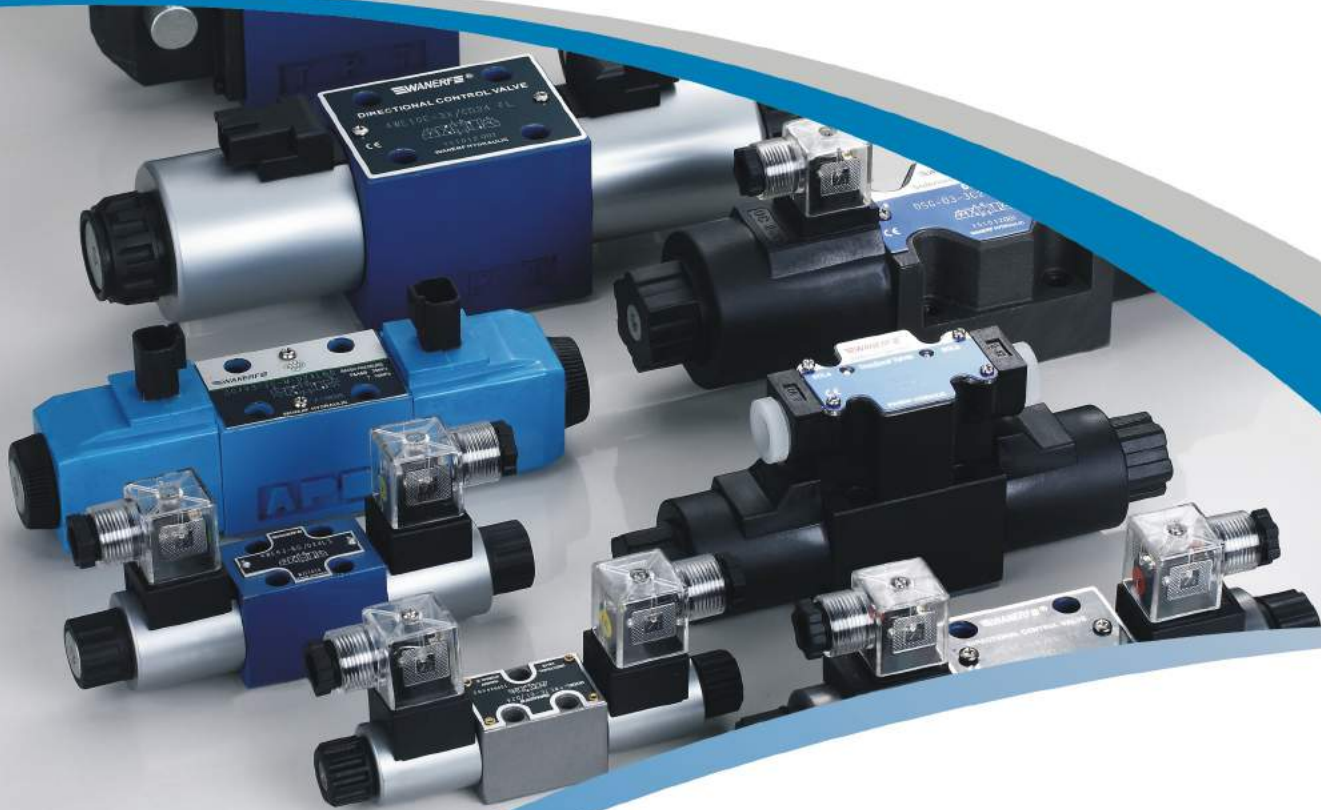




Hydraulic Valves



NINGBO WANERF HYDRAULIC CO.,LTD



Company Profile

Ningbo wanerf hydraulic co ltd specialized in manufacturing variety hydraulic valves. We had received the ISO9001: 2000 quality system and CE certificate. our products had supplied in many aspects, such as metallurgy, petrol mine, engineering, architecture, mold, chemical, mechanical tool, traffic and so on. now under the support from all clients, our goods spread all over the world.

We warmly welcome you contact us for any of your requirements.



Directional Valves

WE series solenoid operated directional valves	1 –13
WMME series solenoid operated directional valves with emergency control	14–14
DG4V series solenoid operated directional valves	15–18
DSG series solenoid operated directional valves	19–22
DMSG series solenoid operated directional valves with emergency control	23–23
WSH series solenoid operated directional valves	24–27
H*B series solenoid operated directional valves	28–30
WEH type electro–hydraulic operated directional valves	31–35
DSHG type electro–hydraulic operated directional valves	36–38
WMM– 70 series lever operated directional valves	39–41
WMM–80 series lever operated directional valves	42–43
DMG– 70 series lever operated directional valves	44–45
DMG–80 series lever operated directional valves	46–47
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MPCV series modular hydraulic operated check valves	51–51
MCV series modular check valves	52–52
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Flow Control Valves

Z2FS type modular check flow regulating valves	73–73
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Pressure Valves

DB*K-L4X series cartridge type pilot relief valves	55-55
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ZDB/ Z2DB series modular relief valves	57-57
MRV series modular relief valves	58-58
DG series direct pressure relief valves	59-59
DB/DBW-5X series pilot operated relief valves	60-61
SBG series low noise relief valves	62-62
SBSG series solenoid control pilot operated relief valves	63-63
BG(RV) series pilot operated relief valves	64-64
BSG (SRV) series solenoid control relief valves	65-65
BST series solenoid control relief valves	66-66
BT series solenoid control relief valves	67-67
DZ-30 series pilot operated sequencing valves	68-68
DZ-L5X series pilot operated sequencing valves	68-68
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ZDR-40 series modular pressure reducing valves	70-70
ZDR-50 series modular pressure reducing valves	70-70
MBRV series modular pressure reducing valves	71-71
DA/DAW-30 series pilot operated unloading valves	72-72
DA/DAW-L5X series pilot operated unloading valves	72-72

Proportional Valves/ Pressure Switch

DBET series proportional pilot control valves	80-80
DBE(M) series proportional relief valves	81-81
EDG series proportional pilot control valves	82-82
EBG series proportional relief valves	83-83
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ADF plug type digital proportional amplifier	85-85
ADE track type digital proportional amplifier	86-86
HED type pressure switch	87-88

4WE3 TYPE 61 SERIES
SOLENOID DIRECTIONAL VALVES



PRODUCT SERIES

方向阀
Directional Valves



ORDERING CODE

4	WE	3	E	61 /	D24	H	
<div>Main Ports = 3 Main Ports = 4</div> <div>Solenoid Directional Valves</div> <div>Size : 3=3 Size</div> <div>Spool Symbols</div>				<div>No Code = NBR Seals V = FKM Seals</div> <div>H: DIN43650 Type Plug L: DIN43650 Type Plug with Lamp F: Deutsch protection degree IP69K A :AMP Junior-Timer, protection degree IP66 D:With two lead wires</div> <div>D12=DC12V D24=DC24V</div> <div>O=without spring return OF=Without spring return with detent. (only suit two position valve with two solenoids)</div>			

4WE4 TYPE 61 SERIES SOLENOID DIRECTIONAL VALVES



PRODUCT SERIES

4WE 4**61/D24 LS



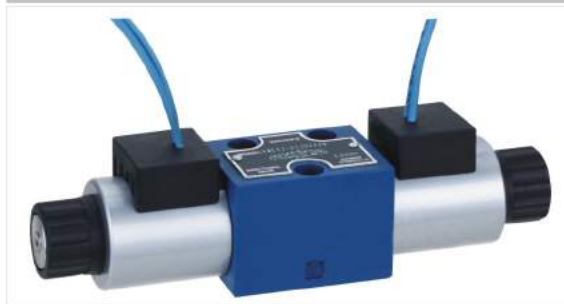
4WE 4**61/D24 AS



4WE 4**61/D24 FS



4WE 4**61/D24 DS



方向阀
Directional Valves

4WE4 TYPE 61 SERIES SOLENOID DIRECTIONAL VALVES

ORDERING CODE

4	WE	4	E	61		D24	H		S
---	----	---	---	----	--	-----	---	--	---

方向阀
Directional Valves

Main Ports
= 3
Main Ports
= 4

Solenoid
Directional Valves

Size
4= size 4

S: blue block
M: black block

No Code = NBR Seals
V = FKM Seals

H: DIN43650 Type Plug
L: DIN43650 Type Plug with Lamp
F: Deutsch
Protection degree IP69K
A: AMP Junior-Timer ,
protection degree IP66
D: With two lead wires

D12=DC12V
D24=DC24V

Spool Symbols

O= without spring return
OF : Without spring return with detent.
(only suit two position valve with two solenoids)

61 series (with three holes install)

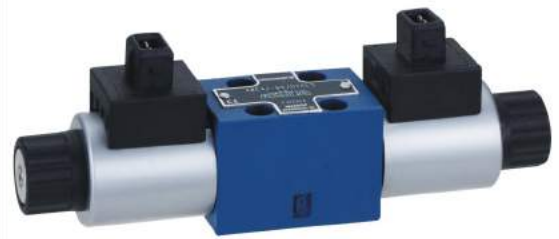
**4WE4 TYPE 60 SERIES
SOLENOID DIRECTIONAL VALVES**

PRODUCT SERIES

4WE 4**60/D24 LS



4WE 4**60/D24 AS



4WE 4**60/D24 FS



4WE 4**60/D24 DS



4WE4 TYPE 60 SERIES SOLENOID DIRECTIONAL VALVES



ORDERING CODE

4	WE	4	E	60	/	D24	H		
---	----	---	---	----	---	-----	---	--	--

方向阀
Directional Valves

Main Ports
= 3
Main Ports
= 4

Solenoid
Directional Valves

Size
4=4Size

S: blue block
M: black block

No Code = NBR Seals
V = FKM Seals

H: DIN43650 Type Plug
L: DIN43650 Type Plug with Lamp
F: Deutsch
protection degree IP69K
A: AMP Junior-Timer ,
protection degree IP66
D: With two lead wires

D12=DC12V
D24=DC24V

Spool Symbols

O= without spring return
OF : Without spring return with detent.
(only suit two position valve with two solenoids)

60 series (with four holes install)

4WE6 SERIES SOLENOID DIRECTIONAL VALVES



PRODUCT SERIES

4WE 6**6X/ED24 AL



4WE 6**6X/EA220 LL



4WE 6**6X/ED24 LL



4WE 6**6X/ED24 BL



4WE 6**6X/ER220 LL



4WE 6**6X/ER220 BL



4WE 6**6X/ED24 FL



4WE 6**6X/EA220 BL



方向阀
Directional Valves

4WE6 SERIES SOLENOID DIRECTIONAL VALVES



方向阀
Directional Valves

PRODUCT SERIES

4WE 6**6X/ED24 AH



4WE 6**6X/EA220 LH



4WE 6**6X/ED24 LH



4WE 6**6X/ED24 BH



4WE 6**6X/ER220 LH



4WE 6**6X/ER220 BH



4WE 6**6X/ED24 FH



4WE 6**6X/EA220 BH



PRODUCT SERIES

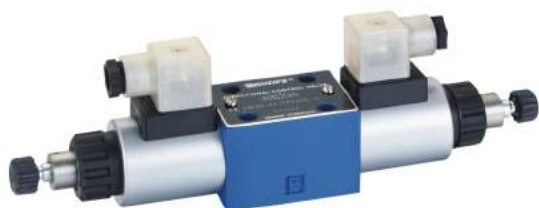
4WE 6**6X/ED24 NP AL



4WE 6**6X/ED24 NP FL



4WE 6**6X/ED24 NP LL



4WE 6**6X/ED24 NP BL



4WE 6**6X/ER220 NP LL



4WE 6**6X/ER220 NP BL



4WE6 SERIES SOLENOID DIRECTIONAL VALVES



ORDERING CODE

4	WE	6	E	6X	/	E	D24	N	L			L
---	----	---	---	----	---	---	-----	---	---	--	--	---

Main Ports
= 3
Main Ports
= 4

solenoid
directional valves

Size
Size =6

Spool Symbols

Series 60-90 = 6X
60~90 series shape is interchangeable

no code = with spring return
O = without spring return
OF= Without spring return with detent.

connect with solenoid thread =E

DC12V=D12 DC24V=D24
AC110V-50HZ= A110-50 AC220V-50HZ= A220-50
RAC110V= R110 RAC220V=R220

NP= with self-locking emergency push rod
N = with manual push rod

H: DIN43650 Type Plug
L: DIN43650 Type Plug with Lamp
F: Deutsch. protection degree IP69K
A : AMP Junior-Timer , protection degree IP66
D : With double leads
B : With terminal box

no code = without locating bore
With Orifice bore B08= ϕ 0.8mm
With Orifice bore B10= ϕ 1.0mm
With Orifice bore B12= ϕ 1.2mm

No Code = NBR Seals
V = FKM Seals

block print :
H: Black color
L: Blue color

方向阀
Directional Valves

4WE10 SERIES SOLENOID DIRECTIONAL VALVES



PRODUCT SERIES

4WE 10**3X/CD24 AL



4WE 10**3X/CA220 LL



4WE 10**3X/CD24 LL



4WE 10**3X/CD24 BL



4WE 10**3X/CR220 LL



4WE 10**3X/CR220 BL



4WE 10**3X/CD24 FL



4WE 10**3X/CA220 BL



方向阀
Directional Valves

PRODUCT SERIES

4WE 10**3X/CD24 AH



4WE 10**3X/CA220 LH



4WE 10**3X/CD24 LH



4WE 10**3X/CD24 BH



4WE 10**3X/CR220 LH



4WE 10**3X/CR220 BH



4WE 10**3X/CD24 FH



4WE 10**3X/CA220 BH



4WE10 SERIES SOLENOID DIRECTIONAL VALVES



ORDERING CODE

4	WE	10	E	3X	/	C	D24		L			L
---	----	----	---	----	---	---	-----	--	---	--	--	---

Main Ports
= 3
Main Ports
= 4
Solenoid
Directional Valves

Size
Size =10

Spool Symbols :

Series 30-39 = 3X
(30-39: no change of the
installation and connection size)

No code = with spring return
O = without spring return
Of= without spring return with detent.

Connect With Solenoid Thread = C

DC12V=D12 DC24V=D24
AC110V-50HZ= A110-50 AC220V-50HZ= A220-50
RAC110V= R110 RAC220V=R220

NP= with self-locking emergency push rod
N = with manual push rod

H: DIN43650 Type Plug
L: DIN43650 Type Plug with Lamp
F: Deutsch. protection degree IP69K
A : AMP Junior-Timer , protection degree IP66
D : With two wires
B : With terminal box

no code = without locating bore
B08=Orifice bore ϕ 0.8mm
B10=Orifice bore ϕ 1.0mm
B12=Orifice bore ϕ 1.2mm

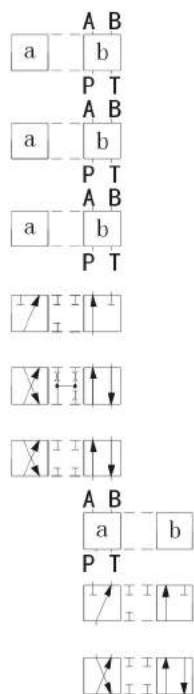
No Code = NBR Seals
V = FKM Seals

block print :
H: Black color
L: Blue color

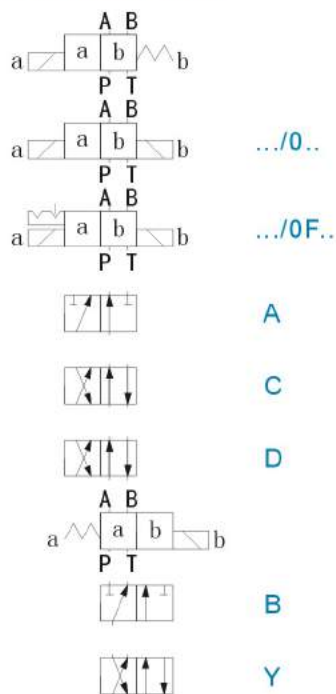
方向阀
Directional Valves

SPOOL SYMBOLS

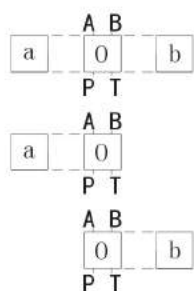
TRANSITION SPOOL



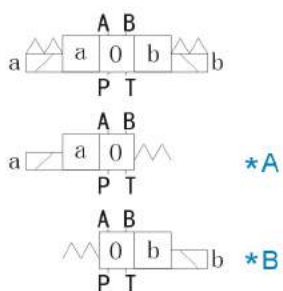
SLIDE VALVE SPOOL



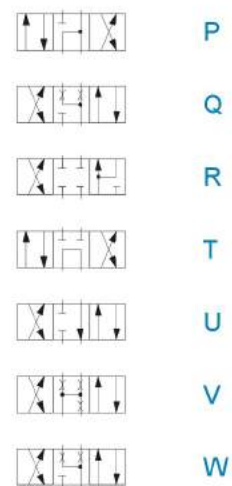
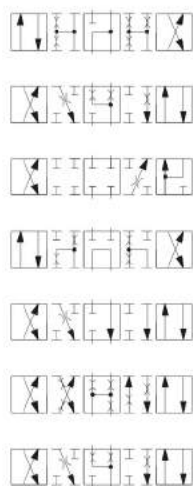
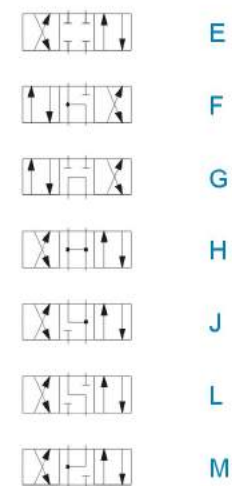
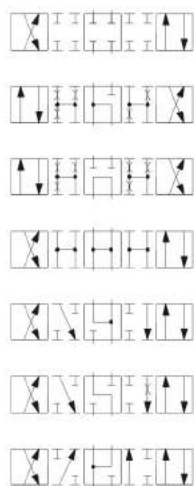
TRANSITION SPOOL



SLIDE VALVE SPOOL



☆ Spool symbol with core a or b then code should be XA or XB
For example : spool E with core position a , then code should be EA

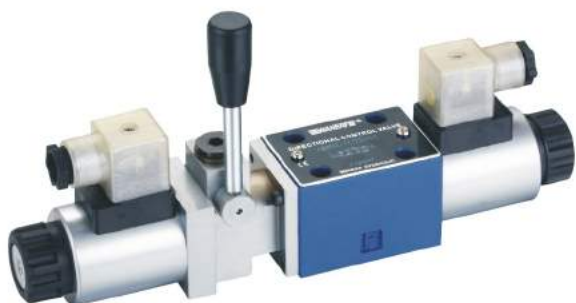


WMME SERIES SOLENOID DIRECTIONAL VALVE WITH EMERGENCY HANDLE



PRODUCT SERIES

PRODUCT FEATURES:



- 1.This valve can work even in the case of power failure.
- 2.There are two different circuit for your choosing according to the install requirement.
- 3.When the valve operated by electrical , the handle will stay in the original location, the handle will not effect any valve performance.
- 4.It can be used as the pilot valve of hydraulic control directional valve.
- 5.The mounting surface is same as din24340 A type and WE series.

