

### DWHG型电液换向阀

## DWHG SERIES SOLENOID PILOT OPERATED DIRECTIONAL VALVES



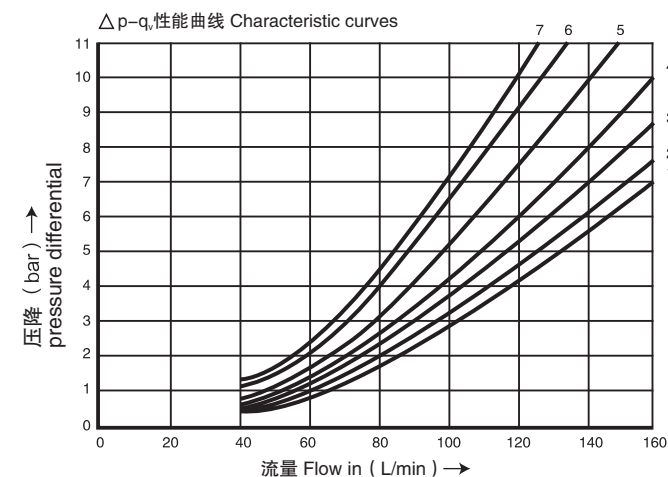
DWHG型电液换向阀是用电磁换向阀作为先导控制的滑阀式换向阀，用于控制液流的通断和流动方向。

DWHG series are solenoid pilot operated spool type valves . This series are used to control the start ,stop and direction of flow.

#### 技术参数 Technical data

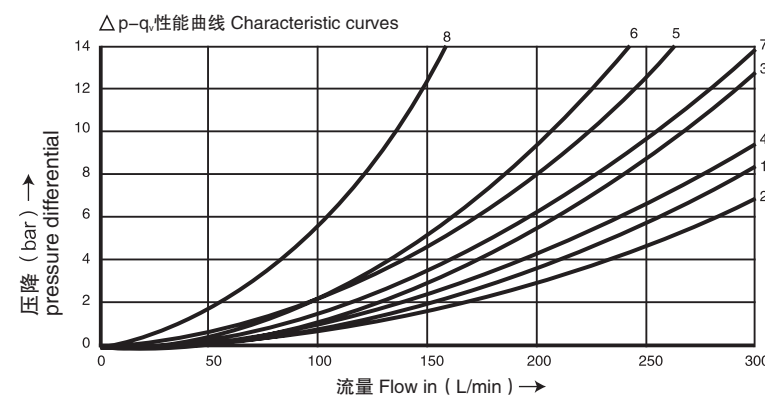
口径 Size	10	16	22	25	32	
最高工作压力 P A B(MPa) Max operating pressure P.A.B(MPa)	31.5	35	31.5	35	35	
T口(MPa) T Port (MPa)	控制油外排 Externally drained	31.5	25	25	25	25
	控制油内排 Internally drained	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16
Y口(MPa) Y Port (MPa)	控制油外排 Externally drained	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16
	控制油内排 Internally drained	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16	交流(AC)-10 直流(DC)-16
最小控制压力 (MPa) Min. Pilot pressure(MPa)	0.45-1	0.45-1.3	0.45-1	0.45-1	0.45-1	
最大流量(L/min) Max. flow rate(L/min)	160	300	450	650	1100	
重量(千克) Weight(KGS)	6.7	9.5	12	18	38.5	
阀体 (材料) 表面处理 Valve body (Material) Surface treatment	铸件 表面磷化处理 casting phosphating surface					
油液清洁度/Oil cleanliness	NAS1638 9级和ISO4406 20/18/15级 NAS1638 class 9 and ISO4406 class 20/18/15					

- 特性曲线：4DWHG10...型 ( 在使用 HLP46 , 油=40°C ± 5°C时测得 )  
Characteristic curves: Type 4DWHG10... ( measured with HLP46, Voil=40°C ± 5°C )



机能符号 Spool symbol	切换位置 Spool position				机能符号 Spool symbol	中位 Central position		
	P-A	P-B	A-T	B-T		A-T	B-T	P-T
E,Y,D	2	2	4	5				
F	1	4	1	4	F	3	6	
G,T	4	2	2	6	G,T	-	7	
H,C	4	4	1	4	H	1	3	
J,K	1	2	1	3				
L	2	3	1	4	L	3	-	
M	4	4	3	4				
P	4	1	3	4	P	-	7	
Q,V,W,Z	2	2	3	5				
R	2	2	3	-				
U	3	3	3	4	U	-	4	

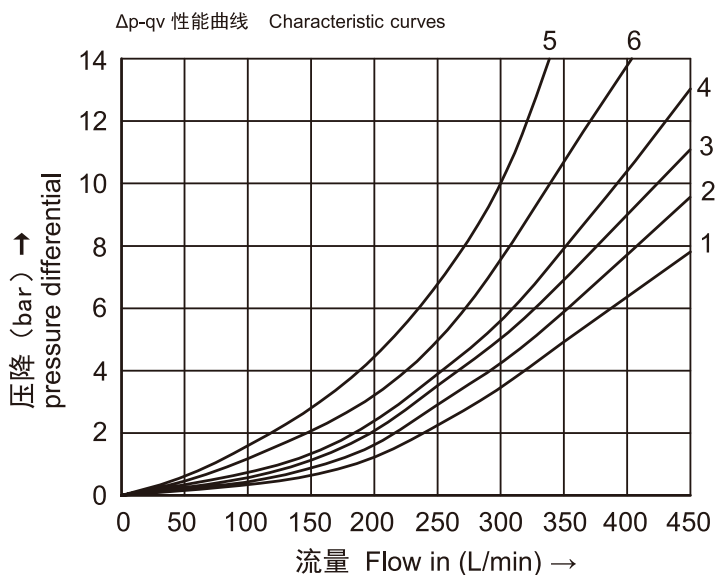
- 特性曲线：4DWHG16...型 ( 在使用 HLP46 , 油=40°C ± 5°C时测得 )  
Characteristic curves: Type 4DWHG16... ( measured with HLP46, Voil=40°C ± 5°C )



机能符号 Spool symbol	切换位置 Spool position					机能符号 Spool symbol	切换位置 Spool position				
	P-A	P-B	A-T	B-T	P-T		P-A	P-B	A-T	B-T	P-T
E,D,Y	1	1	1	3	-	M,W	2	2	4	3	-
F	2	2	3	3	-	R	2	2	4	-	-
G,T	5	1	3	7	6	U	1	1	4	7	-
H,C,Q,V,Z	2	2	3	3	-	S	4	4	4	-	8
J,K,L	1	1	3	3	-						

特性曲线: 4DWHG22...型 (在使用 HLP46, 油温=40°C ± 5°C时测得)

Characteristic curves: Type 4DWHG22... (measured with HLP46, Voil=40°C ± 5°C)

