

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。

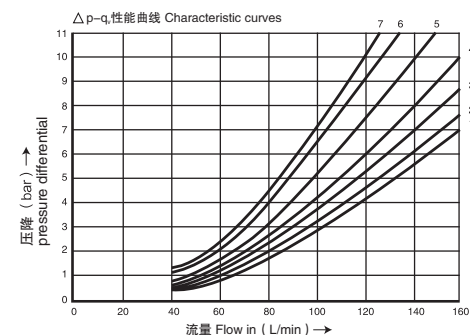
DWHG series are solenoid pilot operated spool type valves. This series are used to control the start, stop and direction of flow.

► 技术参数 Technical data

通径 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， $\vartheta_{\text{油}}=40^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 时测得）

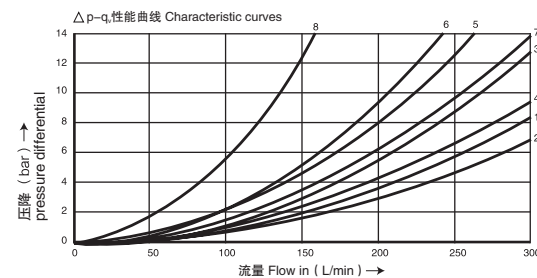
Characteristic curves: Type 4DWHG10... (measured with HLP46, $\text{Voil}=40^{\circ}\text{C}\pm 5^{\circ}\text{C}$)



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	5
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	5
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， $\vartheta_{\text{油}}=40^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 时测得）

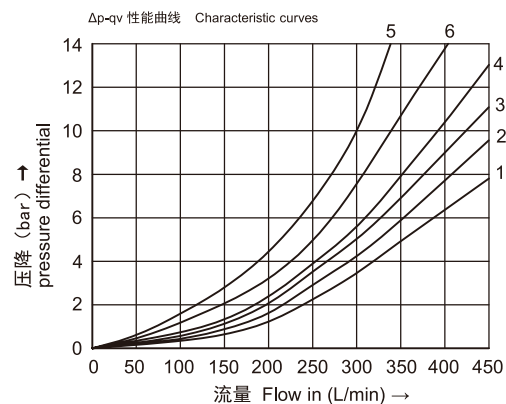
Characteristic curves: Type 4DWHG16... (measured with HLP46, $\text{Voil}=40^{\circ}\text{C}\pm 5^{\circ}\text{C}$)



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-A	P-B	A-T	B-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	-	6
J,K,L	1	1	3	3	-						

特性曲线: 4DWHG22...型 (在使用 HLP46, $\vartheta_{\text{油}}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 时测得)

Characteristic curves: Type 4DWHG22... (measured with HLP46, $\text{Voil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$)

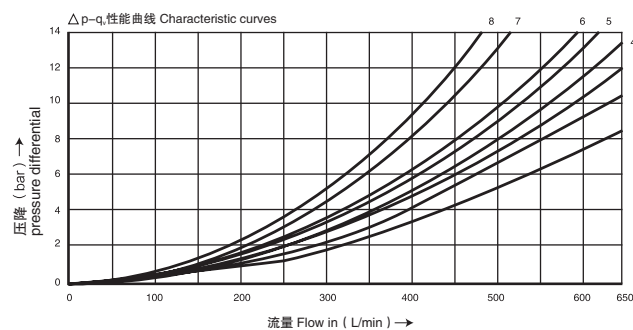


机能符号 Spool symbol	切换位置 Spool position					
	P-A	P-B	A-T	B-T	P-T	B-A
E	2	2	1	4	—	—
F	1	2	1	2	4	—
G	2	2	2	4	6	—
H	2	2	1	3	2	—
J	2	2	1	3	—	—
L	2	2	1	2	—	—
M	2	2	1	4	—	—
P	2	2	1	4	6	—
Q	2	2	1	4	—	—
R	1	2	1	—	—	5
T	2	2	2	4	5	—
U	2	2	1	4	—	—
V	2	2	1	4	—	—
W	2	2	1	3	—	—

