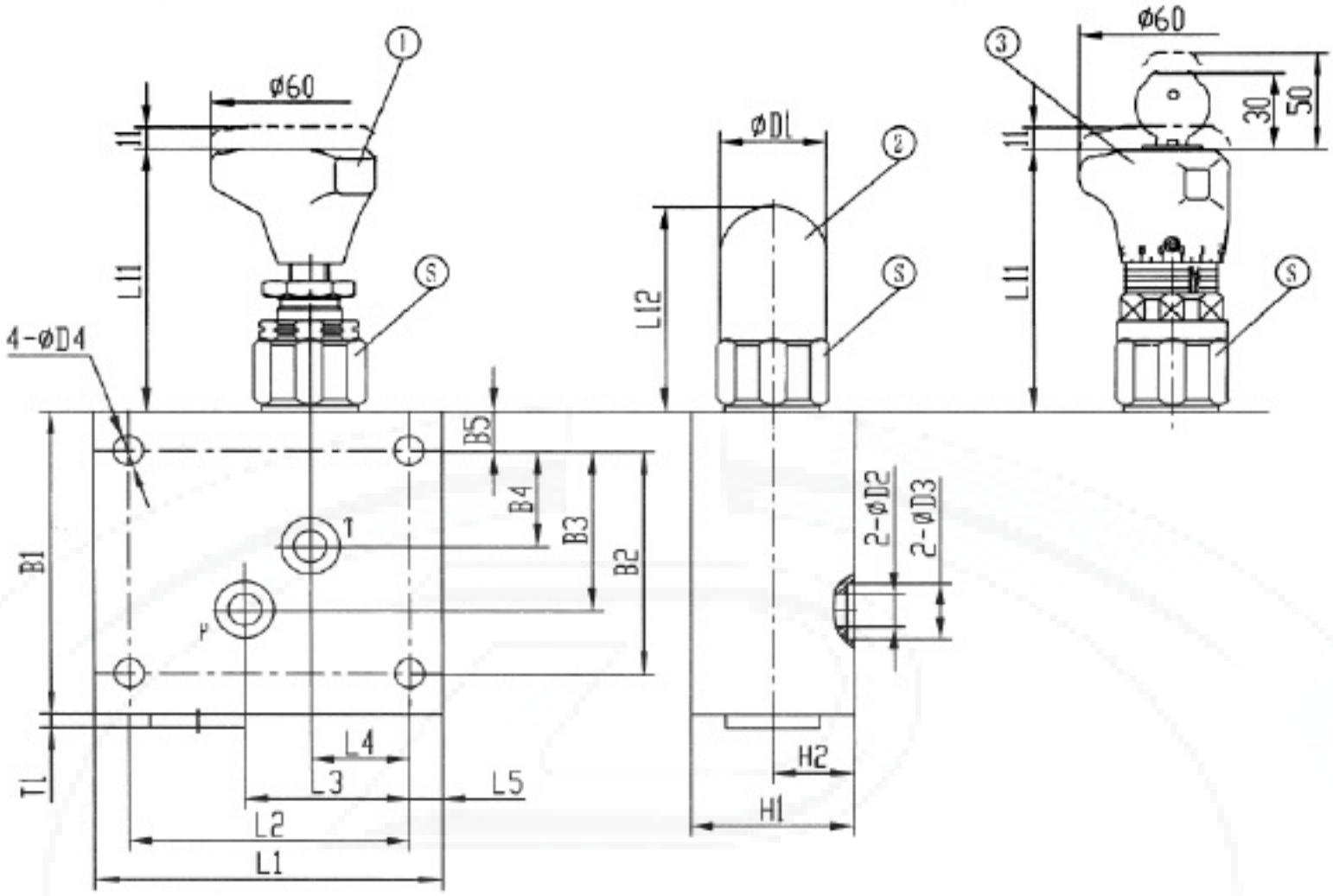




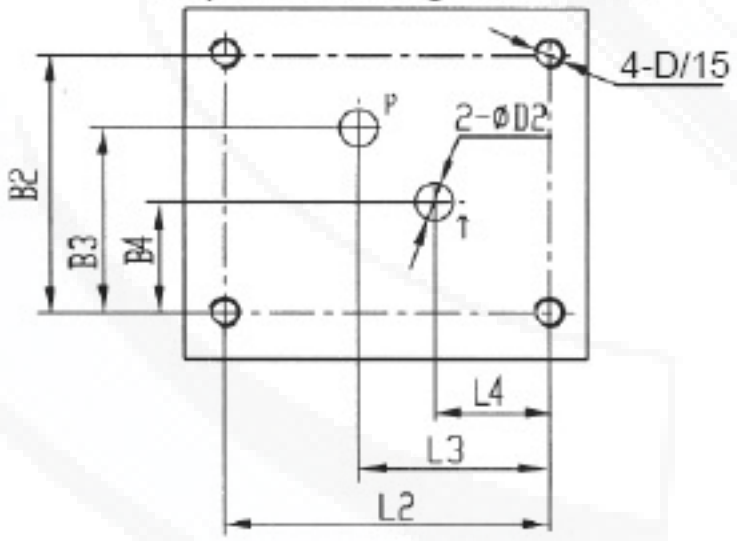


-----Min.adjusting pressure

Unit dimensions:Subplate mounting **(Dimensions in mm)**



subplate mounting dimensions:

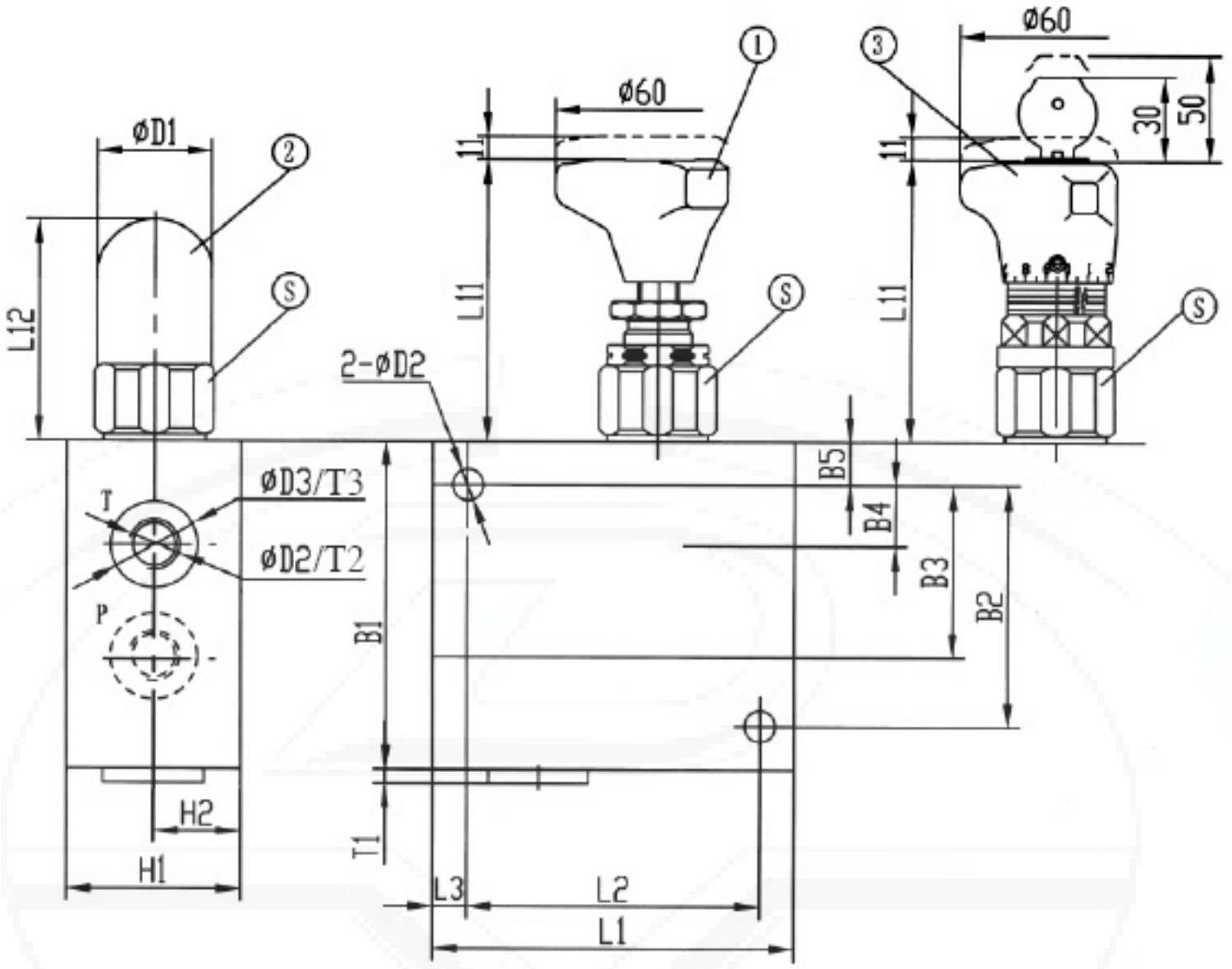


1.Rotary knob
2.Sleeve with hexagon and protective cap
3.Lockable rotary knob with scale

Size	L1	L2	L3	L4	L5	L11	L12	B1	B2	B3	B4	B5	H1	H2
10	105	85	50	30	10	79	68	95	70	50	30	12.5	50	25
20	145	115	65	35	15	77	65	135	85	63	29	25	60	30
30	180	150	75	45	15	-	83	175	125	82	35	25	80	40

Size	ϕ D1	ϕ D2	ϕ D3	ϕ D4	S	T1	D	O-ring	Fixed screw (GB/T70.1-2000)	Weight (Kg)
10	38	10	17.8	9	36	4	4-M8	12.3 × 2.4	4-M8 × 50-10.9	4
20	46	20	27.7	13	46	8	4-M12	22 × 3	4-M12 × 80-10.9	9
30	63	30	41.6	17	60	5	4-M16	34 × 3	4-M16 × 120-10.9	20

Unit dimensions:pipe connections (Dimensions in mm)



1.Rotary knob
2.Sleeve with hexagon and protective cap
3.Lockable rotary knob with scale

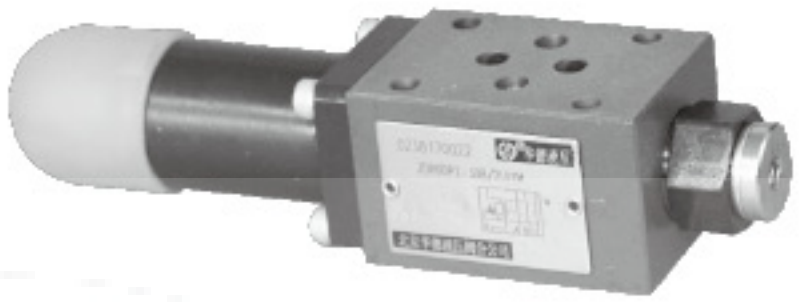
Size	L1	L2	L3	L11	L12	B1	B2	B3	B4	B5	H1	H2	ϕ D1
6	105	85	10	83	72	95	70	50	30	12.5	50	25	34
10				79	68								38
15	140	110	15	77	65	135	85	63	29	25	60	30	48
20													
25	180	150	15	-	83	175	125	82	35	25	80	40	63
30													

Size	ϕ D2	ϕ D3	D	S	T1	T2	T3	Weight (Kg)
6	9	25	M14 × 1.5(G1/4 ″)	32	4	16	1	4
10		38	M22 × 1.5(G1/2 ″)	33		15		
15	14	45	M27 × 2(G3/4 ″)	16	7	18	1	9
20		52	M33 × 2(G1 ″)			20		
25	18	63	M42 × 2(G1 1/4 ″)	60	8	23	1	20
30		65	M48 × 2(G1 1/2 ″)					

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure reducing valve, direct operated, sandwich plate,type ZDR6D...30B/**			RE 26569/12.2004
	Size 6	up to 21 MPa	up to 30L/min	Replaces：RE26569/05.2001

Features:

- Sandwich plate design
- Porting pattern to DIN 24 340, from A,ISO 4401 and CETOP-RP 121H
- 4 pressure ratings
- 3 adjustment elements:
  - · Rotary knob
  - · Sleeve with hexagon and protective cap
  - · Lockable rotary knob with scale
- Pressure reduction in ports A,P,B
- Check valve, optional



Functional description, section

Pressure reducing valves type ZDR 6 D.. are 3-way direct operated pressure reducing valves of sandwich plate design with a pressure relief function on the secondary side. It is used to reduce the system pressure. The pressure reducing valve basically consists of the housing (1), the control spool (2), a compression spring (3) and the adjusment element (4) as well as with an optional check valve.

The secondary pressure is set by the pressure adjustment element (4).

Model "DA"

At rest, the valve is normally open, and fluid can flow unhindered from port A to port A1. The pressure in port A1 is at the same time via the control line (5) present at the spool area opposite to the compression spring (3). When the pressure in port A1 exceeds the pressure level set at the compression spring (3) the control spool (2) moves into the control position against the compression spring (3) and holds the set pressure in port A1 constant. The control pressure and pilot oil are taken from port A1 via control line (5).

If the pressure in port A1 rises still further due to external forces, the control spool (2) is moved still further towards the compression spring (3). This causes a flow path to be opened at port A through line(6) on the control spool (2) to tank. Sufficient fluid then flows to tank to prevent any further rise in pressure. The spring chamber (7) is always drained to tank externally via drilling (6) to port T (Y).

A pressure gauge connection (8) permitts the secondary pressure at the valve to be monitored.

It is only possible to fit a check valve for free flow in ports A1 to A in version "DA".

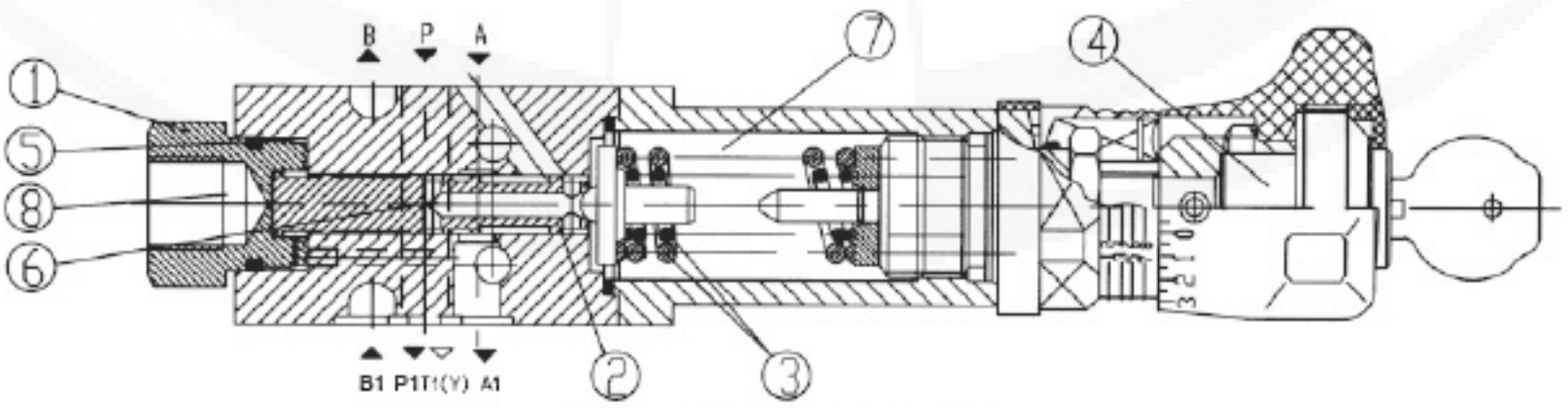
Models "DP" and "DB"

In model "DP", the pressure is reduced in port P1. The control pressure and the pilot oil is taken internally from port P1.

In model "DB", the pressure in port P1 is reduced, and the pilot oil taken from port B.

Attention!

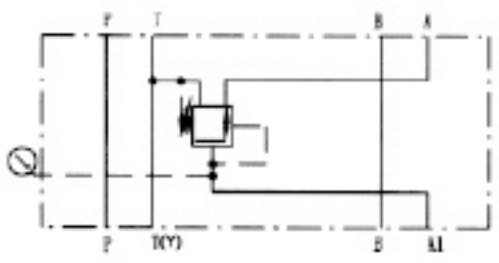
In model DB, it must be ensured, that the pressure in port B is not higher than the set pressure when the directional valve is in position P to A. Otherwise, pressure in port A will be reduced.



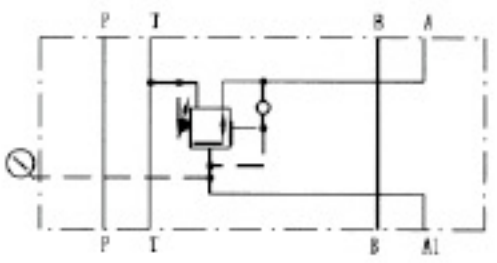
Type ZDR6DA...30B/...YM

Symbols

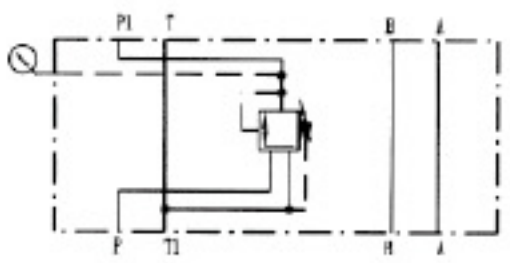
ZDR6DA...-30B/...YM...



ZDR6DA...-30B/...Y...



ZDR6DP...-30B/...YM...



Ordering details

Z	DR	6	D			-	30	B	/		Y				*

Sandwich plate design = Z

Pressure redcing valve = DR

Nominal Size 6 = 6

Direct operated = D

Pressure reduction in port A = A
Pressure reduction in port P = P

Adjustment element
Rotary knob = 1
Hex. head screw with protective cap = 2
Lockable rotary knob with scale = 3

Series 30 to 39 = 30
(30 to 39 = unchanged installation and connection dimensions)

B= Technology of Beijing Huade Hydraulic

25 = max. secondary pressure 2.5 MPa
75 = max. secondary pressure 7.5 MPa
150 = max. secondary pressure 15.0 MPa
210 = max. secondary pressure 21.0 MPa

Y= Pilot oil feed internal, drain external

no code. = with check valve
(inot possible for pressure reduction in port A
M = without check valve

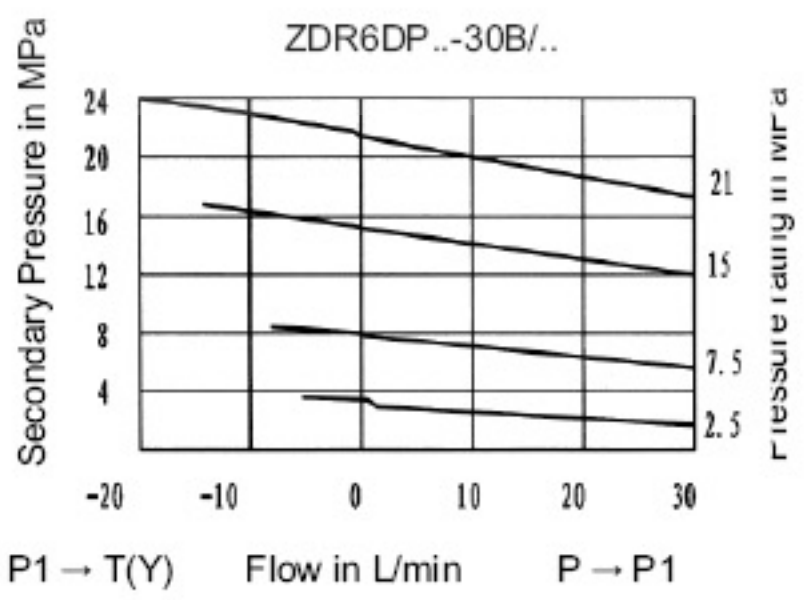
no code. = mineral oils
V = phosphate ester

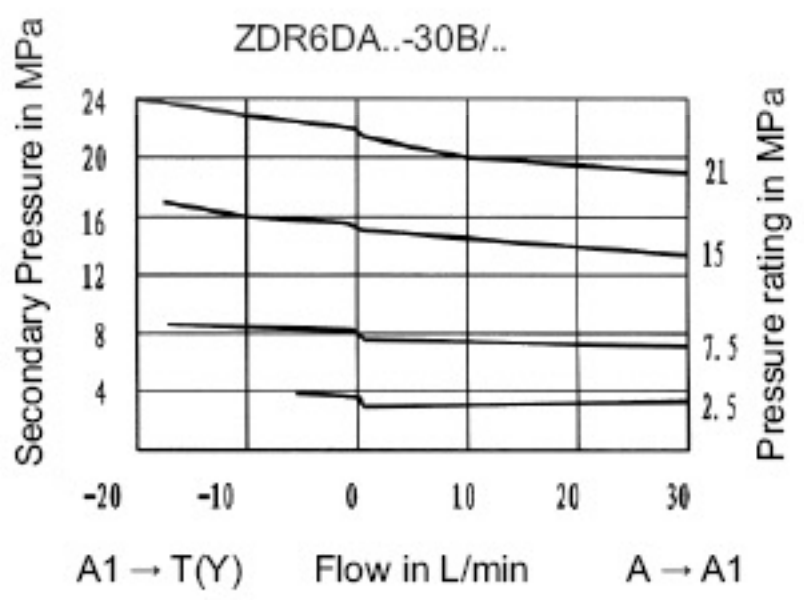
Further details in clear text

Technical data (For applications outside these paramters,plese consult us!)

Pressure fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)
Pressure fluid-temperature range	(℃)	-30 to +80
Viscosity range	(mm^2/s)	10 to 800
Degree of fluid contamination	(μm)	Maximum permissible degree of contamination of the fluid is to NAS 1638,class9. $\beta_{x} \geq 75$
Max.operating Pressure (inlet)	(MPa)	up to 31.5
Secondary pressure(output)	(MPa)	up to 21
Back pressure port	(MPa)	up to 6
Max.flow	(L/min)	up to 30
Weight	(kg)	approx.1.2

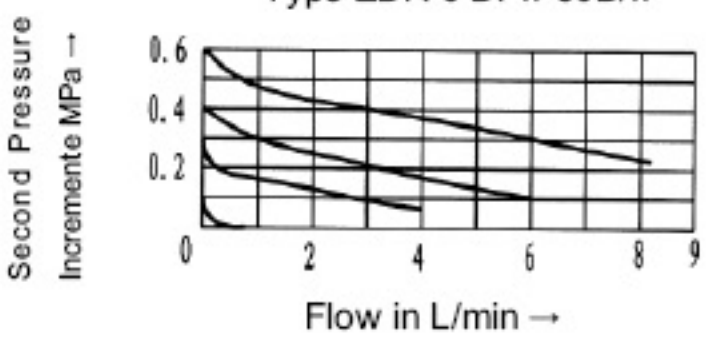
Characteristic curves (measured at ν =41mm^2/s and t=50℃)



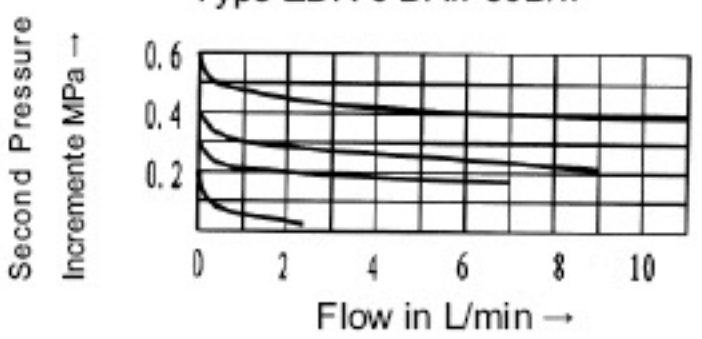


Characteristic curves (measured at ν =41mm²/s and t=50°C)

Type ZDR 6 DP..-30B/..

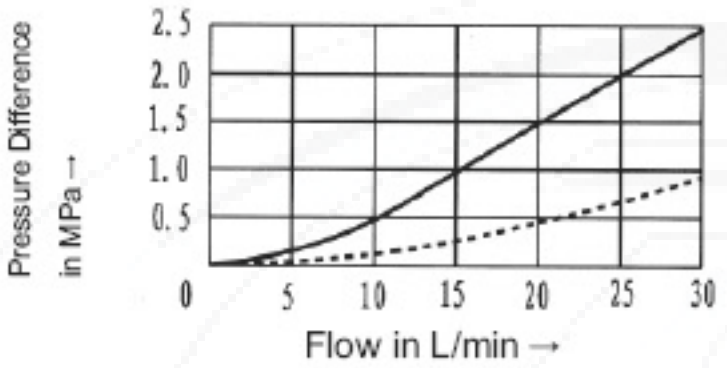


Type ZDR 6 DA..-30B/..



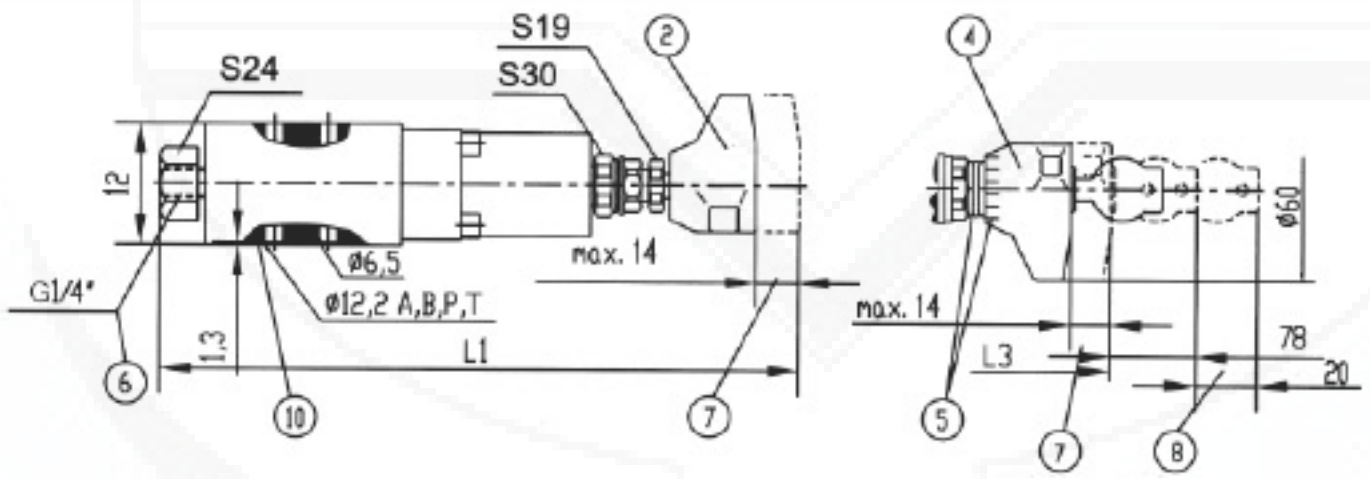
Settable pressure: <1MPa >1MPa

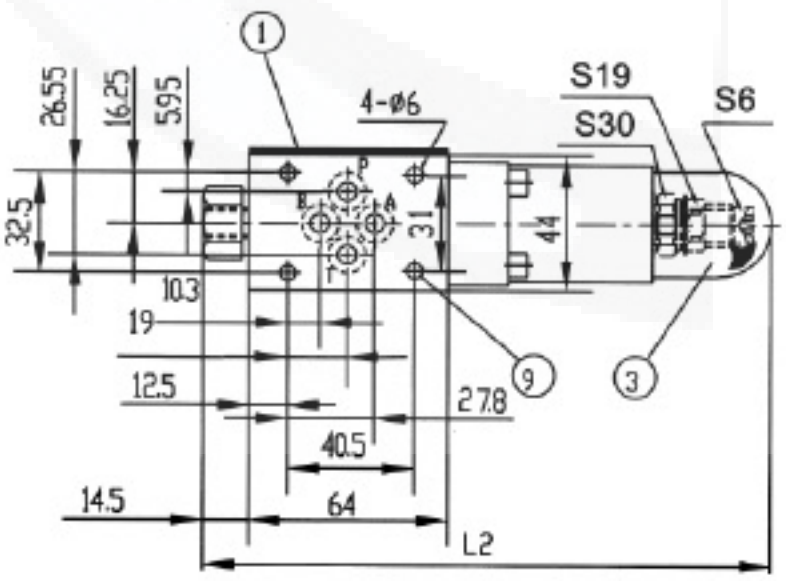
Check valve chacteristic curves Δ P-Q



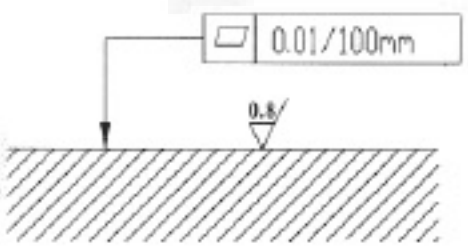
Unit dimensions

(Dimensions in mm)





Required surface finish of mating piece



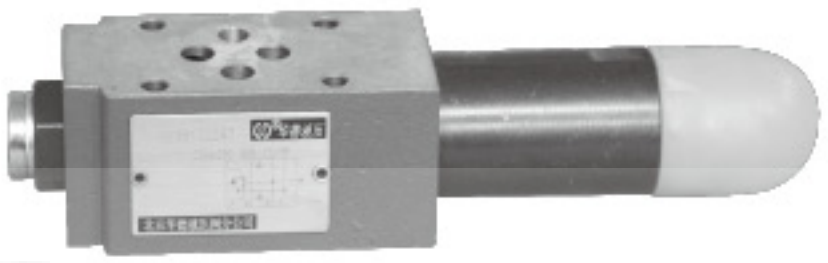
type	L1 max.	L2	L3 max.
ZDR6DA...30B/...	208	182	203
ZDR6DP...30B/...	196	170	191

1. Nameplate
2. Adjustment1
3. Adjustment2
4. Adjustment3
5. Adjusting scale set
6. Pressure gauge connection
7. Stroke
8. Space required to remove key
9. Fixing screw hole
10. O-ring 9.25X1.78, for ports A, B, P, T.

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure reducing valve, direct operated, sandwich plate,type ZDR6D...40B/(New Series)**			RE26550/12.2004
	Size 6	up to 21 MPa	up to 50L/min	

Features:

- Sandwich plate design
- 4 pressure ratings
- 3 adjustment elements:
  - · Rotary knob
  - · Sleeve with hexagon and protective cap
  - · Lockable rotary knob with scale
- Pressure reduction in ports A, B or P
- Check valve, optional
- Porting pattern to DIN 24 340, form A,ISO 4401 and CETOP-RP 121H



Functional, section

Pressure reducing valves type ZDR 6 D.. are 3-way direct operated pressure reducing valves of sandwich plate design with a pressure relief function on the secondary side. It is used to reduce the system pressure. The pressure reducing valve basically consists of the housing (1), the control spool (2), a compression spring (3) and the adjusment element (4) as well as with an optional check valve.

The secondary pressure is set by the pressure adjustment element (4).

Model "ZDR6DA"

At rest, the valve is normally open, and fluid can flow unhindered from port A to port A1. The pressure in port A1 is at the same time via the control line present at the spool area opposite to the compression spring (3). When the pressure in port A1 exceeds the pressure level set at the compression spring (3) the control spool (2) moves into the control position against the compression spring (3) and holds the set pressure in port A1 constant.

The control pressure and pilot oil are taken from port A1 via control line.

If the pressure in port A1 rises still further due to external forces, the control spool (2) is moved still further towards the compression spring (3).

This causes a flow path to be opened at port A1 through control land (9) on the control spool (2) to tank. Sufficient fluid then flows to tank to prevent any further rise in pressure. The spring chamber (7) is always drained to tank externally via drilling (6) to port T (Y).

A pressure gauge connection (8) permitts the secondary pressure at the valve to be monitored.

It is only possible to fit a check valve for free flow in ports A1 to A in version "DA".

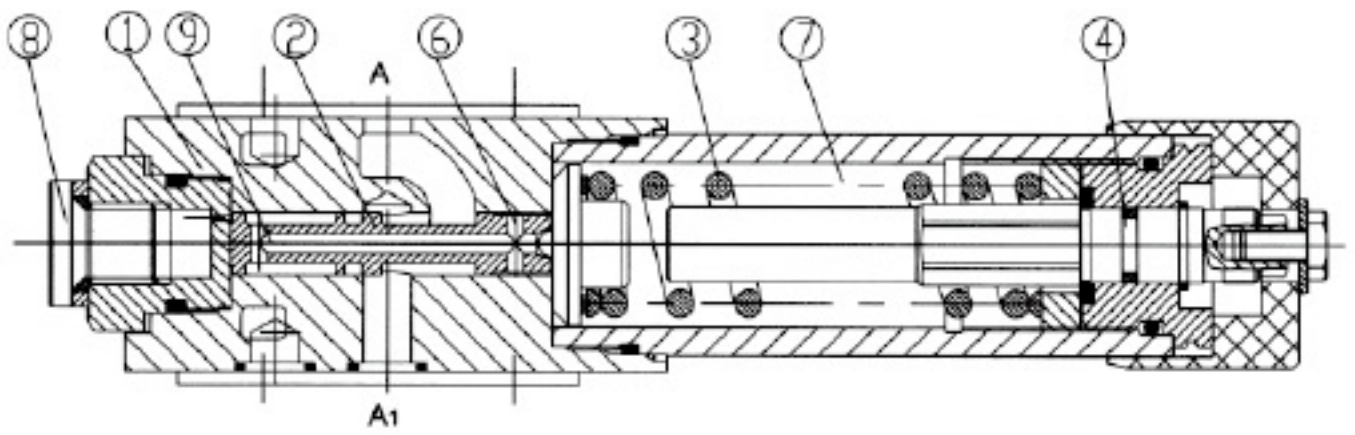
Models "DP" and "DB"

In model "DP", the pressure is reduced in port P1. The control pressure and the pilot oil is taken internally from port P1.

In model "DB", the pressure in port P1 is reduced, and the pilot oil taken from port B.

Attention!

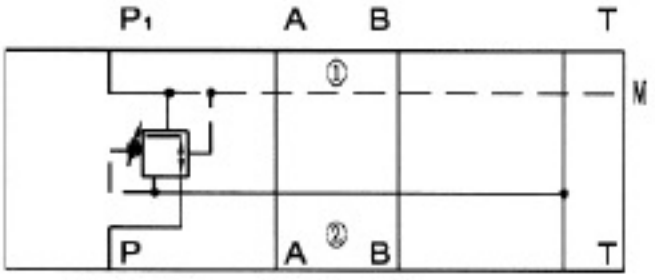
In model DB, it must be ensured, that the pressure in port B is not higher than the set pressure when the directional valve is in position P to A. Otherwise, pressure in port A will be reduced.



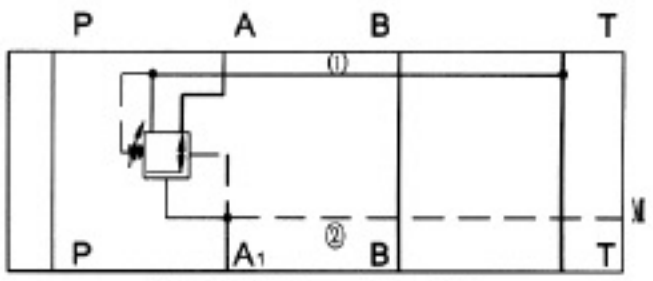
Type ZDR6DA1-40B/...YM...

Symbols (① =valve side, ② =subplate side)

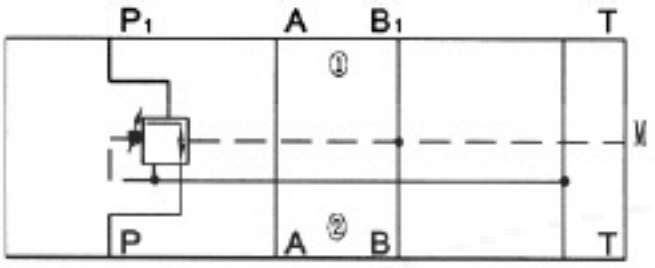
ZDR6DP...-40B/...YM...



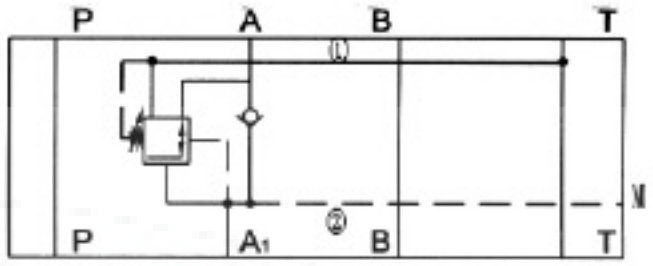
ZDR6DA...-40B/...YM...



ZDR6DB...-40B/...YM...



ZDR6DA...-40B/...Y...



Ordering details

Z	DR	6	D			-	40	B	/		Y			*

Sandwich plate design = Z

Pressure redcing valve = DR

Nominal Size 6 = 6

Direct operated = D

Pressure reduction in port A = A
Pressure reduction in port B = B
(Pilot oil from port B)
Pressure reduction in port P = P

Adjustment element
Rotary knob = 1
Hex. head screw with protective cap = 2
Lockable rotary knob with scale = 3

Series 40 to 49 = 40
(40 to 49 = unchanged installation and connection dimensions)

Further details in clear text

No code. = mineral oils
V = phosphate ester

No code. = with check valve (only possible for pressure reduction in port A)
M = without check valve

Y= Pilot oil feed internal,drain external

25= max. secondary pressure 2.5 MPa
75= max. secondary pressure 7.5 MPa
150= max. secondary pressure 15 MPa
210= max. secondary pressure 21 MPa

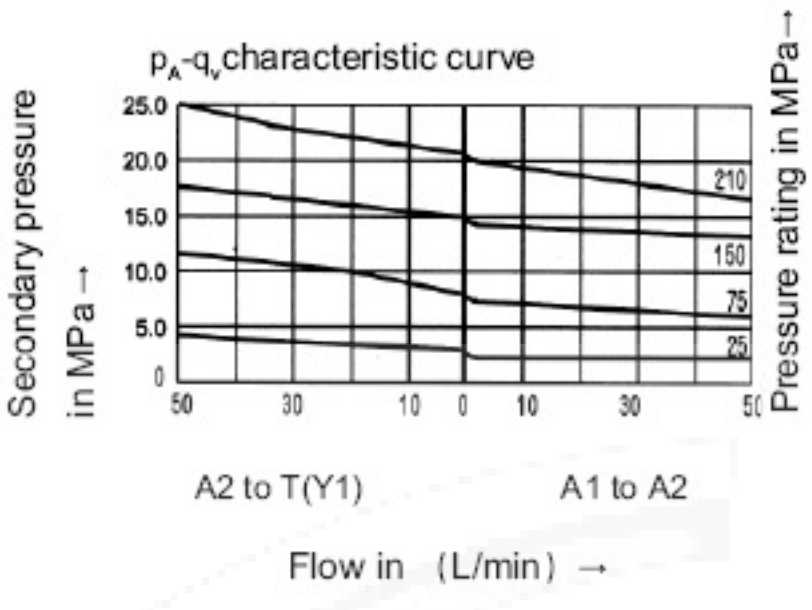
B= Technology of Beijing Huade Hydraulic

Technical data (For applications outside these paramters,plese consult us!)

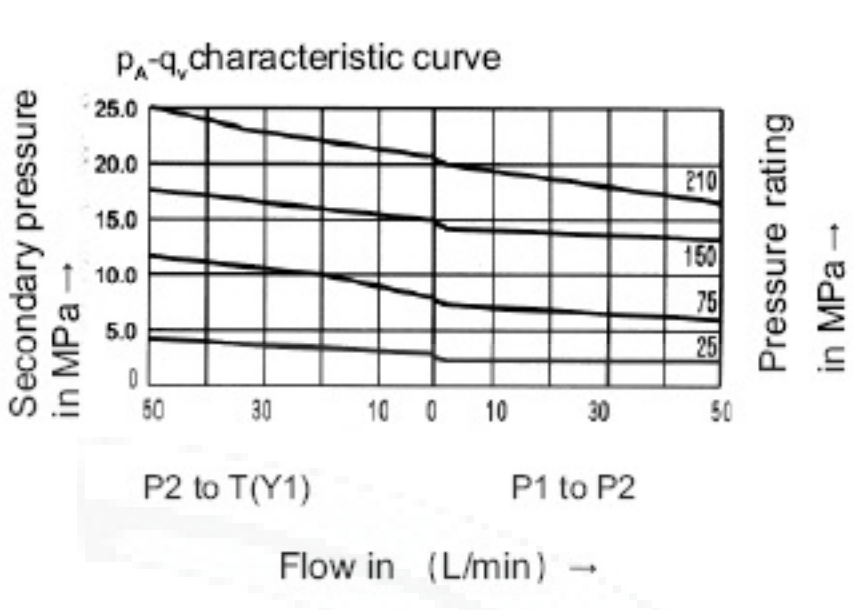
Pressure fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)
Pressure fluid-temperature range	(℃)	-30 to +80
Viscosity range	(mm^2/s)	10 to 800
Degree of fluid contamination	(μm)	Maximum permissible degree of contamination of the fluid is to NAS 1638,class 9. $\beta_{10} \geqslant 75$
Max.operating Pressure (inlet)	(MPa)	up to 31.5
Secondary pressure(output)	(MPa)	up to 2.5、up to 7.5、up to 15.0、up to 21.0
Back pressure port	(MPa)	up to 16.0
max.flow	(L/min)	up to 50.0
weight	(kg)	approx.1.2

Characteristic curves (measured at ν =41mm²/s and t=50°C)

Type ZDR6DA

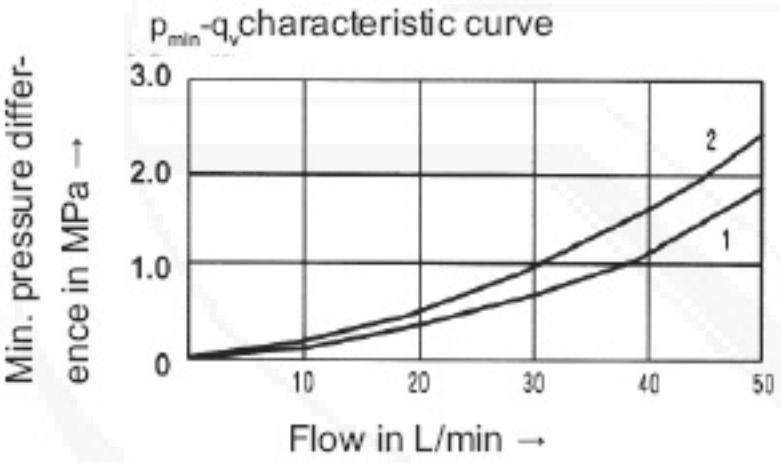


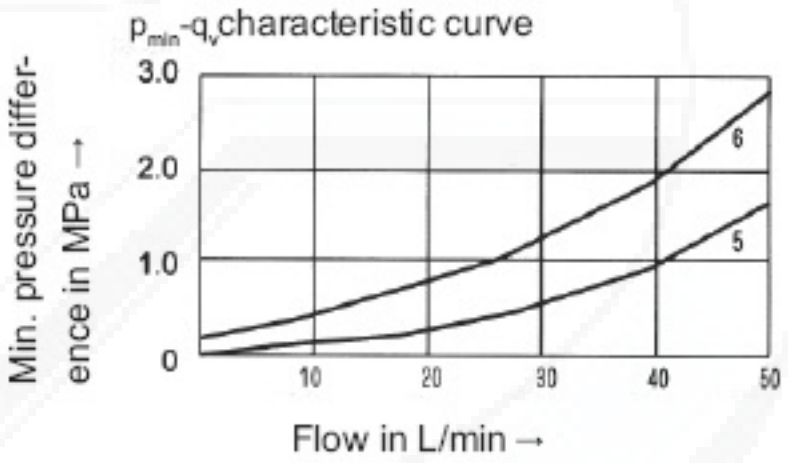
Type ZDR6DP and ZDR6DB

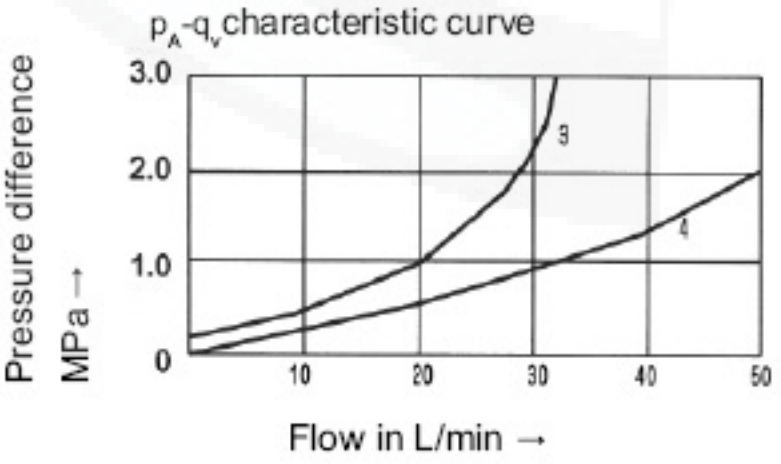


Note:

The curve characteristics remain, with low set pressures, the same in relation to the pressure rating





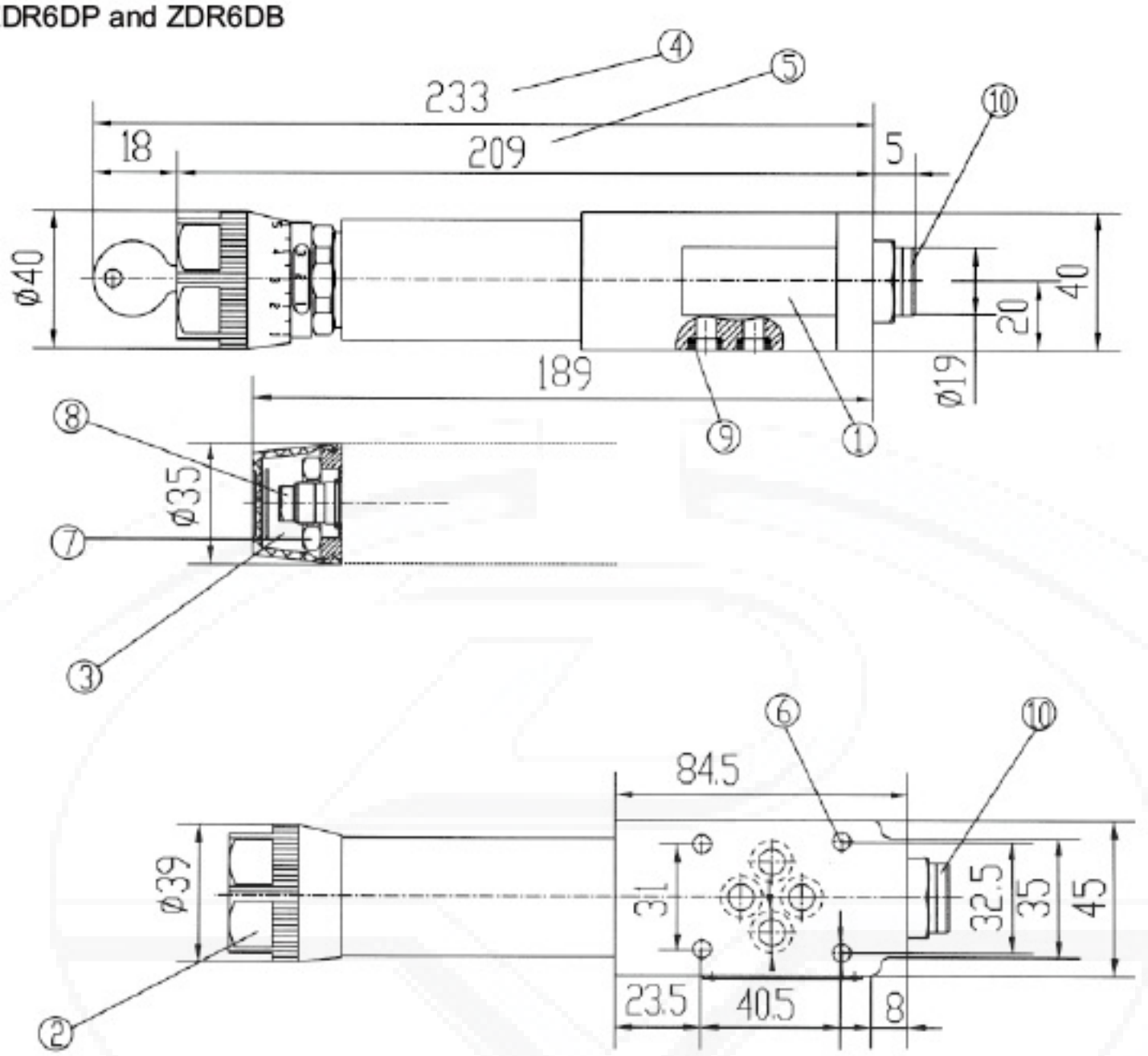


1. A to A1
2. A1 to TB (third. flow path)
3. A1 to A (flow via check valve only)
4. A1 to A (check valve and fully open control cross section)
5. P1 to TB
6. P1 to T(Y) (third. flow path)

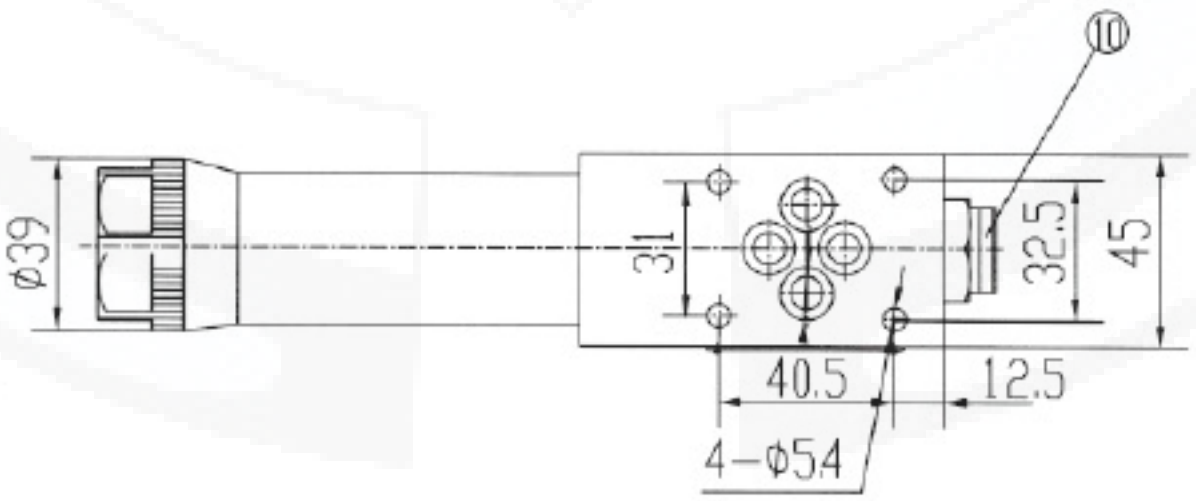
The characteristic curves for the pressure relief function are valid for the outlet pressure = zero over the entire flow range!

Unit dimensions **(Dimensions in mm)**

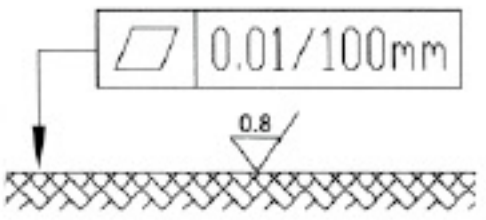
Type ZDR6DP and ZDR6DB



Type ZDR6DA



1. Nameplate
2. Adjustment1
3. Adjustment2
4. Adjustment3
5. Adjustment7
6. Valve fixing screw holes
7. Lock nut 24 A/F
8. Hexagon 10A/F
9. O-ring 9.25X1.78 for ports A2,B2,P2,T2(Y)
10. Pressure gauge port G1/4˝;deepth12,internal hex.6A/F



Required surface finish of mating piece

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	Pressure reducing valve, type ZDR6DP0...40B/40YM			RE 26700/12.2004
	Size 6	up to 4.0 MPa	up to 7L/min	

Features:

- Sandwich plate design

Functional description,section

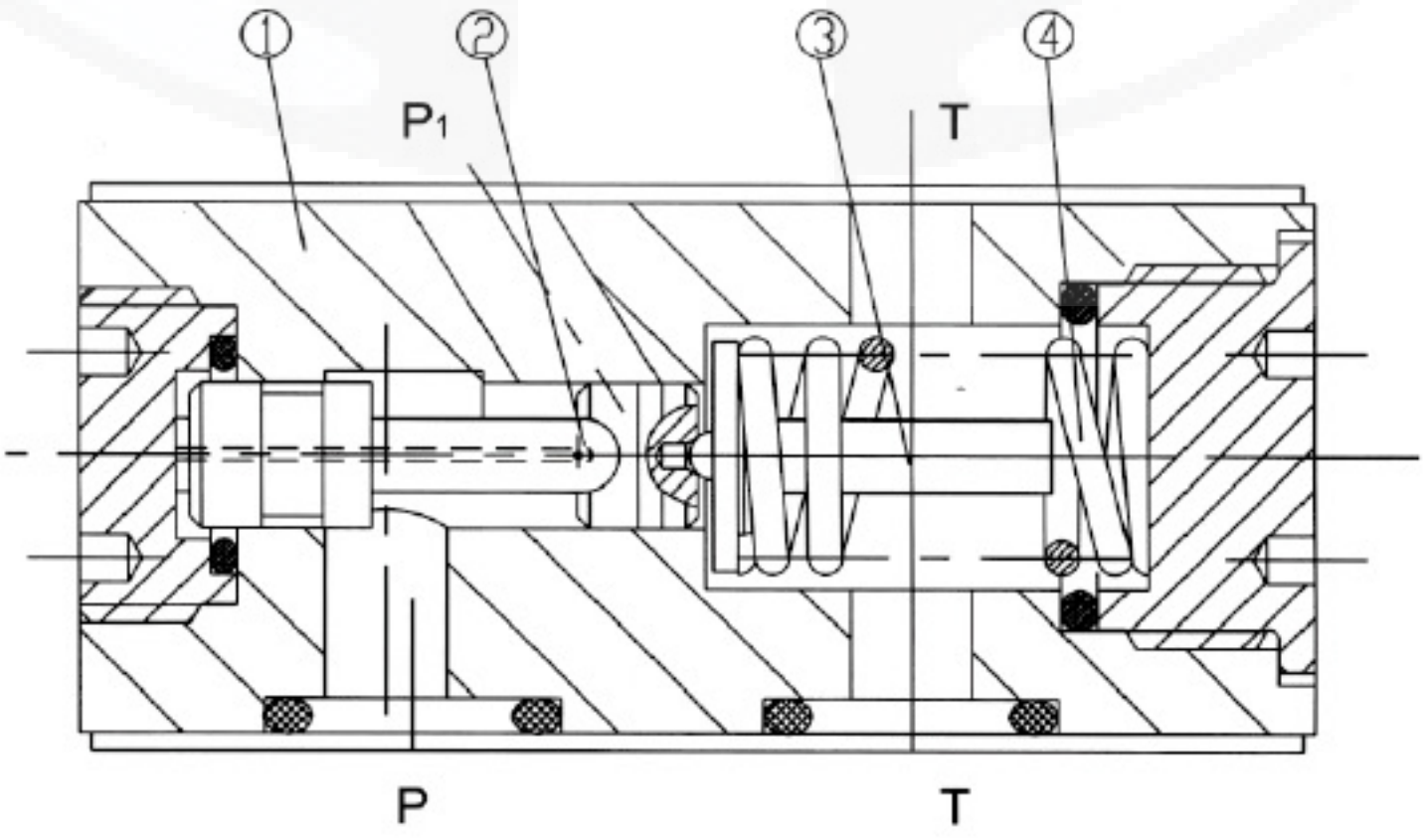
Pressure reducing valves type ZDR 6 DP0...40B/40YM are pressure reducing valves of sandwich plate design. It is used to reduce the system pressure.

The pressure reducing basically valve consists of the housing (1), the control spool (2), a compression spring seating (3) and a compression spring (4).

At rest, the valve is normally open, and fluid can flow unhindered from port P to port P1. The pressure in port P1 is at the same time present at the spool area opposite to the compression spring (4). When the pressure in port P1 exceeds the pressure level set at the compression spring (4) the control spool (2) moves into the control position against the compression spring (4) and holds the set pressure in port P1 constant.

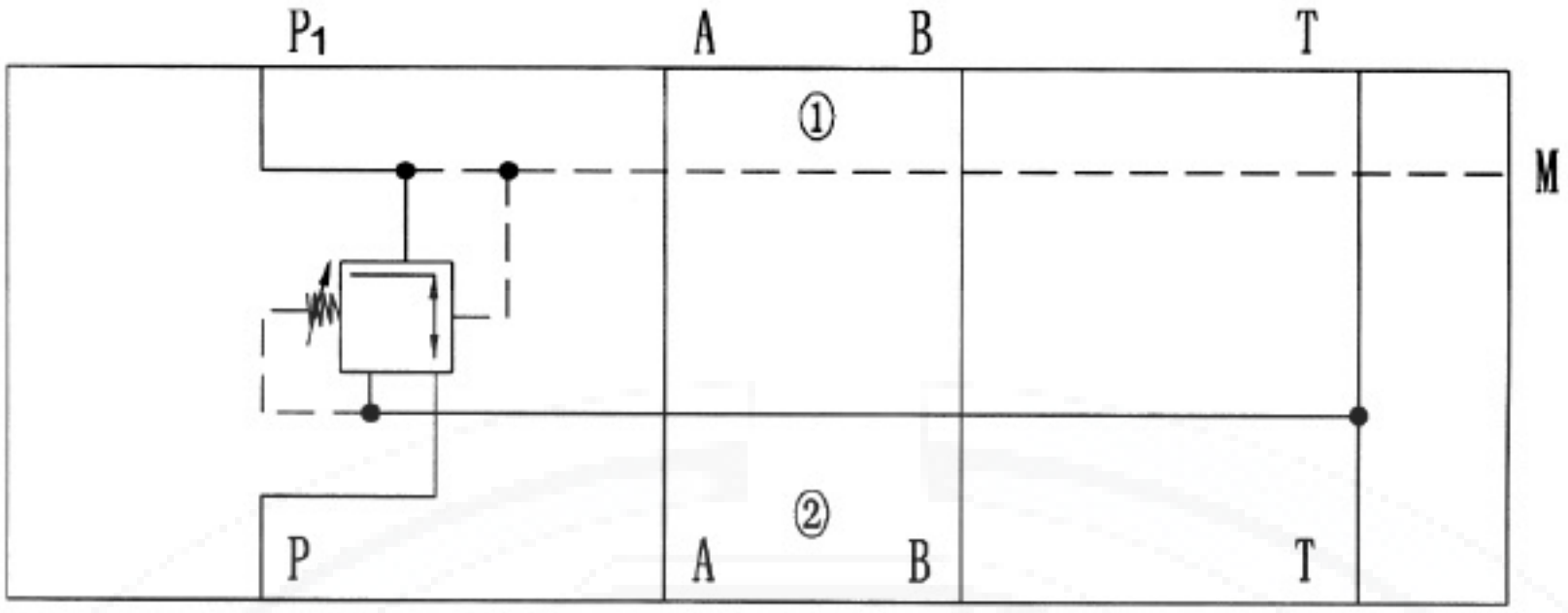
If the pressure in port P1 rises still further due to external forces, the control spool (2) is moved still further towards the compression spring (4).