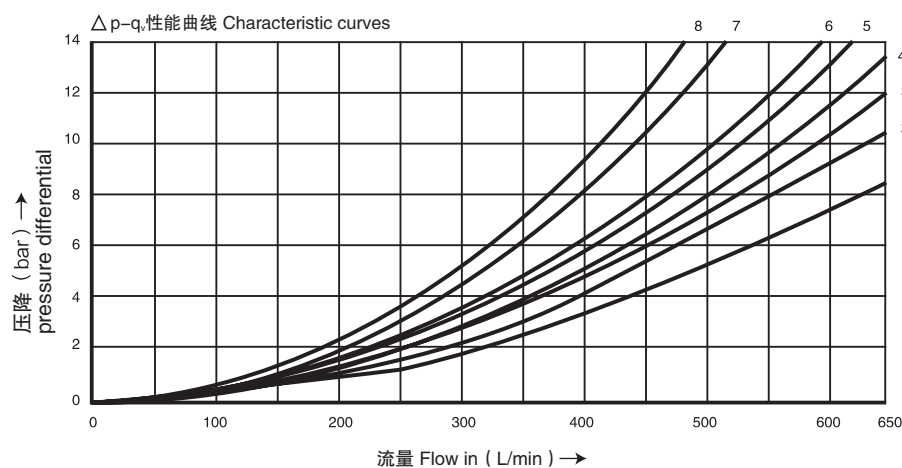


机能符号 Spool symbol	切换位置 Spool position					
	P-A	P-B	A-T	B-T	P-T	B-A
E	2	2	1	4	-	-
F	1	2	1	2	4	-
G	2	2	2	4	6	-
H	2	2	1	3	2	-
J	2	2	1	3	-	-
L	2	2	1	2	-	-
M	2	2	1	4	-	-
P	2	2	1	4	6	-
Q	2	2	1	4	-	-
R	1	2	1	-	-	5
T	2	2	2	4	5	-
U	2	2	1	4	-	-
V	2	2	1	4	-	-
W	2	2	1	3	-	-

4 机能符号L Spool symbol L  
中位A-T Central position A-T  
6 机能符号U Spool symbol U  
中位B-T Central position B-T

特性曲线: 4DWHG25...型 (在使用 HLP46, 油温=40°C ± 5°C时测得)

Characteristic curves: Type 4DWHG25... (measured with HLP46, Voil=40°C ± 5°C)



7 机能符号 G Spool symbol G  
中位P-T Central position P-T  
8 机能符号 T Spool symbol T  
中位P-T Central position P-T

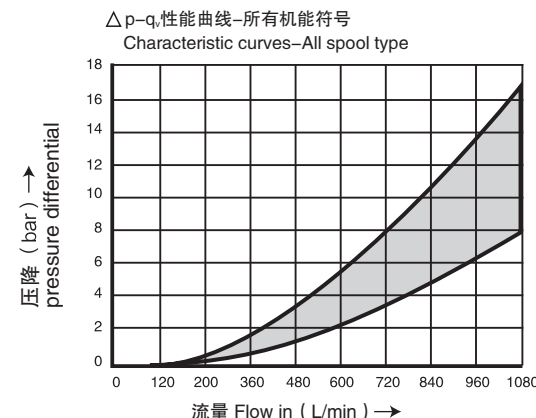
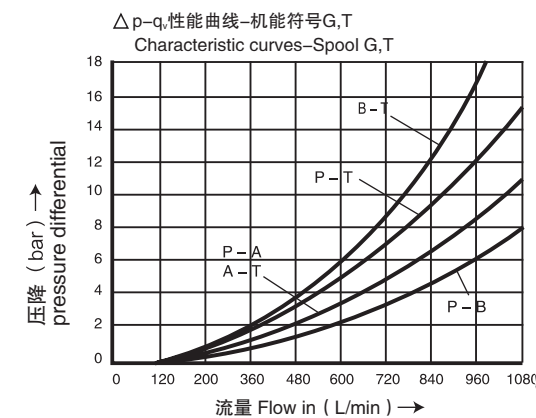
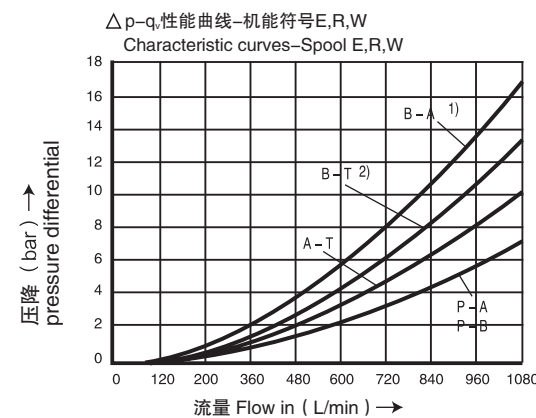
机能符号 Spool symbol	切换位置 Spool position			
	P-A	P-B	A-T	B-T
E	1	1	1	3
F	1	4	3	3
G	3	1	2	4
H	4	4	3	4
J,Q	2	2	3	5

机能符号 Spool symbol	切换位置 Spool position			
	P-A	P-B	A-T	B-T
L	2	2	3	3
M	4	4	1	4
P	4	1	1	5
R	2	1	1	-

机能符号 Spool symbol	切换位置 Spool position			
	P-A	P-B	A-T	B-T
U	4	1	1	6
V	2	4	3	6
W	1	1	1	3
T	3	1	2	4