- 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, $\vartheta_{\text{油}}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 时测得)

Characteristic curves: Type 4DWHG25... (measured with HLP46, $\text{Voil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$)



- 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

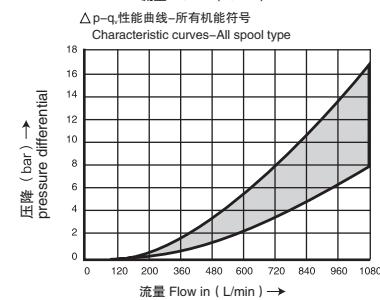
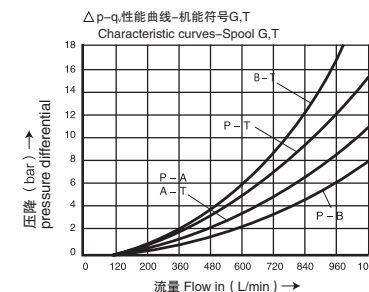
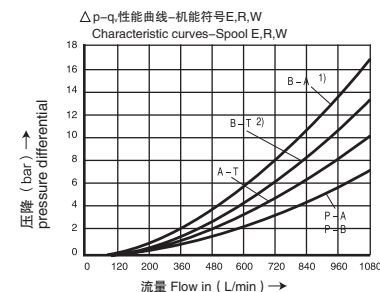
机能符号 Spool symbol	切换位置 Spool position			
	P-A	P-B	A-T	B-T
E	1	1	1	3
F	1	4	3	3
G	3	1	2	4
H	4	4	3	4
J,Q	2	2	3	5

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, $\vartheta_{\text{油}}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 时测得)

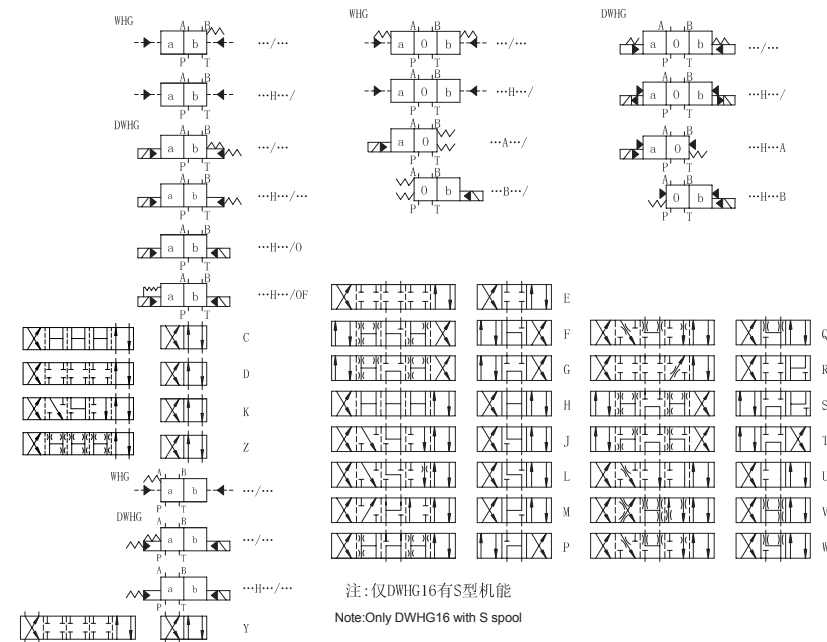
Characteristic curves: Type 4DWHG32... (measured with HLP46, $\text{Voil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$)