Sufficient fluid then flows to tank to prevent any further rise in pressure. The spring chamber is always drained to tank externally via drilling to port T (Y).



Symbols (① =valve side, ② =subplate side)

ZDR6DPO...-40B/...YM...



Ordering details

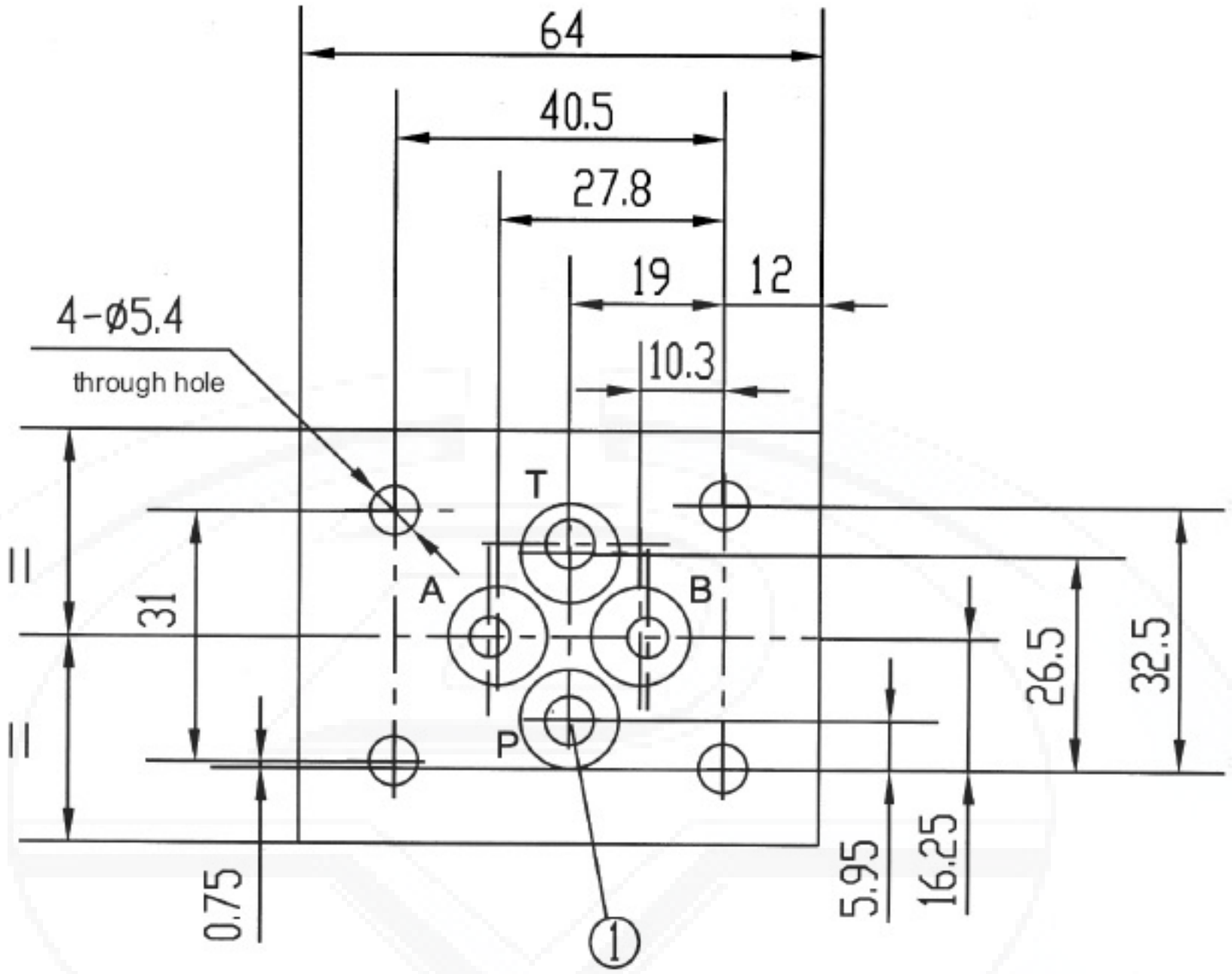
Z	DR	6	D	P	O	-40	B/	40	Y	M		*

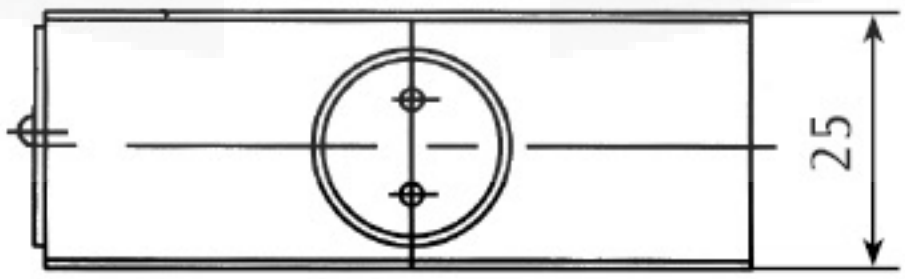
- Sandwich plate design = Z
- Pressure redcing valve = DR
- Nominal Size 6 = 6
- Direct operated = D
- Pressure reduction in port P1 = P
- Outlet pressure fixed = O
- Series 40 to 49 = 40
  (40 to 49 = unchanged installation and connection dimensions)
- Technology of Beijing Huade Hydraulic = B
- Further details in clear text
- No code. = mineral oils
  V = phosphate ester
- M = without check valve
- Y = Pilot oil feed internal,drain external
- 40 = max. secondary pressure 4 MPa

Technical data (For applications outside these paramters,plese consult us!)

Pressure fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)
Pressure fluid - temperature range	(°C)	-30 to +80
Viscosity range	(mm²/s)	10 to 800
Degree of fluid contamination		recommend a filter with a minimum retention rate of $\beta_{10} \geqslant 75$
Max. operating pressure Port P	(MPa)	up to 30
Secondary pressure(output)	(MPa)	up to 4
Back pressure Ports T (Y)	(MPa)	up to 16
Max. flow	(L/min)	up to 7

Unit dimensions (**Dimensions in mm**)

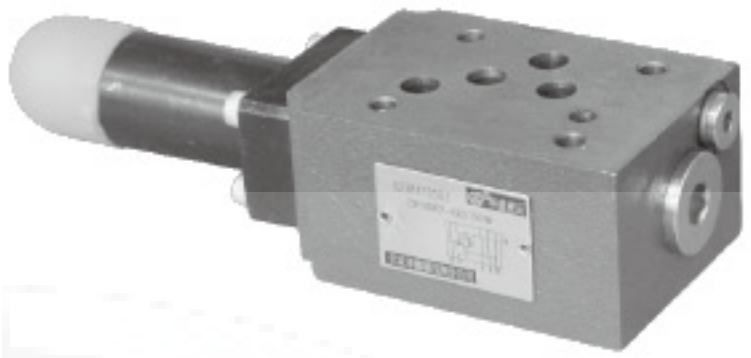




BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	Direct operated pressure reducing valve sandwich plate,type ZDR 10 D...40B/			RE26584 /12.2004
	Size10	up to 21 MPa	up to 50L/min	Replaces：RE26584/05.2001

Features:

- Sandwich plate design
- Porting pattern to DIN 24 340, form A,ISO 4401 and CETOP-RP 121H
- Pressure reduction in ports A, B or p
- 3 adjustment elements:
  - · Rotary knob
  - · Hex. head screw with protective cap
  - · Lockable rotary knob with scale
- 4 pressure ratings
- optional check valve



Functional, section

The pressure reducing valve type ZDR 10 D.. is a 3-way direct operated valve of sandwich plate design with a pressure relief function on the secondary side. It is used to reduce the system pressure.

The pressure reducing valve basically consists of the housing (1), the control spool (2), a compression spring (3),and the adjustment (4) as well as an optional check valve.

The secondary pressure is set by the pressure adjustment element (4).

Model "DA"

At rest, the valve is normally open, and fluid can flow unhindered from port A to port A1. The pressure in port A1 is at the same time via the control line (5) present at the spool area opposite to the compression spring (3). When the pressure in port A1 exceeds the pressure level set at the compression spring (3), the control spool (2) moves into the control position against the compression spring (3) and holds the set pressure in port A1 constant.

The control pressure and pilot oil are taken from port A1 via control line (5).

If the pressure in port A1 rises still further due to external forces, the control spool (2) is moved still further towards the compression spring (3).

This causes a flow path to be opened at port A1 via control land (6) on the control spool (2) and housing (1) to tank (port TB).

Sufficient fluid then flows to tank to prevent any further rise in pressure.

The spring chamber (7) is always drained to tank externally via port TA .

A pressure gauge connection (8) permitts the secondary pressure at the valve to be monitored.

It is only possible to fit a check valve for free flow in ports A1 to A in version "DA".

Models "DP" and "DB"

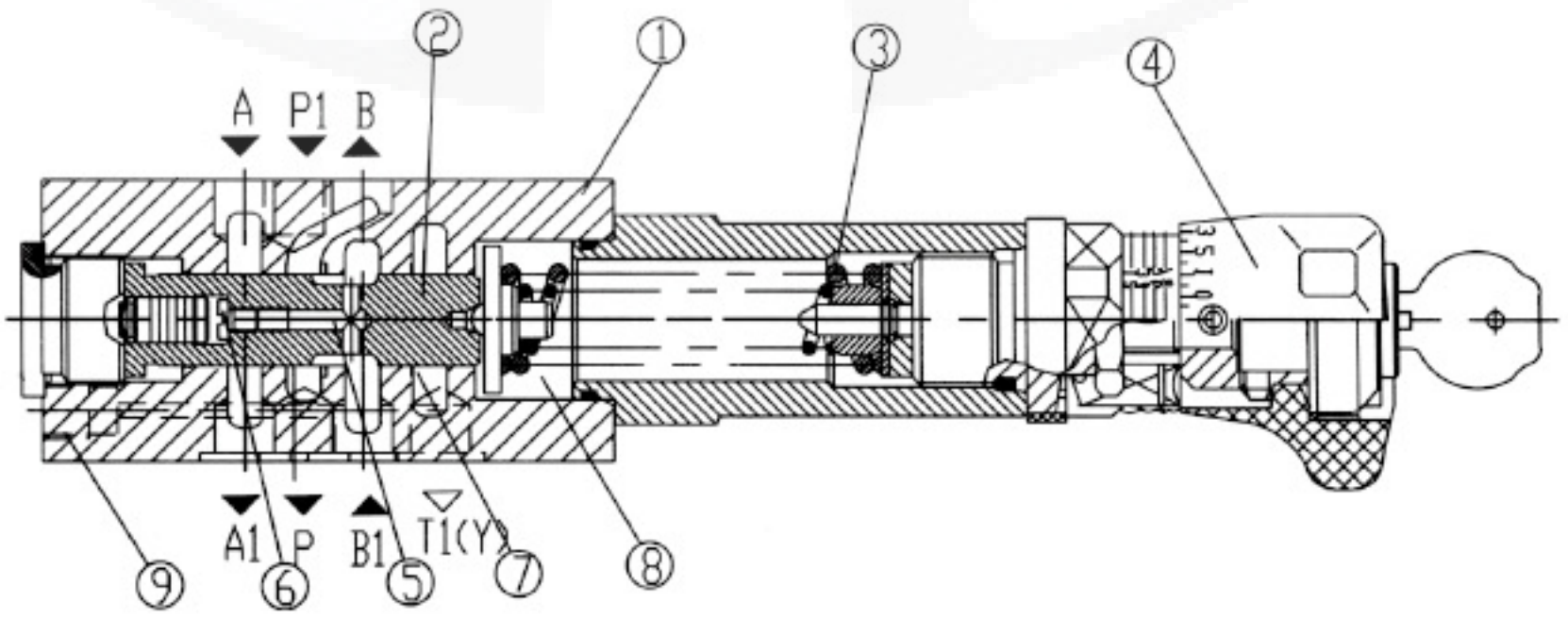
In model "DP", the pressure is reduced in port P1. The control pressure and the pilot oil is taken internally from port P1.

In model "DB", the pressure in port P1 is reduced, and the pilot oil taken from port B.

Attention!

When the directional valve is in the switched position P to A, pressure in port B must not exceed the set secondary pressure. Otherwise, pressure in port A will be reduced.

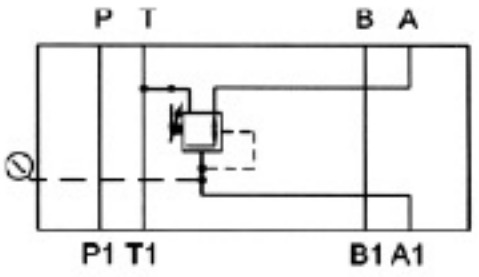
If used without a directional valve, TA and TB must be interconnected (e.g. in the cover plate).



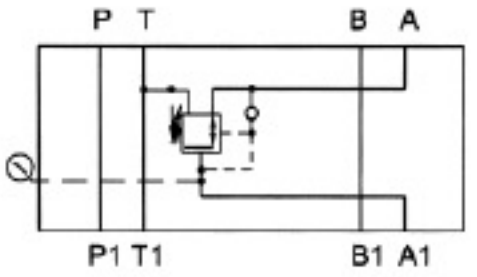
ZDR10D...40B/...YM

Symbols

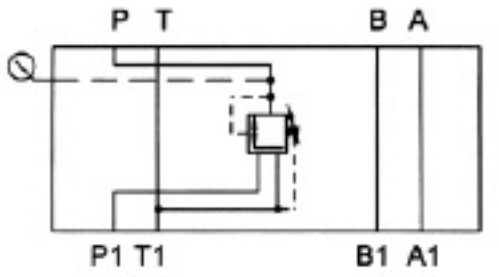
ZDR10DA...-40B/...YM...



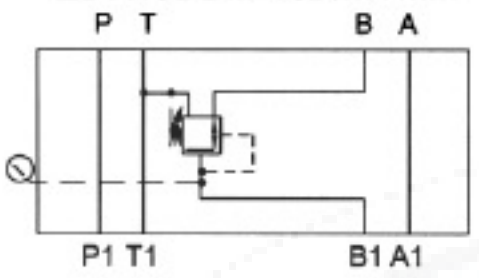
ZDR10DA...-40B/...Y...



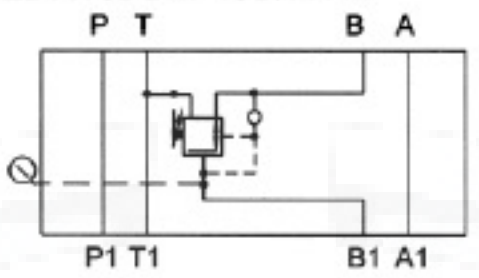
ZDR10DP...-40B/...YM...



ZDR10DB...-40B/...YM...



ZDR10DB...-40B/...Y...



Ordering details

Z	DR	10	D			-	40	B	/		Y			*

Sandwich plate design = Z

Pressure redcing valve = DR

Size 10 =10

Direct operated = D

Pressure reduction in port A = A
Pressure reduction in port B = B
Pressure reduction in port P = P

Setting elements
Rotary knob = 1
Hex. head screw with protective cap = 2
Lockable rotary knob with scale = 3

Series 40 to 49 = 40
(40 to 49 = unchanged installation and connection dimensions)

Further details in clear text

No code. = mineral oils
V = phosphate ester

No code. = with check valve
(only possible for pressure reduction in port A,B)
M = without check valve

Y= Pilot oil feed internal,drain external

25= max. secondary pressure 2.5 MPa
75= max. secondary pressure 7.5 MPa
150= max. secondary pressure 15 MPa
210= max. secondary pressure 21 MPa

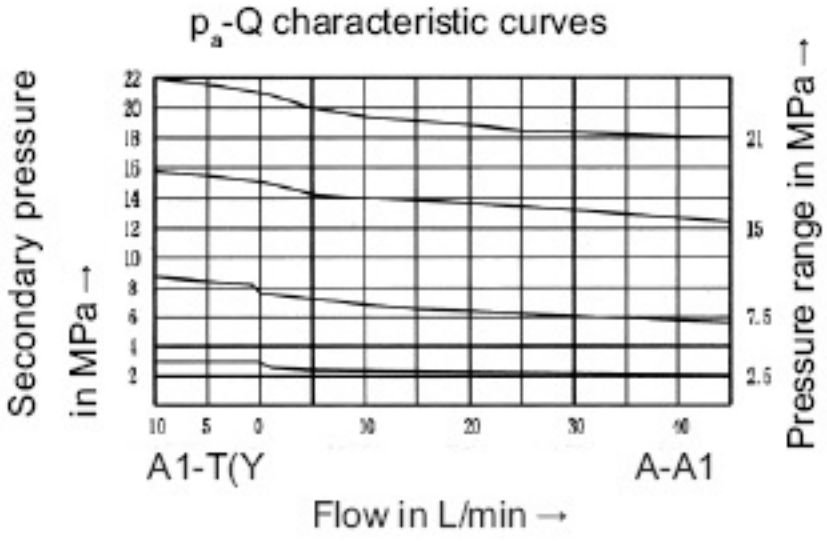
B= Technology of Beijing Huade Hydraulic

Technical data (For applications outside these paramters,plese consult us!)

Weight	(Kg)	approx. 2.8
Pressure fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)
Pressure fluid - temperature range	(°C)	-30 to +80
Viscosity range	(mm^2/s)	10 to 800
Degree of fluid contamination		recommend a filter with a minimum retention rate of $\beta_{10} \geqslant 75$
Max. operating pressure Port P	(MPa)	up to 31.5
Secondary pressure(output)	(MPa)	up to 21
Back pressure Ports T (Y)	(MPa)	up to 15
Max. flow	(L/min)	50

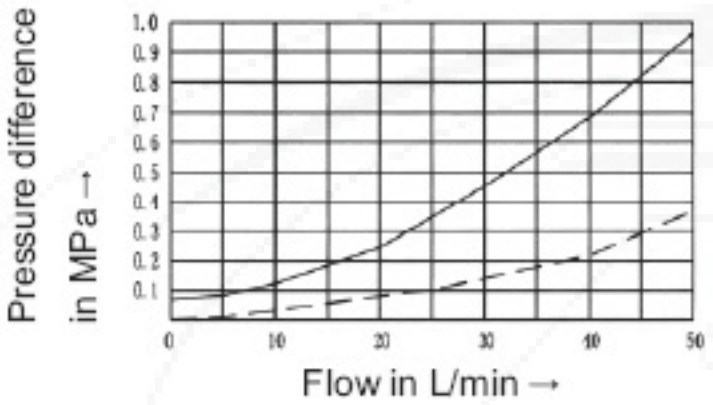
Characteristic curves (measured at ν =41mm²/s and t=50°C)

p_a-Q characteristic curves

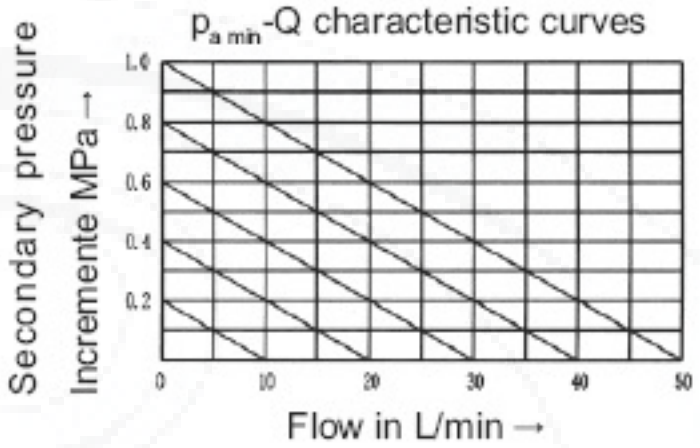


P_{amin}-Q characteristic curve, Maximum secondary pressure 2.5MPa.Min.adjusting pressure is ralated to A-A1,B-B1 and P-P1. When P=3MPa, flow of ports A1 and P1 are 20L/min. If pressure rises above P=3.4MPa, flow=0.

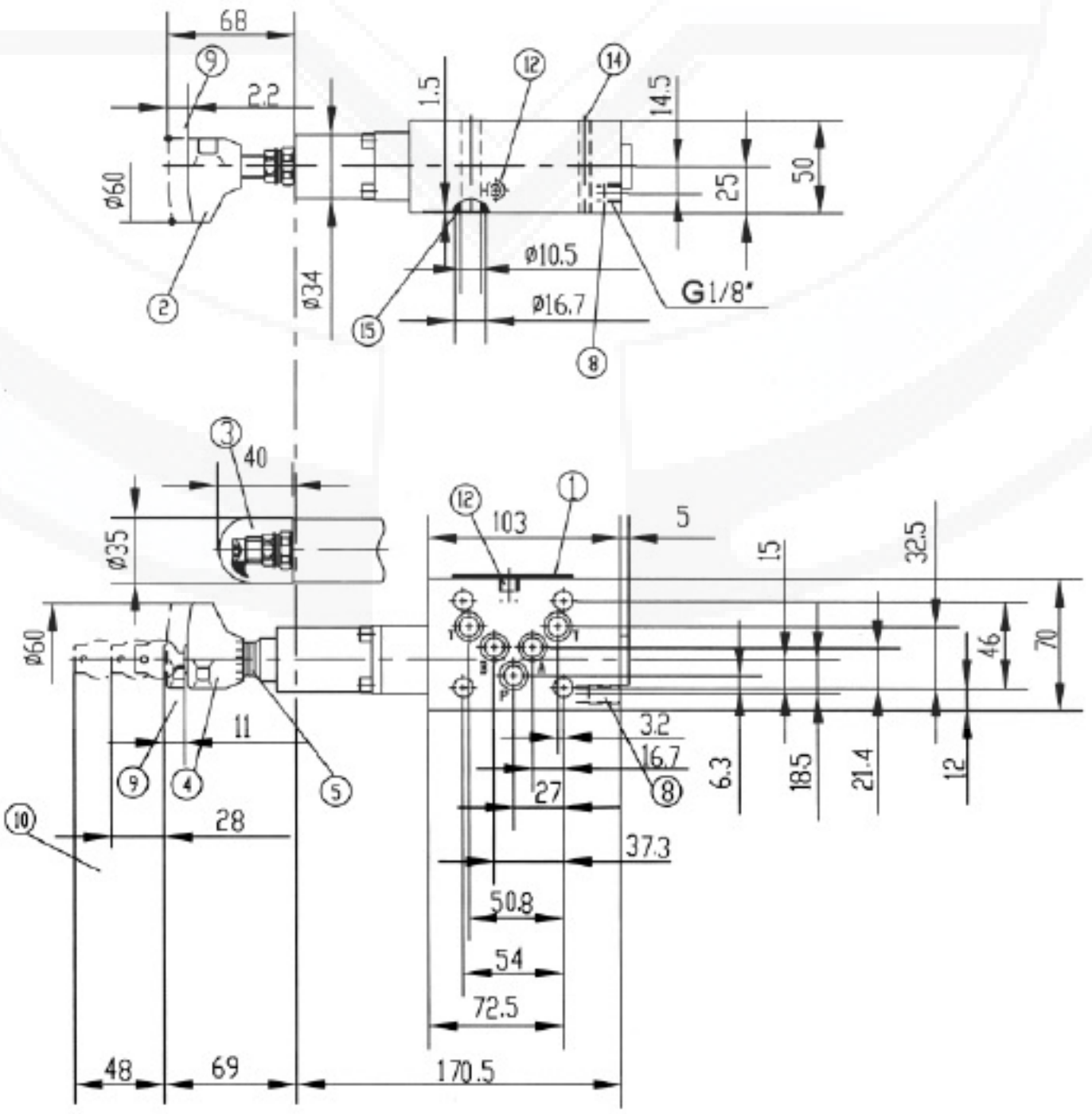
Non-retum valve characteristic curves



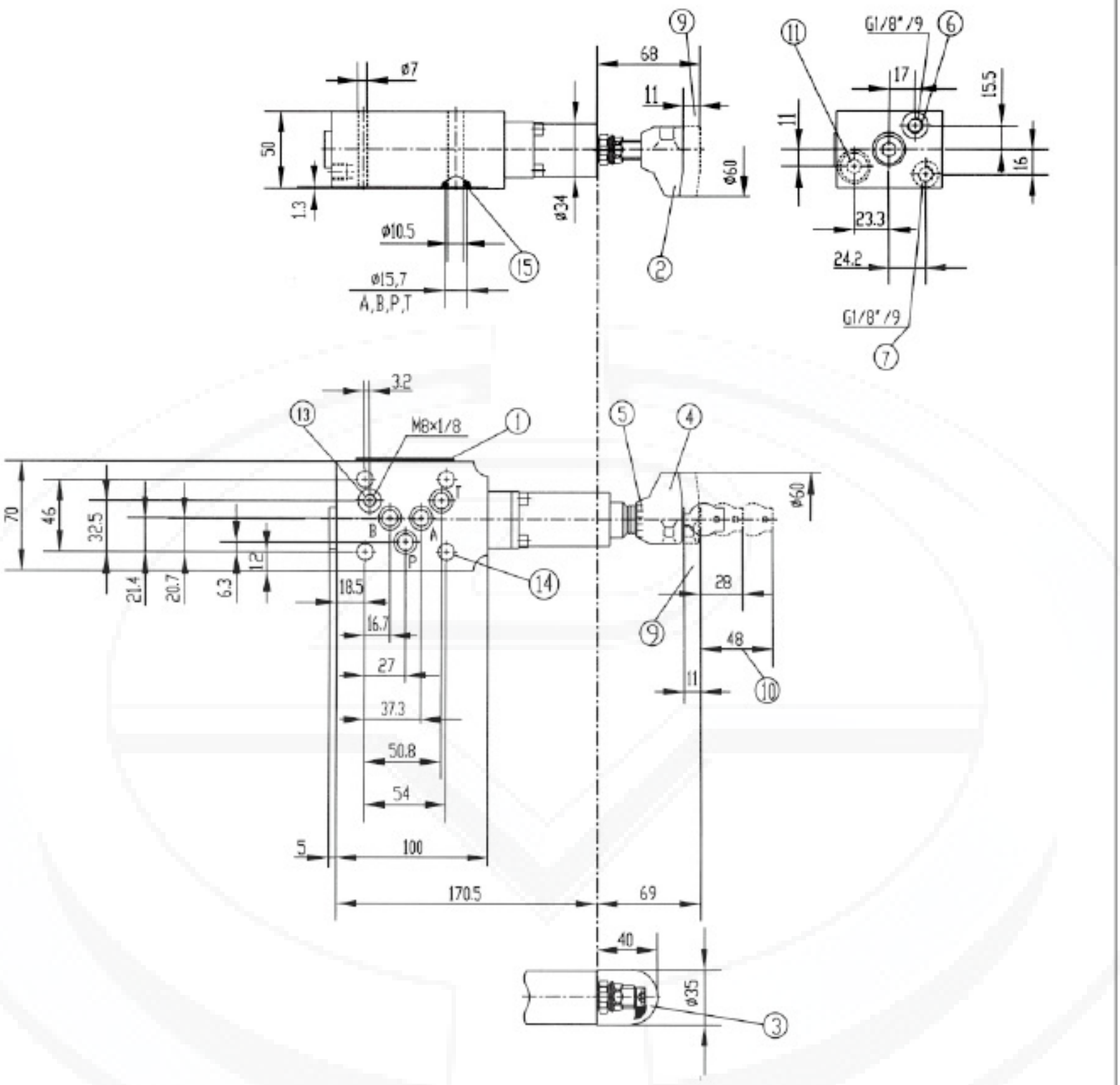
$p_{a\,min}$-Q characteristic curves



Unit dimensions:type ZDR10DB (**Dimensions in mm**)

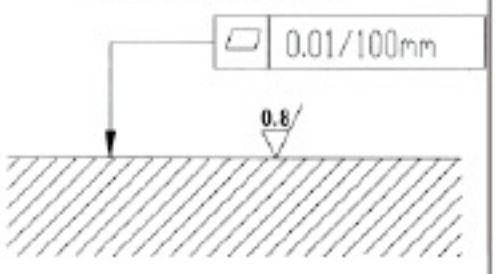


Unit dimensions:type ZDR10DR **(Dimensions in mm)**



1. Nameplate
2. Adjustment1
3. Adjustment2
4. Adjustment3
5. Adjusting scale set
6. A pressure gauge connection for ZDR 10DP
7. A pressure gauge connection for ZDR 10DA
8. A pressure gauge connection for ZDR 10DB
9. Max.distance of adjustment
10. Space required to remove key
11. Optional check valve for ZDR10DA
12. Optional check valve for ZDR10DB
13. Maximum secondary pressure is 2.5MPa, stem on this hole; When 7.5MPa,15MPa and 21MPa,use as a leakage hole;This hole can use as chamber "T",at the same time needn`t use chamber "T"(right),must unload spool.Opposite hole with O-ring drilling a hole ,use as a leackage hole.
14. Fixed screw hole
15. O-ring 12X2 for ports A，B，P，T

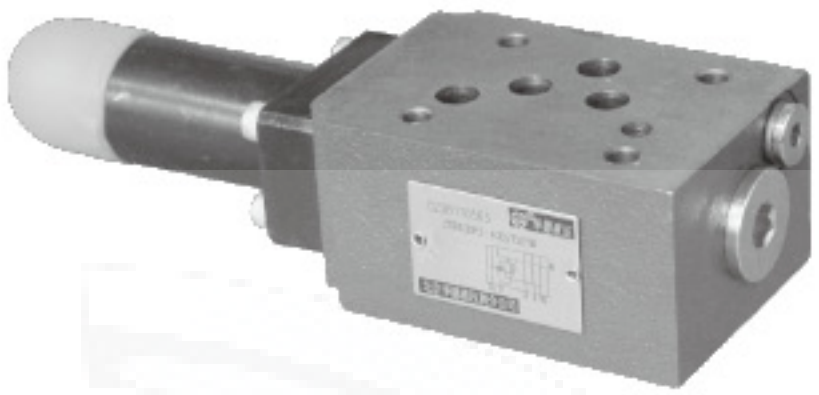
Required surface finish of mating piece



BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	Direct operated pressure reducing valve, sandwich plate,type ZDR 10D...50B/(New Series)			RE26585/12.2004
	Size 10	up to 21MPa	up to 80L/min	

Features:

- Sandwich plate design
- Pressure reduction in ports A, B or P
- 4 adjustment elements:
  - · Rotary knob
  - · Hex. head screw with protective cap
  - · Lockable rotary knob with scale
  - · Rotary knob with scale
- 4 pressure ratings
- optional check valve
- Porting pattern to DIN 24 340, form A,ISO 4401 and CETOP-RP 121H



Functional, section

The pressure reducing valve type ZDR 10 D.. is a 3-way direct operated valve of sandwich plate design with a pressure relief function on the secondary side. It is used to reduce the system pressure.

The pressure reducing valve basically consists of the housing (1), the control spool (2), a compression spring (3),and the adjustment (4) as well as an optional check valve.

The secondary pressure is set by the pressure adjustment element (4).

Model "DA"

At rest, the valve is normally open, and fluid can flow unhindered from port A1 to port A2. The pressure in port A2 is at the same time via the control line (5) present at the spool area opposite to the compression spring (3). When the pressure in port A2 exceeds the pressure level set at the compression spring (3), the control spool (2) moves into the control position against the compression spring (3) and holds the set pressure in port A2 constant.

The control pressure and pilot oil are taken from port A2 via control line (5).

If the pressure in port A2 rises still further due to external forces, the control spool (2) is moved still further towards the compression spring (3).

This causes a flow path to be opened at port A2 via control land (5) on the control spool (2) and housing (1) to tank (port TB).

Sufficient fluid then flows to tank to prevent any further rise in pressure.

The spring chamber (7) is always drained to tank externally via port TA .

A pressure gauge connection (8) permitts the secondary pressure at the valve to be monitored.

It is only possible to fit a check valve for free flow in ports A2 to A1 in version "DA".

Models "DP" and "DB"

In model "DP", the pressure is reduced in port P1. The control pressure and the pilot oil is taken internally from port P1.

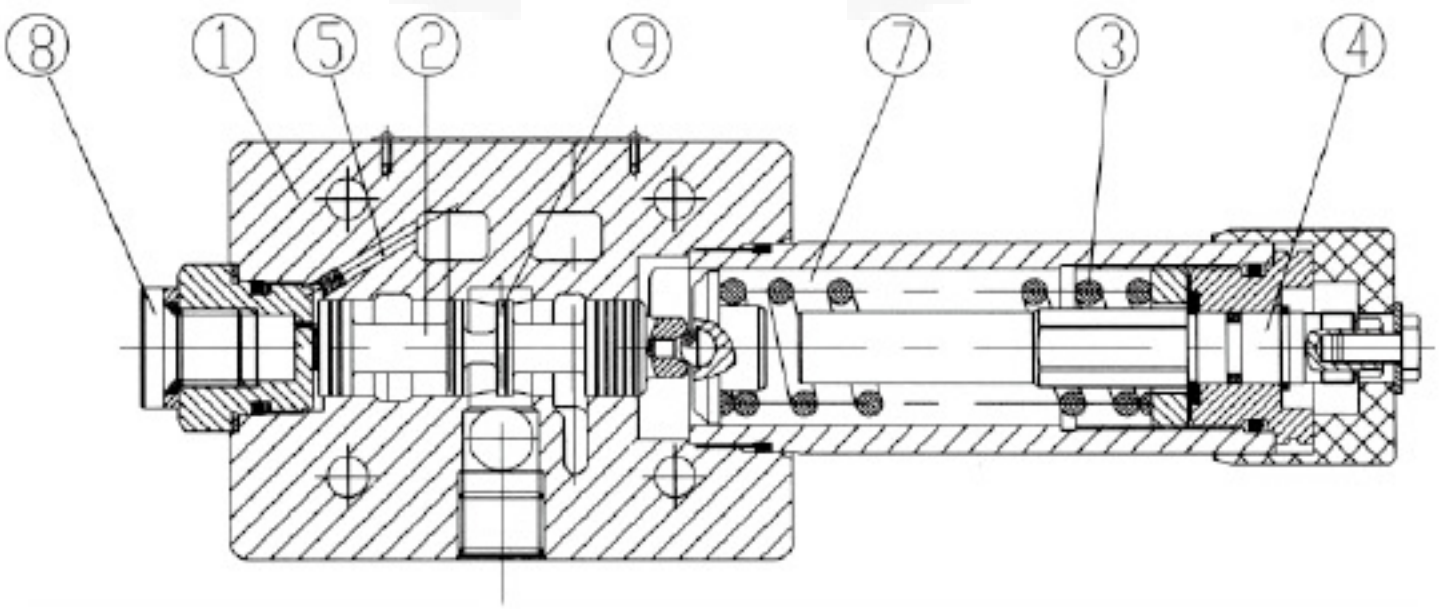
In model "DB", the pressure in port P1 is reduced, and the pilot oil taken from port B.

Attention!

When the directional valve is in the switched position P to A, pressure in port B must not exceed the set secondary pressure.

Otherwise, pressure in port A will be reduced.

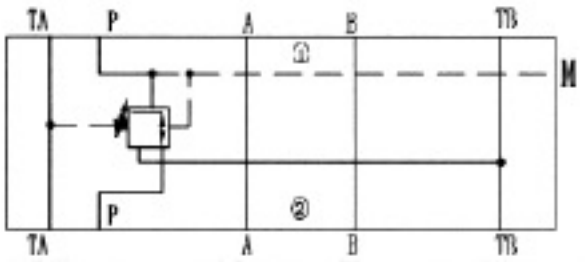
If used without a directional valve, TA and TB must be interconnected (e.g. in the cover plate).



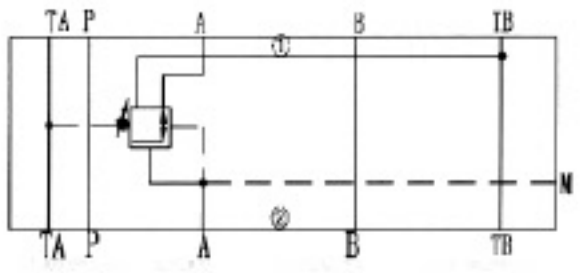
ZDR10DB1-50B/...YM

Symbols (① =valve side, ② =subplate side)

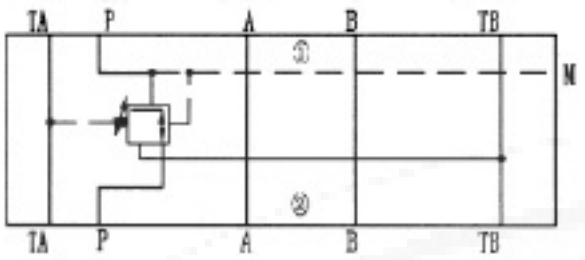
ZDR10DP...-50B/...YM...



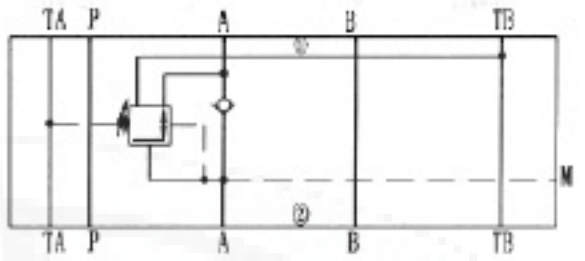
ZDR10DA...-50B/...YM...



ZDR10DB...-50B/...YM...



ZDR10DA...-50B/...Y...



Ordering details

Z	DR	10	D			-	50	B	/		Y			*

Sandwich plate design = Z

Pressure redcing valve = DR

Size 10 = 10

Direct operated = D

Pressure reduction in port A = A
Pressure reduction in port B = B
(Pilot oil from port B)
Pressure reduction in port P = P

Setting elements
Rotary knob = 1
Hex. head screw with protective cap = 2
Lockable rotary knob with scale = 3
Rotary knob with scale = 7

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

Further details in clear text

No code. = mineral oils
V = phosphate ester

No code. = with check valve (only possible for pressure reduction in port A)
M = without check valve

Y = Pilot oil feed internal, drain external

25= max. secondary pressure 2.5 MPa
75= max. secondary pressure 7.5 MPa
150= max. secondary pressure 15.0 MPa
210= max. secondary pressure 21.0 MPa

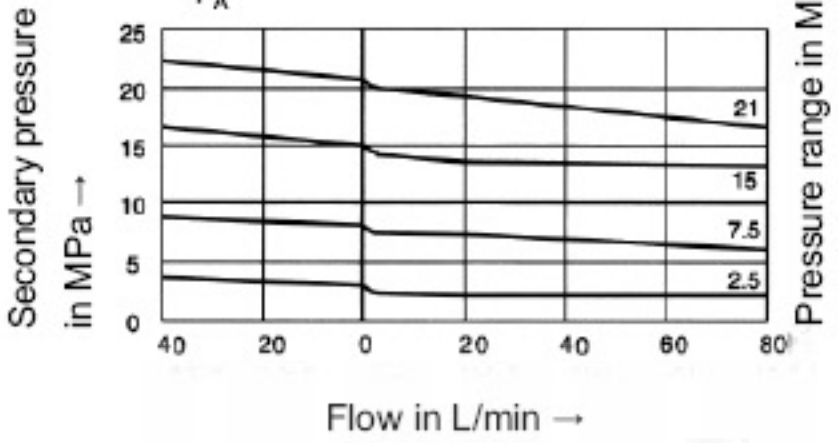
B = Technology of Beijing Huade Hydraulic

Technical data

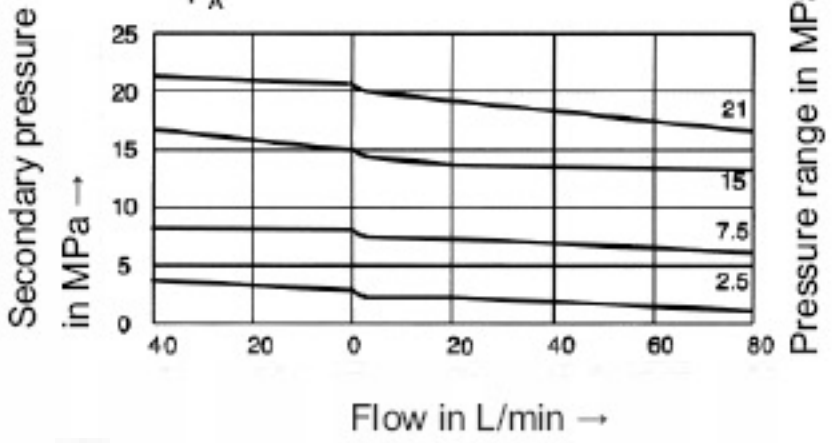
Weight	(kg)	approx. 2.8
Pressure fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)
Pressure fluid-temperature range3	(°C)	-30 to +80
Viscosity range	(mm^2/s)	10 to 800
Degree of fluid contamination		recommend a filter with a minimum retention rate of $\beta_{10} \geqslant 75$
Max.operating Pressure (inlet)	(MPa)	up to 31.5
Secondary pressure(output)	(MPa)	up to 2.5, up to 7.5, up to 15.0, up to 21.0
Back pressure port	(MPa)	up to 16.0
Max.flow	(L/min)	80

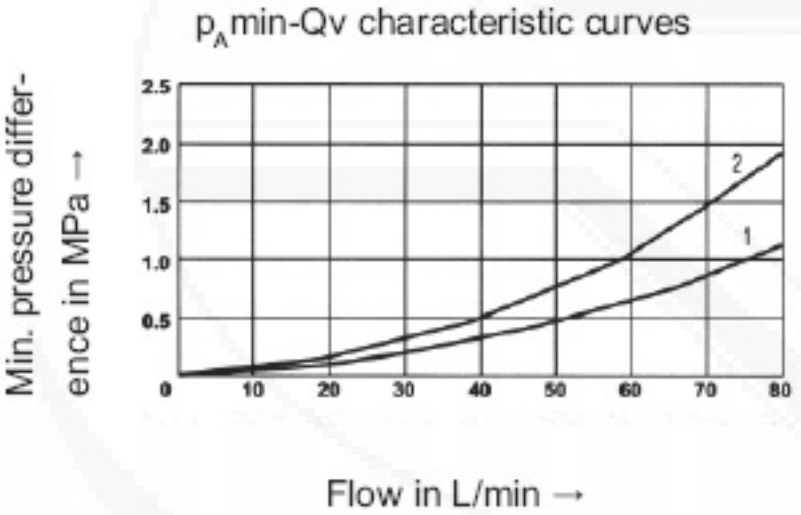
Characteristic curves (measured at ν =41mm² /s and t=50°C)

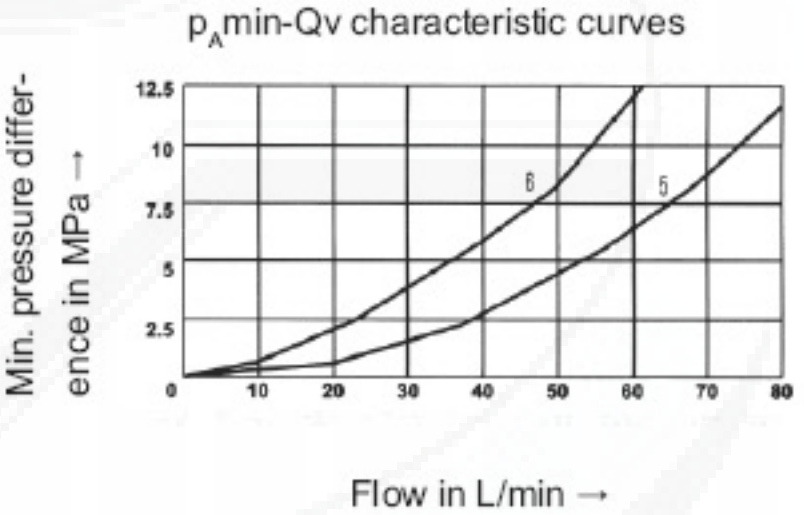
ZDR10DA...-50B/

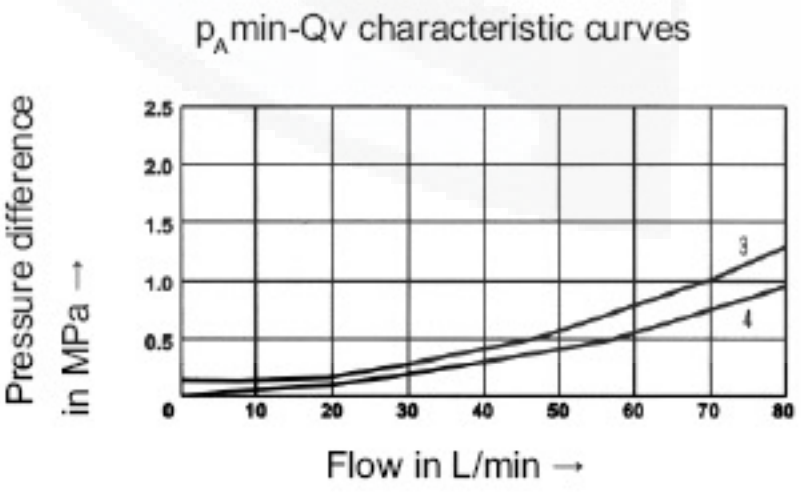


ZDR10DP...-50B/ and ZDR10DB...-50B/





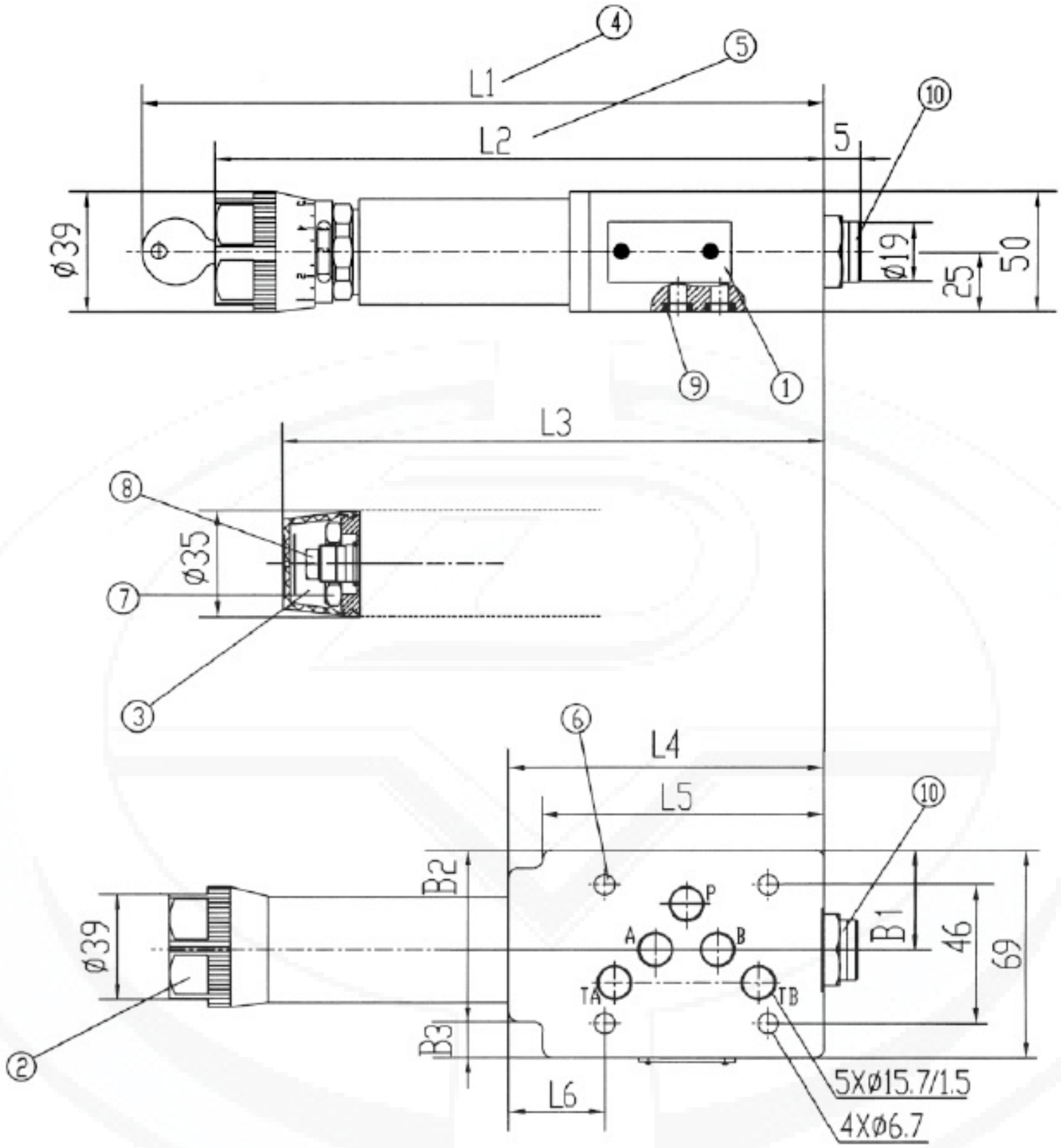




1. A1 to A2
2. A2 to TB (3rd. flow path)
3. A2 to A1(flow via check valve only)
4. A2 to A1(check valve and fully open control cross section)
5. P2 to TB
6. P1 to TB (3rd. flow path)

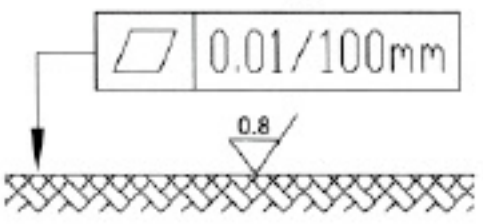
The characteristic curves for the pressure relief function are valid for the outlet pressure = zero over the entire flow range!

Unit dimensions **(Dimensions in mm)**



1. Nameplate
2. Adjustment1
3. Adjustment2
4. Adjustment3
5. Adjustment7
6. Fixed screw hole of valve
7. Lock nut 24 A/F
8. Hexagon 10 A/F
9. O-ring 12X2 apply to the oil orifice A2, B2, P2, T2 (Y)
10. Pressure gauge port G1/4″; 12 deep intend hexagon 6A/F

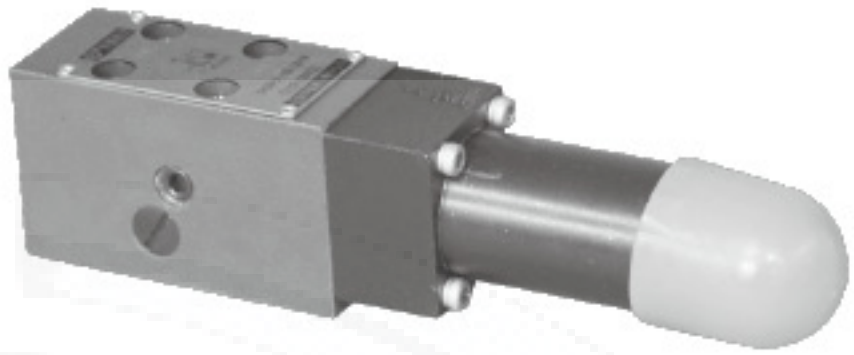
Required surface finish of mating piece



BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure reducing valve, direct operated, type DR 5 DP**			RE 26580/12.2004
	Size 5	up to 31.5MPa	up to 15L/min	Replaces: RE26580/05.2001

Features:

- Subplate mounting
- 5 pressure ratings
- 4 adjustment elements:
  - · Rotary knob,
  - · Set screw with hexagon and protective cap,
  - · Lockable rotary knob with scale,
  - · Rotary knob with scale
- Check valve, optional
- Porting pattern to DIN 24 340, form D,ISO 5781 and CETOP-RP 121H



Functional,section

The valve type DR5 DP is a 3-way direct operated pressure reducing valve with a pressure relief function on the secondary side.

It is used to reduce the system pressure. The secondary pressure is set by the pressure adjustment element (4). At rest, the valve is normally open and the pressure fluid can flow unhindered from port P to port A. The pressure in port A is at the same time, via the control line (6), present at the spool area opposite to the compression spring (3). When the pressure in port A exceeds the pressure level set at compression spring (3), the control spool (2) moves into the control position and holds the set pressure in port A constant.

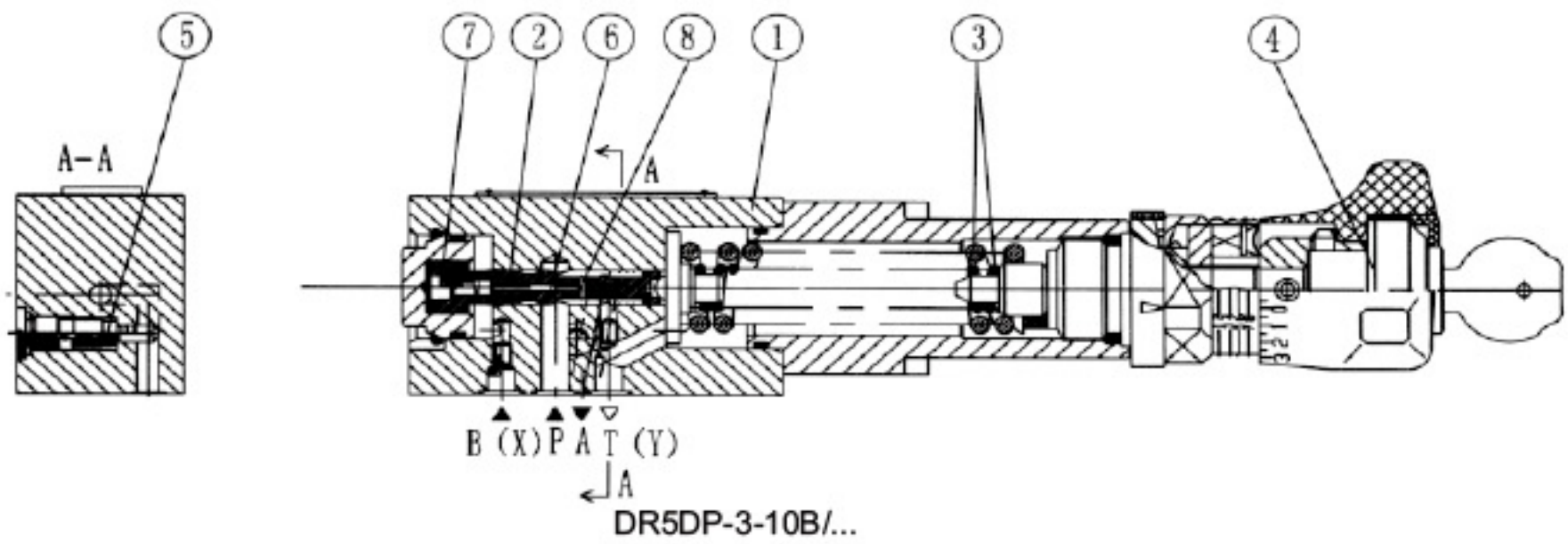
The control and pilot oil are taken from port A via control line (6).

If the pressure in port A still increases due to external forces on the actuator, the control spool(2) moves still further towards the compression spring(3).

This causes a flow path to be opened at port A via control land (8) on the control spool (2) to the tank. Sufficient pressure fluid then flows to tank to prevent any further rise in pressure.

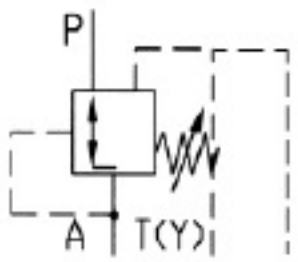
The spring chamber is always drained to tank externally via port T (Y).

For free return flow from port A to port P an optional check valve (5) can be fitted.

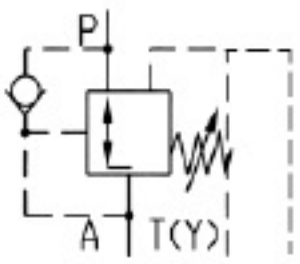


DR5DP-3-10B/...

