

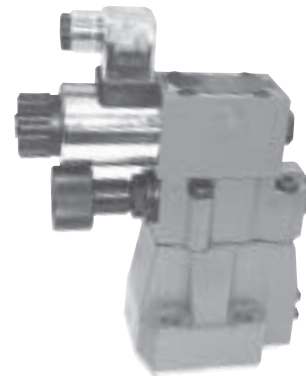


## Catálogo de Productos

Pressure shut-off valve pilot operated, type DA/DAW...50B/(New Series)

**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.**

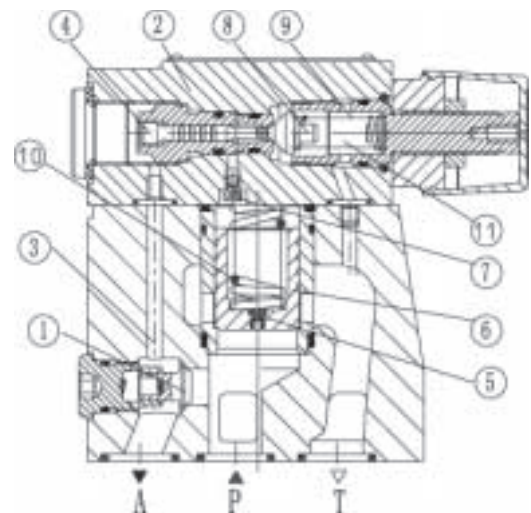
The pump delivers flow via check valve (1) into the hydraulic system (P to A). Pressure in port A acts via pilot line (3) on the pilot control spool (4). At the same time, pressure in port P passes via orifices (5) and (7) to the spring loaded side of the main spool (6) ball poppet (8) in the pilot valve (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.**

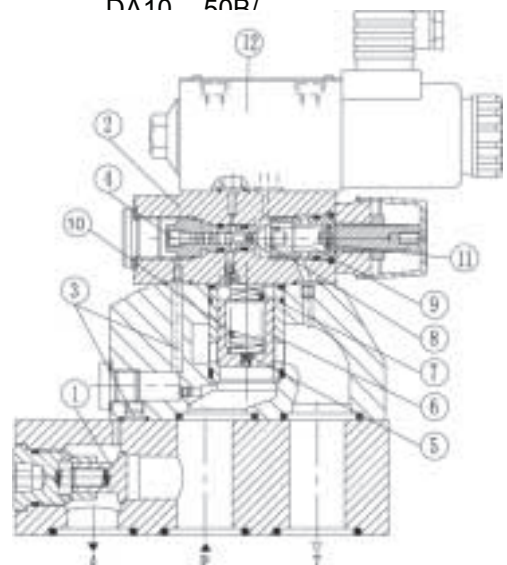
The area of the pilot spool (4) is 10% or optionally 17% greater than effective area of the ball (8). The effective force on the pilot spool (4) is, therefore, 10 or 17% greater than the effective force on the ball (8). When the actuator pressure falls in relation to the cut-off pressure by a valve which corresponds to the switching pressure 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 from P to A.

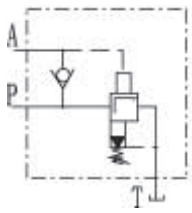


DA 10 50B/

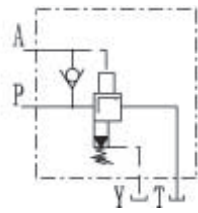


DAW20,30...-50B/

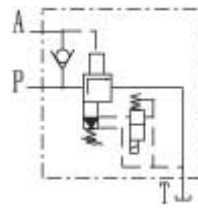
**symbol**



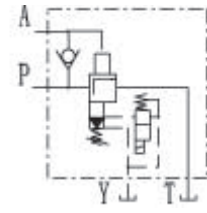
DA...-50B/...



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



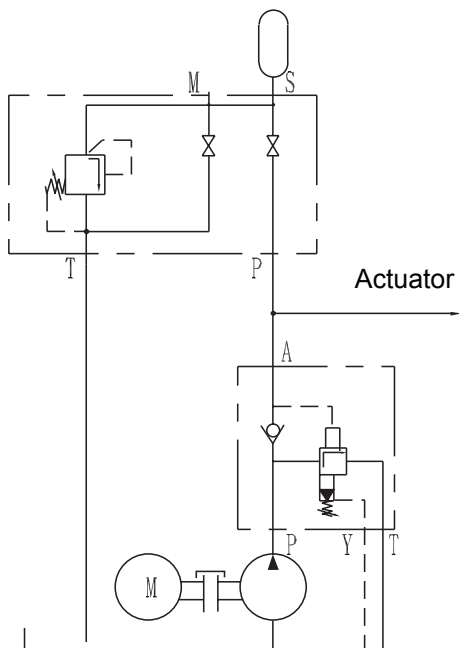
DAW...-50B/...