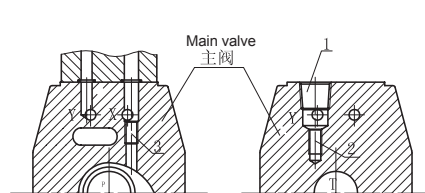
- 1) 仅用于机能符号 R
2) 不用于机能符号 R

- 1) Only applicable for spool R
2) Not applicable for spool R

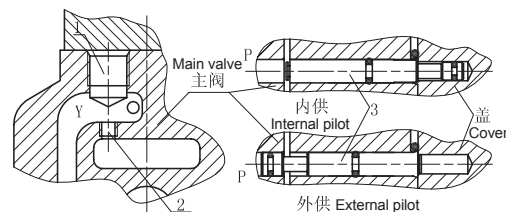
机能符号 Spool symbols



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

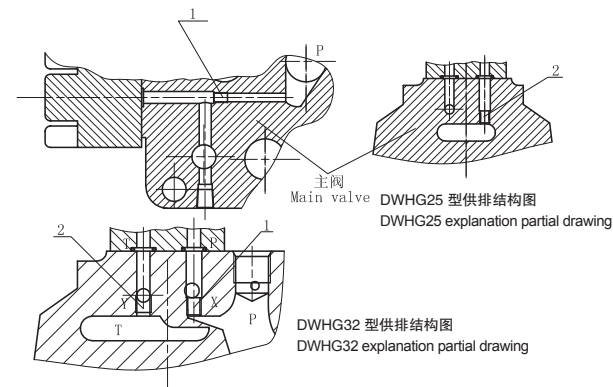
- 1、内供与外供转换:拆下右盖,将销3的小头朝向主阀内装成外供,将销3的小头朝外装成内供。
- 2、内排与外排转换:将主阀顶上螺塞1拆下,装上M6螺钉2成外排,拆下M6螺钉2成内排。

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。

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。

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。

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.

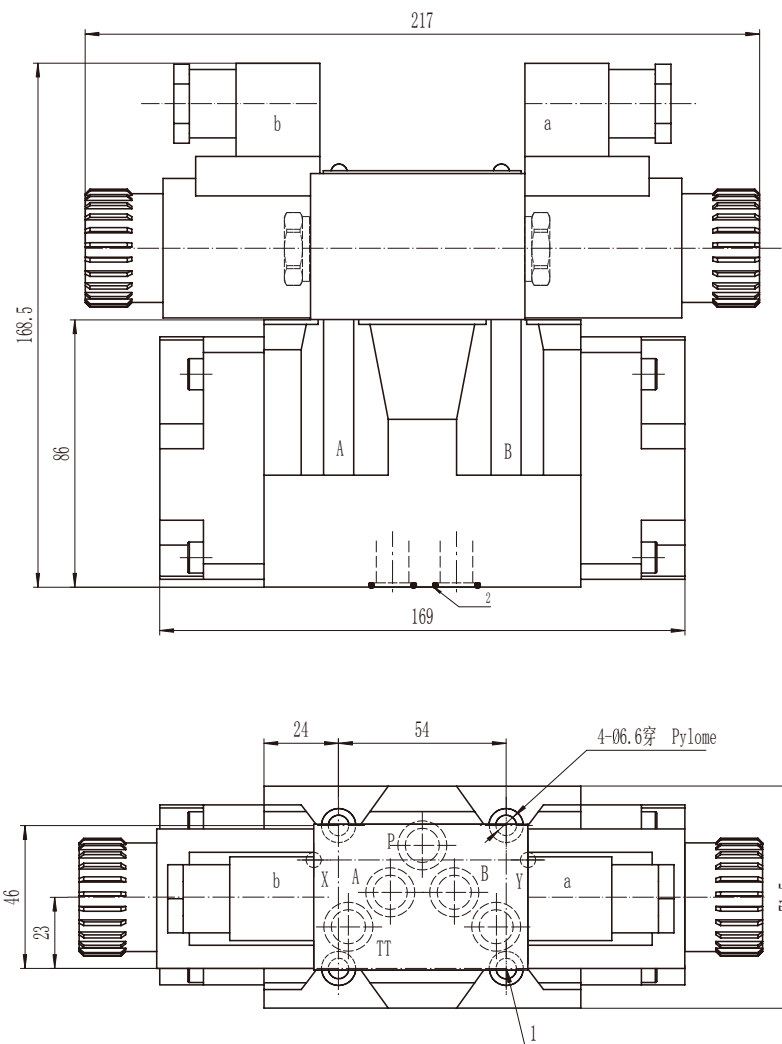
4、4DWHG32

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.