ORDERING CODE

*	WMME	6	*	1X	E	*	*	*	*	*
---	------	---	---	----	---	---	---	---	---	---

Main Ports = 3
Main Ports = 4

Solenoid directional valve
with emergency handle

Size
Size =6
Size =10

Spool Symbols

Series 10-19 =1X
(10-19: no change of the installation and connection size)

connect with solenoid thread = C

DC12V 24V =12D D24
RAC110V 220V =R110 R220
AC110V 220V =A110 A220

No Code = Handle is placed at vertical position
MO = Handle level set

remark: Spool Symbols
two position valve : take ref WE series two position valve
three position valve: take ref WE series three position valve

No Code = NBR Seals
V = FKM Seals

no code = without locating bore
B08=Orifice bore ϕ 0.8mm
B10=Orifice bore ϕ 1.0mm
B12=Orifice bore ϕ 1.2mm
B15=Orifice bore ϕ 1.5mm
B20=Orifice bore ϕ 2.0mm
B25=Orifice bore ϕ 2.5mm
B30=Orifice bore ϕ 3.0mm

H: DIN43650 Type Plug
L: DIN43650 Type Plug with Lamp
F: Deutsch. Protection degree IP69K
A: AMP Junior-Timer, protection degree IP66
D: with two lead wires

technical parameters: take ref WE series
performance characteristics: take ref WE series

DG4V SERIES SOLENOID DIRECTIONAL VALVES



PRODUCT SERIES

方向阀
Directional Valves

DG4V3**MD24 L 40



DG4V3**MD24 L 60



DG4V3**MR220 L 40



DG4V3**MR220 L 60



DG4V3**MA220 L 40



DG4V3**MA220 L 60



DG4V3**MD24 A 60



DG4V3**MD24 F 60

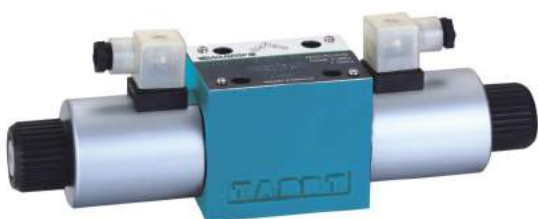


DG4V SERIES
SOLENOID DIRECTIONAL VALVES



PRODUCT SERIES

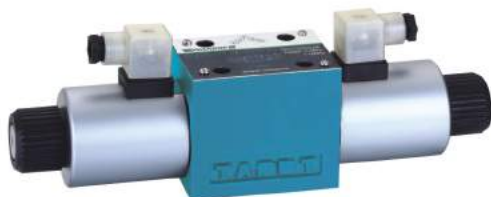
DG4V5**MD24 L 20



DG4V5**MA220 L 20



DG4V5**MR220 L 20



DG4V5**MD24 A 20



方向阀
Directional Valves

DG4V SERIES
SOLENOID DIRECTIONAL VALVES



ORDERING CODE

DG4V	3	2C	M	D24	L	40
------	---	----	---	-----	---	----

design Number

H: DIN43650 Type Plug
L: DIN43650 Type Plug with Lamp
F: Deutsch
Protection degree IP69K
A: AMP Junior-Timer ,
protection degree IP66
D: with two lead wires
B : with terminal box

D24=DC24V D12=DC12V
A110 A220=AC 11V/50HZ AC220V/50HZ
R220=RAC110V 220V

Electrical options and features

slide valve spool

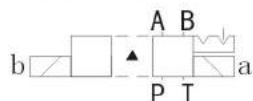
Terminal Size :
3= NG6
5= NG10

Series code :
D = directional valves
G = soleplate / integrated package installation
4= solenoid control
V= rated voltage 35MPa

Directional Valves

SPOOL SYMBOLS

DOUBLE SOLENOID VALVE
TWO POSITION WITH DETENT



DG4V-3/5-*N

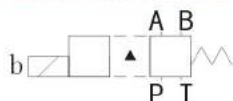


0



2

SINGLE SOLENOID VALVE
SOLENOID IN CHAMBER A



DG4V-3/5-*A

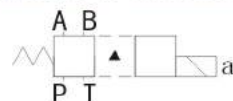


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2

SINGLE SOLENOID VALVE
SOLENOID IN CHAMBER B



DG4V-3/5-*AL

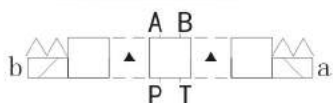


0



2

DOUBLE SOLENOIDS VALVE
SPRING CENTRING



DG4V-3/5-*C



0



2



6



7



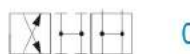
22



34

☆▲ ONLY INSTANTANEOUS SITUATION

DG4V-3/5-*B/F



0



2



6



7



22



34

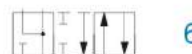
DG4V-3/5-*BL/FL



0



2



6



7



22



34

☆ "8 IS THE SPECIAL SPOOL

DG4V-3/5-8C



8

DG4V-3/5-8BL



8

DG4V-3/5-8B



8

PRODUCT SERIES

DSG02**D24 L



DSG02**D24 B



DSG02**R220 L



DSG02**R220 B



DSG02**A220 L



DSG02**A220 B



DSG02**D24 NPL



DSG02**D24 NPB



PRODUCT SERIES

DSG03**D24 L



DSG03**D24 B



DSG03**R220 L



DSG03**R220 B



DSG03**A220 L



DSG03**A220 B



DSG03**D24 NPL



DSG03**D24 NPB



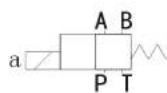
ORDERING CODE

DS	G	02	3C2	D24		L
solenoid directional Valves						
subplate mounting						
Size 02=NG6 03=NG10						
spool symbol						
D12=DC12V D24=DC24V A110-50=AC110V-50HZ A220-50=AC220V-50HZ R110=RAC110V R220=RAC220V						
NP=with self-locking emergency push rod N = with manual push rod						
H=with DIN 43650 connector L= DIN 43650 connector with lamp B = terminal box type						

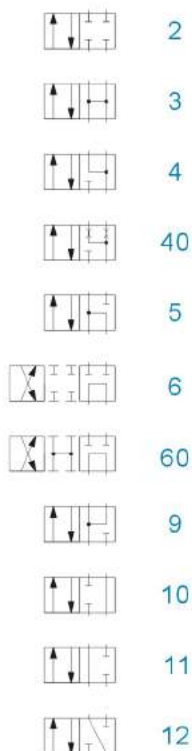
方向
阀
Directional Valves

SPOOL SYMBOLS

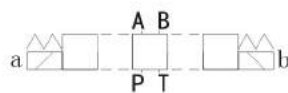
SINGLE SOLENOID VALVE
SPRING RETURN



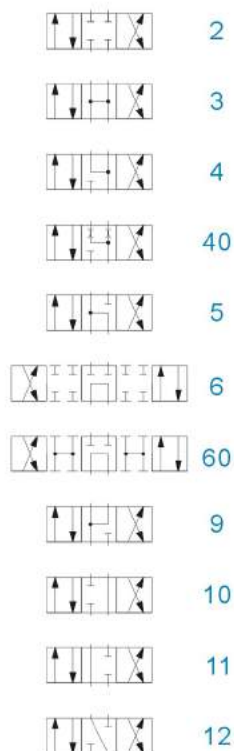
2B * BL



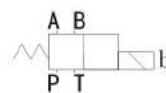
DOUBLE SOLENOIDS VALVE WITH
THREE POSITION , SPRING CENTRING



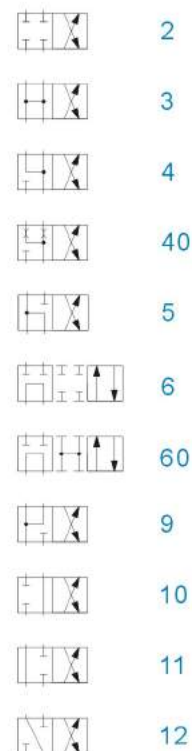
3C *



SINGLE SOLENOID VALVE
WITH SPRING RETURN



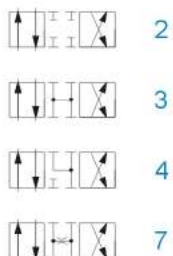
2B * B



TWO POSITION WITHOUT SPRING



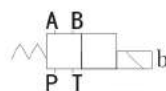
2N *



TWO POSITION WITH SPRING RETURN



2B *



2B * A



TWO POSITION WITH MECHANICAL DETENT



2D *



DMSG SERIES SOLENOID DIRECTIONAL VALVE WITH EMERGENCY HANDLE



PRODUCT SERIES

PRODUCT FEATURES:



- 1.this valve can work even in the case of power failure.
2. There are two different circuit for your choosing according to the install requirement.
3. When the valve operated by electrical , the handle will stay in the original location, the handle will not effect any valve performance.
4. It can be used as the pilot valve of hydraulic control directional valve.
5. The mounting surface is same as DIN24340 A type and WE series.

ORDERING CODE

DMSG — 02 * 1X / E * * * *

Solenoid directional valve
with emergency handle

Size
02=size6
03=size10

Spool Symbols

Series 10-19 =1X
(10-19: no change of the installation and connection size)

connect with solenoid thread

D12 D24 =DC12V 24V
R110 R220 =RAC110V 220V
A110 A220 =AC110V 220V

no code= handle is placed in a vertical position
MO= Handle level set

No Code = NBR Seals
V = FKM Seals

H: DIN43650 Type Plug
L: DIN43650 Type Plug with Lamp
F: Deutsch. Protection degree IP69K
A: AMP Junior-Timer , protection degree Ip66
D: with two lead wires

remark: Spool Symbols
take ref DSG series

technical parameters: take ref DSG series
performance characteristics: take ref DSG series

PRODUCT SERIES

WSH01**D24 L



WSH01**D24 A



WSH01**D24 F



PRODUCT SERIES

WSH02**D24 L



WSH02**D24 B



WSH02**R220 L



WSH02**R220 B



WSH02**A220 L



WSH02**A220 B



PRODUCT SERIES

WSH03**D24 L



WSH03**D24 B



WSH03**R220 L



WSH03**R220 B



WSH03**A220 L



WSH03**A220 B



WSH SERIES
SOLENOID DIRECTIONAL VALVES



ORDERING CODE

方向阀
Directional Valves

	WS	H	02	3C2	31.5	D24	L
Solenoid directional valves							
subplate type							
Size 01=NG4 02=NG6 03=NG10							
spool symbol:take reference of the DSG spools							
max work pressure 31.5 Mpa							
D12=DC12V D24=DC24V A110-50=AC110V-50HZ A220-50=AC220V-50HZ R110=RAC110V R220=RAC220V							
H: DIN43650 Type Plug L: DIN43650 Type Plug with Lamp F: Deutsch. Protection degree IP69K A: AMP Junior-Timer , protection degree IP66 D: With two lead wires							

H*B SERIES
SOLENOID DIRECTIONAL VALVES



PRODUCT SERIES

34EH6B**



34BH6B**



34EH10B**



34BH10B**



方向阀
Directional Valves

H*B SERIES
SOLENOID DIRECTIONAL VALVES



ORDERING CODE

3	4	E	O	H	6	B			
---	---	---	---	---	---	---	--	--	--

Anti-mounted solenoid = LH

damper type
single damper = Z
double dampers = ZZ

Spring
spring reset or centring = T
no spring= no code

connection way of the solenoid
subplate connection = B
thread connection = L

Size
Size 6= NG 6
size 10= Ng10

pressure 31.5 MPa = H

Slide valve symbols

E = D C
B=RAC

Chamber way
two way = 2
four way = 4

valve bore working position
two position = 2
three position = 3

方向阀
Directional Valves

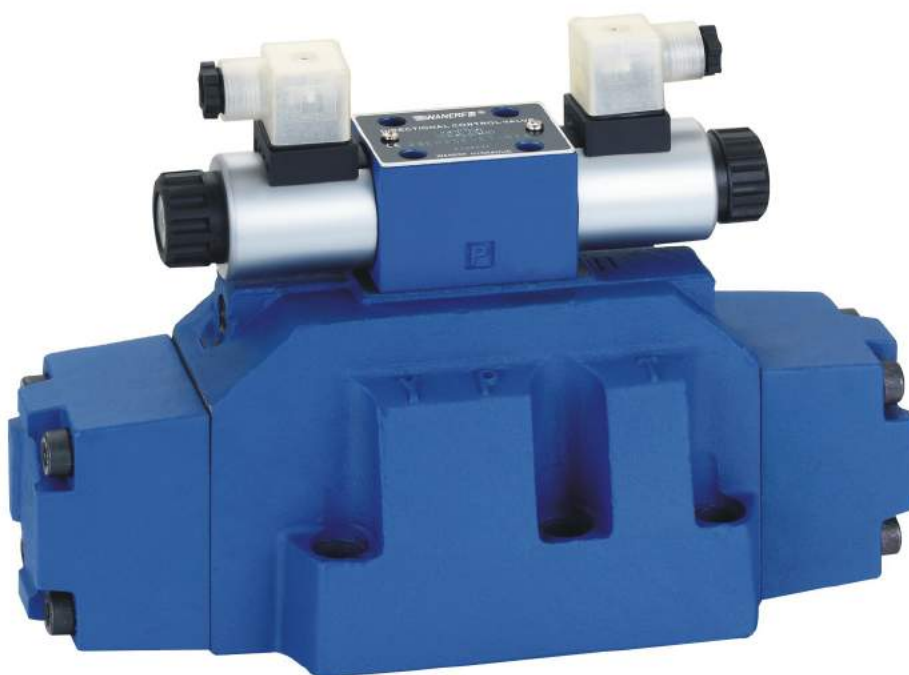
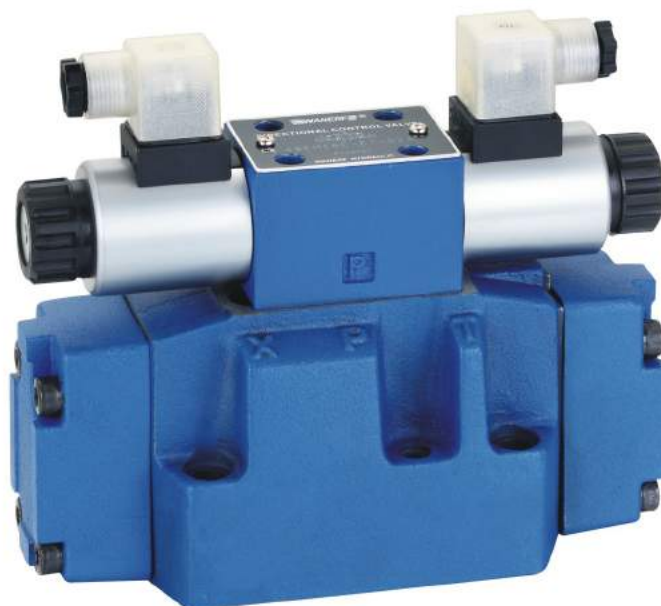
SPOOL SYMBOLS