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

**Circuit examples**

Hydraulic system with accumulator

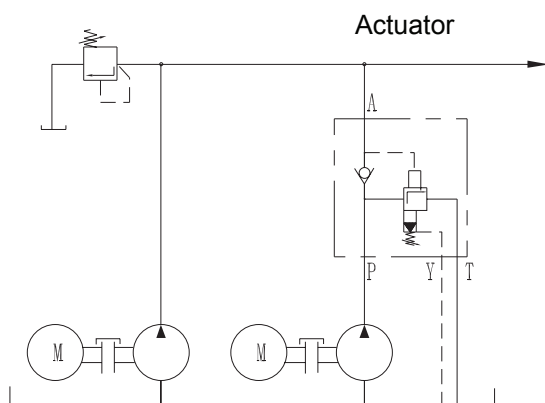


Application guidelines:

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



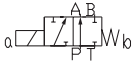
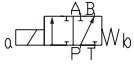
## Ordering details

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,return external

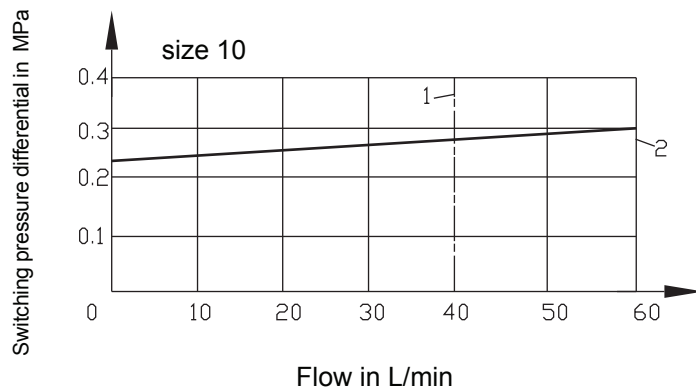
Switching pressure differential (P → A)  
10 = In the mid range 10  
17 = In the mid range 17

## Hydraulic technical data

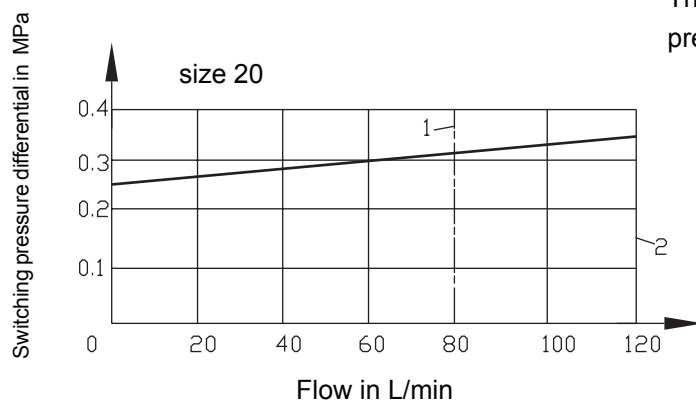
Size		10	20	30
Max. flow L/min	10%	40	80	120
	17%	60	120	240
Pressure range	10%	See characteristic curve		
	17%			
Operating pressure, port A (MPa)		up to 31.5		
Max. settable pressure (MPa)		up to 5, up to 10, up to 20, up to 31.5		
Pressure fluid		Mineral oil (for NBR seal), or phosphate ester (for FPM seal)		
Viscosity range (mm <sup>2</sup> /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 $v = 41 \text{ mm}^2/\text{s}$ and $t = 50^\circ\text{C}$ )

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



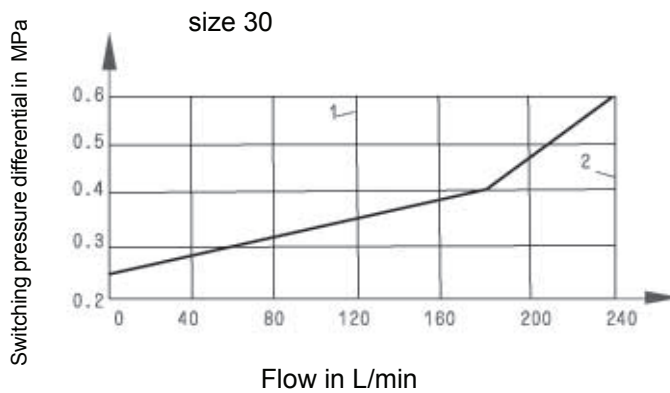
1  $q_{v \max}$  for 10% version  
2  $q_{v \max}$  for 17% version