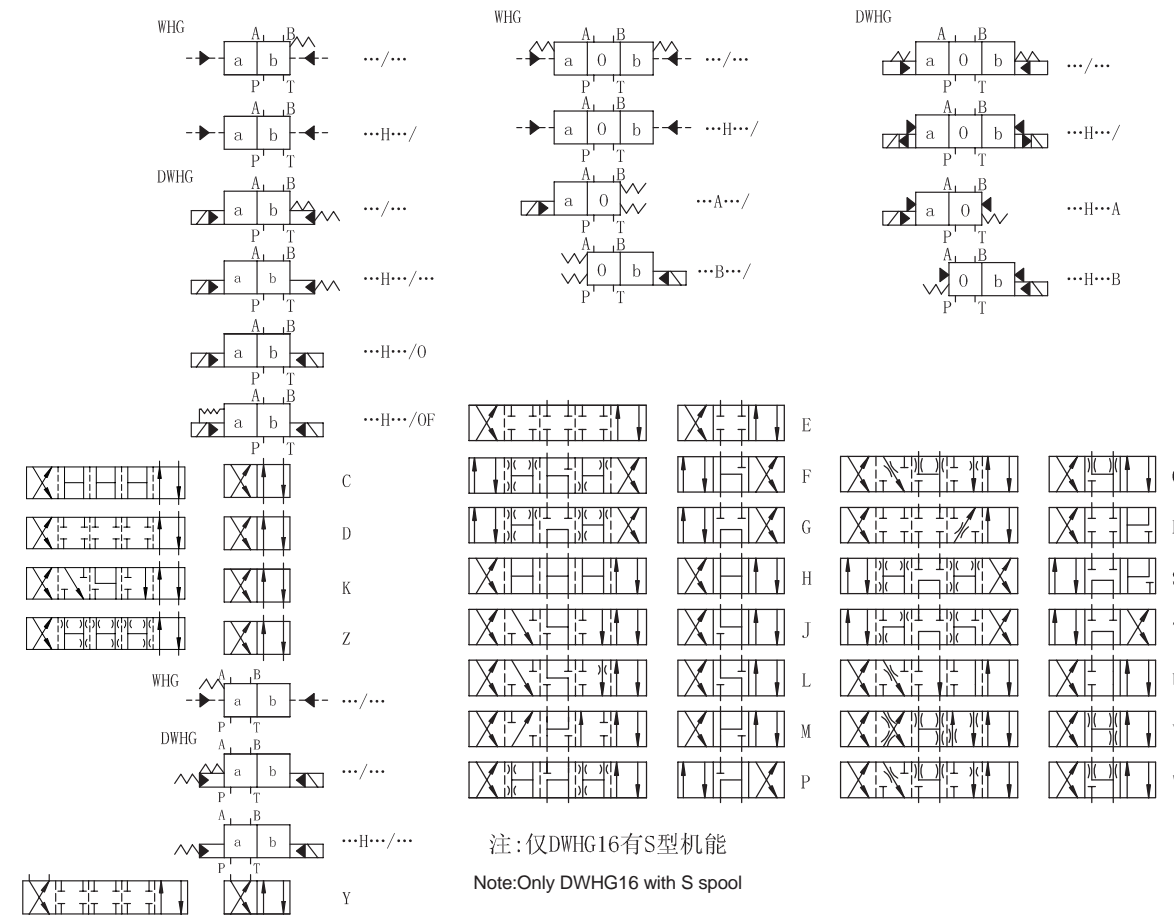
特性曲线: 4DWHG32...型 (在使用 HLP46, 油温=40°C ± 5°C时测得)

Characteristic curves: Type 4DWHG32... (measured with HLP46, Voil=40°C ± 5°C)



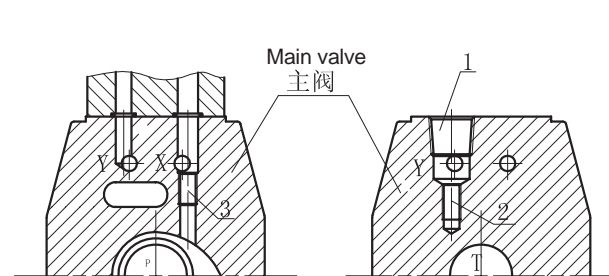
1) 仅用于机能符号 R  
2) 不用于机能符号 R  
1) Only applicable for spool R  
2) Not applicable for spool R

机能符号 Spool symbols

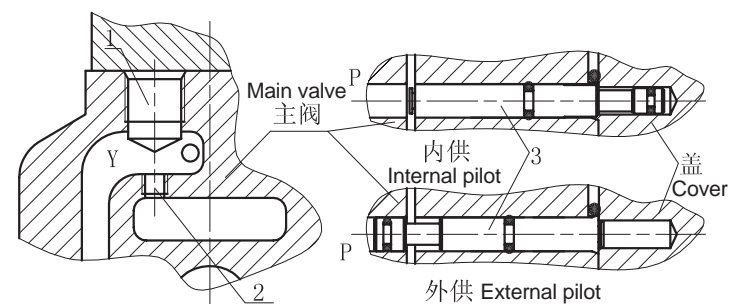


注: 仅DWHG16有S型机能  
Note: Only DWHG16 with S spool

控制油内供与外供及内排与外排的说明 Pilot fluid supply



DWHG10 型供排结构图  
DWHG10 explanation partial drawing



DWHG16 型供排结构图  
DWHG16 explanation partial drawing

一、4DWHG10型

- 1、内供与外供转换:主阀体顶上P孔中有M6螺钉3为外供,拆下M6螺钉3为内供。
- 2、内排与外排转换:卸去螺塞1,装上M6螺钉2为外排,拆下M6螺钉为内排。

1、4DWHG10

(1) Internal pilot and external pilot:  
The "P" port with M6 screw 3 is external pilot, to convert valve into internal pilot, the M6 screw 3 must be removed.  
(2) Internal drain and external drain:  
Removing the bolt 1, to install M6 screw 2 is external drain, unscrew the M6 screw 2 is internal drain.

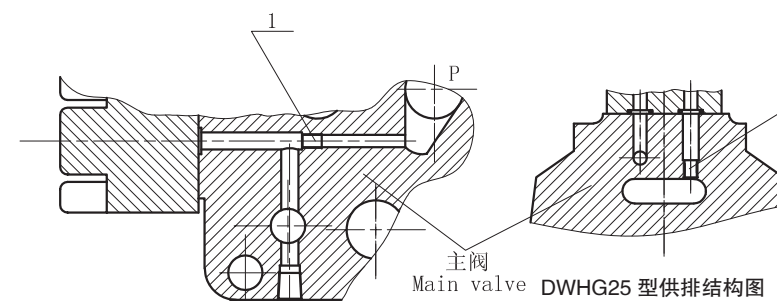
二、4DWHG16型

- 1、内供与外供转换:拆下右盖,将销3的小头朝向主阀内装成外供,将销3的小头朝外装成内供。
- 2、内排与外排转换:将主阀顶上螺塞1拆下,装上M6螺钉2成外排,拆下M6螺钉2成内排。

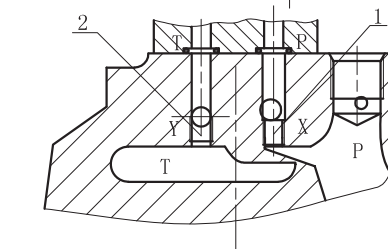
2、4DWHG16

(1) Internal pilot and external pilot:  
Removing the sideward cover, installing the pin to allow "P" port with open position is internal pilot, to convert the pin into "P" port with plugged position is external drain.  
(2) Internal drain and external drain:  
Removing the bolt 1 and installing M6 screw 2 is external drain, unscrew the M6 screw 2 is internal drain.

控制油内供与外供及内排与外排的说明 Pilot fluid supply



DWHG25 型供排结构图  
DWHG25 explanation partial drawing



DWHG32 型供排结构图  
DWHG32 explanation partial drawing

三、4DWHG25型

- 1、内供与外供转换:拆下端盖,装上M6螺钉1外供,拆下M6螺钉2成内供。
- 2、内排与外排转换:将主阀顶上T孔中的M6螺钉2拆下为内排,装上为外排。

3、4DWHG25

(1) Internal pilot and external pilot:  
Removing the sideward cover, installing M6 screw 1 is external pilot, unscrew the M6 screw 2 is internal pilot.  
(2) Internal drain and external drain:  
Removing the M6 screw 2 in the "T" port on the top of main valve is internal drain, installing the M6 screw 2 is external drain.