THREE POSITION , SPRING CENTRING		TWO POSITION , STANDARD SOLENOID TYPE		TWO POSITION , ANTI-MOUNTED SOLENOID TYPE
	O			
	H			
	P			
	Y			
	Yx			
	X			
	C			
	J			
	N			
	M			
	K			
	I1			
	I2			
	I3			

WEH SERIES HYDRAULIC
CONTROL DIRECTIONAL VALVES



方向阀
Directional Valves



WEH SERIES HYDRAULIC CONTROL DIRECTIONAL VALVES

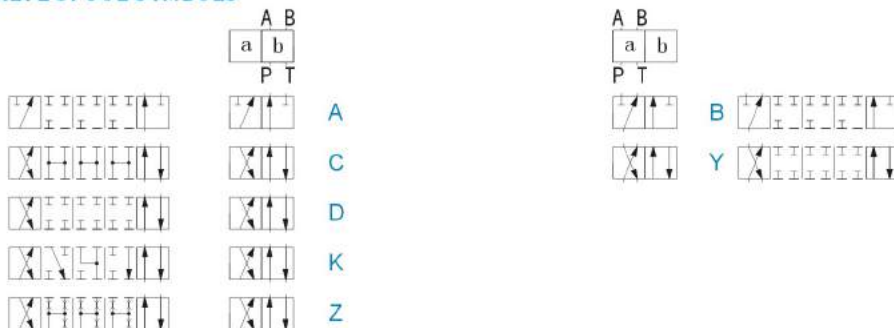


ORDERING CODE

	4WEH	10		E	6X	/		6A	D24				L						
<div>Notes:</div> <div>No code = mineral substance hydraulic oil V= phosphate ester hydraulic oil</div> <div>No code = without pressure reducing valve D1= with pressure reducing valve (reducing rate 1:0.66)</div> <div>No code = without pre-load valve P0.45 = with pre-load valve P=0.45 Mpa</div> <div>No code = without insert damper B08= damper 0.8mm B10= damper 1.0mm B12= damper 1.2mm B15= damper 1.5mm</div> <div>H= with DIN 43650 connector L= DIN 43650 connector with lamp</div> <div>No code = without switching time adjustment S= switching time adjustment as meter-in control S2=switching time adjustment as mter-out control</div> <div>no code = external pilot , external drain E=internal pilot external drain ET=internal pilot internal drain T=external pilot internal drain (Hydraulic centering 3 position valve not suit for E & ET)</div> <div>no code = without manual override N= with manual override</div>																			
working pressure no code = 28 Mpa				Size : 10= NG10 16= NG 16 25= NG25 32= NG 32				no code = with spring return or centring H = with hydraulic return or centring				take reference the spool of slide valves				series 60-69= 6X			
when pilot valve is two solenoids two position valve pilot valve is with hydraulic reset O= without spring return OF= without spring return with detent				pilot control valve standard solenoid valve = 6A high capability solenoid valve = 6E				D12 D24=DC12V DC24V A110 A220=AC110V/50HZ AC220V/50HZ R110 R220=RAC110V RAC220V											

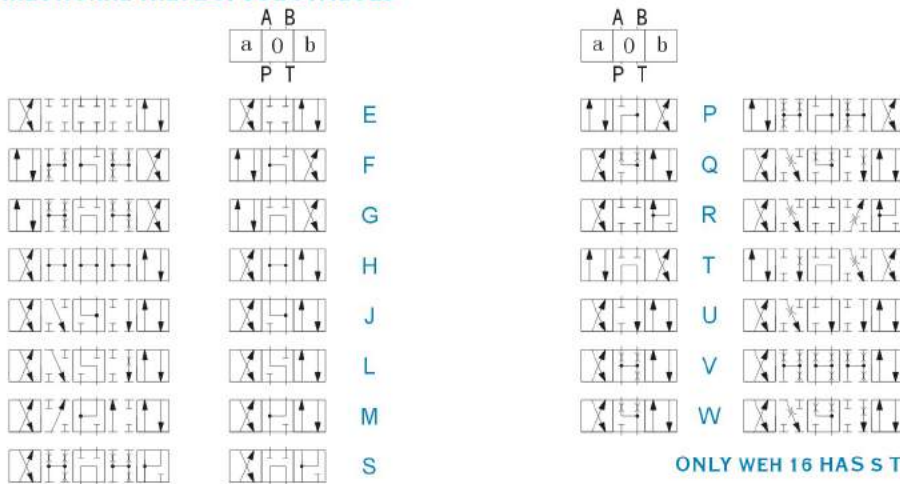
3 POSITION VALVE SPOOL SYMBOLS

2 POSITION VALVE SPOOL SYMBOLS



SPOOL	FORM	HYDRAULIC DRIVE WH	ELECTRIC-HYDRAULIC DRIVE WEH	SPOOL	FORM	HYDRAULIC DRIVE WH	ELECTRIC-HYDRAULIC DRIVE WEH
A, C, D, K, Z	..I..			B, Y	..I..		
	..H..I..				..H..I..		
	..H../O						
	..H/OF						

3 POSITION DIRECTIONAL VALVE SPOOL SYMBOLS



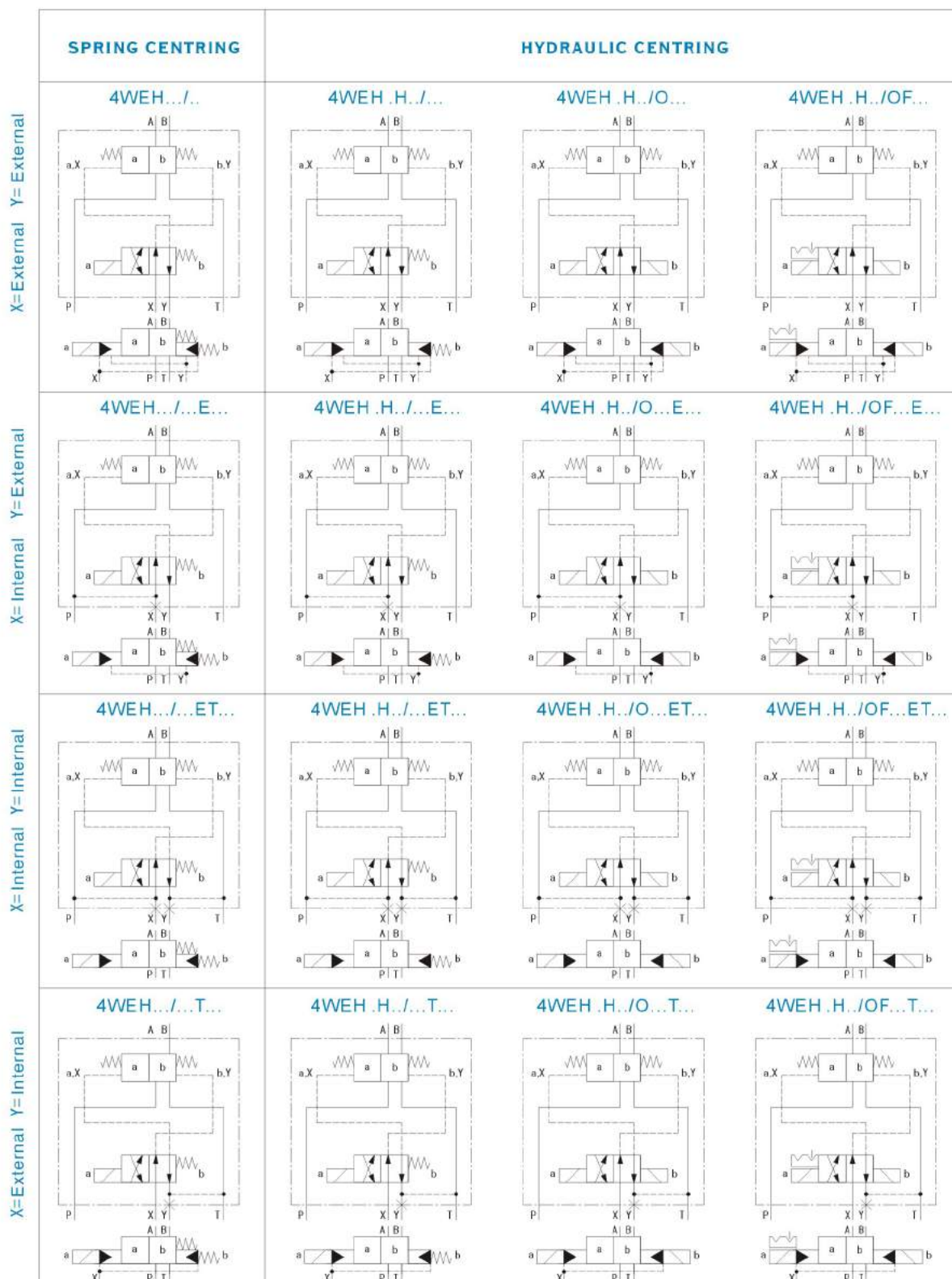
ONLY WEH 16 HAS S TYPE SPOOL

CORE SPOOL	DIRE- CTION	VALVE CORE RESE	HYDRAULIC DRIVE WH	ELECTRIC-HYDRAULIC DRIVE WEH	DIRE- CTION	VALVE CORE RESE	HYDRAULIC DRIVE WH	ELECTRIC-HYDRAULIC DRIVE WEH
E,F, G,H, J,L, M,Q, R,S, T,U, V,W	..I..				..H..I..			
	.A				H.A			
	.B				H.B			

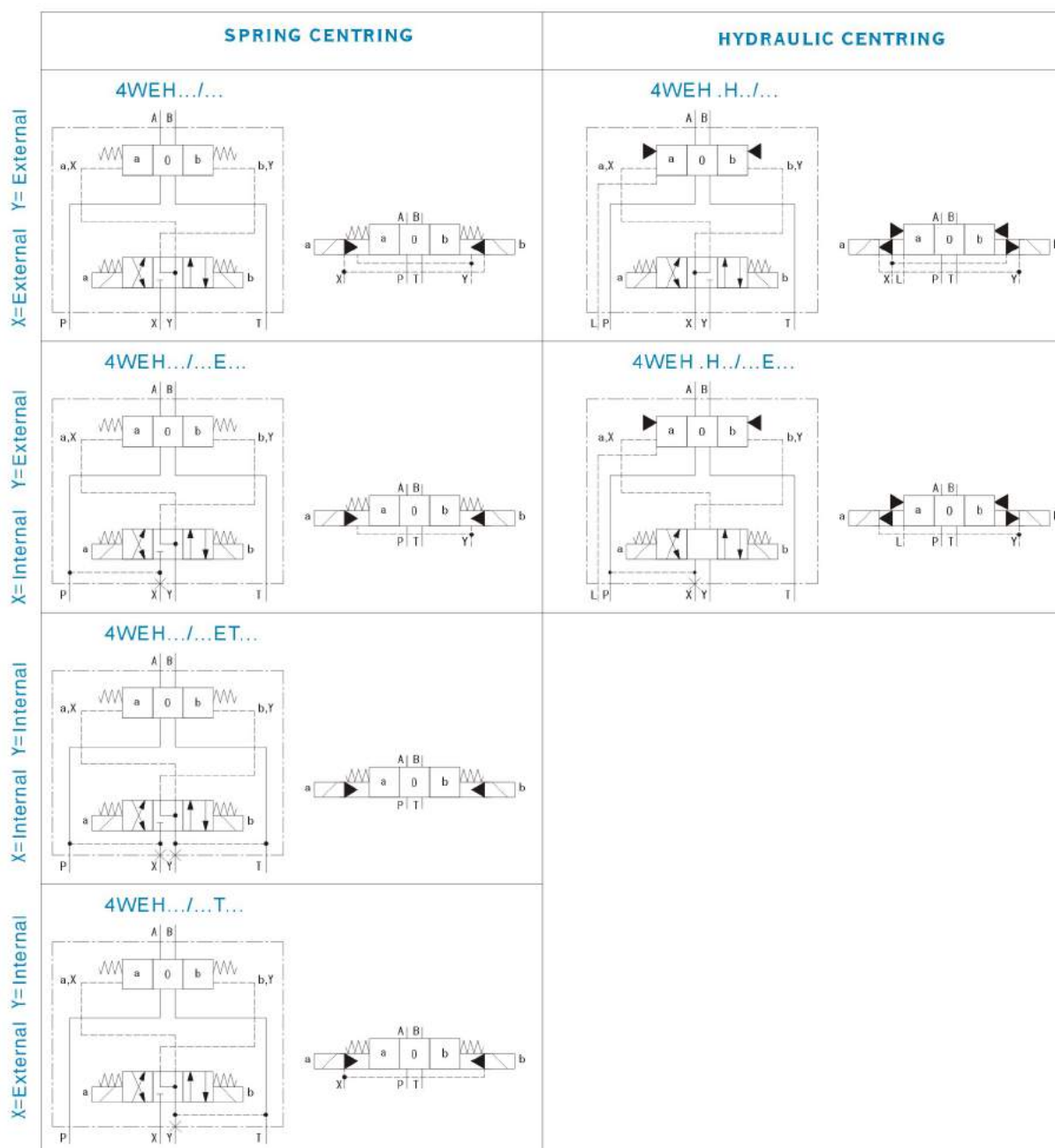
X TYPE SPOOL WITH SINGLE SOLENOID A/B, THEN SERIES NO. IS XA / XB
FOR EXAMPLE : E SPOOL , SOLA , THEN SERIES NO. IS EA .

NINGBO WANERF HYDRAULIC CO.,LTD

TWO POSITION DIRECTIONAL VALVE SPOOL SYMBOLS



3 POSITION DIRECTIONAL VALVE SPOOL SYMBOLS



DSHG SERIES ELECTRIC-
HYDRAULIC CONTROL DIRECTIONAL VALVES



PRODUCT SERIES



方向阀
Directional Valves

DSHG SERIES ELECTRIC-
HYDRAULIC CONTROL DIRECTIONAL VALVES



ORDERING CODE

DSH	G	04	3C2			D24	L		
-----	---	----	-----	--	--	-----	---	--	--

K= With knob
blank = without knob

Stroke adjustment AB : both sides
A: A side
B : B side

H= with DIN 43650 connector
L= DIN 43650 connector with lamp
B= with terminal box

