KLÜG
HYDRAULICS

DIRECTIONAL VALVES

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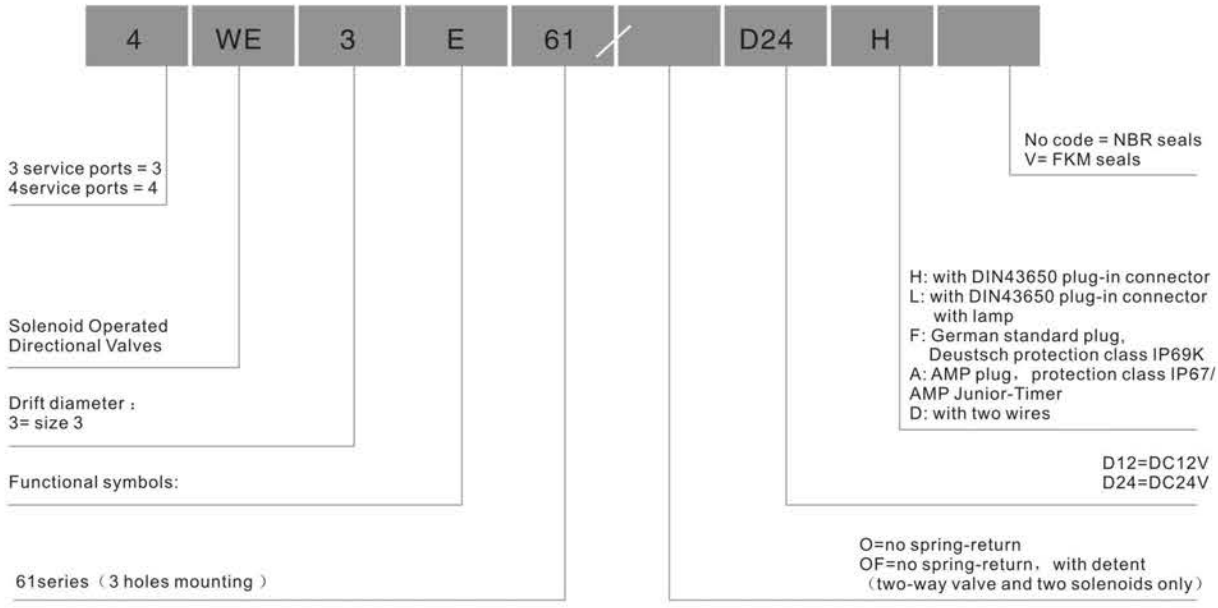
WE3-61 series solenoid operated directional valves

Product Specification

1.WE3-61 series solenoid operated directional valves, using plate connection and meeting the IS04401 standard, have the smallest shape within the similar products, but still keep the superior performance.
2.It is convenient to replace the coil for the val ve body and solenoids with screw connection structure.
3.Adopting wet solenoid, making the commutation action smoothly and low noise.
4.The designation of valve structure is exquisite, and the channel manufacture enjoys high precision, which could get relatively large flow when in a relatively low pressure drop L:::,.Pº
5.Solenoid coi Is usually according to DIN43650 IS04400EN 175301-803 standard configuration plug, and the shell protection class is IP65. Higher protection classAMP, DEUTSCH plugs can also be configured or using irradiation as the power line of the solenoid directly according to users need.

Ordering Code



Technical Data

General Data

The total weight of solenoid (with two solenoids)	kg	0.7
The total weight of solenoid (with one solenoids)	kg	0.55
Installation site		anywhere
ambient temperature	℃	-20-+50(adopt NBR sealing ring)

HYDRAULIC DATA

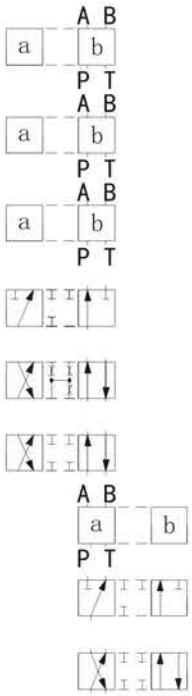
Maximum working oil pressure ports P,A and B MPa 31.5	MP a	31.5
The highest oil pressure T cavity can bear	MP a	10
Rated flow	l/min	10
Maximum flow	l/min	15
Liquid medium		Mineral hydraulic oil, Phosphate ester hydraulic oil
Hydraulic fluid temperature range	℃	-20-+80
Hydraulic fluid cleanliness		ISO4572: j310<>75NAS1638: level 9
Hydraulic fluid viscosity		ISO-VG32 (5420) cSt

ELECTRICAL DATA

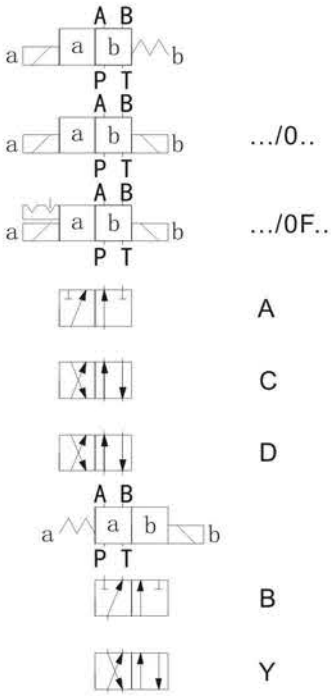
Voltage category		DC, RAC(coil with a rectifier component)				
Duty cycle	ED	100%				
Voltage allowable fluctuation range	%	-10~+10				
The reserving and reset time	ms	On50 ... 90 off40 ... 80 (do not include RAC type)				
Maximum reversing rate	Hz	3				
Coil insulation class		H				
The maximum operating temperature coil allowed	℃	180				
Coi! weight	kg	0.18				
voltage	V	12	24	48	110	220
Power types		DC	DC	DC	DC	DC
Power rate	Hz	--	--	--	50/60	50/60
Power consumption	W	16	16	16	19	19
Coil resistance (20°C)	ohm	9.5	37	108	108	501
Operating current (20°C)	A	1.3	0.65	0.32	0.21	0.11

SPOOL SYMBOLS

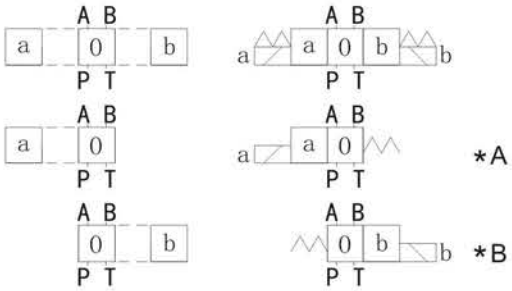
TRANSITION SPOOL



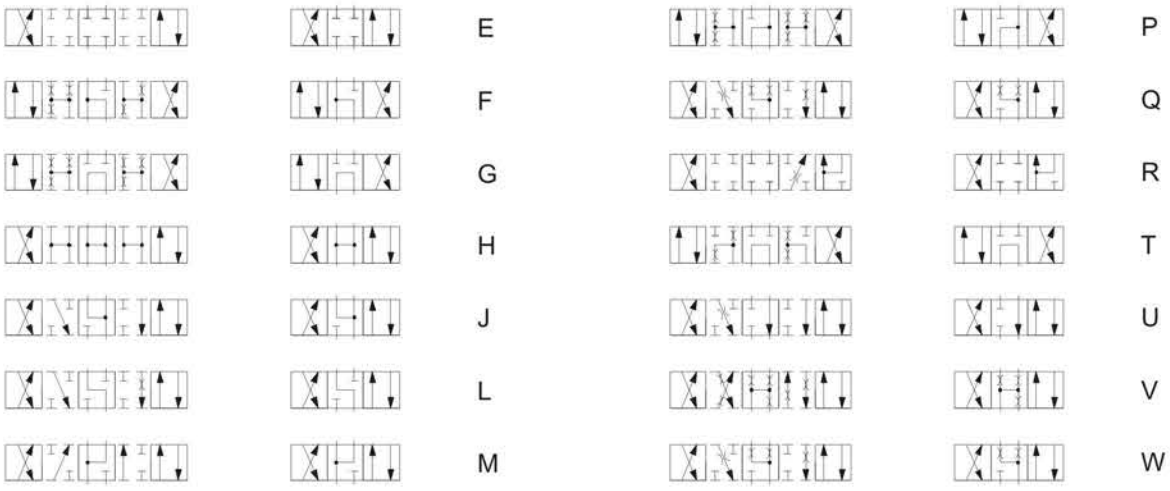
SLIDE VALVE SPOOL



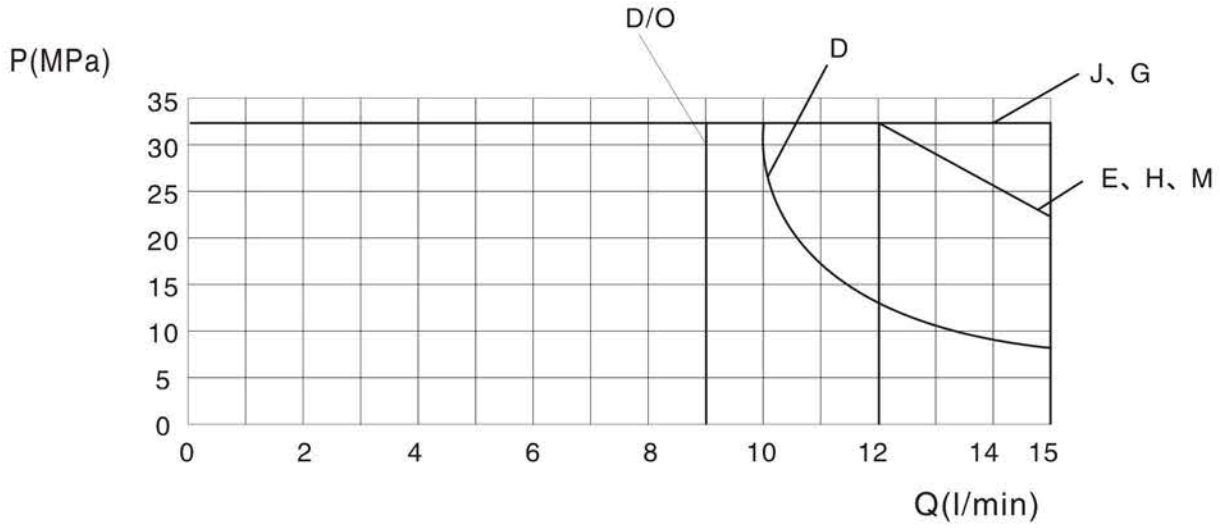
Transition spool Slide valve spool



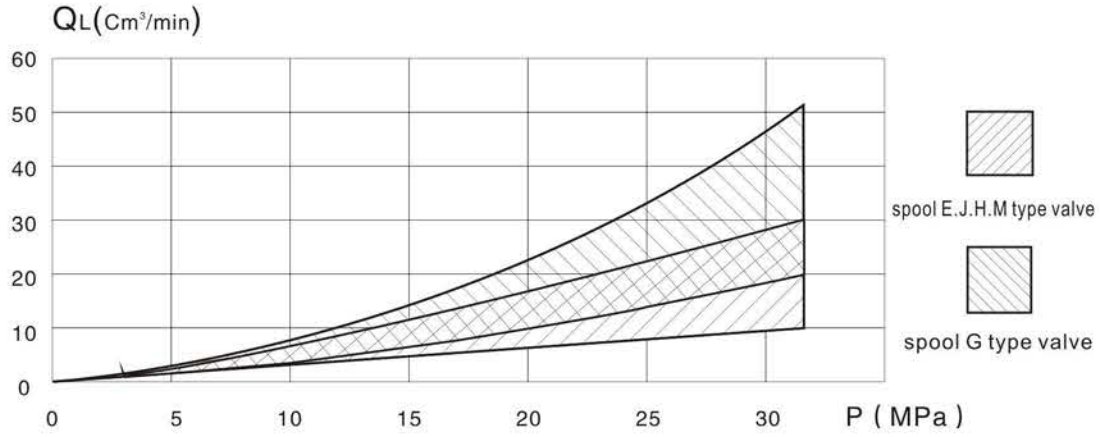
* spool * take spool pos ilion a/b, then its spool code is changed to be * A/*B
For example: spool E take spool position a, then its spool code is EA