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

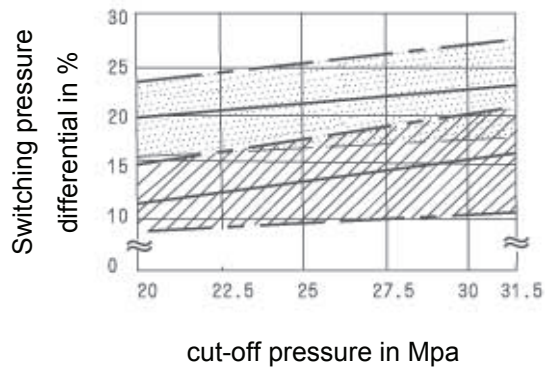
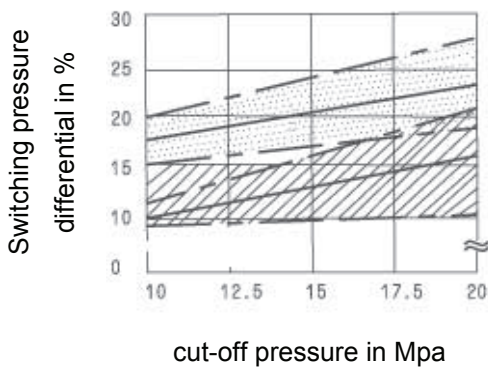
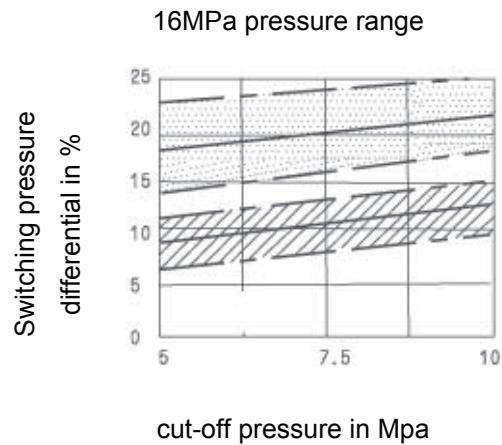
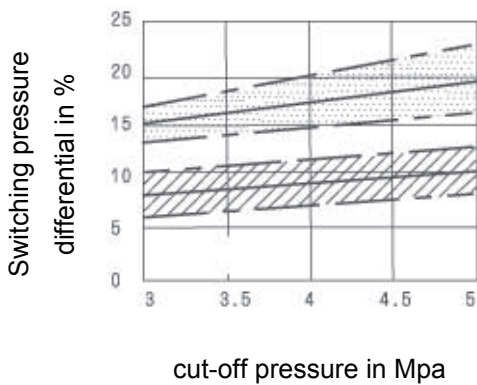
**Characteristic curves** (measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $t = 50^\circ\text{C}$ )