D12 D24=DC12V DC24V
A110 A220=AC110V/50HZ 220V/50HZ
R110 R220=RAC110V RAC220V

drain connection
blank : external drain
T: internal drain

pilot connection
none: internal pilot
E : external pilot

slide valve spool

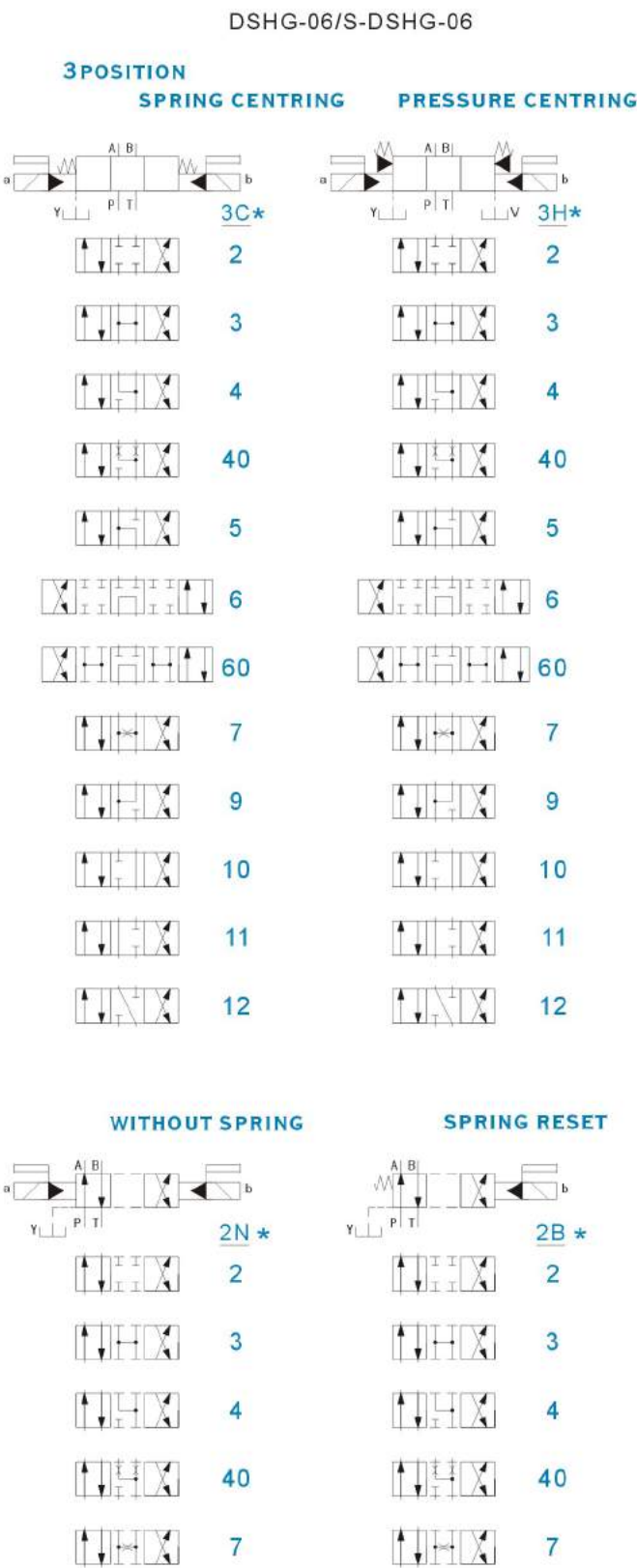
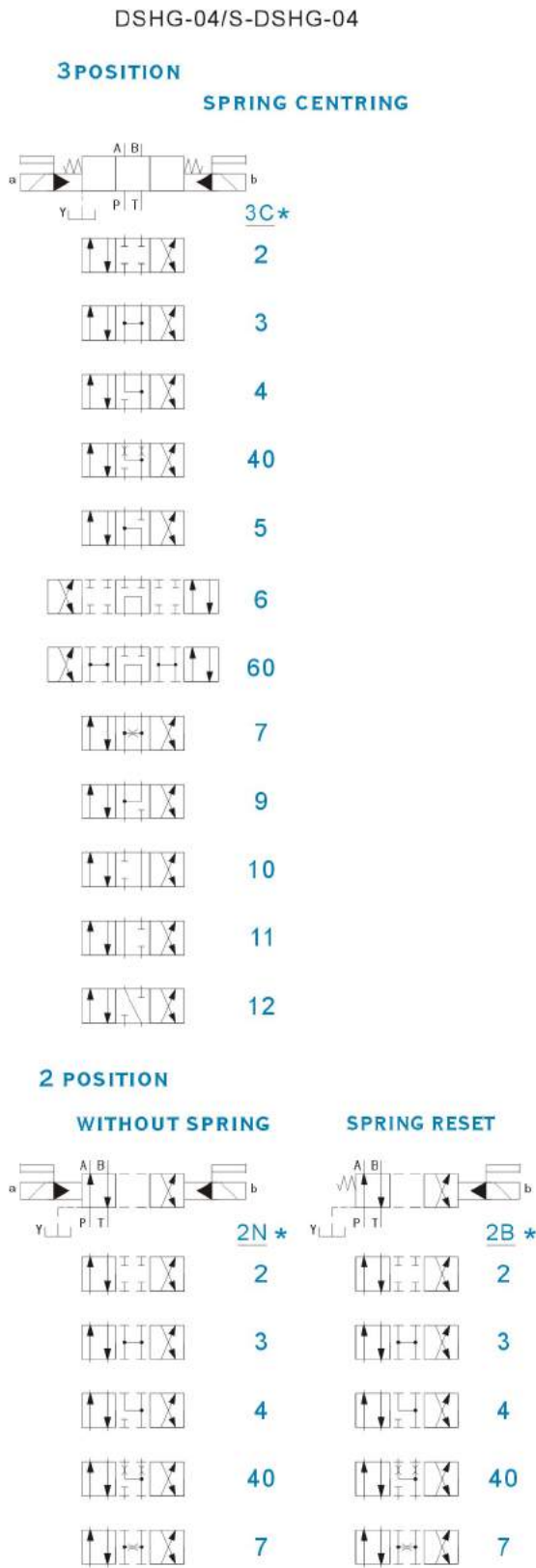
Size :
04=NG16 06=NG25 10=NG32

mounting way : subplate installation

electric-hydraulic directional valves

方向阀
Directional Valves

SPOOL SYMBOLS



方向阀
Directional Valves

WMM SERIES 70 MANUALLY OPERATED DIRECTIONAL VALVES



PRODUCT SERIES

方向阀
Directional Valves

4WMM 4**70/F



4WMM4**70/F LR



4WMM 6**70/F



4WMM 6**70/F LR



4WMM 10**70/F



4WMM 10**70/F LR



WMM SERIES 70 MANUALLY
OPERATED DIRECTIONAL VALVES



ORDERING CODE

4	WMM	6	E	70	/	F			
---	-----	---	---	----	---	---	--	--	--

hand shank operation direction
no code : front and back operation
LR: left and right operation

no code = mineral substance hydraulic oil
V= phosphate ester hydraulic oil

No code = without insert damper
B08= damper 0.8mm
B10= damper 1.0mm
B12= damper 1.2mm

No code : with spring return
F: with detent

series code

spool symbols

Size:
4=NG4
6=NG6
10=NG10

Handle operated

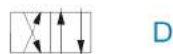
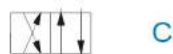
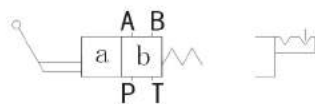
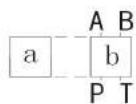
3 =3 position
4= 4 position

方向阀
Directional Valves

SPOOL SYMBOLS

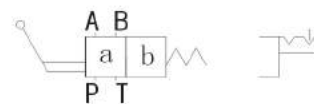
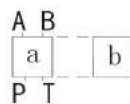
TRANSITION SPOOL

SLIDE VALVE SPOOL



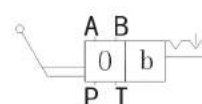
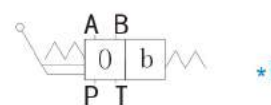
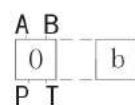
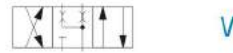
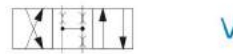
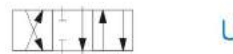
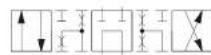
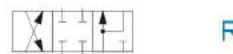
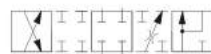
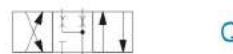
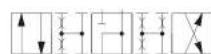
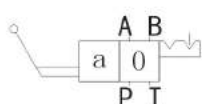
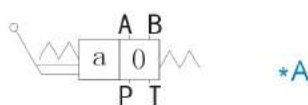
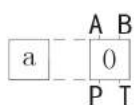
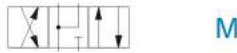
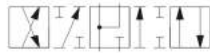
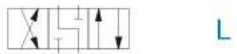
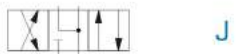
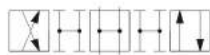
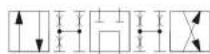
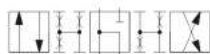
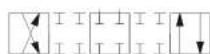
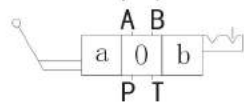
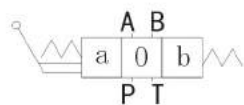
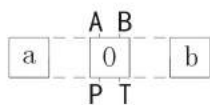
TRANSITION SPOOL

SLIDE VALVE SPOOL



TRANSITION SPOOL

SLIDE VALVE SPOOL



WMM TYPE OF 80 SERIES MANUALLY OPERATED DIRECTIONAL VALVE



WORKING FEATURE

- 1.Spool and handle connected together as a whole, reliability is better
- 2.Sub-plate installation
- 3.Handle operated
- 4.Installation surface according to DIN24340 A type ISO4401



方向阀
Directional Valves

ORDERING CODE

4	WMM	6	E	80	F				
<div>3 ways = 3</div> <div>4 ways = 4</div>	<div>Handle operated</div>	<div>Nominal diameter</div> <div>6 = nominal size 6</div> <div>10 = nominal size 10</div> <div>16 = nominal size 16</div> <div>25 = nominal size 25</div>	<div>Spool symbol</div>	<div>Serial number (improved and designed on the basis of original series valve, and make the spool and back handle connected together)</div>	<div>No mark = without plug-type damper</div> <div>B08 = with damper, diameter of throttle hole: 0.8mm</div> <div>B10 = with damper, diameter of throttle hole: 1.0mm</div> <div>B12 = with damper, diameter of throttle hole: 1.2mm</div>	<div>no mark : standard type</div> <div>S: SS type (except block , other parts all make by ss)</div>	<div>Options of handle position</div> <div>No mark: handle position is at A side</div> <div>R: handle position is at B side</div>	<div>No mark = mineral oil</div> <div>V = organic phosphate</div>	<div>No mark = spring return</div> <div>F = with detent</div>

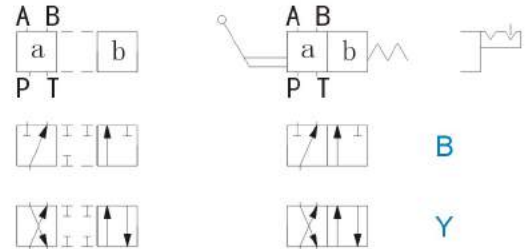
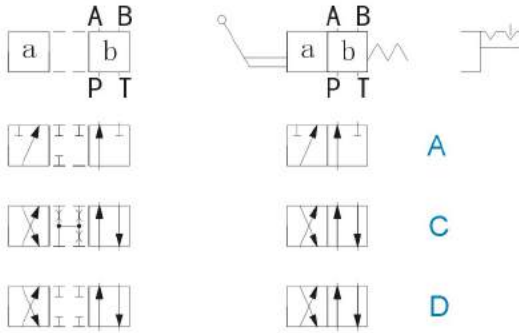
SPOOL SYMBOLS

TRANSITION SPOOL

SLIDE VALVE SPOOL

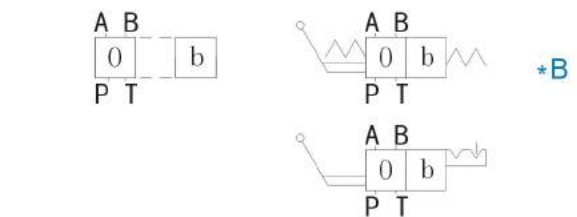
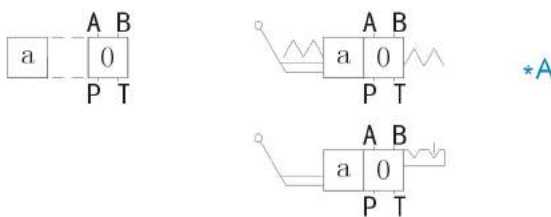
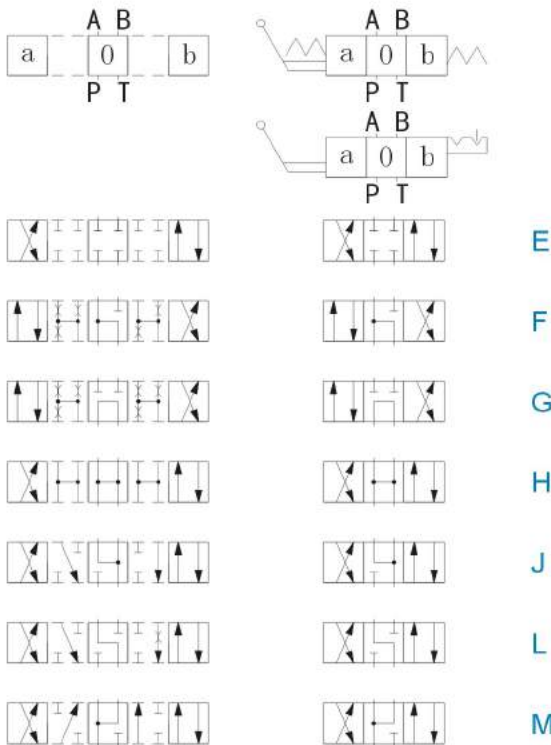
TRANSITION SPOOL

SLIDE VALVE SPOOL



TRANSITION SPOOL

SLIDE VALVE SPOOL



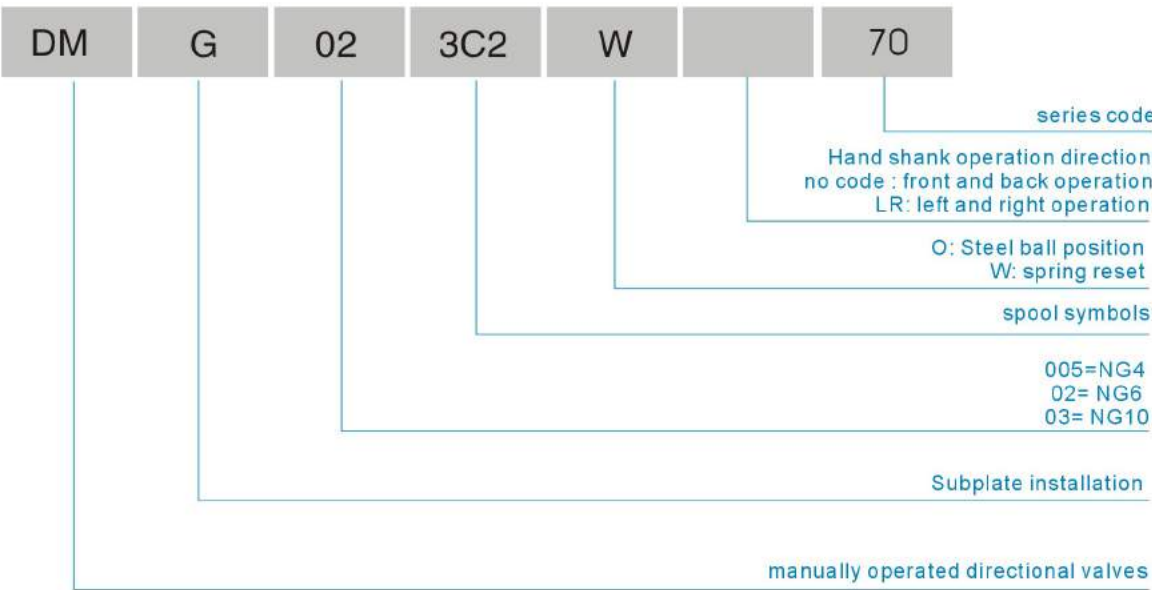
DMG-70 TYPE MANUALLY OPERATED DIRECTIONAL VALVES



PRODUCT SERIES



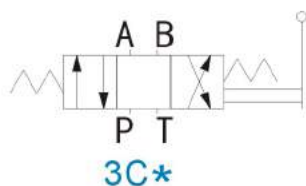
ORDERING CODE



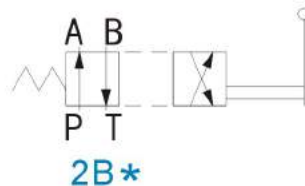
方向阀
Directional Valves

HYDRAULIC SYMBOLS

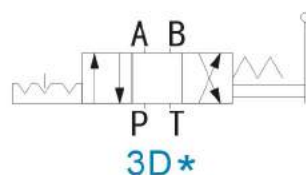
3 POSITION WITH SPRING CENTRING



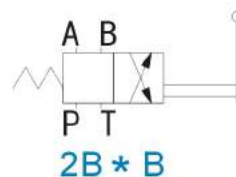
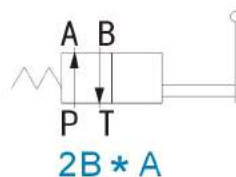
2 POSITION WITH SPRING CENTRING



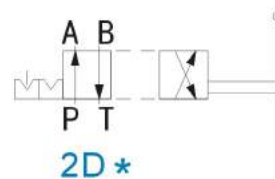
WITHOUT SPRING WITH
MECHANICAL POSITION



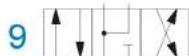
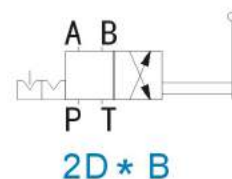
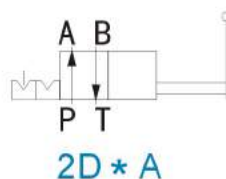
2 POSITION SPRING RETURN WITH
3 POSITION EXTENSION



WITHOUT SPRING WITH
MECHANICAL POSITION



2 POSITION WITHOUT SPRING WITH 3 POSITION
EXTENSION , MECHANICAL POSITION



DMG-80 SERIES MANUALLY OPERATED DIRECTIONAL VALVE



WORKING FEATURE

- 1.spool and handle connected together as a whole, reliability is better
- 2.sub-plate installation
- 3.handle operated
- 4.installation surface according to DIN24340 A type ISO4401



方向阀
Directional Valves

ORDERING CODE

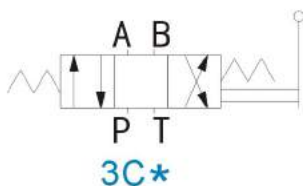
DM	G	02	3C2	W		80
Manually operated directional valve						
Sub-plate installation						
02= nominal size 6 03= nominal size 10						
Spool symbol						
O: steel ball detent W: spring return						
						Serial number (improved & designed on the basis of original series valve: making the spool and back handle connected together)
						Options of handle position No mark: handle position is at A side R: handle position is at B side