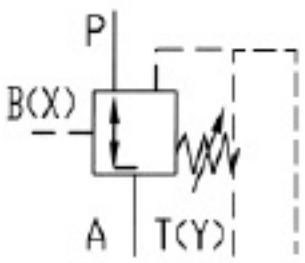
Symbol



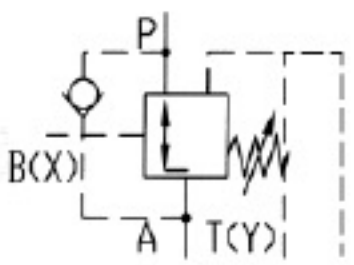
without non-return valve Type "YM"



with non-return valve Type "Y"



without non-return valve Type "XYM"



with non-return valve Type "XY"

Ordering code

	DR	5	D	P		-	10	B	/		Y			*

For subplate mounting = No code
For front flange mounting = F

Size 5 =5

Direct operated = D

Subplate mounting = P

Adjusting element
Rotary knob = 1
Head screw with hexagon and protective cap = 2
Lockable rotary knob with scale 1) = 3
Rotary knob with scale = 7

Series 10 to 19 = 10
(50 to 59 = unchanged installation and connection dimensions)

Technology of Beijing Huade Hydraulic =B

further details in clear text

No code. = mineral oils
V = phosphate ester

No code = with non-return valve
M = without non-return valve

Y= Pilot oil supply internal, drain external
XY = Pilot oil supply internal, drain external

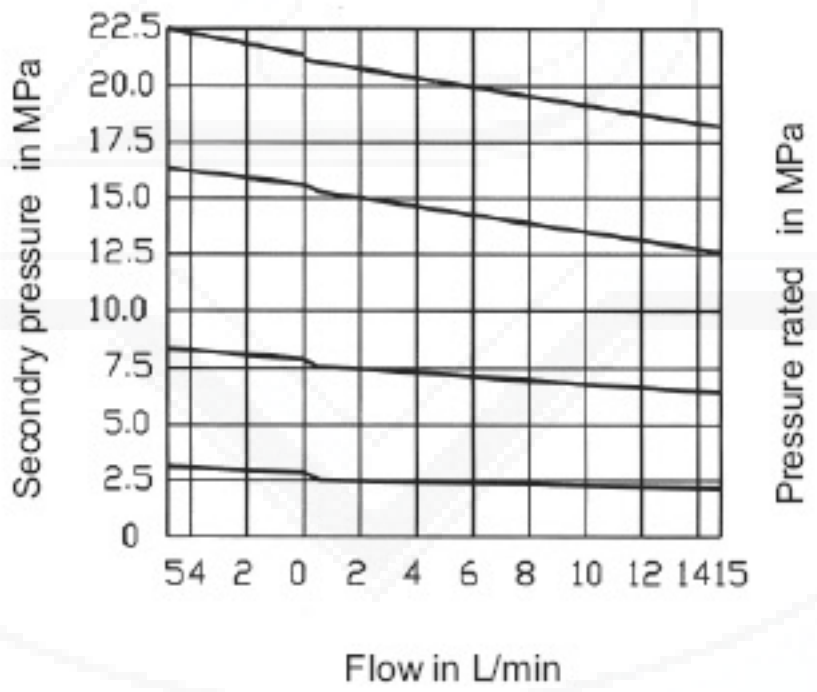
25= Max. sequence pressure 2.5 MPa
75= Max. sequence pressure 7.5 MPa
150= Max. sequence pressure 15 MPa
210= Max. sequence pressure 21 MPa
315= Max. sequence pressure 31.5 MPa
(31.5 MPa unit only available without non-return valve)

Technical data

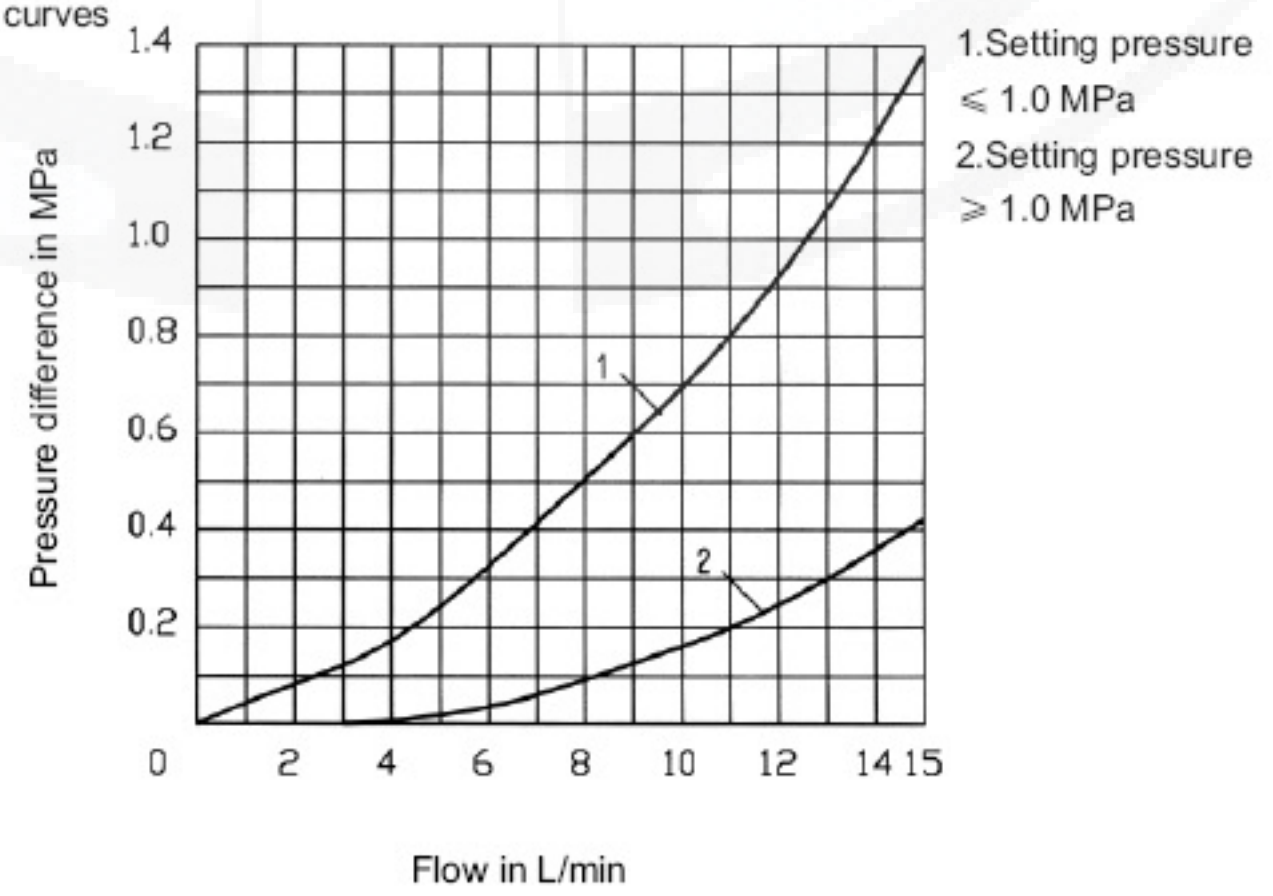
Max. operating pressure(Port P)	(MPa)	up to 31.5
Max. secondary pressure (Port A)	(MPa)	up to 21.0;without non-return valve up to 31.5
Max. back pressure(Ports T (Y))	(MPa)	up to 6.0
Max. flow	(L/min)	up to 15
Pressure fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)
Viscosity range	(mm^2/s)	-10~800
Pressure fluid - temperature range	(°C)	-30 to +80
Degree of contamination	(μm)	Maximum permissible degree of contamination of the fluid is to NAS 1638 class 9.
Weight	(Kg)	approx. 1.0

Characteristic curves (measured at n = 41 mm^2/s and t = 50°C)

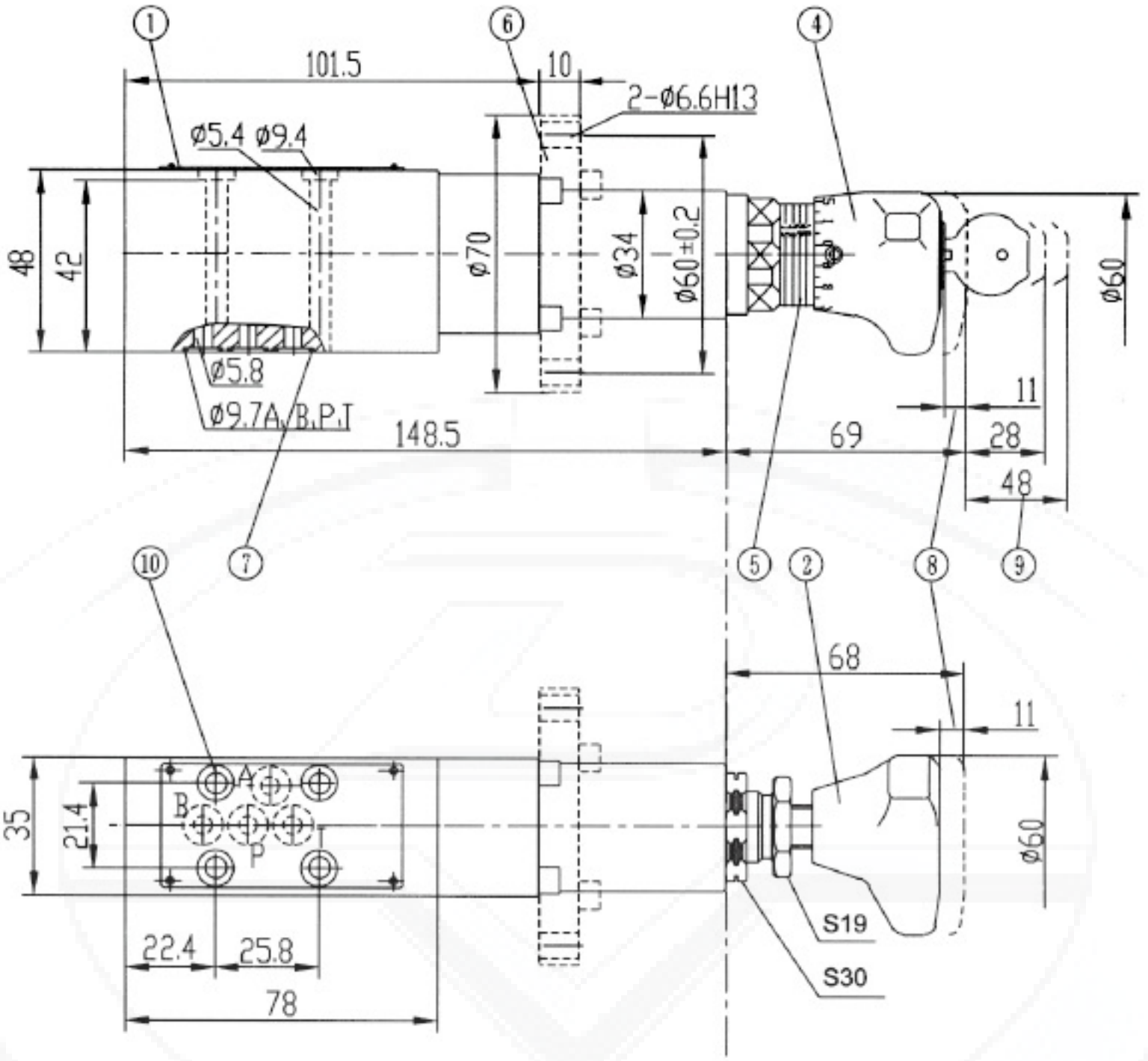
p_A-q_V characteristic curves



Δ p - Qq characteristic curves



Unit dimensions **(Dimensions in mm)**



1 Nameplate
2 Adjustment type 1
3 Adjustment type 2
4 Adjustment type 3
5 Scale and ring marking for repeat setting
6 Panel mounting model
(type DZ 5 DP./..)
7 O-ring 7 x 1,5
for ports P, A, B(X) and T(Y)
8 Max. stroke
9 Space required to remove key
10 Valve fixing hole

Subplates: see page 153
G115/01 (G1/4") G115/02 (M14 × 1.5)
G96/01 (G1/4") G96/02 (M14 × 1.5)
must be ordered separately

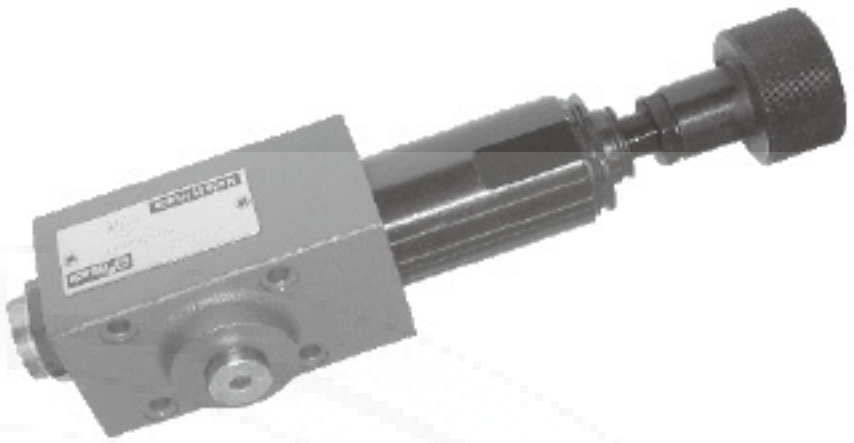
Valve fixing screws:
M5x50-10.9(GB/T70.1-2000); M_A = 9.0 Nm

Required surface finish of mating piece

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure reducing valve, direct operated, type DR 6 DP**			RE 26896/12.2004
	Size 6	up to 21MPa	up to 60L/min	Replaces: RE26896/05.2001

Features:

- Subplate mounting
- 5 pressure ratings
- 4 adjustment elements:
  - · Rotary knob,
  - · Set screw with hexagon and protective cap,
  - · Lockable rotary knob with scale,
  - · Rotary knob with scale
- Check valve, optional
- Porting pattern to DIN 24 340, form D,ISO 5781 and CETOP-RP 121H



Functional,section

The valve type DR 6 DP is a 3-way direct operated pressure reducing valve with a pressure relief function on the secondary side.

It is used to reduce the system pressure. The secondary pressure is set by the pressure adjustment element (4). At rest, the valve is normally open and the pressure fluid can flow unhindered from port P to port A. The pressure in port A is at the same time, via the control line (6), present at the spool area opposite to the compression spring (3). When the pressure in port A exceeds the pressure level set at compression spring (3), the control spool (2) moves into the control position and holds the set pressure in port A constant.

The control and pilot oil are taken from port A via control line (6).

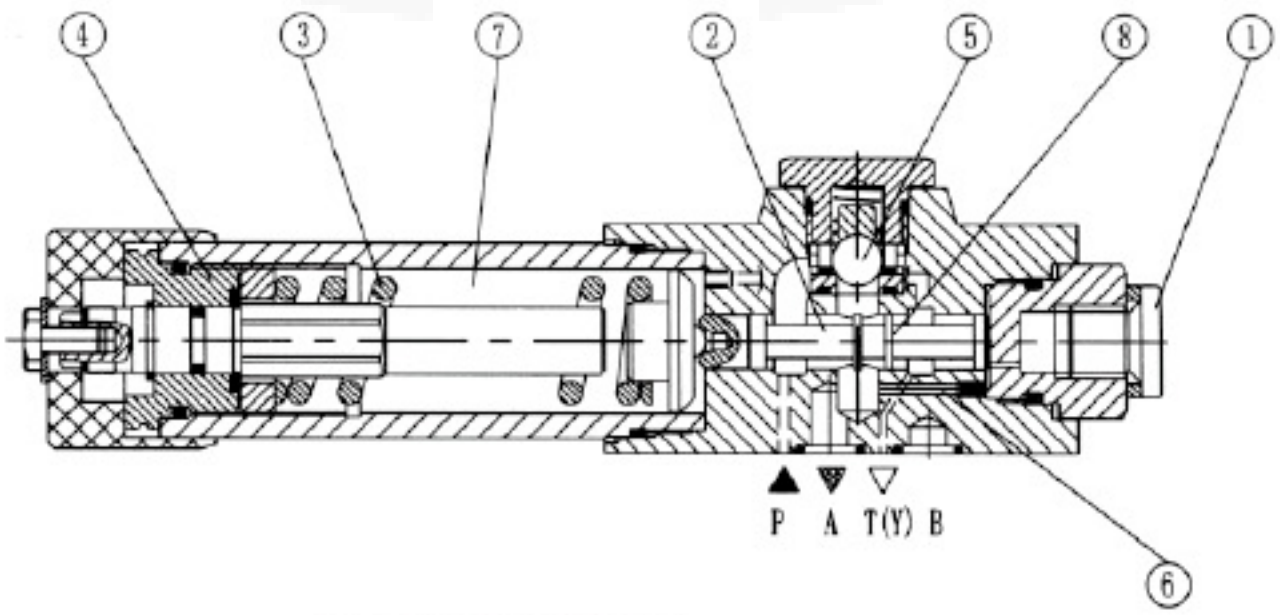
If the pressure in port A still increases due to external forces on the actuator, the control spool (2) moves still further towards the compression spring (3).

This causes a flow path to be opened at port A via control land (8) on the control spool (2) to the tank. Sufficient pressure fluid then flows to tank to prevent any further rise in pressure.

The spring chamber (7) is always drained to tank externally via port T (Y).

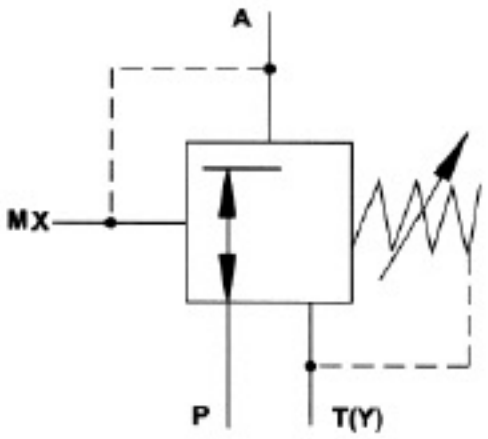
For free return flow from port A to port P an optional check valve (5) can be fitted.

A pressure gauge connection (1), permitts the secondary pressure at the valve to be monitored.

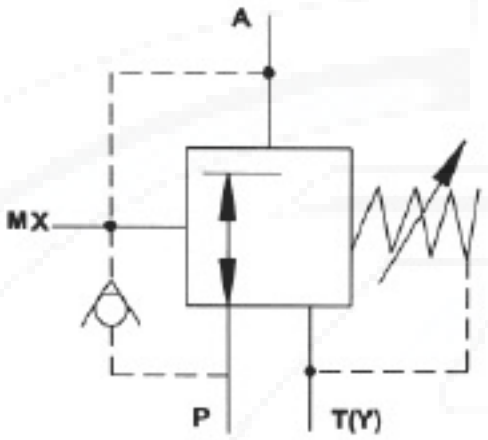


Type DR6DP1-50B/...Y...

Symbols



Version "YM"
Pilot oil supply internal
oil drain external
without check valve



Version "Y"
Pilot oil supply internal
oil drain external
with check valve

Ordering details

DR	6	D	P		-	50	B	/		Y			*

Size 10 =10

Direct operated pressure reducing valve

Subplate mounting =P

Adjustment element
Rotary knob = 1
Set screw with hexagon and protective cap = 2
Lockable rotary knob with scale = 3
Rotary knob with scale = 7

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

Technology of Beijing Huade Hydraulic = B

Further details in clear text

No code. = mineral oils
V = phosphate ester

No code = With check valve
M = Without check valve

Y = Pilot oil supply internal, drain external

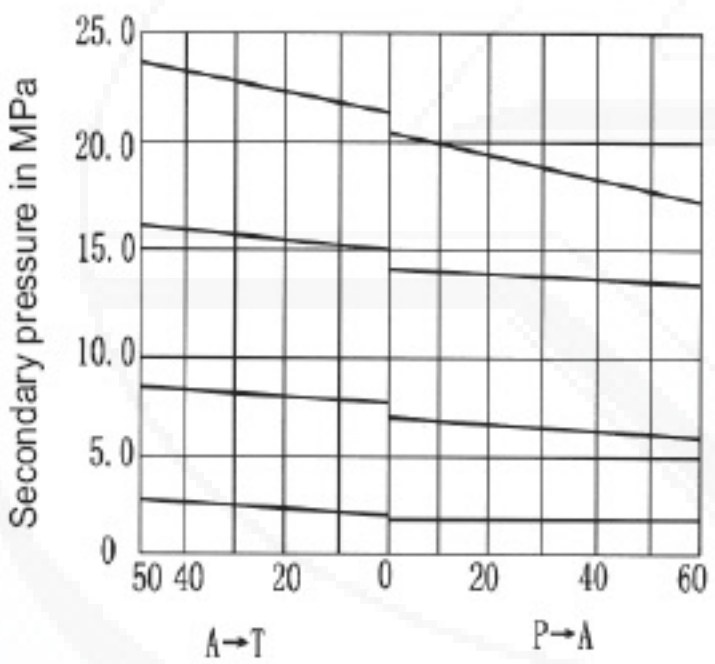
25= Max. secondary pressure 2.5 MPa
75= Max. secondary pressure 7.5 MPa
150= Max. secondary pressure 15.0 MPa
210= Max. secondary pressure 21.0 MPa

Technical data

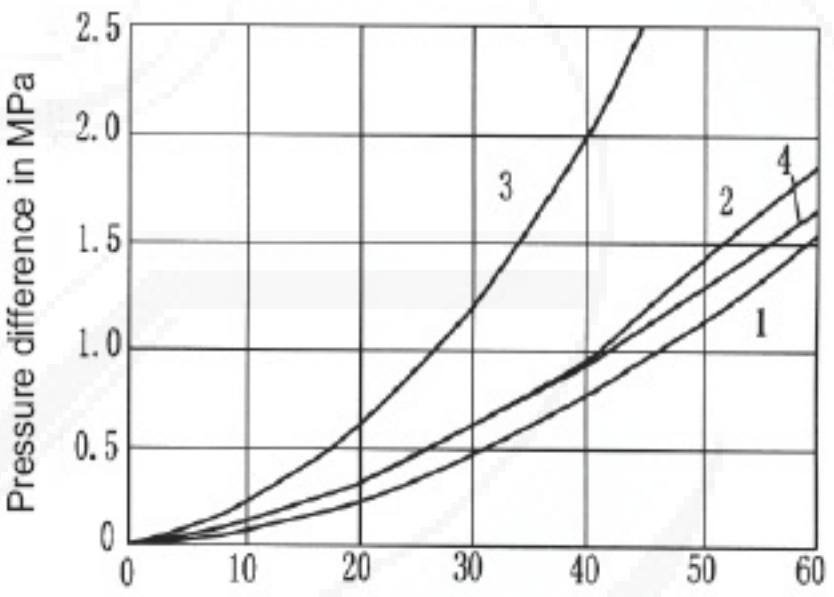
Max. operating pressure Port P	(MPa)	up to 315
Max. secondary pressure Port A	(MPa)	up to 2.5; up to 7.5; up to 15.0; up to 21.0; up to 31.5
Max. back pressure Ports T (Y)	(MPa)	up to 160
Max. flow	(L/min)	up to 60
Pressure fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)
Viscosity range	(mm^2/s)	10~800
Pressure fluid - temperature range	(℃)	-30 to +80
Degree of contamination	(μm)	Maximum permissible degree of contamination of the fluid is to NAS 1638 class 9.
Weight	(Kg)	approx. 1.2

Characteristic curves (measured at v = 41 mm^2/s and t = 50℃)

p_A-q_V characteristic curves



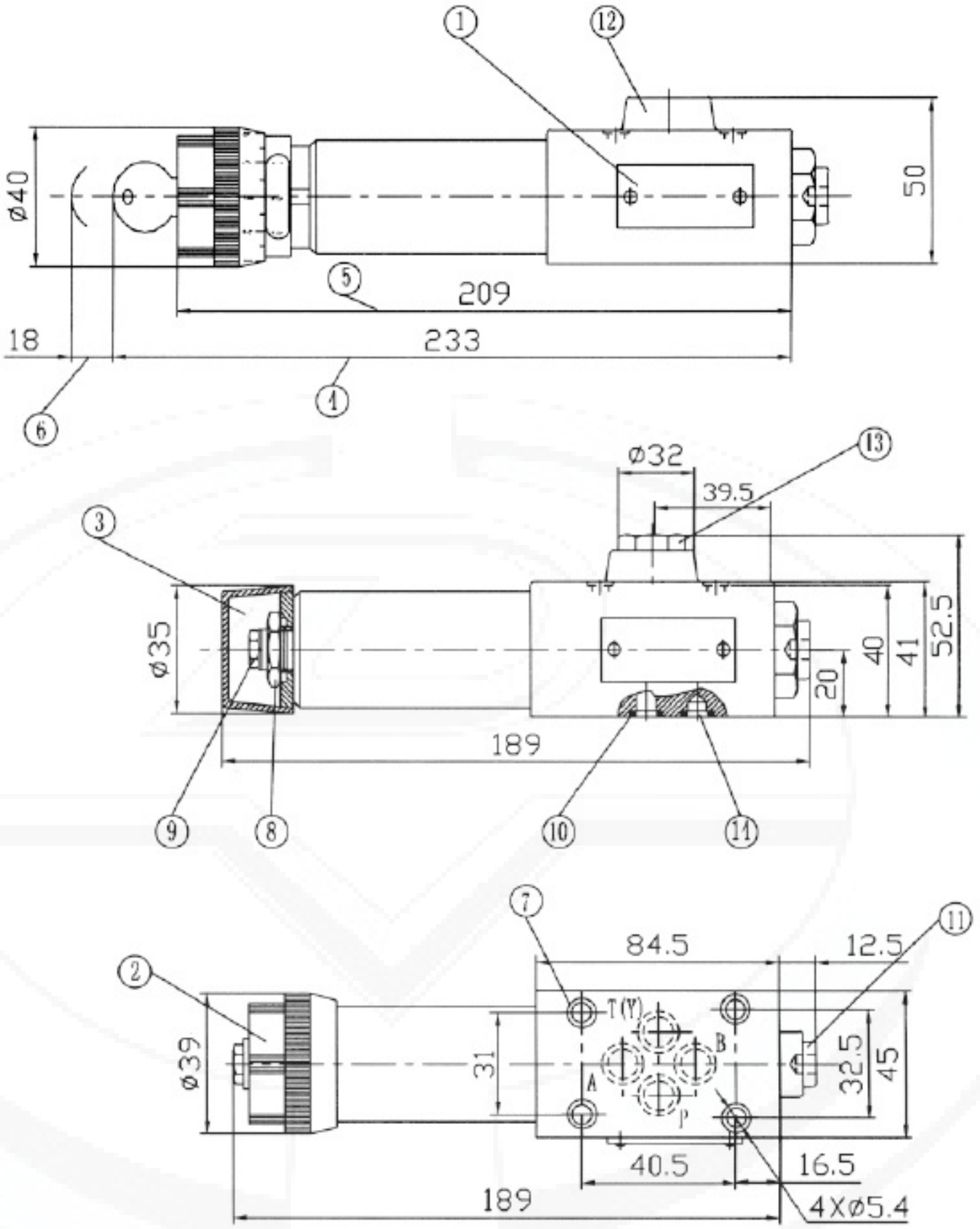
D_p-C_q characteristic curves



Note:
The curve characteristics remain, with a low set pressure,
the same in relation to the pressure rating .
The characteristic curves for the pressure relief function are valid for the outlet pressure = zero over the entire flow range!

1 P to A (min. pressure differential)
2 A to T (Y) (min. pressure differential)
3 △ p only over the check valve
4 △ p over the check valve and fully open control cross section

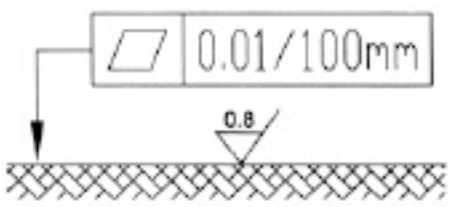
Unit dimensions: type DR6DP **(Dimensions in mm)**



1. Nameplate
2. Adjustment element 1
3. Adjustment element 2
4. Adjustment element 3
5. Adjustment element 7
6. Space required to remove key
7. Valve fixing holes
8. Lock nut 24 A/F
9. Hexagon 10 A/F
10. O-ring 9.25 x 1.78 for ports A, B, P, T(Y)
11. Pressure gauge connection G 1/4; Deep12; internal hexagon 6 A/F
12. Without check valve
13. With check valve
14. Port B has no function

Subplates:see page 152
G341/01(G1/4")
G341/02(M14X1.5)
G342/01(G3/8")
G342/02(M18X1.5)

Valve fixing screws
M5 x 50 - 10.9(GB/T70.1-2000)
Tightening torque M_A = 8.9 Nm

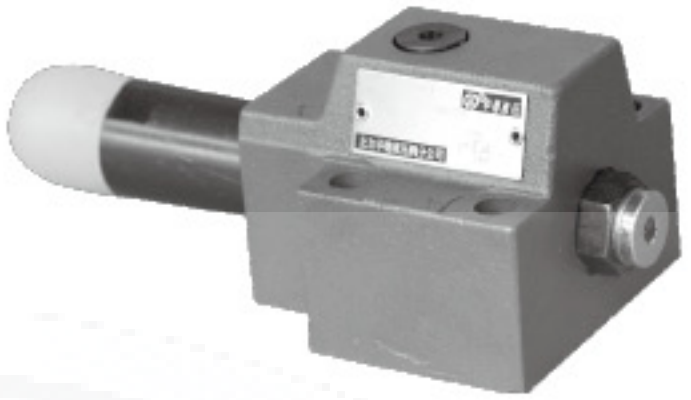


Required surface finish of mating piece

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure reducing valve, direct operated, type DR 10 DP**			RE 26897/12.2004
	Size 10	up to 21MPa	up to 80L/min	Replaces: RE26897/05.2001

Features:

- For subplate mounting
- 4 pressure ranges
- 4 setting elements:
  - · Rotary knob
  - · Hex. head sleeve with protective cap
  - · Lockable rotary knob with scale
  - · Rotary knob with scale
- With pressure gauge port
- Optional non return valve
- Porting pattern to DIN 24 340, form D,ISO 5781 and CETOP-RP 121H



Functional, section

The valve type DR 10 DP is a direct operated valve of 3 way design, with a pressure relief function on the reduced pressure side.

Pressure setting is by means of the pressure setting element (1).

At rest, the valve is normally open, and fluid can flow unhindered from port B to port A. Pressure in port A is also present on the end of the spool (2), via control line (4), opposing the compression spring (3). When the pressure in port A reaches the pressure level set at spring (3), spool (2) moves to the control position and holds the pressure in port A constant.

Fluid to control the valve is taken from port A via control drilling

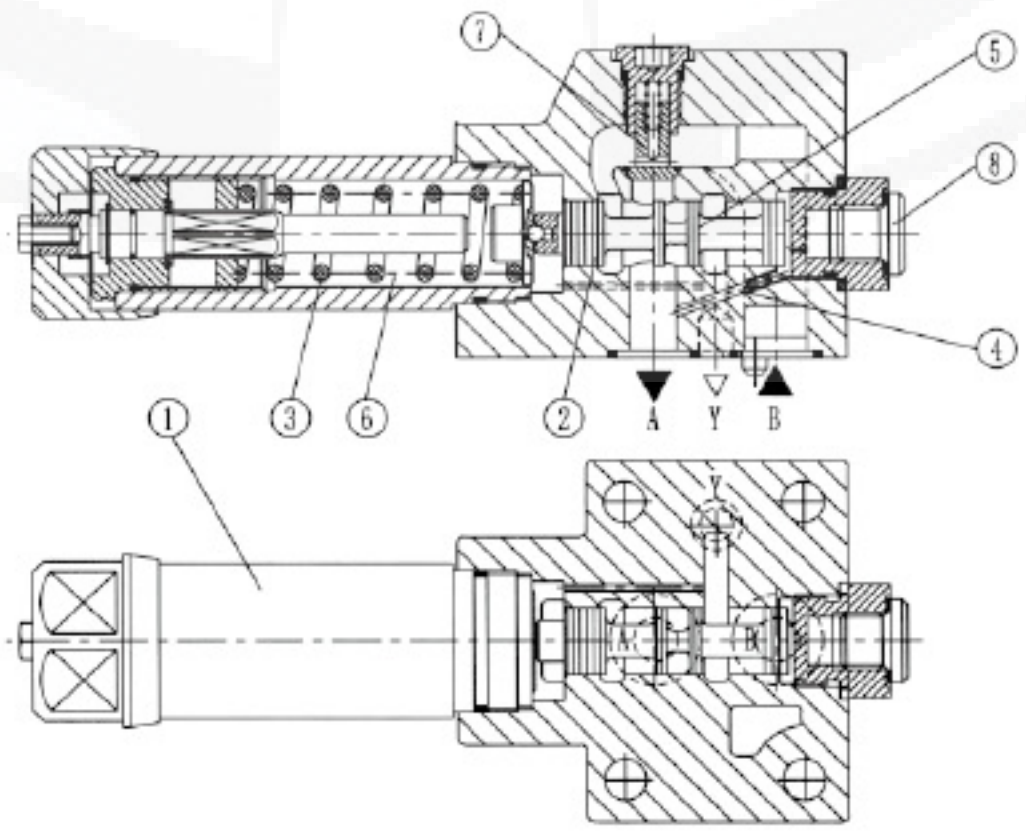
If the pressure in port A rises still further due external forces, the spool (2) is moved still further towards the compression spring (3).

This causes a flow path to be opened over control land (5) in the control spool (2) to tank (port Y) . Sufficient fluid then flows to tank to prevent any further rise in pressure.

The spring chamber (6) is drained to tank externally via port Y.

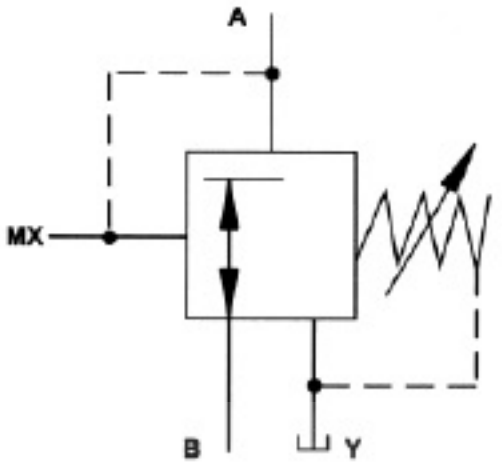
An optional non return valve (7) is available to allow free flow from port A to port B.

A pressure gauge connection (8), permits the secondary pressure to be monitored.

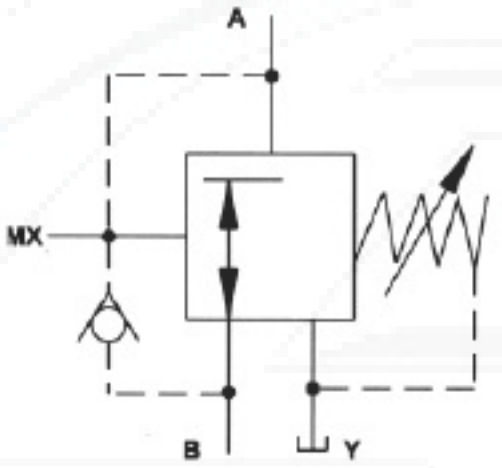


DR 10 DP 1-40B/...Y...

Symbols



Type "YM"
Pilot oil supply internal
drain external
without check valve



Type "Y"
Pilot oil supply internal
drain external
with check valve

Ordering details

DR	10	D	P		- 40	B /		Y			*

Size 10 =10

Direct operated pressure reducing valve size 6

Subplate mounting =P

Adjustment element
Rotary knob = 1
Set screw with hexagon and protective cap = 2
Lockable rotary knob with scale = 3

Series 40 to 49 = 40
(40 to 49: unchanged installation and connection dimensions)

Technology of Beijing Huade Hydraulic =B

25 = Max. secondary pressure 2.5 MPa
75 = Max. secondary pressure 7.5 MPa
150 = Max. secondary pressure 15 MPa
210 = Max. secondary pressure 21 MPa

Y = Pilot oil supply internal, drain external

No code = With check valve
M = Without check valve

No code. = mineral oils
V = phosphate ester

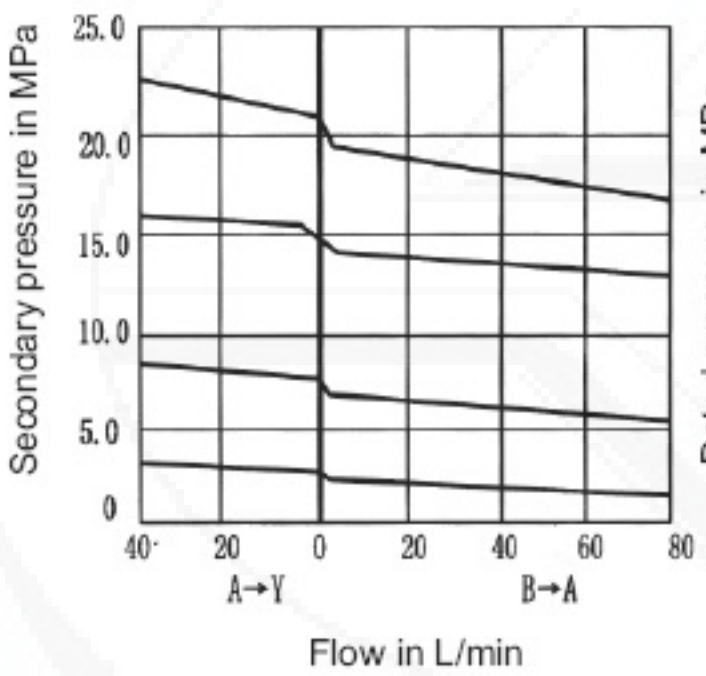
Further details in clear text

Technical data

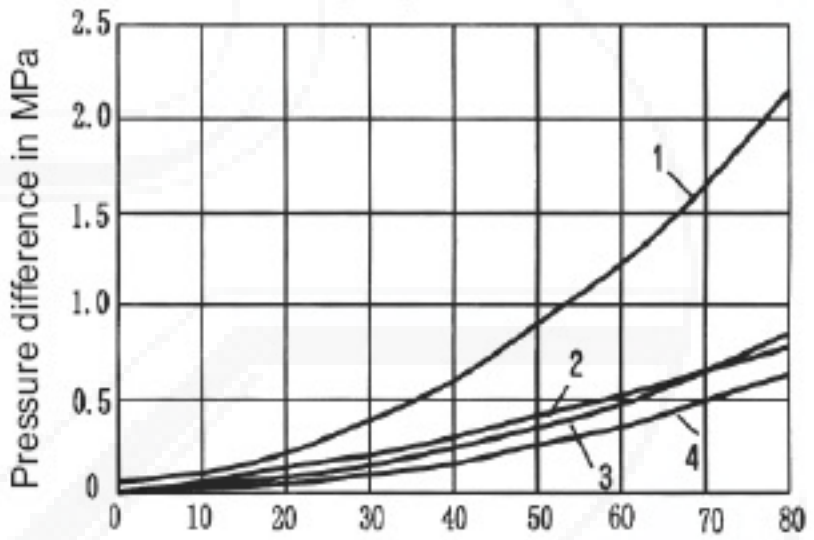
Max. operating pressure(Port P)	(MPa)	up to 31.5
Max. secondary pressure(Port A)	(MPa)	up to 2.5，up to 7.5，up to 15.0，up to 21.0，up to 31.5
Max. back pressure(Ports T (Y))	(MPa)	up to 16.0
Max. flow	(L/min)	up to 80
Pressure fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)
Viscosity range	(mm^2/s)	10~800
Pressure fluid - temperature range	(℃)	-30 to +80
Degree of contamination	(μm)	Maximum permissible degree of contamination of the fluid is to NAS 1638 class 9.
Weight	(Kg)	approx. 3

Characteristic curves (measured at V = 41 mm^2/s and t = 50℃)

p_A-q_V characteristic curves



$\triangle_p$ - Q_q characteristic curves



Note:

For any particular setting range (spring selection) all flow curves at pressure settings lower than the maximum remain parallel to the maximum setting curve of that range.

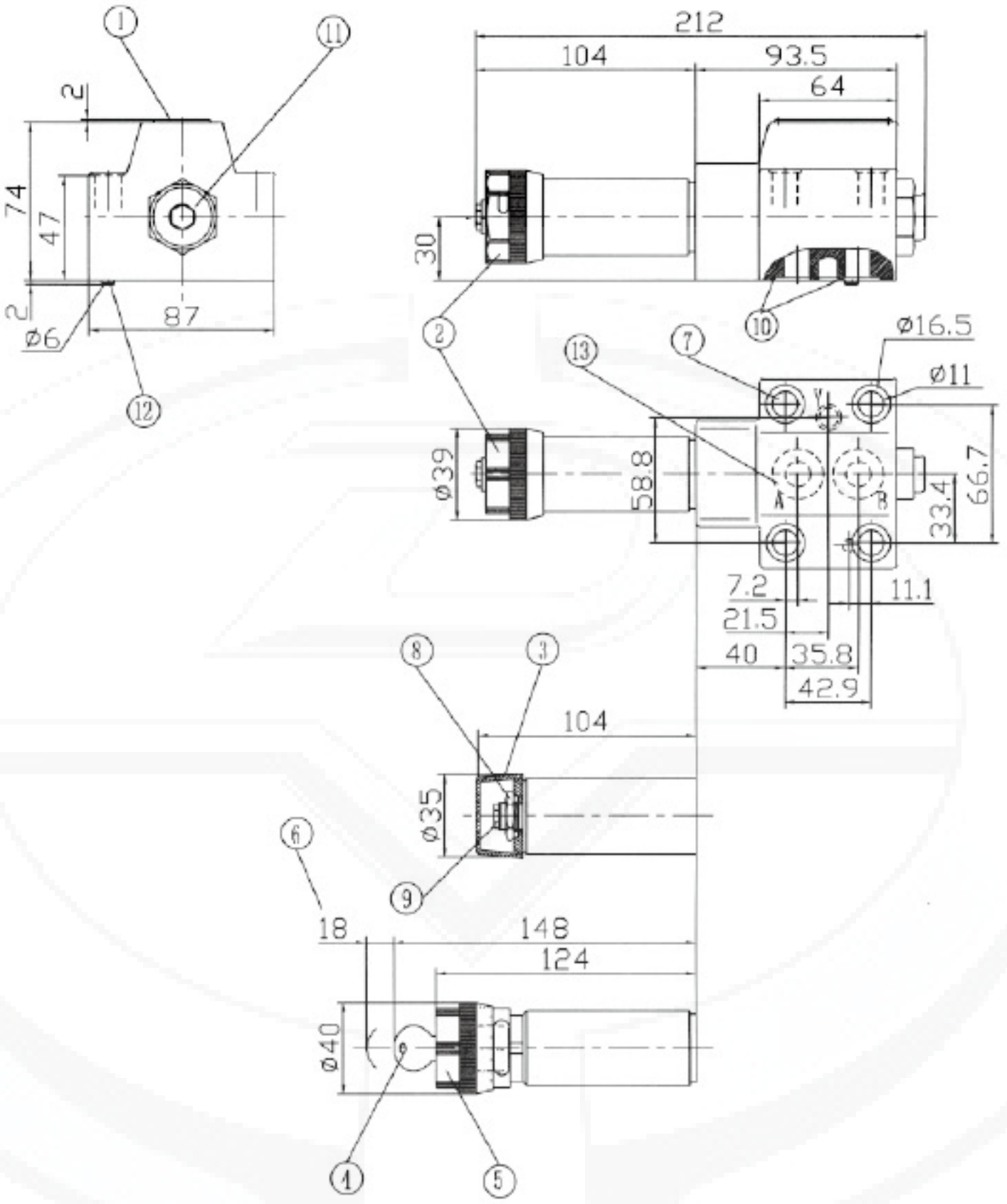
1 Pressure drop / flow curve A to Y via non-return valve

2 Pressure drop / flow curve B to A

3 Pressure drop via check valve only

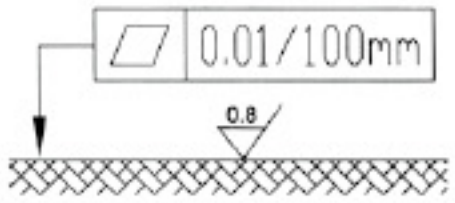
4 △p over the check valve and fully open control cross section

Unit dimensions:type DR10DP **(Dimensions in mm)**



1. Nameplate
2. Adjustment element 1
3. Adjustment element 2
4. Adjustment element 3
5. Adjustment element 7
6. Space required to remove key
7. Valve fixing holes
8. Lock nut 24 A/F
9. Hexagon 10 A/F
10. O-ring 17.12 x 2.62 for ports A, B, 9.25 x 1.78 for ports Y
11. Pressure gauge connection port G 1/4;
12. Locating pin
13. Subplates see page 150
    G460/01(G3/8″)
    G460/02(M18X1.5)
    G461/01(G1/2″)
    G461/02(M22X1.5)

Valve fixing screws (GB/T70.1-2000):
M10X60-10.9 M_A =75Nm

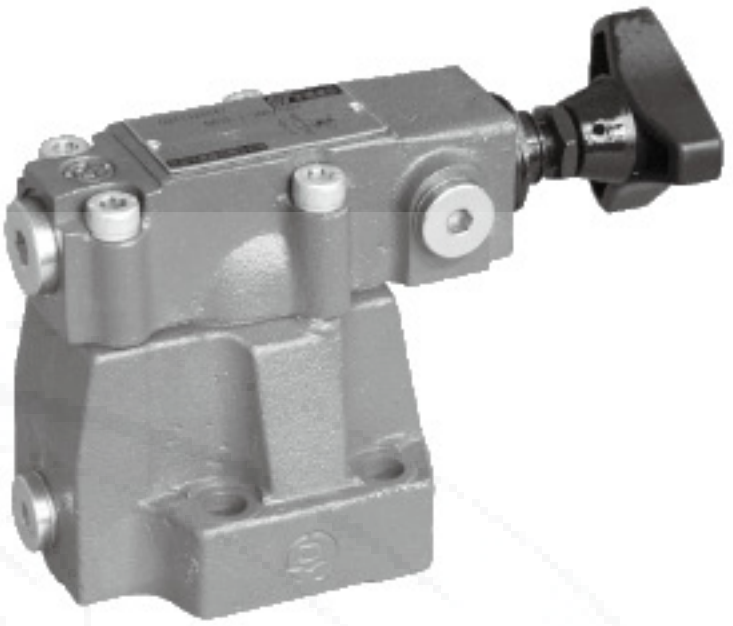


Required surface finish of mating piece

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pilot operated pressure reducing valve, type DR... 30B/**			RE 26891/12.2004
	Size10,20,30	up to 31.5MPa	up to 320L/min	Replaces: RE26891/05.2001

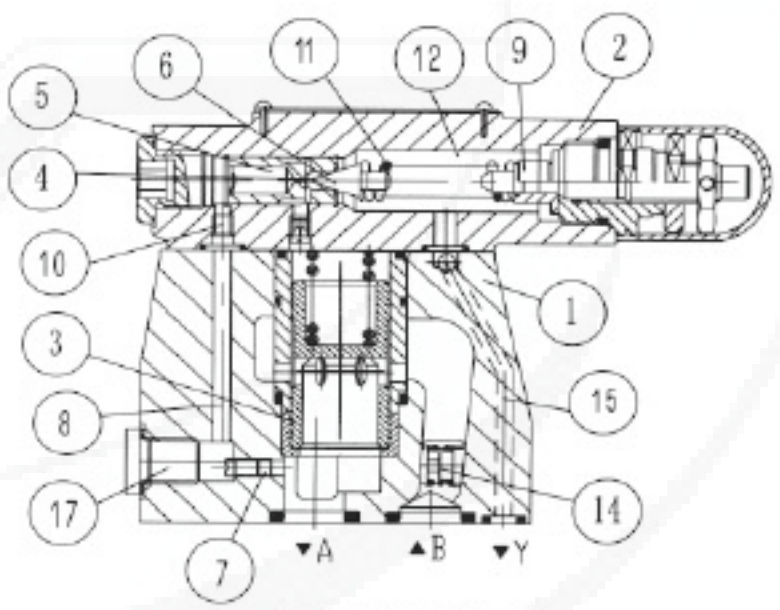
Features:

- For subplate mounting
- For threaded connections
- For cartridge connection
- 3 adjustment elements:
  - · Rotary knob,
  - · Sleeve with hexagon and protective cap,
  - · Lockable rotary knob with scale,
- 4 pressure settings
- Optional check valve (only for valve for subplate mounting)

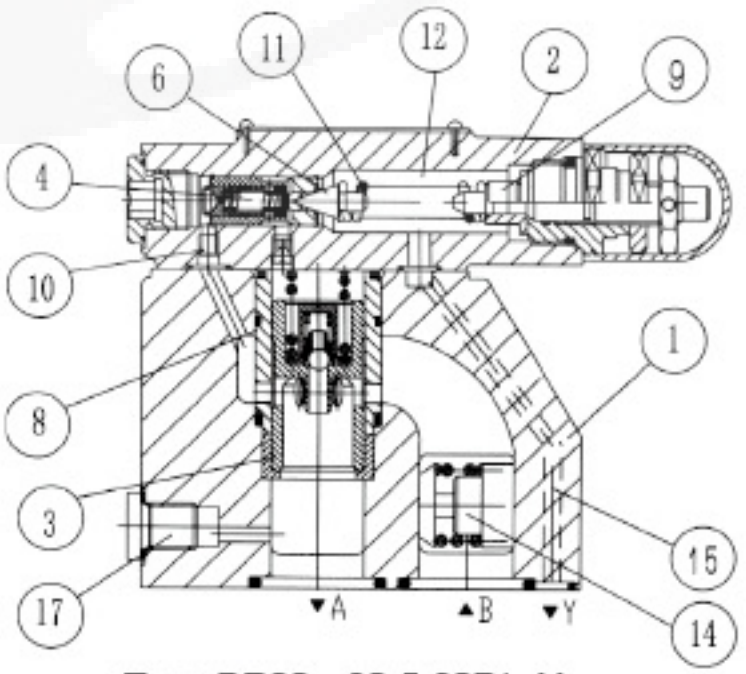


Functional, section

Pressure valves type DR are pilot operated pressure reducing valves, which are controlled from the secondary circuit.
They basically consist of main valve (1) with main spool insert (3) and pilot valve (2) with pressure adjustment element (9).
At rest, the valves are open, fluid can freely pass from port B to port A via the main spool (3).
Pressure present in port A acts upon the bottom side of the main spool(3). At the same time there is pressure acting on the poppet (6) in the pilot valve (2) via the orifice (4) on the spring-loaded side of the main piston (3) and via the port (5). Same it is acting on the poppet (6) via the orifice (7), control line (8), and orifice (10). According to setting of spring (11), pressure builds up in front of the poppet (6), in port (5) and in spring chamber (12), holding the control spool (3) in the open position. Fluid can freely flow from port B to port A via main spool (3), until the pressure in port A exceeds the value set at spring (11) and opens the poppet (6). The control piston (3) moves to closing position.
The desired reduced pressure is achieved, when a balance between the pressure in port A and the pressure set at spring (11) is reached.
Pilot oil drain from spring chamber (12) to tank takes place externally via line (15).
Free return flow from port A to B can be achieved by installing an optional check valve (14).
A pressure gauge connection (17) allows the reduced pressure in port A to be monitored.



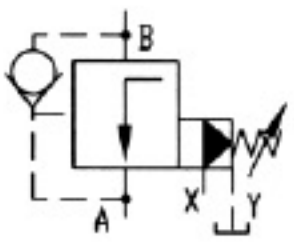
DR10-5-30B/...Y...



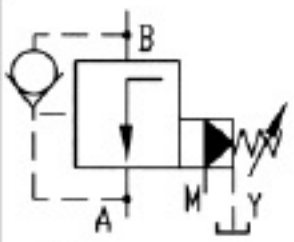
Type DR20、30-5-30B/...Y...

Symbols

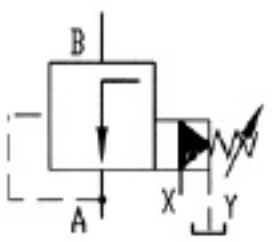
For subplate mounting



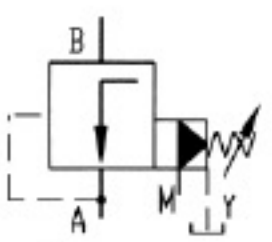
DR10...-30B/...Y...



DR$^{20}_{30}$...-30B/...Y...

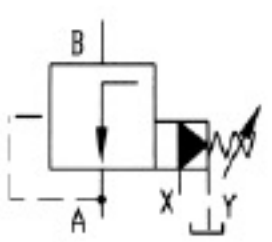


DR10...-30B/...YM...

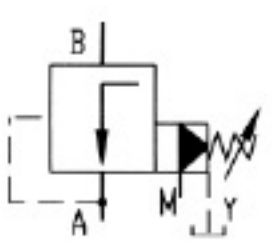


DR$^{20}_{30}$...-30B/...YM...

For pipe mounting



DR$^{8}_{10}$...-30B/...Y...



DR$^{8}_{10}$...-30B/...YM...

Ordering Code

			-	-	30	B	/		Y		/	/		*

Pilot operated valve = DR
Pilot valve = DRC
without main spool insert
(do not state size)
Pilot valve = DRC
with main spool insert
(state valve size 30)

Size	Valve	
	Subplate mounting	Threaded connections
	Ordering Code	
10	10	10 (M22x1.5 or G1/2 *)
15	-	15 (M27x2 or G3/4 *)
20	20	20 (M33x2 or G1 *)
25	-	25 (M42x2 or G11/2 *)
32	30	30 (M48x2 or G11/2 *)

For subplate mounting = No code
For threaded connections = G

Further details in clear text

No code = mineral oils
V = phosphate ester

No code = external connect port : British
2= external connect port : metric
(A pressure gauge connection port G1/4")

No code = with check valve
M = without check valve
(Without check valve ,but no code)

50= pressure setting up to 5.0 MPa
100= pressure setting up to 10.0 MPa
200= pressure setting up to 20.0 MPa
315= pressure setting up to 31.5 MPa

B = Technology of Beijing Huade Hydraulic

30 = Series 30 to39
(30 to 39: unchanged installation and connection dimensions)

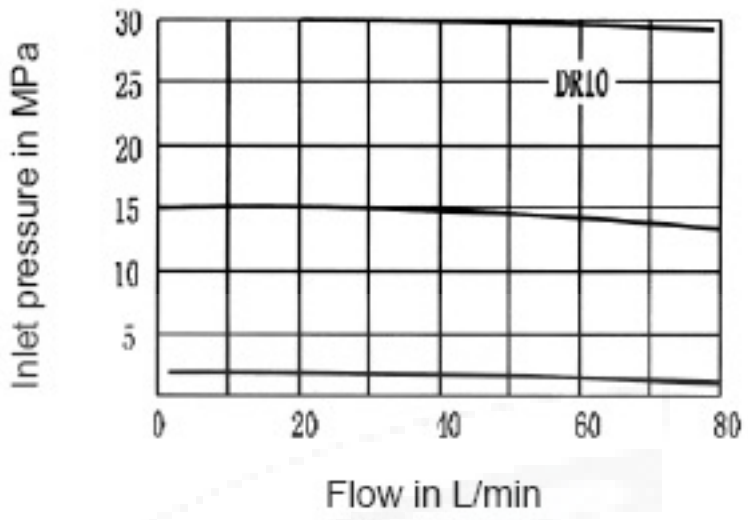
Adjustment element

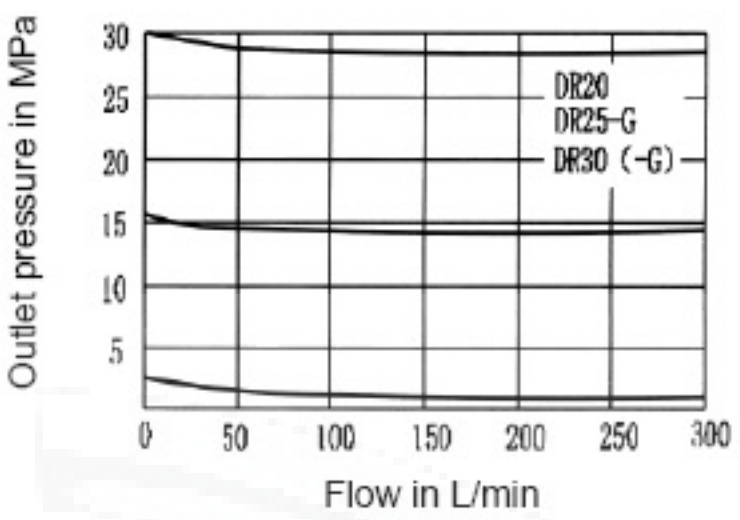
4= Rotary knob
5= Sleeve with hexagon and protective cap
6= Lockable rotary knob with scale
7= Rotary knob with scale

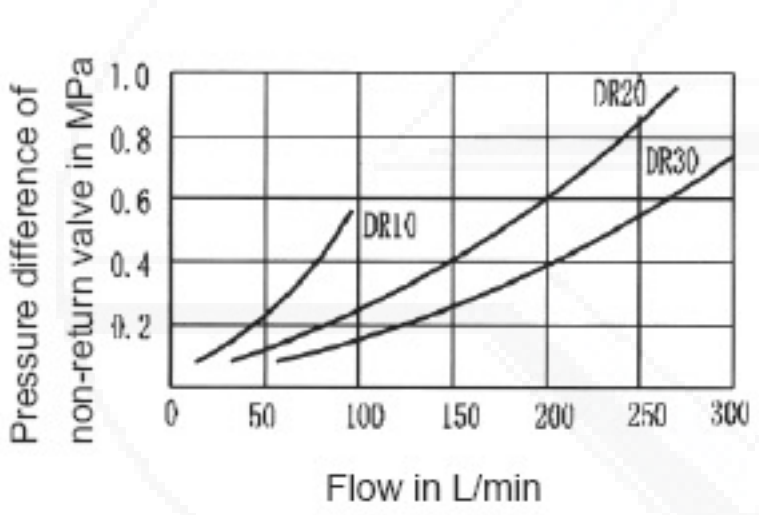
Technical Date

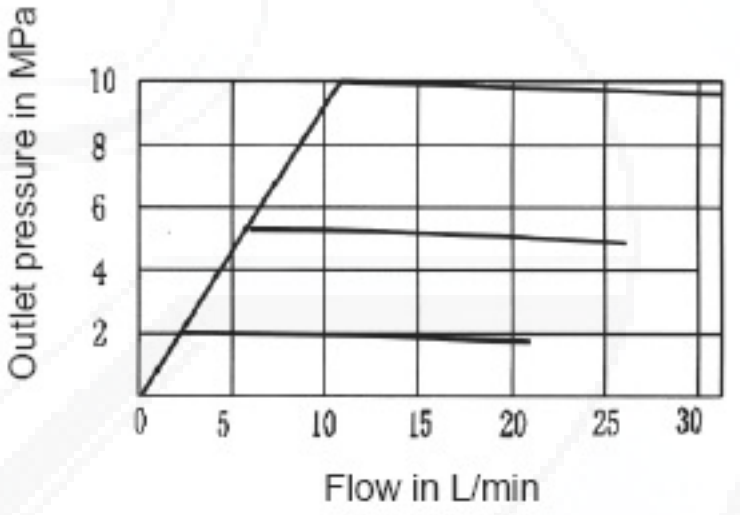
Size		8	10	15	20	25	30
Flow (L/min)	Threaded connections	-	80	-	200	-	300
	Subplate mounting	80	80	200	200	300	300
Operating pressure (MPa)		up to 10 or 31.5					
Inter pressure ,port B (MPa)		up to 31.5					
Outlet pressure ,port A (MPa)		0.3～31.5		1～31.5			
Back pressure ,port Y (MPa)		up to 31.5					
Fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)					
Viscosity range (mm^2/s)		10～800					
Fluid temperature range (℃)		-30～+80					

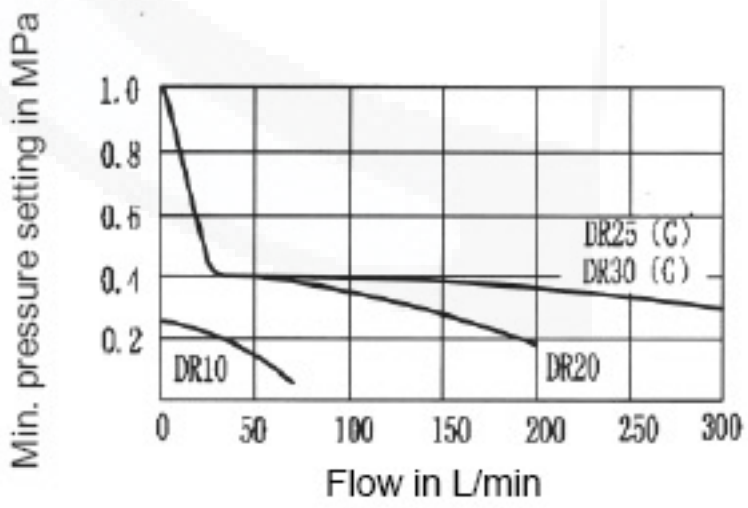
Characteristic Curves (measured at v = 41 mm² /s and t = 50 °C)