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

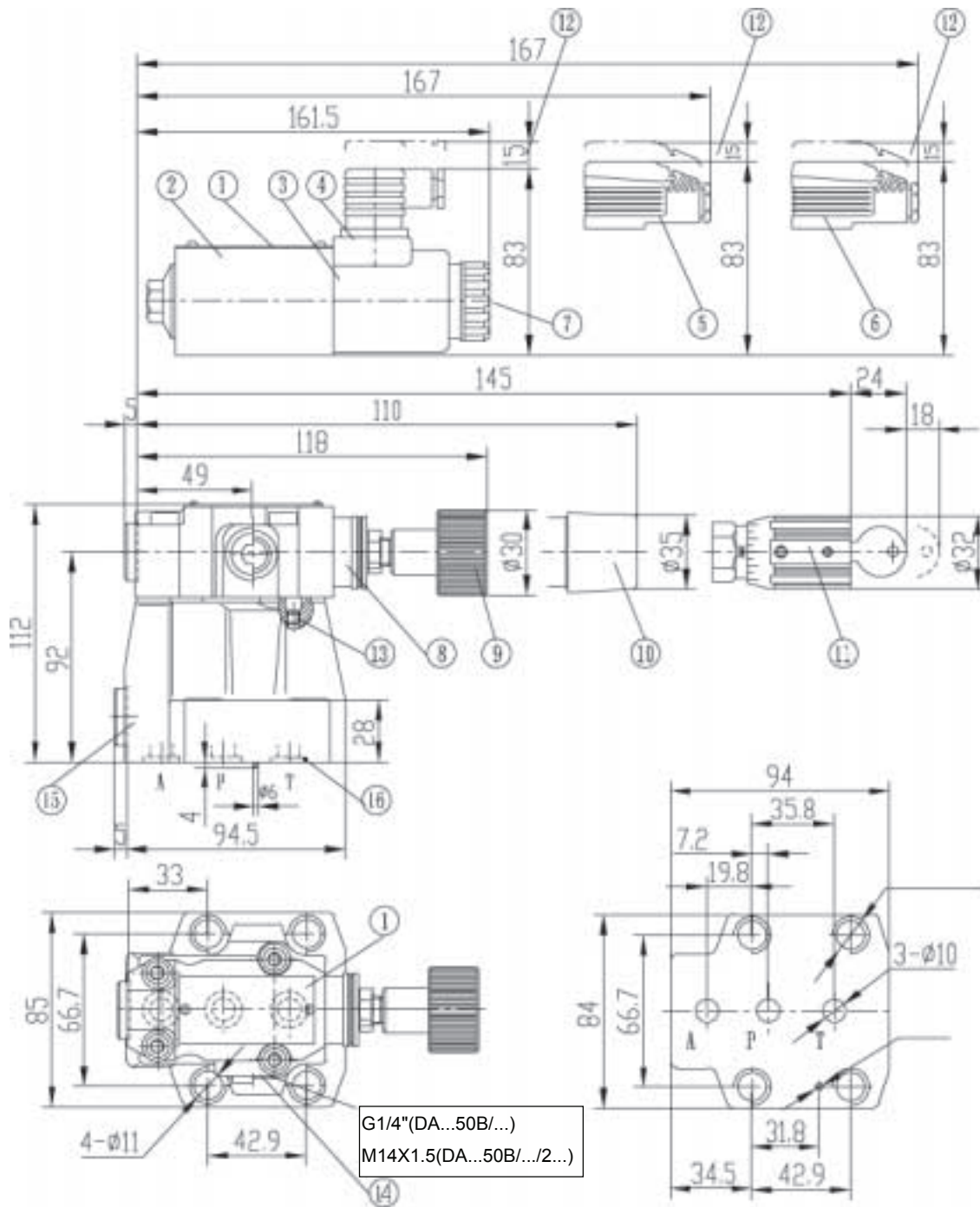


These characteristic curves are valid for an outlet pressure (T) = zero over the entire flow range.