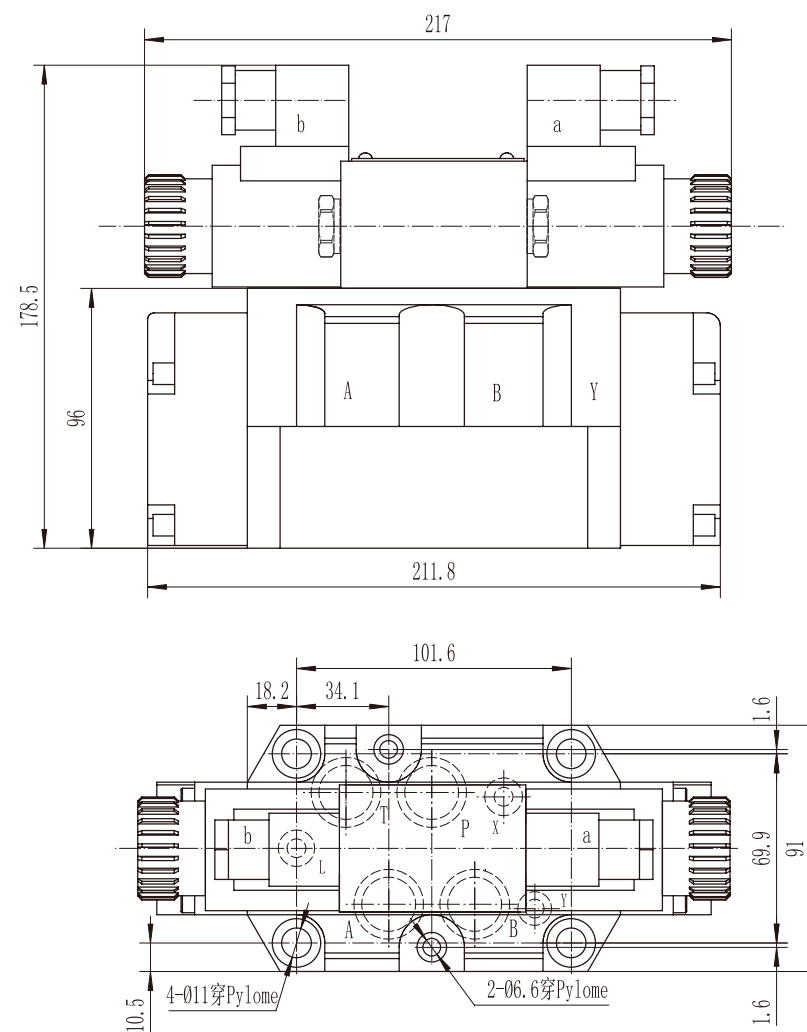
NOTE : 1.The "X" port on the base plate must be plugged if internal pilot.
2.The "Y" port on the base plate must be plugged if internal drain.