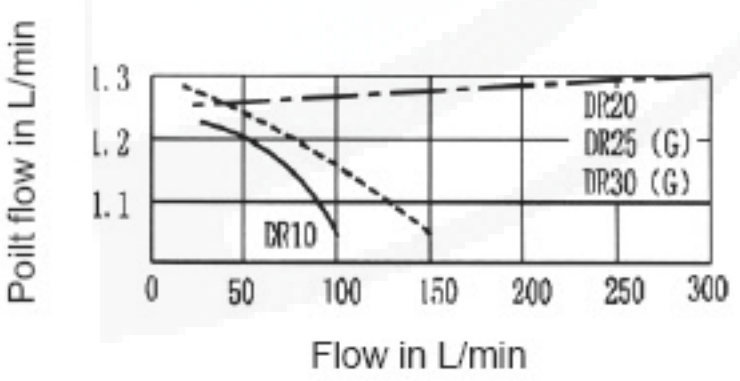










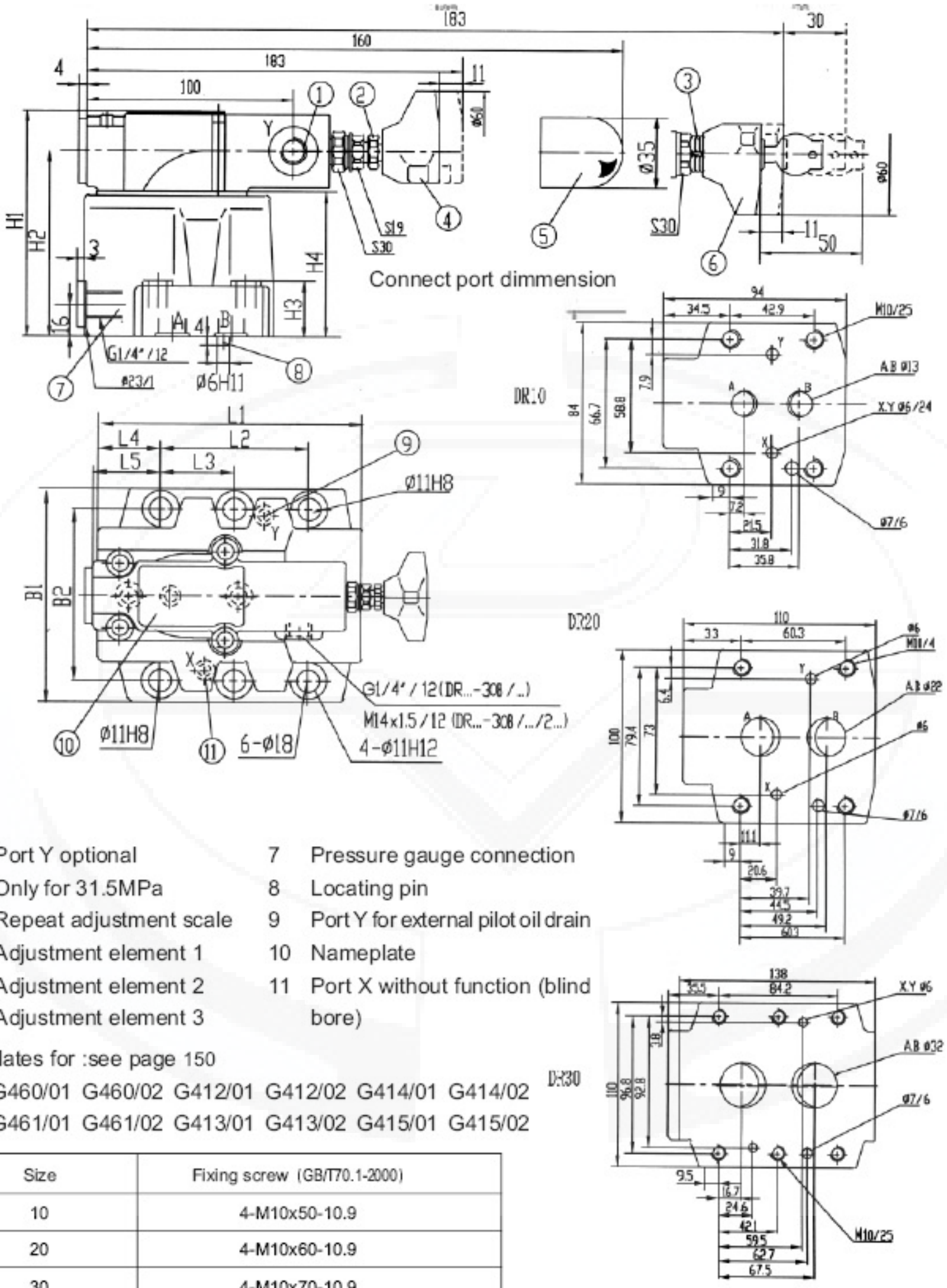


— — — =2MPa △ PDR10

——— =10MPa △ PDR10

— - — - =2MPa and 10MP △ P DR20 and DR30

Unit Dimensions: Valve for subplate mounting (Dimensions in mm)



1 Port Y optional
2 Only for 31.5MPa
3 Repeat adjustment scale
4 Adjustment element 1
Adjustment element 2
Adjustment element 3
7 Pressure gauge connection
8 Locating pin
9 Port Y for external pilot oil drain
10 Nameplate
11 Port X without function (blind bore)

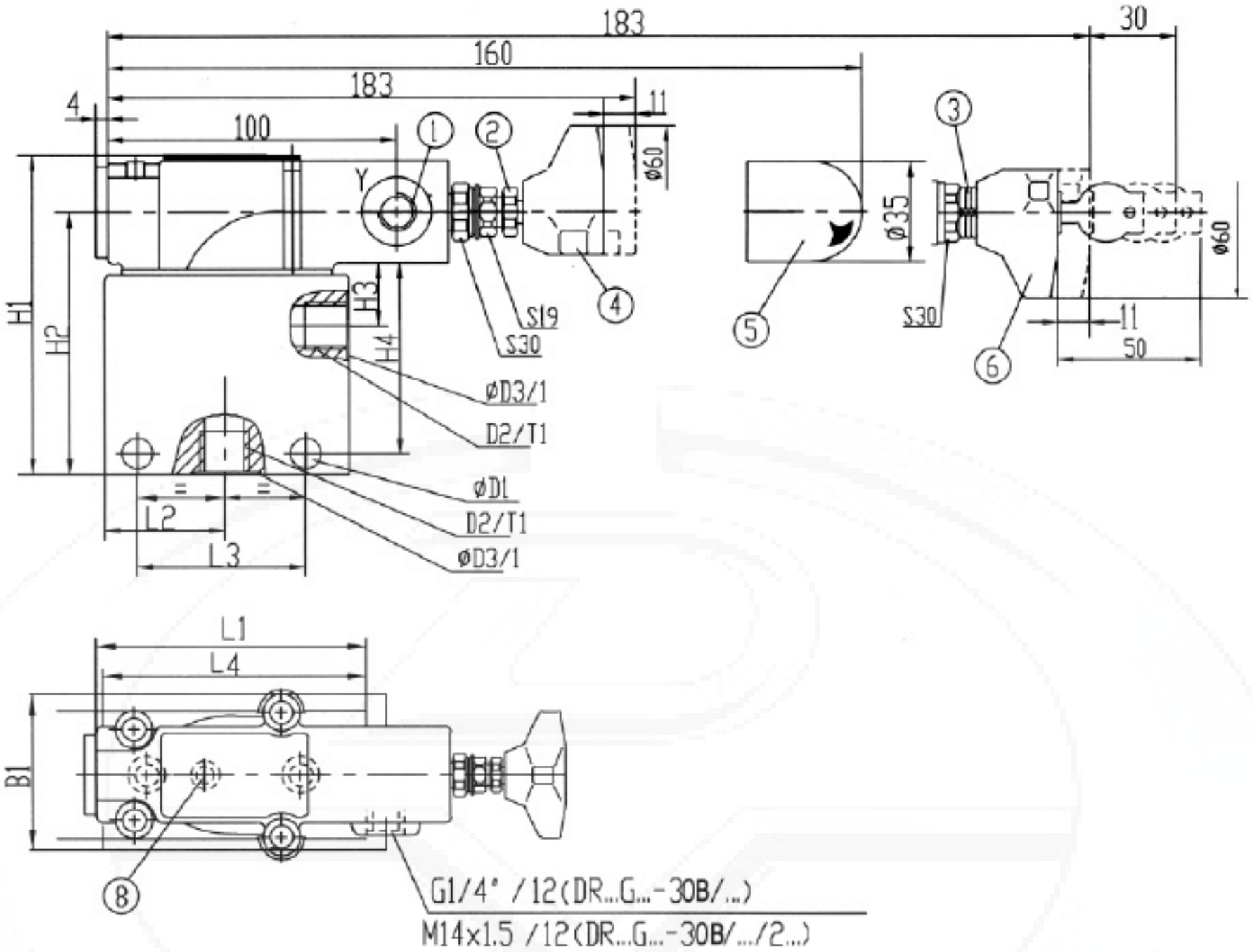
Subplates for :see page 150

G460/01 G460/02 G412/01 G412/02 G414/01 G414/02
G461/01 G461/02 G413/01 G413/02 G415/01 G415/02

Size	Fixing screw (GB/T70.1-2000)
10	4-M10x50-10.9
20	4-M10x60-10.9
30	4-M10x70-10.9

Size	B1	B2	H1	H2	H3	H4	L1	L2	L3	L4	L5	O-ring	
												for ports X、Y	for ports A、B
10	85	66.7	112	92	28	72	90	42.9	-	35.5	34.5	9.25 × 1.78	17.12 × 2.62
20	102	79.4	122	102	38	82	112	60.3	-	33.5	37	9.25 × 1.78	28.17 × 3.53
30	120	96.8	130	110	46	90	140	84.2	42.1	28	31.3	9.25 × 1.78	34.52 × 3.53

Unit Dimensions:insert mounting **(Dimensions in mm)**

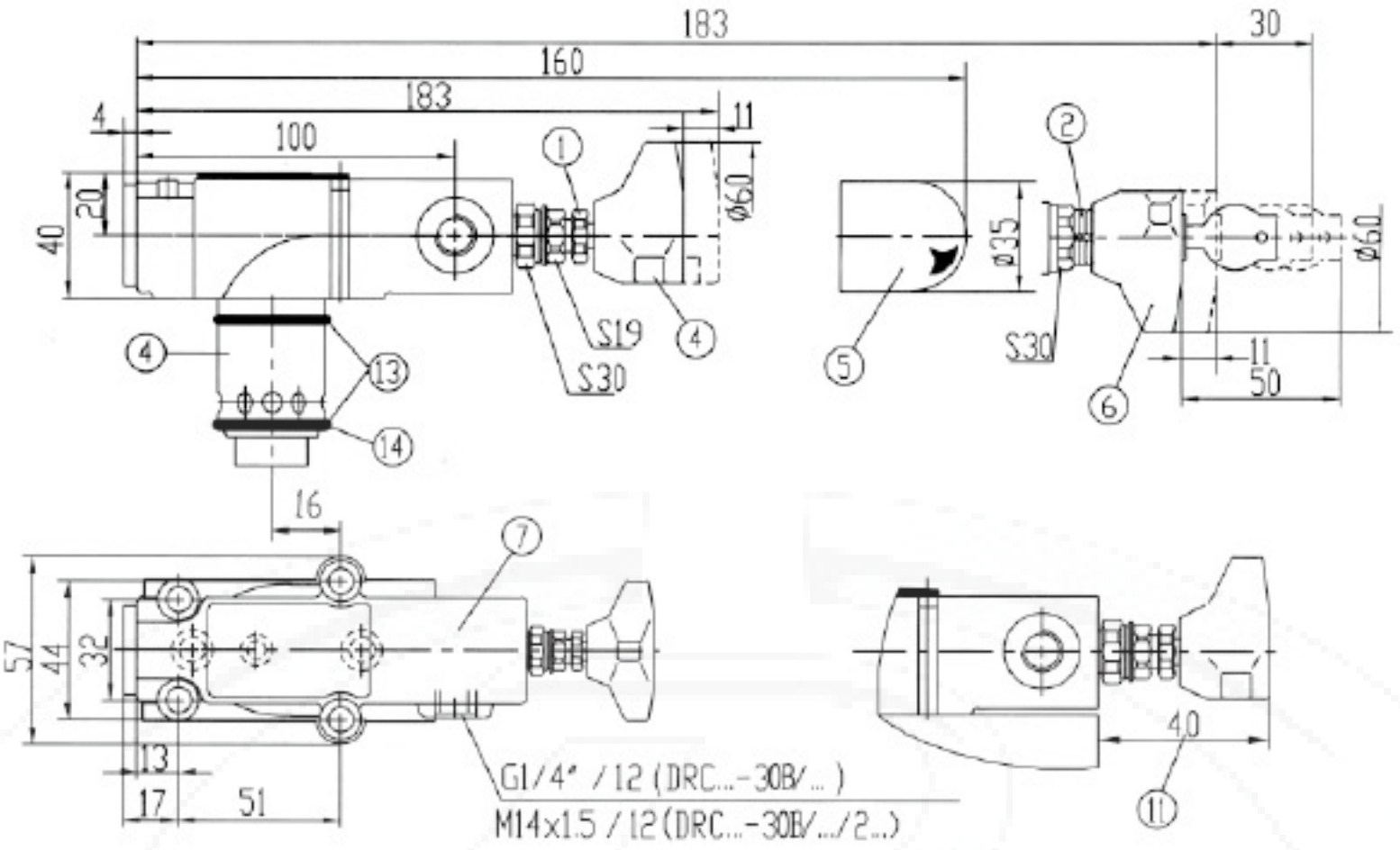


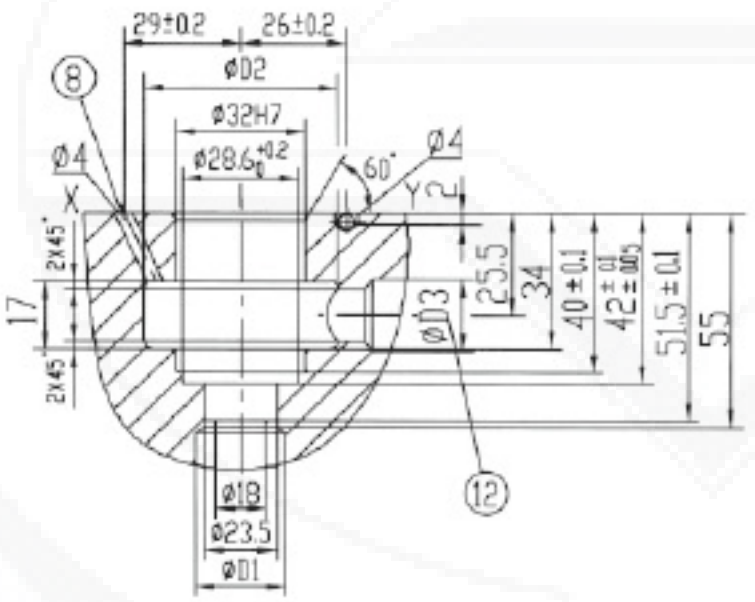
1. Port Y optional
2. Only for 31.5MPa
3. Repeat adjustment scale
4. Adjustment element 1
5. Adjustment element 2
6. Adjustment element 3
7. Pressure gauge connection port

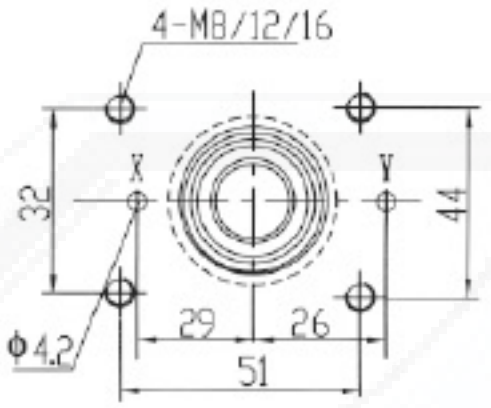
Warnning: pipe mounting without non-return valve,can not flow reverse

Size	B1	ϕ D1	D2		ϕ D3	H1	H2	H3	H4	L1	L2	L3	L4	T1	Weight (kg)
			Metric	British											
10	63	9	M22 × 1.5	G1/2"	34	125	105	28	75	90	40	62	85	14	4.3
15			M27 × 2	G3/4"	42									16	6.8
20			M33 × 2	G1"	47									18	
25	70	11	M42 × 2	G11/4"	58	138	118	34	85	100	46	72	99	20	10.2
30			M48 × 2	G11/2"	65									22	

Unit Dimensions:insert mounting **(Dimensions in mm)**







1. Only for 31.5MPa
2. Repeat adjustment scale
3. Main spool assembly
4. Adjustment element 1
5. Adjustment element 2
6. Adjustment element 3
7. Nameplate
8. Pilot control oil supply
11. Min.distance when adjustment element "1" or "3"insert integration block
12. Hole D3 can meet hole D2 at any location, but can't meet port 'X'and fixed screw.
13 O-ring 27.3X2.4
14 Retainer ring 32X28.4X0.8

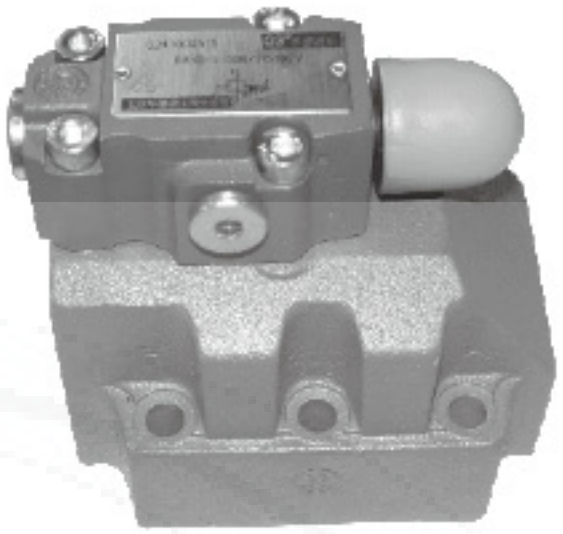
Size	ϕ D1	ϕ D2	ϕ D3	locating screw (GBT70.1-2000)	Weight (kg)
10	10	40	10	4-M8 × 40-10.9	1.4
20	25	40	25		
30	32	45	32		

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pilot operated pressure reducing valve, type DR...50B/(New Series)**			RE 26892/12.2004
	Size 10 to 25	up to 31.5MPa	up to 400L/min	Replaces: RE26892/05.2001

Features:

- Subplate mounting
- For threaded connections
- For manifold mounting
- 4 adjustment elements:
  - · Rotary knob,
  - · Sleeve with hexagon and protective cap,
  - · Lockable rotary knob with scale,
  - · Rotary knob with scale
- 4 pressure settings

  optional check valve (only for valve for subplate mounting)



Functional, Section

Pressure valves type DR are pilot operated pressure reducing valves, which are controlled from the secondary circuit. They basically consist of main valve (1) with main spool insert (3) and pilot valve (2) with pressure adjustment element ..

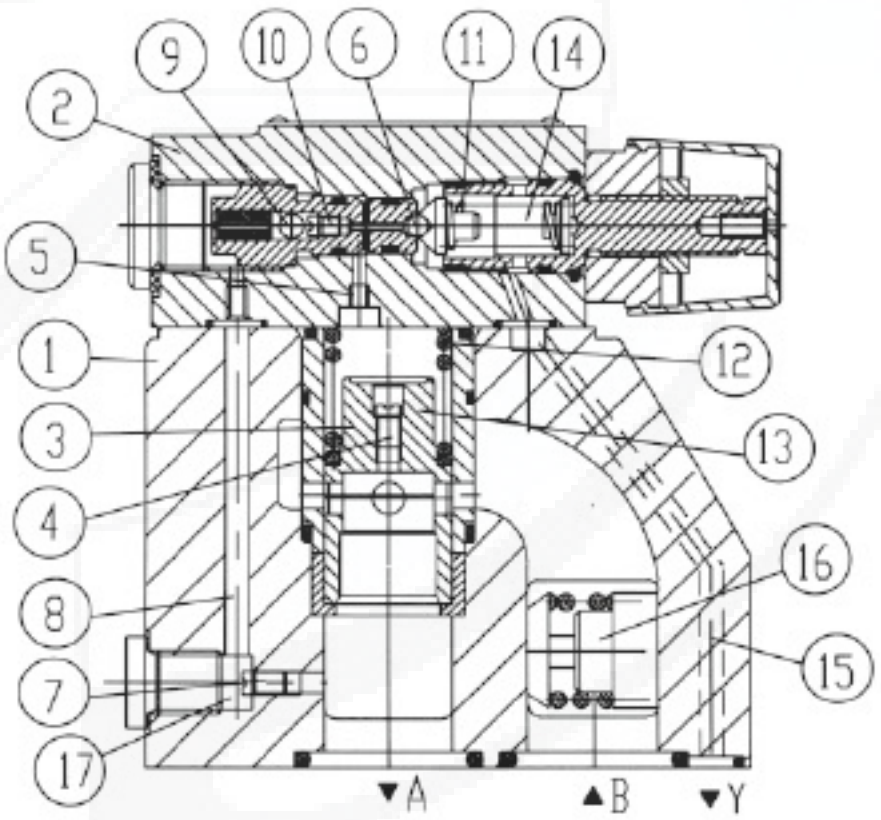
At rest, the valves are open, fluid can freely pass from port B to port A via the main spool insert (3).

Pressure present in port A acts upon the bottom side of the main spool. At the same time there is pressure acting on the ball(6) in the pilot valve (2) via the orifice (4) on the spring-loaded side of the main piston (3) and via the port (5). Same it is acting on the ball (6) via the orifice (7), control line (8), check valve(9)and orifice (10). According to setting of spring (11), pressure builds up in front of the ball (6), in port (5) and in spring chamber (12), holding the control piston (13) in the open position. Fluid can freely flow from port B to port A via main spool insert (3), until the pressure in port A exceeds the value set at spring (11) and opens the ball (6). The control piston (13) moves to closing position.

The desired reduced pressure is achieved, when a balance between the pressure in port A and the pressure set at spring (11) is reached. Pilot oil drain from spring chamber (14) to tank takes place externally via control line (15).

Free return flow from port A to B can be achieved by installing an optional check valve (16).

A pressure gauge connection (17) allows the reduced pressure in port A to be monitored.



Ordering Code

			-	-	50	B	/		Y		/	/		*

Pilot operated valve =DR
Pilot valve = DRC
without main spool insert
(do not state size)
Pilot valve = DRC
with main spool insert
(state valve size 30)

Size	Valve	
	Subplate mounting	Threaded connections G
	Ordering code	
10	10	10 (M22x1.5 or G1/2``)
15	-	15 (M27x2 or G3/4``)
20	20	20 (M33x2 or G1``)
25	-	25 (M42x2 or G11/2``)

For subplate mounting = No code
For threaded connections = G

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

B = Technology of Beijing Huade Hydraulic

50 = pressure setting up to 5.0 MPa
100 = pressure setting up to 10.0 MPa
200 = pressure setting up to 20.0 MPa
315 = pressure setting up to 31.5 MPa

No code = with check valve
M = without check valve
(Without check valve ,but no code)

No code =external connect with port:metre
2= external connect with port:inch
(A pressure gauge connection G1/4")

No code = mineral oils
V = phosphate ester

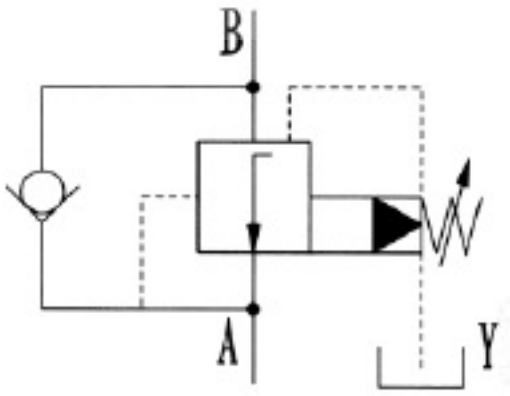
Further details in clear text

Adjustment element

4 = Rotary knob
5 = Sleeve with hexagon and protective cap
6 = Lockable rotary knob with scale
7 = Rotary knob with scale

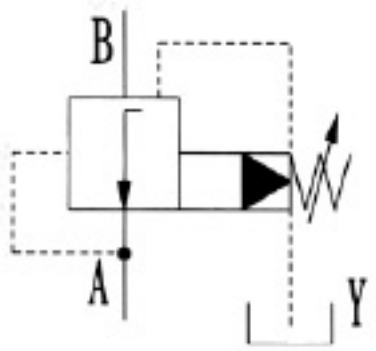
Symbols

only for subplate mounting



DR...50B...Y...

only for subplate mounting



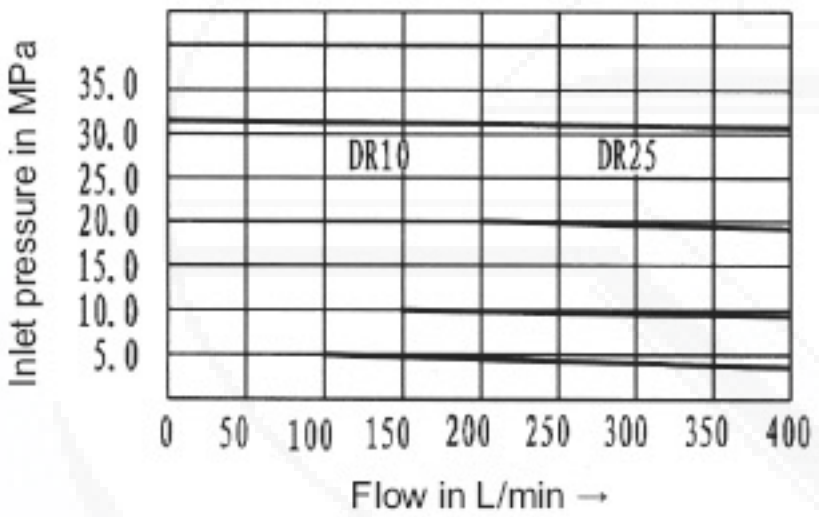
DR...50B...YM...

Technical Data

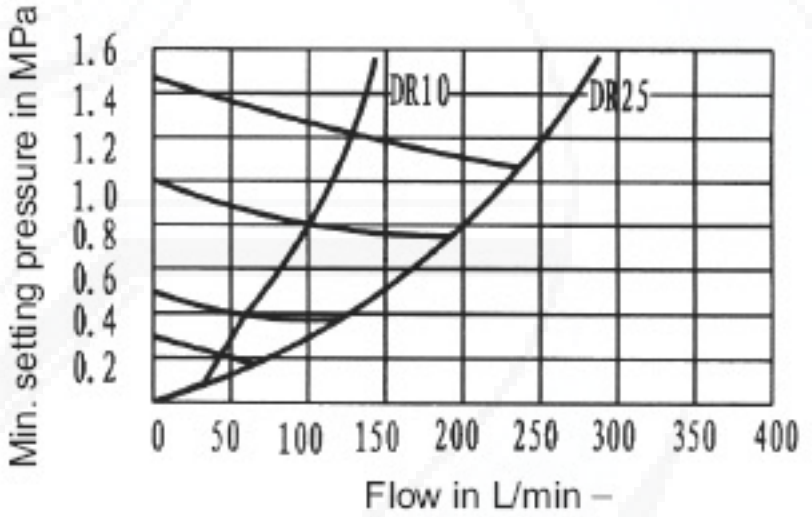
Inlet pressure, port B	(MPa)	up to 31.5				
Outlet pressure, port A	(MPa)	up to 5.0、10.0、20.0、31.5				
Backpressure, port Y	(MPa)	up to 31.5				
Max. flow (Subplate mounting)	(L/min)	DR10		DR20		
		150		300		
Max. flow (Threaded connections)	(L/min)	DR10	DR15	DR20	DR25	
		150	300	300	400	
Fluid		Mineral oil (for NBR seal)or phosphate ester(for FPM seal)				
Fluid temperature range	(℃)	-30 up to + 80				
Viscosity range	(mm/s^2)	10 up to 800				
Degree of contamination		Maximum permissible degree of contamination of the fluid to NAS 1638, class 9.				

Characteristic Curves (measured at v=41mm²/s and t=50℃)

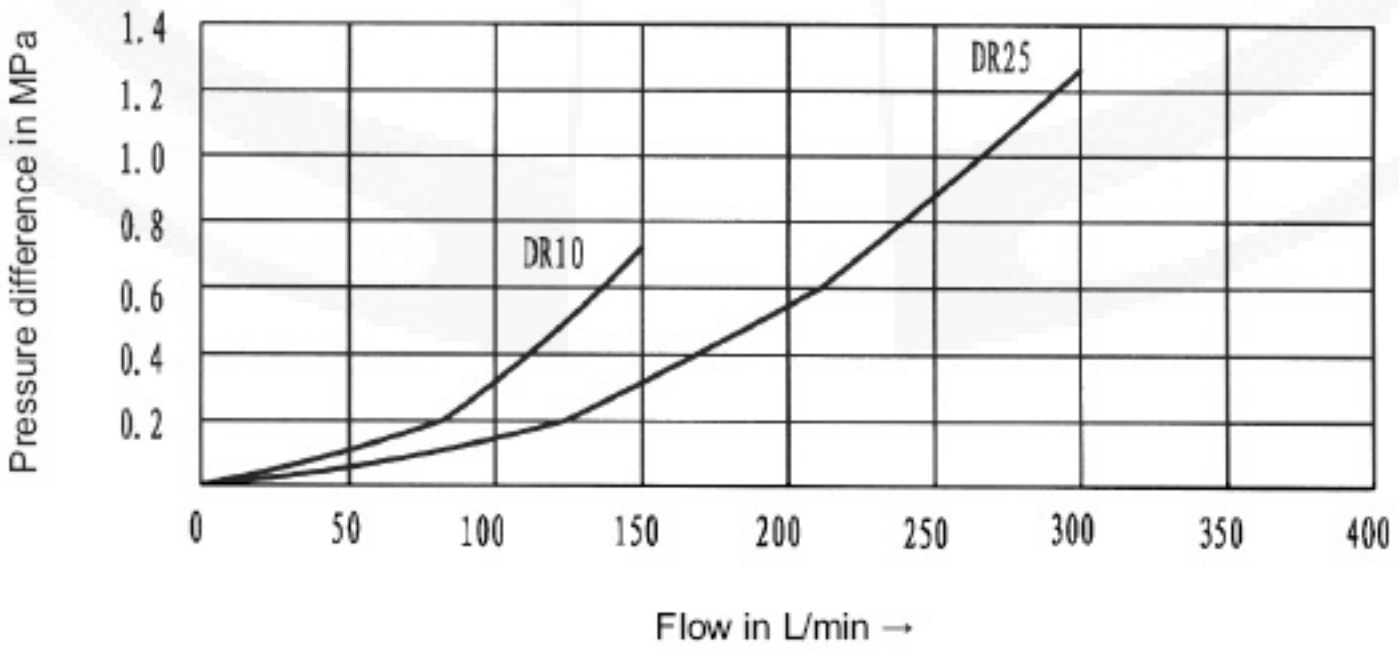
Outlet pressure p_A related to flow Q (B-A)



min. setting pressure p_A min related to flow Q (B-A)

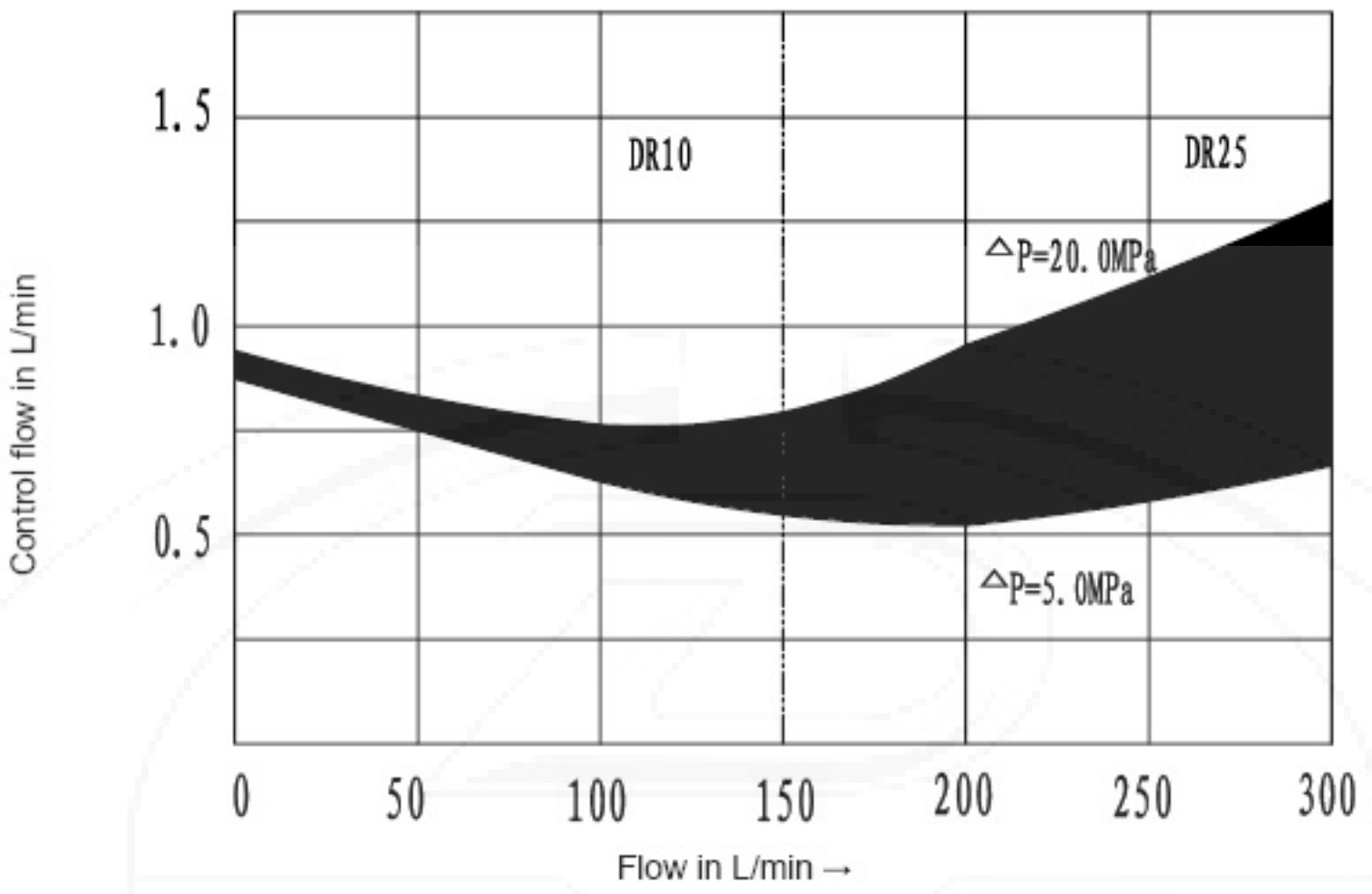


△p-Q-curves (B- A) (lowest settable pressure difference)

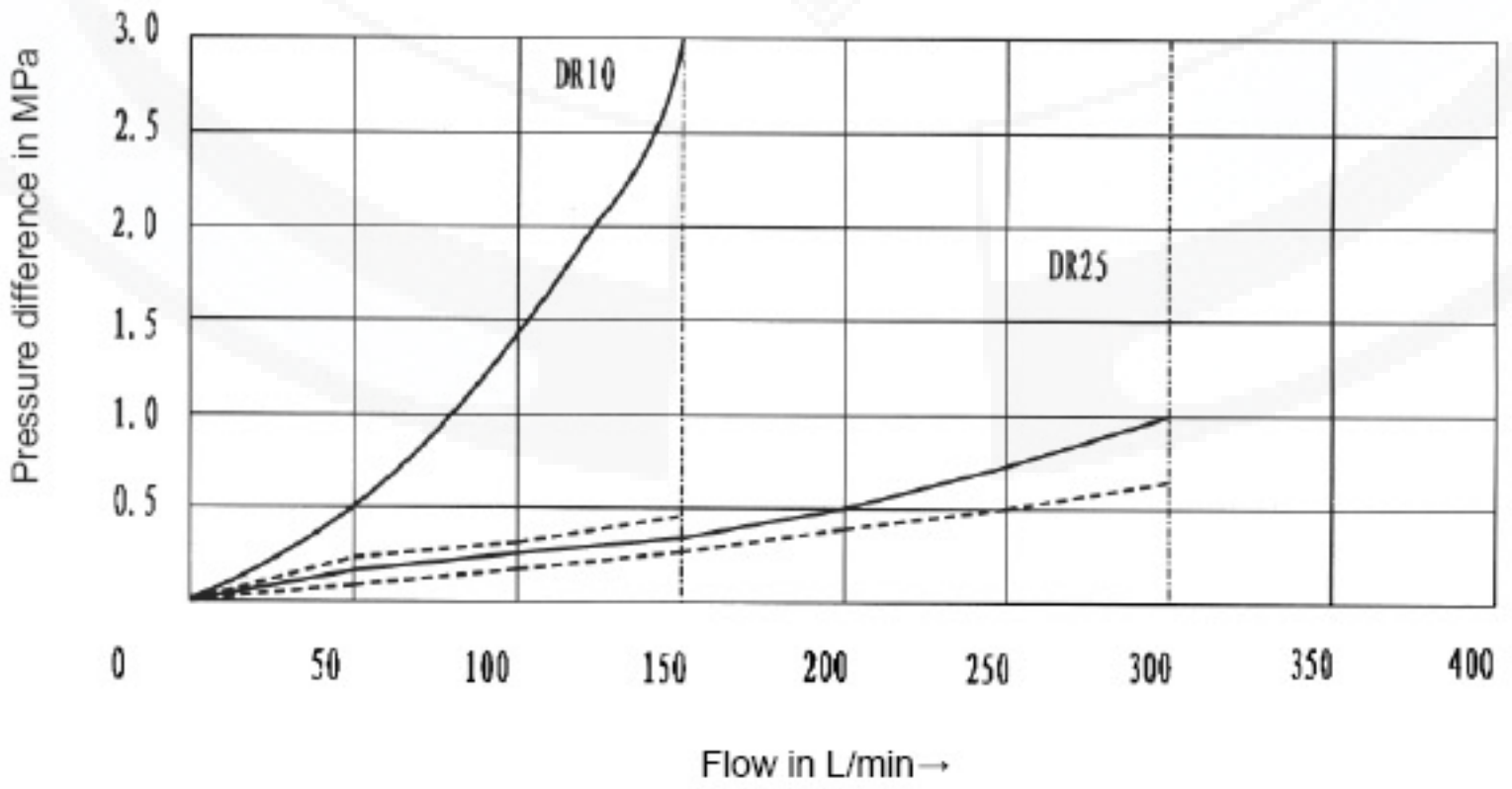


Characteristic Curves (measured at v = 41 mm²/s and t = 50°C)

Control flow related to flow (B-A) and to pressure difference



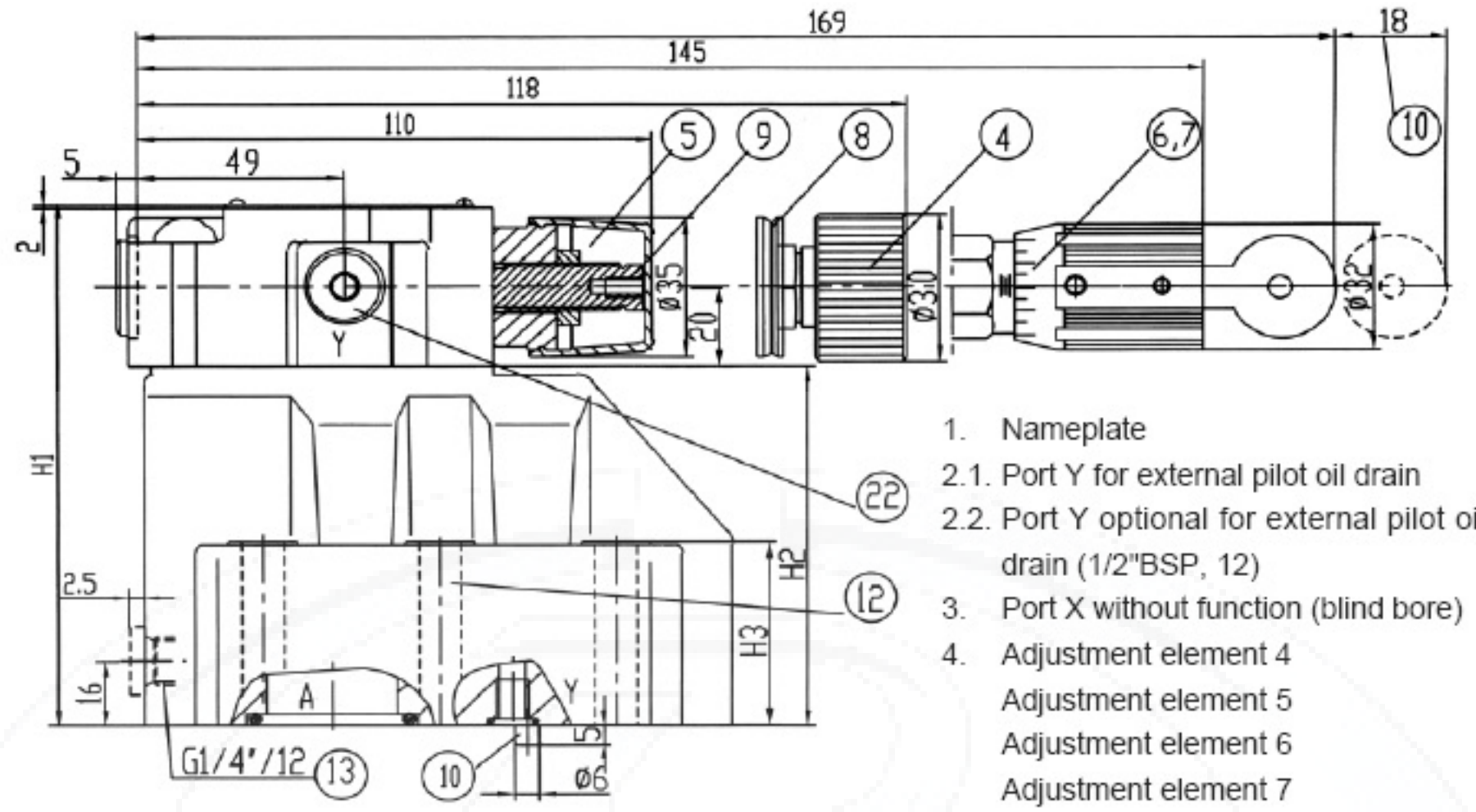
△ p-Q-curves via the check valve (A-B)

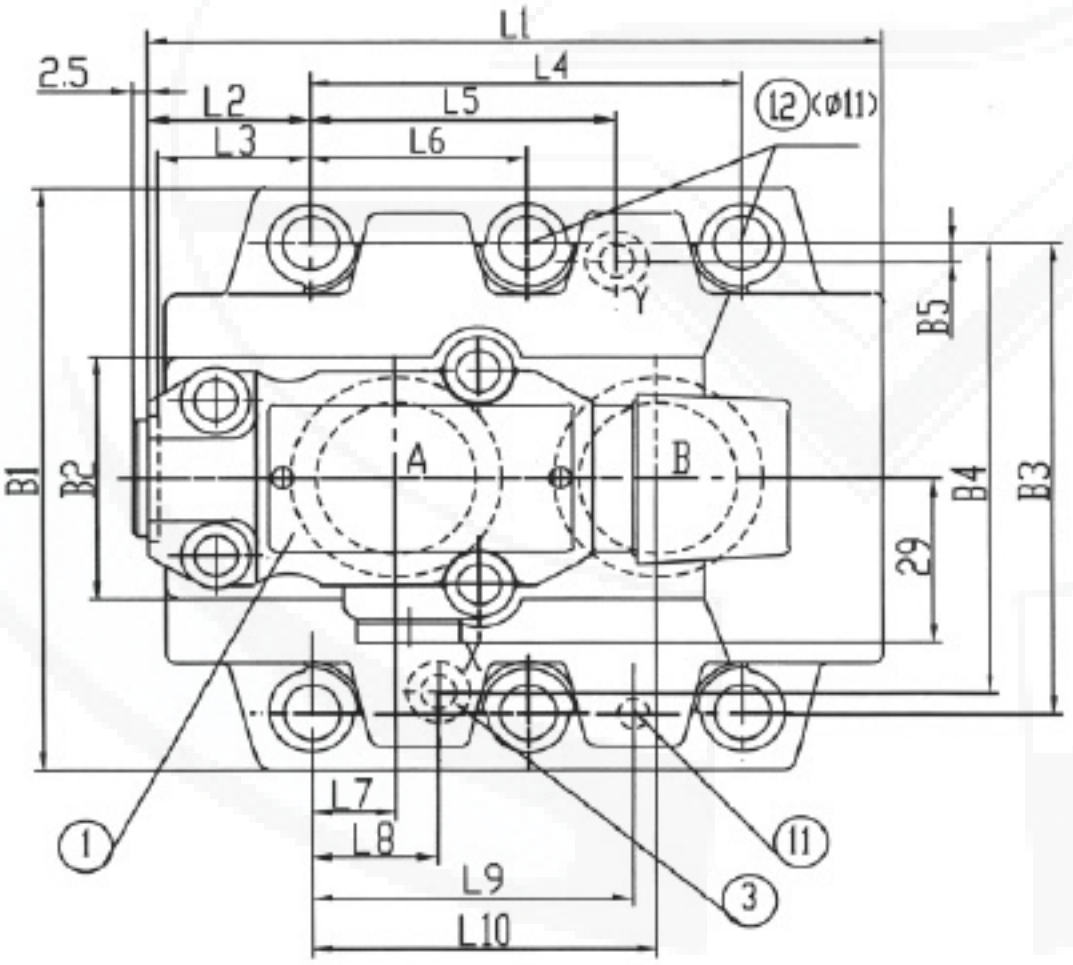


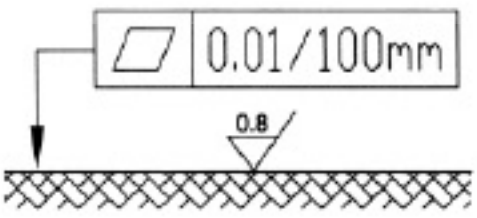
——— Flow resistance via check valve, main stage closed

– – – Flow resistance via check valve at fully opened main stage

Unit Dimensions: Valve for Subplate Mounting (Dimensions in mm)







Required surface finish
of mating piece

1. Nameplate
2.1. Port Y for external pilot oil drain
2.2. Port Y optional for external pilot oil drain (1/2"BSP, 12)
3. Port X without function (blind bore)
4. Adjustment element 4
   Adjustment element 5
   Adjustment element 6
   Adjustment element 7
   Hexagon 22 A/F
9. Hexagon 10 A/F
10. Space required for removal of key
11. Locating pin
12. Valve fixing holes
13. Pressure gauge connection port

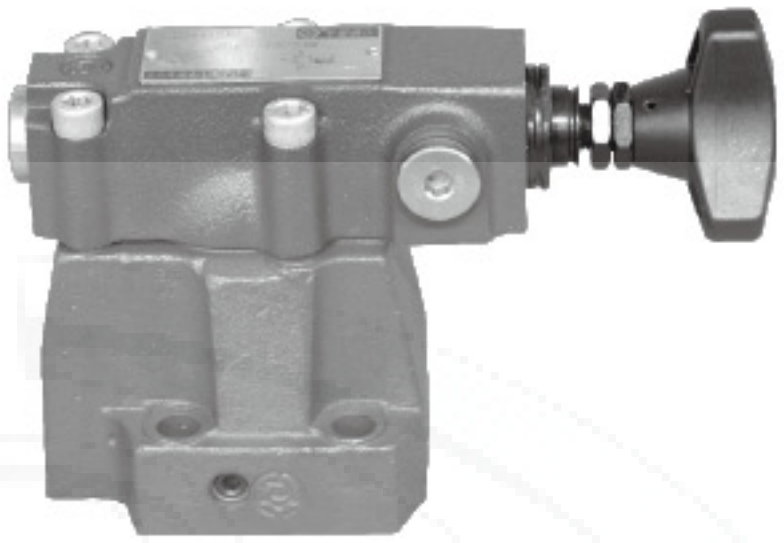
Subplates for:see page150
DR 10 G 460/01 (3/8" BSP)
G 461/01 (1/2" BSP)
DR 20 G 412/01 (3/4" BSP)
G 413/01 (1" BSP)
DR 30 G 414/01 (1 1/4" BSP)
G 415/01 (1 1/2" BSP)
Valve fixing screws:GB/T70.1-2000
DR 10：4-M10 x 50-10.9;
tightening torque = 75 Nm
DR 20：4-M10 x 60-10.9;
tightening torque = 75 Nm
DR 30：6-M10 x 70-10.9
tightening torque = 75 Nm
Weight(Kg):
Size 10: 3.4
Size 20: 5.3

Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	B1	B2	B3	B4	B5	H1	H2	H3	O-ring(ports A.B)	O-ring(ports X.Y)
10	96	35.5	33	42.9	21.5	-	7.2	31.5	21.8	35.8	85	50	66.7	58.8	7.9	112	92	28	17.2 × 262	9.25 × 1.78
20	116	37.5	35.4	60.3	39.7	-	11.1	20.6	44.5	49.2	102	59.5	79.4	73	6.4	122	102	38	28.17 × 3.53	

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure sequence valve pilot operated, type DZ...30B/**			RE 26390/12.2004
	Size 10,20,30	up to 21MPa	up to 450L/min	Replaces: RE26390/05.2001

Features:

- Suitable for use as a relief, sequence and bypass valve
- For subplate mounting
- For manifold block mounting
- 4 adjustment elements:
  - · Rotary knob
  - · Sleeve with hexagon and protective cap
  - · Lockable rotary knob with scale
  - · Rotary knob with scale
- 4 pressure ratings
- Check valve, optional



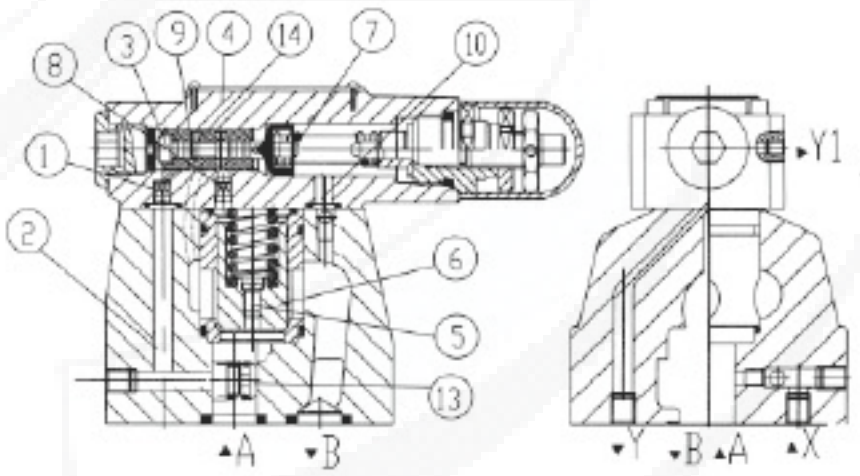
Functional, section

Pressure valves type DZ are pilot operated pressure sequence valves. They are used for pressure dependent sequence switching of a second circuit.
The pressure sequence valves basically consist of main valve (1) with main spoolt (6) and pilot valve (2) with pressure adjustment element and check valve (11), optional.

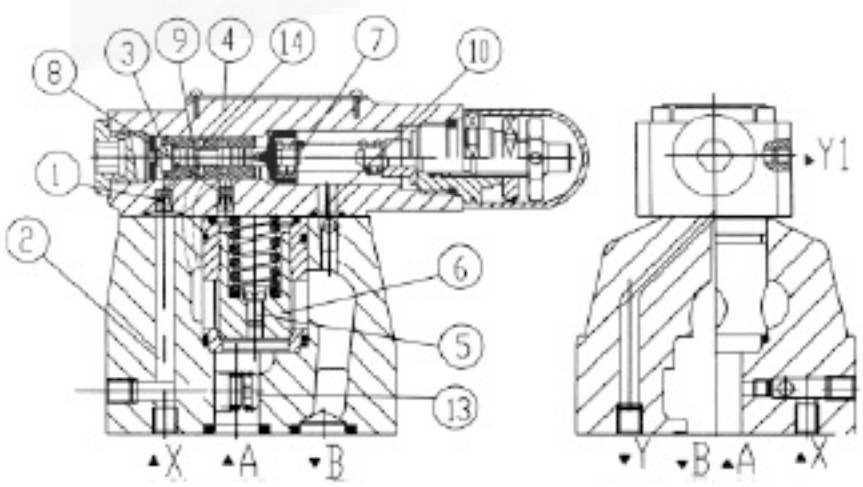
The valve function varies according to pilot oil drain configuration:

Type DZ...-30B/210.
The pressure in port A acts on the pilot spool (6) in the pilot valve (2) via the control line (4). At the same time it acts on the spring loaded side of the main spool (6) via orifice (8). When the pressure exceeds the value set at spring (7), the pilot piston (3) is moved against the spring (7). The signal is obtained internally from port A via control line (4). The fluid on the spring loaded side of the main spool (6) now flows to port B via orifice (9), control land (14) and lines (10) .There is now a pressure drop at main spool (6), the connection from port A to port B is open maintaining the pressure set at spring (7). The leakage oil at pilot piston (3) is led to port B internally via line (10). An optional check valve (11) can be fitted for free return flow from port B to A.

Type DZ...-30B/210X
The function of this valve is principally the same as for valve DZ...30B/210. However, on pressure sequence valve type DZ...30B/...X.. the signal is given externally by means of port X.

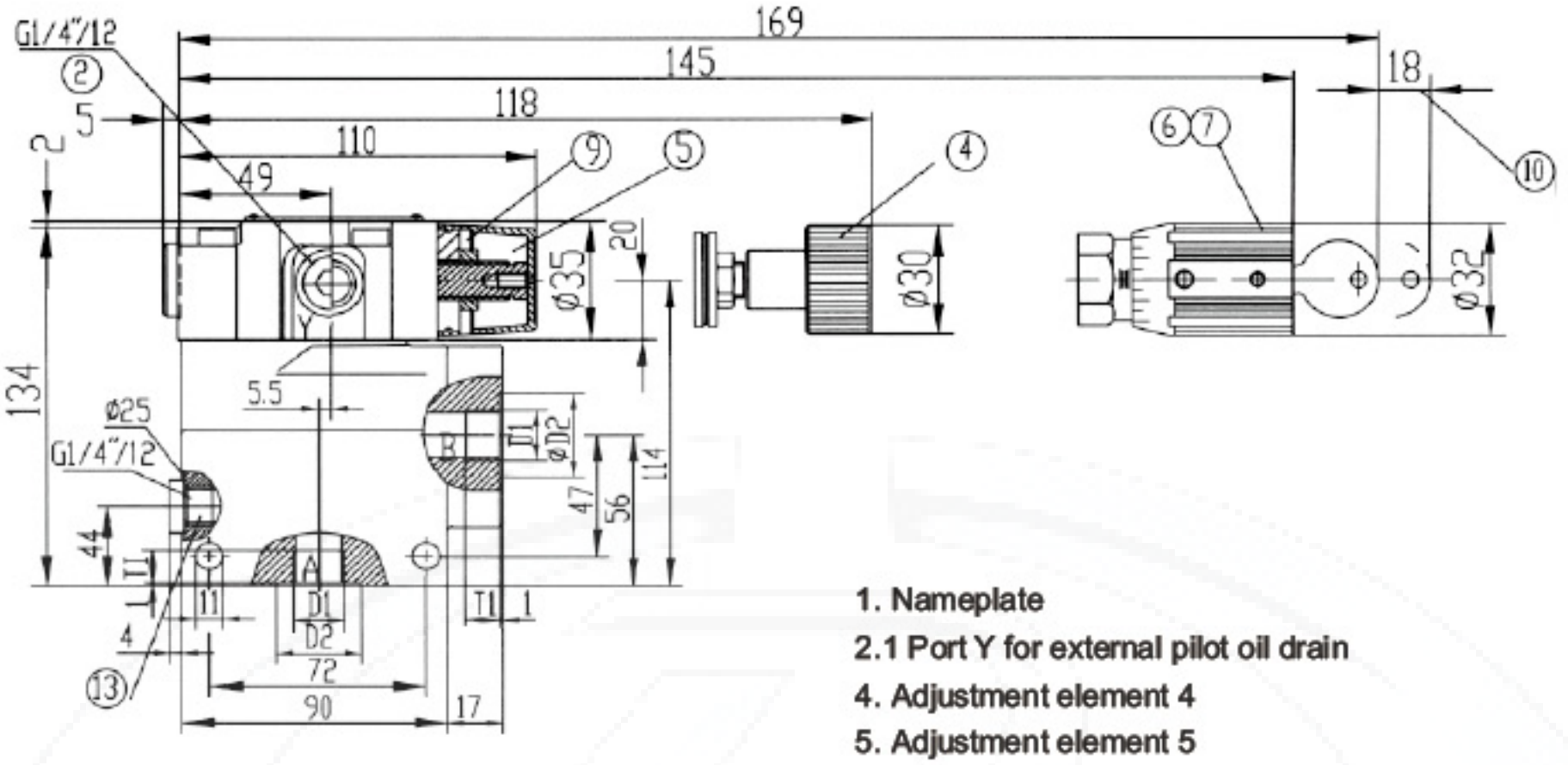


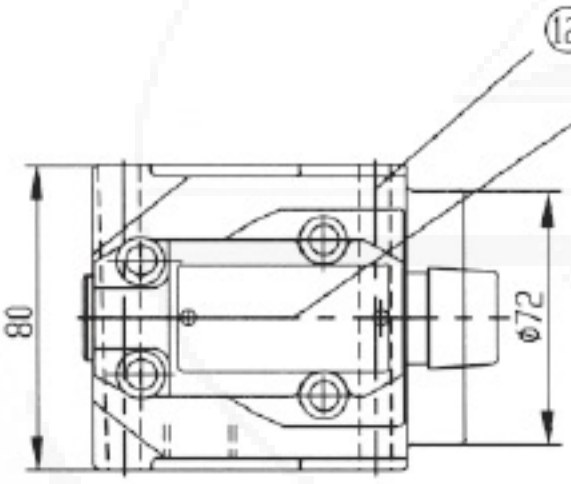
Type DZ...30B/210



Type DZ...30B/210X

Unit Dimensions: Valve for Threaded Connection **(Dimensions in mm)**





1. Nameplate
2. 1 Port Y for external pilot oil drain
4. Adjustment element 4
5. Adjustment element 5
6. Adjustment element 6
7. Adjustment element 7
8. Hexagon 22A/F
9. Hexagon 10A/F
10. Space required for removal of key
12. Valve fixing hole
13. Pressure gauge connection port

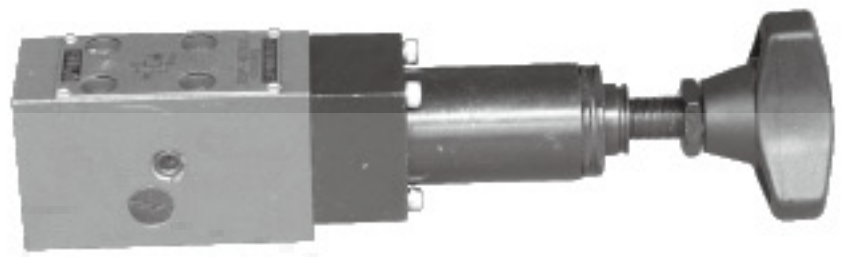
Type	D1	ϕ D2	T
DR10G	G1/2"(M22 × 1.5)	34	14
DR15G	G3/4"(M27 × 2)	42	16
DR20G	G1"(M33 × 2)	47	18
DR25G	G11/4"(M42 × 2)	58	20

Warnning: pipe mounting without non-return valve,can not flow reverse

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	Direct operated pressure sequence valve, type DZ 5 DP			RE 20392/12.2004
	Size 5	up to 31.5MPa	up to 30L/min	Replaces: RE20392/05.2001

Features:

- For subplate mounting
- Front flange mounting
- 5 pressure ranges
- 4 different setting elements:
  - · Rotary knob
  - · Sleeve with hexagon and protective cap
  - · Lockable rotary knob with scale
  - · Rotary knob with scale
- Optional non return valve
- Mounting pattern to DIN 24 340, form C for subplates



Functional,Section

Valves type DZ 5 DP are direct operated sequence valves. They are used to direct oil to a second system at a set pressure.

Valves of this type consist basically of the housing (1), control spool (2), springs (3) and pressure setting element (4), and additionally non-return valve (5) if required.

The pressure at which the valve passes oil is set at the pressure setting element (4).The springs (3) hold the control spool (2) in the starting position, and the valve remains closed. The pressure in port P passes via drilling (6) and jet (7) on to the spool operating area at the opposite end to the control springs (3).

When pressure in port P reaches the set value, the spool moves against the spring to connect port P to port A.