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




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

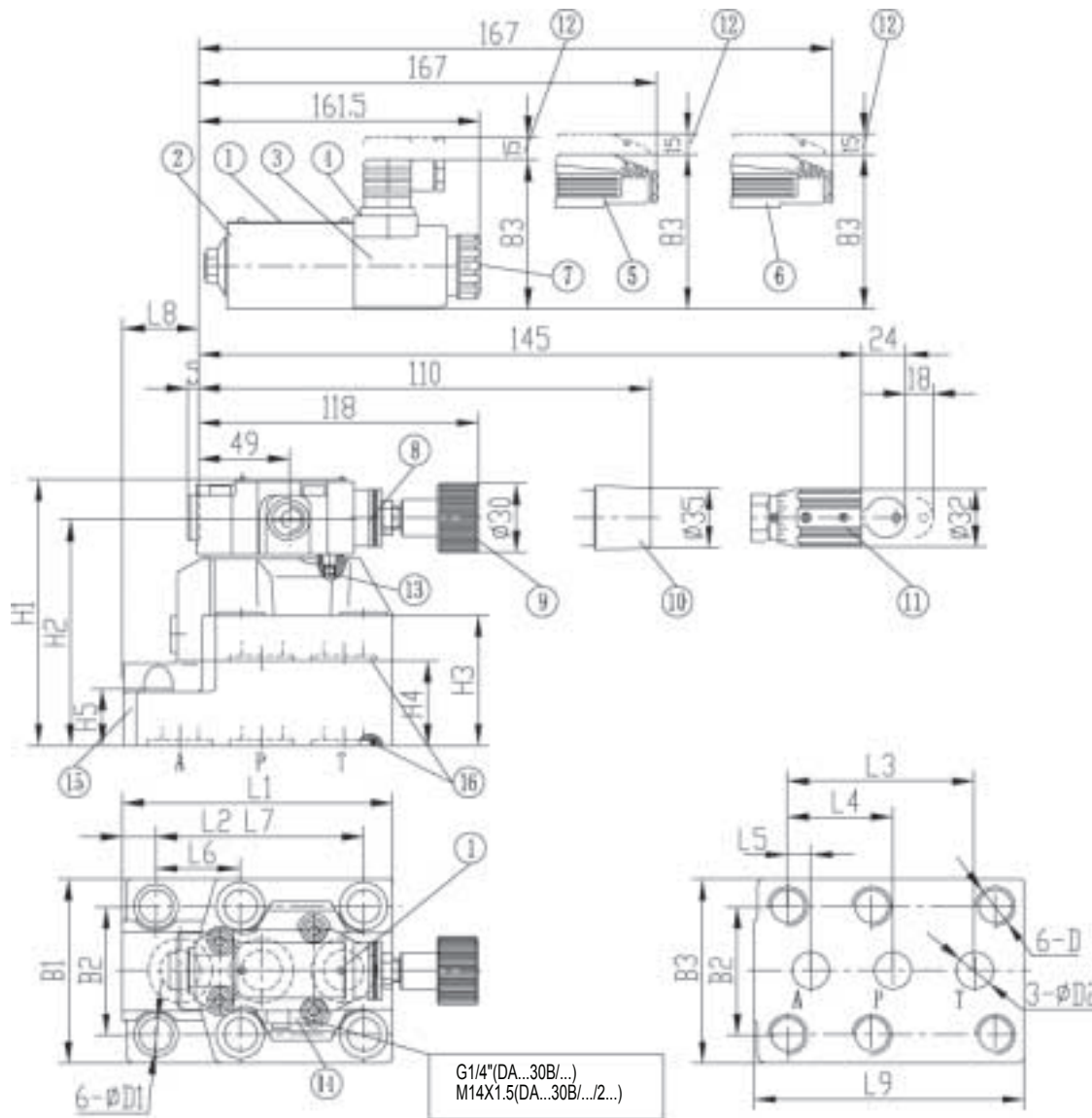


- 1.Nameplate
- 2.Direction valves, type WE6
- 3.Solenoid
- 4.Plug-in connector Z4
- 5.Large plug-in connector Z5
- 6.Large plug-in connector with light Z5L
- 7.Hand override, optional
- 8.Lock nut(only apply to up to 31.5 Mpa)

- 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

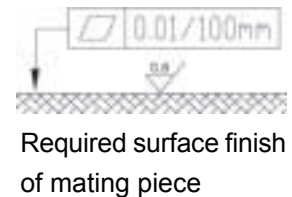
  
 Required surface finish  
 of mating piece

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



- 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
- 17. Space required to remove key

DA/DAW20...50B/...:28.17X3.53  
 DA/DAW30...50B/...:34.52X3.53



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		

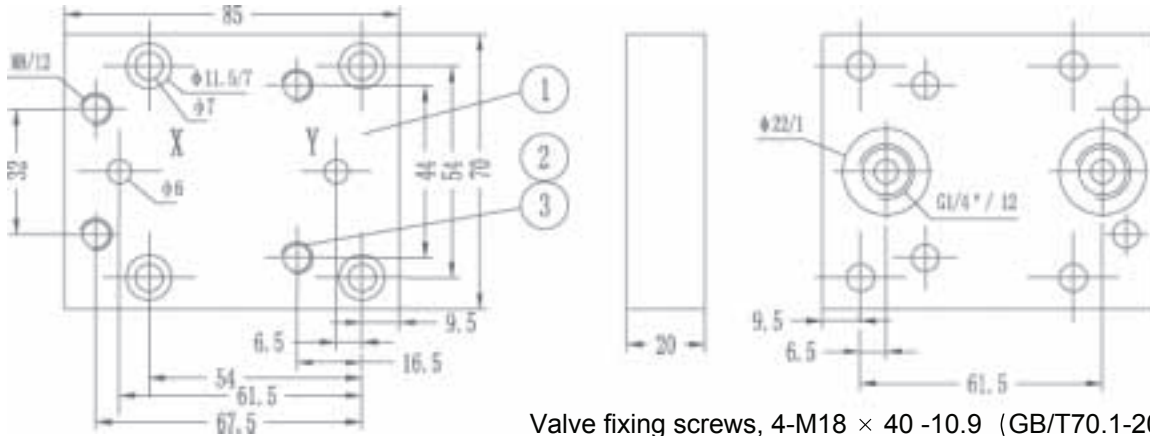
	DA/DAW20	DA/DAW30
Fixing screw	4-M16X100-10.9	4-M18X120-10.9
	2-M16X60-10.9 (GB/T70.1-2000)	2-M18X80-10.9 (GB/T70.1-2000)
Subplate for see page 151	G469/1 (G3/4) G470/1 (G1")	G471/1 (G11/4") G472/1 (G11/2")