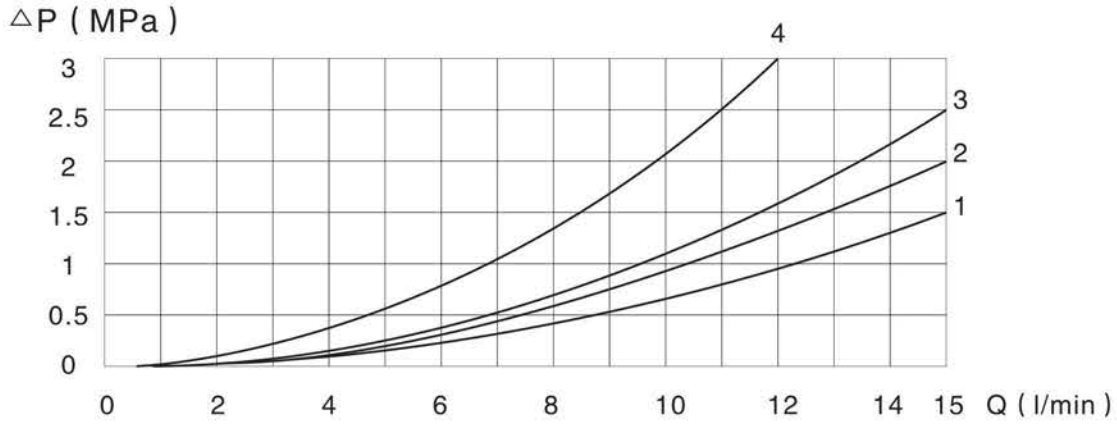
flow-pressure feature P=f(Q)]



pressure-leakage feature P=f(Q)]

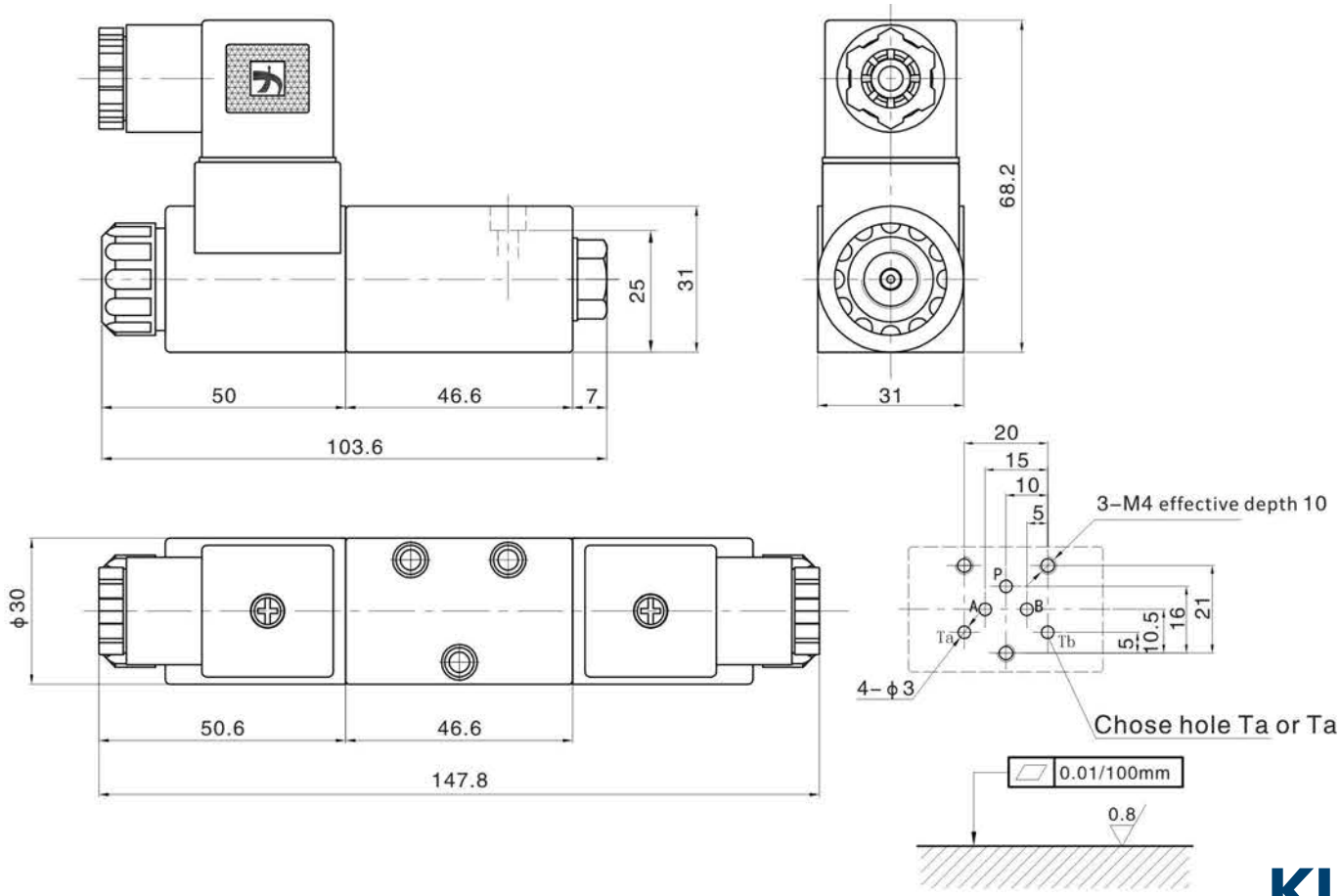


flow-pressure drop feature DP=f(Q)]



Spool type	feature				
	P–A	P–B	P–T	P–T	P–T
D/O.D .Y	3	3	–	2	2
E.EA.EB	3	3	–	2	2
J.JA.JB	3	3	–	1	1
G.GA.GB	4	4	3	4	4
H.HA.HB	4	4	3	1	1
M.MA.MB	2	2	–	2	2

drawing of installation dimension



WE4-60 series solenoid operated directional valves

Product Features

1.WE4-60 series solenoid operated directional valves, using plate connection and meeting the ISO4401 standard, have the smallest shape in the similar products, but still keep the superior performance .
2.It is convenient to re place the coil for the val ve and the solenoid use thread connection structure.
3.Adopting wet solenoid, making smoothly reversing action and low noise.
4.The designation of valve structure is exquisite, and the channel manufacture enjoys high precision, which could get relatively large flow when the delta Pis low.Solenoid coi Is usually in DIN43650 IS04400EN175301-803 standard to configure plug and the protection class is lp5
5. Higher protectionclassAMP, DEUTSCH plugs can also be configured or using irradiation as the power line of the solenoid directly

Model Code

4	WE	4	E	60	/		D24	H		

- 4: 3 service ports = 3; 4 service ports = 4
- WE: Solenoid Operated Directional Valves
- 4: Drift diameter : 3=3 size
- E: Functional symbols:
- 60: 60series（4 holes mounting）
- /: O=no spring-return; OF=no spring-return，with detent
- D24: D12=DC12V; D24=DC24V
- H: H: with DIN43650 plug-in connector; L: with DIN43650 plug-in connector with lamp; F: German standard plug, Deustsch protection class IP69K; A: AMP plug，protection class IP67/ AMP Junior-Timer; D: with two wires
- (blank): No code = NBR seals; V= FKM seals
- (blank): S: silver white metal shell; M: black square type shell

Technical Data

General Data

The total weight of solenoid (with two solenoids)	kg	0.89
The total weight of solenoid (with one solenoids)	kg	0.72
Installation site		Optional position
ambient temperature	℃	-20-+S0(adopt NBR seal ring)

HYDRAULIC DATA

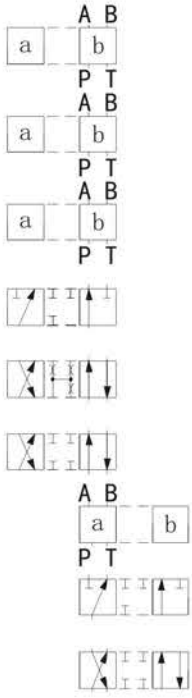
Maximum working oil pressure ports P,A and B MPa 31.5	MP a	31.5
The highest oil pressure T cavity can bear	MP a	21
Maximum flow	I/min	25
Liquid medium		Mineral hydraulic oil, Phosphate ester hydraulic oil
Hydraulic fluid temperature range	°C	-20-+80
Hydraulic fluid cleanliness		ISO4572: j310<>75NAS1638: level 9
Hydraulic fluid viscosity		ISO-VG32 (5420) cSt

ELECTRICAL DATA

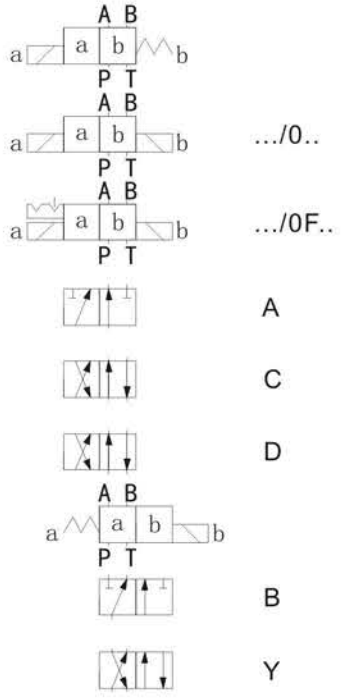
Voltage category		DC, RAC(coil with a rectifier component)					
Duty cycle	ED	100%					
Voltage allowable fluctuation range	%	-10~+10					
The reserving and reset time	ms	On50 ... 90 off40 ... 80 (do not include RAC type)					
Maximum reversing rate	Hz	3					
Coil insulation class		H					
The maximum operating temperature coil allowed	℃	180					
Coi! weight	kg	0.215					
voltage	V	12	24	48	110	R110	R220
Power types		DC	DC	DC	DC	AC	AC
Power rate	Hz	--	--	--	50/60	50/60	50/60
Power consumption	W	26	26	26	29	29	29
Coil resistance (20°C)	ohm	2.18	1.10	0.50	0.26	0.33	0.17
Operating current (20°C)	A	5.5	22	89	413	89	413