4DWHG10外型尺寸 4DWHG10 Subplate Installation Dimensions



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

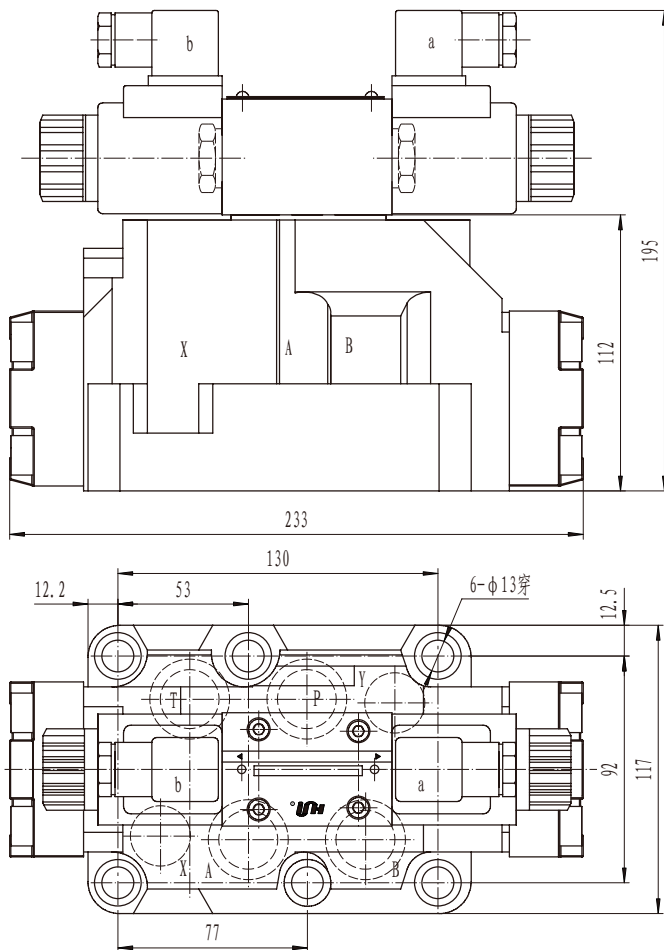
4DWHG16外型尺寸 4DWHG16 Subplate Installation Dimensions



- 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

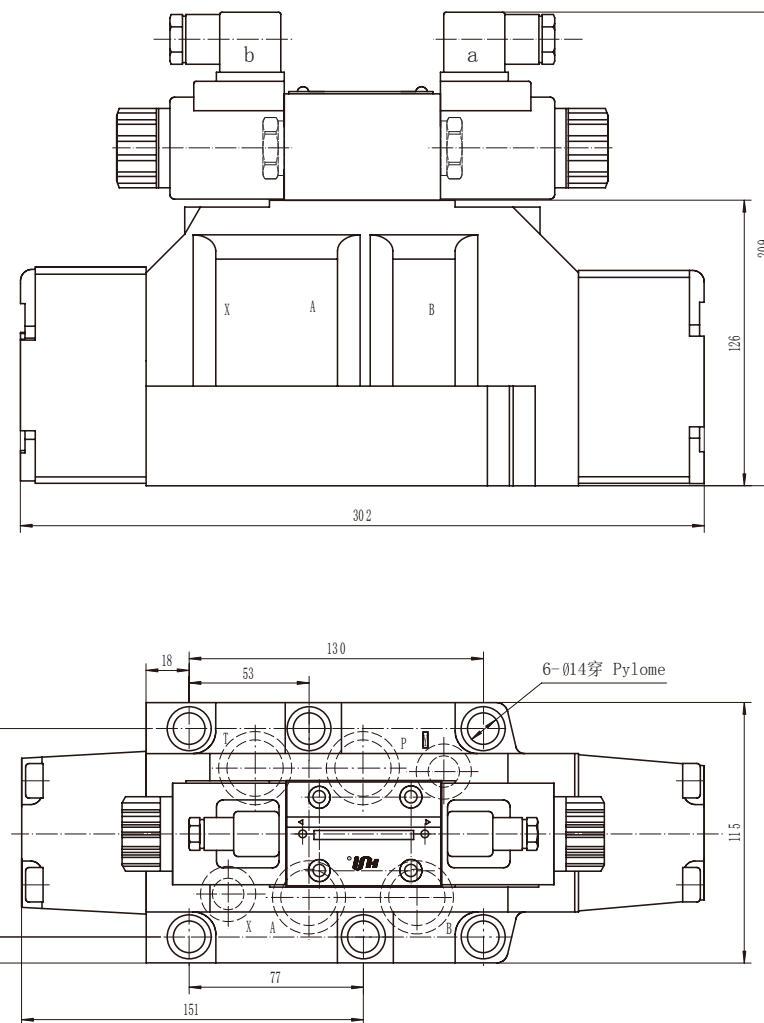
4DWHG22外型尺寸 4DWHG22 Subplate Installation Dimensions



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: φ31X3.1
X.Y口O型圈: φ25X3.1

Valve's set screw
6 of M12 × 60 GB/T70.1-12.9 Tightening torque Ma=130Nm.
O-ring for P.T.A.B Port: φ31 × 3.1
O-ring for X.Y Port: φ25 × 3.1