四、4DWHG32型

- 1、内供与外供转换:将主阀顶上P孔中的M6螺钉1装上成外供,拆下为内供。
- 2、内排与外排转换:将主阀顶上T孔中的M6螺钉2装上为外排,拆下为内排。

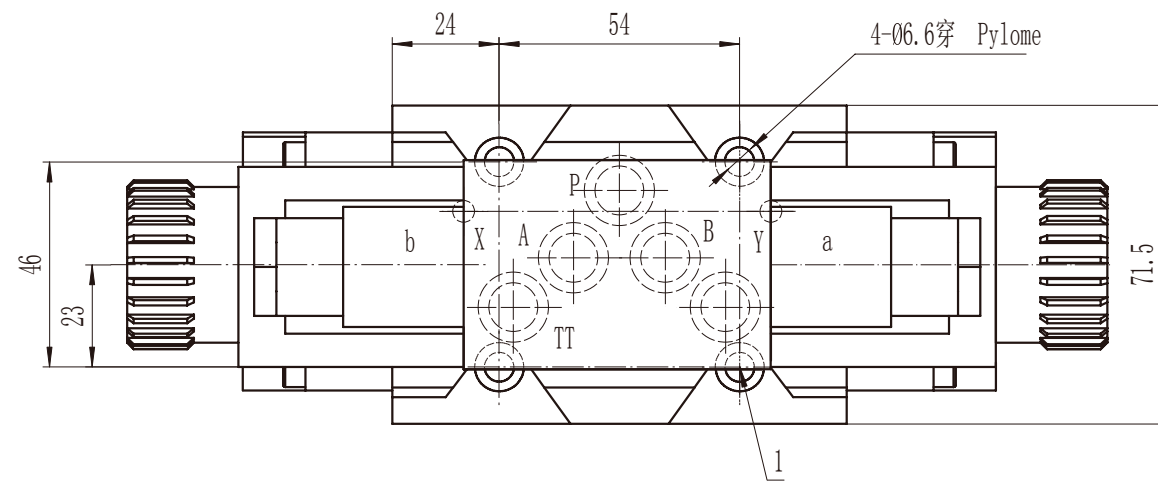
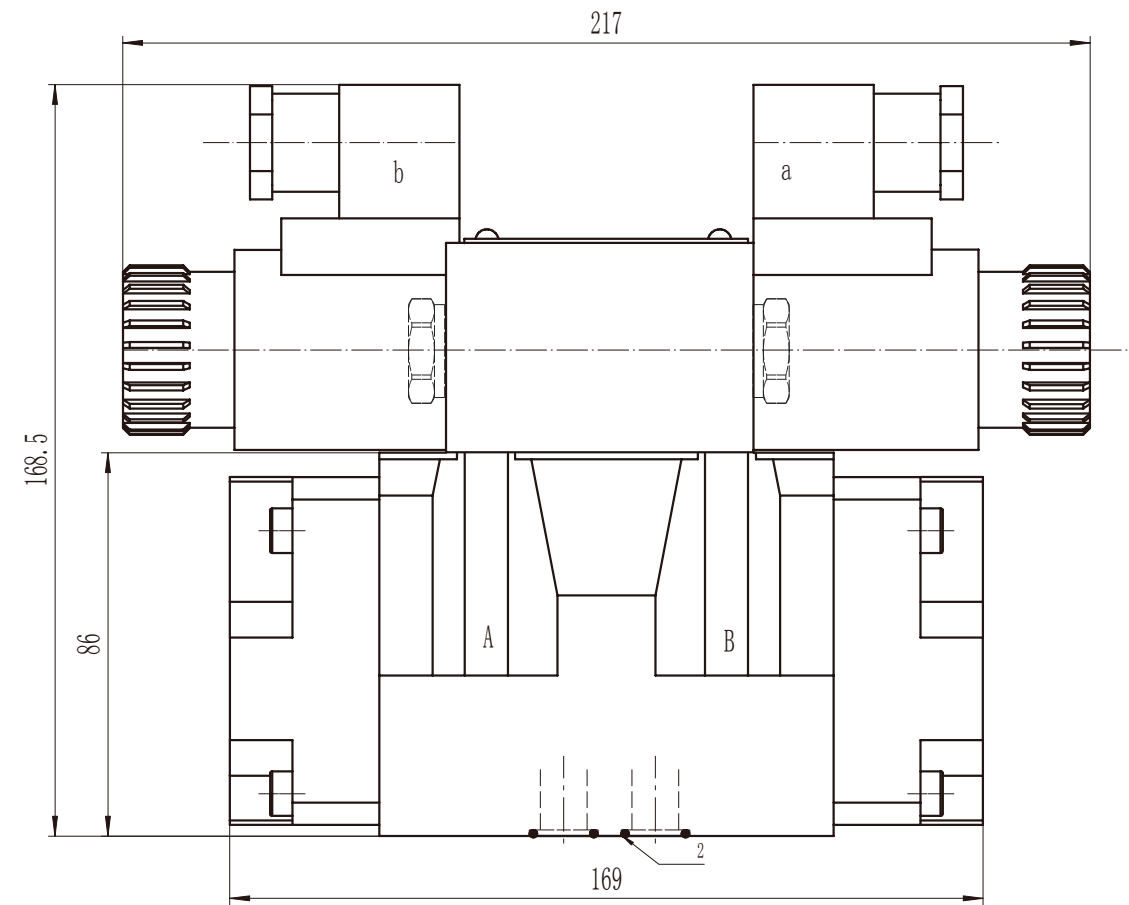
4、4DWHG32

1、Internal pilot and external pilot:  
Installing the M6 screw 1 in the "P" port on the top of main valve is external pilot; removing the M6 screw 1 is internal pilot.  
2、Internal drain and external drain:  
Removing the M6 screw 2 in the "T" port on the top of main valve is external drain; installing the M6 screw 2 is internal drain.