Spool symbols

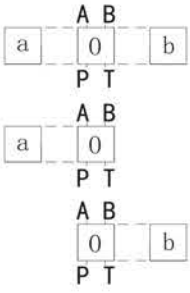
TRANSITION SPOOL



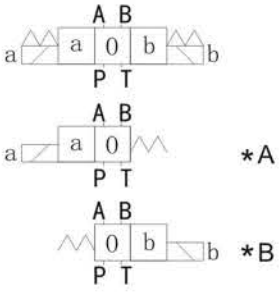
SLIDE VALVE SPOOL



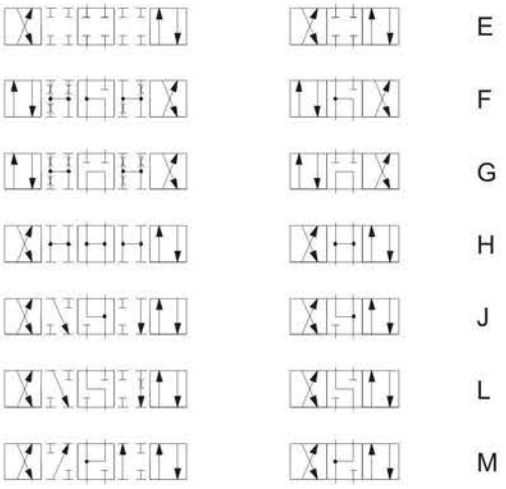
TRANSITION SPOOL

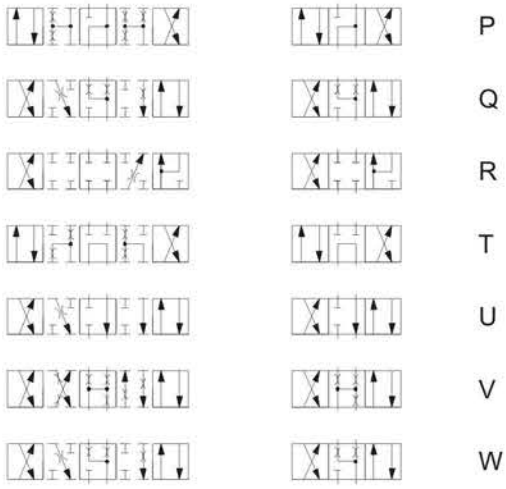


SLIDE VALVE SPOOL

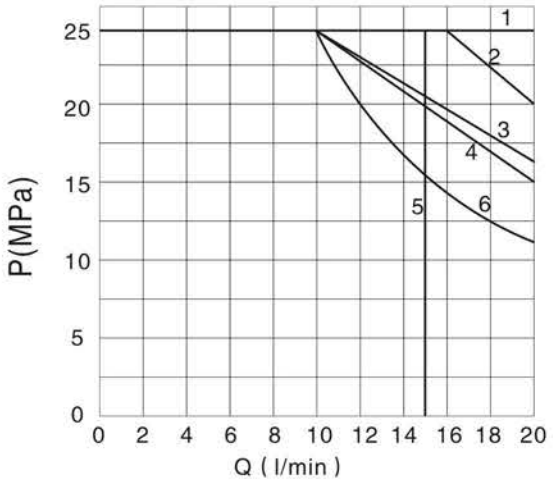


* spool * take spool pos ilion a/b, then its spool code is changed to be * A/*B
For example: spool E take spool position a, then its spool code is EA





working feature

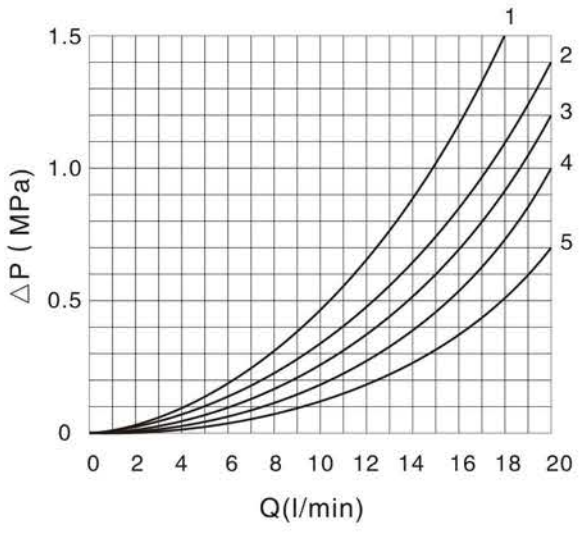


spool type	curve
E	1
M	3
W	1
G	4
J	1
U	1
L	1
Y	2 (6*)
D/OF	5

（6*）= When Y type spool be used to 2 way or 3 way, it meets the curve of No.4

Test condition: the solenoid is on working temperature, input voltage is 10% less than rated value, fluid oil temperature is 40ºC, fluid oil viscosity is 46mm2/ (40ºC) , The chart showing is the numerical value when two channels with oil flowing at the same time (For example, from P to A, also from B to T), lfthe valve with two positions & four way, or three position & four way was working, the fluid oil only flow in one way, and the working limit will be changed, even changed to negative value.
When testing, el ose the spool regularly, oil pressure is 12.5Mpa, flow is 1 0L/min, the standard coil without other additional electronic device is under working temperature , The data as the chart showing influenced by the following factors: the changes from hydraulic circuit, working medium, pressure, flow and temperature.

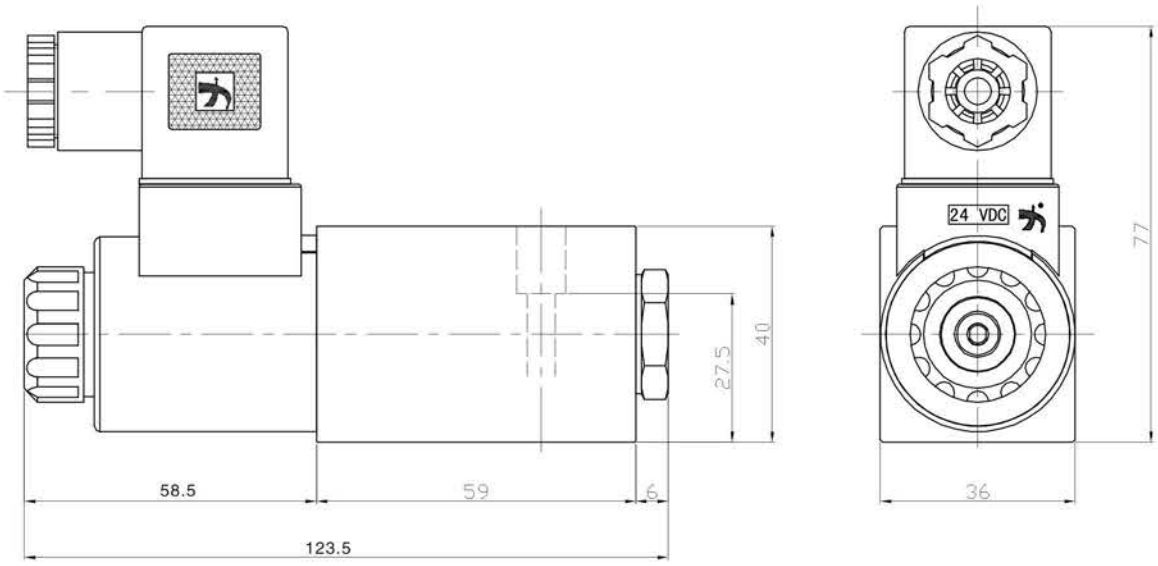
pressure drop-flow curve

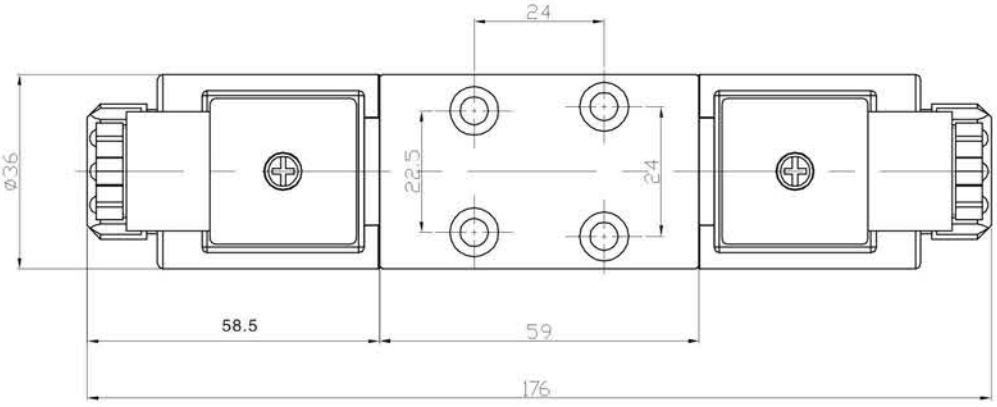


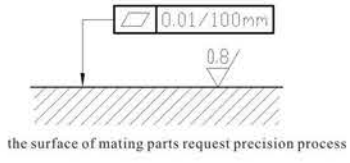
spool type	flow direction				
	P→A	P→B	A→T	B→T	P→T
E	2	2	4	4	
H	4	4	5	5	3
W	2	2	5	5	
G	2	2	2	2	1
J	4	4	2	2	
U	3	3	3	3	
L	3	3	5	5	
Y	3	3	4	4	
D/OF	3	3	4	4	
	curve code				