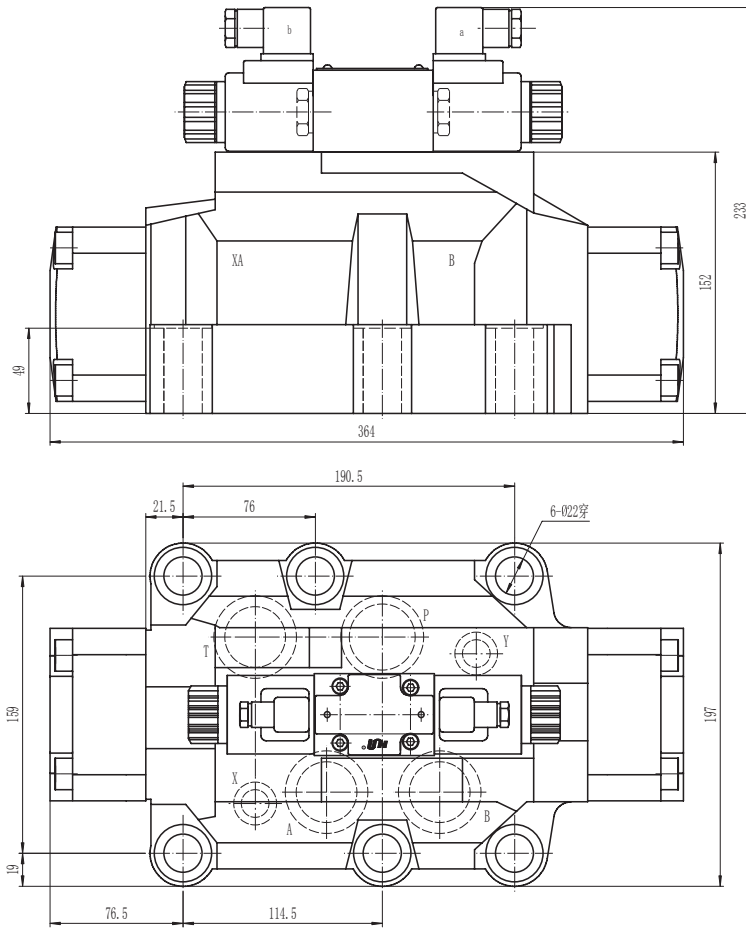
4DWHG25外型尺寸 4DWHG25 Subplate Installation Dimensions



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: φ34X3.1
X.Y口O型圈: φ25X3.1

Valve's set screw
6 of M12 × 60 GB/T70.1-12.9 Tightening torque Ma=130Nm.
O-ring for P.T.A.B Port: φ34 × 3.1
O-ring for X.Y Port: φ25 × 3.1

4DWHG32外型尺寸 4DWHG32 Subplate Installation Dimensions

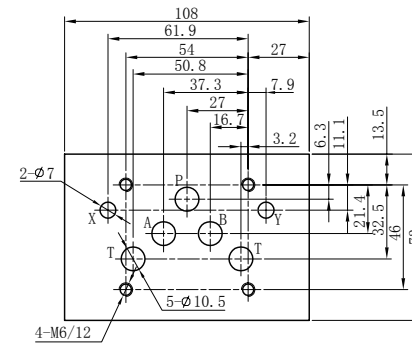


阀固定螺钉
6个M20X80 GB/T 70.1-2000 12.9级 拧紧扭矩
Ma=430Nm
A.B.P.T口O型圈: $\Phi 42 \times 3$
X.Y口O型圈: $\Phi 19 \times 3$