DMG SERIES 80 MANUALLY OPERATED DIRECTIONAL VALVES

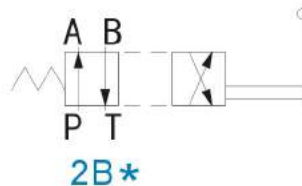


HYDRAULIC SYMBOLS

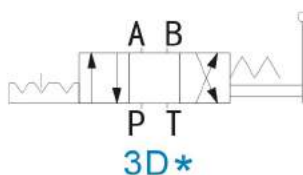
3 POSITION WITH SPRING CENTRING



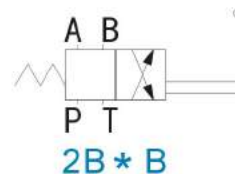
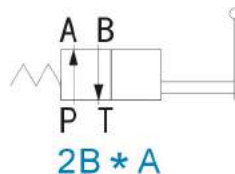
2 POSITION WITH SPRING CENTRING



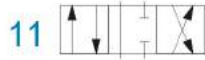
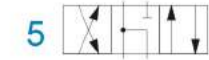
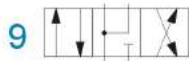
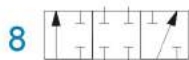
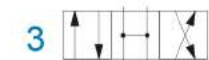
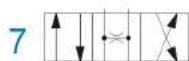
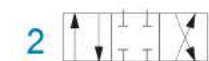
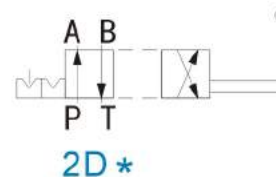
WITHOUT SPRING WITH
MECHANICAL POSITION



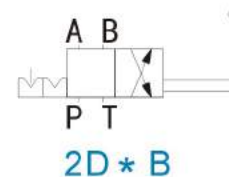
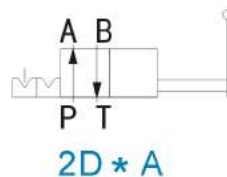
2 POSITION SPRING RETURN WITH
3 POSITION EXTENSION



WITHOUT SPRING WITH
MECHANICAL POSITION



2 POSITION WITHOUT SPRING WITH 3 POSITION
EXTENSION , MECHANICAL POSITION



DMT03-80 PIPE CONNECTION
TYPE MANUAL OPERATED VALVE



PRODUCT SERIES



方向阀
Directional Valves

ORDERING CODE

DM	T	03	3C2	W		80
----	---	----	-----	---	--	----

Lever operated
directional valve

Installation type
T: pipe installation

Nominal diameter
03= diameter 10

Spool symbol

Serial number of design

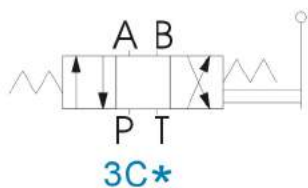
Handle position
NO mark: handle position is at A side
R: handle position is at B side

O: steel ball with detent
W: spring return

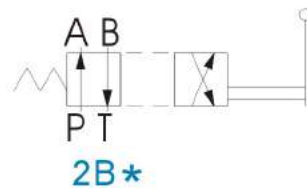
DMT03-80 PIPE CONNECTION TYPE MANUAL OPERATED VALVE



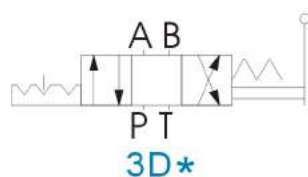
3 POSITION WITH SPRING CENTRING



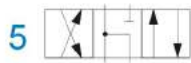
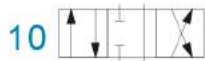
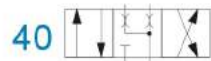
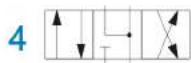
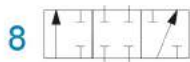
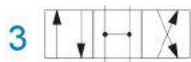
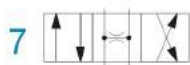
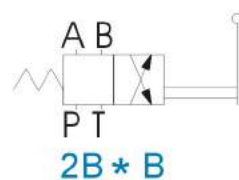
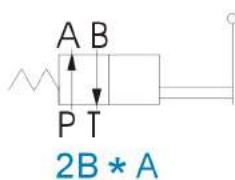
2 POSITION WITH SPRING CENTRING



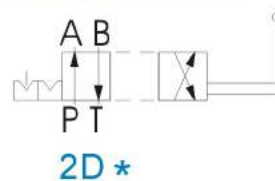
WITHOUT SPRING WITH
MECHANICAL POSITION



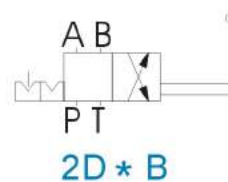
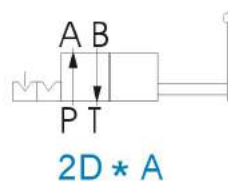
2 POSITION SPRING RETURN WITH
3 POSITION EXTENSION



WITHOUT SPRING WITH
MECHANICAL POSITION



2 POSITION WITHOUT SPRING WITH 3 POSITION
EXTENSION , MECHANICAL POSITION



Z2S SERIES MODULAR TYPE HYDRAULIC CONTROL CHECK VALVE



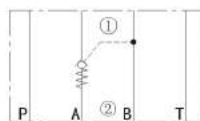
PRODUCT SERIES



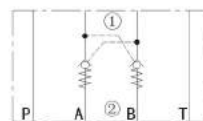
Remark

Z2S check valve is the modular type hydraulic control check valve, it using to close one or more chamber oil, no leakage, with good stability.

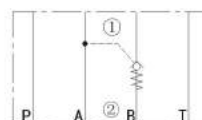
SPOOL SYMBOLS



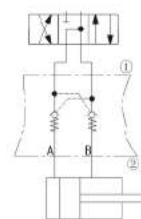
Z2S-A



Z2S



Z2S-B



①=Valve side
②=subplate side

Circuit diagram

ORDERING CODE

Z2S	10				
-----	----	--	--	--	--

modular hydraulic control check valve

size

6=NG6

10=NG10

16=NG16

22=NG22

with detail description

no code = NBR Seals
V= FKM Seals

no code = both chamber A and B has check valve

A= chamber A with the check valve

B= chamber B with the check valve

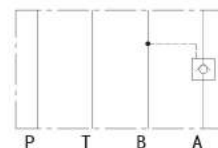
10 NG10 Series NO.
30 NG 16.22 Series NO.
40 NG6 Series NO.
10-19 structure and dimension is same
30- 39 structure and dimension is same
40- 49 structure and dimension is same

MPCV SERIES MODULAR TYPE HYDRAULIC CONTROL CHECK VALVE

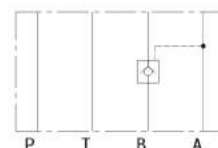


PRODUCT SERIES

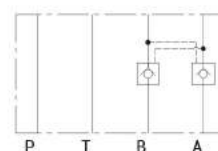
SPOOL SYMBOLS



MPCV-A



MPCV-B



MPCV-W

ORDERING CODE

MPCV	02	W	20
------	----	---	----

design NO:

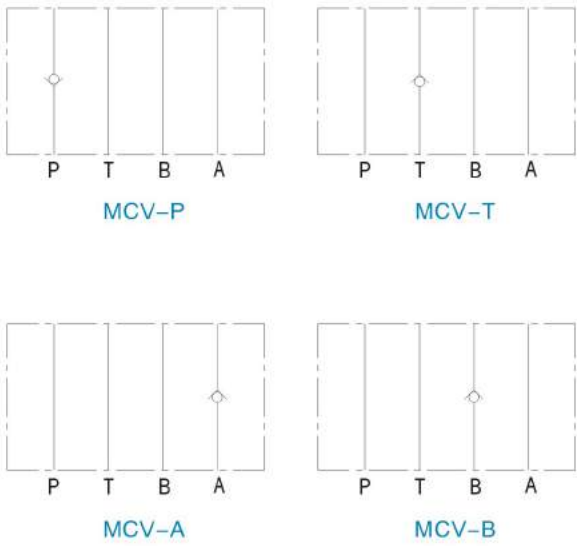
function bore
A= bore A
B= bore B
W= A & B bore

Size
02= NG6
03= NG10

modular type hydraulic control check valve

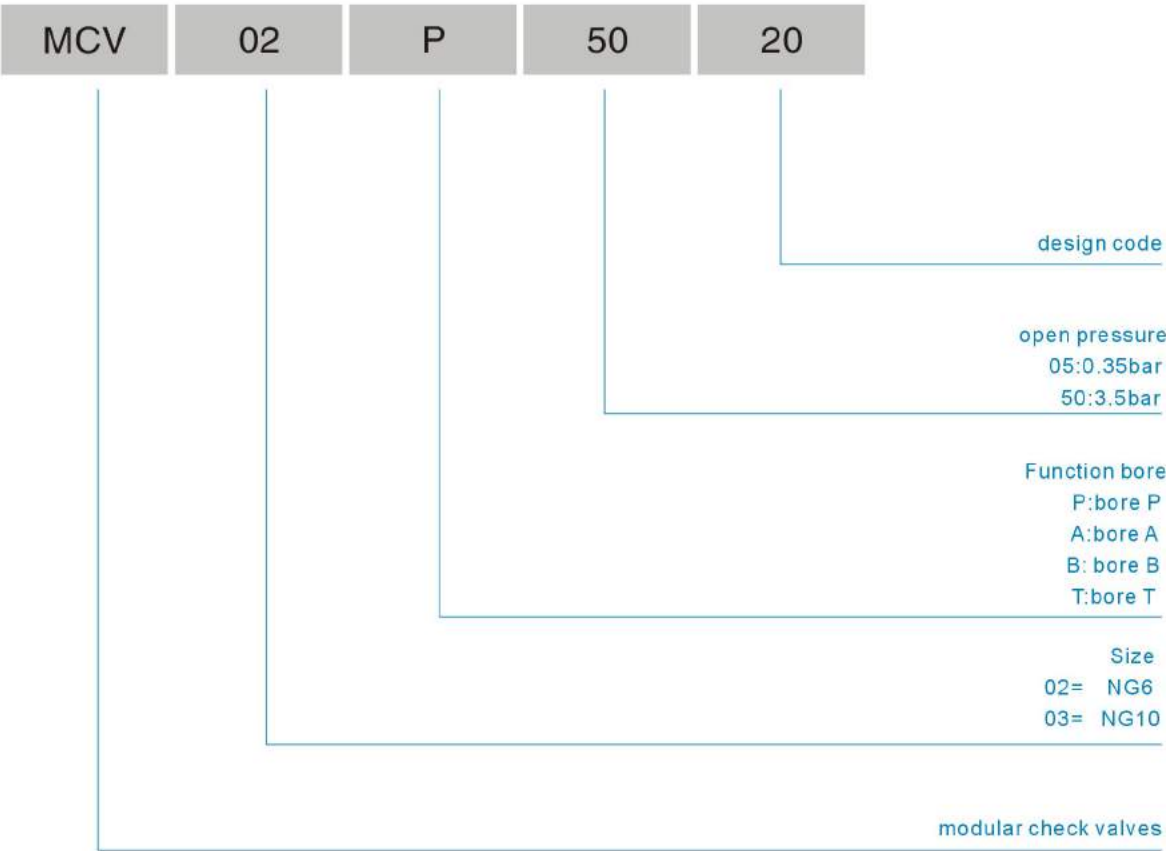
PRODUCT SERIES

SPOOL SYMBOLS



方向阀
Directional Valves

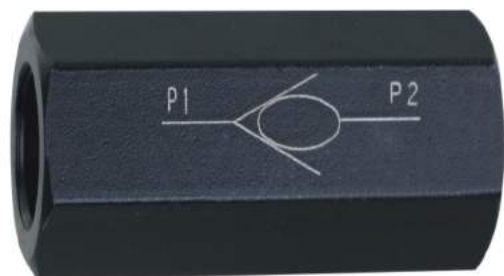
ORDERING CODE



S TYPE OF CHECK VALVE



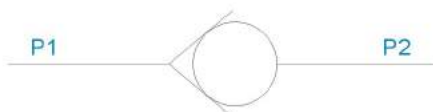
PRODUCT SERIES



The function of S type check valve is making the oil flow in one direction, but stop in another direction

Connection type: pipe connection

SPOOL SYMBOLS



ORDERING CODE



Nominal diameter:
6 = nominal size 6
8 = nominal size 8
10 = nominal size 10
15 = nominal size 15
20 = nominal size 20
25 = nominal size 25
30 = nominal size 30
40 = nominal size 40

Pipe connection = G

Without spring = 0
Starting pressure 0.05Mpa = 1
Starting pressure 0.15Mpa = 2
Starting pressure 0.30Mpa = 3
Starting pressure 0.50Mpa = 5

Explanation

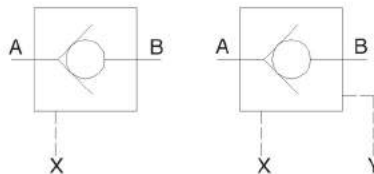
Pipe connection
Inch: no mark
Metric: 2

Nothing to be revised = 0(customized by manufacturer)



PRODUCT SERIES

SPOOL SYMBOLS



- 1.Flow control check valve
- 2.Connection dimension as DIN24340
- 3.Subplate installation
- 4.With drain port or without drain port as required
- 5.With pilot valve or without pilot valve as required
- 6.Buffer and release pressure by pilot valve (reduce the hydraulic impact)
- 7.Three kinds of starting pressure can be choose

ORDERING CODE

Flow control
check valve

Without drain port = V
With drain port = L

Type	SV		SL	
Oil Port	G	P	G	P
Specification 10	10	10	10	10
Specification 16	15	15	15	15
Specification 20	20	20	20	20
Specification 25	25	25	25	25
Specification 32	30	30	30	30

Subplate mounting = P
Thread connection = G

A= with pilot valve
B= without pilot valve

Explain Other details
with words

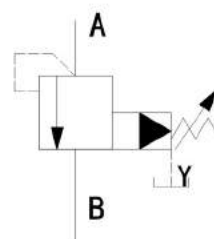
No code = Mineral oil with DIN51524
and DIN51525 organic phosphate

30series (30~39= connection and installation dimension without change)

1=
2= starting pressure
3=

PRODUCT SERIES

SPOOL SYMBOLS



说明

插入式结构
4种压力范围
4种调节形式
旋钮
带保护罩的调节螺栓
带刻度可锁旋钮
带刻度旋钮
可直接插入油路块使用

REMARK:

Plug-in type
Four type of pressure scope
Four adjustment type
With knob
adjusting bolt with protective cover
Lock knob with scale
Lock with scale
Can directly plug into block

ORDERING CODE

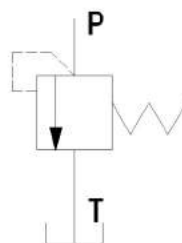
DB		K		L4X		Y	
relief valve =DB							no code= NBR Seals V= FKM Seals
SIZE 6=6 SIZE10=10						Y: internal supply external drain	
PLUG-IN TYPE =K						5= pressure can adjust to 5MPA 10= pressure can adjust to 10 MPA 20= pressure can adjust to 20MPA 31.5= pressure can adjust to 31.5MPA	
With knob=1 Adjusting bolt with protective cover=2 Lock knob with scale=3 Lock with scale=7				L4X=		L40~L49 series (L40~L49 unchanged installation and connection dimensions)	

Notes for selecting items:

This pilot relief valve can start with lower pressure and with big flow , but internal leakage will be more than DBD series.
If the whole hydraulic system don't have high requirement toward the start pressure but should with low leakage , you'd better select DBD series .