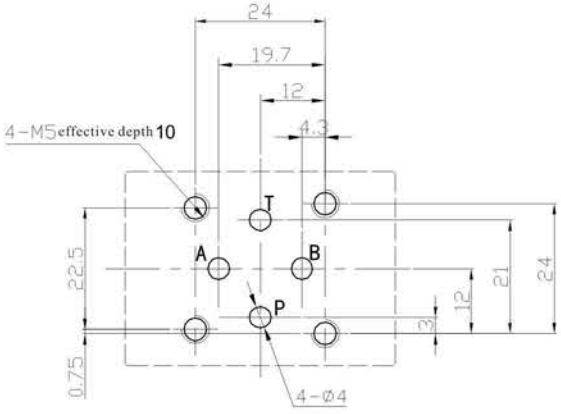
above chart is the pressure drop curve when the spool working regularly.
Testing condition: fluid oil viscosity is 46mm2/s, fluid oil temperature is 40ºC

drawing of installation dimension



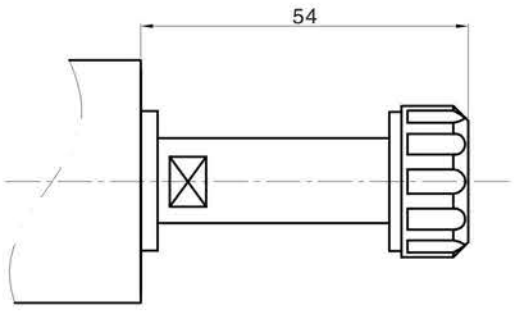




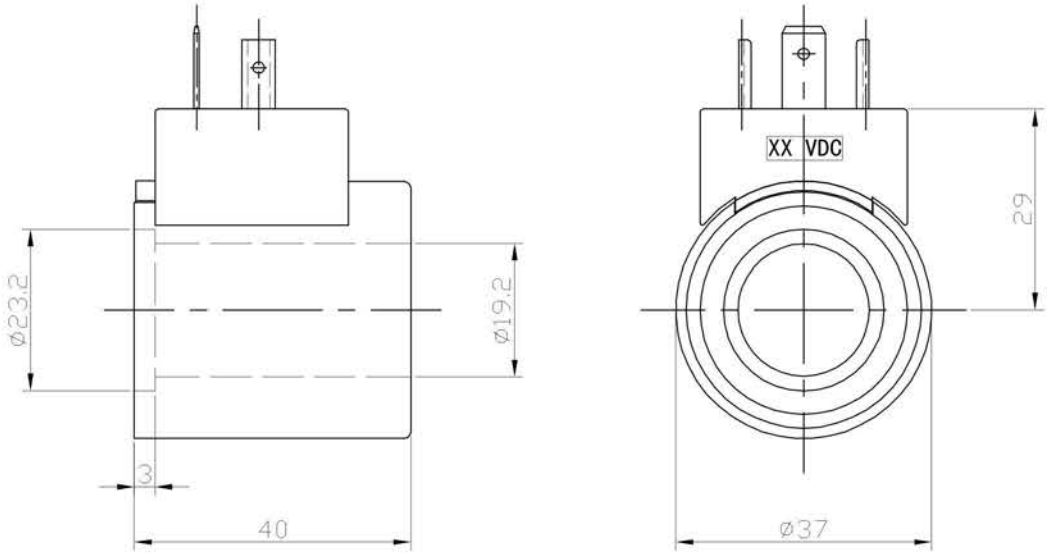


option of electronic connector]

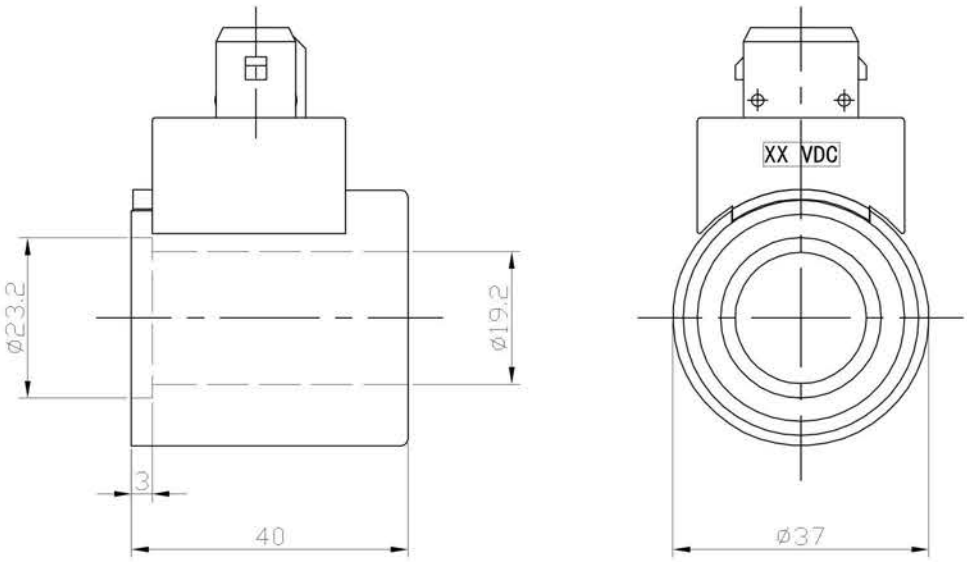
Without coil, fastening the tube and locknut on the homologous valve body, according to the different IP grade, then choose th coi! with homologous structure.



Coil with connector meets DIN43650EN175301-803 ISO4400

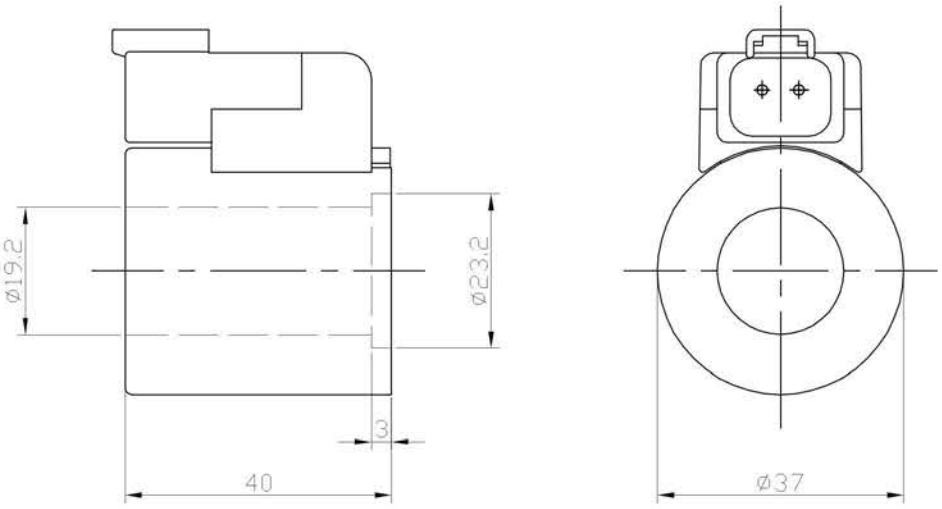


Coil with connector AMP, the IP grade of coil house is IP67

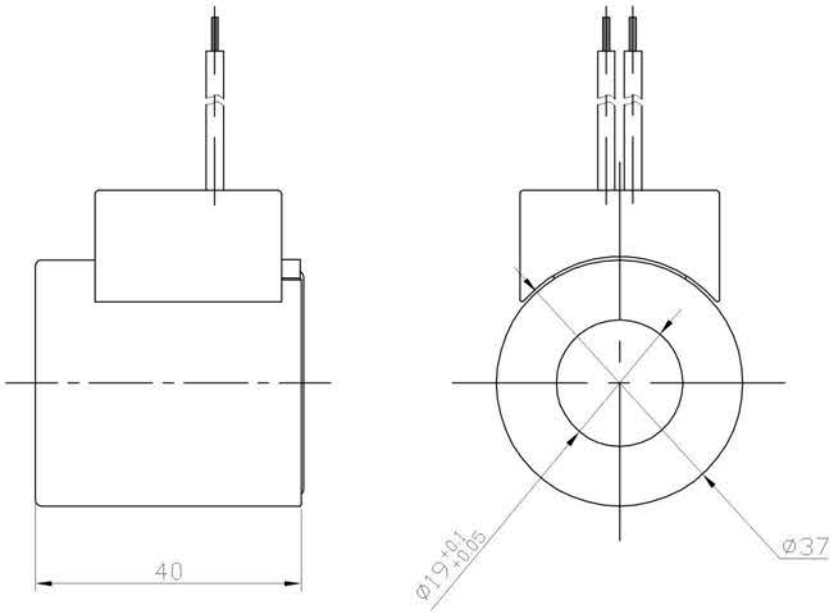


option of electronic connector

coil with connector DEUTSCH DT04-2P, the IP grade of coil house is IP-69K



coil with irradiation ray (length 350mm, also can choose as user's requirement)



WE4-61 series solenoid operated directional valves

Product Specification

1.WE4-61 series solenoid operated directional valves, using plate connection and meeting the ISO4401 standard , have the smallest shape in the similar products, but still keep the superior performance.
2.The valve adopts five groove runners , three mounting hales .
3.It is convenient to replace the coil far the val ve and solenoids use thread connection structure .
4.Adopting wet solenoid , making smoothly reversing action and low noise.
5.The designation of valve structure is exquisita, and the channel manufacture enjoys high precision, which could get relatively large flow when the 6 P is low.
6.Solenoid coils usually in DIN43650IS04400EN175301-803 standard to configure plug and the protection class is IP65. Higher protection classAMP, DEUTSCH plugs can also be configurad or using irradiation as the power line of the solenoid directly according to users need.

Model Code

4	WE	4	E	61		D24	H		

4: 3 service ports = 3, 4service ports = 4

WE: Solenoid Operated Directional Valves

4: Drift diameter : 3=3 size

E: Functional symbols:

61: 61series（3 holes mounting）

O=no spring-return
OF=no spring-return，with detent
（two-way valve and two solenoids only）

D12=DC12V D24=DC24V

H: with DIN43650 plug-in connector
L: with DIN43650 plug-in connector with lamp
F: German standard plug, Deustsch protection class IP69K
A: AMP plug，protection class IP67/ AMP Junior-Timer
D: with two wires

No code = NBR seals
V= FKM seals

S: silver white metal shell
M: black square type shell

Technical Data

General Data

The total weight of solenoid (with two solenoids)	kg	0.89
The total weight of solenoid (with one solenoids)	kg	0.72
Installation site		Optional position
ambient temperature	℃	-20-+50(adopt NBR seal ring)

HYDRAULIC DATA

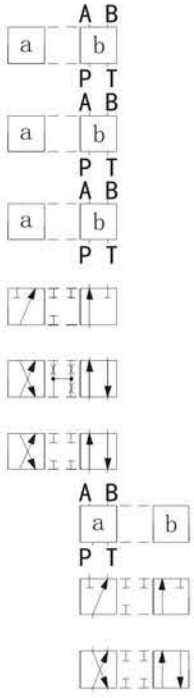
Maximum working oil pressure ports P,A and B MPa 31.5	MP a	31.5
The highest oil pressure T cavity can bear	MP a	18
Maximum flow	l/min	20
Liquid medium		Mineral hydraulic oil, Phosphate ester hydraulic oil
Hydraulic fluid temperature range	°C	-20-+80
Hydraulic fluid cleanliness		ISO4572: ~ I0;;e75NAS1638: Class 9
Hydraulic fluid viscosity		ISO-VG32 (5420) cSt