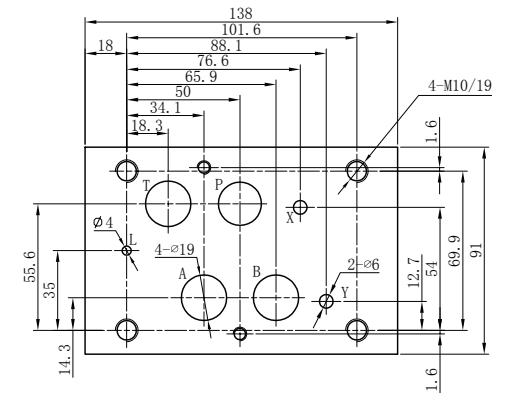
Valve's set screw
6 of M20 \times 80 GB/T70.1-2000 12.9 Tightening torque Ma=430Nm.
O-ring for P.T.A.B Port: $\Phi 42 \times 3$
O-ring for X.Y Port: $\Phi 19 \times 3$

底板安装尺寸 Installation dimensions

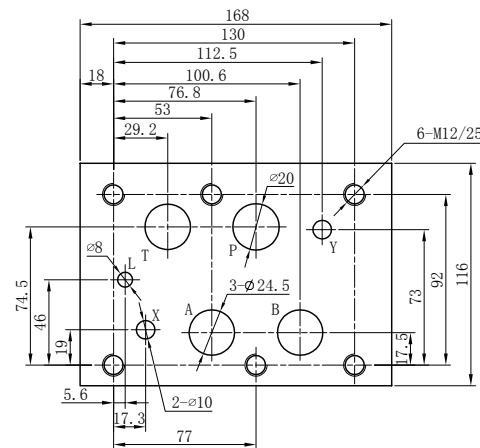
4DWHG10



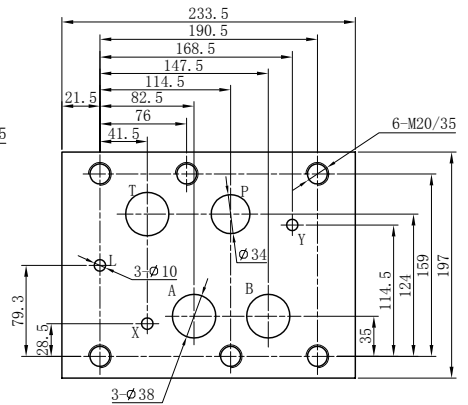
4DWHG16



4DWHG22/4DWHG25



4DWHG32



H	4DWHG10	*	E	60	/	*	DC24	N	*	/	*	Z5L	*	*	*	*
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无=28MPa
H=35MPa
No code=
28MPa
H=35MPa

通径 10;16;22;25;32
Size 10;16;22;25;32

无=主阀弹簧对中
H=主阀液压对中
No code=spring return
H=Hydraulic return

见滑阀机能符号
See the function symbol
of spool valve

系列30=10通径;系列60=16-32通径
Series 30=Size 10;Series 60=Size 16-32

O=导阀无复位弹簧
OF=导阀无复位弹簧, 带定位器
O=Without spring return
OF=Without spring return,with detent

电压 Voltage
DC12;DC24 ;AC110;AC220

N=有故障检查按钮;无=没有故障检查按钮
N=With concealed manual override
No Code =Without concealed manual override

无=外供外排型 E=内供外排型
ET=内供内排型 T=外供内排型
No code=Externally pilot, externally drained
E=Internally pilot,externally drained
ET=Internally pilot internally drained
T=Externally pilot, internally drained

附加说明
For further details

无=丁晴橡胶
V=氟橡胶
No code=NBR seals
V=FPM seals

无标记=不带预压阀
P4.5=带预压阀; 开启压力0.45MPa
No code=Without preload valve
P4.5=With preload valve
cracking pressure is 0.45MPa

无标记=不带插入式阻尼器
B0.8=节流孔径0.8 B10=节流孔径1.0
B12=节流孔径1.2 B15=节流孔径1.5
No coad if without plug-in throttleer
B0.8=Throttle orifice size 0.8
B10=Throttle orifice size 1.0
B12=Throttle orifice size 1.2
B15=Throttle orifice size 1.5

Z5L=带灯大方形插头
Z5L=Large quadrate plug with light

无=没有调节器
S=有调节器,进口节流 S2=有调节器,出口节流
No code=Without pilot adjustment
S=With meter-in pilot adjustment
S2=With meter-out pilot adjustment

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