PRODUCT SERIES

SPOOL SYMBOLS



remark:
 3 type of connection way
 Plug-in type
 Thread connection
 Subplate mounting
 7 types pressure level
 2.5, 5, 10, 20, 31.5, 40 and 63MPa available
 3 adjustment type
 Adjusting bolt with protect cover
 With handle
 Handle with lock

ORDERING CODE

DBD					10	/	/	
-----	--	--	--	--	----	---	---	--

Direct pressure relief valve

Adjusting bolt with protect cover=S
 With handle =H
 Handle with lock =A

no code = NBR Seals
 V= FKM Seals

Thread type:
 No code= british type
 2= metric type

connection way		G	K	P	
Size	G1/4	M14×1.5	6	6	6
	G3/8	M18×1.5	8	-	-
	G1/2	M22×1.5	10	10	10
	G3/4	M27×2	15	-	-
	G1	M33×2	20	20	20
	G1 1/4	M42×2	25	-	-
	G1 1/2	M48×2	30	30	30

Connection mode
 Plug-in type =K
 thread connection =G
 subplate mounting =P

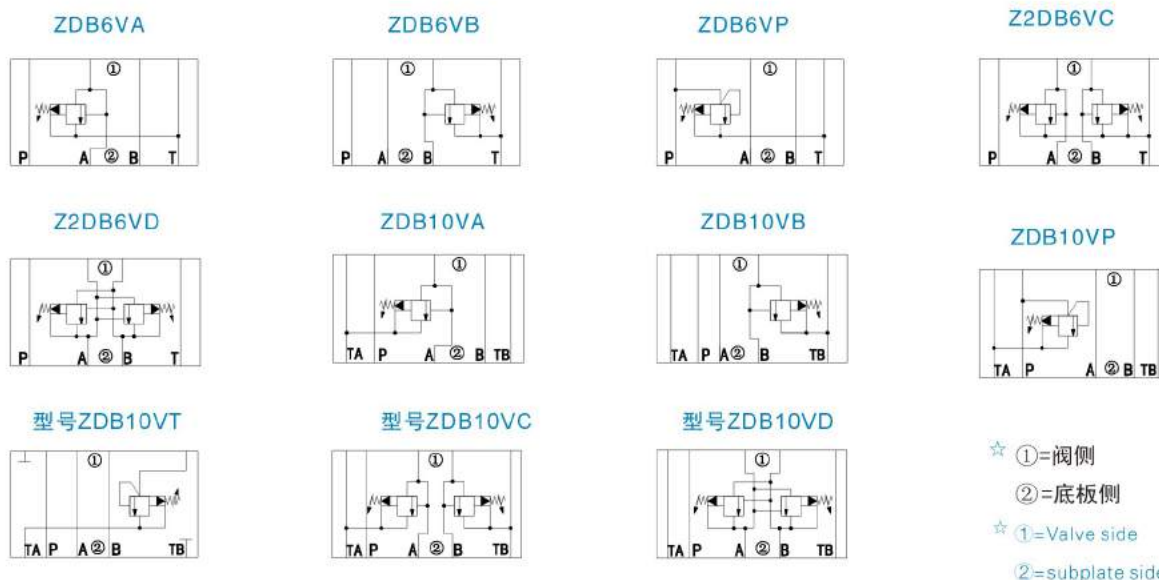
Size	10	6、8、15和20	25和30
Pressure degree (pre-sure can adjust to)	2.5= 2.5MPa	2.5= 2.5MPa	2.5= 2.5MPa
	5= 5MPa	5= 5MPa	5= 5MPa
	10= 10MPa	10= 10MPa	10= 10MPa
	20= 20MPa	20= 20MPa	20= 20MPa
	31.5= 31.5MPa	31.5= 31.5MPa	31.5= 31.5MPa
	40= 40MPa	40= 40MPa	
	63= 63MPa		

10= 10 series
 (10~19 series, unchanged installation and connection dimensions)

PRODUCT SERIES



SPOOL SYMBOLS



ORDERING CODE

Z DB 10 - L40

Modular type=Z

Just applicable VC and VD with 2 plug in relief valve

Pilot relief valve=DB

Size 6=NG6 10=NG10

Relief function from to

A→TA =VA
P→TA =VP
TB1→TA2 ONLY NG10 available=VT
B→TB =VB
A→TA and B→TB =VC
A→B and B→A =VD

no code = NBR Seals
V= FKM Seals

5= pressure can adjust to 5Mpa
10= pressure can adjust to 10Mpa
20= pressure can adjust to 20Mpa
31.5=pressure can adjust to 31.50Mpa

L40 =L40
40-49 structure and dimension same

With knob =1
Adjusting bolt with protect cover =2
Locking-knob with scale =3
Knob with scale =7

PRODUCT SERIES



机能符号 SPOOL SYMBOLS



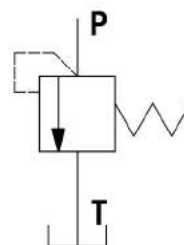
ORDERING CODE

MRV	02	P	K	2	20
					design code
					Pressure adjustment scope 1: 8~70bar 2:35~140bar 3:70~250bar
					Adjustment type blank : no knob (customization) K: with plastic knob (standard)
					function bore P:P hole A:A hole B:B hole A & B series connection
					Size 02= NG6 03= NG10
					modular relief valves

压力阀
Pressure Valves

PRODUCT SERIES

SPOOL SYMBOLS



remark:

- 1.DG-01 valve is used as far-distance control, it connected with the control chamber and can control double pressure and triplicate pressure.
- 2.DG-02 valve is used as the pressure adjustment of small flow valve or regard as safety valve.

ORDERING CODE

D	G	01	1	30	
					Series code : 30: standard type 31:low-pressure type
					Adjustment scope 1:*~70 bar 2:35~140 bar 3:70~250 bar
					Terminal size: 01=NG3 02=NG6
					Mounting way: G: subplate mounting T: pipe installation
					Direct pressure relief valve

PRODUCT SERIES



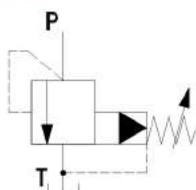
Ramark:

DB/DBW type pressure valve is the pilot relief valve , they can be used to limit DB or DBW or unload the system pressure .

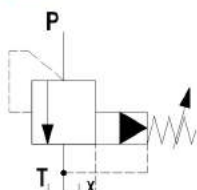
压力阀
Pressure Valves

SPOOL SYMBOLS

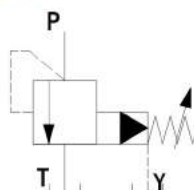
DB ...-...



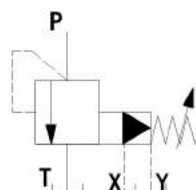
DB ...X...



DB ...Y...

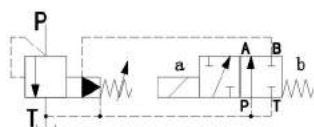


DB ...XY...



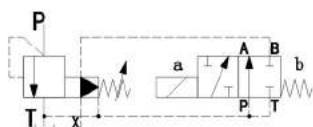
DBW ...-...

Normal closed



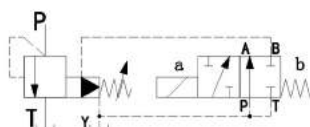
DBW ...X...

Normal closed



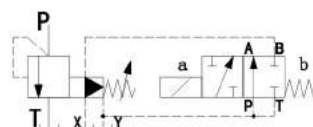
DBW ...Y...

Normal closed

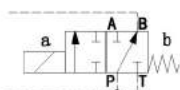


DBW ...XY...

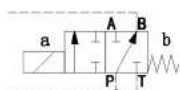
Normal closed



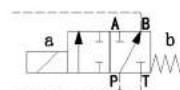
Normal open



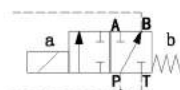
Normal open



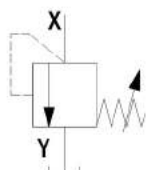
Normal open



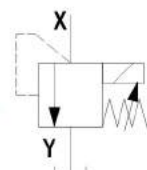
Normal open



DBC_T ...-...



DBWC_T ...-...



PRODUCT SERIES

DB W 10 A 1 5X 10 X D24 L

压力阀
Pressure Valves

without solenoid = no code
with solenoid = W

additional mark

No code = mineral hydraulic oil
V= phosphonolipid hydraulic oil

no code = british thread
2= metric thread

R12= solenoid valve orifice
diameter 1.2mm

H : with DIN 43650 connector
L: DIN 43650 connector with lamp

N = manually override

D12 D24= DC12V 24V
A110 A220=AC110V/50HZ 220V/50HZ
R110 R220=RAC110V 220V

No code = without transit time delay
S= with transit time delay (only DBW type)

no code : internal supply , internal drain
X= external supply , internal drain
Y= internal supply , external drain
XY= external supply , external drain

5= up to 5 mpa
10= up to 10 mpa
20 = up to 20 mpa
31.5= up to 31.5 mpa
35= up to 35 mpa

Pilot control relief valve = no code
pilot control valve = C
(without core plug-in components ,
without mark of size)
with core plug-in components
pilot control valve = C
(mark the size NG10 or NG 30)
long-distance pressure adjustment
valve(without marking size) = T

Size	mounting type	
	Subplate mounting	Thread connection
	Marking	
10		=10
15	=10	=15
20	=20	=20
25	=30	=25
32		=32

Normal closed = A
Normal open = B

subplate mounting = no code
thread connection = G

with knob = 1
adjusting bolt with shield = 2
locked knob with scale = 3
knob with scale = 7

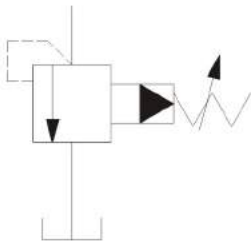
series 50-59= 5X

SBG SERIES LOW NOISE
PILOT CONTROL RELIEF VALVES



PRODUCT SERIES

SPOOL SYMBOLS



- Remark
1. Low noise design can ensure the stability
 2. Protect the pump and dominate valve in case of exceed the rated voltage , as well as keep whole hydraulic system working under the rated pressure .
 3. Use the far-distance control to actualize the far-distance control and unloading control .

ORDERING CODE

SB	G	06	2		30
					<div>Series code</div> <div>30= standard type</div> <div>32= low start pressure type</div>
					<div>Knob adjustment position</div> <div>blank : left side (standard) R: right side</div>
					<div>Adjustment scope</div> <div>1:~70 bar</div> <div>2:35~140 bar</div> <div>3:70~250 bar</div>
					<div>Size :</div> <div>03= NG10</div> <div>06=NG20</div> <div>10=NG30</div>
					<div>Mounting type</div> <div>G= subplate mounting</div>
					low-noise pilot control relief valve

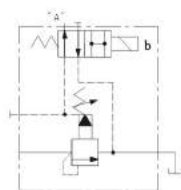
压力阀
Pressure Valves

SBSG SERIES LOW-NOISE SOLENOID CONTROL RELIEF VALVES

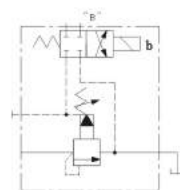


PRODUCT SERIES

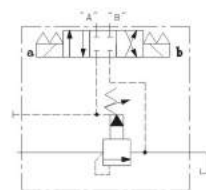
SPOOL SYMBOLS



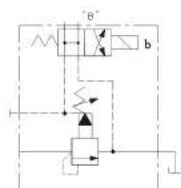
2B3A



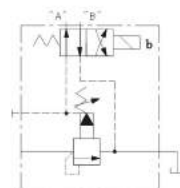
2B2B



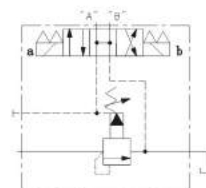
3C2



2B3B



2B2



3C3

Remark

1. Low noise design can ensure the stability
2. under the electronics control which can ensure pump and hydraulic system unloading or keep rated pressure .
3. Combine the remote valve , can actualize the 2-3 degree pressure control .

ORDERING CODE

SBS G 03 2B3A 2 L D24 L 30

low-noise solenoid
control relief valve

Mounting type
G= subplate mounting

size :
03= NG10
06= NG20
10=NG32

oil drain type
2B3A:normal closed
2B3B:normal open to unload
2B2B:two-stage B type
2B2:two-stage type
3C2:three-stage type
3C3:two-stage plug normal open unloading

Design code
30= standard type
32= low pressure type

H= with DIN 43650 connector
L= DIN 43650 connector with lamp
B= with terminal box

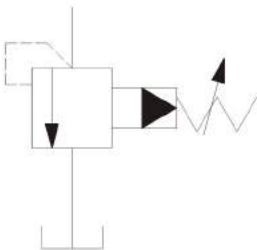
Coil voltage
D12 24=DC12V 24V
A110 220=AC110V 220V
R110 220=RAC110V 220V

Adjustment scope L= left side (standard type)
R= right side (customization)

Adjustment scope
1: ~700bar
2:35~140bar
3:70~250bar

PRODUCT SERIES

SPOOL SYMBOLS



- Remark
- 1.Protect the pump and dominate valve in case of exceed the rated voltage , as well as keep whole hydraulic system working under the rated pressure .
 - 2.Use the far-distance control to actualize the far-distance control and unloading control .
 - 3.With the pilot control design which can ensure big flow and low noise .

ORDERING CODE

B(RV)	G	03	2	30
-------	---	----	---	----

Series code
30:standard type
32:low start pressure type

Pressure adjustment scope
1: *~700bar
2:35~140bar
3:70~250bar

Size :
03= NG10
06=NG20
10=NG30

mounting type
G:subplate mounting
T: tubular mounting

Pilot control relief valve

压力阀
Pressure Valves

BSG(SRV) SERIES SOLENOID CONTROL RELIEF VALVES

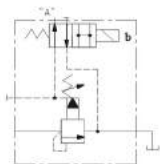


PRODUCT SERIES

SPOOL SYMBOLS



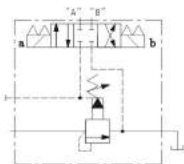
压力阀
Pressure Valves



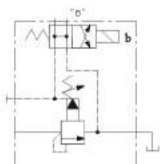
2B3A



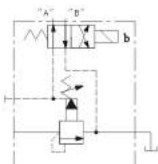
2B2B



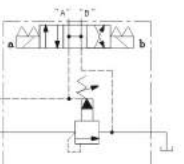
3C2



2B3B



2B2



3C3

Remark
Combination of relief and solenoid valves , can use the electronics signal to unload the pump ,also can use the pilot relief valve to control the whole system under double- three stage pressure .

ORDERING CODE

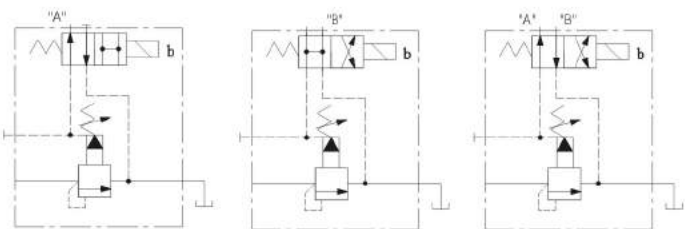
BS(SRV)	G	03	2B3A	2	D24	L
solenoid control relief valves	Mounting type G= subplate mounting	Size 03=NG10 06=NG20 10=NG32				H : DIN 43650 connector L : DIN 43650 connector with lamp B : with terminal box
						Coil voltage D12 24=DC12V 24V A110 220=AC110V 220V R110 220=RAC110V 220V
						Pressure adjustment scope 1: *~700bar 2:35~140bar 3:70~250bar
						Oil drain type 2B3A: normal closed 2B3B: normal open to unload 2B2B: two-stage B type 2B2: two-stage type 3C2: three-stage type 3C3:two-stage plug normal open unloading

BST TYPE OF SOLENOID
CONTROLLED RELIEF VALVE



PRODUCT SERIES

SPOOL SYMBOLS



ORDERING CODE

BS — T 06 — 3 — 30

BS: solenoid controlled
relief valve

Installation type Pipe installation

Specification of valve 06: 3/4 "

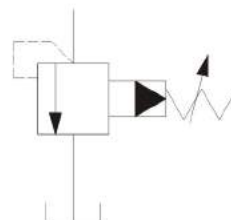
Pressure adjustment range
1: 7-70kgf/cm²
2: 35-140kgf/cm²
3: 70-250kgf/cm²

The serial number of design
30: standard type
31: low bottom plane

压力阀
Pressure Valves

PRODUCT SERIES

SPOOL SYMBOLS



ORDERING CODE

B	—	T	06	—	3	—	30
B: piloted relief valve							
Installation type Pipe installation							
Specification of valve 04: 1/2 " 06: 3/4 "							
Pressure adjustment range 1: 7-70kgf/cm ² 2: 35-140kgf/cm ² 3: 70-250kgf/cm ²							
Serial number of design 30: standard type 31: low bottom plane							

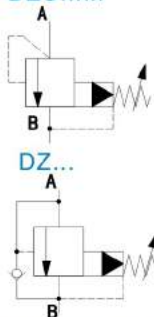
PRODUCT SERIES



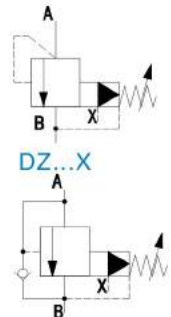
Remark:
 Subplate mounting
 Mounting surface according to
 DIN24340 D type AND 5781
 Used as block installation
 Four type of pressure scope
 Four adjustment type
 With knob
 Adjusting bolt with protect cover
 Locking-knob with scale
 Knob with scale
 Can select check valve

SPOOL SYMBOLS

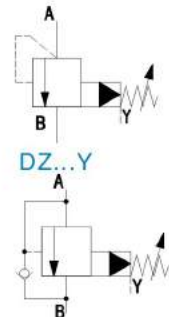
DZ...M
DZC...M



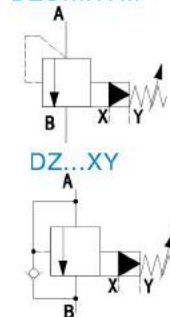
DZ...XM



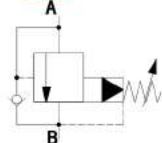
DZ...YM



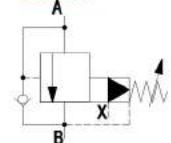
DZ...XYM
DZC...XYM



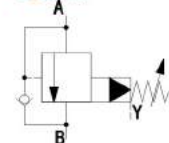
DZ...