注意事项:内供时必须把底板上X口堵住,内排时必须把底板上Y口堵住。

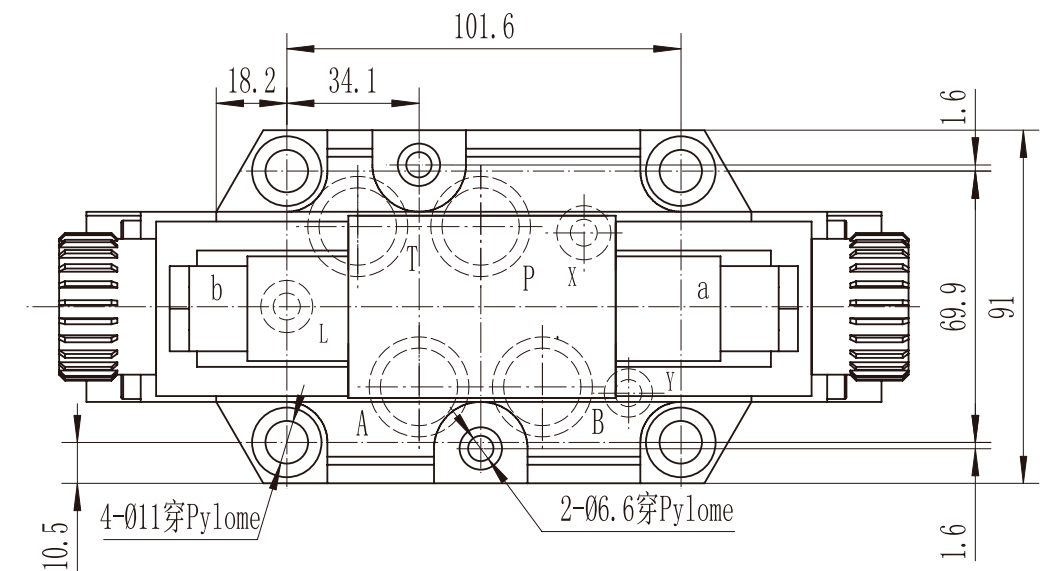
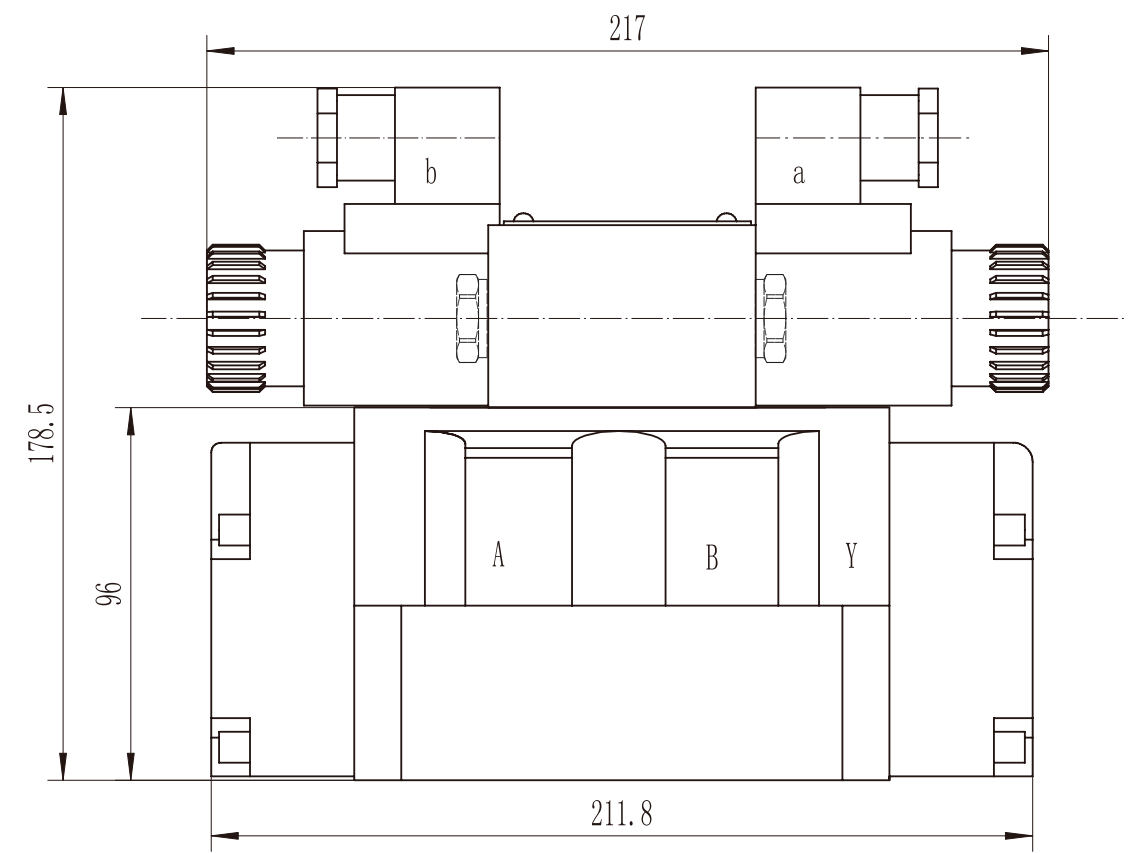
NOTE : 1.The "X" port on the base plate must be plugged if internal pilot.  
2.The "Y" port on the base plate must be plugged if internal drain.

4DWHG10外型尺寸 4DWHG10 Subplate Installation Dimensions



- |   |  |
|---|--|
| 1、阀固定螺丝:<br>4个M6X45 GB/T70.1-12.9级<br>拧紧扭矩Ma=15.5Nm<br>2、O型圈Φ16X1.9 | 1.Valve's set screw<br>4 of M6 x 45 GB/T70.1-12.9<br>Tightening torque Ma=15.5Nm.<br>2.O-ring φ 16 x 1.9 |
|---|--|