**Subplates**

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

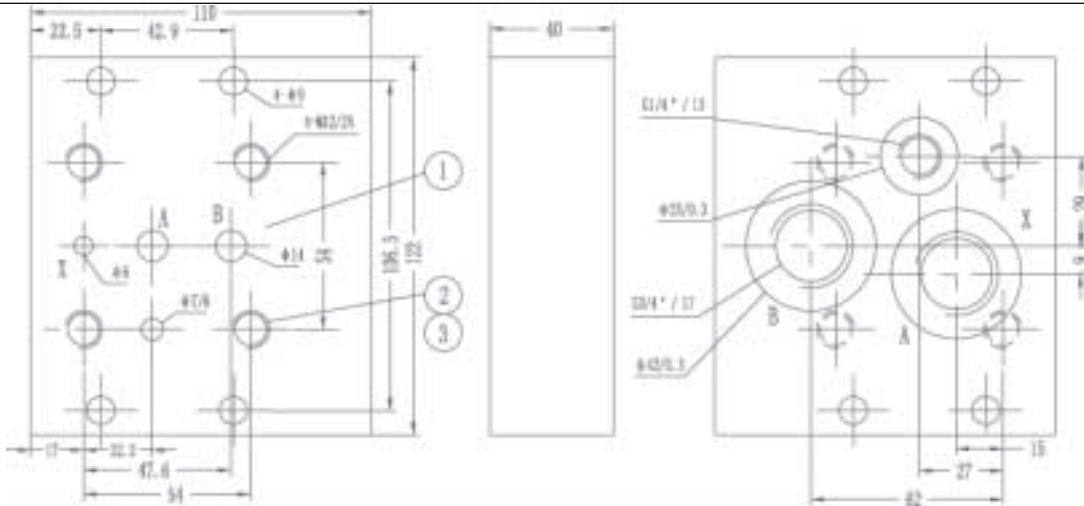
**(Dimensions in mm)**



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)**

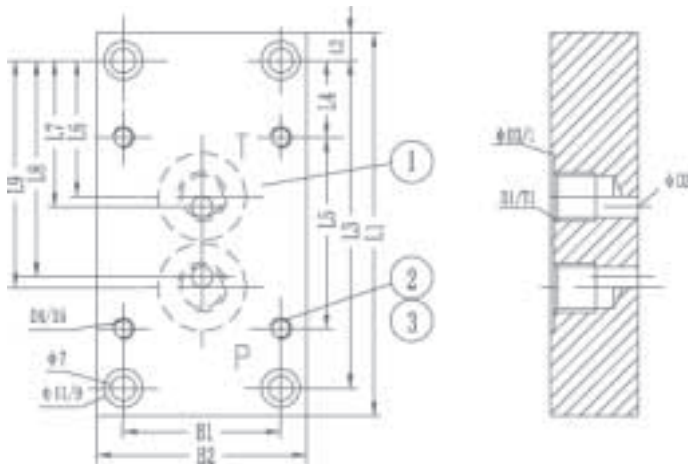


Valve fixing screws, 4-M18 × 40 -10.9 (GB/T70.1-2000)

**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)**

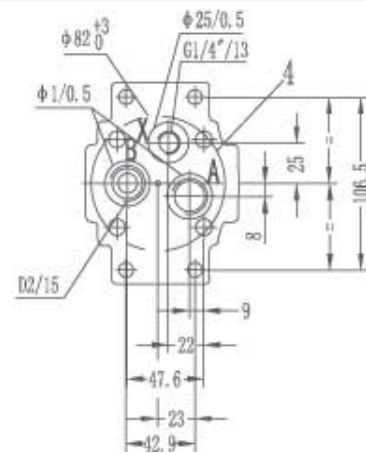
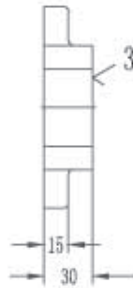
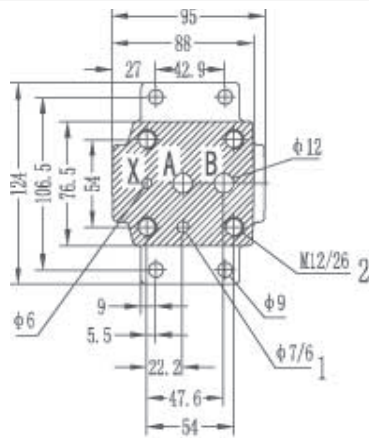


Valve fixing screws		Weight
NG6:M6 × 50	GB70	1.5
NG10:M8 × 70	-85	2.5
NG20:M8 × 90	-10.9	2.5
NG30:M10 × 110		5

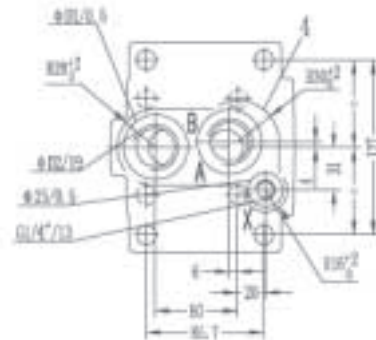
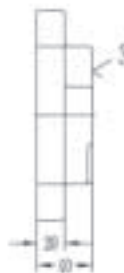
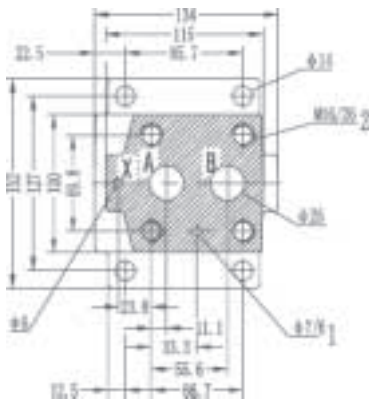
- ① mating piece of valve
- ② Valve fixing pin
- ③ Valve fixing screws

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	1 1/2"(M48 × 2)