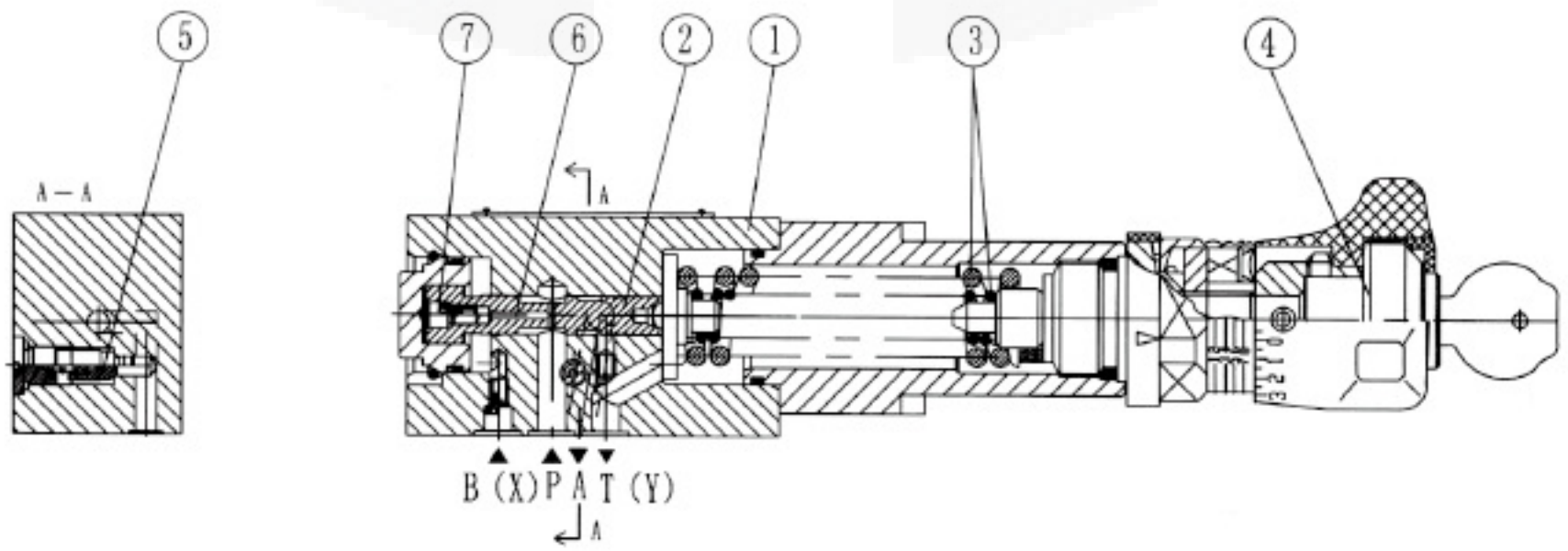
The signal for this passes internally via drilling (6) from port P.

Oil now passes to the system connected to port A, but the pressure in port P does not fall.

The pilot oil may also be fed externally via port B(X).

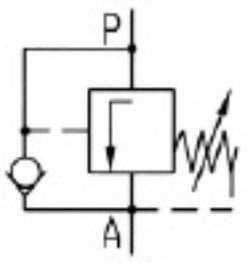
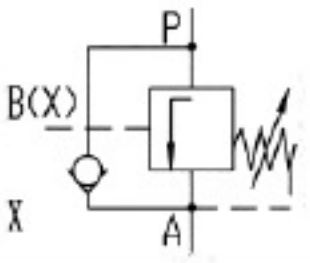
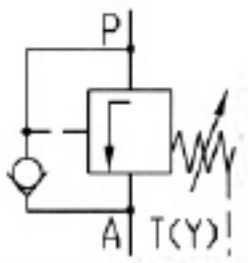
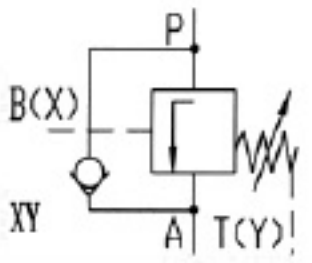
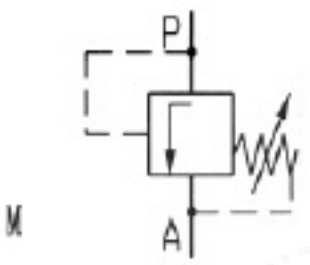
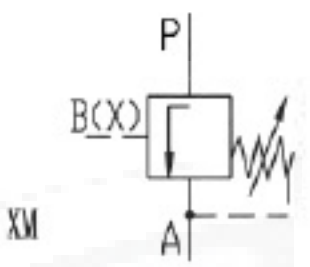
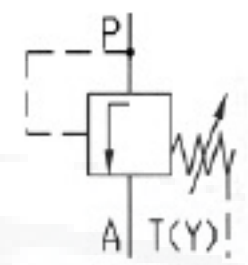
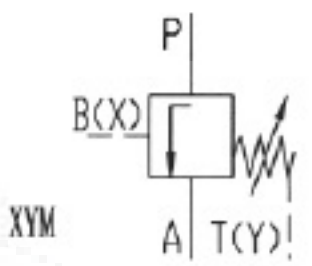
Depending on the application of the valve, the pilot oil return may be externally via port T(Y) or internally.

In order to allow free return flow of the oil from port A to port P, non-return valve (5) may be included if required.



Type DZ5DP-3-10B/...

Symbols

with non-return valve	DZ5DP.,-10B/... 	DZ5DP.,-10B/...X... 	DZ5DP.,-10B/.Y.. 	DZ5DP.,-10B/...XY.. 
without non-return valve	DZ5DP.,-10B/...M.. 	DZ5DP.,-10B/...XM.. 	DZ5DP.,-10B/...YM... 	DZ5DP.,-10B/...XYM.. 

Ordering code

	DZ	5	D	P	-	10	B	/					*

For subplate mounting = No code
For front flange mounting = F

Size 5 =5

Direct operated = D

Subplate ports = P

Adjusting element
Rotary knob = 1
Head screw with hexagon and protective cap = 2
Lockable rotary knob with scale 1) = 3
Rotary knob with scale = 7

Series 10 to 19 = 10
(10 to 19, installation and connection dimensions remain unchanged)

Technology of Beijing Huade Hydraulic =B

further details in clear text

No code. = mineral oils
V = phosphate ester

No code= with non-return valve
M= without non-return valve

No code = pilot oil supply internal, drain internal
X = pilot oil supply external, drain internal
Y = pilot oil supply internal, drain external
XY = pilot oil supply external, drain external

25= Max. sequence pressure 2.5 MPa
75= Max. sequence pressure 7.5 MPa
150= Max. sequence pressure 15.0 MPa
210= Max. sequence pressure 21.0 MPa
315= Max. sequence pressure 31.5 MPa
(31.5 MPa unit only available without non-return valve)

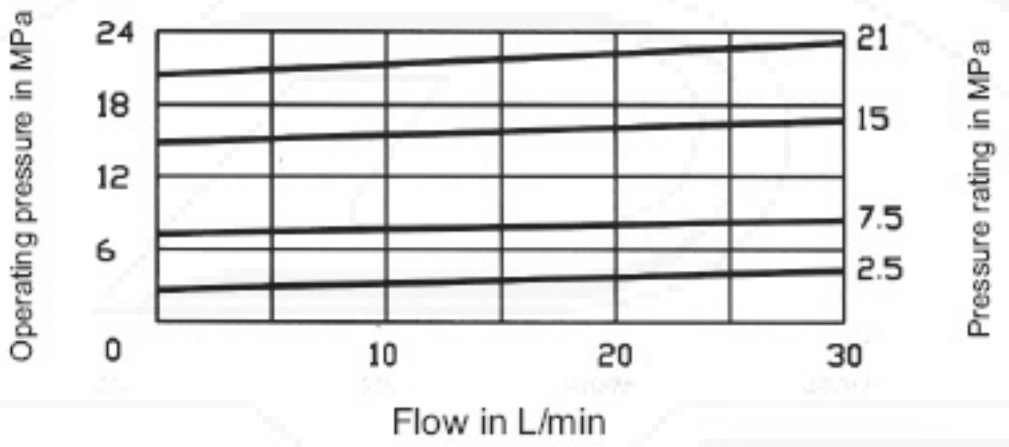
Technical Data

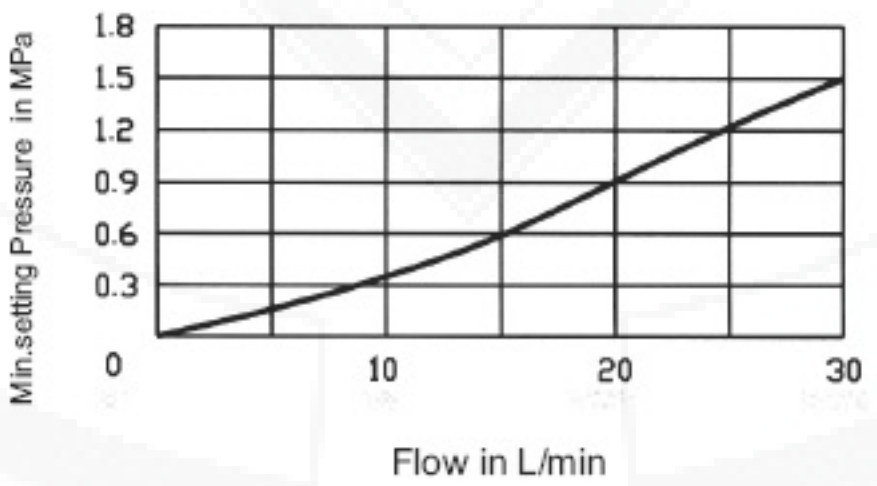
Inlet pressure,port P，B（X）	(MPa)	up to 210; without non-return valve up to 31.5
Outlet pressure,port A	(MPa)	to 31.5
Back pressure,port T（Y）	(MPa)	to 6.0
Max.permissible flow	(L/min)	to 30
Fluids		Mineral oil (for NBR seal),or phosphate ester (for FPM seal)
Viscosity range	(mm^2/s)	10~800
Fluid temperature range	(℃)	-30～+80
Fluid cleanliness	(μm)	Fluid cleanliness Maximum permissible degree of contamination of the fluid to NAS 1638 Class 9

Operating curves (measured at v=41mm^2/S and t=50℃)

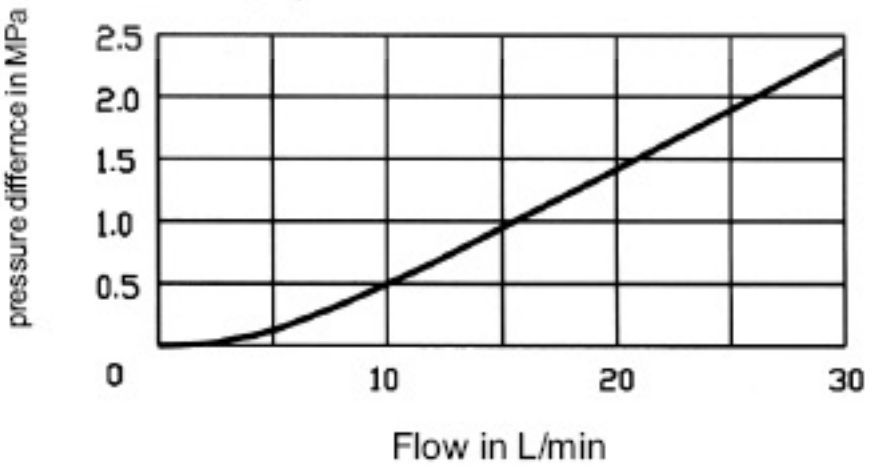
Pe- Q-curve

Inlet pressure related to flow

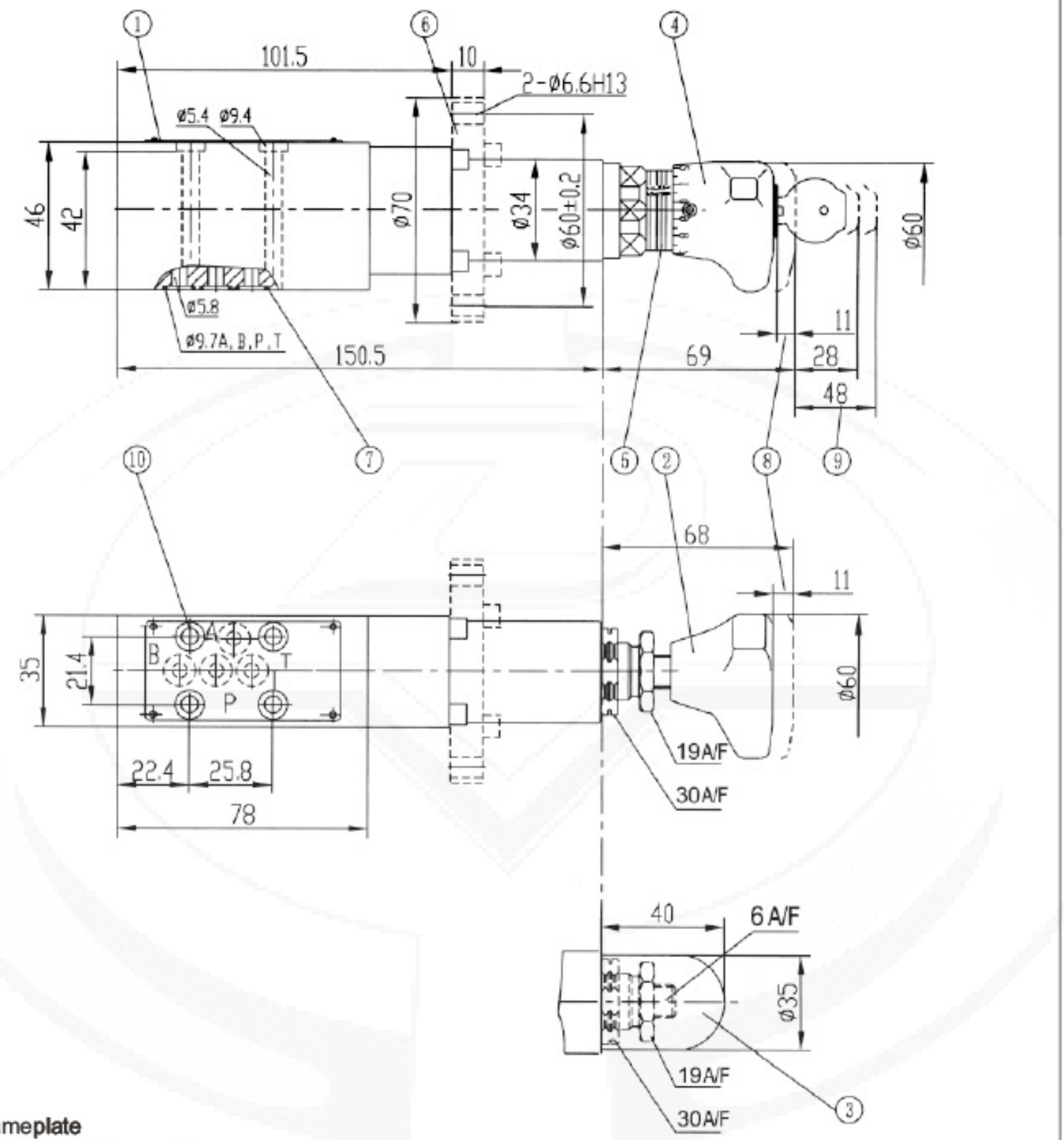




△ p-Q-curve via the no-return valve



Unit dimensions: **(Dimensions in mm)**



1. Nameplate
2. Adjustment element 1
3. Adjustment element 2
4. Adjustment element 3
5. Scale and ring marking for repeat setting
6. Panel mounting model (type DZ 5 DP../..)
7. O-ring 7 x 1.5 for ports P, A, B(X) and T(Y)
8. Max. stroke
9. Space required to remove key
10. Valve fixing holes

Subplates and valve fixing screws must be ordered separately

Subplates :see page153

G115/01 (G1/4")
G115/02 (M14X1.5)
G96/01 (G1/4")
G96/02 (M14X1.5)

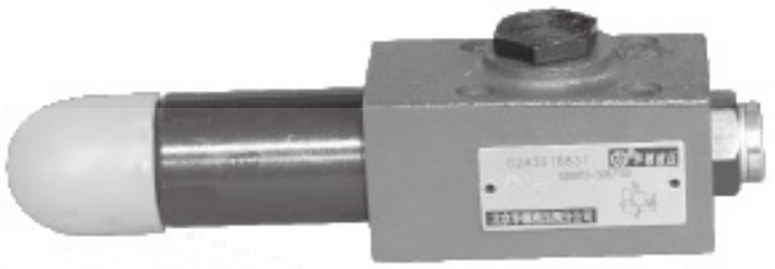
Valve fixing screws: (GB/T70.1-2000)
M5x50-10.9; M_A = 8,9 Nm

Required surface finish of mating piece

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	Direct operated pressure sequence valve, type DZ 6 DP			RE 26393/12.2004
	Size 6	up to 21MPa	up to 60L/min	Replaces: RE26393/05.2001

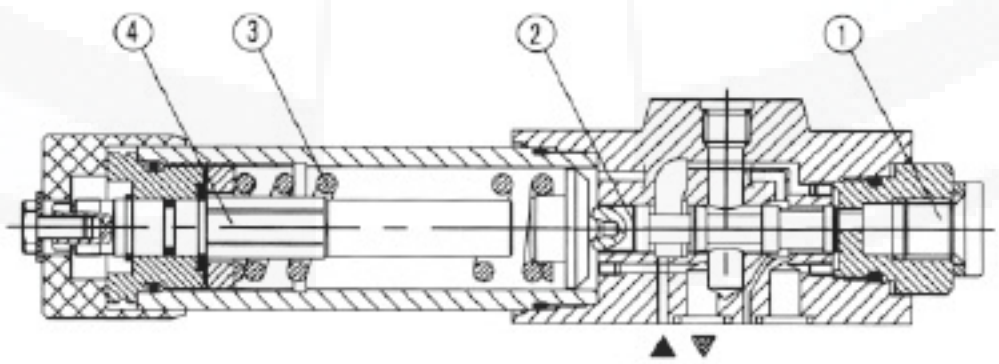
Features:

- For subplate mounting
- 5 pressure stages
- 4 Adjusting elements:
  - · Rotary knob,
  - · Head screw with hexagon and protective cap,
  - · Lockable rotary knob with scale,
  - · Rotary knob with scale
- Check valve, optional
- Mounting pattern to DIN 24 340, form A,ISO 4401 and CETOP-RP 121H

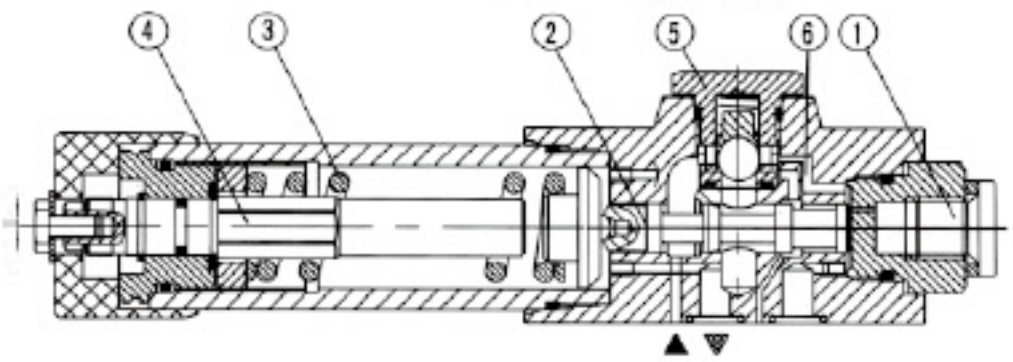


Function, section

The valve type DZ 6 DP is a direct operated pressure sequence valve.
It is used for the pressure dependent connection of a second system.
The setting of the sequence pressure is via the adjusting element(4).
The spring (3) holds the control spool (2) in the neutral position, the valve is blocked. The pressure in channel P is present at the spool surface of the control spool (2) opposite the spring (3) via the control line (6).
If the pressure in channel P reaches the set value of the spring (3) the control spool (2) is moved to the left and the connection
P to A is opened. The system at channel A is connected without a pressure decrease falling in channel P.
The control signal originates internally via the control line (6) from channel P or externally via port B (X).
Depending on the use of the valve the leakage oil drain is externally via port T (Y) or internally via A.

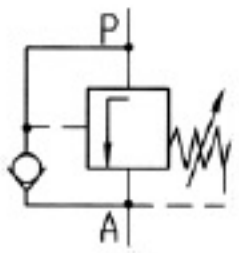
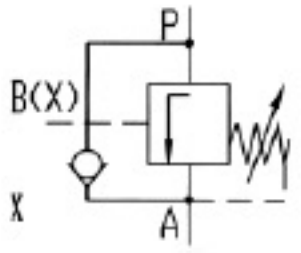
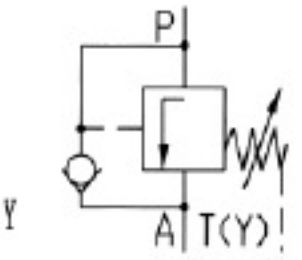
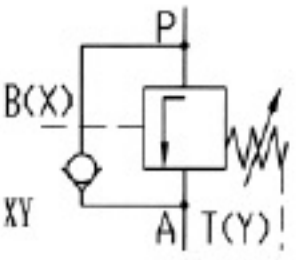
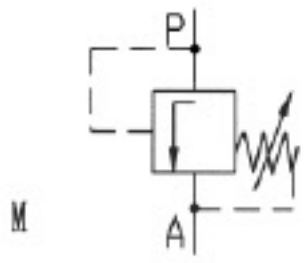
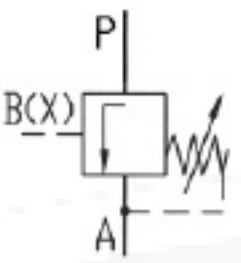
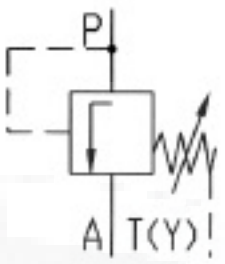
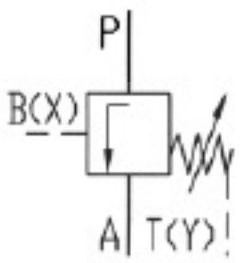


DZ6DP1-50B/..XYM P A T(Y) B(X)



DZ6DP1-50B/... P A T(Y) B(X)

Symbols

with non-return valve	DZ6DP.-10B/...	DZ6DP.-10B/...X..	DZ6DP.-10B/...Y..	DZ6DP..-10B/...XY..
				
without non-return valve	DZ6DP.-10B/...M...	DZ6DP.-10B/...XM...	DZ6DP.-10B/...YM...	DZ6DP.-10B/...XYM...
				

Ordering code

DZ	6	D	P		-	50	B	/					*

Size 6 =6

Direct operated = D

Subplate ports = P

Adjusting element
- Rotary knob = 1
- Head screw with hexagon and protective cap = 2
- Lockable rotary knob with scale 1) = 3
- Rotary knob with scale = 7

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

Technology of Beijing Huade Hydraulic =B

Further details in clear text

- No code. = mineral oils
- V = phosphate ester

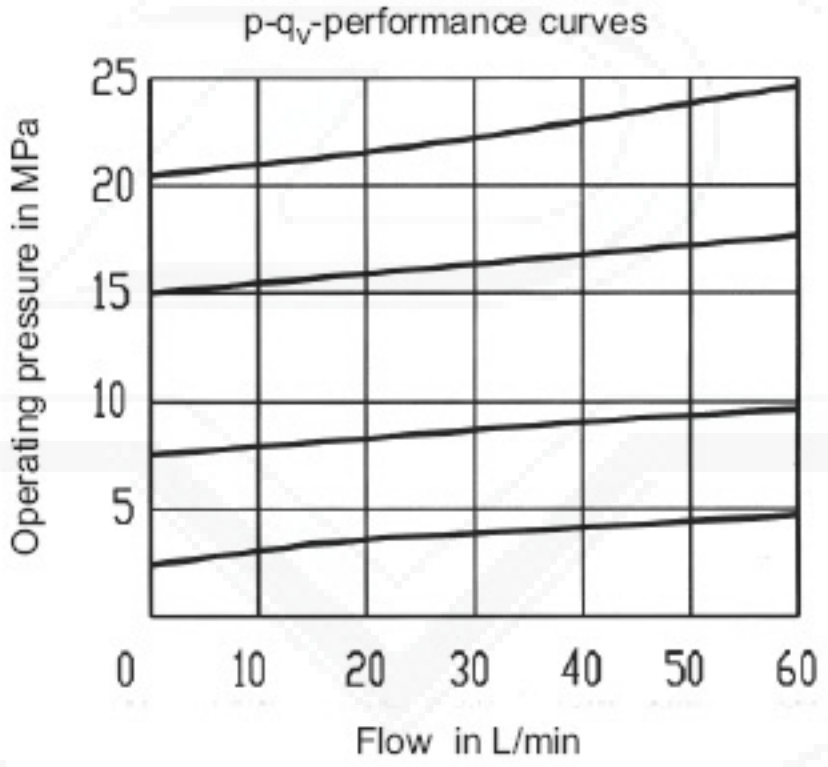
- No code = with non-return valve
- M = without non-return valve

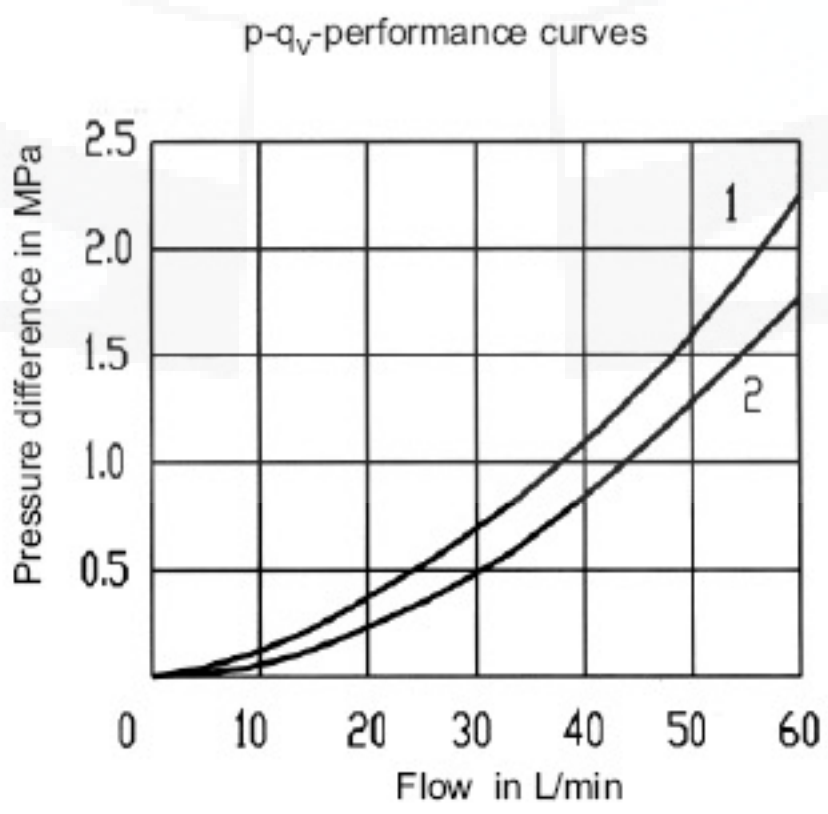
- No code = pilot oil supply internal, drain internal
- X = pilot oil supply external, drain internal
- Y = pilot oil supply internal, drain external
- XY = pilot oil supply external, drain external

- 25= Max. sequence pressure 2.5 Mpa
- 75= Max. sequence pressure 7.5 Mpa
- 150= Max. sequence pressure 15.0 Mpa
- 210= Max. sequence pressure 21.0 Mpa

Technical Data		
Inlet pressure,port P，B（X）	（MPa）	up to 31.5
Outlet pressure,port A	（MPa）	up to 21.0
Back pressure,port T（Y）	（MPa）	up to 16.0
Max.permissible flow	（L/min）	up to 60
Fluid		Mineral oil (for NBR seal),or phosphate ester (for FPM seal)
Viscosity range	（mm^2/s）	10~800
Fluid temperature rang	（℃）	-30 to +80
Fluid cleanliness	（μm）	Fluid cleanliness Maximum permissible degree of contamination of the fluid to NAS 1638 Class 9.
Max. flow	L/min	up to 60

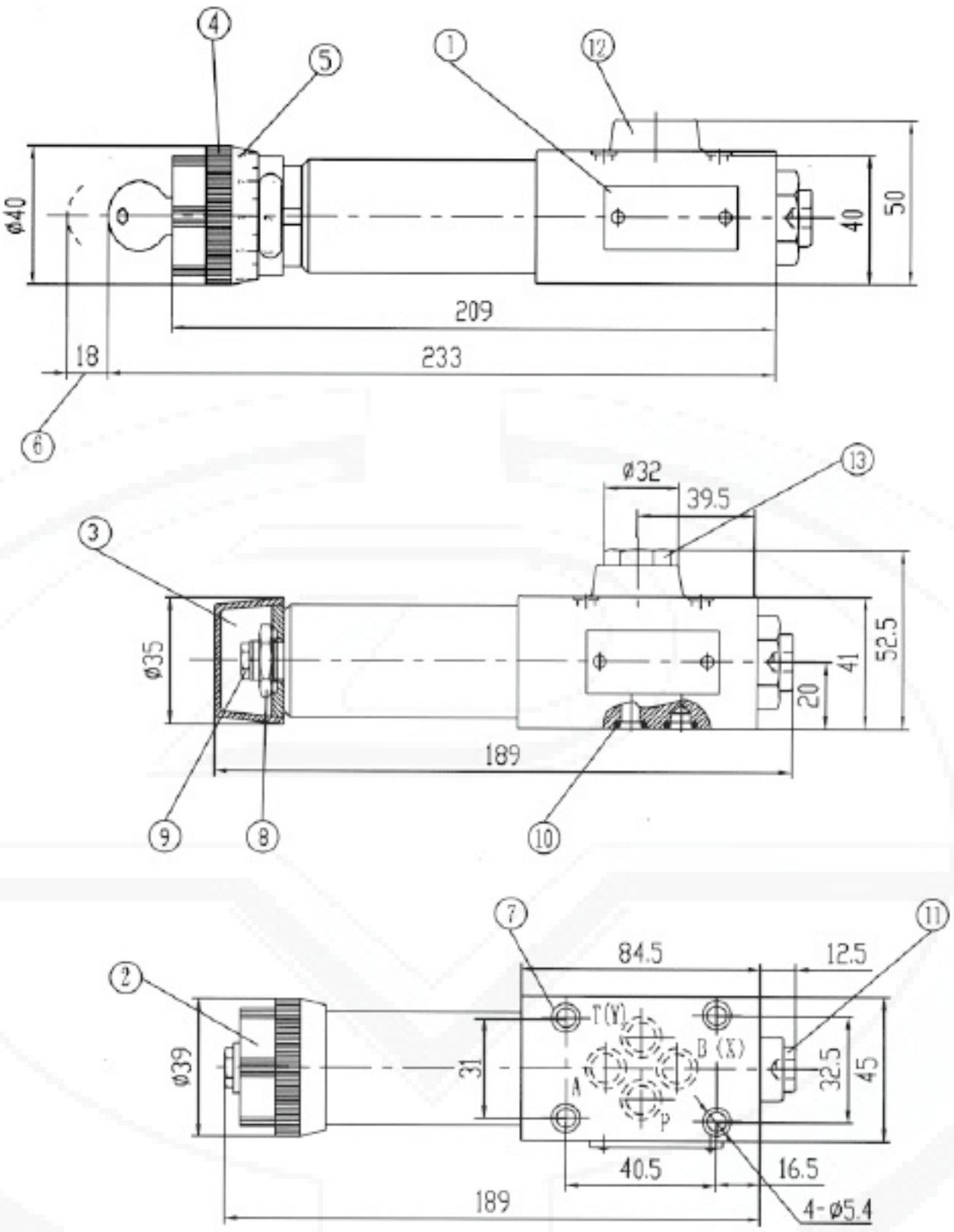
Operating curves (measured at v=41mm^2/S and t=50℃)





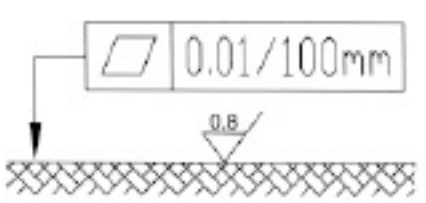
1 △ p-q_V-performance curve via check valve A to P
2 △ p-q_V-performance curve P to A

Unit dimensions: **(Dimensions in mm)**



1 Nameplate
2 Adjustment element 1
3 Adjustment element 2
4 Adjustment element 3
5 Adjustment element 7
6 Space required to remove key
7 Valve fixing screw holes
8 Lock nut 24 A/F
9 Hexagon 10 A/F
10 O-ring 9.25 x 1.78 for ports A, B (X), P, T(Y)
11 Pressure gauge port G 1/4; 12 deep;
Hexagonal recess A/F 6
12 Without check valve
13 With check valve

Subplates:see page152
G 341/01 (G 1/4")
G 341/02 (M14X1.5)
G 342/01 (G 3/8")
G 342/02 (M18X1.5)
Valve fixing screws
4-M5 x 50-10.9
(GB/T70.1-2000)
Tightening torque M_A = 8,9 Nm,
must be ordered separately.

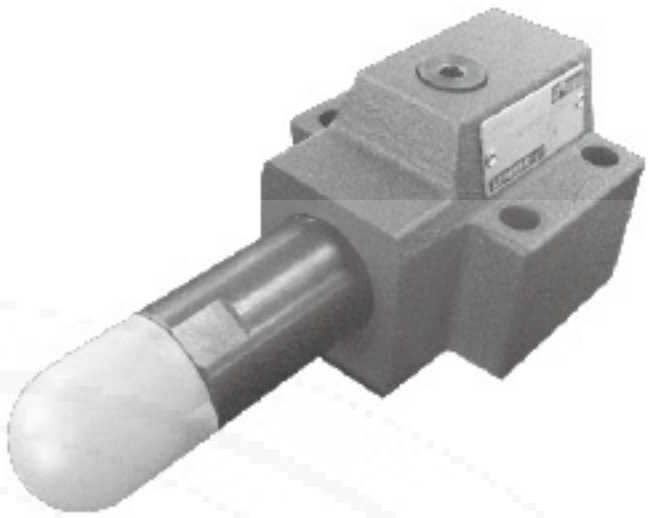


Required surface finish
of mating piece

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	Pressure sequence valve, direct operated, type DZ 10 DP			RE 26394/12.2004
	Size 10	up to 21MPa	up to 80L/min	Replaces: RE26394/05.2001

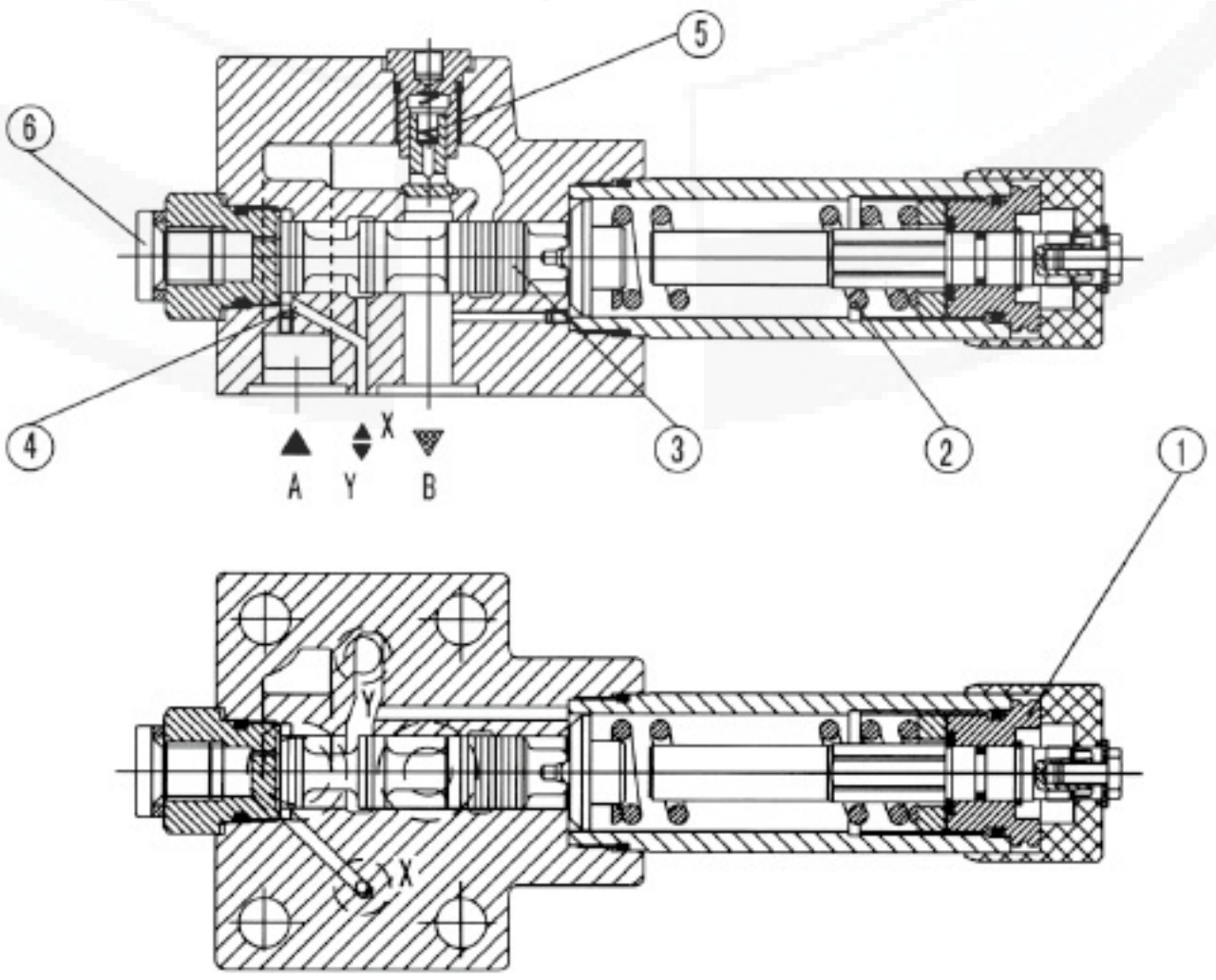
Features:

- For subplate mounting
- 4 pressure ratings
- 4 adjustment elements:
  - · Rotary knob
  - · Sleeve with hexagon and protective cap
  - · Lockable rotary knob with scale
  - · Rotary knob with scale
- With pressure gauge connection
- Check valve, optional
- mounting pattern to DIN 24 340, form D,ISO 5781 and CETOP-RP 121H



Function, section

The valve type DZ 10 DP is a direct operated pressure sequence valve.
It is used for pressure dependent sequencing of a second system.
The sequence pressure is set via the adjusting element (1).
The compression spring (2) holds the control spool (3) in the start position, the valve is closed. The pressure in port A is present at the piston area of the control spool (3) opposite to the compression spring (2) via the control line (4). When the pressure reaches the value set on compression spring (2), the control spool (3) is moved and opens the connection A to B. The system which is connected to port B is sequenced without the pressure in channel A falling.
The control signal is obtained via the control line (4) from port A or externally via connection X.
Depending on the valve application the leakage drain oil can be passed externally via connection Y or internally via B.

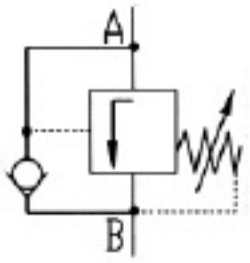


Type DZ10DP1-40B/...XY..

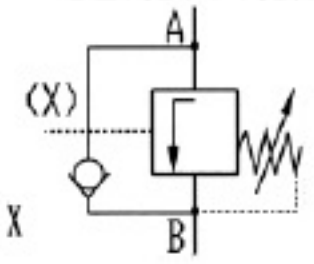
Symbols

with non-return valve

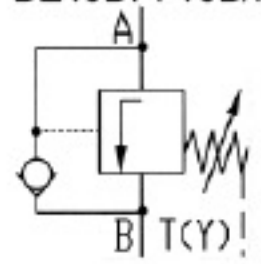
DZ10DP.-10B/...



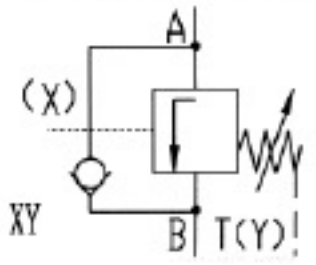
DZ10DP.-10B/...X..



DZ10DP.-10B/...Y..

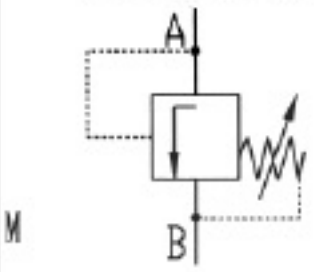


DZ10DP..-10B/...XY..

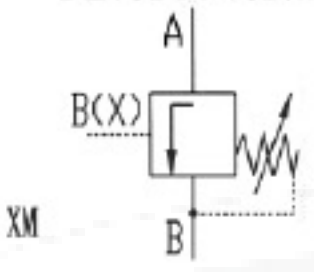


without non-return valve

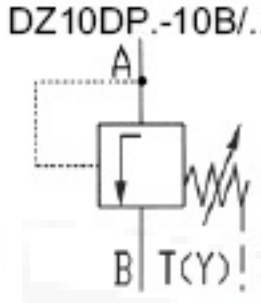
DZ10DP.-10B/...M...



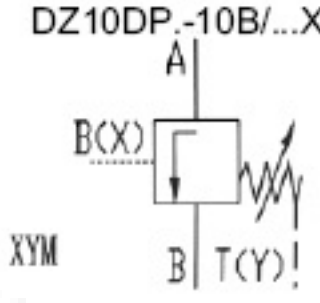
DZ10DP.-10B/...XM...



DZ10DP.-10B/...YM...



DZ10DP.-10B/...XYM...



Ordering code

DZ	10	D	P		-	50	B	/					*

Size 10 =10

Direct operated = D

Subplate ports = P

Adjusting element

Rotary knob	= 1
Head screw with hexagon and protective cap	= 2
Lockable rotary knob with scale	= 3
Rotary knob with scale	= 7

Series 40 to 49 = 40
(40 to 49, installation and connection dimensions remain unchanged)

Technology of Beijing Huade Hydraulic =B

Further details in clear text

No code. =	mineral oils
V =	phosphate ester

No code =	with non-return valve
M =	without non-return valve

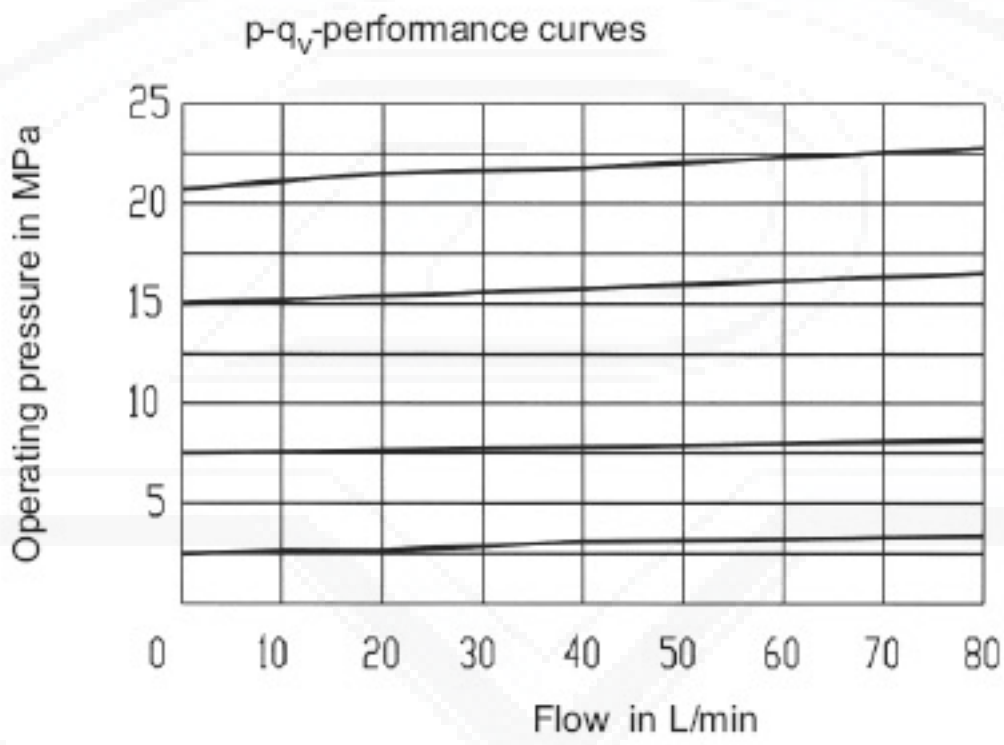
No code	=	pilot oil supply internal, drain internal
X	=	pilot oil supply external, drain internal
Y	=	pilot oil supply internal, drain external
XY	=	pilot oil supply external, drain external

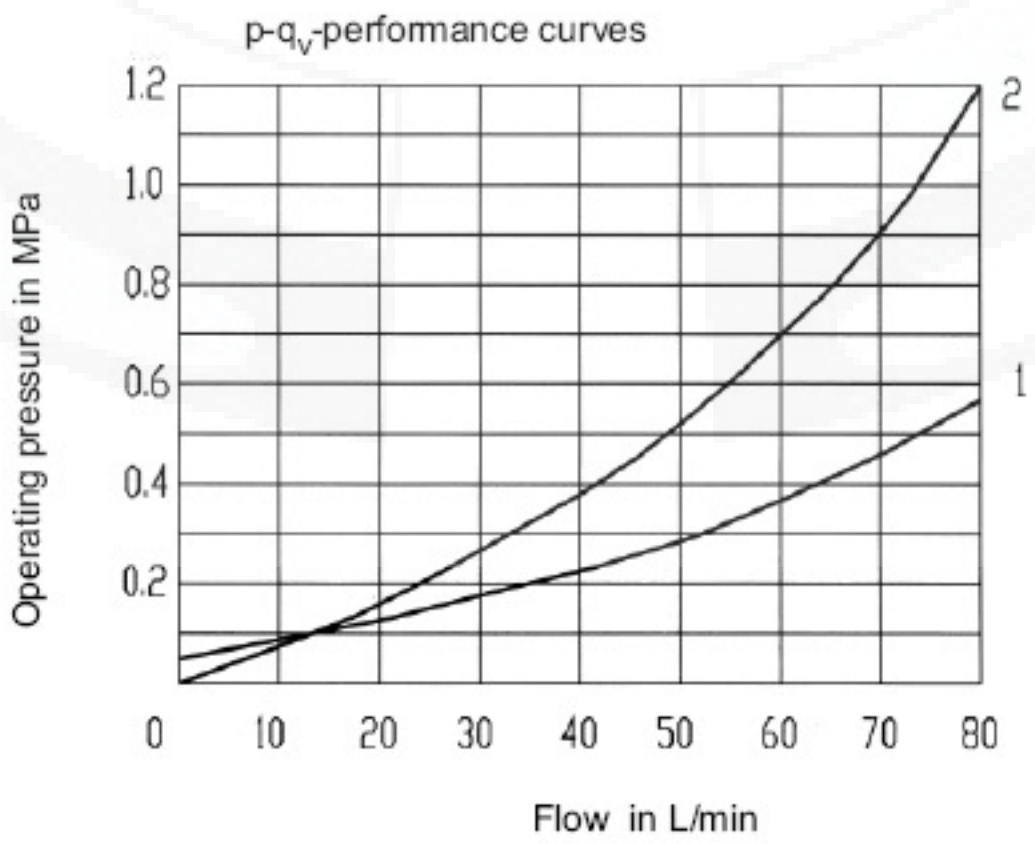
25=	Max. sequence pressure 2.5 Mpa
75=	Max. sequence pressure 7.5 Mpa
150=	Max. sequence pressure 15.0 Mpa
210=	Max. sequence pressure 21.0 Mpa
315=	Max. sequence pressure 31.5 Mpa

Technical Data

Inlet pressure,port P，A（X）	（MPa）	up to 31.5
Outlet pressure,port B	（MPa）	up to 21.0
Back pressure, port T（Y）	（MPa）	up to 16.0
Max.permissible flow	（L/min）	up to 60
Fluid		Mineral oil (for NBR seal),or phosphate ester (for FPM seal)
Viscosity range	（mm^2/s）	10~800
Fluid temperature rang	（℃）	-30 to +80
Fluid cleanliness	（μm）	Fluid cleanliness Maximum permissible degree of contamination of the fluid to NAS 1638 Class 9.
Max. flow	(L/min)	up to 80

Operating curves (measured at v=41mm^2/s and t=50℃)

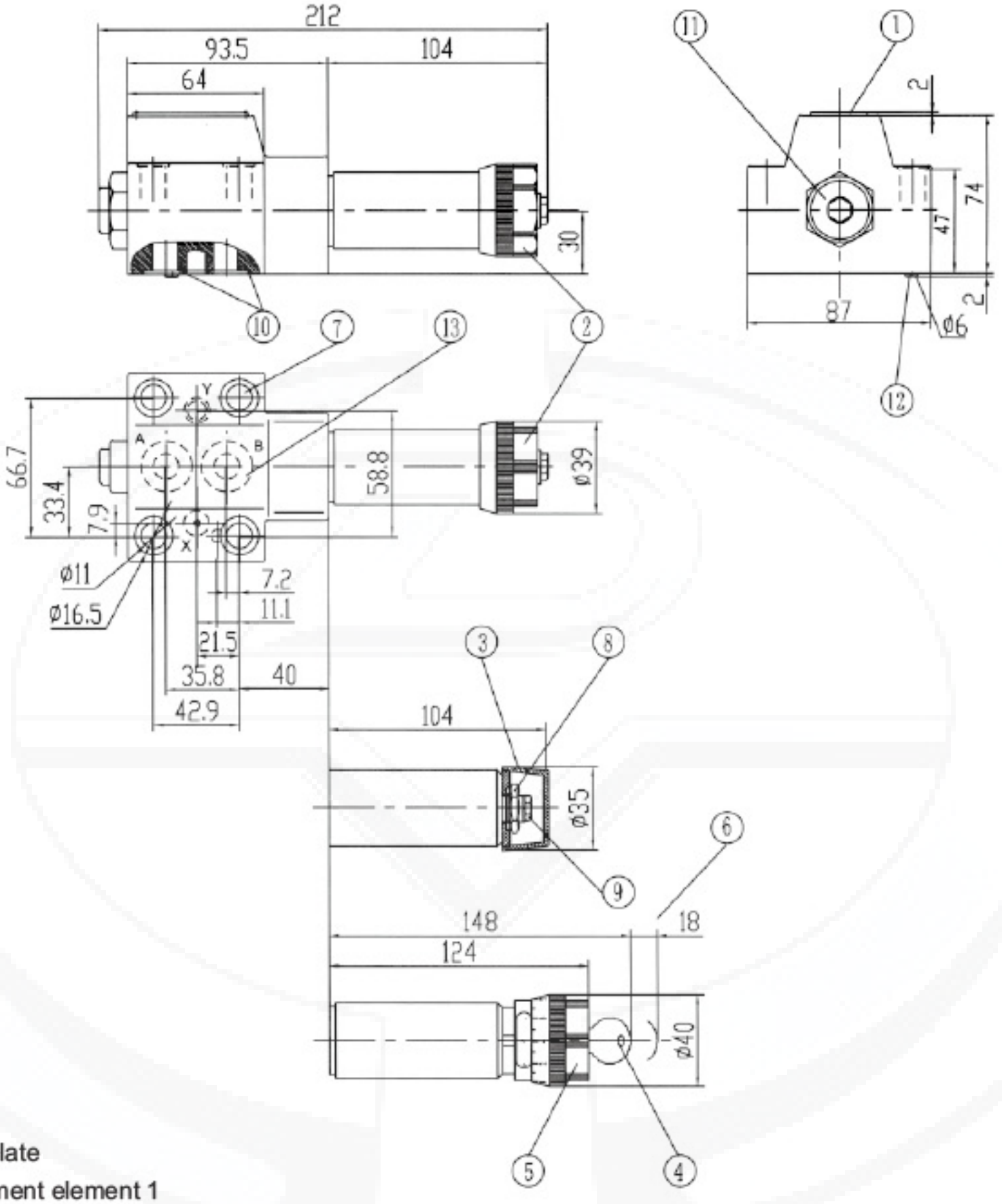




1 △ p-q_v-performance curve via check valve B to A

2 △ p-q_v-performance curve A to B

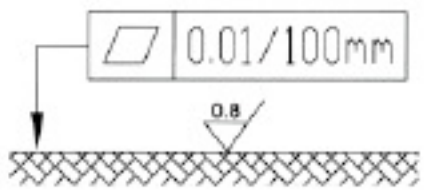
Unit dimensions: **(Dimensions in mm)**



1. Nameplate
2. Adjustment element 1
3. Adjustment element 2
4. Adjustment element 3
5. Adjustment element 7
6. Space required to remove key
7. Valve fixing screw holes
8. Lock nut 24 A/F
9. Hexagon 10 A/F
10. O-ring 17.12 x 2.62 for ports A and B
    O-ring 9.25 x 1.78 for ports X and Y
11. Pressure gauge port G 1/4˝;
    deep12; allen key A/F 6
12. Locating pin

Subplates:see page150
G460/01(G3/8")
G460/02(M18X1.5)
G461/01(G1/2")
G461/02(M22X1.5)

Valve fixing screws
M10 x 60-10.9
(GB/T70.1-2000);
Tightening torque M_A = 75 Nm



Required surface finish
of mating piece

Type DZ...30B/210Y..

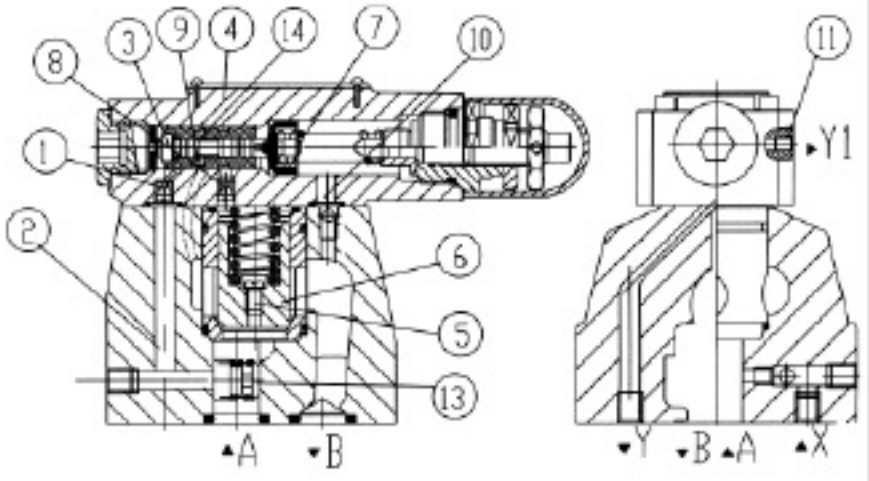
The function of this valve is principally the same as for valve type DZ...30B/....However, for type DZ...30B/...Y.. leakage at pilot piston (3) must be drained to tank.

Type DZ...30B/....XY...

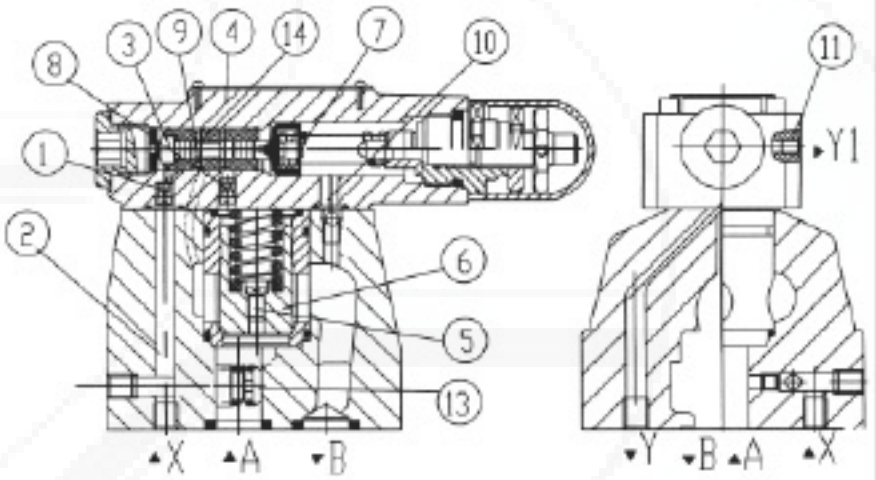
Pressure in port X acts on the pilot piston (3) in the pilot valve (2) via control line (4). At the same time pressure in port A acts on the spring loaded side of the main spool (6) via orifice (5). When the pressure in port X exceeds the value set at the spring (7), the pilot piston (3) is moved against the spring (7). When pilot piston (3) is moved against spring (7), fluid can pass from the spring loaded side of the main spool (6) into the spring chamber of the pilot valve (2) viaorfice (9) and line (16) and pressure breaks down on the spring loaded side of the main spool (6).

The fluid can, therefore, pass from port A to B with minimum loss of pressure. The pilot oil in spring chamber (17) should be drained to tank via line(14) or port Y.

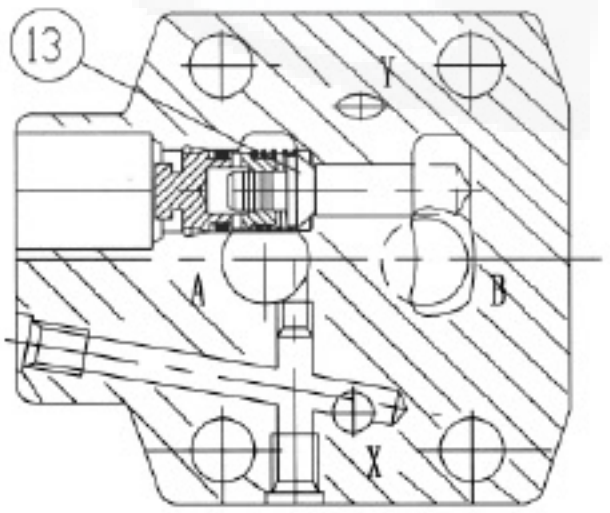
Optional check valve (11) can be fitted for free return flow from port B to A.



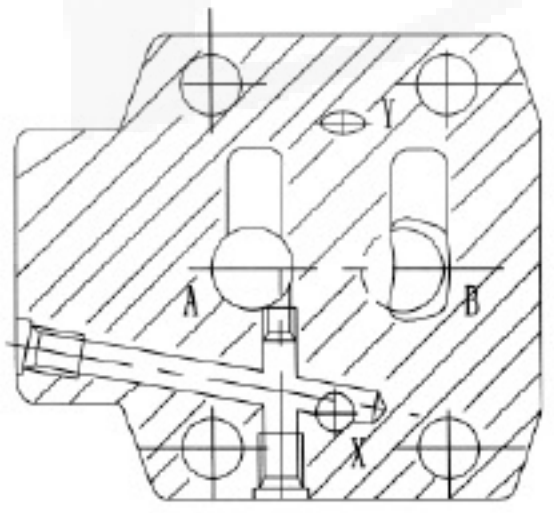
Type DZ...30B/210Y



Type DZ...30B/210X Y

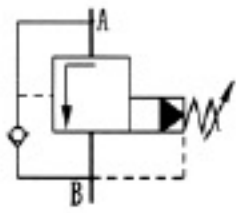
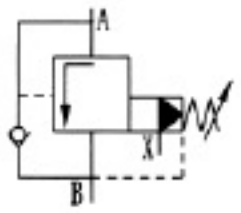
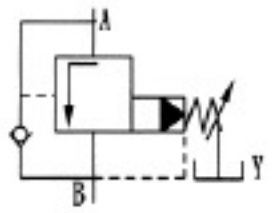
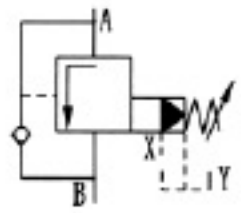
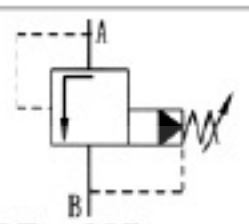
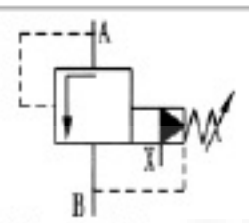
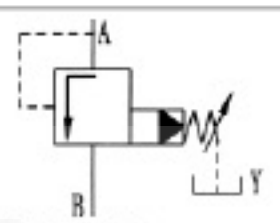
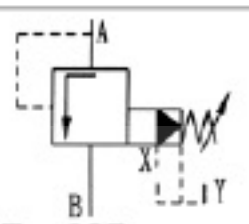


With non-return valve
(Type DZ...30B/210)



Without non-return valve
(Type DZ...30B/210 M)

Symbols of control oil

...-...	...X...	...Y...	...XY...
			