ELECTRICAL DATA

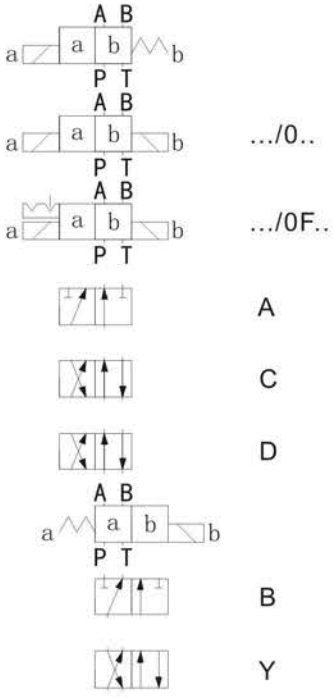
Voltage category		DC, RAC(coil with a rectifier component)					
Duty cycle	ED	100%					
Voltage allowable fluctuation range	%	-10~+10					
The reserving and reset time	ms	On50 ... 90 off40 ... 80 (do not include RAC type)					
Maximum reversing rate	Hz	3					
Coil insulation class		H					
The maximum operating temperature coil allowed	℃	180					
Coi! weight	kg	0.18					
voltage	V	12	24	48	110	R110	R220
Power types		DC	DC	DC	AC	AC	AC
Power rate	Hz	--	--	--	50/60	50/60	50/60
Power consumption	W	26	26	26	26	29	29
Coil resistance (20°C)	ohm	2.18	1.10	0.50	0.26	0.33	0.17
Operating current (20°C)	A	1.3	0.65	0.32	0.21	89	413

spool symbols

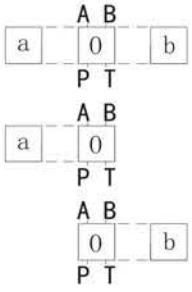
TRANSITION SPOOL



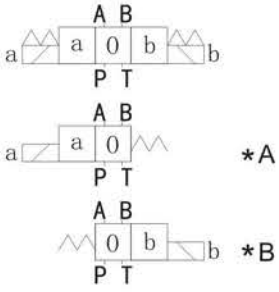
SLIDE VALVE SPOOL



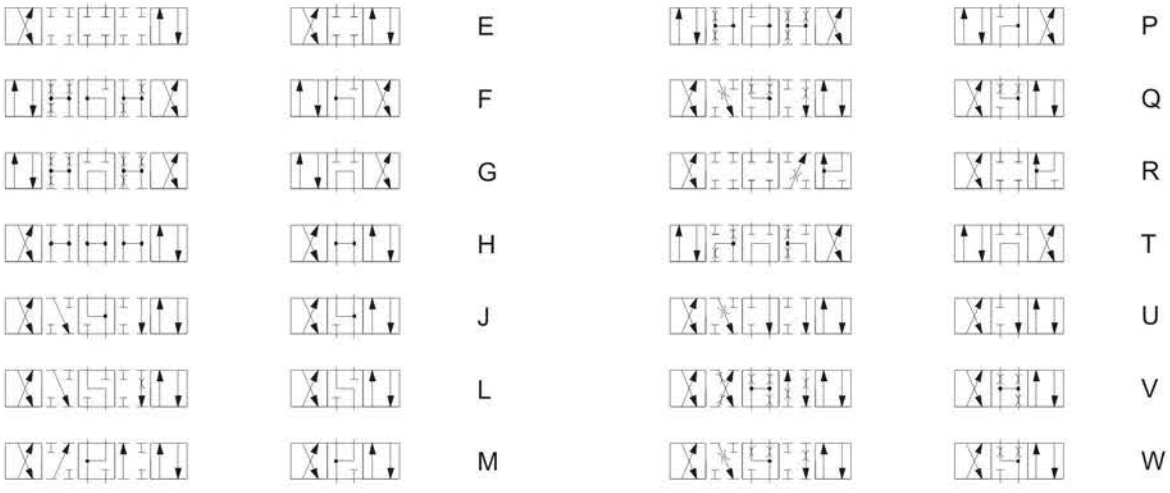
TRANSITION SPOOL



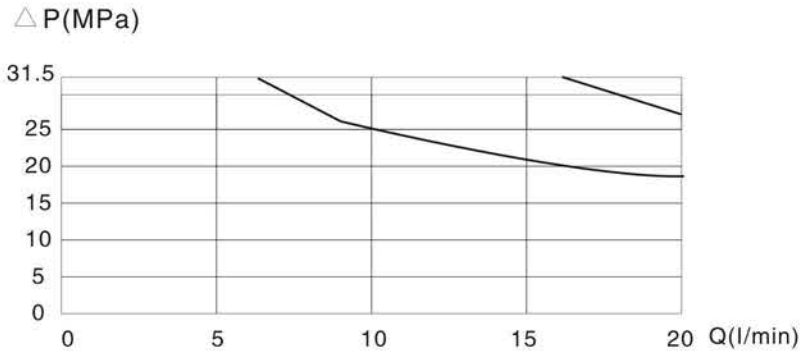
SLIDE VALVE SPOOL



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

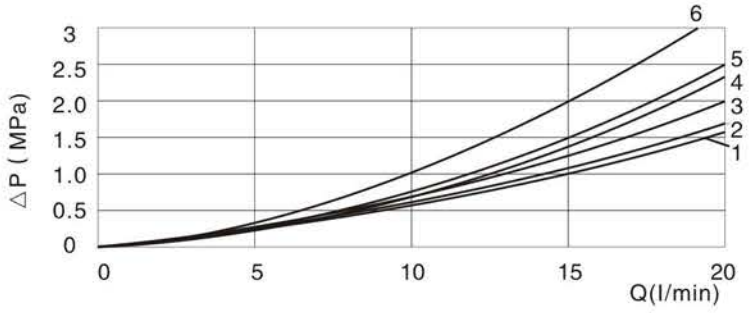


working feature



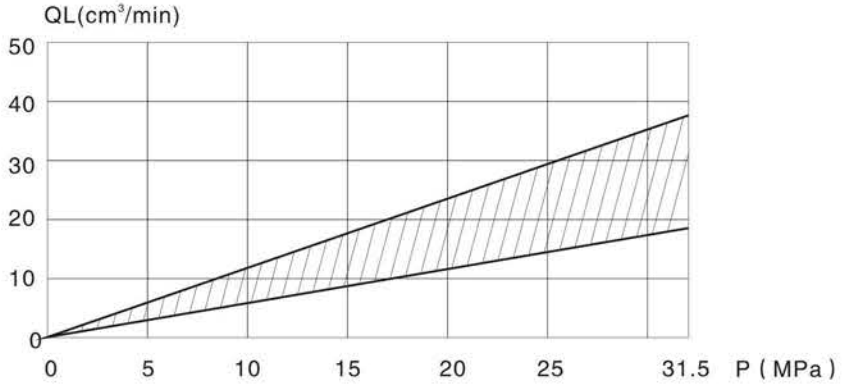
Test condition: the solenoid is on working temperature, input vol ta ge is 10% less than rated value, fluid oil temperature is 40 'C, fluid oil viscosity is 46mm2/ (40'C) ° The chart showing is the numerical value when two channels with oil flowing at the same time (For example, from P to A, also from B to T)o lfthe valve with two positions & four way, or three position & four way was working, the fluid oil only flow in one way, and the working limit will be changed, even changed to negative value.
When testing, e lose the spool regularly, oil pressure is 12.5Mpa, flow is 1 0L/min, the standard coil without other additional electronic device is under working temperatureo The data as the chart showing influenced by the following factors: the changes from hydraulic circuit, working medium, pressure, flow and temperature.

flow-pressure drop feature LP=f(Q)

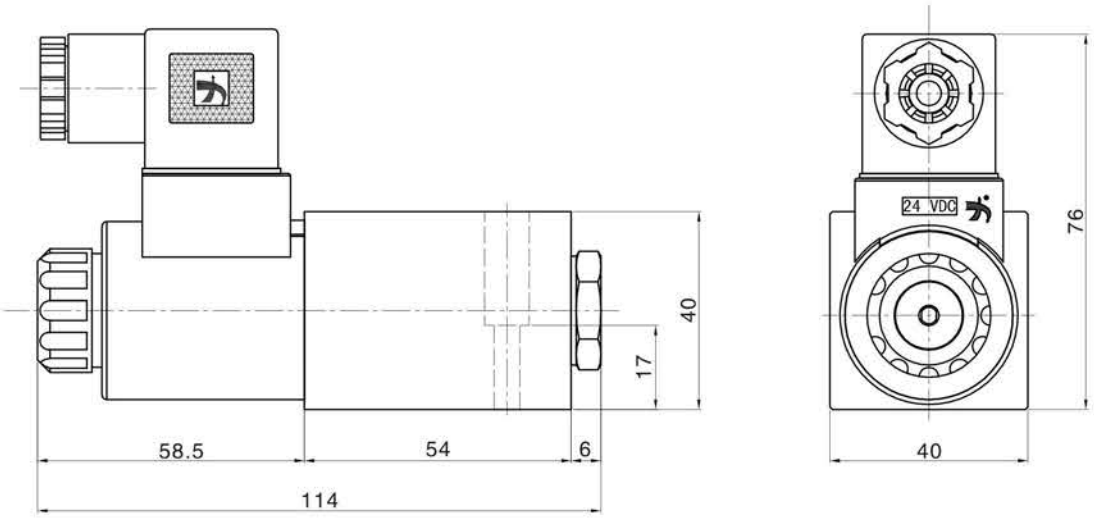


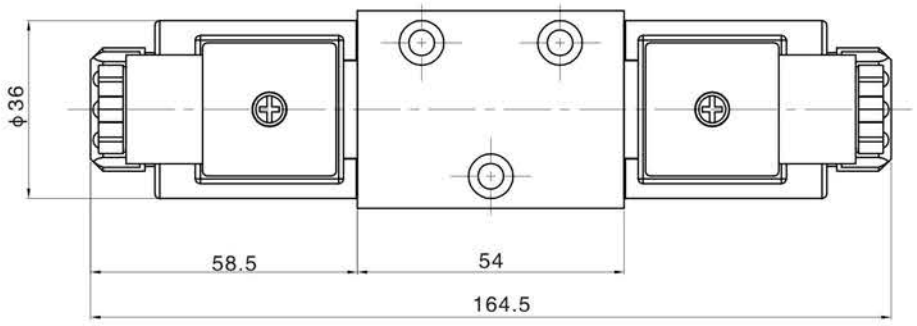
spool type	feature				
	P–A	P–B	P–T	A–T	B–T
D,Y	5	5	–	2	2
E,EA,EB	5	5	–	2	2
J,JA,JB	5	5	–	1	1
G,GA,GB	4	4	6	2	2
H,HA,HB	4	4	3	2	2
M,MA,MB	4	4	–	2	2