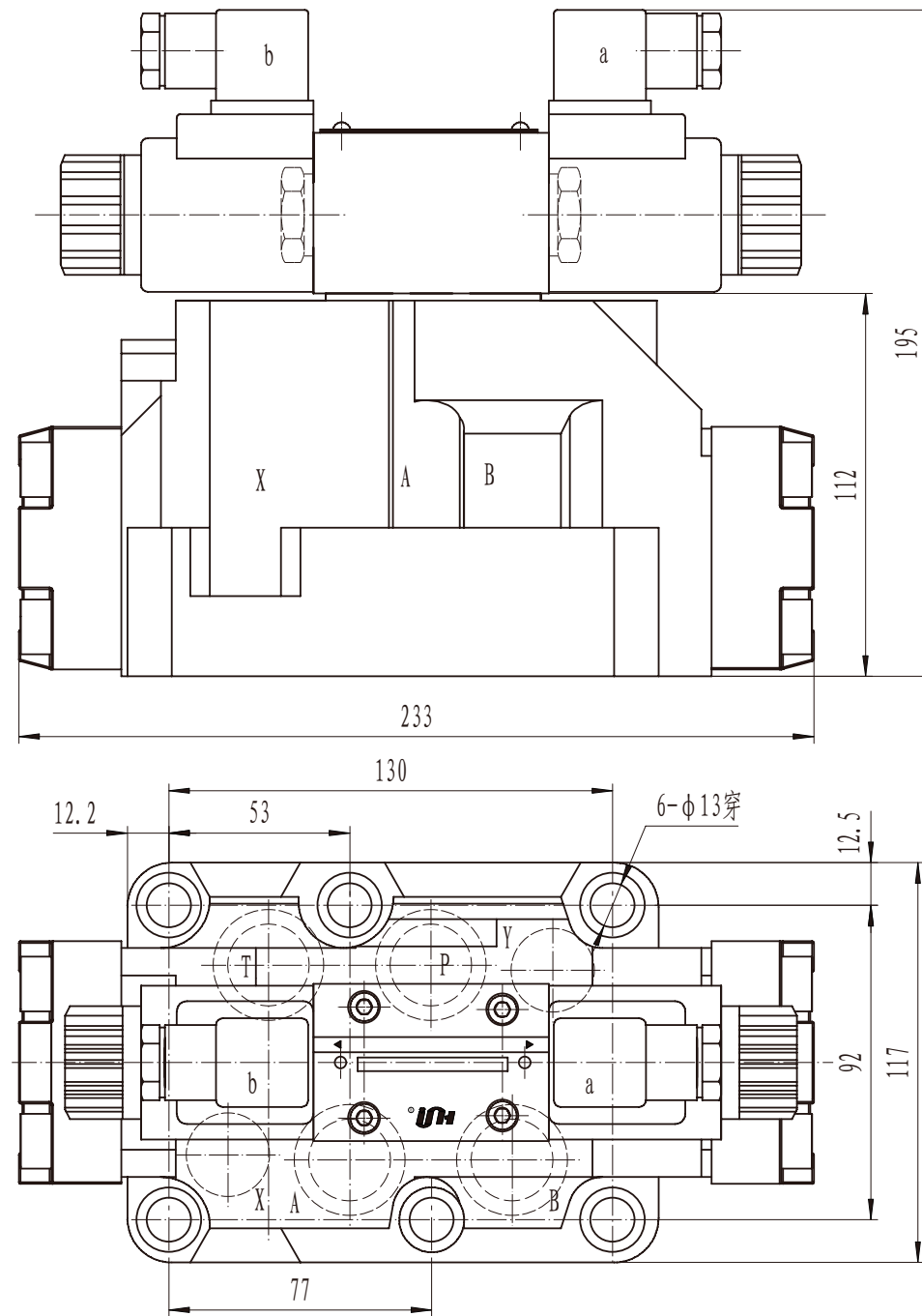
4DWHG16外型尺寸 4DWHG16 Subplate Installation Dimensions



- 阀固定螺钉  
4个M10X60GB/T 70.1-12.9级 拧紧扭矩Ma=75Nm  
2个M6X60GB/T 70.1-12.9级 拧紧扭矩Ma=15.5Nm  
P.T.A.B口O型圈: Φ26X2.4  
X.Y.L口O型圈: Φ15X1.9

- Valve's set screw  
4 of M10 x 60 GB/T70.1-12.9 Tightening torque Ma=75Nm.  
2 of M6 x 60 GB/T70.1-12.9 Tightening torque Ma=15.5Nm.  
O-ring for P.T.A.B Port: φ 26 x 2.4  
O-ring for X.Y.L Port: φ 15 x 1.9

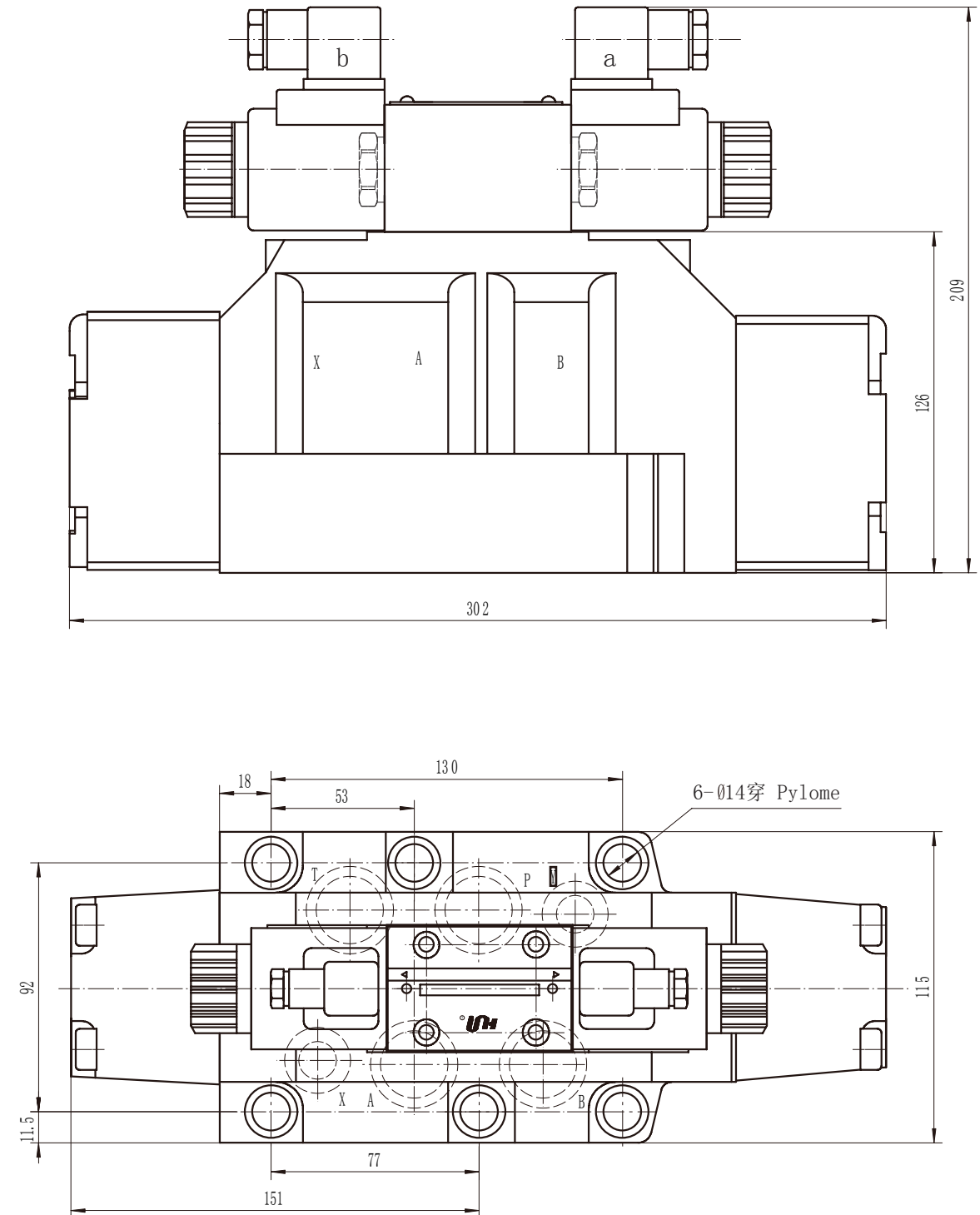
4DWHG22外型尺寸 4DWHG22 Subplate Installation Dimensions



阀固定螺钉  
6个M12X60GB/T 70.1-12.9级 拧紧扭矩Ma=130Nm  
P.T.A.B口O型圈:  $\phi 31 \times 3.1$   
X.Y口O型圈:  $\phi 25 \times 3.1$