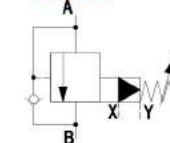
DZ...X



DZ...Y



DZ...XY



ORDERING CODE

DZ - - L50

Pilot operated sequencing valve = no code
 Pilot valve (without plug-in and terminal size marking) =C
 Pilot valve (with plug-in and marking Ng30) =C

10=NG10
 25=NG20
 32=NG30

Regulating element
 With knob =1
 Adjusting bolt with protect cover=2
 Locking-knob with scale =3
 Knob with scale =7

no code = NBR Seals
 V= FKM Seals

No code= with check valve
 M= without check valve

Oil control
 No code= internal supply and internal drain
 X=external supply and internal drain
 Y=internal supply and external drain
 XY=external supply and external drain

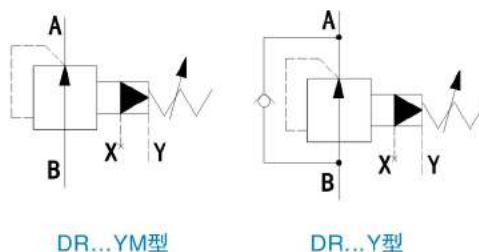
5= pressure can reach to 5MPa
 10= pressure can reach to 10MPa
 20= pressure can reach to 20MPa
 31.5= pressure can reach to 31.5MPa

30= 30 series
 L50= L50 series
 (L50 is new series which can instead of 30 series)

SPOOL SYMBOLS



Four adjustment type
With knob
Adjusting bolt with protect cover
Locking-knob with scale
Knob with scale
Can select check valve(only suit to subplate mounting)



ORDERING CODE

DR					-L50	/	Y	/		
----	--	--	--	--	------	---	---	---	--	--

no code = NBR Seals
V= FKM Seals

Size	connection way	
	subplate mounting	thread mounting
10	=10	=10
15		=15
20	=20	=20
25		=25
32	=30	=30

Only suit to chamber X1 and Y1 of thread connecting and subplate mounting valve

no code=	british thread
2=	metric thread

No code=with check valve
M= without check valve

Y= Control oil effluent

- 5= pressure can reach to 5MPa
- 10= pressure can reach to 10MPa
- 20= pressure can reach to 20MPa
- 31.5= pressure can reach to 31.5MPa
- 35= pressure can reach to 35MPa

30= 30 series
L50= L50 series
(L50 is new series which can instead of 30 series)

ZDR SERIES MODULAR PRESSURE REDUCING VALVE



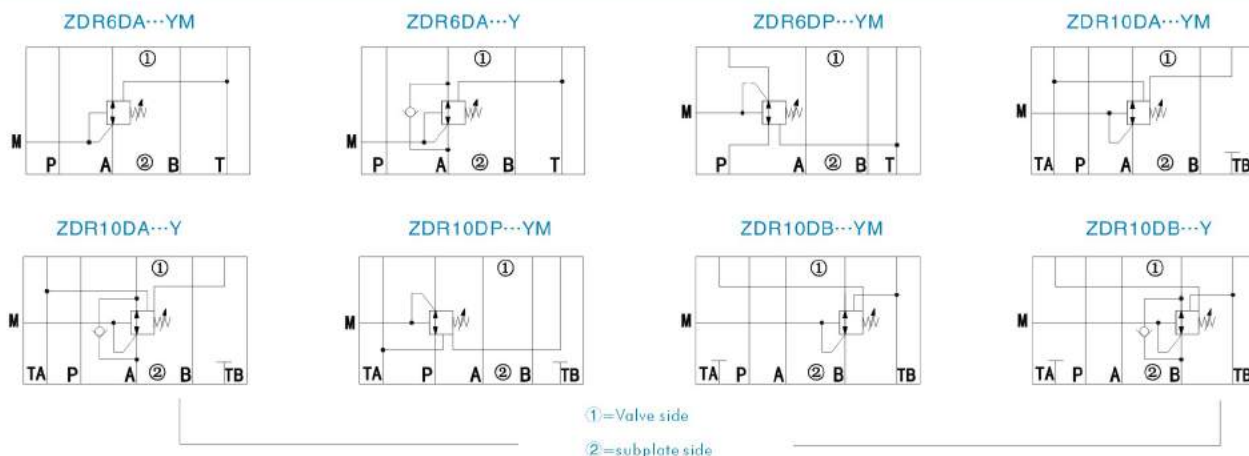
PRODUCT SERIES



说明
 叠加式结构
 安装面符合DIN24340
 A型和ISO4401
 4种压力范围
 3种调节形式
 旋钮
 带保护罩的调节螺栓
 带锁旋钮
 带压力表接口
 可选用单向阀

Remark:
 Modular type
 Mounting surface according to
 DIN24340 D type AND ISO4401
 Four type of pressure scope
 Three adjustment type
 With knob
 Adjusting bolt with protect cover
 Locking-knob with scale
 Can connector pressure gage
 Can select check valve

SPOOL SYMBOLS



ORDERING CODE

Z DR 6 D - L40 Y

Modular type=Z

Reducing valve =DR

Size 6=NG6 10=NG10

direct operation=D

Pressure reducing at chamber A2=A
 Pressure reducing at chamber B2=B
 Pressure reducing at chamber P1=P

With knob =1
 Adjusting bolt with protect cover=2
 Knob with locking =3

40 series NG6=40
 50 series NG10=50

no code = NBR Seals
 V= FKM Seals

No code= with check valve
 (only DA and DB10 available)
 M=without check valve

Y= oil internal supply external drain

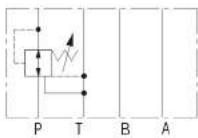
2.5= max pressure 2.5Mpa
 7.5= max pressure 7.5Mpa
 15= max pressure 15Mpa
 21= max pressure 21Mpa

MBRV SERIES MODULAR PRESSURE REDUCING VALVES

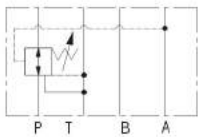


PRODUCT SERIES

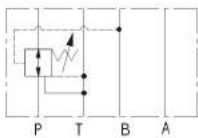
SPOOL SYMBOLS



MBRV-P



MBRV-A



MBRV-B

ORDERING CODE

MBRV	02	P	K	0	20
------	----	---	---	---	----

design code

Pressure adjustment scope
0: 1.5~35bar
1: 8~70bar
2: 35~140bar
3: 70~250bar

Adjustment type
blank : no knob (customization)
K: with plastic knob (standard)

Function bore
bore P
bore A
bore B

Size
02= NG6
03= NG10

modular type pressure reducing valve

压力阀
Pressure Valves

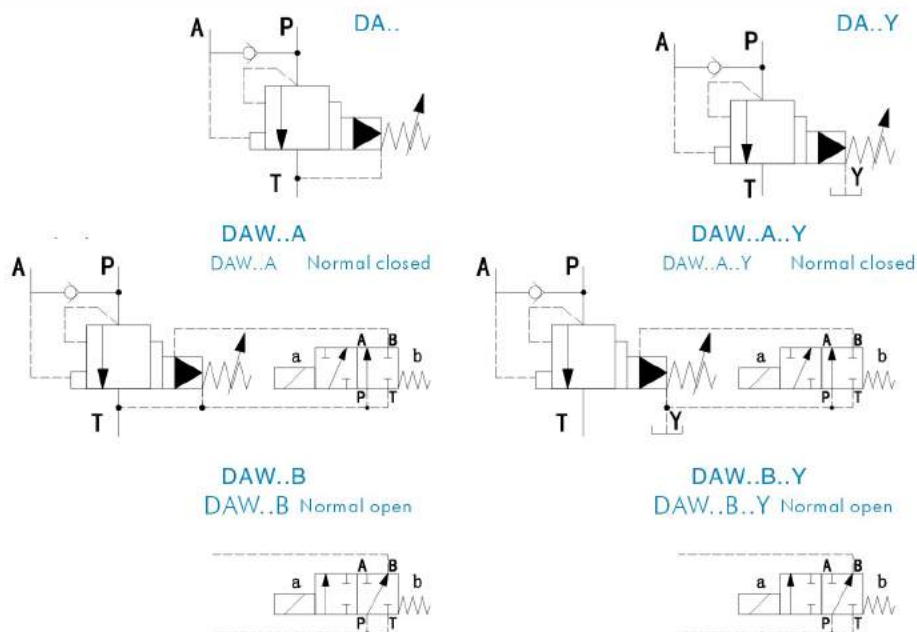
DA/DAW SERIES PILOT OPERATED UNLOADING VALVES



PRODUCT SERIES



SPOOL SYMBOLS



ORDERING CODE

DA + L50 /

No code= without solenoid valve
W= with solenoid valve

No code=pilot operated valves
C=pilot valve without plug-in (no size marking)
C=pilot valve with plug-in (with size marking 30)

10= NG10
25= NG20
32= NG30

DAW (toward DAW valve)
normally closed =A
normally open =B

Regulating element
With knob =1
Adjusting bolt with protect cover =2
Locking-knob with scale =3
Knob with scale =7

30 =30 series
L50 =L50 series
(L50 is new series which can instead of 30 series)

no code = NBR Seals
V= FKM Seals

Toward DAW valve
H: DIN43650 connector
L: DIN43650 connector (with lamp)

Toward DAW valve:
N= Fault check button

Toward DAW valve
D12 D24= DC12V DC24V
A110 A220= AC110V AC220V
R110 R220=RAC110V RAC220V

Toward DAW valve 6E= high-performance solenoid directional valve

No code= internal drain
Y= external drain

Pressure change (P→A)
10= center scope 10%
17= center scope 17%

5= pressure adjustment scope 0-5MPa
10= pressure adjustment scope 5-10MPa
20= pressure adjustment scope 10-20MPa
31.5= pressure adjustment scope 20-31.5MPa

PRODUCT SERIES

SPOOL SYMBOLS

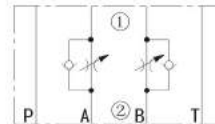
流量阀
Flow control valves



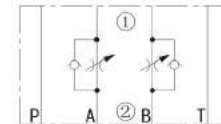
Remark

Z2FS type modular check valve , it control the flow through the way to change fracture surface .

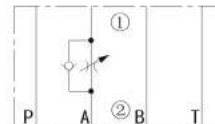
☆ ①=阀侧 ①=Valve side
②=底板侧 ②=subplate side



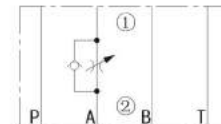
Z2FS 进口节流
Z2FS input throttle



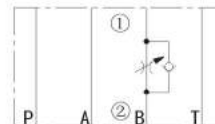
Z2FS 出口节流
Z2FS output throttle



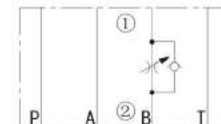
Z2FS-A 进口节流
Z2FS-A input throttle



Z2FS-A 出口节流
Z2FS-A output throttle



Z2FS-B 进口节流
Z2FS-B input throttle



Z2FS-B 出口节流
Z2FS-B output throttle

ORDERING CODE

Z2FS	10		3X			
------	----	--	----	--	--	--

modular type check valve

size

6=NG6
10=NG10
16=NG16
22=NG22

chamber A,B with throttle =blank
chamber A with throttle =A
chamber B with throttle =B

3X = Series 3X
30-39 structure and dimension same

additional remark:

no code = NBR Seals
V= FKM Seals

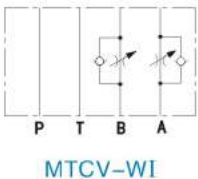
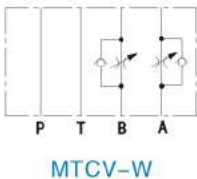
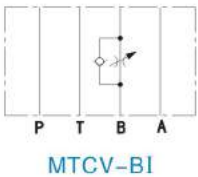
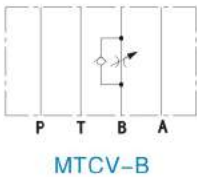
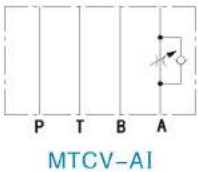
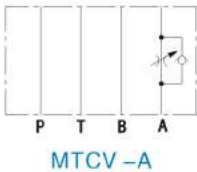
Input throttle = S
output throttle= S2
change the input and output throttle only
have to rotated the valve 180 degrees

MTCV SERIES MODULAR
TYPE HYDRAULIC CONTROL CHECK VALVE



PRODUCT SERIES

SPOOL SYMBOLS



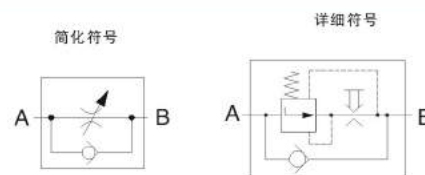
流量阀
Flow control valves

ORDERING CODE

MTCV	02	W	K		20
					design code
					control type
					blank : output throttle
					I: input throttle
					Adjustment type
					blank : no knob (customization)
					K: with plastic knob (standard)
					function bore
					A= bore A
					B= bore B
					W= A & B bore
					Size
					02= NG6
					03= NG10
					modular type check valve

PRODUCT SERIES

SPOOL SYMBOLS



- 1.For the choices of pressure compensation limit
- 2.avoid overshoot
- 3.lever operated knob with lock
- 4.use rectifier stack board to control the flow in both directions

ORDERING CODE

2FRM 5 + 30 / / / / ※

Flow control valve

30series= 30
(30-39= unchanged installation and connection dimension)

Nonlinearity
0.2L/min= 0.2Q
0.6L/min= 0.6Q
1.2L/min= 1.2Q
3L/min = 3Q
6L/min = 6Q
10L/min= 10Q
15L/min= 15Q

flow direction: (A→B)

No mark= without pressure compensation limit
B= with pressure compensation limit

No mark= mineral oil HLP meets DIN51525
V= organic phosphate

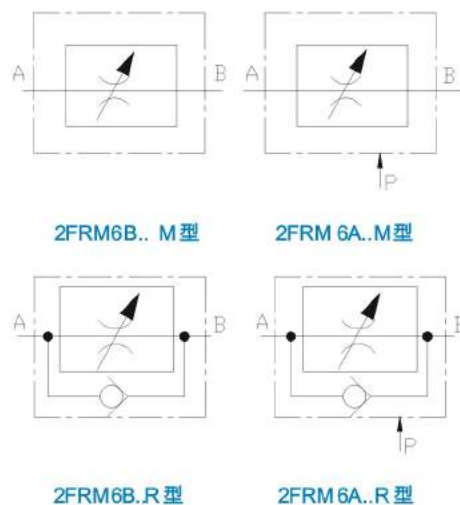
Explain other details with words

PRODUCT SERIES



1. with external switch of pressure compensation
2. could set check valve
3. with scale knob
4. valve could be with lock
5. Installation dimension meets DIN24340

SPOOL SYMBOLS

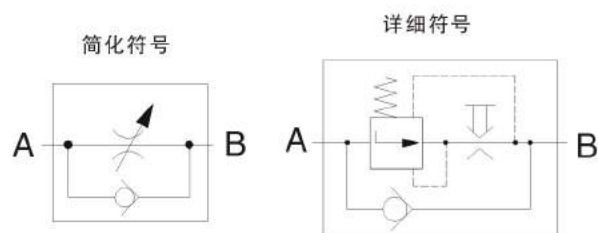


ORDERING CODE

2FRM	6			6	L3X			V	※
Flow control valve									Explain other details with words
Specification 6 = 6								V= FKM seal No mark= NBR seal	
With external switch of pressure compensation = A (restrain throb when start) Without external switch of pressure compensation= B Without external switch of pressure compensation= SB (used in plate installation)								R= with check valve M= without check valve	
Setting device Scale knob can be locked= 3 With scale knob= 7								Flow(A→B) 0.2Q= to 0.2L/min 0.6Q= to 0.6L/min 1.5Q= to 1.5L/min 3Q= to 3L/min 6Q= to 6L/min 10Q= to 10L/min 16Q= to 16L/min 25Q= to 25L/min 32Q= to 32L/min	
when scale is at 0 position, it corresponds to port P= 6								Series: 30-39= L3X (30-39: shape interchangeable)	

PRODUCT SERIES

SPOOL SYMBOLS



1. For the choices of pressure compensation limit
2. Avoid opening overshoot
3. Lever operated Knob with lock
4. use rectifier stack board to control the flow in both directions

ORDERING CODE

2FRM	10	20	/				※
------	----	----	---	--	--	--	---

Specification 10 = 10
Specification 16 = 16

20series = 20

Explain other details
with words

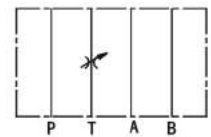
No mark= mineral oil meet
DIN51529 and 51525
V= organic phosphate