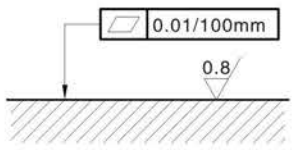
QL=f (P) pressure-leakage feature



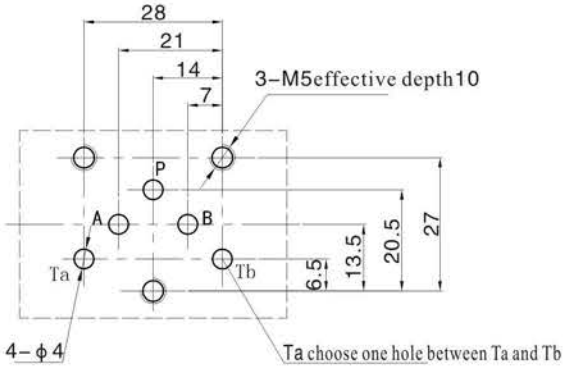
drawing of installation dimension





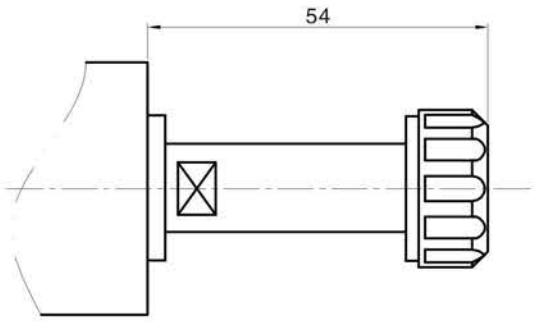


the surface of mating parts request precision process

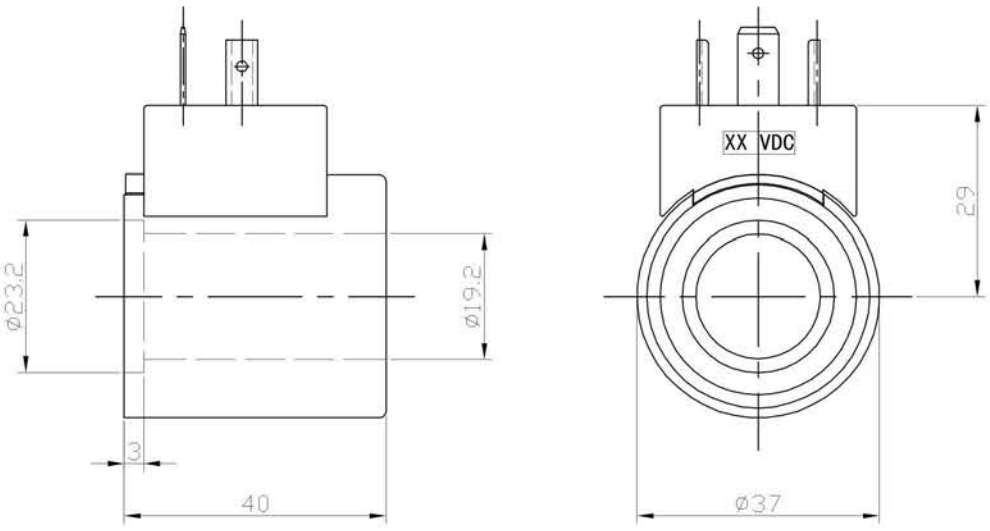


option of electronic connector

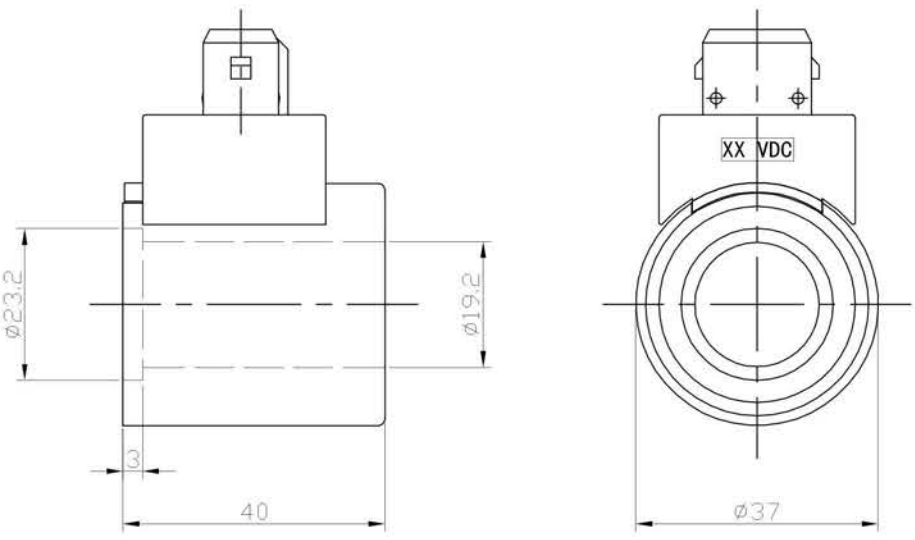
Without coil, fastening the tube and locknut on the homologous val ve body, according to the different IP grade, then choose the coil with homologous structure.



Coil with connector meets DIN43650EN175301-803 ISO4400

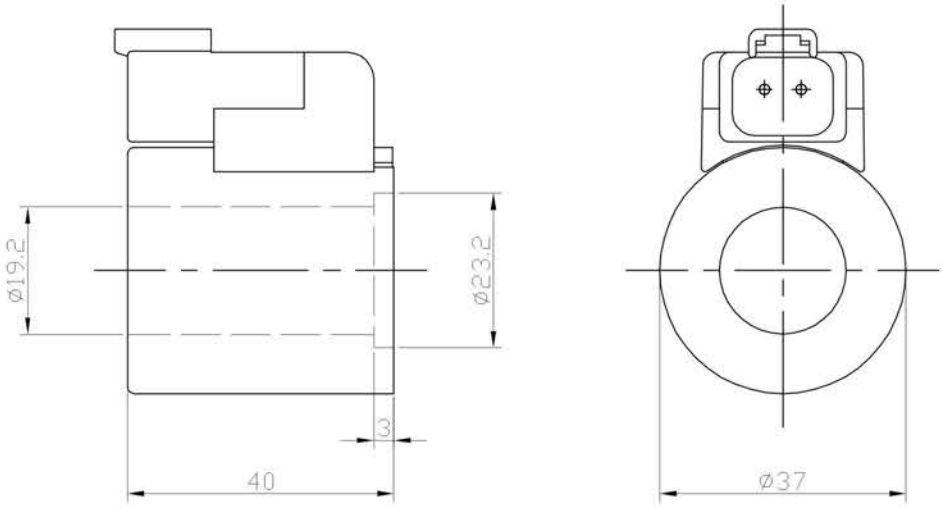


Coil with connector AMP, the IP grade of coil shell is IP67

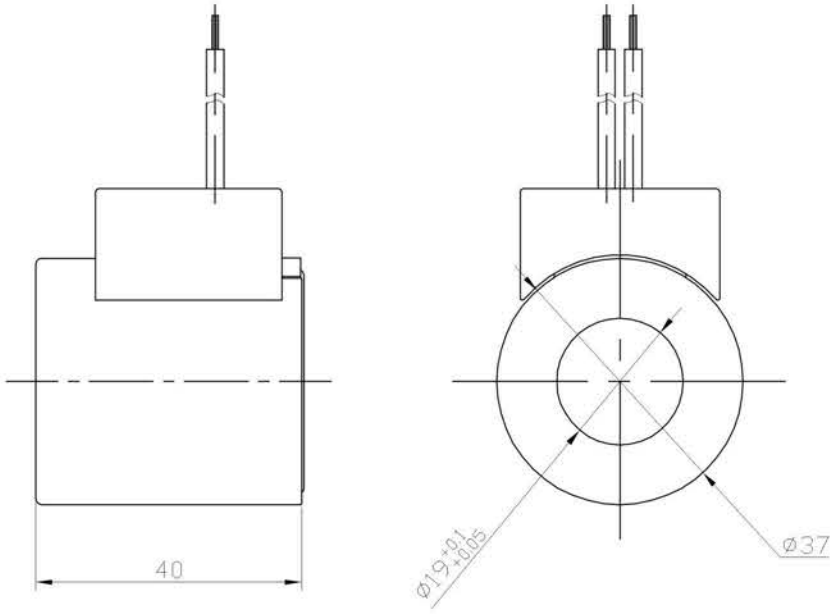


option of electronic connector

coil with connector DEUTSCH DT04-2P, the IP grade of coil house is IP-69K



coil with irradiation ray (length 350mm, also can choose as user's requirement)



WE4-61 series solenoid operated directional valves

Product Specification

1.Direct-acting solenoid operational direction valve as standard type .
2.Installation a rea by DIN24 340 type A
3.DC or AC wet-type solenoid that can be arbitrary rotation and with detachable coil.
4.Coil can be re placed without oil.
5.Equipped with manual emergency operation push rod.

Model Code

4	WE	6	E	6X		E	D24	N	L			L

3channel=3
4channel=4

Solenoid Operated Directional Valves

Drift diameter：
3=3diameter

Function Symbol：

60~69 series =6X
（60~69：installation and linking size remains the same）

O=no spring-return
OF=no spring-return，with positioning
Spring return unmarked

Solenoid thread linkage：=E

D12 D24=DC12V 24V
A110 A220=RC110V/50Hz 220V/50Hz
R110 R220=RAC110V 220V

With self-locking manual emergency put rod = NP

H: DIN43650 plug
L: DIN43650 plug（with lamp）
F: DEUTSCH，protection class IP69K/Deutsch
A: AMP plug，protection class IP67/AMP Junior-Timer
D:double lines
B :Terminal box

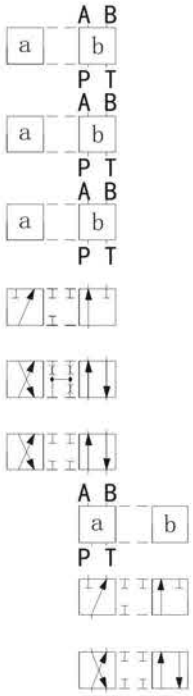
No marks = no cartridge choke
B08=orifice Φ0.8mm
B12=orifice Φ1.0mm
B12=orifice Φ1.2mm