DZ····-30B/210···	DZ····-30B/210X···	DZ····-30B/210Y···	DZ····-30B/210XY···
			
DZ····-30B/210M···	DZ····-30B/210XM···	DZ····-30B/210YM···	DZ····-30B/210XYM···

Ordering details

DZ | | | - | - | 30 | B | /210 | | / | / | | |

Pilot operated valve =No code
Pilot operated valve without main spool insert
(do not state nominal size) = C
Pilot operated valve with main spool insert
(state valve size 30) = C

Nominal size 10 = 10
Nominal size 25 = 20
Nominal size 32 = 30

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

Series 30 to 39 =30
(30 to 39: unchanged installation and connection dimensions)

Technology of Beijing Huade Hydraulic =B

Further deatils in clear text

No code. = mineral oils
V = phosphate ester

No code= pilot port，G1/4"
2= pilot port，M14X1.5

No code = With check valve
M = Without check valvePilot oil supply

No code = Poilt flutd feed internal ,return internal
X= Poilt fluid feed external,return internal
Y= Poilt fluid feed internal,return external
XY= Poilt fluid feed external,return external

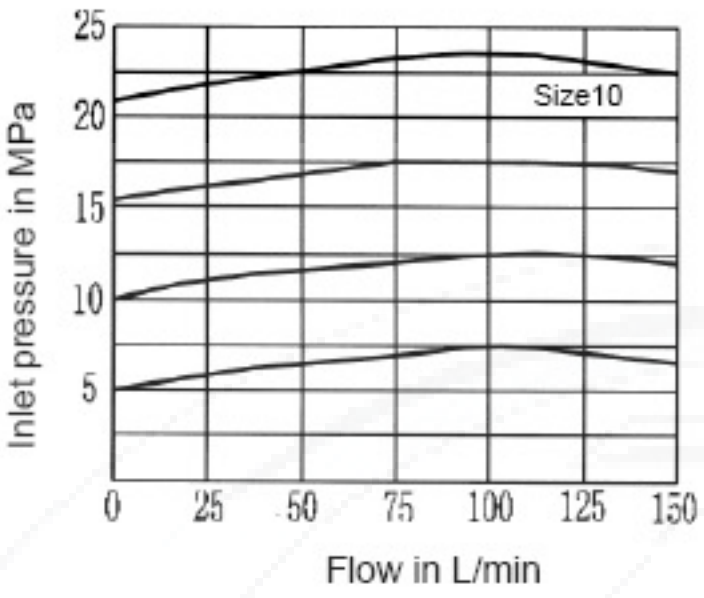
210 = Max. settable pressure up to 21MPa

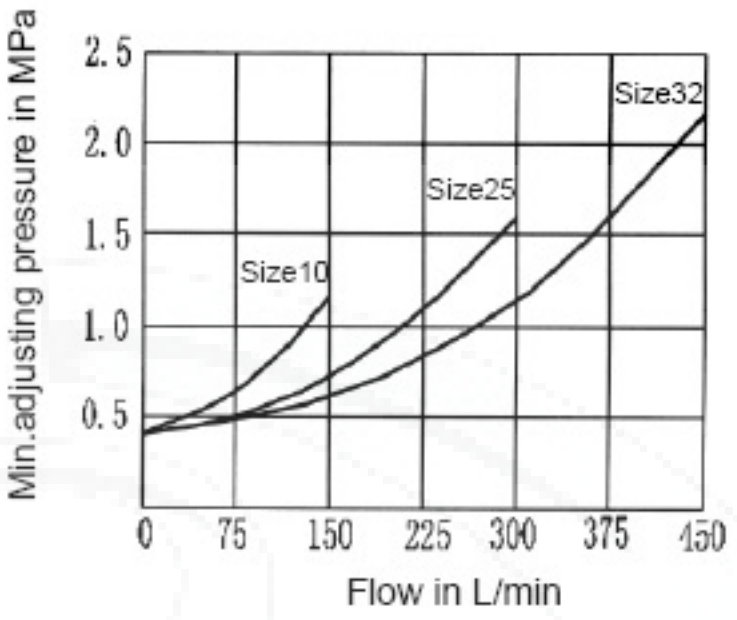
Technical data

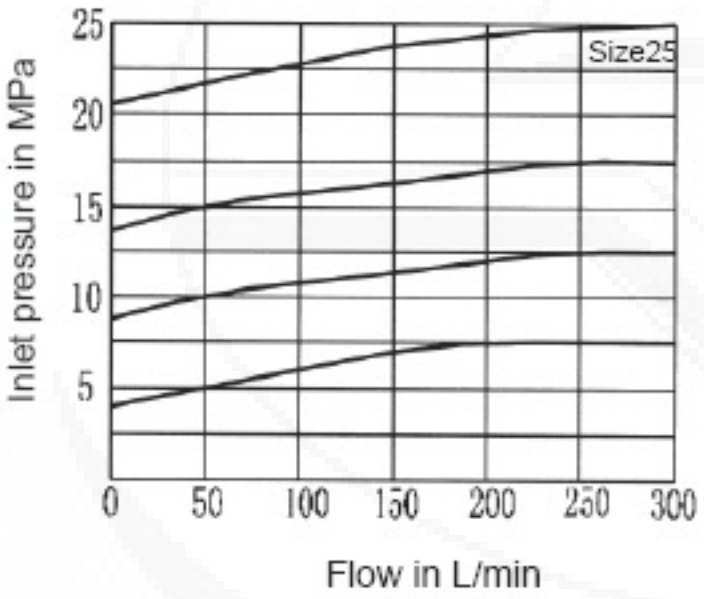
Size		10	20	30
Flow	(L/min)	150	300	450
Operating pressure	(MPa)	up to 31.5, for A、B、X		
Backpressure, port Y	(MPa)	up to 31.5		
Adjust pressure	(MPa)	0.3（in related to Q）～21		
Fluid		Mineral oil (for NBR seal),or phosphate ester (for FPM seal)		
Viscosity range	(mm^2/s)	10～800		
Fluid temperature range	(℃)	-30～+80		

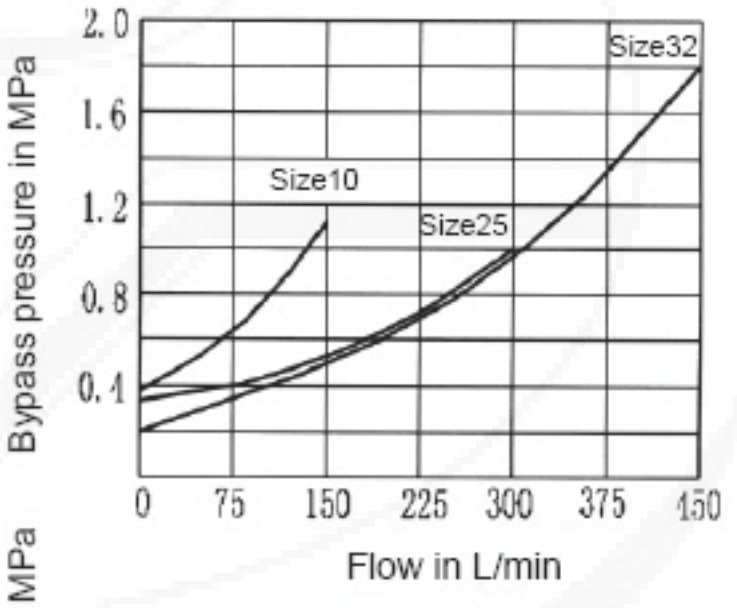
Characteristic curves (measured at v = 41 mm² /s and t = 50)

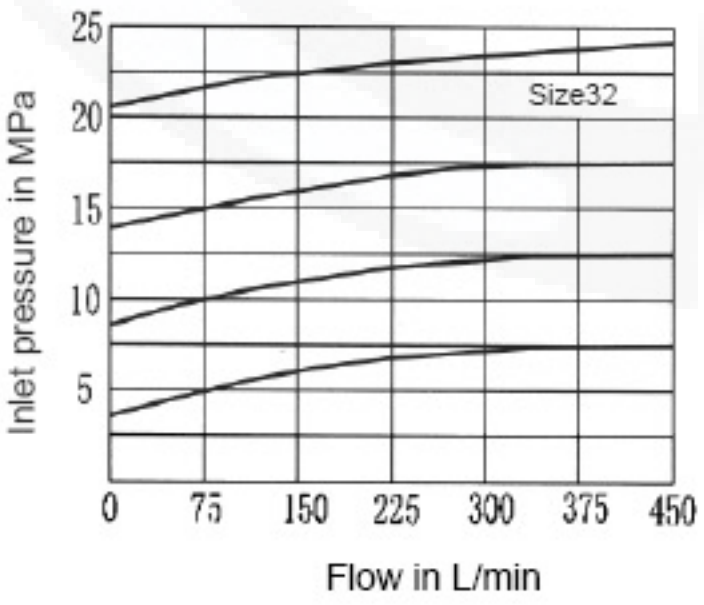
The characteristic curves are valid for outlet pressure Pb = 0 for the complete flow range

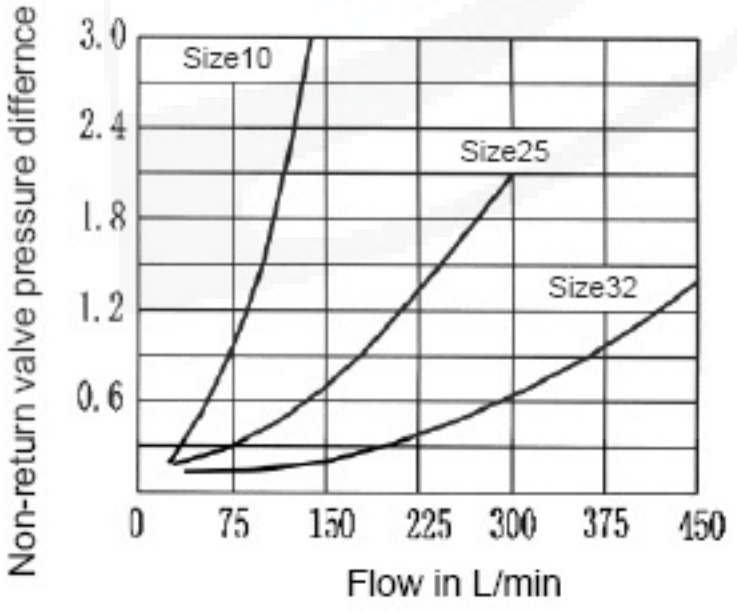




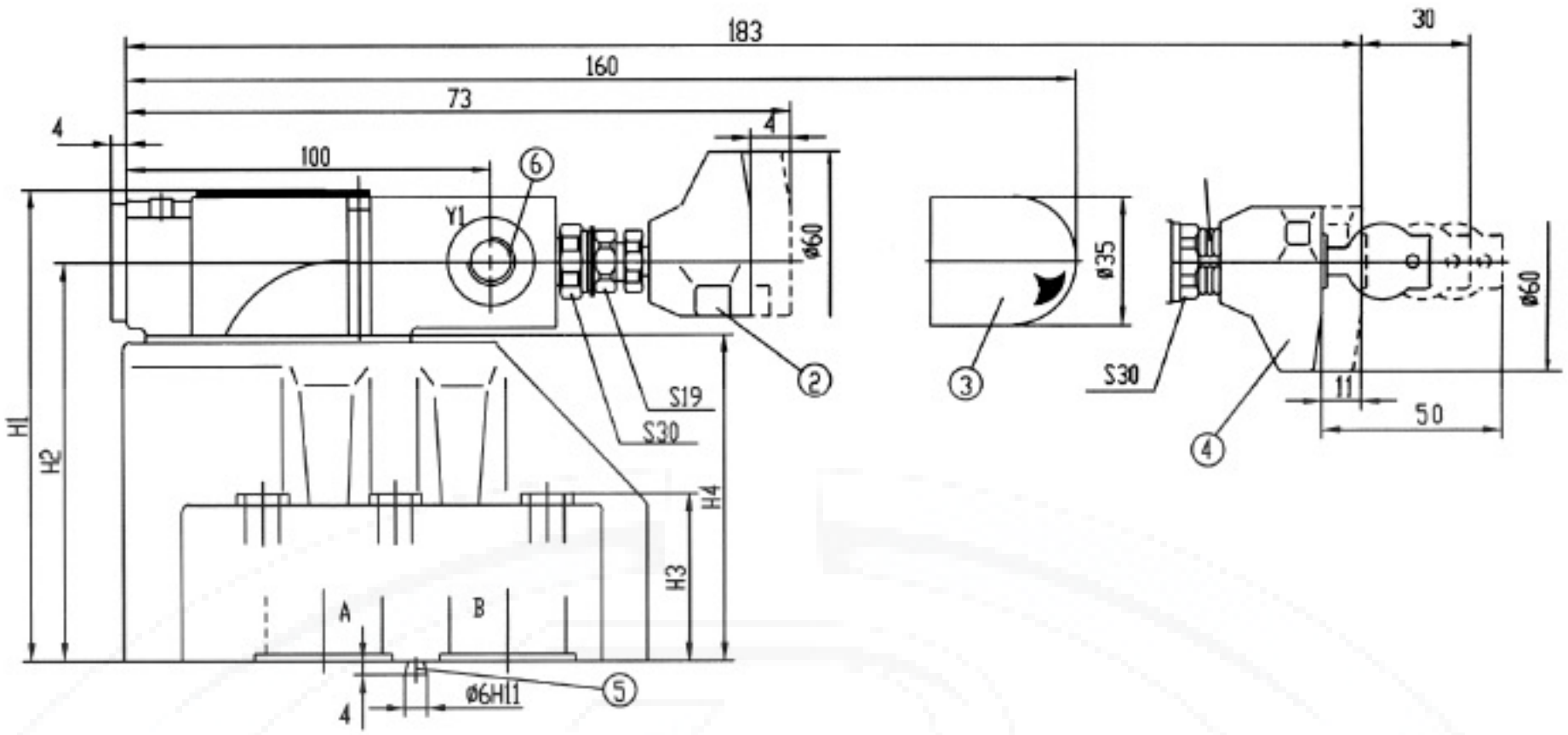


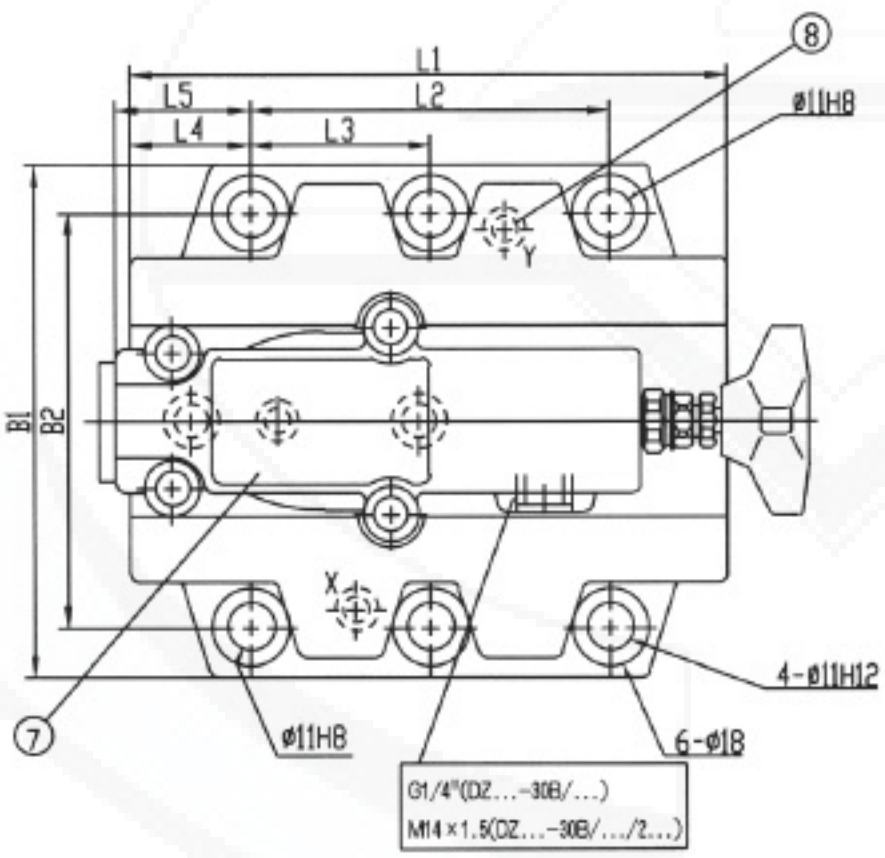






Unit dimensions: pilot operated valve (Dimensions in mm)





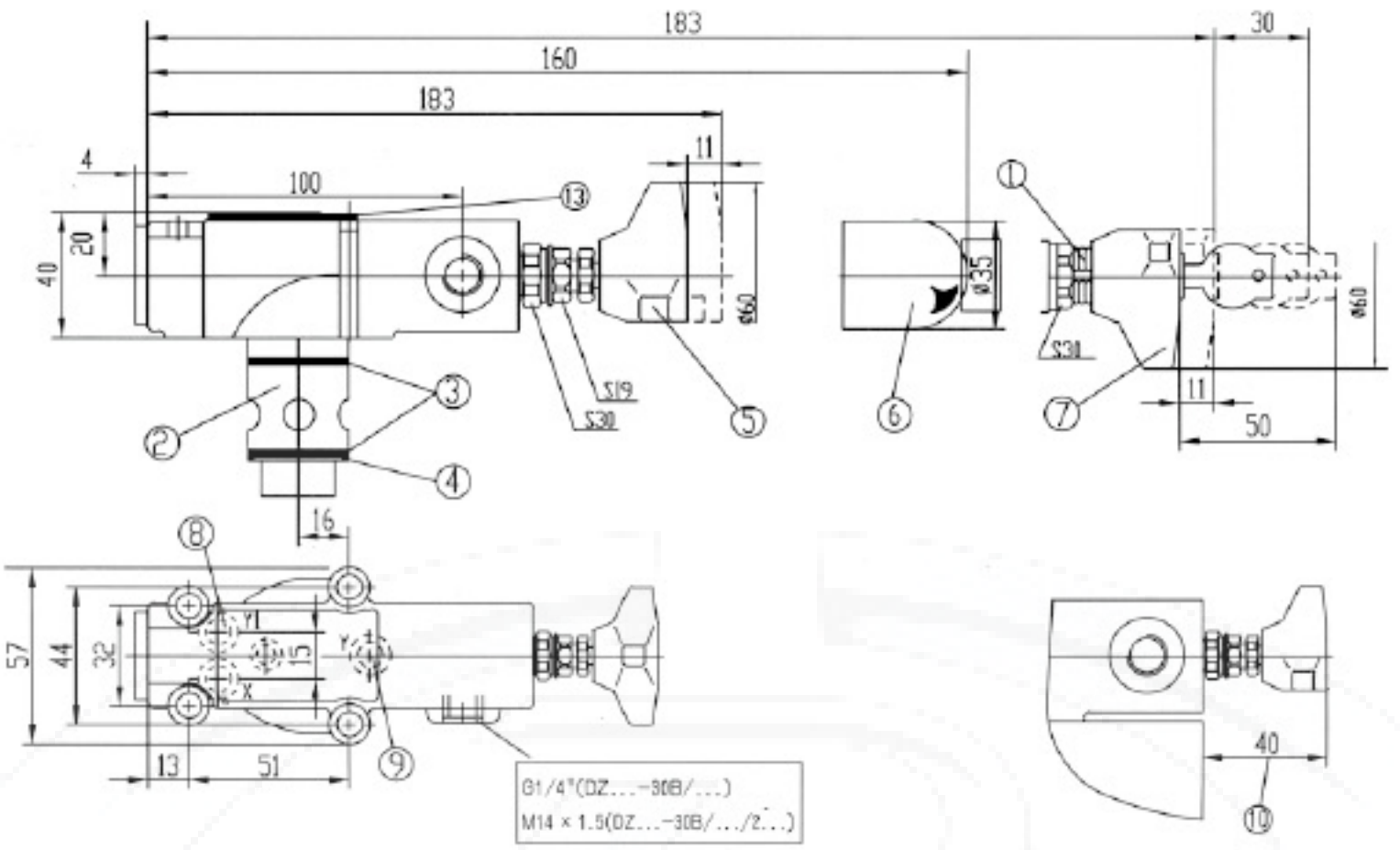
1. Repeat adjusting scale
2. Adjustment element 1
3. Adjustment element 2
4. Adjustment element 3
5. Locating pin
6. Port Y1 (G 1/4; 12) for external pilot oil drain when used as a bypass valve, unloading of spring chamber when used as sequence valve
7. Nameplate
8. Port Y for external point oil drain when used as a unloading valve

Subplates:see page150
G412/01 G412/02
G413/01 G413/02
G414/01 G414/02
G415/01 G415/02
G460/01 G460/02
G461/01 G461/02

Size	B1	B2	H1	H2	H3	H4	L1	L2	L3	L4	L5	O-ring		Fixing screws	Weight
												Port X,Y	Port A,B	(GB/T70.1-2000)	(Kg)
10	85	66.7	112	92	28	72	90	42.9	-	35.5	34.5	9.25 × 1.78	17.12 × 2.62	4-M10 × 50	3.6
20	102	79.4	122	102	38	82	112	60.3	-	33.5	36.5		28.17 × 3.53	4-M10 × 60	5.5
30	120	96.8	130	110	46	90	140	84.2	42.1	28	31.3		34.52 × 3.53	6-M10 × 70	8.2

Unit dimensions: pilot operated valve

(Dimensions in mm)



1. Repeat adjusting scale
2. Main spool insert
3. O-ring 27.3 x 2.4
4. Back-up ring 32/28.4X0.8
5. Adjustment element 1
6. Adjustment element 2
7. Adjustment element 3
8. Port Y1
   pilot oil drain when used as reduce or sequence valve
9. Port Y
   pilot oil drain when used as bypass valve; unloading of spring chamber when used as sequence valve
10. Min.distance when use the adjustment element"1"or"3"
11. This drilling is not required when used as unloading valve
13. Hole D3 can meet hole D2 at any location.
    Care has to be taken that connection hole X and the fixing hole are not damaged.
14. Nameplate

Size	ϕ D1	ϕ D2	ϕ D3	Fixing screws (GB/T70.1-2000)	Weight (Kg)
10	10	40	10	4-M8 × 40-10.9	1.4
20	25	40	25		
30	32	45	32		

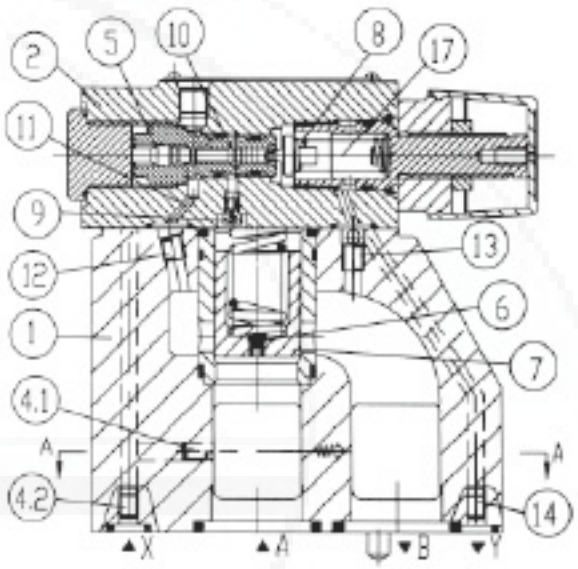
BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	Pressure sequence valve pilot operated, type DZ ...50B/(New series)			RE26350/12.2004
	Size 10, 20, 30	up to 31.5 MPa	up to 600 L/min	

Features:

- For subplate mounting
- 4 adjustment elements:
  - · Rotary knob
  - · Sleeve with hexagon and protective cap
  - · Lockable rotary knob with scale
  - · Rotary knob with scale
- 4 pressure ratings
- Check valve, optional
- Mounting pattern to DIN 24 340, form D,ISO 5781 and CETOP-RP 121H

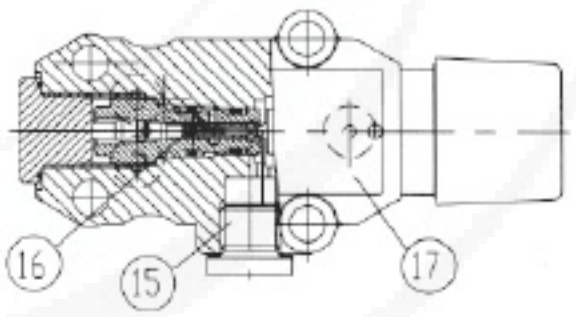
Functional, section

Pressure valves type DZ are pilot operated pressure sequence valves. They are used for pressure dependent sequence switching of a second circuit.
The pressure sequence valves basically consist of main valve (1) with main spool insert (7) and pilot valve (2) with pressure adjustment element and check valve (3), optional.
The valve function varies according to pilot oil drain configuration:

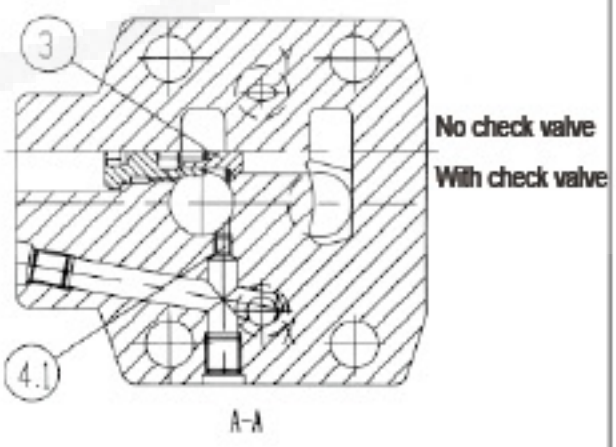


Type DZ...50B/210...

Sequence valve type DZ...50B/... .
(Control lines 4.1, 12 and 13 open; control lines 4.2, 14 and 15 plugged)
The pressure in line A acts on the pilot spool (5) in the pilot valve (2) via the control line (4.1). At the same time it acts on the spring loaded side of the main spool (7) via orifice (6). When the pressure exceeds the value set at spring (8), the pilot piston (5) is moved against the spring (8). The signal is obtained internally from port A via control line (4.1).
The fluid on the spring loaded side of the main piston (7) now flows to port B via orifice (9), control land (10) and control lines (11) and (12). There is now a pressure drop at main spool (7), the connection from port A to port B is open maintaining the pressure set at spring (8). The leakage oil at pilot piston (5) is led to port B internally via control line (13). An optional check valve (3) can be fitted for free return flow from port B to A.



Sequence valve type DZ...50B/...X...
(Control lines 4.2, 12 and 13 open;
control lines 4.1, 14 and 15 plugged)
The function of this valve is principally the same as for valve DZ..-.-50B/....
However, on pressure sequence valve type DZ...50B/...X... the signal is given externally by means of control line (4.2).
Sequence valve type DZ...50B/...Y...
(Control lines 4.1, 12 and 14 or 15 open;control lines 4.2, and 13 plugged)
The function of this valve is principally the same as for valve type DZ...50B/....
However, for type DZ...50B/...Y... leakage at pilot piston (5) must be drained to tank without pressure via line (14) or (15). Pilot oil is fed to port B via line (12).



Sequence valve type DZ...50B/...XY...
(Control lines 4.2, 14 or 15 open;control lines 4.1, 12 and 13 plugged)
Pressure in port X acts on the pilot piston (5) in the pilot valve (2) via control line (4. 2). At the same time pressure in port A acts on the spring loaded side of the main spool (7) via orifice (6). When the pressure in port X exceeds the value set at the spring (8), the pilot piston (5) is moved against the spring (8). When pilot piston (5) is moved against spring (8), fluid can pass from the spring loaded side of the main spool (7) into the spring chamber (17) of the pilot valve (2) via orifice (9) and line (16) and pressure breaks down on the spring loaded side of the main spool (7).
The fluid can, therefore, pass from port A to B with minimum loss of pressure. The pilot oil in spring chamber (17) should be drained to tank without pressure via line (14) or (15). An optional check valve (3) can be fitted for free return flow from port B to A.

Ordering details

DZ | | | - | - | 50 | B | | | | | | | *

Pilot operated valve = No code
Pilot operated valve without main spool insert
(do not state nominal size) = C
Pilot operated valve with main spool insert
(state valve size 30) = C

Nominal size 10 = 10
Nominal size 25 = 20
Nominal size 32 = 30

Adjustment element
Rotary knob = 1
Sleeve with hexagon and protective cap = 2
Lockable rotary knob with scale = 3
Rotary knob with scale = 7

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

Technology of Beijing Huade Hydraulic =B

50 = Settable pressure up to 5.0 Mpa
100 = Settable pressure up to 10.0 Mpa
200 = Settable pressure up to 20.0 Mpa
315 = Settable pressure up to 31.5 Mpa

No code = Poilt flutd feed internal ,return internal
X= Poilt fluid feed external,return internal
Y= Poilt fluid feed internal,return external
XY= Poilt fluid feed external,return external

No code = With check valve
M = Without check valve

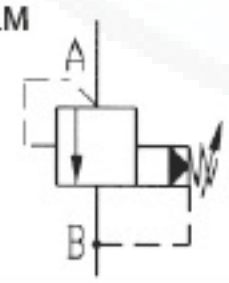
No code= pilot port，G1/4"
2 = pilot port，M14X1.5

No code. = mineral oils
V = phosphate ester

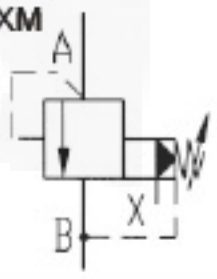
Further deatils in clear text

Smbosl:

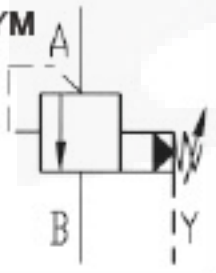
DZ...50B/...M
DZC...50B/...M



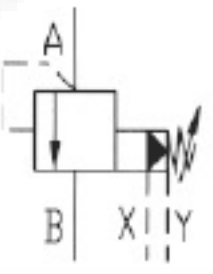
DZ...50B/...XM
DZC...50B/...XM



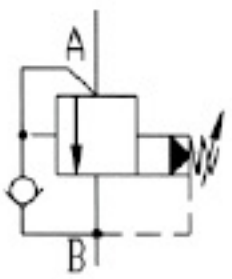
DZ...50B/...YM
DZC...50B/...YM



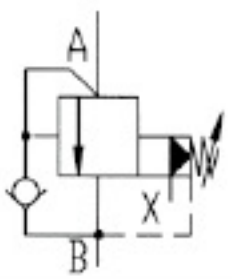
DZ...50B/...XYM
DZC...50B/...XYM



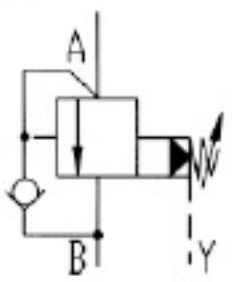
DZ...50B/...



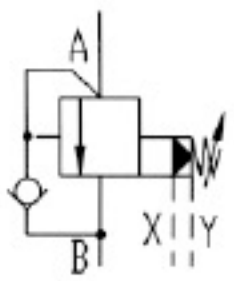
DZ...50B/...X



DZ...50B/...Y



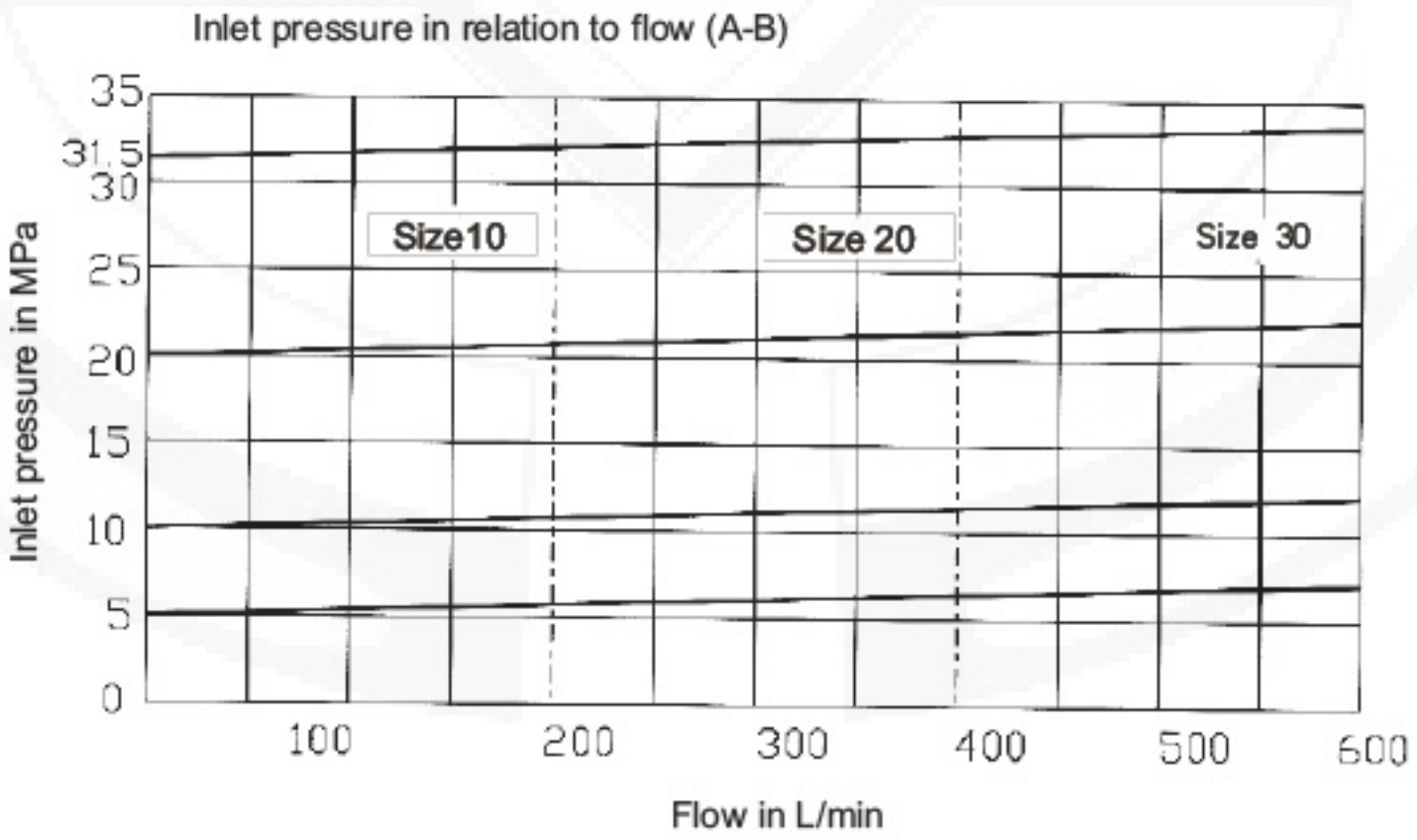
DZ...50B/...XY



Technical data

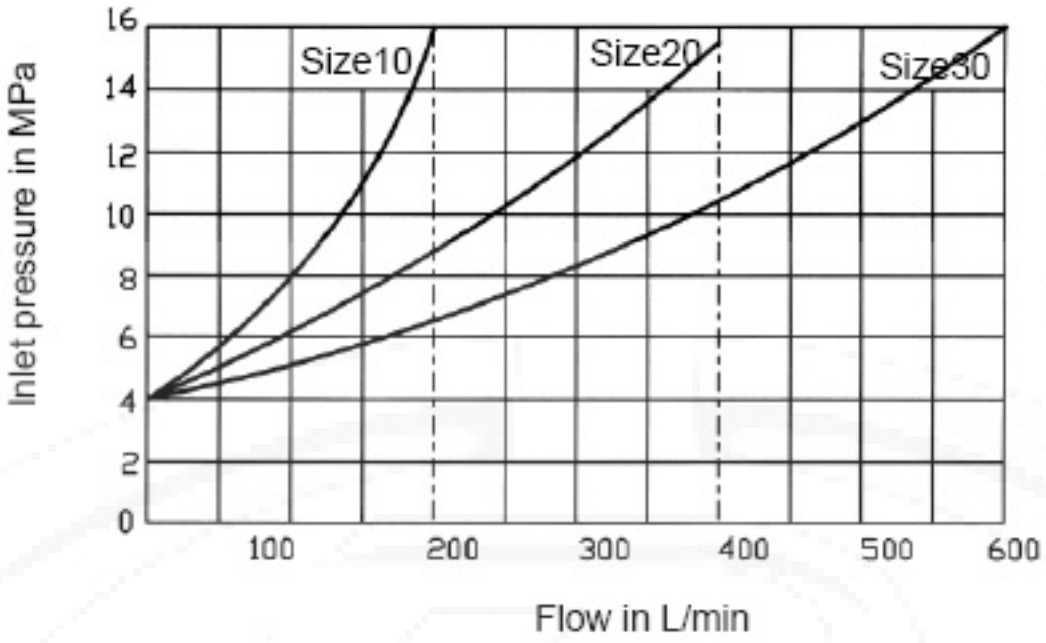
Operating pressure,port A,B,X		(MPa)	up to 31.5		
Backpressure, port Y		(MPa)	up to 31.5		
Fluid pressure	min.	(MPa)	Not related to flow,see characteristic curves		
	max.	(MPa)	to 5,to 10,to 20,to 31.5		
Max. flow		(L/min)	Size10	Size20	Size30
			200	400	600
Fluid			Mineral oil (for NBR seal),or phosphate ester (for FPM seal)		
Viscosity range		(mm^2/s)	10~800		
Fluid temperature range		(°C)	-30～+80		
Degree of contamination		(μm)	Maximum permissible degree of contamination of the fluid to NAS 1638, class 9.		
Weight			Size10	Size20	Size30
	DZ	(Kg)	3.4	5.3	8
	DZC	(Kg)	1.2		
	DZC30	(Kg)	1.5		

Characteristic curves (measured at v = 41 mm^2/s and t = 50°C)



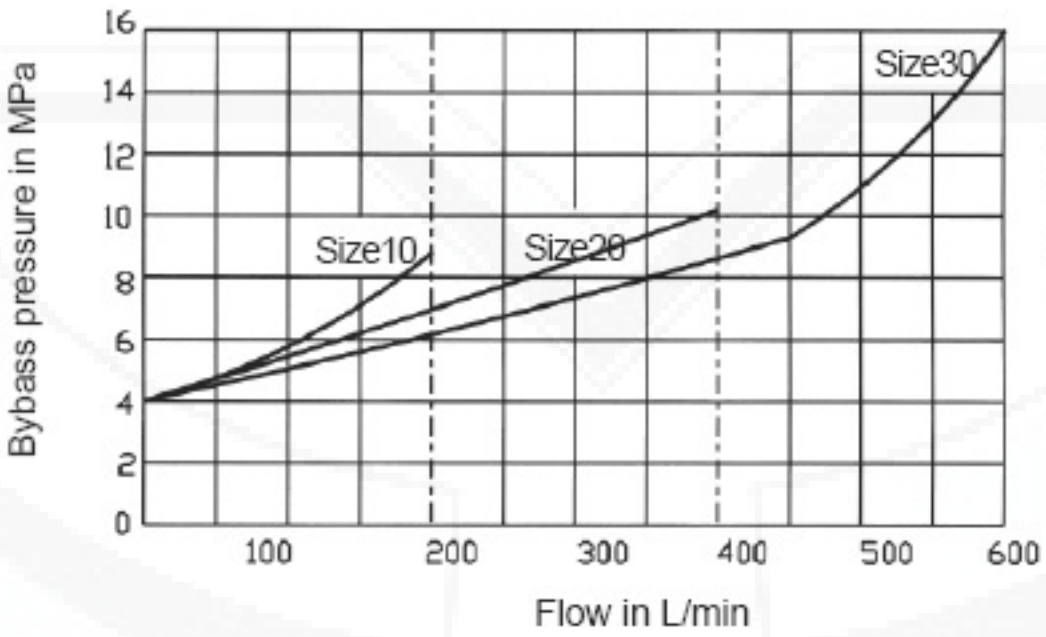
Characteristic curves (measured at v = 41 mm²/s and t = 50°C)

Minimum settable pressure in relation to flow (A-B)
(= bypass pressure model ...X...)



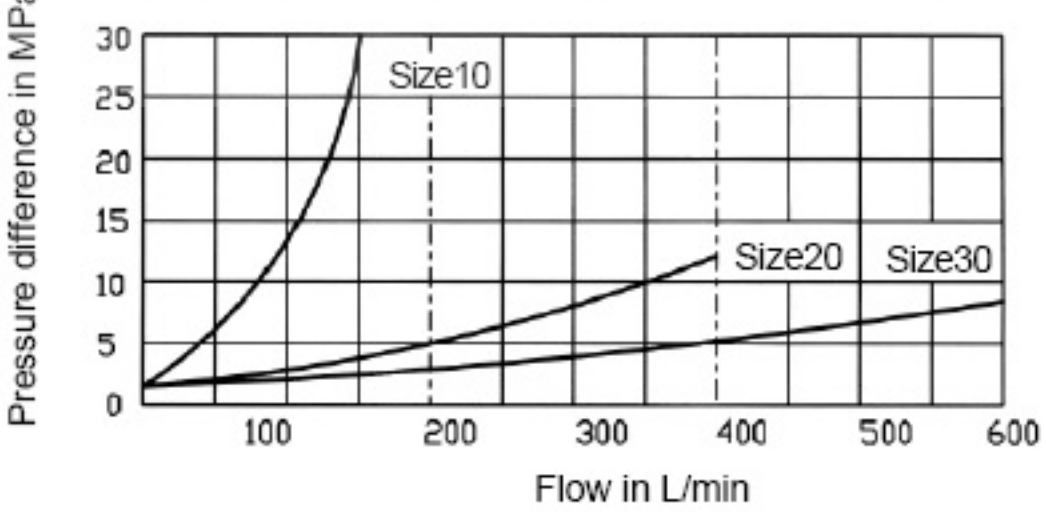
The characteristic curves are valid for outlet pressure P_B = 0 for the complete flow range

Bypass pressure in relation to flow (A → B) (model ...XY...only)

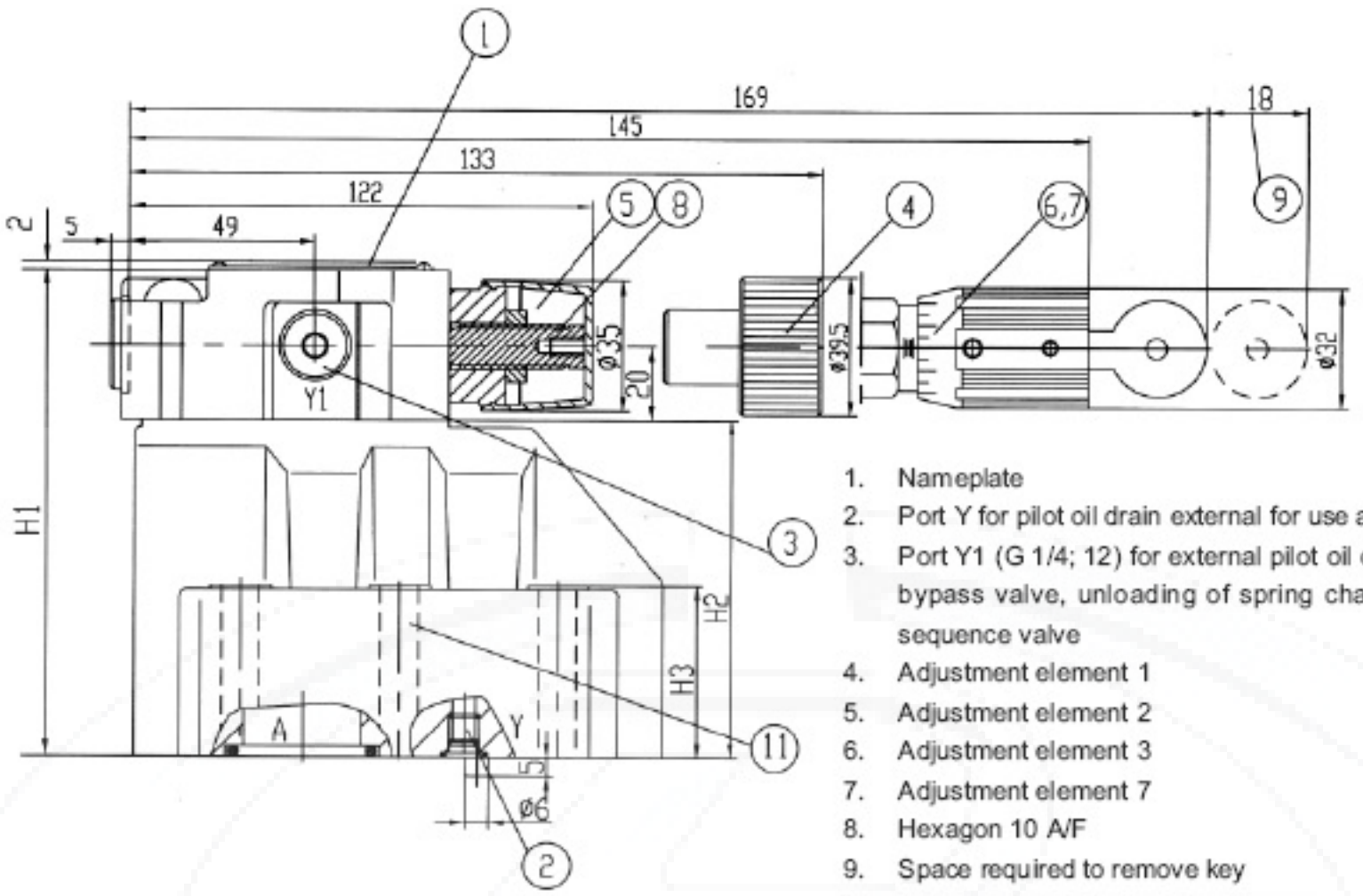


The characteristic curves are valid for outlet pressure P_B = 0 for the complete flow range

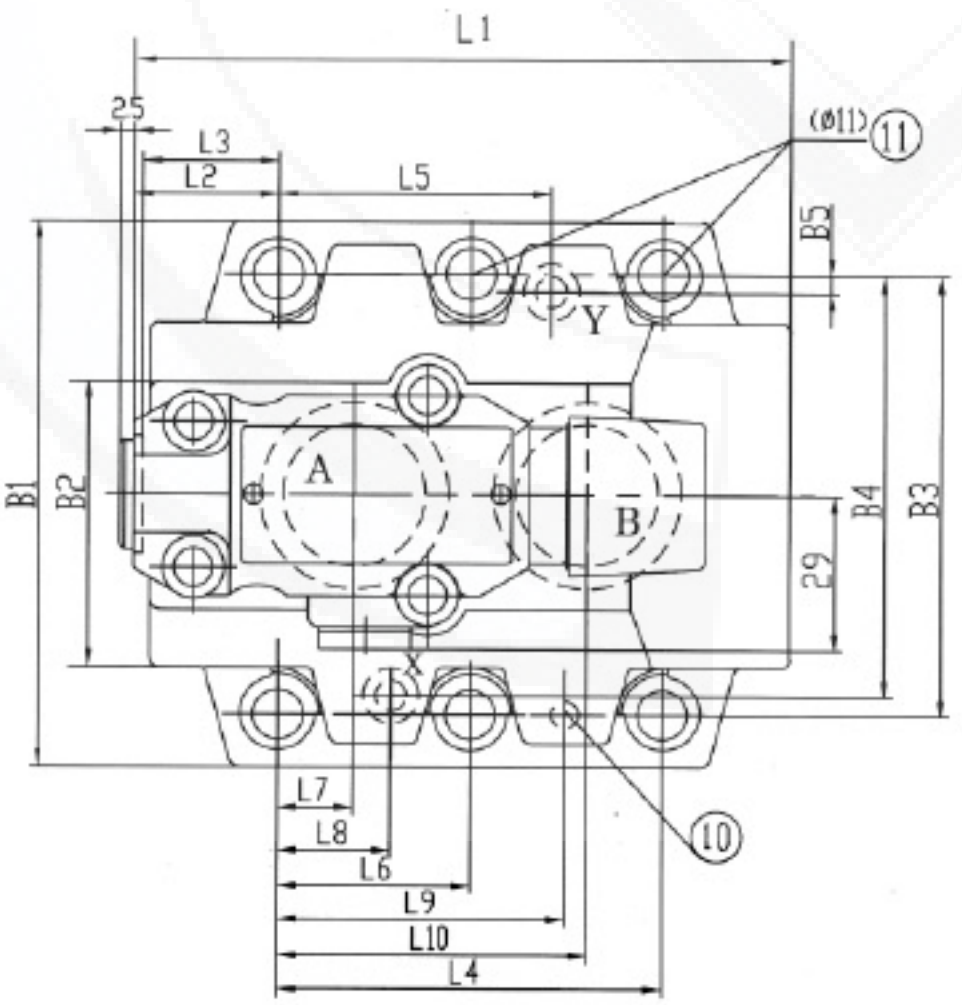
△ p-q_v Characteristic curves across the check valve (A → B)

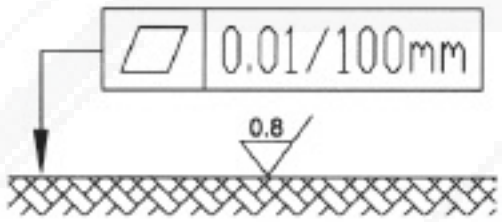


Unit dimensions: pilot operated valve (Dimensions in mm)



1. Nameplate
2. Port Y for pilot oil drain external for use as bypass valve
3. Port Y1 (G 1/4; 12) for external pilot oil drain when used as a bypass valve, unloading of spring chamber when used as sequence valve
4. Adjustment element 1
5. Adjustment element 2
6. Adjustment element 3
7. Adjustment element 7
8. Hexagon 10 A/F
9. Space required to remove key
10. Locating pin
11. 4 valve fixing holes for sizes 10 and 25
    6 valve fixing holes for size 32 valve fixing screws must be ordered separately.





Required surface finish of mating piece

Subplates：see page150

Size 10: G460/01(G3/8");G460/02(M18X1.5)
G461/01(G1/2");G461/02(M22X1.5)

Size 20: G412/01(G3/4");G412/02(M27X2)
G413/01(G1"); G413/02(M33X2)

Size 30: G414/01(G1 /4");G414/02(M42X2)
G415/01(G1 /2"); G415/02(M48X2)

Valve fixing screws

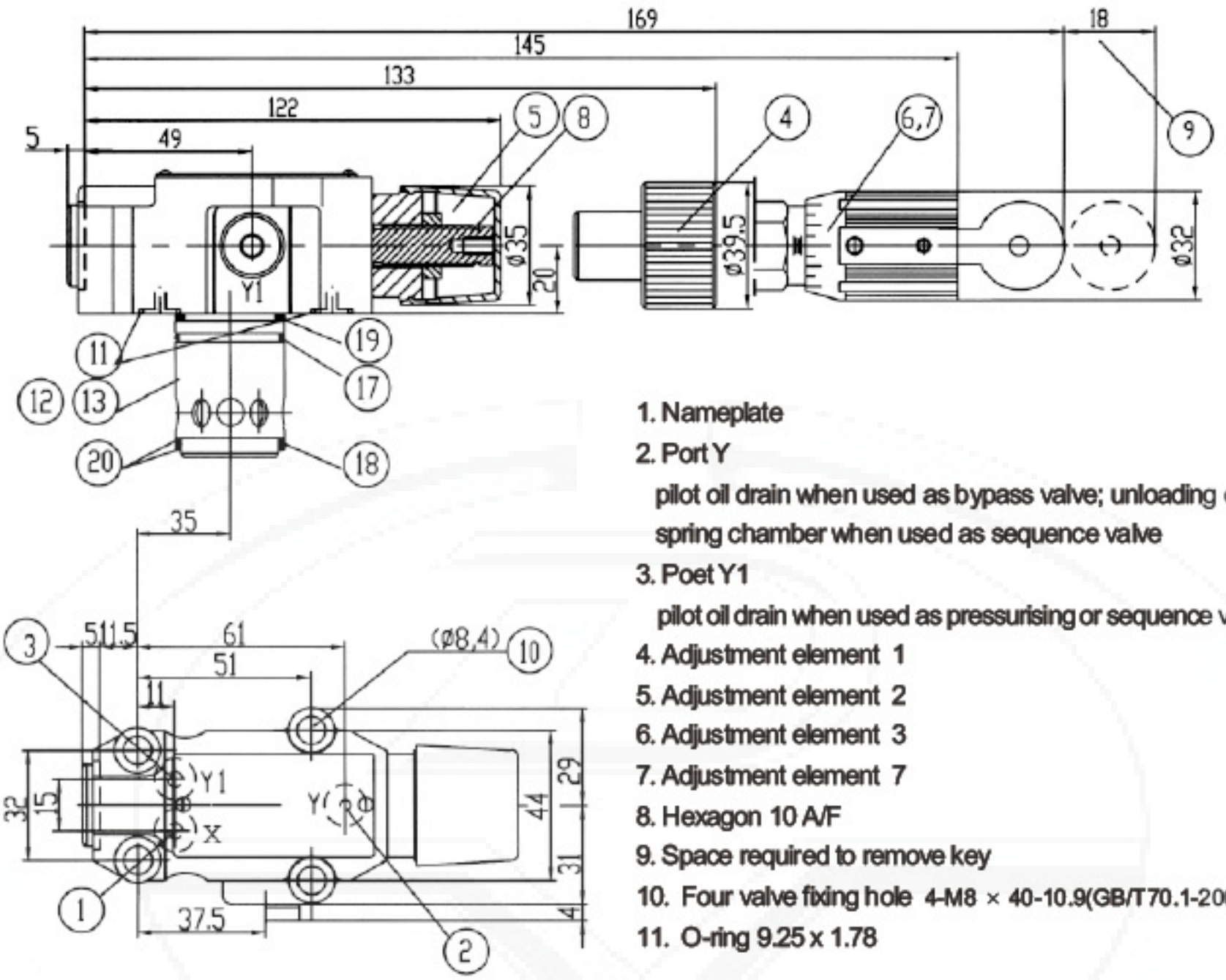
Size10: 4-M10x50-10.9
(GB/T70.1-2000); M_A=75 Nm

Size25: 4-M10x60-10.9
(GB/T70.1-2000); M_A=75 Nm

Size32: 6-M10x70-10.9
(GB/T70.1-2000); M_A=75 Nm

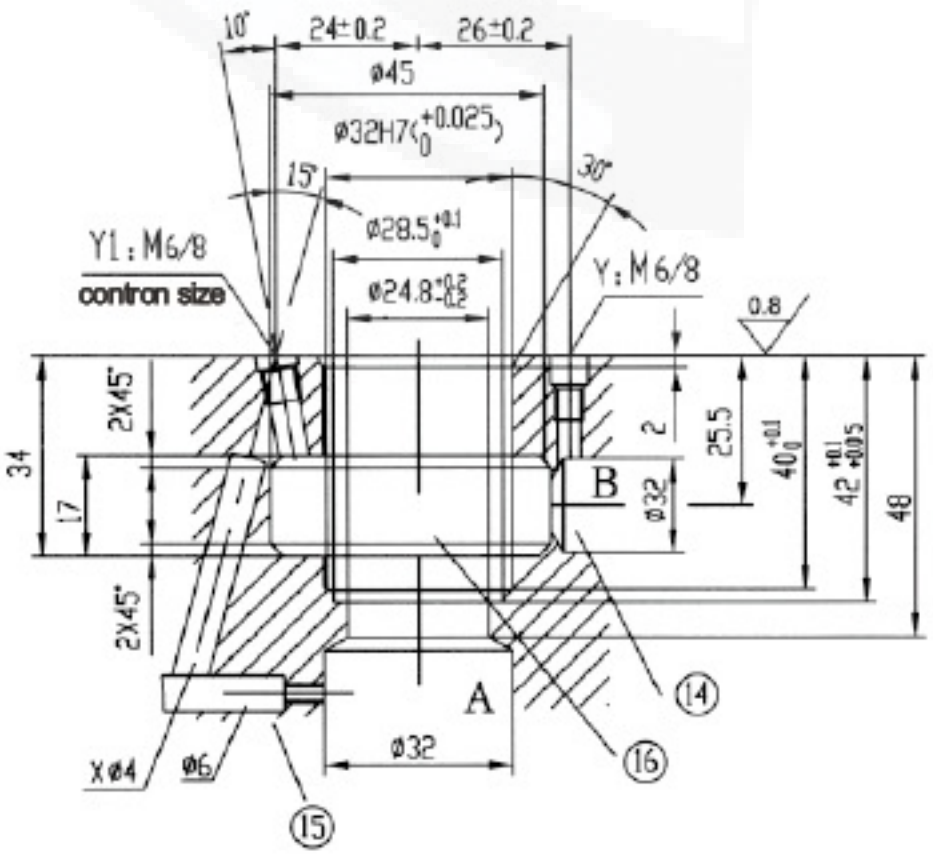
Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	B1	B2	B3	B4	B5	H1	H2	H3	O-rings(portA.B)	O-rings(port X.Y)
10	96	35.5	33	42.9	21.5	-	7.2	21.5	31.8	35.8	85	50	66.7	58.8	7.9	112	92	28	17.12 × 2.62	9.25 × 1.78
20	116	37.5	35.4	60.3	39.7	-	11.1	20.6	44.5	49.2	102	59.5	79.4	73	6.4	122	102	38	28.17 × 3.53	9.25 × 1.78
30	145	33	29.8	84.2	59.5	42.1	16.7	24.6	62.7	67.5	120	76	96.8	92.8	3.8	130	110	46	34.52 × 3.53	9.25 × 1.78

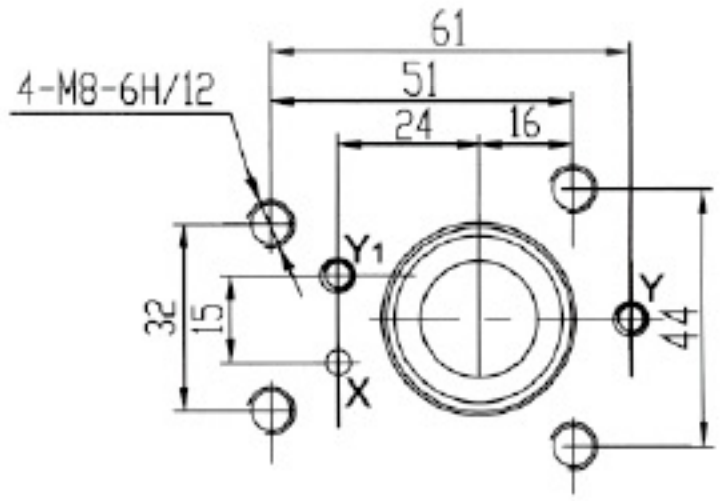
Unit dimensions: pilot operated valve (Dimensions in mm)



1. Nameplate
2. Port Y
   pilot oil drain when used as bypass valve; unloading of spring chamber when used as sequence valve
3. Poet Y1
   pilot oil drain when used as pressurising or sequence valve
4. Adjustment element 1
5. Adjustment element 2
6. Adjustment element 3
7. Adjustment element 7
8. Hexagon 10 A/F
9. Space required to remove key
10. Four valve fixing hole 4-M8 × 40-10.9(GB/T70.1-2000)
11. O-ring 9.25 x 1.78

12. Main spool insert
13 Cartridge assembly includes main spool insert with jet
14 Hole Φ32 can meet hole Φ45 at any location.
   Care has to be taken that connection hole X and the fixing hole are not damaged.
15 This drilling is not required when used as bypass valve
16 Back-up ring and O-ring to be inserted into this hole before fitting the main spool
17. O-ring 28.3 x 1.8
18. O-ring 27.3 x 2.4
19. O-ring 28 x 2.65
20. Rotainer ring 32 x 28.4 x0.8

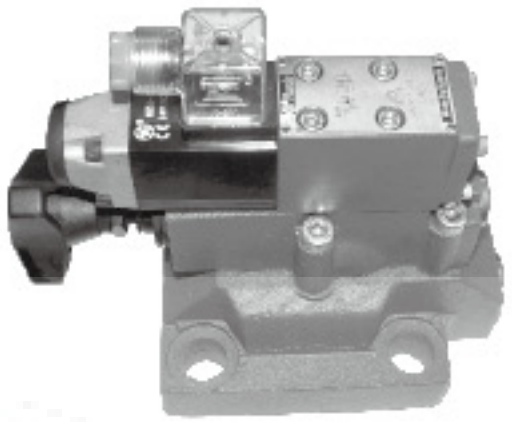




BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure shut-off valve, pilot operated, type DA/DAW...-30B/**			RE 26410/12.2004
	Size 10, 20, 30	up to 31.5 MPa	up to 250 L/min	Replaces: RE26410/05.2001

Features:

- For subplate mounting:
- 4 adjustment elements:
  - · Rotary knob
  - · Sleeve with internal hexagon and protective cap
  - · Lockable rotary knob with scale
  - · Rotary knob with scale
- 3 pressure ratings
- Solenoid actuated unloading via a built-in directional valve



Function, section:

Pressure control valves type DA/DAW are pilot operated pressure shut-off valves.