Valve's set screw  
6 of M12 x 60 GB/T70.1-12.9 Tightening torque Ma=130Nm.  
O-ring for P.T.A.B Port:  $\phi 31 \times 3.1$   
O-ring for X.Y Port:  $\phi 25 \times 3.1$

4DWHG25外型尺寸 4DWHG25 Subplate Installation Dimensions

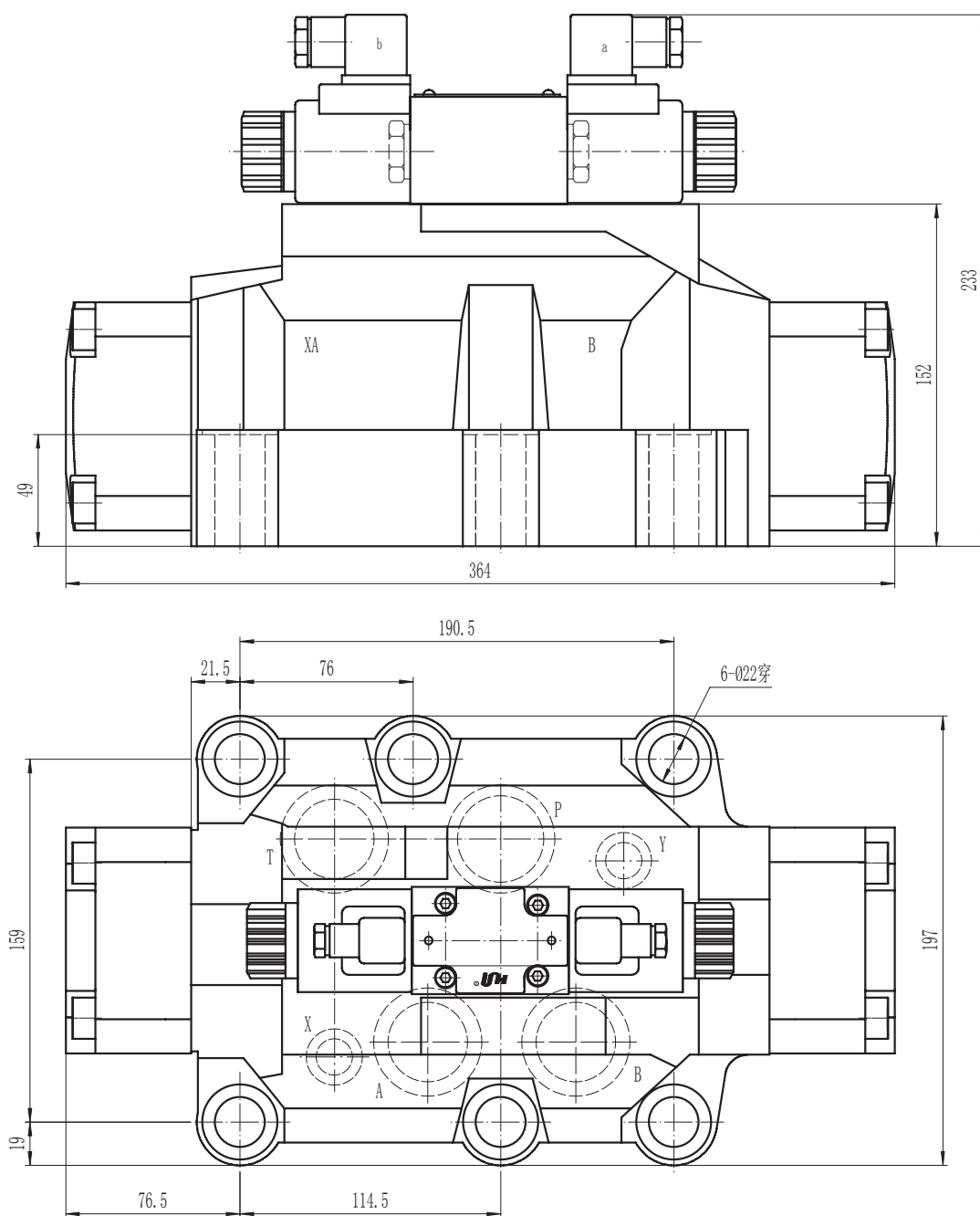


阀固定螺钉  
6个M12X60 GB/T 70.1-12.9级 拧紧扭矩Ma=130Nm  
A.B.P.T口O型圈:  $\phi 34 \times 3.1$   
X.Y口O型圈:  $\phi 25 \times 3.1$

Valve's set screw  
6 of M12 x 60 GB/T70.1-12.9 Tightening torque Ma=130Nm.  
O-ring for P.T.A.B Port:  $\phi 34 \times 3.1$   
O-ring for X.Y Port:  $\phi 25 \times 3.1$



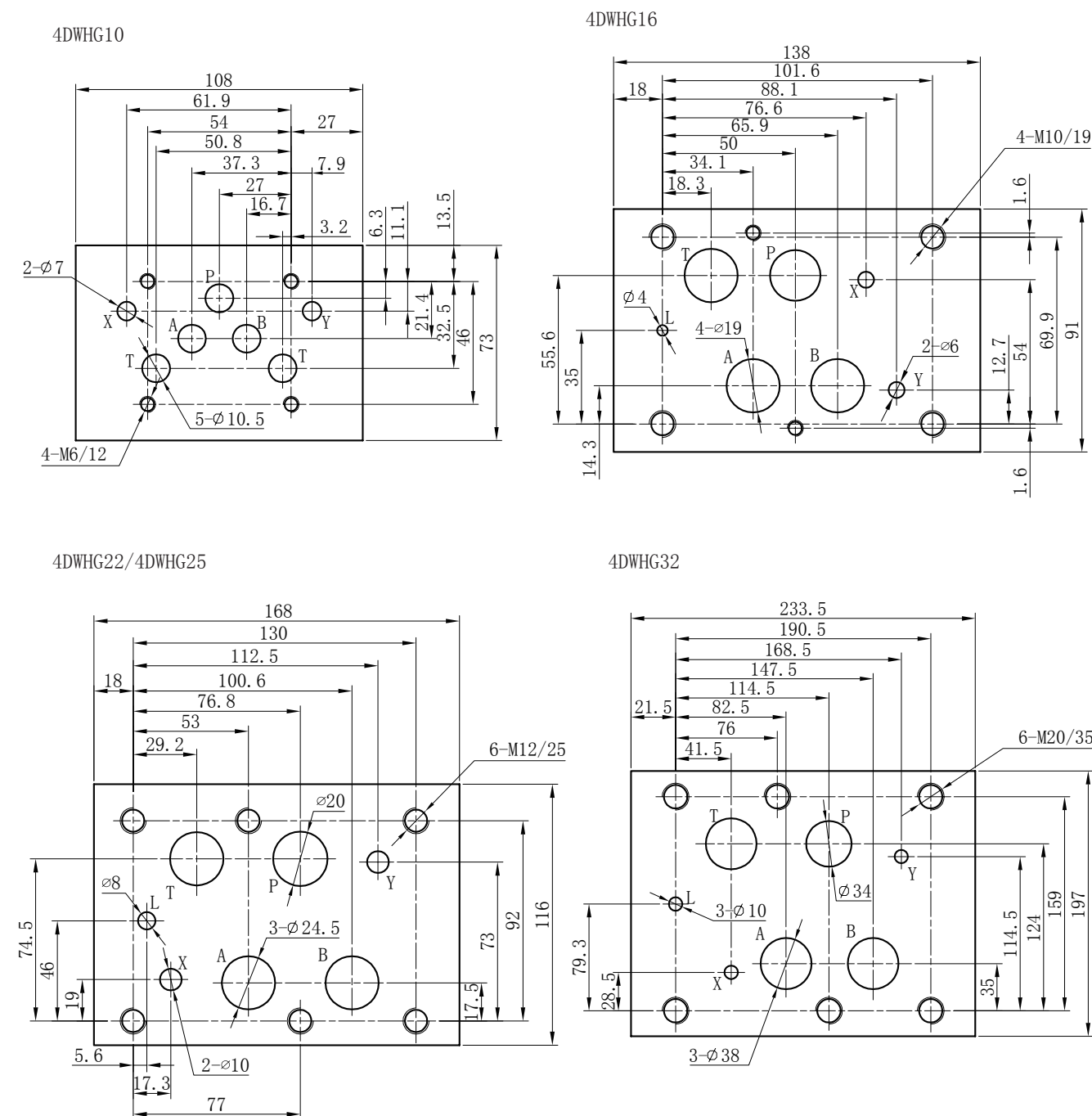
4DWHG32外型尺寸 4DWHG32 Subplate Installation Dimensions