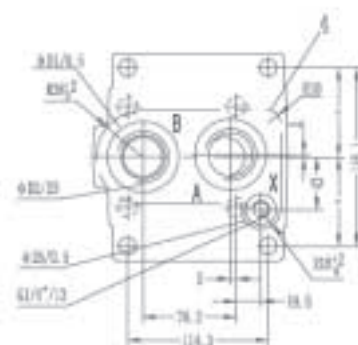
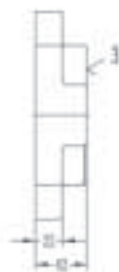
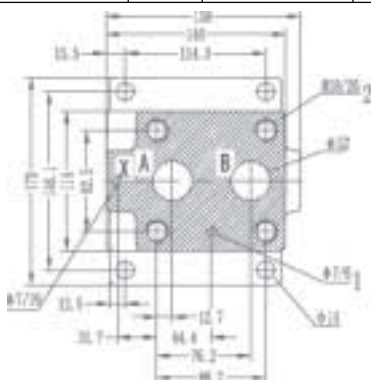
## Subplates



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				

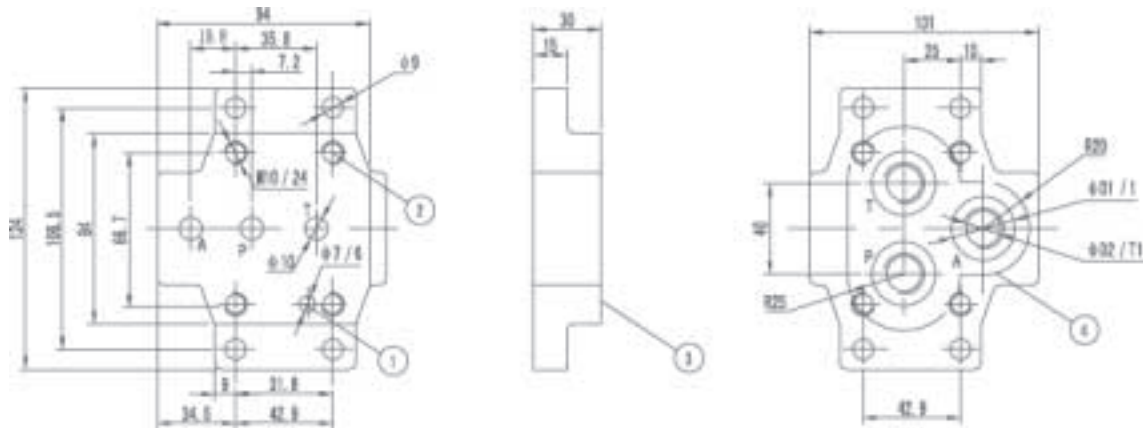


Size	Type	D1	D2	T1	Valve fixing screws	Tightening torque for screws	Weight
NC32	G410/01	58	G1 1/4"	20.5	4-M18 × 50 -10.9 (GB/T70.1-2000)	405Nm	5.0kg
	G410/02		M42 × 2				
	G411/01	65	G1 1/2"	22.5			
	G411/02		M48 × 2				

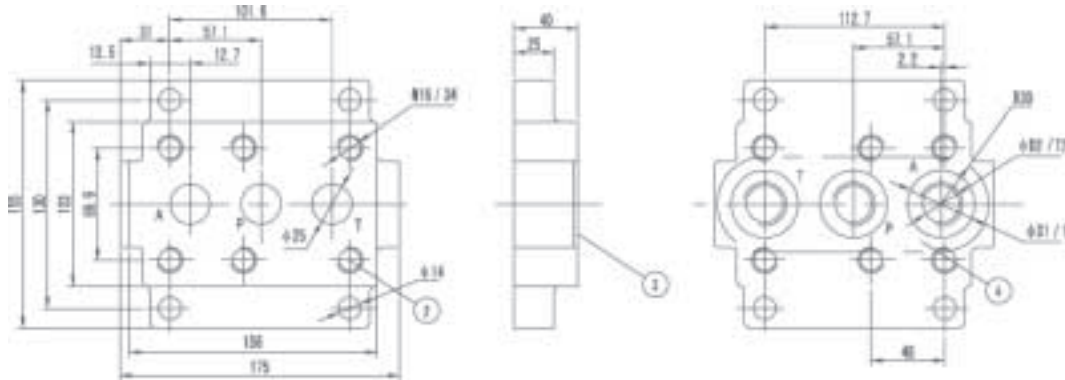
**1 mating piee of valve    2 Valve fixing screws    3 locating pin    4 Front panel cut-out**