Nitrile rubber seal = no mark
V=Fluorine rubber sealing ring

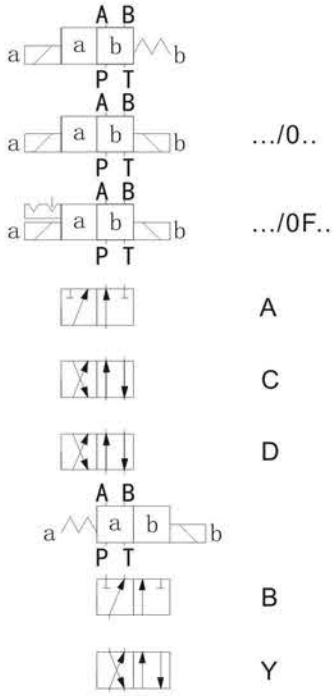
The valve body coating
H：black
L：blue

SPOOL SYMBOLS

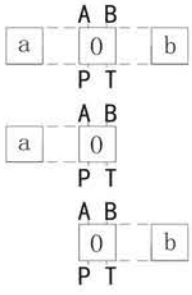
TRANSITION SPOOL



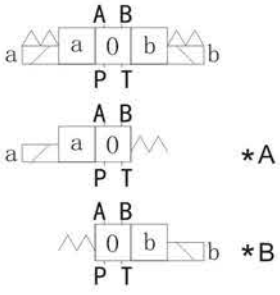
SLIDE VALVE SPOOL



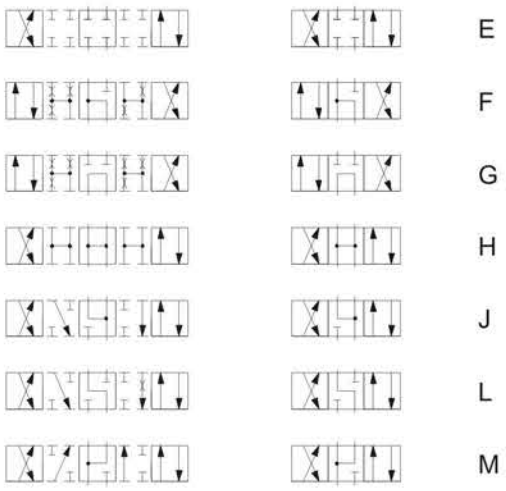
TRANSITION SPOOL

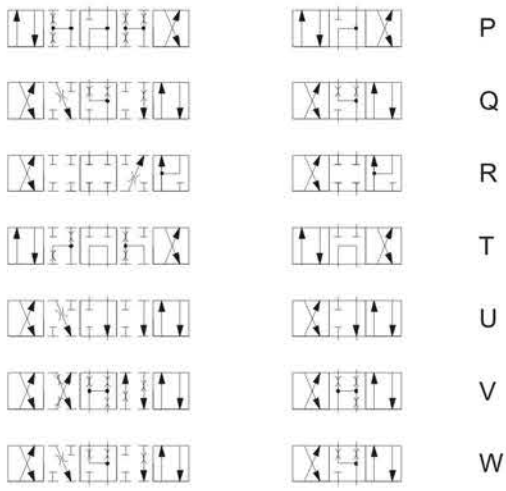


SLIDE VALVE SPOOL



* Spool symbol with corea or b then code shou ld be XA or XB
Fo r example: spool E with core position a, then code should be EA





Technical Data

General Data

Mounting position			kg	optional
Operating	temperature		℃	-30-+50 (ni trile rubber seal)
				-20-+50 (rubber seal)
weight		Single solenoid valve	kg	1.45
		Double solenoid val ve	kg	1.95

HYDRAULIC DATA

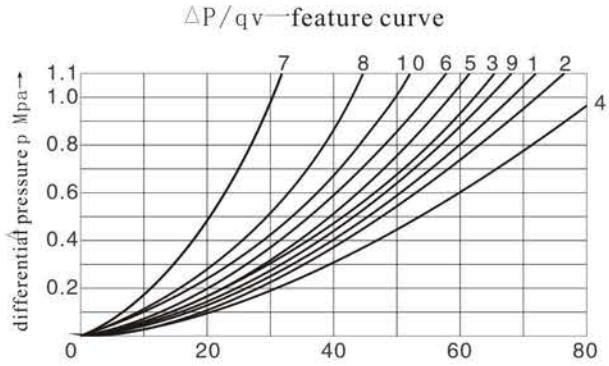
Maximum operating voltage fluid port P, A, B		MP a	31.5
Hydraulic fluid port		MP a	21 (DC) : 16 (AC) Hydraulic fluid port MPa When working pressure exceeds the allowable pressure, val ves with the sign bit A,B must use Tas oíl drain port
Maximum flow rate		l/min	80 (DC) ; 60 (AC)
Flux areas	TypeQ	mm'2	About 6% of the nominal cross-sectional area
(when in the median)	TypeW	mm'2	About 6% of the nominal cross-sectional area
Hydraulic oíl l, suitable for ni trile rubber and fluoro rubber seal 2, Fluoro seal only			Mineral oíl (HL,HLP) by DIN5 l 524 Rapid biological solution oíl by VDMA24 568 HETG 1) ; HEPG 2) ;HEES 3)
The oíl temperature range		°C	-30-+80 (ni trile rubber seal) -20-+80 (rubber seal)
Viscosity range		mm'2/s	2 .8-500
Oil cleanliness			The highest oíl pollution leve! by NAS! 1639 Class 9 recommend mínimum filter filtration precision ¡310~75

ELECTRIC DATA

Voltage category		DC	AC(50HZ)
Supply voltage	ED	12, 24, 48, 110, 220	110, 220
Allowable voltage tolerance	%	-10~+15	+10--15
Power consumption	W	30	+10--15
Holding current	A	--	--
Starting current	A	--	0.27(220V)
Working system	ED%	100	0.72(220V)
Reversing time	ms	125-145	10-20
Resetting time	ms	100-250	15-40
Switching time	times/h	~ 15000	~ 7200
Protection class by DIN 40050		IP65(AMP: IP66)	(Deutsch: 1 P69k)
Maximum coi! temperature	℃	135°C (Class B)	180"C(Class H)

feature curve

(testing result on basis ofthat when u =41 mm/s & t=50 ºC)



Curve 7: spool type"R"is in switch positionA-B
Curve 8: spool type"G"and "T" are in median position P-T
Curve 9: spool type"H" is in median position P-T

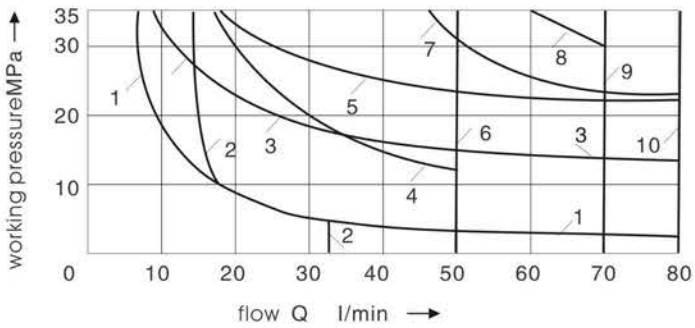
spool symbol	flow direction			
	P–A	P–B	A–T	B–T
A,B	3	3	–	–
C	1	1	3	1
D,Y	5	5	3	3
E	3	3	1	1
F	1	3	1	1
T	10	10	9	9
H	2	4	2	2
J,Q	1	1	2	1
L	3	3	4	9
M	2	4	3	3
P	3	1	1	1
R	5	5	4	–
V	1	2	1	1
W	1	1	2	2
U	3	3	9	4
G	6	6	9	9

switching performance limit

(testing result on basis ofusing HLP46, t=50 ºC)

I .The working limit can be used for both the two flow direction (For example: Flow return from B to T, at the same time, flow from P to A)
2.Power limit tested when so lenoid is at working temperature, under voltage 10%, and port T have no back pressure.
3.When unidirectional flow (ifit was clogged from P to A, B port) , dueto the fluid power in the val ve, the allowed switching limit may drop.

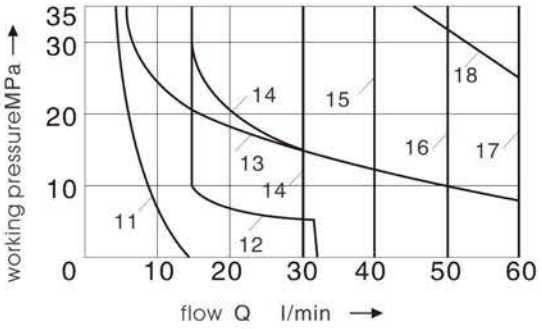
DC solenoid		AC solenoid–50Hz		AC solenoid–60Hz	
curve	symbol	curve	symbol	curve	symbol
1	A,B	11	A,B	19	A,B
2	V	12	V	20	V
3	A,B	13	A,B	21	A,B
4	F,P	14	F,P	22	F,P
5	J	15	G,T	23	G,T
6	G,H,T	16	H	24	J,L,U
7	A/O,A/OF,L,U	17	A/O,A/OF,C/O	25	A/O,A/OF,Q,W
8	C,D,Y		C/OFD/O,/D/OF,	26	C,D,Y
9	M		E,J,LM	27	H
10	E,R,C/O,C/OF		Q,R2,U,W	28	C/O,C/OF,D/C,
	D/O,D/OF,Q,W	18	C,D,Y		D/OF,E,M,R2



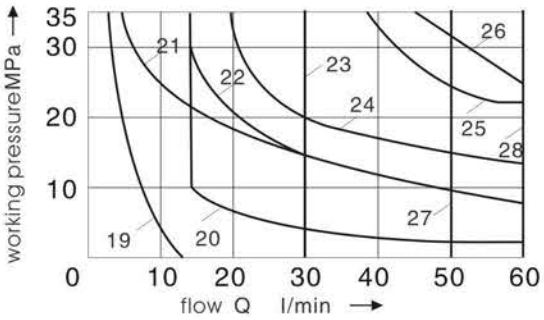
Notice: 1) with emergency operation
2) flow from actuator components back to tank

DC solenoid	
feature curve	solenoid voltage
1~10	12, 24, 48, 96, 110

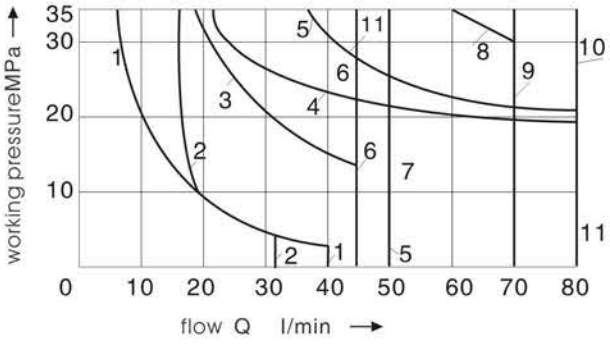
switching performance limit



AC solenoid		
feature curve	power source voltage	
11~18	AC110	110V,50Hz
	AC220	220V,50Hz



AC solenoid		
feature curve	power source voltage	
19~28	AC110	110V,50Hz
	AC220	220V,50Hz