They are used to switch a pump flow over to unpressurised by-pass as soon as the accumulator loading pressure is reached. Further applications for the valve are in systems that have high and low pressure pumps. In this case the low pressure pump is switched to unpressurised by-pass as soon as the set high pressure is reached.

Pressure shut-off valves basically consist of the main valve with the main spool assembly , pilot valve with pressure adjustment element and check valve. In size 10 valves, the check valve is built into the main valve . In valve sizes 25 and 32 the check valve is built into a separate plate installed under the main valve.

Pressure shut-off valve type DA

Diverting pump flow from P to A or P to T.

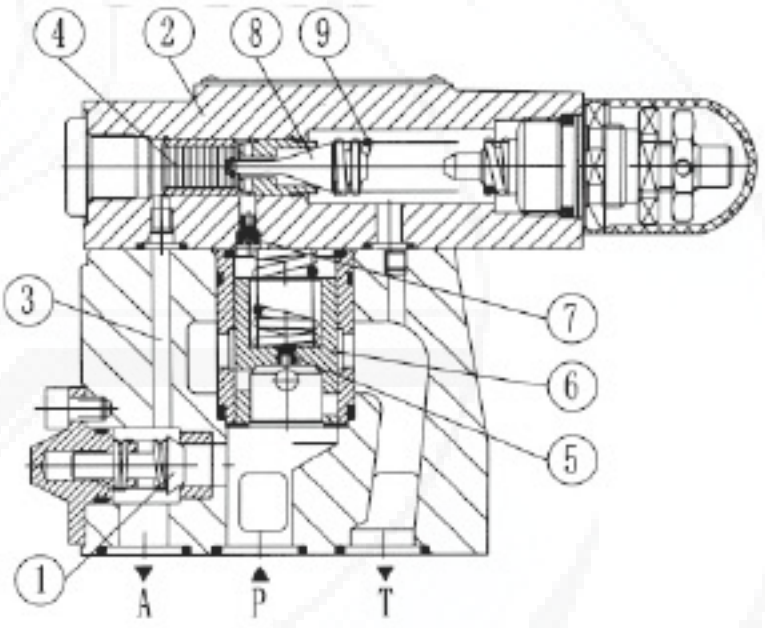
The pump delivers flow via check valve (1) into the hydraulic system (P to A). Pressure in port A acts via pilot line (3) on the pilot control spool (4). At the same time, pressure in port P passes via orifices (5) and (7) to the spring loaded side of the main spool (6) and poppet (8) in the pilot valve (2). As soon as the set cut-off pressure in the hydraulic system is reached, the poppet (8) lifts off against spring (9). Pressure fluid now flows via orifices (5) and (7) into spring chamber (11).From here, the fluid is returned to tank either internally via control line in valve type DA..30B/... or externally via control line in valve type DA..30B/..Y... Due to orifices (5) and (7), a pressure drop is now present at the main spool (6). The main spool (6) now lifts off its seat and opens the connection from P to T. The check valve (1) now closes the connection from A to P. The poppet (8) is now held open by the system pressure via pilot spool (4).

Diverting pump flow from P to T or P to A.

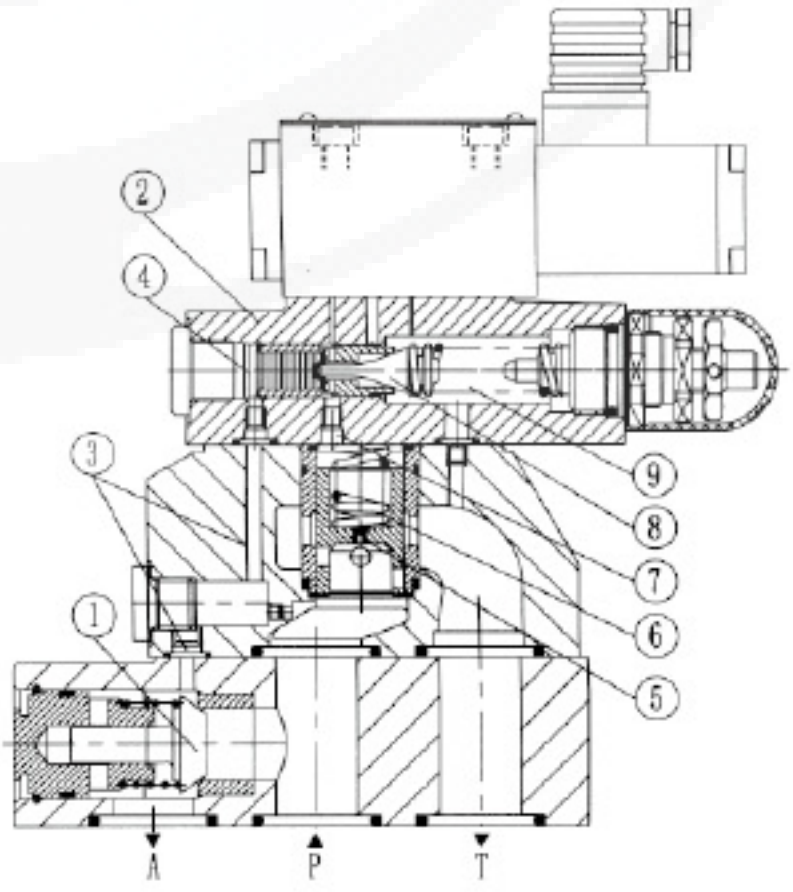
The area of the pilot spool (4) is 17% greater than effective area of the poppet(8). The effective force on the pilot spool (4) is, therefore, 17%greater than the effective force on the poppet (8) .when the actuator pressure falls in relation to the cut-off pressure by a valve which corresponds to the switching pressue differential,spring (9) pushes poppet(8) on to its seat.Pressure is then built up on the spring loaded side of the main spool(6).In conjunction with spring (10), this closes the main spool(6) and isolates the connection from P to T . the pump flow passes once more via the check valve (1) into the hydraulic system(P to A).

Pressure shut-off valve type DAW

The function of this valve is principally the same as the DA valve.A solenoid actuated directional valve(12) can, however swithch the set cut-off pressure which is under the pilot valve (2) either from P to T or form P to A.

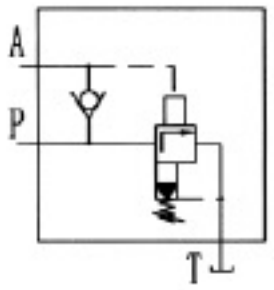


DA10...-30B/

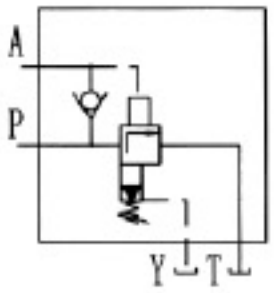


DAW20,30...-30B/

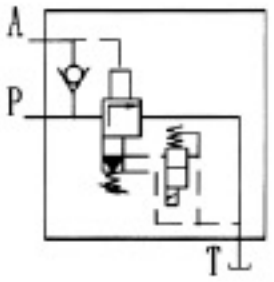
symbols



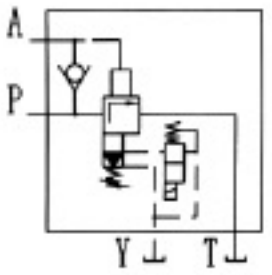
DA...-30B/...



DA...-30B/...Y...



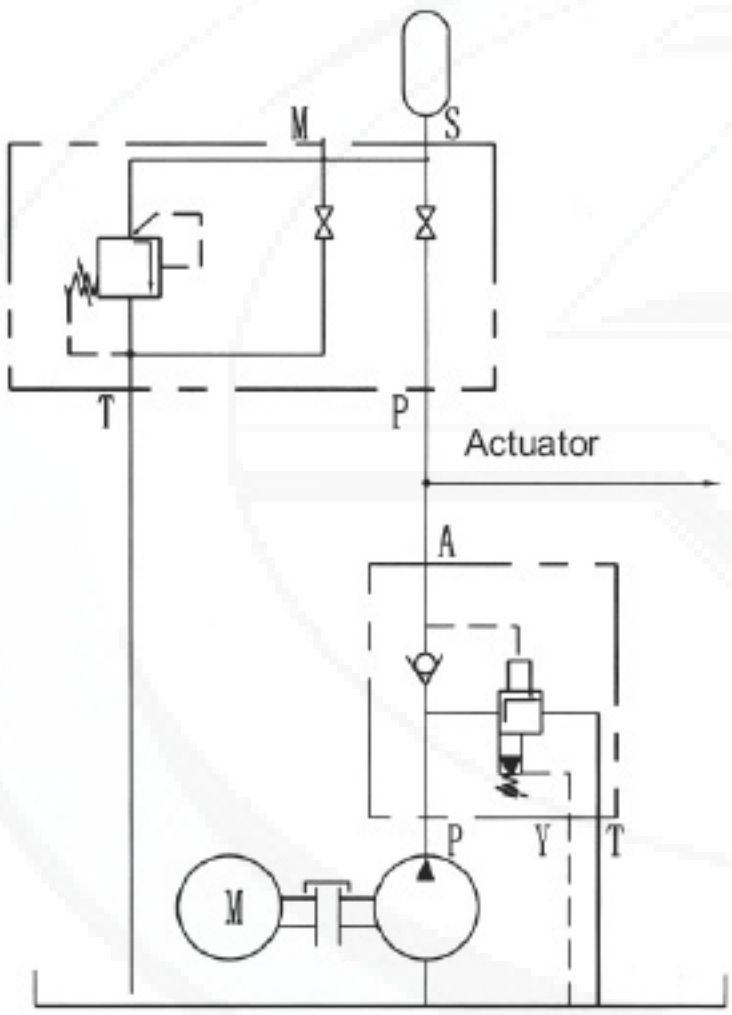
DAW...-30B/...



DAW...-30B/...Y...

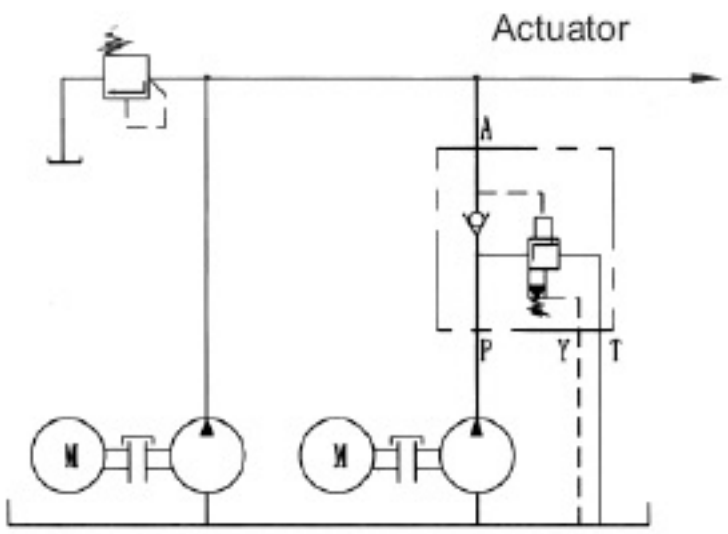
Circuit examples

Hydraulic system with accumulator



Application guidelines:
The connection between the DA valve and the hydraulic accumulator should be as short as possible and with a low pressure drop!

Hydraulic system with high and low pressure pumps



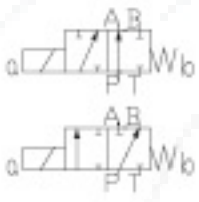
ordering details

DA | | | | – | – 30 | B / | | | | / | / | *

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

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

Nominal size 10 = 10
Nominal size 25 = 20
Nominal size 32 = 30



Normally closed = A

Normally open = B

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

Series 30 to 39 (30 to 39: unchanged installation and connection dimensions) =30

Technology of Beijing Huade Hydraulic =B

Further details in clear text

No code. = mineral oils
V = phosphate ester

No code .= port Y G1/4"
2 = port Y M14X1.5

Z4 = Plug-in connector DIN 43 650
Z5 = Large plug-in connector
Z5L = Large plug-in connector with light

No code = Without hand override
N = With hand override

W220-50 = 220V 50Hz AC
G24 = 24 V DC
W220R = DC solenoid with built-in rectifier(only with "Z5" plug)

No code = Poilt flutd feed internal ,return internal
Y= Poilt fluid feed internal,return external

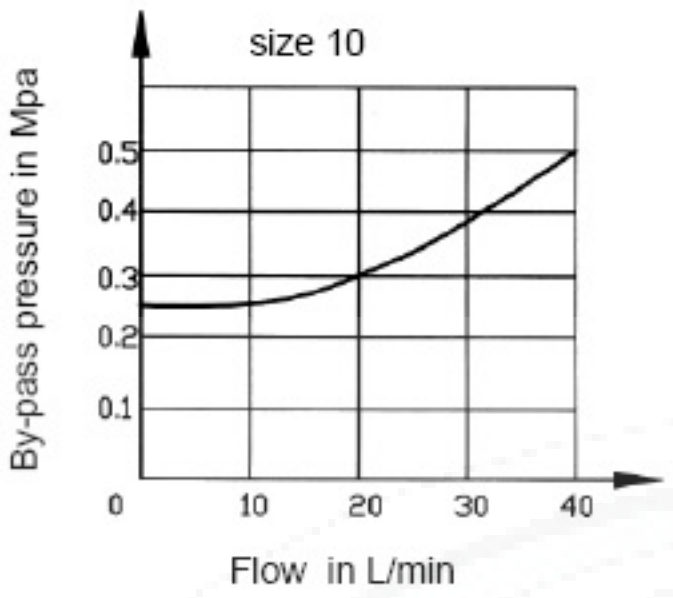
Settable pressure range
80 = 2～8 Mpa
160 = 8～16 Mpa
315 = 16～31.5 Mpa

Hydraulic technical data

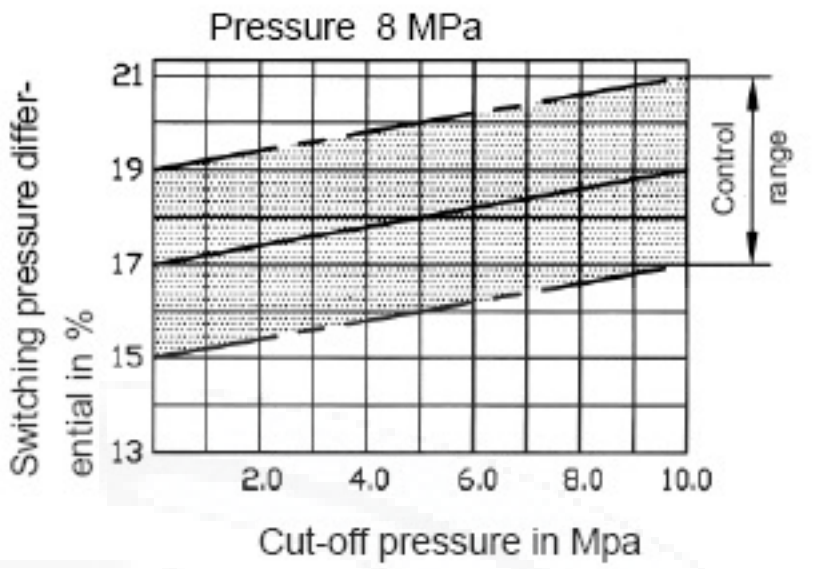
Size		10	20	30
Max. flow (L/min)		40	100	250
pressure rang		See chracteristic curse		
Operating pressure,port A (MPa)		up to 31.5		
Max.settable pressure (MPa)		up to 8、up to 16、up to 31.5		
Pressure fluid		Mineral oil (for NBR seal),or phosphate ester (for FPM seal)		
Viscosity range (mm^2/s)		10~800		
Pressure fluid temperature range (℃)		-30 to + 80		
Degree of contamination (μm)		Maximum permissible degree of contamination of the pressure fluid is to NAS 1638 class 9. We, therefore, recommend a filter with a minimum retention rate of $\beta_{10} \geqslant 75$		
Weight (Kg)	DA	3.8	7.7	13.4
	DAW	4.9	8.8	14.5

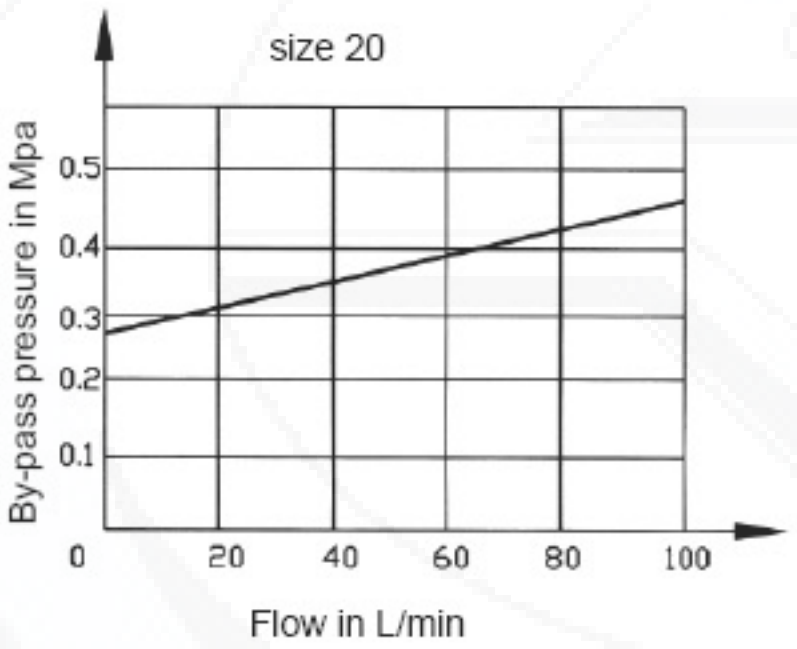
Characteristic curves (measured at v = 41 mm²/s and t = 50 ° C)

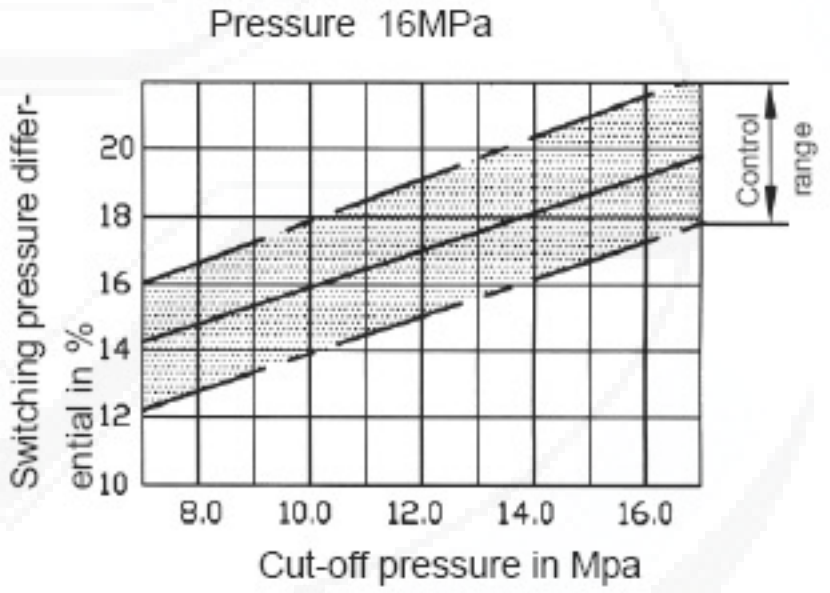
By-pass pressure in relation to the pump flow q_{vp} P (P → T)

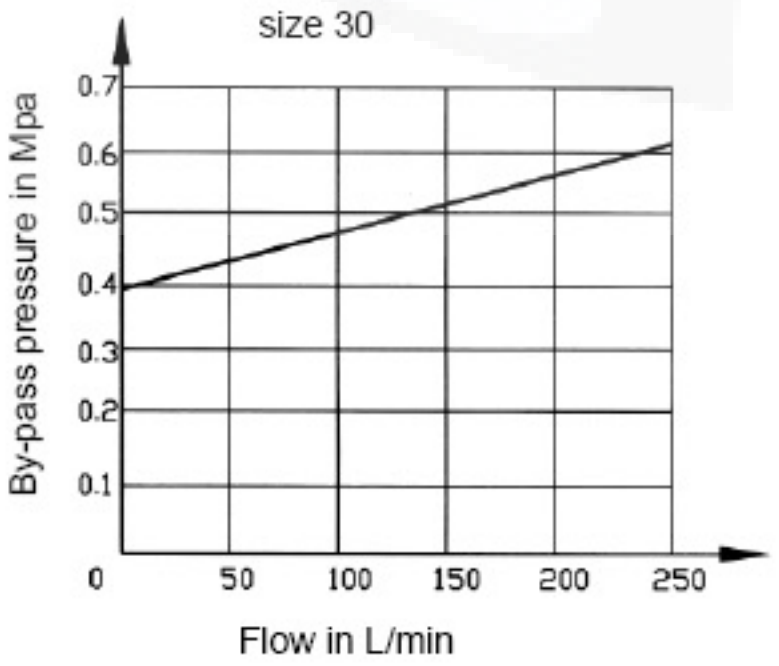


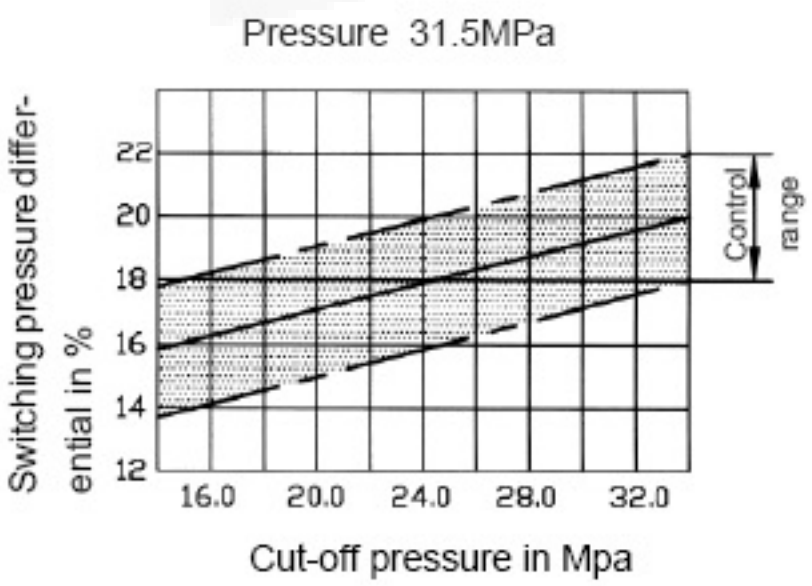
Switching pressure differential in relation to the cut-off pressure (P → A)



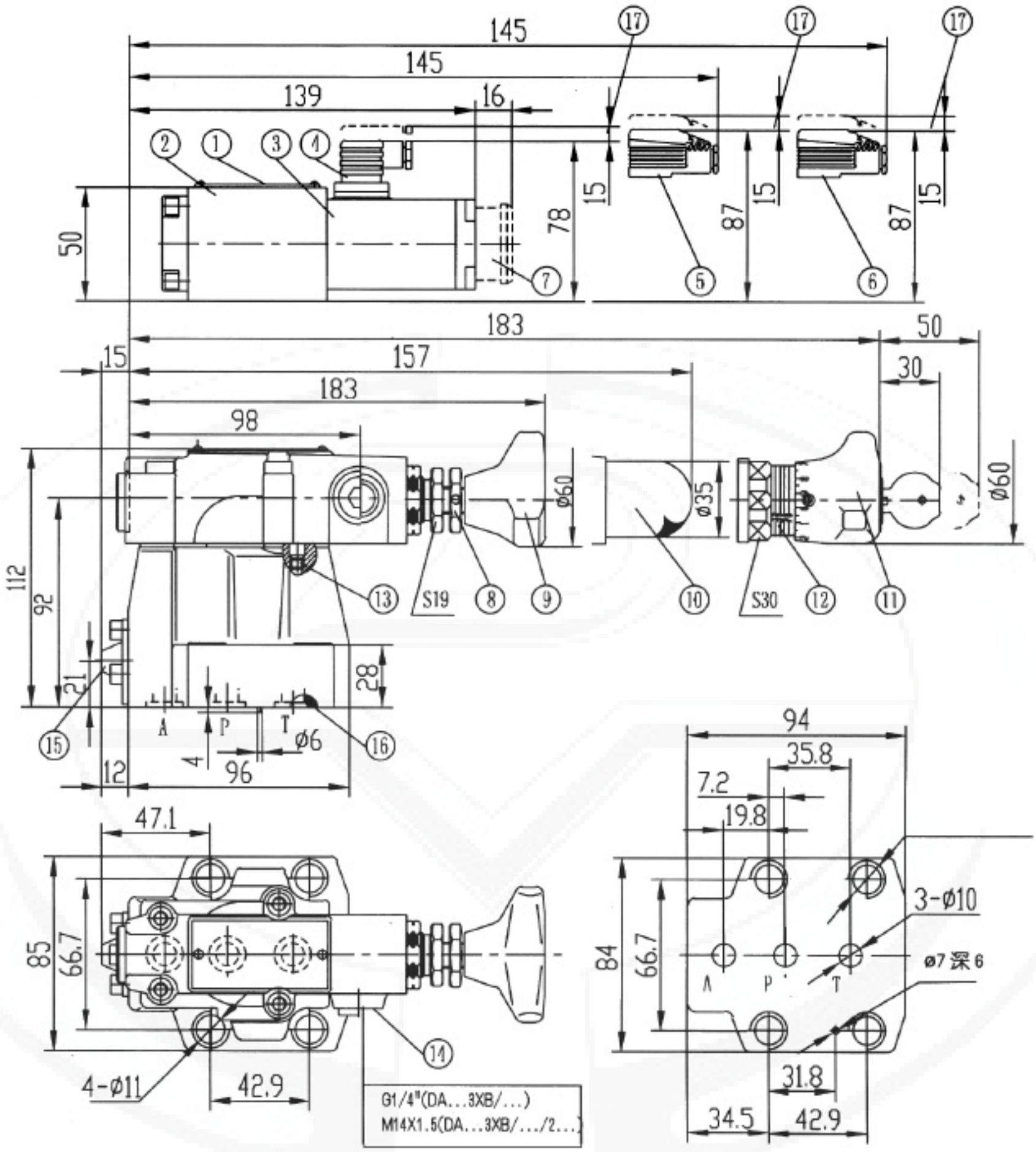








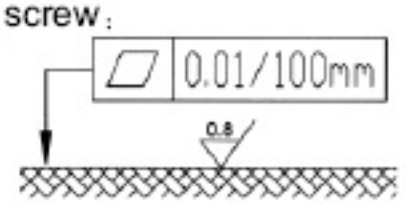
DA/DAW Unit dimensions, size 10 (30 series): **(Dimensions in mm)**



1. Nameplate
2. Directional valves, type WE5
3. Solenoid
4. Plug-in connector Z4
5. Large plug-in connector Z5
6. Large plug-in connector with light Z5L
7. Hand override, optional
8. Locknut(only apply to up to 31.5 Mpa)
9. Adjustment element 1
10. Adjustment element 2
11. Adjustment element 3
12. Repeat adjusting scale
13. Locating pin
14. Port Y for external pilot oil drain
15. Integrated check valve
16. O-ring 27.3X2.4
17. Space required to remove key fixing screw:
    4-M10X50-10.9(GB/T70.1-2000)

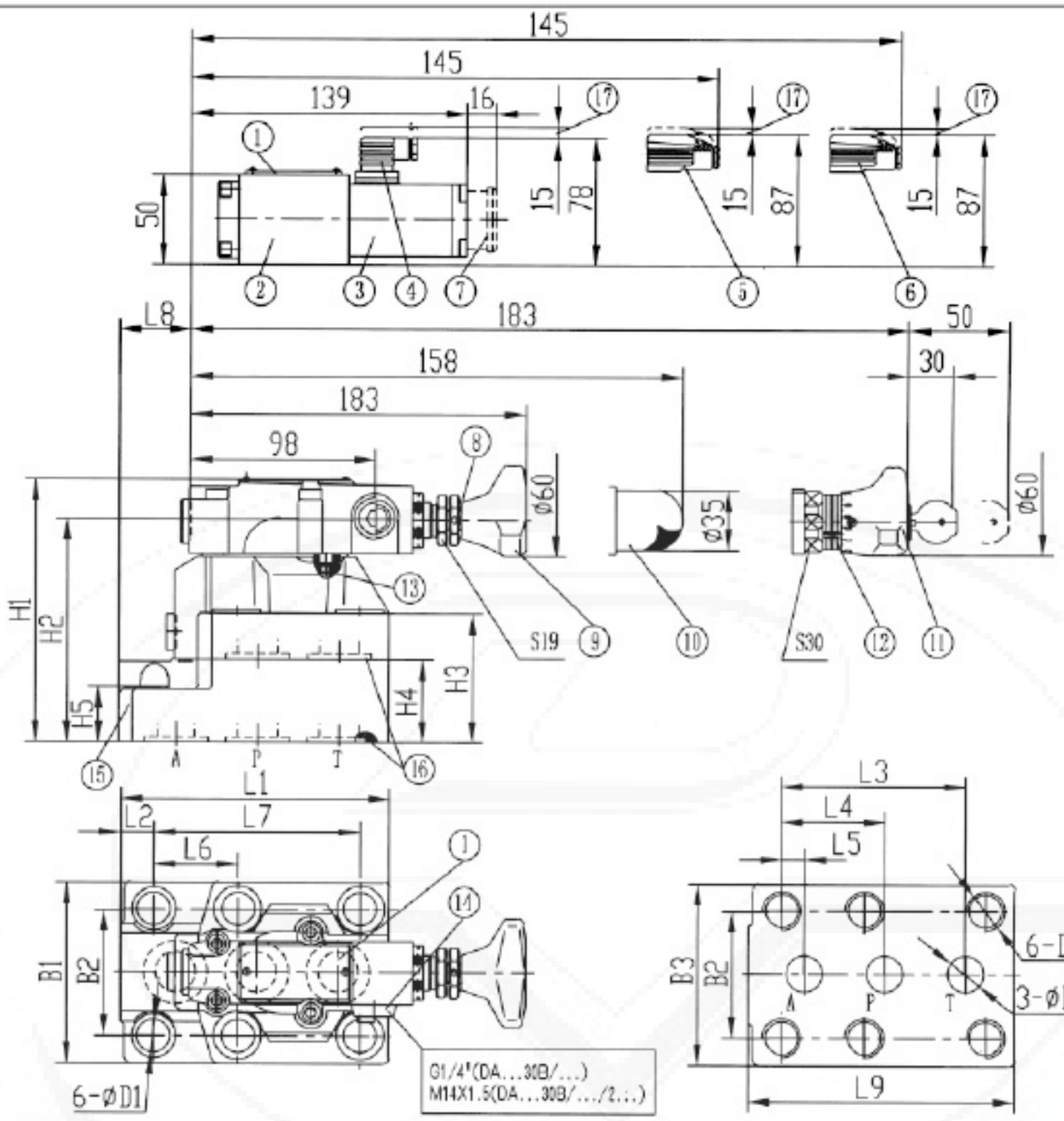
Subplate for: see page 151

G467/1 (G3/8") 12 (M18 × 1.5)
G468/1 (G1/2") 12 (M22 × 1.5)



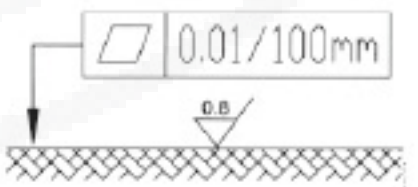
Required surface finish of mating piece

DA/DAW Unit dimensions, size 20,30 (30 series): **(Dimensions in mm)**



1. Name plate
2. Directional valves, type WE6
3. Solenoid
4. Plug-in connector Z4
5. Large plug-in connector Z5
6. Large plug-in connector with light Z5L
7. Hand override, optional
8. Lock nut(only apply to up to 31.5MPa)
9. Adjustment element 1
10. Adjustment element 2
11. Adjustment element 3
12. Repeat adjusting scale
13. Locating pin
14. Port Y for external pilot oil drain
15. Integrated check valve
16. O-ring 27.3X2.4
DA/DAW20...30B/...:28.17X3.53
DA/DAW30...30B/...:34.52X3.53
17. Space required to remove key

DA/DAW20 DA/DAW30
4-M16X100-10.9
2-M16X60-10.9
(GB/T70.1-2000)
4-M18X120-10.9



Required surface finish of mating piece

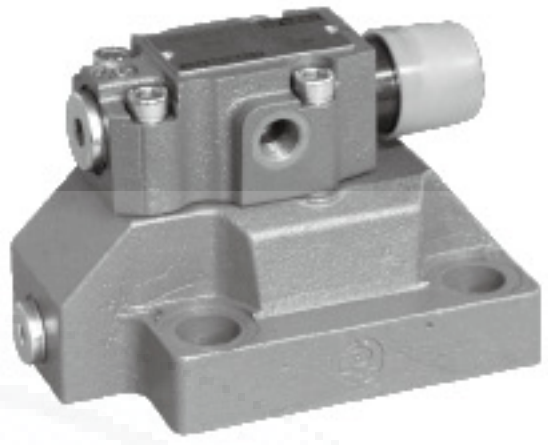
Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	B1	B2
20	154	25	101.6	57.1	12.7	46	112.7	49	156	101	69.9
30	199	42	127	63.5	12.7	50.8	139.7	73	229	116	82.5
Size	B3	H1	H2	H3	H4	H5	ΦD1	ΦD2	D		
20	103	144	124	72	46	28	18	25	M16 depth 34		
30	118.5	165	145	93	67	45	20	32	M18 depth 37		

	DA/DAW20	DA/DAW30
Fixing screw	4-M16X100-10.9 2-M16X60-10.9 (GB/T70.1-2000)	4-M18X120-10.9 2-M18X80-10.9 (GB/T70.1-2000)
Subplate for see page 142	G469/1 (G3/4") G469/02 (M27 × 2) G470/1 (G1") G470/02 (M33 × 2)	G471/1 (G11/4") G471/02 (M42 × 2) G472/1 (G11/2") G472/02 (M48 × 2)

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	**Pressure shut-off valve pilot operated, type DA/DAW...50B/(New Series)**			RE 26420/12.2004
	Size 10, 20, 30	up to 31.5 MPa	up to 240 L/min	Replaces: RE26420/05.2001

Features:

- For subplate mounting:
- 4 adjustment elements:
  - · Rotary knob
  - · Sleeve with internal hexagon and protective cap
  - · Lockable rotary knob with scale
  - · Rotary knob with scale
- 4 pressure ratings,optional
- Solenoid actuated unloading via a built-on directional valve



Function, section

Pressure control valves type DA/DAW are pilot operated pressure shut-off valves. They are used to switch a pump flow over to unpressurised by-pass as soon as the accumulator loading pressure is reached. Further applications for the valve are in systems that have high and low pressure pumps. In this case the low pressure pump is switched to unpressurised by-pass as soon as the set high pressure is reached.Pressure shut-off valves basically consist of the main valve with the main spool assembly , pilot valve with pressure adjustment element and check valve . In size 10 valves, the check valve is built into the main valve . In valve sizes 25 and 32 the check valve is built into a separate plate installed under the main valve.

Pressure shut-off valve type DA

Diverting pump flow from P to A or P to T.

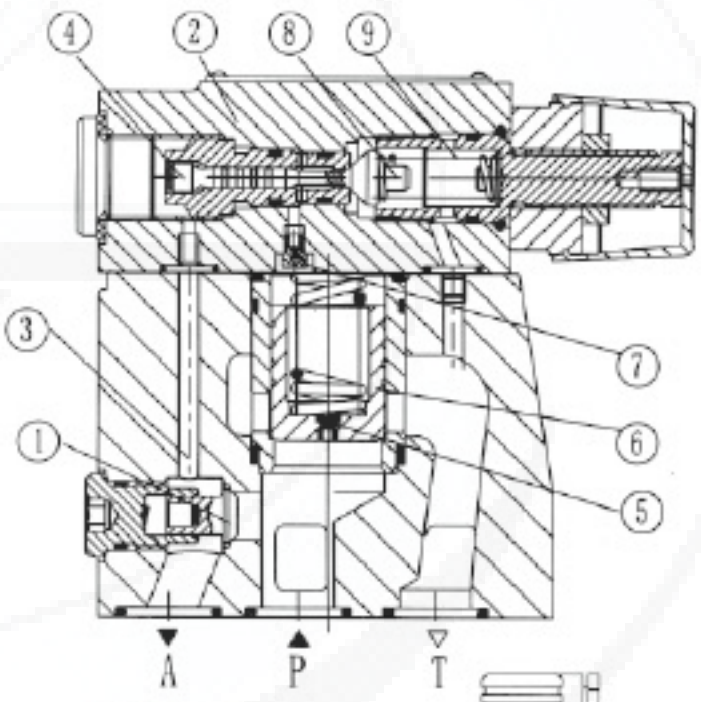
The pump delivers flow via check valve (1) into the hydraulic system (P to A). Pressure in port A acts via pilot line (3) on the pilot control spool (4). At the same time, pressure in port P passes via orifices (5) and (7) to the spring loaded side of the main spool (6) ball poppet (8) in the pilot valve (2). As soon as the set cut-off pressure in the hydraulic system is reached, the poppet (8) lifts off against spring (9). Pressure fluid now flows via orifices (5) and (7) into spring chamber (11).From here, the fluid is returned to tank either internally via control line in valve type DA..50B/... or externally via control line in valve type DA..50B/..Y... Due to orifices (5) and (7), a pressure drop is now present at the main spool (6). The main spool (6) now lifts off its seat and opens the connection from P to T. The check valve (1) now closes the connection from A to P. The ball(8) is now held open by the system pressure via pilot spool (4).

Diverting pump flow from P to T or P to A.

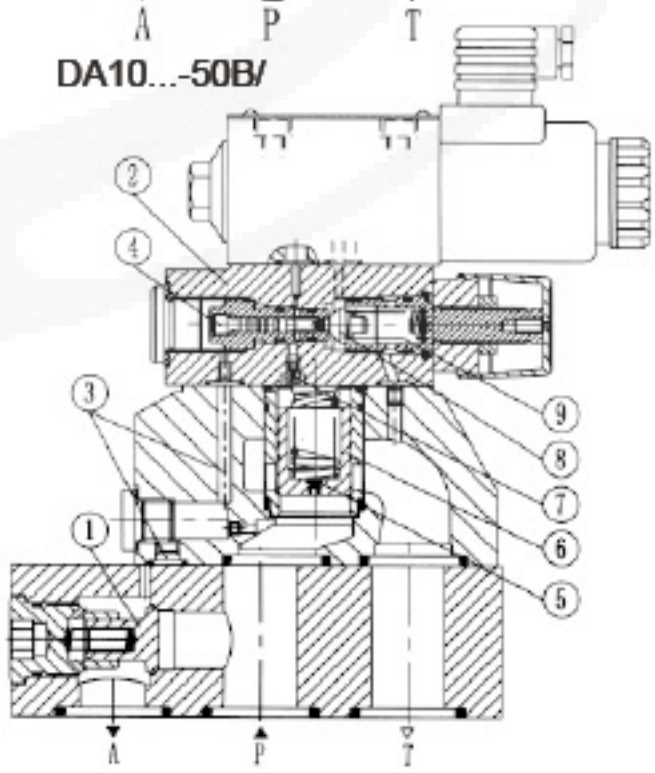
The area of the pilot spool (4) is 10% or optionnally 17% greater than effective area of the ball(8). The effective force on the pilot spool (4) is, therefore,10 or 17% greater than the effective force on the ball(8) .When the actuator pressure falls in relation to the cut-off pressure by a valve which corresponds to the switching pressue differential,spring (9) pushes ball(8) on to its seat.Pressure is then built up on the spring loaded side of the main spool(6).In conjunction with spring (10), this closes the main spool(6) and isolates the connection from P to T . the pump flow passes once more via the check valve (1) into the hydraulic system(P to A).

Pressure shut-off valve type DAW

The function of this valve is basically the same as the DA valve. A solenoid actuated directional valve(12) can, however switch the set cut-off pressure which is under the pilot valve (2) either from P to T or form P to A.

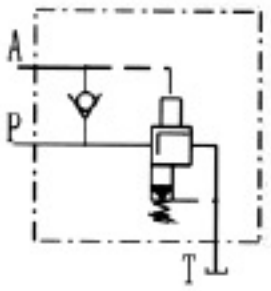


DA10...-50B/

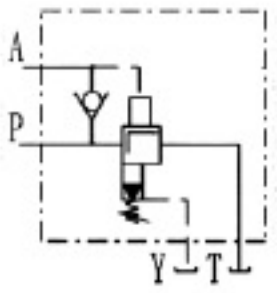


DAW20,30...-50B/

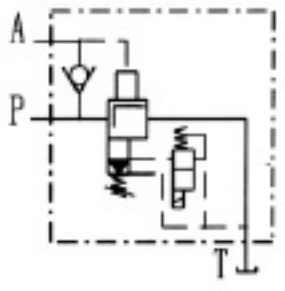
symbol



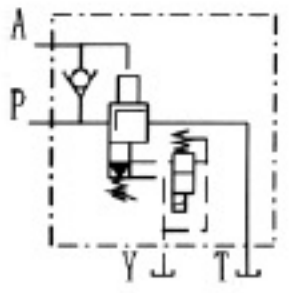
DA...-50B/...



DA...-50B/...Y...



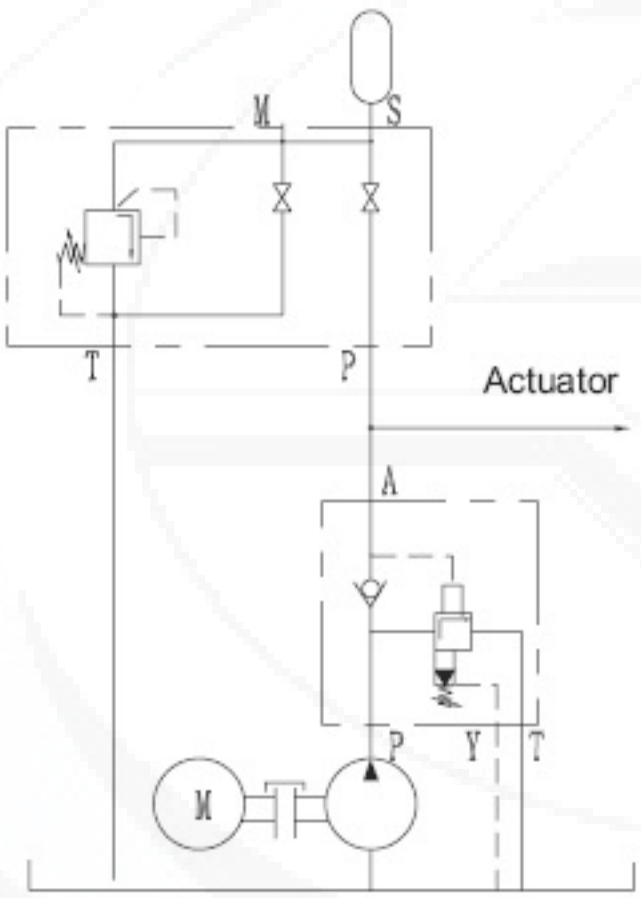
DAW...-50B/...



DAW...-50B/...Y...

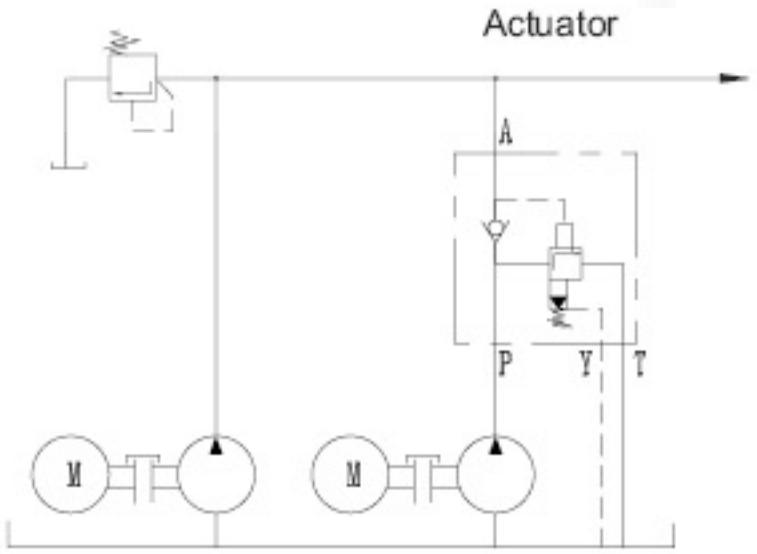
Circuit examples

Hydraulic system with accumulator



Application guidelines:
The connection between the DA valve and the hydraulic accumulator should be as short as possible and with a low pressure drop!
With high pump flows as well as small switching differentials 10%) then preferably the "Y" version should be used.

Hydraulic system with high and low pressure pumps



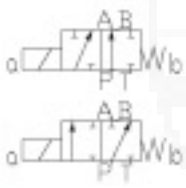
Ordering details

DA | | | | – | – 50 | B / | – | / | | | | | | *

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

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

Nominal size 10 = 10
Nominal size 25 = 20
Nominal size 32 = 30



Normally closed = A
Normally open = B

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 range
0 to 5 MPa = 50
5 to 10 MPa = 100
10 to 20 MPa = 200
20 to 31.5 MPa = 315

Further details in clear text

No code. = mineral oils
V = phosphate ester

No code. = Metric
2 = British

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

No code = Without hand override
N = With hand override

W220-50 = 220V 50Hz AC
G24 = 24 V DC
W220R = DC solenoid with built-in rectifier(only with "Z5" plug)

No code = Without directional valve
6B = With directional valve

No code= Poilt fluid feed internal ,return internal
Y = Poilt fluid feed internal,retum external

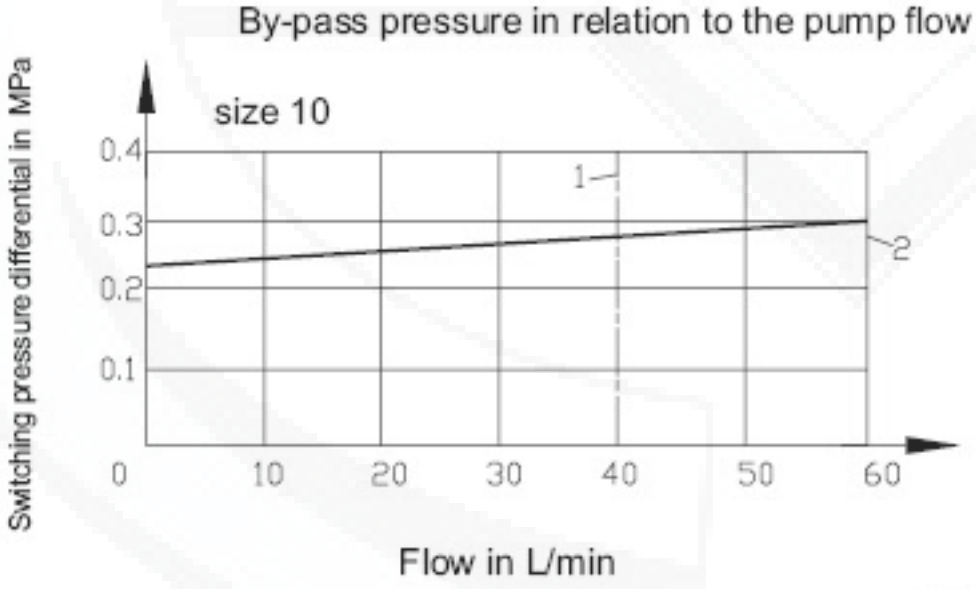
Switching pressure differential (P → A)
10 = In the mid range 10
17 = In the mid range 17

Hydraulic technical data

Size		10	20	30
Max. flow L/min	10%	40	80	120
	17%	60	120	240
Pressure range	10%	See chracteristic curse		
	17%			
Operating pressure,port A (MPa)		up to 31.5		
Max.settable pressure (MPa)		up to 5,up to 10,up to 20,up to 31.5		
Pressure fluid		Mineral oil (for NBR seal),or phosphate ester (for FPM seal)		
Viscosity range (mm^2/s)		10~800		
Pressure fluid temperature range (°C)		-30 to + 80		
Weight (Kg)	DA	2.6	6.6	12.3
	DAW	3.8	7.8	13.5
	DAC	1.2(DAWC add to 1.2Kg)		
	DAC30	1.5(DAWC30 add to 1.2Kg)		
Direction valve characteristic		see WE6		

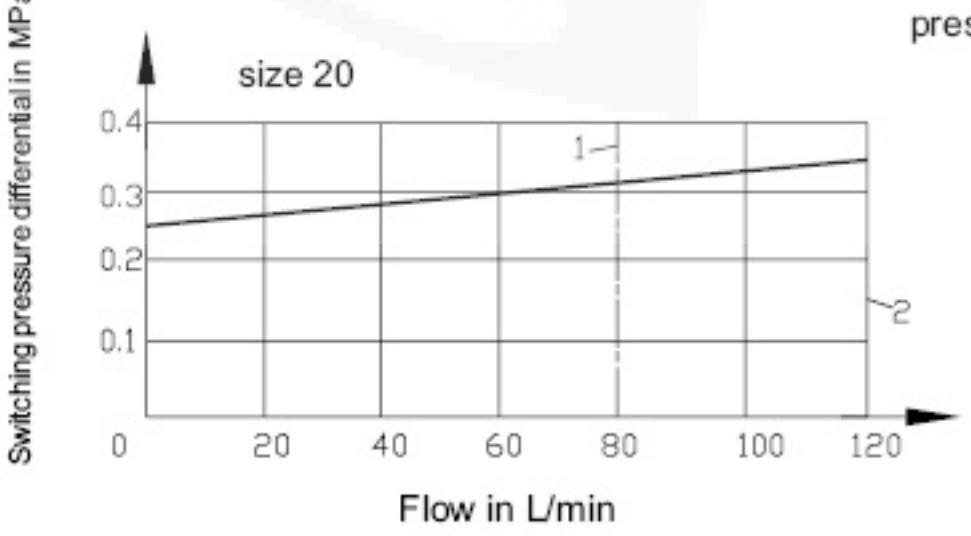
Characteristic curves (measured at v = 41 mm^2 /s and t = 50°C)

By-pass pressure in relation to the pump flow q_v P (P - T)



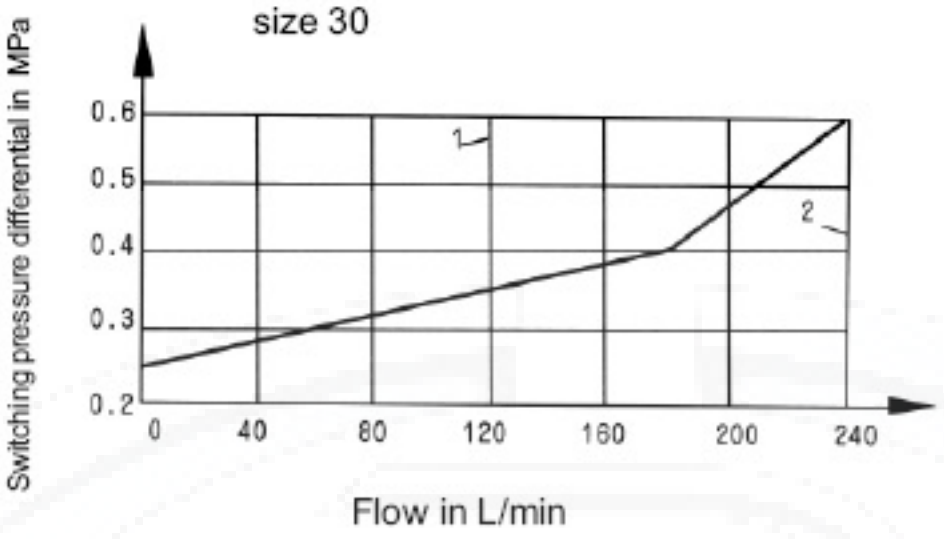
1 $q_{V\ max}$ for 10% version
2 $q_{V\ max}$ for 17% version

These characteristic curves are valid for an outlet pressure (T) = zero over the entire flow range.



Characteristic curves (measured at v = 41 mm² /s and t = 50°C)

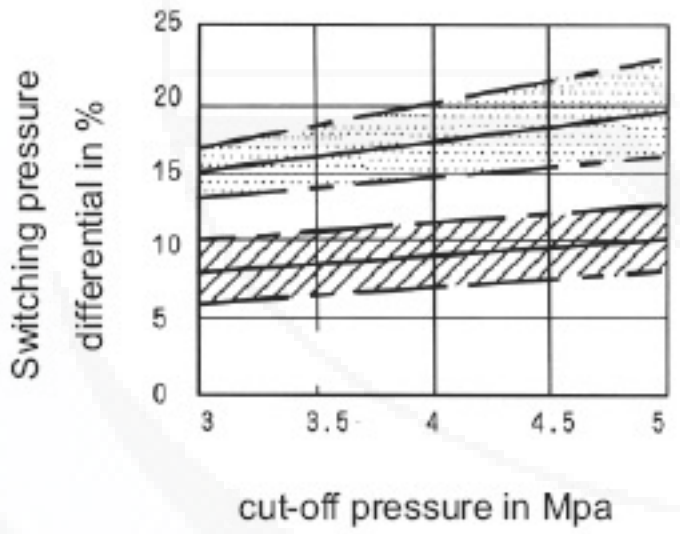
By-pass pressure in relation to the pump flow q_v P (P → T)



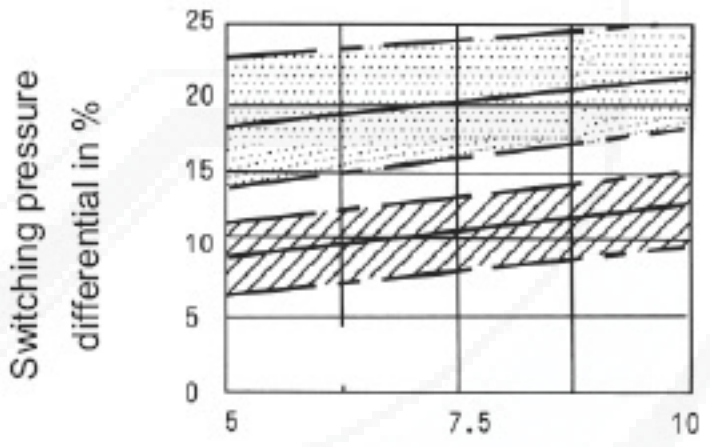
1 $q_{V\ max}$ for 10% version
2 $q_{V\ max}$ for 17% version

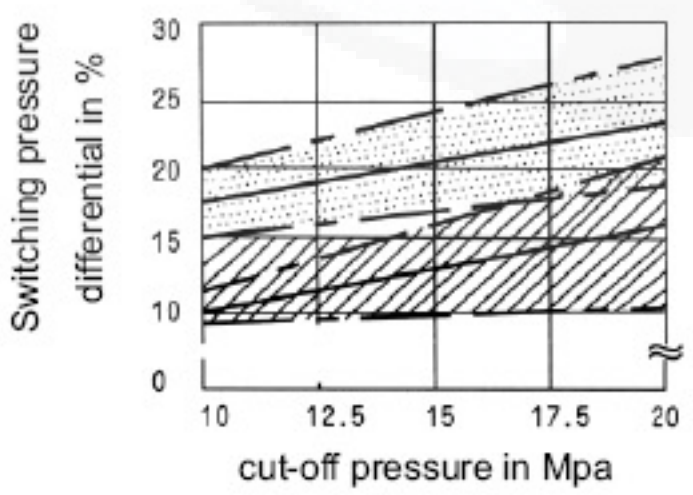
These characteristic curves are valid for an outlet pressure (T) = zero over the entire flow range.