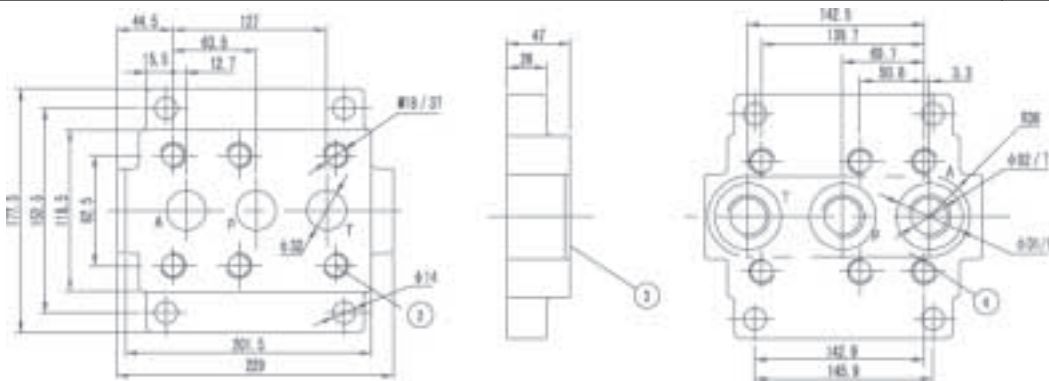
## Subplates



Size	Type	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)	
	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)	
	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

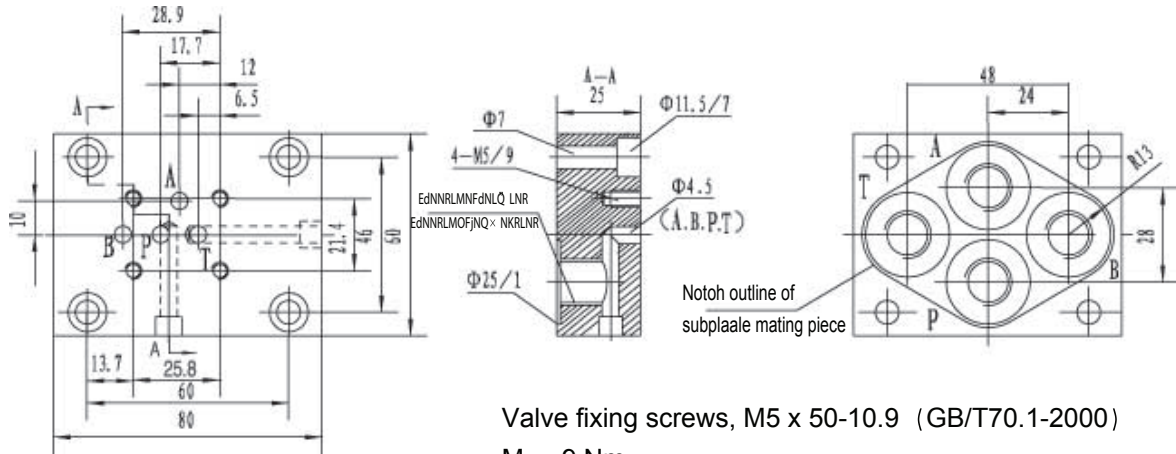


## Subplates

For applications outside these parameters, please consult us!

**G115/01 (G1/4" ) G115/02 (M14x1.5)**

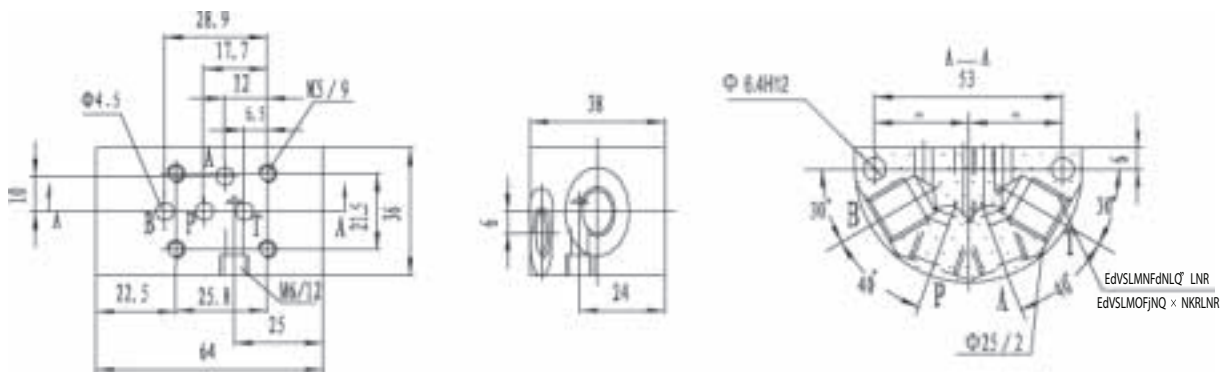
**(Dimensions in mm)**



Valve fixing screws, M5 x 50-10.9 (GB/T70.1-2000)  
 $M_A = 9 \text{ Nm}$

**G96/01 (G1/4" ) G96/02 (M14x1.5)**

**(Dimensions in mm)**



Valve fixing screws, M5 x 50-10.9 (GB/T70.1-2000)  
 $M_A = 9 \text{ Nm}$