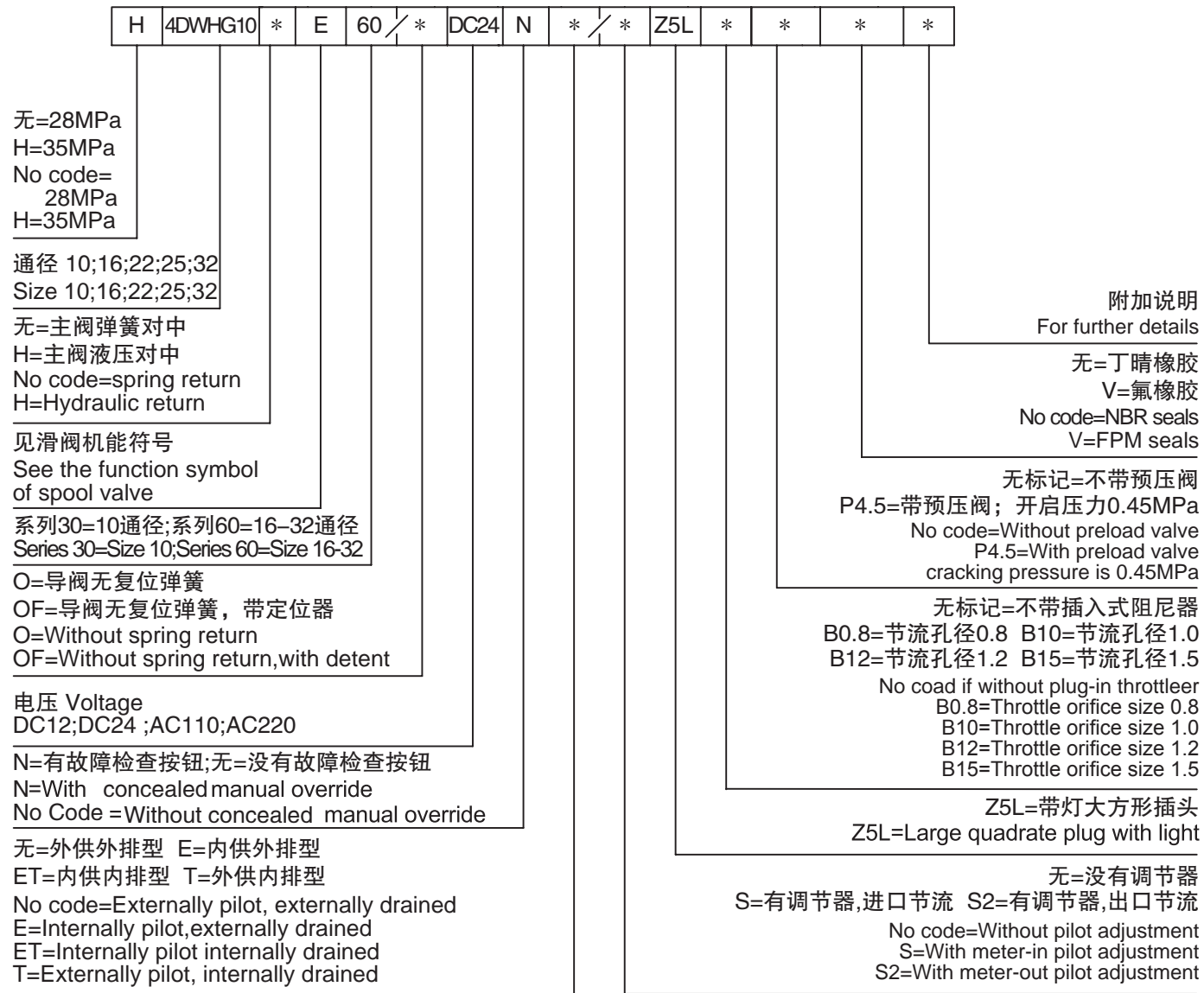


阀固定螺钉  
6个M20X80 GB/T 70.1-2000 12.9级 拧紧扭矩  
Ma=430Nm  
A.B.P.T口O型圈:  $\phi 42 \times 3$   
X.Y口O型圈:  $\phi 19 \times 3$

Valve's set screw  
6 of M20  $\times$  80 GB/T70.1-2000 12.9 Tightening torque Ma=430Nm.  
O-ring for P.T.A.B Port:  $\phi 42 \times 3$   
O-ring for X.Y Port:  $\phi 19 \times 3$

底板安装尺寸 Installation dimensions





### WHG型液动换向阀

### WHG SERIES HYDRAULIC OPERATED DIRECTIONAL VALVES



WHG型液动换向阀是用控制油液发出的液讯号使主阀芯移动来实现的油路的换向。

WHG series hydraulic operated directional valves can be used to change the direction of hydraulic oil by moving the main spool when the valve receives a hydraulic signal from the pilot hydraulic oil.

- 连接尺寸与DWHG相同, 详见第43页  
Installation dimensions is the same with DWHG, refer to page 43