Specification 10, linearity specification 16, linearity
to 10L/min = 10L to 60L/min = 60L
to 16L/min = 16L to 100L/min = 100L
to 25L/min = 25L to 160L/min = 160L
to 30L/min = 30L

no mark= without pressure compensation limit
B= with pressure compensation limit

PRODUCT SERIES

SPOOL SYMBOLS



流量阀
Flow control valves

ORDERING CODE

MTV

—

02

—

P

Modular throttle valve

Diameter: 02 = 6
03 = 10

functional action hole
P = hole P
T = hole T

MG/MK TYPE OF THROTTLE VALVE

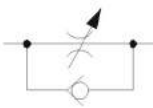


PRODUCT SERIES

SPOOL SYMBOLS



MG型



MK型

- 1.Suit to mount with direct channel
- 2.effected by the pressure and viscosity

ORDERING CODE

		G	10	/	V	※
--	--	---	----	---	---	---

Throttle valve= MG
One-way throttle valve= MK

specification
6 = 6 8 = 8 15 = 15
20 = 20 25 = 25 30 = 30

Mounting directly= G

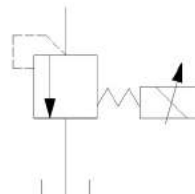
Series 10= 10 (10-19: unchanged installation and connection dimension)

FKM seal= V

Explain other details with words

PRODUCT SERIES

HYDRAULIC SYMBOLS



ORDERING CODE

DBET	X	/	D24		N	H	
------	---	---	-----	--	---	---	--

proportional
control valves

installation hole = X
accord with Is044010302094

max pressure degree
5 mpa = 5
8 mpa = 8
18 mpa = 18
25 mpa = 25
31.5 mpa = 31.5

amplifier supply voltage
D24=24VDC

V=FKM Seals
M= NBR Seals
suit mineral substance
hydraulic oil

Electric connection
H= DIN 43650 connector

N= Manually override

solenoid type (current)
8=max current 0.8A
15= max current 1.5 A

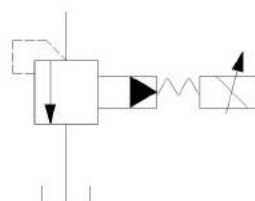
比例阀 / 压力继电器
proportional valves / pressure switch

DBE(M) SERIES ELECTRIC-HYDRAULIC PROPORTIONAL RELIEF VALVES

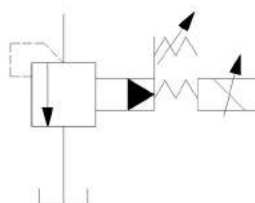


PRODUCT SERIES

HYDRAULIC SYMBOLS



DBE



DBEM

ORDERING CODE

DBE		E	10	5X / 31	Y	D24	
-----	--	---	----	---------	---	-----	--

Proportional
relief valves

Without maximum pressure
relief function = no code
with maximum pressure
relief function = M

No code = for external control electronics
E= with integrated electronics

Size
size 10= 10
size 20=20
size 30=32

component series 50 to 59 = 5X
(50 to 59: unchanged installation and connection dimensions)

seal material
M=NBR Seals
suitable for mineral oil
V= FKM Seals

Supply voltage of electronics
D24=24VDC

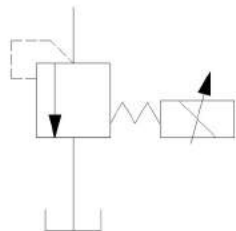
External pilot oil drain = Y
unloading port X , external pilot oil drain = XY

Pressure stage
up to 5mpa = 5
up to 10 mpa = 10
up to 20 mpa = 20
up to 31 mpa = 31
up to 35 mpa = 35

比例阀 / 压力继电器
proportional valves/ pressure switch

PRODUCT SERIES

HYDRAULIC SYMBOLS



ORDERING CODE

ED	G	01	H	10
----	---	----	---	----

design code

Pressure adjustment scope
B: 0.5-7.0MPa
C: 1.0-16MPa
H: 1.2-25MPa

Specification:01

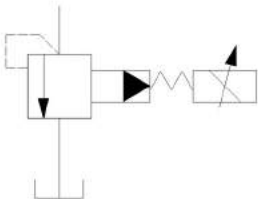
mounting way
G= subplate mounting

proportional control valves

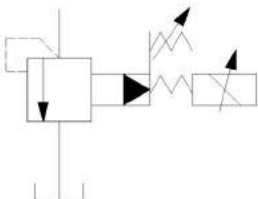
比例阀 / 压力继电器
proportional valves/ pressure switch

PRODUCT SERIES

HYDRAULIC SYMBOLS



EBG*T



EBG*

ORDERING CODE

EB	G	03	C	T	D24	10
----	---	----	---	---	-----	----

design code

rated voltage
D24= DC24V
D12=DC12V

no code : with safety valve
T= without safety valve

pressure adjustment scope (MPa)
B:7 C:16 H:25

Size : 03,06,10

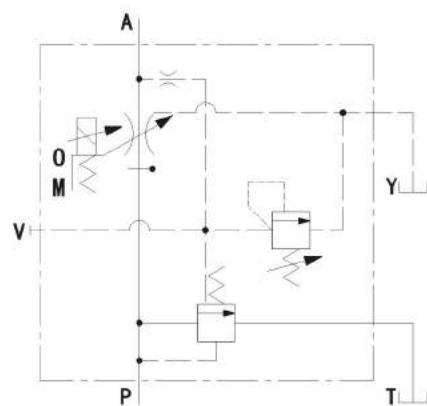
Mounting type
G = subplate mounting

electric-hydraulic proportional relief valves

比例阀 / 压力继电器
proportional valves/ pressure switch

PRODUCT SERIES

HYDRAULIC SYMBOLS



This valve only supply to the electronics with lowest pressure and energy conservation valves.
This valve can keep the pump side pressure always greater than 0.6-0.9MPa, so can save the energy.

ORDERING CODE

EFB	G	03	125	C	10	
						design code
						proportional pilot control relief valve
						pressure adjustment scope
						C: 1.4-14MPa
						H: 1.4-21MPa
						max adjustment flow
						125:125 L / min
						250:250 L / min
						500:500 L / min
						Size : 03 06 10
						Mounting way
						G = subplate mounting
						electric-hydraulic control proportional pressure control valves

比例阀 / 压力继电器
proportional valves/ pressure switch

PRODUCT SERIES



Remark:
Can directly install on proportional valve, the plug type meet the requirement DIN EN 175301-803, protection degree : IP65

Feature:
Amplifier had the function of splash proof , so it can be used under different environment. You can install it without any tools and freely set the related data which can be matched with different item and resistance proportional valve.

ORDERING CODE

TECHNICAL DATA

ADF 11 A 01 D2 3 40

plug type
mounting

ITEM NO.:

connection terminal A Cable output B

single solenoid 01

Voltage=24VDC D2

Rated input: 0-+10VDC 3

series code

EXAMPLE

proportional solenoid	rated voltage	resistance	max currentmA
Rexroth type	24V	19.5	800
Yuken type	12V	4.5	1500
Vickers type	12V	10-13	800
	12V	7.5	1600

Voltage	24VDC
rated voltage	0... + 10VDC
input impedance	≥100Kohm
Signal	200Hz
no load loss	0.3W
Current	0-1600mA (Suit to different Proportional valve)
Min current	0-600mA 可调
Max current	1600mA 可调

ADE SERIES DIGITAL
TYPE PROPORTIONAL AMPLIFIER



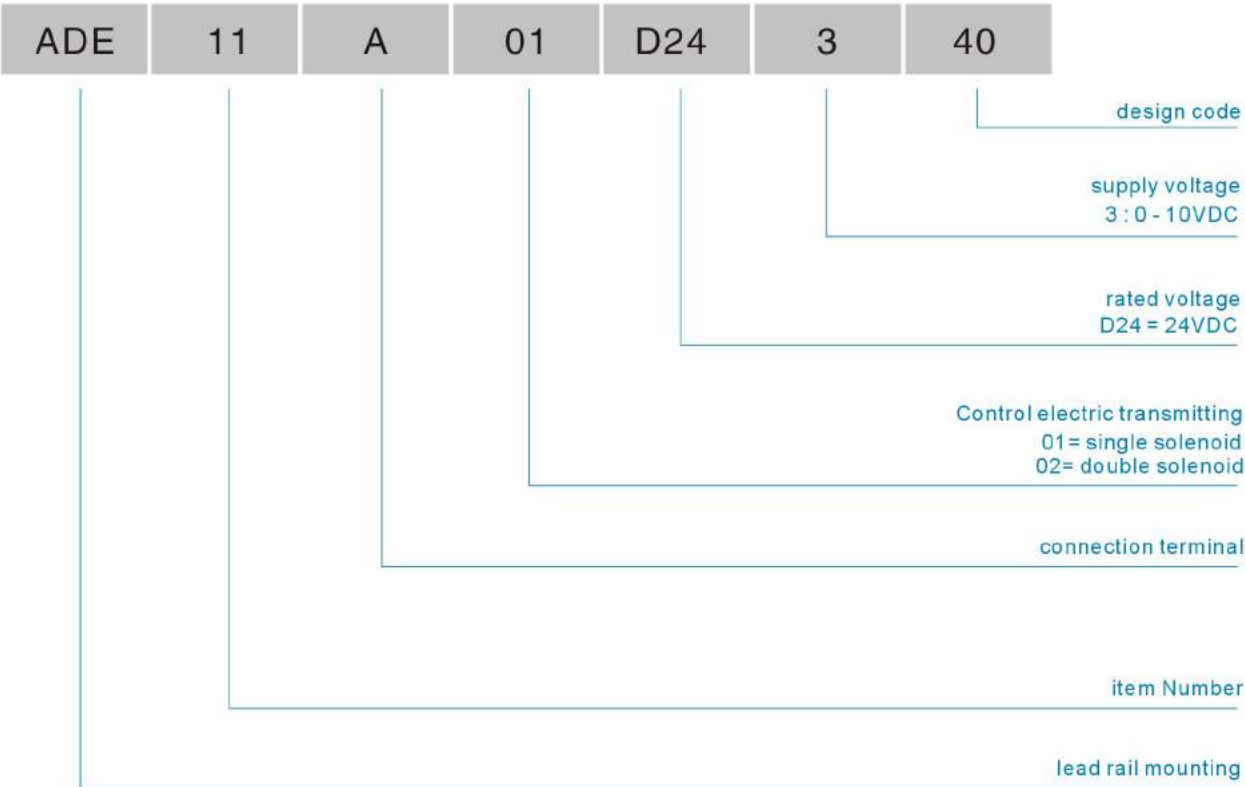
PRODUCT SERIES

ELECTRICAL TECHNOLOGY PARAMETERS



supply voltage	0~10VDC
supply resistance	≥100Kohm
output voltage	10VDC 最大载荷2mA
Frequency	200Hz
no load loss	0.3W
max current	1600mA
min current	0--600mA

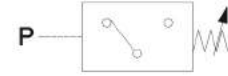
ORDERING CODE



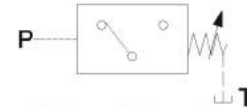
比例阀 / 压力继电器
proportional valves/ pressure switch

PRODUCT SERIES

HYDRAULIC SYMBOLS



without drain port



With drain port

1. With or without drain port
2. With or without indicator light
3. Used for internal security setting (ex or sch protect)

ORDERING CODE

HED1 A 20 / ※

With drain port=K
Without drain port=O

Explain other details
with words

series 20 = 20(20-29: unchanged installation
and connection dimension)

No mark= mineral oil
V= organic phosphate

HED1K: maximum pressure adjusted to 100bar= 100
HED1K: maximum pressure adjusted to 350bar= 350
HED1K: maximum pressure adjusted to 500bar= 500
HED10: maximum pressure adjusted to 50bar= 50
HED10: maximum pressure adjusted to 100bar= 100
HED10: maximum pressure adjusted to 350bar= 350

No mark= standard type
H= used for internal security setting
(only for that without indicator light)

No mark= socket connection
Z = plug connection (plug, four lead wire + ground wire)
Z6= plug connection (plug, to din4361, six lead wire + ground wire)

No mark = no indicator light
L24= used for 24V indicator light (Z24-35V)
L110= used for 110V indicator light (90V-130V)
L220= used for 220V indicator light (180V-240V)

HED4 TYPE PRESSURE SWITCH



PRODUCT SERIES

HYDRAULIC SYMBOLS



- 1.subplate installation
- 2.thread installation
- 3.As a vertical stack seal in the horizontal combination type of assembly valve
- 4.With or without indicator light

ORDERING CODE

HED40		10	/					※
-------	--	----	---	--	--	--	--	---

Subplate mounting= P
Pipe installation= A
As a vertical stack part= H

10 series = 10
(10-19: unchanged connection and installation dimension)

Maximum setting pressure 50bar = 50
Maximum setting pressure 100bar = 100
Maximum setting pressure 350bar= 350

Connected with small plug= Z14
Connected with big plug= Z15

Only use big plug to connect
Use 24V indicator light (25-35V)= L24
Use 110V indicator light (90V-130V) = L110
Use 220V indicator light (180V-240V) = L220

Explain other details
with words


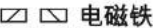

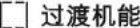

Mineral oil DIN51525 or 51525 = no mark
organic phosphate = V










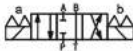




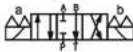

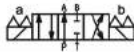













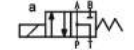
















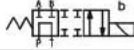

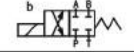





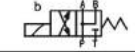


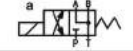

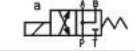
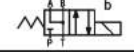







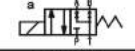
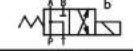




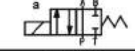
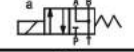
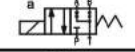




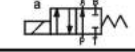


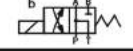



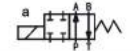



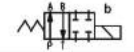


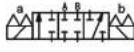
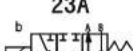
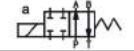


Without protective cap = no mark
With protective cap = S
Protective cap with lock = A

比例阀 / 压力继电器
proportional valves / pressure switch

VALVE CIRCUIT SYMBOL MATCH FORM

4WE型								
DSG型	3C2 	3C3 	3C4 	3C40 	3C5 	3C60 	3C6 	
SWH型	C2 	C3 	C4 	C40 	C5 	C6 	C60 	
DG4V型	2C 	0C 	6C 	33C 	1C 	8C 	—	
B(L)*H型	34E0 	34EH 	34EY 	—	34EK 	34EM 	—	
4WE型	D/O 	C/O 	D/OF 	C/OF 	D 	C 	A 	
DSG型	2N2 	2N3 	2D2 	2D3 	2B2 	2B3 	2B8 	
SWH型	N2 	N3 	D2 	D3 	B2 	B3 	B20 	
DG4V型	—	—	2N 	0N 	2A 	0A 	22A 	
B(L)*H型	—	—	—	—	24E1 	—	23E0 	
4WE型	LA 	NA 	PA 	UA 	—	EB 	HB 	
DSG型	2B12B 	2B11B 	2B25B 	2B10B 	—	2B2BL 	2B3BL 	
SWH型	C8B 	C9B 	C5SB 	C8SB 	C9SB 	C2BS 	C3BS 	
DG4V型	3B 	—	11BL 	7B 	—	2BL 	0BL 	
B(L)*H型	—	—	—	24EJ 	—	—	—	
4WE型	Y 	X 	B 	—	UB 	PB 	—	
DSG型	2B2L 	2B3L 	2B8L 	—	2B10BL 	2B25BL 	—	
SWH型	B2S 	B3S 	B20S 	—	C8SA 	C5SA 	C9SA 	
DG4V型	2AL 	0AL 	22AL 	23AL 	31BL 	11B 	—	
B(L)*H型	—	—	—	—	—	—	—	

附：  弹簧  电磁铁  机能  过渡机能  机械定位

							—	
	3C9 	3C12 	3C10 	3C25 	3C11 	—	—	—
	C7 	C8 	C8S 	C5S 	C9 	—	C9S 	—
	7C 	3C 	31C 	11C 	—	—	—	—
	34EP 	34EN 	34EJ 	—	34EC 	—	—	—
	EA 	HA 	JA 	WA 	FA 	GA 	—	MA 
	2B2B 	2B3B 	2B4B 	2B40B 	2B5BL 	2B60B 	2B6B 	2B9B 
	C2B 	C3B 	C4B 	C40B 	C5B 	C6B 	C60B 	C7B 
	2B 	0B 	6B 	33B 	1BL 	8BL 	—	7B 
	24E0 	24EH 	24EY 	—	24EK 	—	—	24EP 
	JB 	WB 	FB 	GB 	—	MB 	LB 	NB 
	2B4BL 	2B40BL 	2B5B 	2B60BL 	2B6BL 	2B9BL 	2B12BL 	2B11BL 
	C4BS 	C40BS 	C5BS 	C6BS 	C60BS 	C7BS 	C8BS 	C9BS 
	6BL 	33BL 	1B 	8B 	—	7BL 	3BL 	—
	—	—	—	—	—	—	—	—
	DE 	DH 	—				K 	Z 
	2B2A 	2B3A 	—	—	2B13 		3C8 	
	—	—	—	—				
	—	—	23A 	—				
	24EI 5 	24EI 2 	—	—	24EI 3 			



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