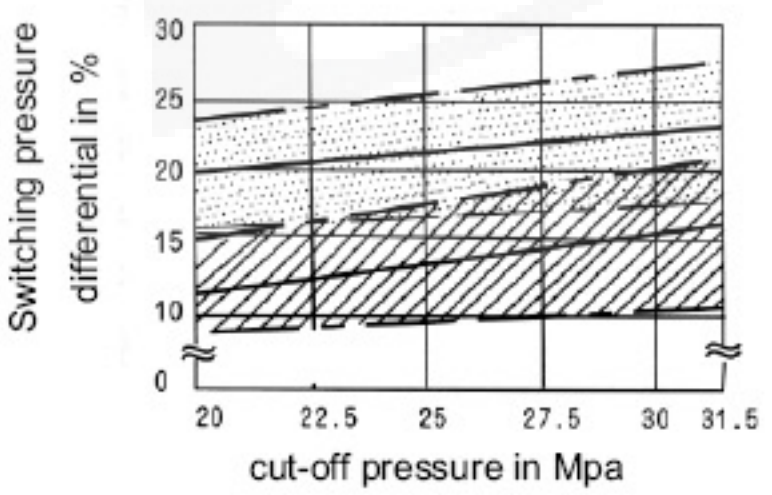
Switching pressure differential in relation to the cut-off pressure (P → A)



16MPa pressure range

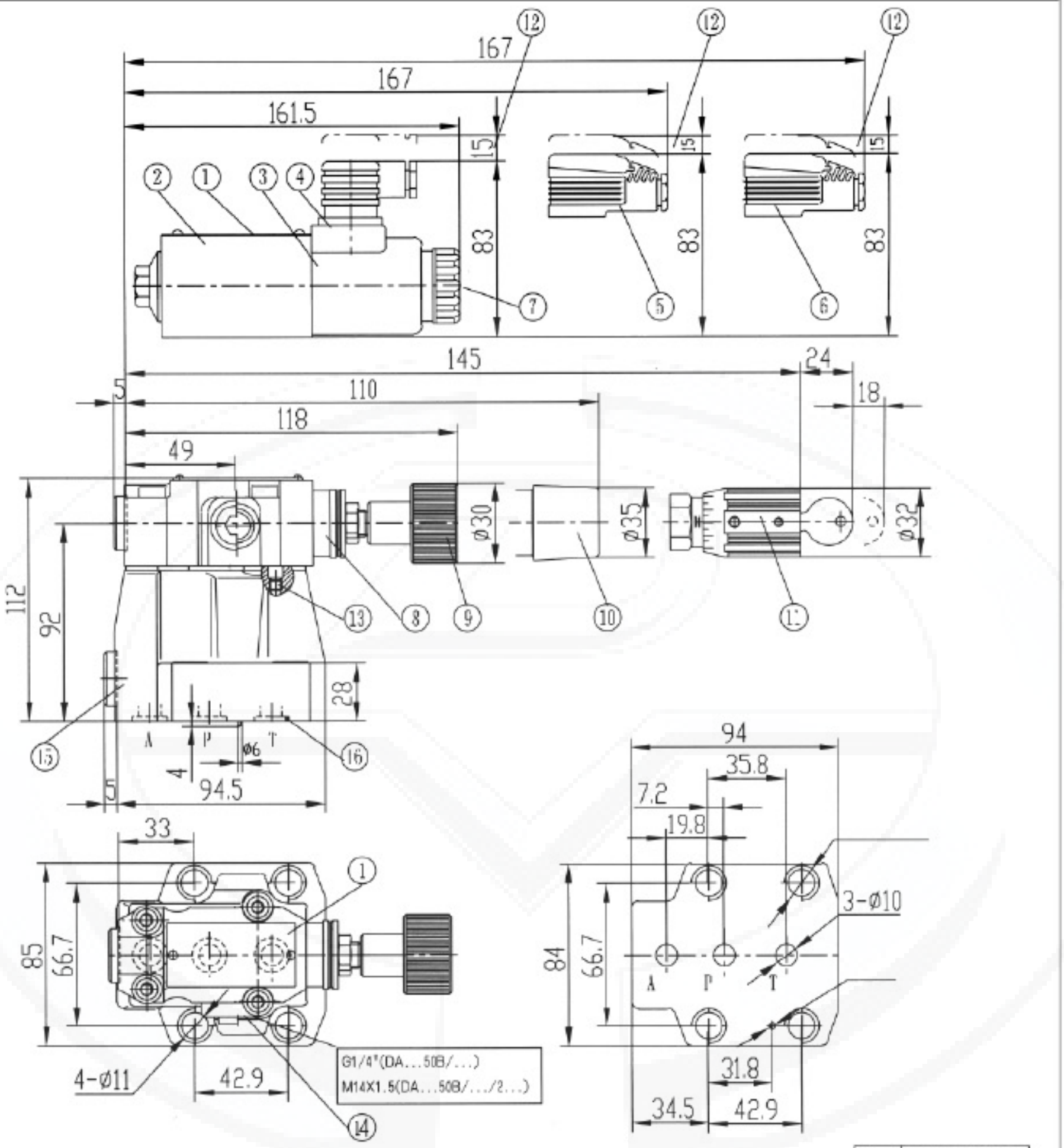






=Deviation range for the 17% version
=Deviation range for the 10% version

DA/DAW Unit dimensions, size 10 (50 series): **(Dimensions in mm)**



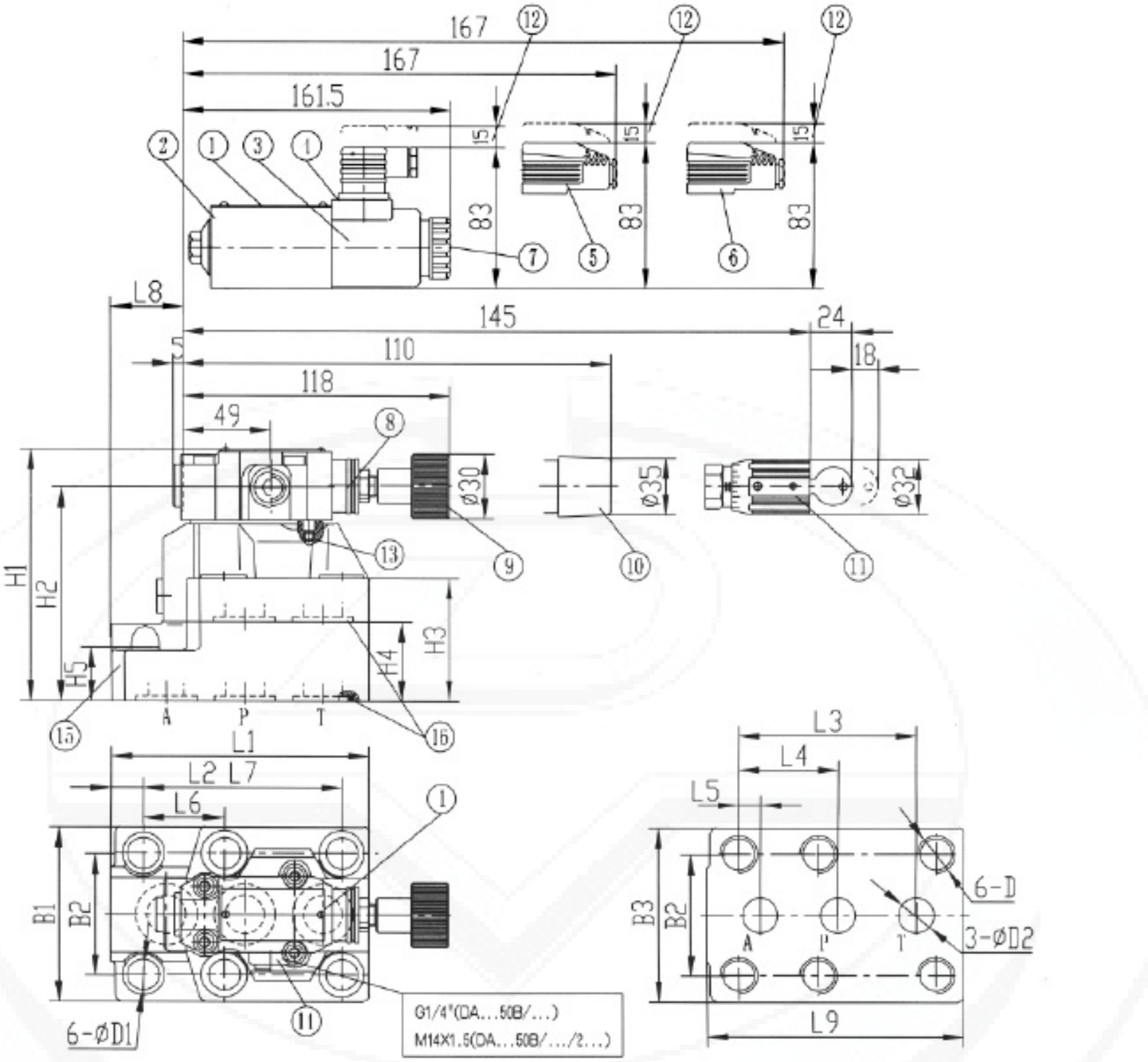
1.Nameplate
2.Directional valves, type WE6
3.Solenoid
4.Plug-in connector Z4
5.Large plug-in connector Z5
6.Large plug-in connector with light Z5L
7.Hand override, optional
8.Lock nut(only apply to up to 31.5 Mpa)

9.Adjustment element 1
10.Adjustment element 2
11.Adjustment element 3
12.Space required to remove key
13.Locating pin
14.Port Y for external pilot oil drain
15.Integrated check valve
16.O-ring 17.12X2.62

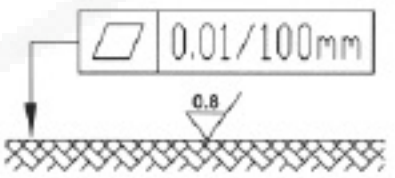
Required surface finish of mating piece

Fixing screw:
4-M10X50-10.9 (GB/T70.1-2000)
Subplates: see page151
G467/1 (G3/8")
G468/1 (G1/2")

DA/DAW Unit dimensions, size 20,30 (50 series): **(Dimensions in mm)**



1. Nameplate
2. Directional valves, type WE6
3. Solenoid
4. Plug-in connector Z4
5. Large plug-in connector Z5
6. Large plug-in connector with light Z5L
7. Hand override, optional
8. Lock nut
9. Adjustment element 1
10. Adjustment element 2
11. Adjustment element 3
12. Space required to remove key
13. Locating pin
14. Port Y for external pilot oil drain
15. Integrated check valve
16. O-ring 27.3X2.4
    DA/DAW20...50B/...:28.17X3.53
    DA/DAW30...50B/...:34.52X3.53
17. Space required to remove key



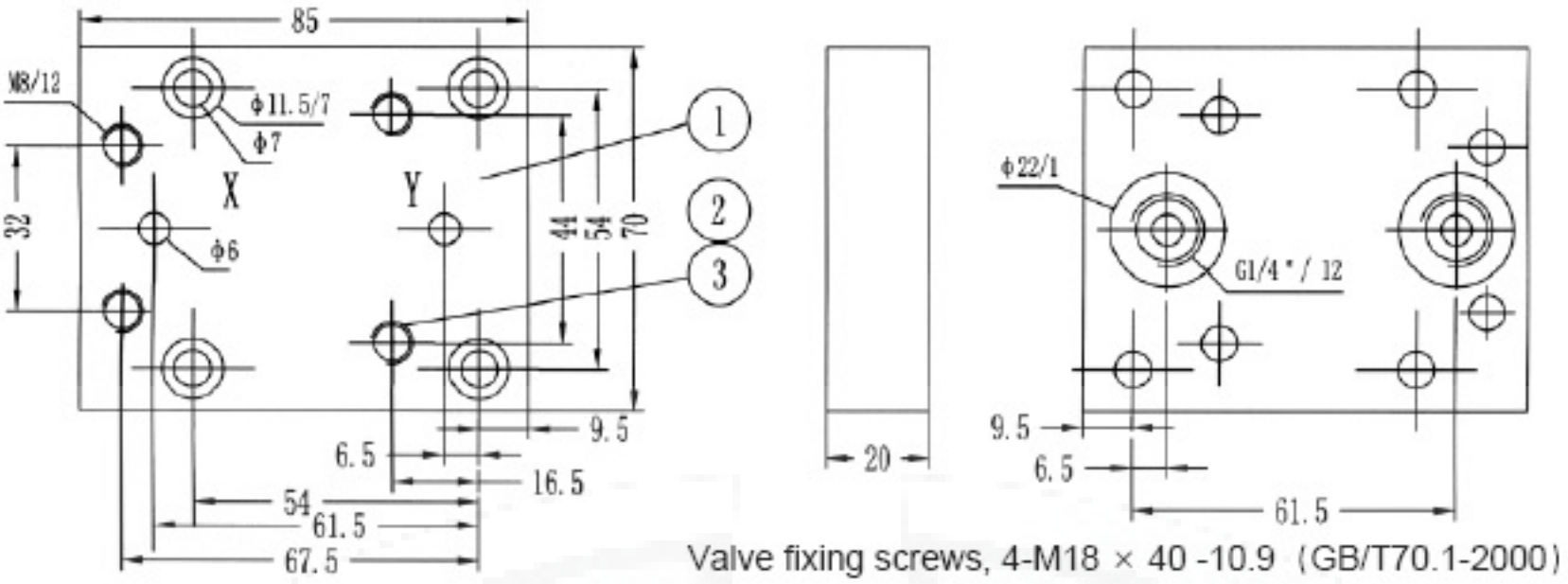
Required surface finish of mating piece

Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	B1	B2
20	154	25	101.6	57.1	12.7	46	112.7	48.2	156	101	69.9
30	199	42	127	63.5	12.7	50.8	139.7	69.8	229	118.5	82.5
Size	B3	H1	H2	H3	H4	H5	ΦD1	ΦD2		D	
20	103	144	124	72	46	28	18	25	M16 depth 34		
30	118.5	165	145	93	67	45	20	32	M18 depth 37		

	DA/DAW20	DA/DAW30
Fixing screw	4-M16X100-10.9 2-M16X60-10.9 (GB/T70.1-2000)	4-M18X120-10.9 2-M18X80-10.9 (GB/T70.1-2000)
Subplate for see page 151	G469/1 (G3/4) G470/1 (G1")	G471/1 (G1 1/4") G472/1 (G1 1/2")

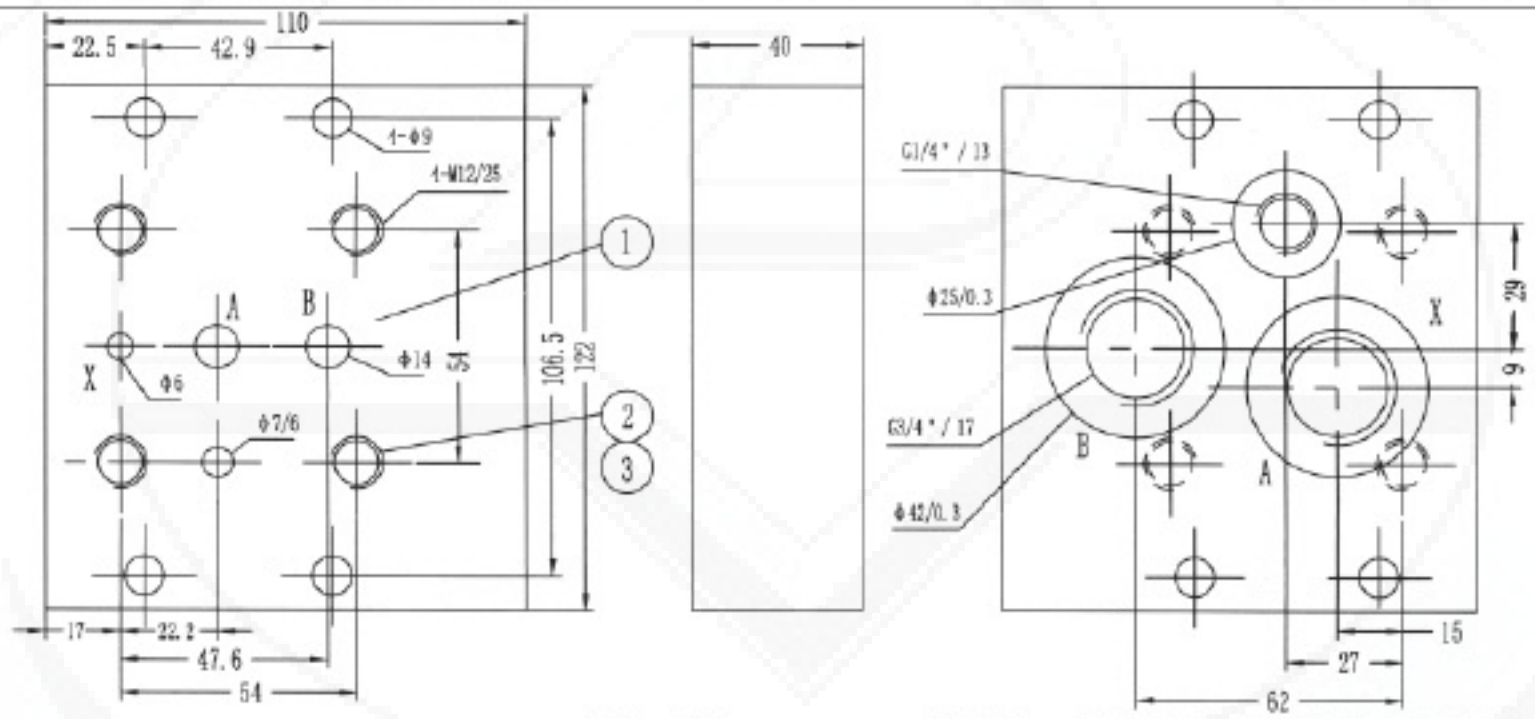
Subplates

G51/01（G1/4 "） G51/02（M14 × 1.5） Weight：1kg (Dimensions in mm)



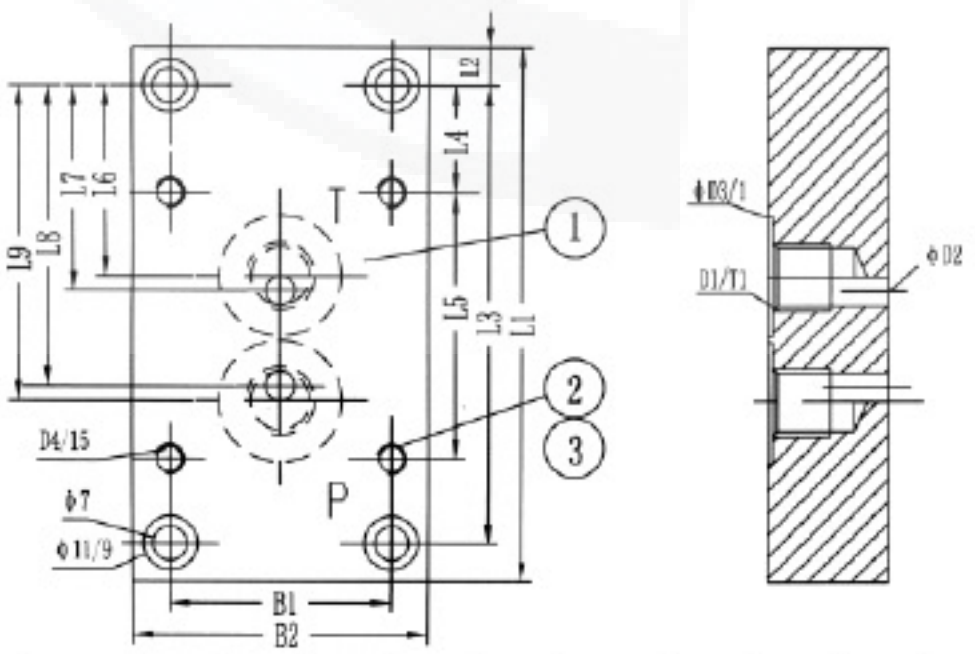
Valve fixing screws, 4-M18 × 40 -10.9（GB/T70.1-2000）

G565/01（G3/4 "） G565/02（M27 × 2） Weight：1kg (Dimensions in mm)



Valve fixing screws, 4-M18 × 40 -10.9（GB/T70.1-2000）

G300/01(G1/4 ") G302/01(G1/2 ") G304/01(G1 ") G306/01(G1 1/2 ") (Dimensions in mm)
G300/02(M14 × 1.5) G302/02(M22 × 1.5) G304/02(M33 × 2) G306/02(M48 × 2)

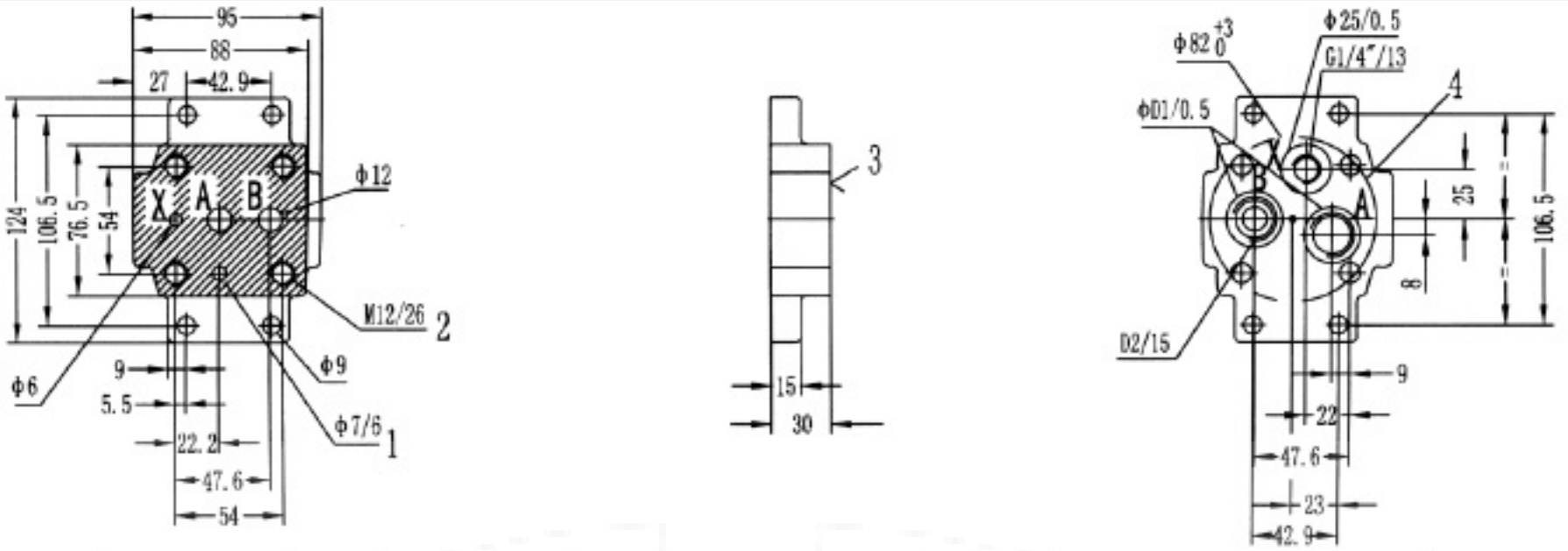


Valve fixing screws		Weight
NG6:M6 × 50	GB70	1.5
NG10:M8 × 70	-85	2.5
NG20:M8 × 90	-10.9	2.5
NG30:M10 × 110		5

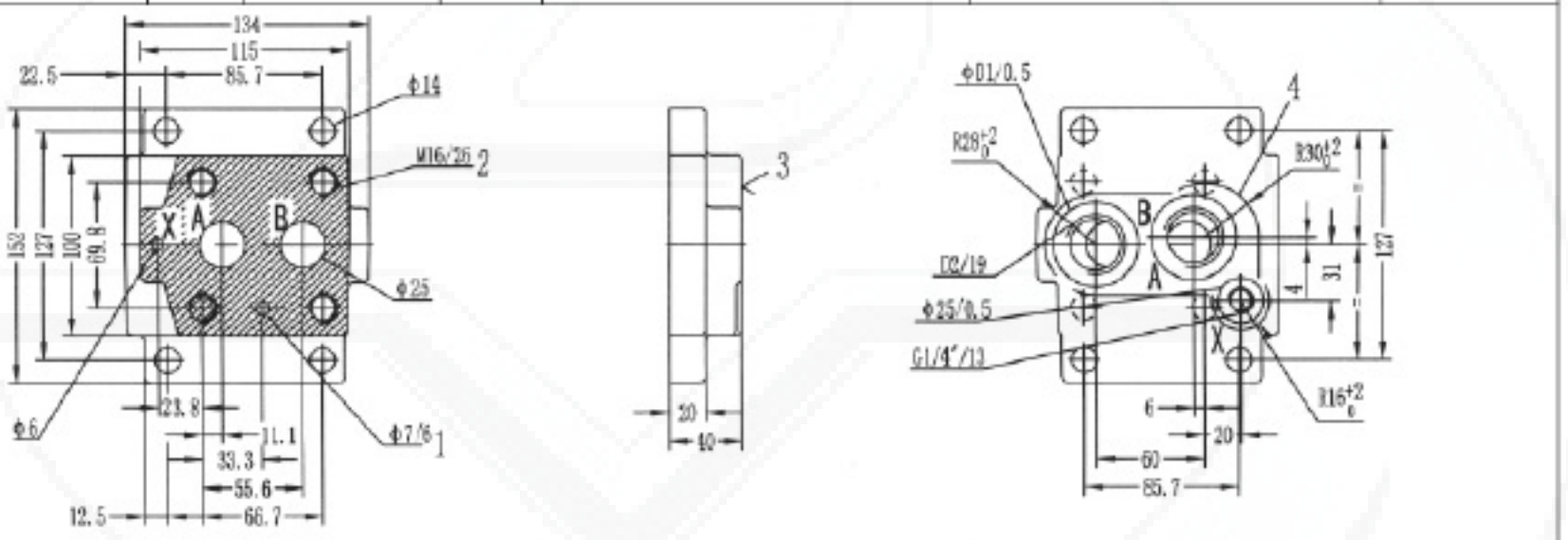
① mating piee of valve
② Valve fixing pin
③ Valve fixing screws

Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	B1	B2	φ D2	φ D3	D4	T1	S	D1
6	110	8	94	22	55	39	42	62	65	45	60	6	25	M6	15	25	1/4"(M14 × 1.5)
10	135	10	115	27.5	70	40.5	48.5	72.5	80.5	60	80	10	34	M8	16	25	1/2"(M22 × 1.5)
20	170	15	140	20	100	42	55	86	97	70	100	20	47	M8	20	40	1"(M33 × 2)
30	190	12.5	165	17.5	130	42	62.5	112.5	123	100	130	30	61	M10	24	40	11/2"(M48 × 2)

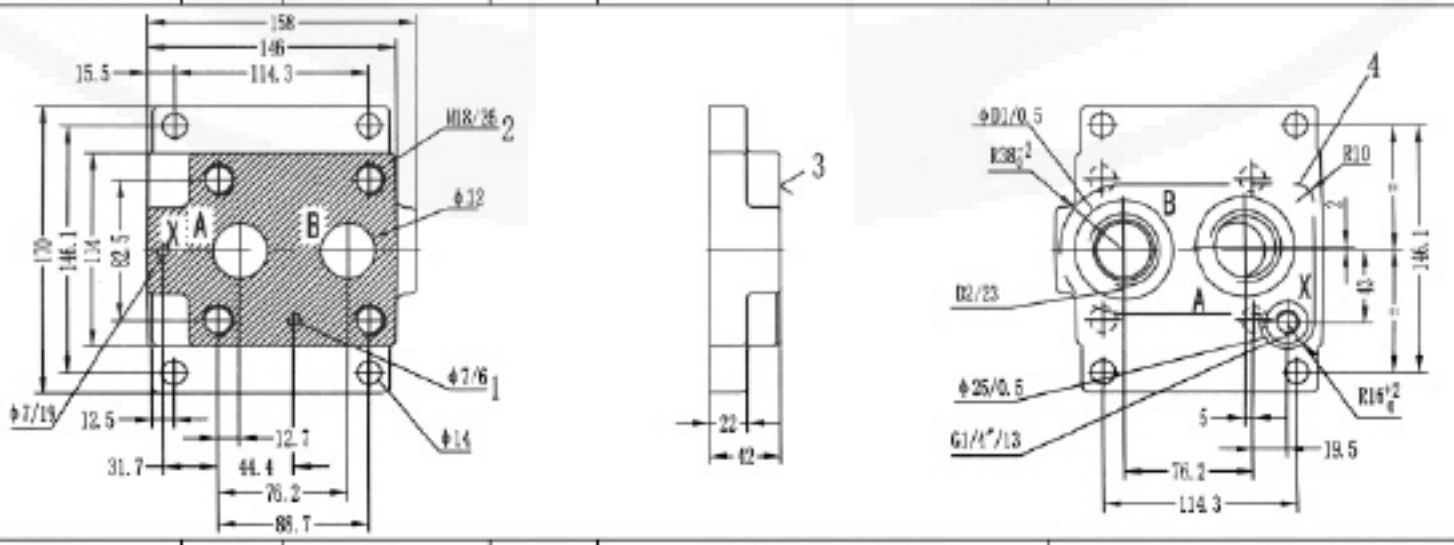
Subplates



Size	Type	D1	D2	T1	Valve fixing screws	Tightening torque for screws	Weight
NC10	G545/01	28	G3/8"	13	4-M12 × 50 -10.9 (GB/T70.1-2000)	120Nm	1.5kg
	G545/02		M18 × 1.5				
	G546/01	34	G1/2"	16			
	G546/02		M22 × 1.5				



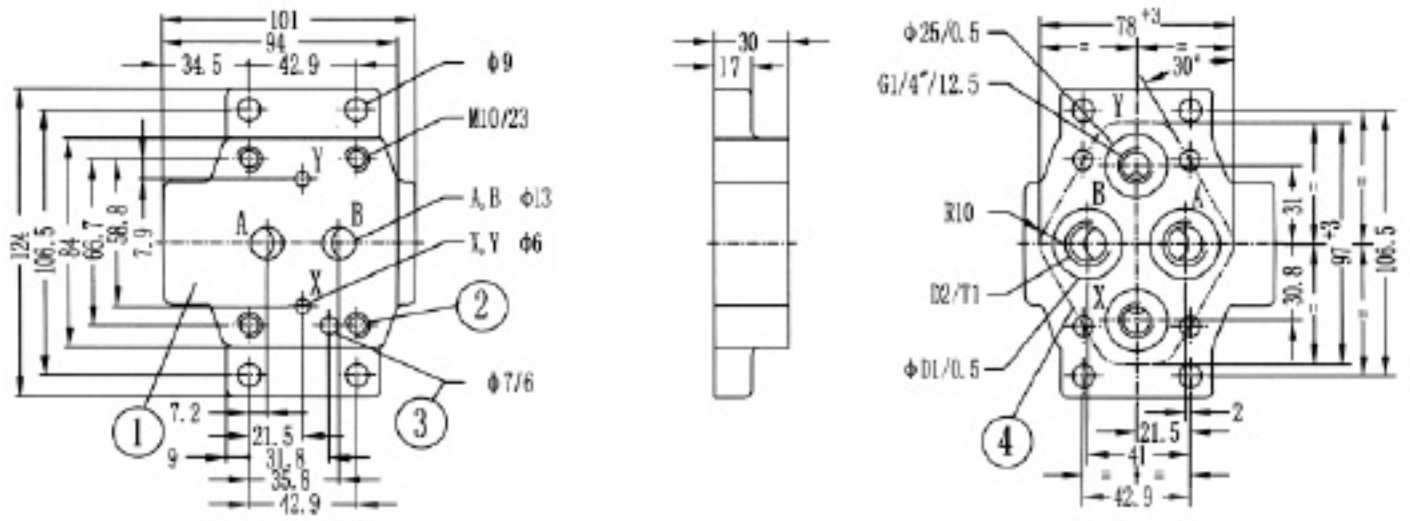
Size	Type	D1	D2	T1	Valve fixing screws	Tightening torque for screws	Weight
NC25	G408/01	42	G3/4"	17	4-M16 × 50 -10.9 (GB/T70.1-2000)	295Nm	3.0kg
	G408/02		M27 × 2				
	G409/01	47	G1"	20			
	G409/02		M33 × 2				



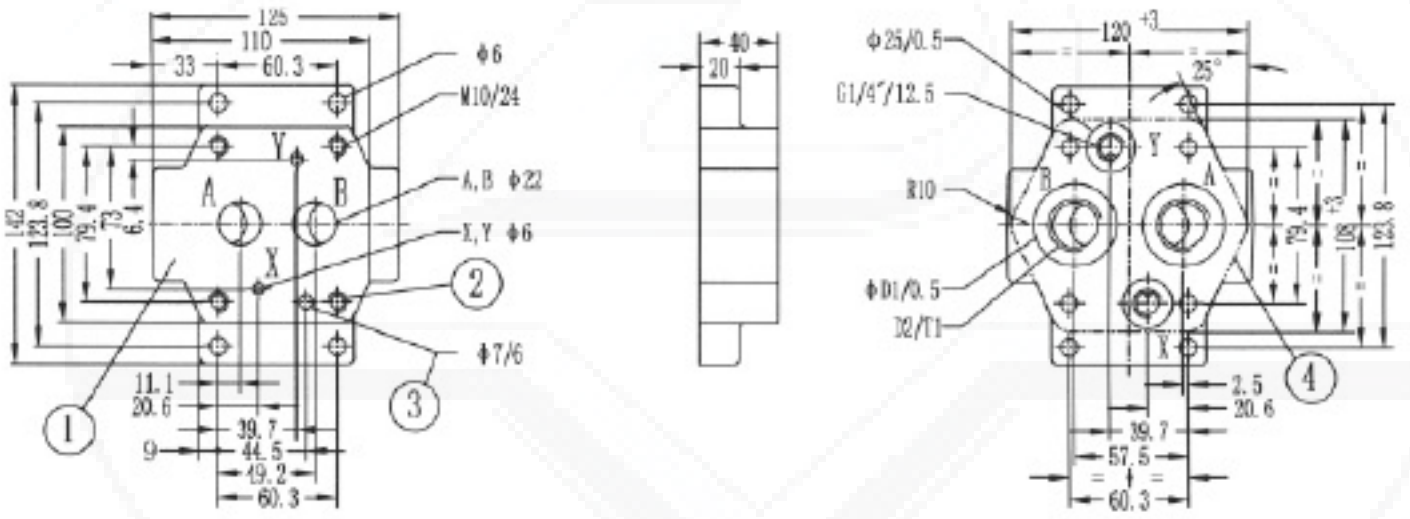
Size	Type	D1	D2	T1	Valve fixing screws	Tightening torque for screws	Weight
NC32	G410/01	58	G1 1/4"	20.5	4-M18 × 50 -10.9 (GB/T70.1-2000)	405Nm	5.0kg
	G410/02		M42 × 2				
	G411/01	65	G1 1/2"	22.5			
	G411/02		M48 × 2				

1 mating piee of valve **2 Valve fixing screws** **3 locating pin** **4 Front panel cut-out**

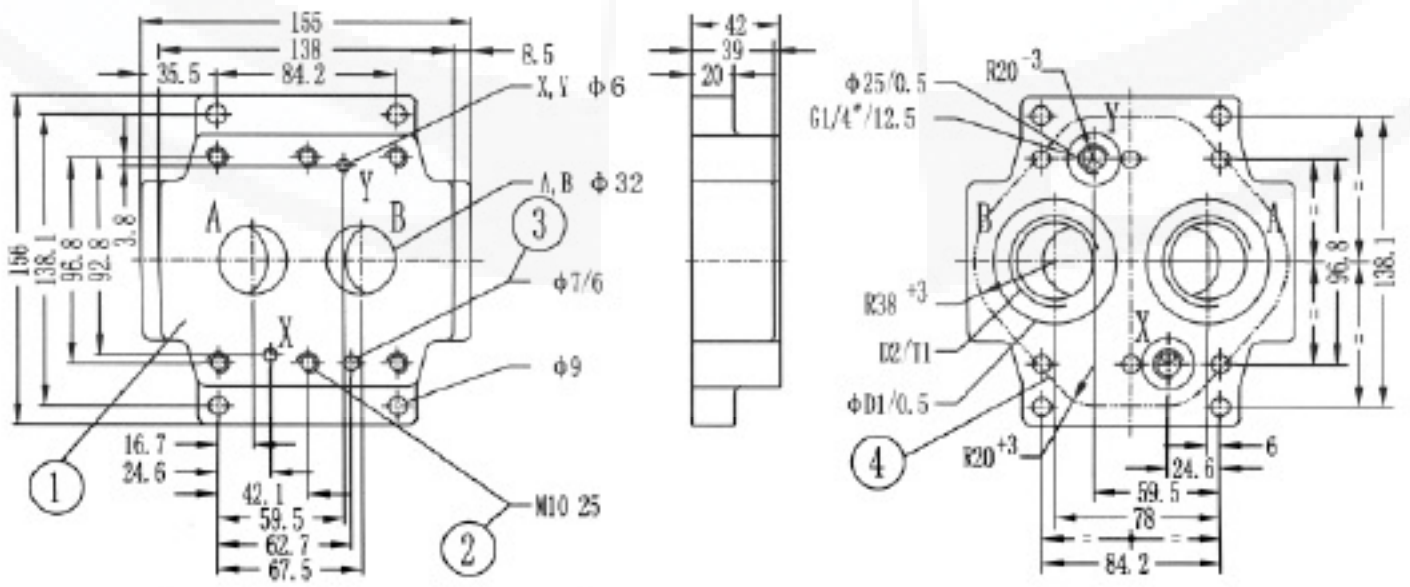
Subplates



Size	Type	D1	D2	T1	Valve fixing screws	Tightening torque for screws	Weight
NC10	G460/01	28	G3/8"	13	4-M10 × 40 -10.9 (GB/T70.1-2000)	69Nm	1.7kg
	G460/02		M18 × 1.5				
	G461/01	34	G1/2"	16			
	G461/02		M22 × 1.5				



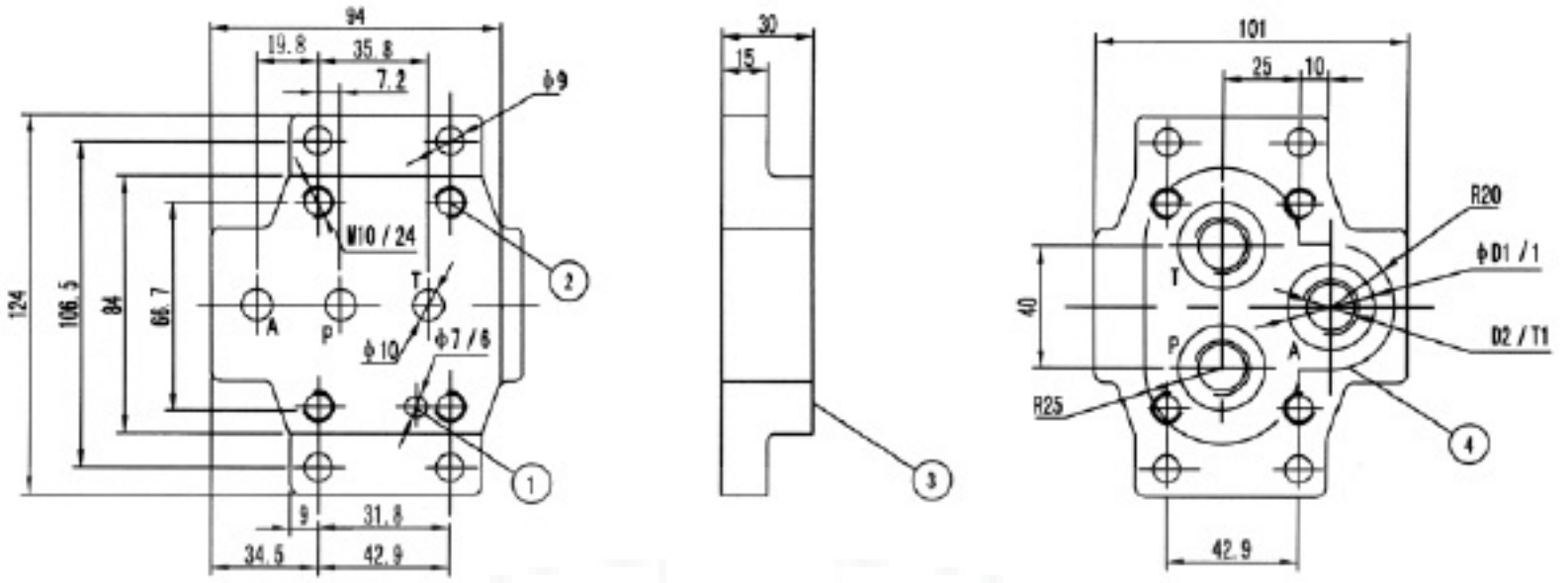
Size	Type	D1	D2	T1	Valve fixing screws	Tightening torque for screws	Weight
NC25	G412/01	42	G3/4"	17	4 -M10 × 50 -10.9 (GB/T70.1-2000)	69Nm	3.3kg
	G412/02		M27 × 2				
	G413/01	47	G1"	20			
	G413/02		M33 × 2				



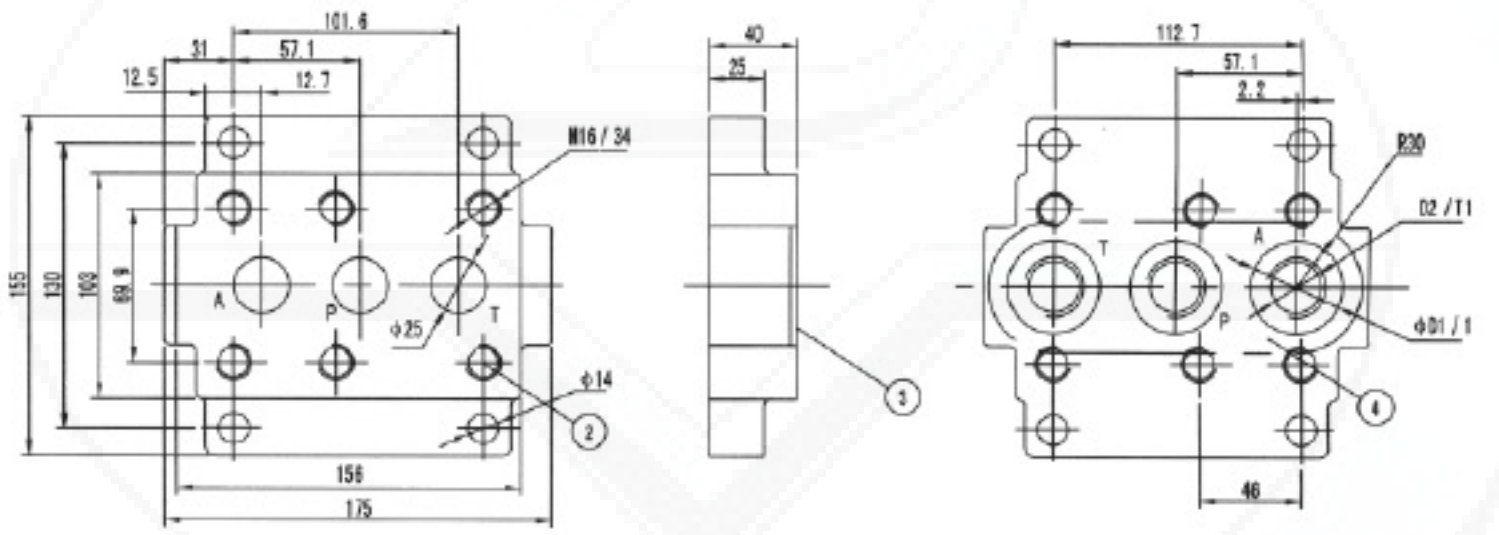
Size	Type	D1	D2	T1	Valve fixing screws	Tightening torque for screws	Weight
NC32	G414/01	56	G1 1/4"	20.5	6 -M10 × 60-10.9 (GB/T70.1-2000)	69Nm	5kg
	G414/02		M42 × 2				
	G415/01	61	G1 1/2"	22.5			
	G415/02		M48 × 2				

1 mating piee of valve **2 Valve fixing screws** **3 locating pin** **4 Front panel cut-out**

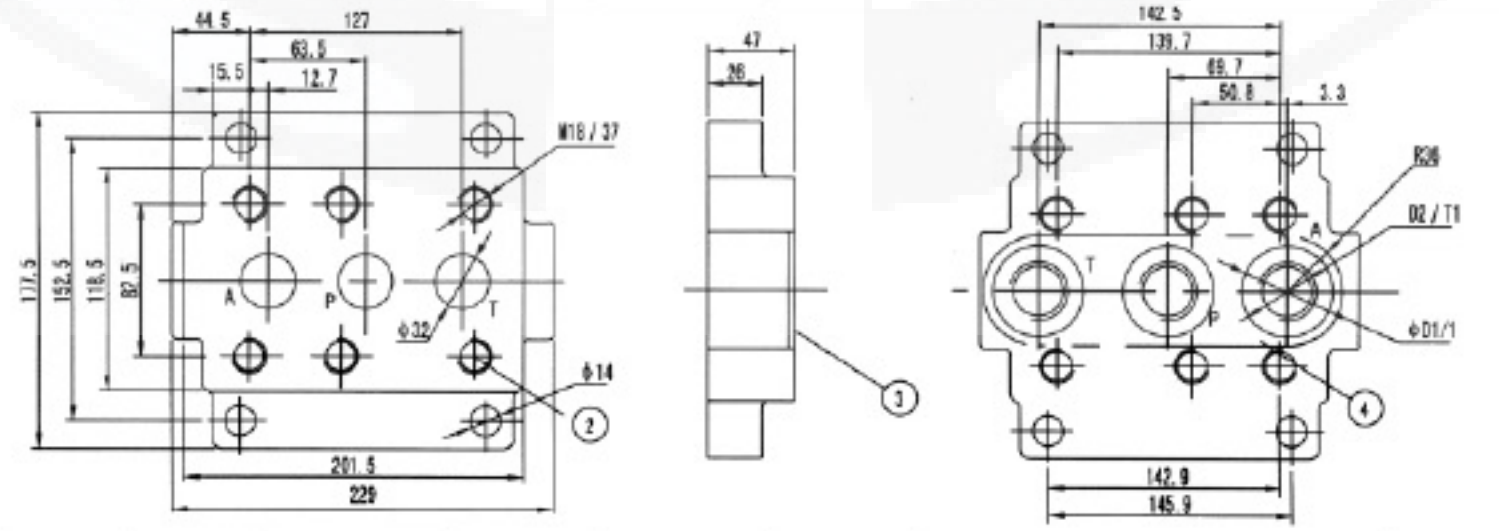
Subplates



Size	Type	Weight	D1	D2	T1		Valve fixing screws	Tightening torque
NC10	G467/01	1.7kg	G3/8"	28	12		4-M10 × 80-10.9（GB/T70.1-2000）	
	G467/02		M18 × 1.5					
	G488/01		G1/2"	34	14			
	G488/02		M22 × 1.5					



Size	Type	Weight	D1	D2	T1		Valve fixing screws	Tightening torque
NC20	G469/01	5.2kg	G3/4"	42	16		4-M16 × 100-10.9（GB/T70.1-2000） 4-M16 × 60-10.9（GB/T70.1-2000）	
	G469/02		M27 × 2					
	G470/01		G1"	47	18			
	G470/02		M33 × 2					

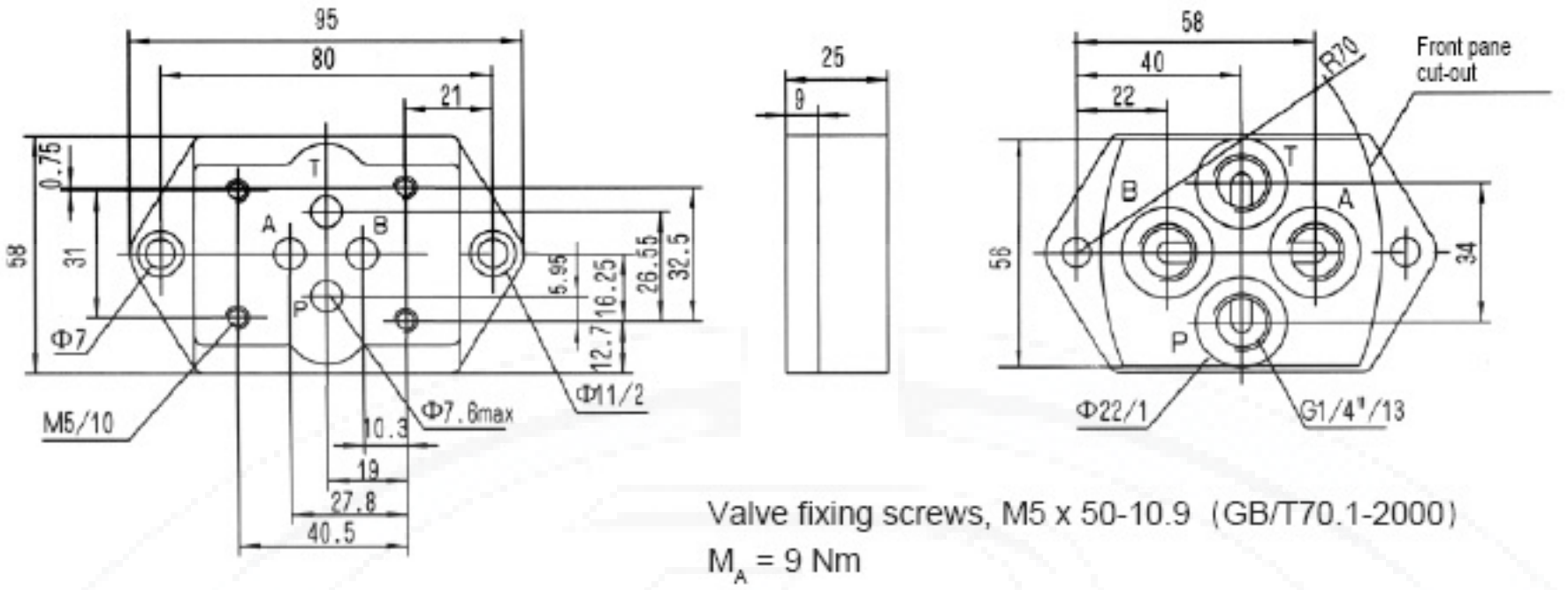


Size	Type	Weight	D1	D2	T1		Valve fixing screws	Tightening torque
NC32	G471/01	8.2kg	G1 1/4"	42	16		4-M18 × 120-10.9（GB/T70.1-2000） 4-M18 × 80-10.9（GB/T70.1-2000）	
	G471/02		M42 × 2					
	G472/01		G1 1/2"	47	18			
	G472/02		M48 × 2					

1、locating pin 2、Valve fixing screws 3、mating piee of valve 4、Front panel cut-out

Subplates

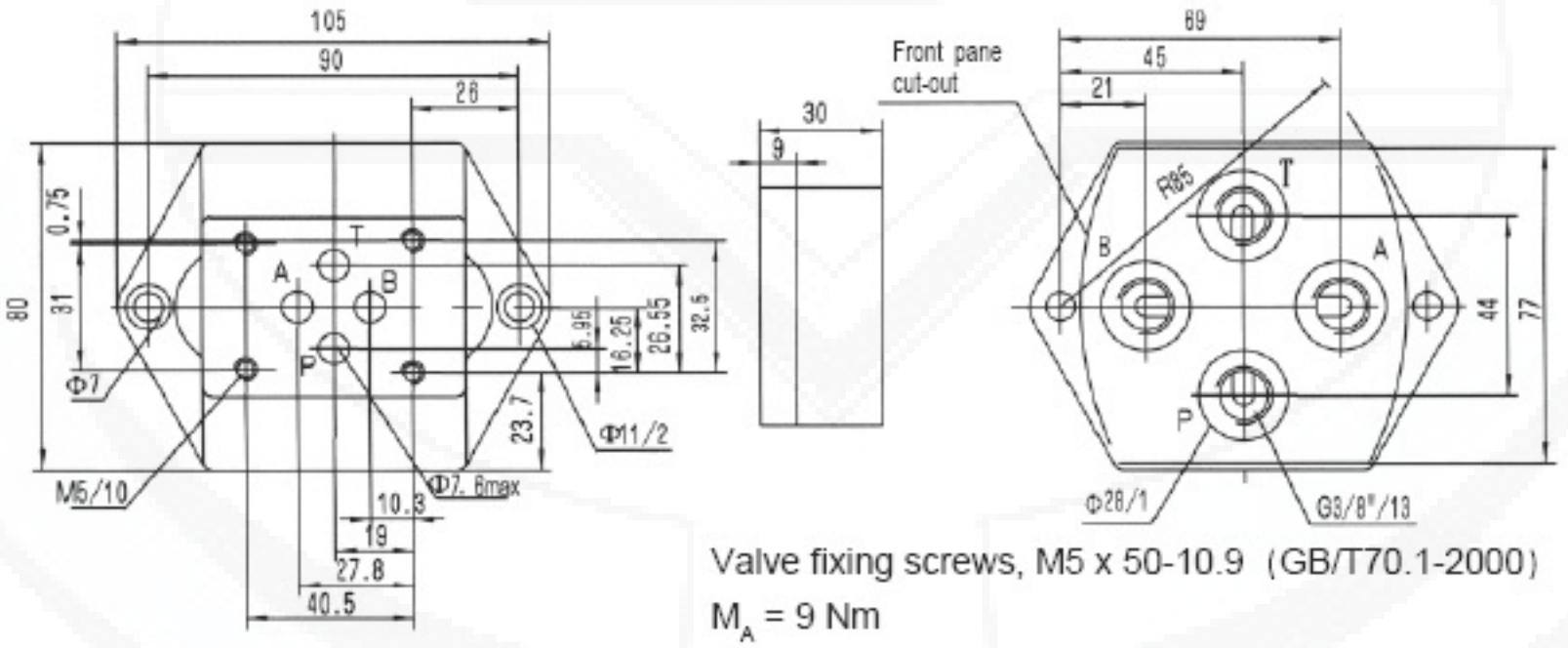
G341/01（G1/4″） G341/02（M14x1.5） Weight ≈ 1kg (Dimensions in mm)



Valve fixing screws, M5 x 50-10.9（GB/T70.1-2000）

M_A = 9 Nm

G342/01（G3/8″） G342/02（M18x1.5） Weight ≈ 1kg (Dimensions in mm)



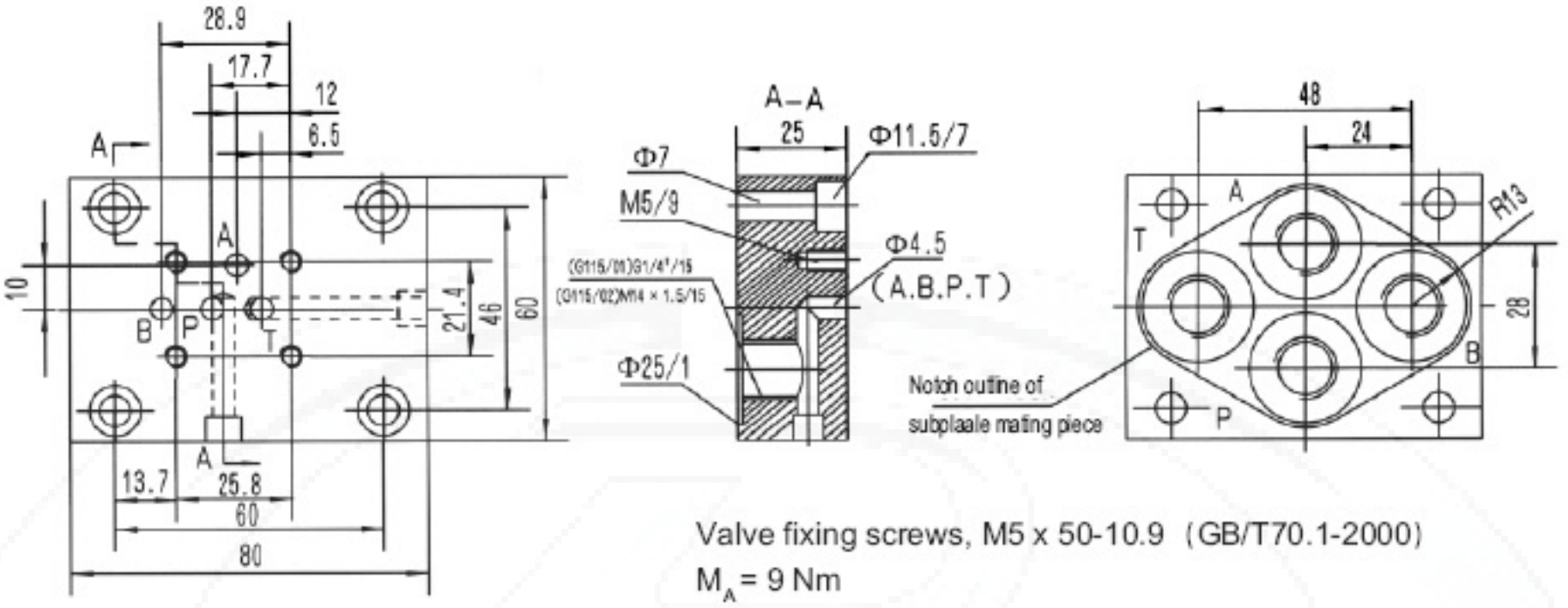
Valve fixing screws, M5 x 50-10.9（GB/T70.1-2000）

M_A = 9 Nm

Subplates

For applications outside these parameters, please consult us!

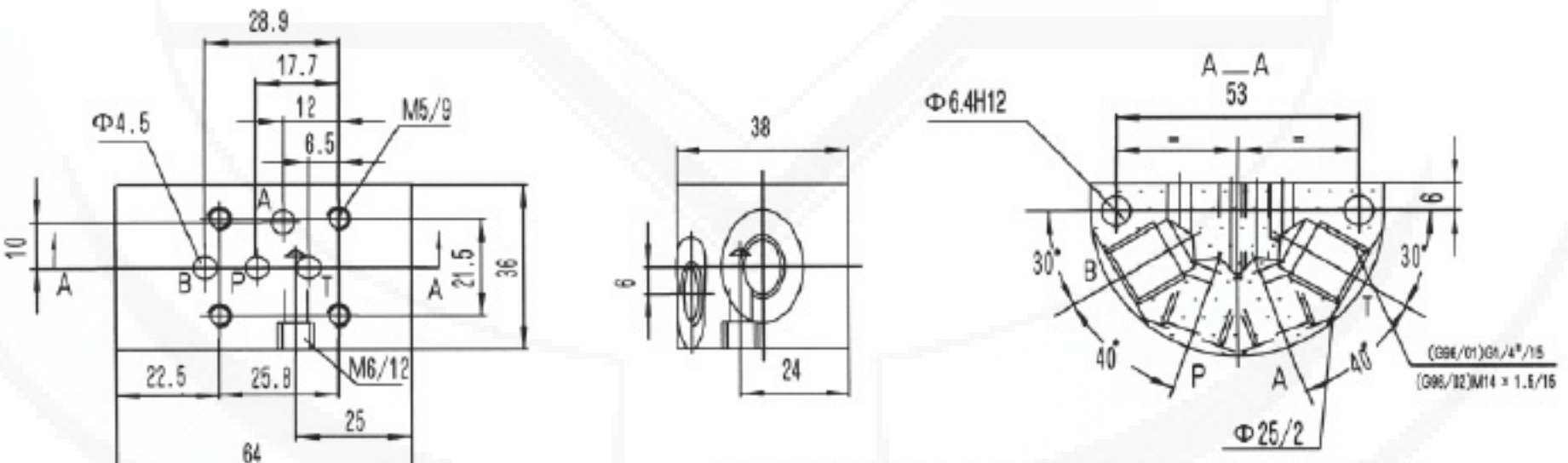
G115/01 (G1/4″) G115/02 (M14x1.5) **(Dimensions in mm)**



Valve fixing screws, M5 x 50-10.9 (GB/T70.1-2000)

M_A = 9 Nm

G96/01 (G1/4″) G96/02 (M14x1.5) **(Dimensions in mm)**



Valve fixing screws, M5 x 50-10.9 (GB/T70.1-2000)

M_A = 9 Nm

Annotations:

HUADE AMÉRICA
CEP : 03162-020
RUA HIPÓDROMO 1445 – MOOCA, SÃO PAULO, SP, BRASIL
TEL : (11) 3186-5959
huade@huade.com.br
www.huade.com.br