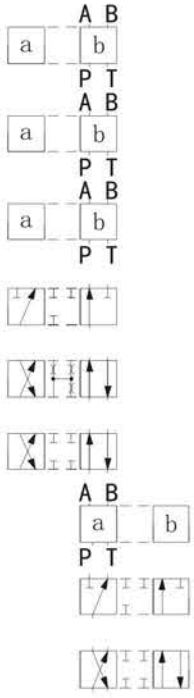


DC solenoid	
feature curve	power source voltage
1~10	DC110V

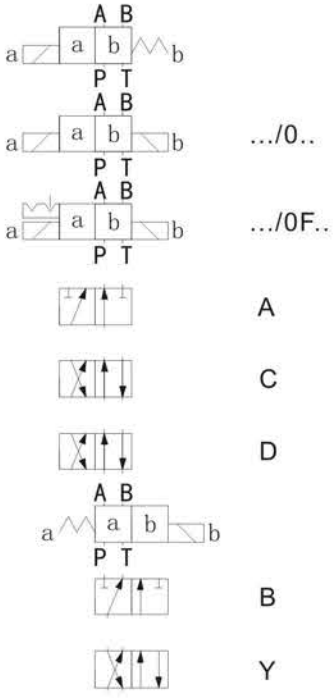
curve	symbol
1	A、B
2	V
3	F、P
4	J、L、U
5	G
6	T
7	H
8	C、D
9	M
10	E、R、C/O、C/OF、D/O、D/OF、Q、W、E1
11	A/O、A/OF
12	E

drawing of installation dimension

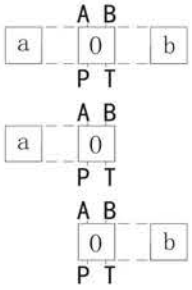
TRANSITION SPOOL



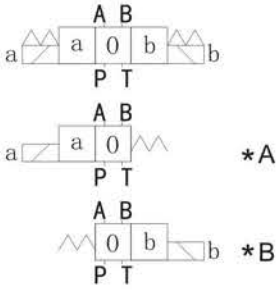
SLIDE VALVE SPOOL



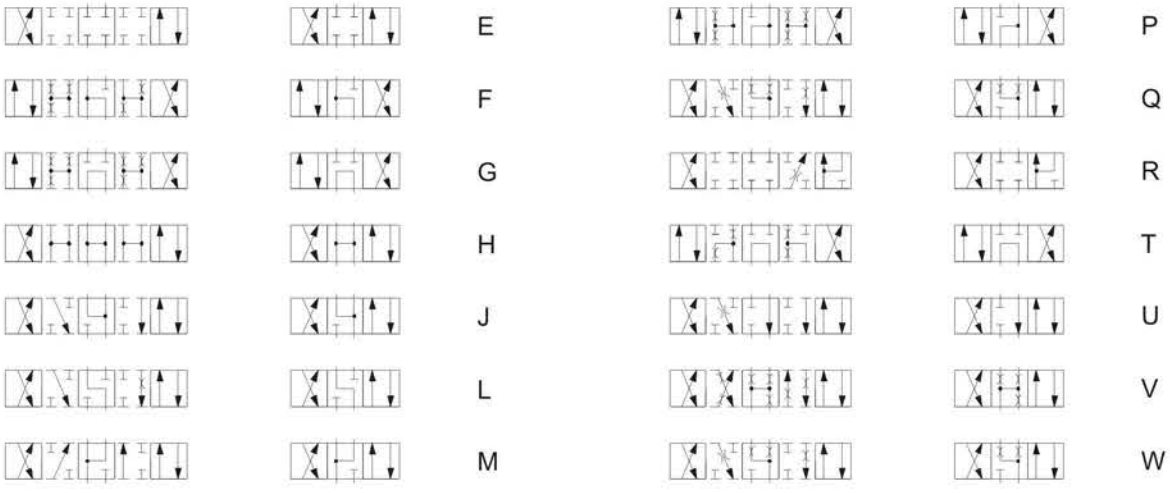
TRANSITION SPOOL



SLIDE VALVE SPOOL

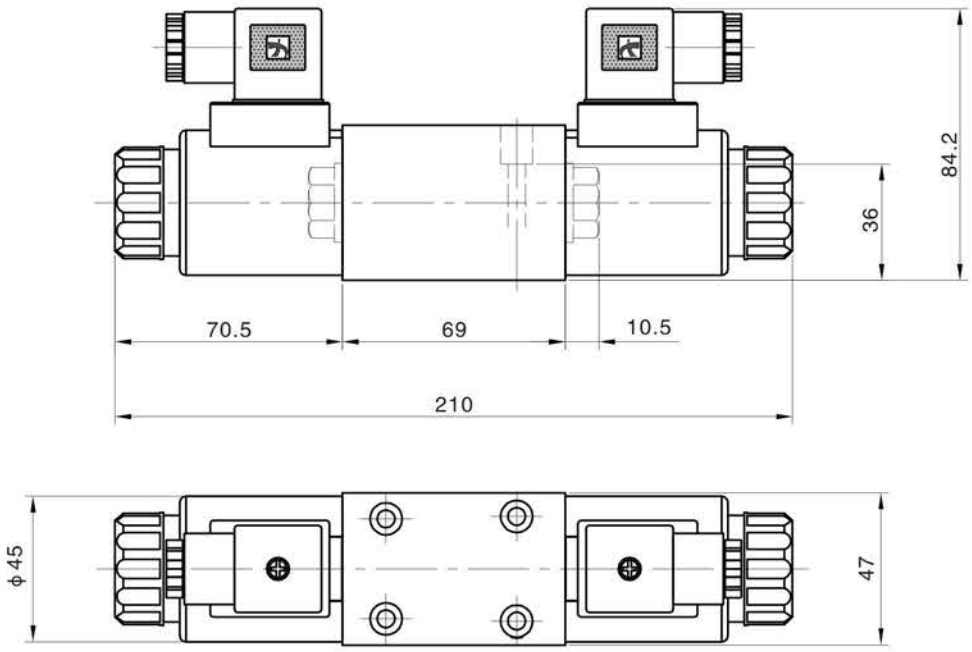


* Spool symbol with corea or b then code should be XA or XB
For example: spool E with core position a, then code should be EA

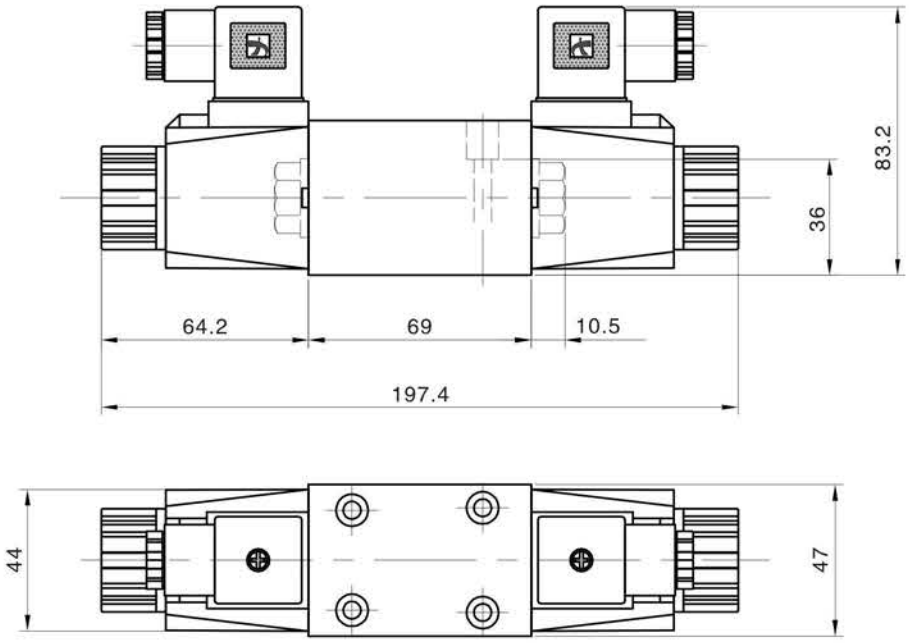


drawing of installation dimension

4WE6-DC-H

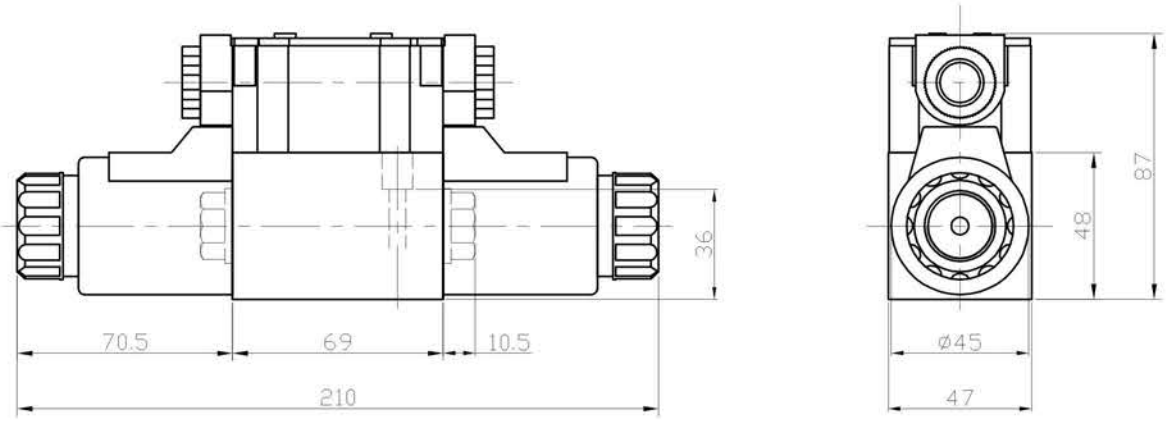


4WE6-AC-H

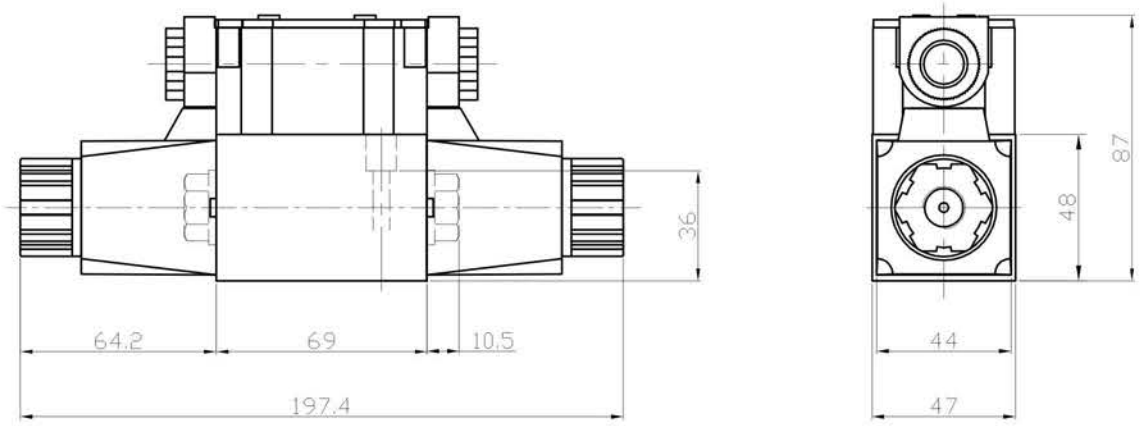


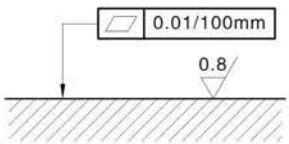
drawing of installation dimension

4WE6 E–D24–B

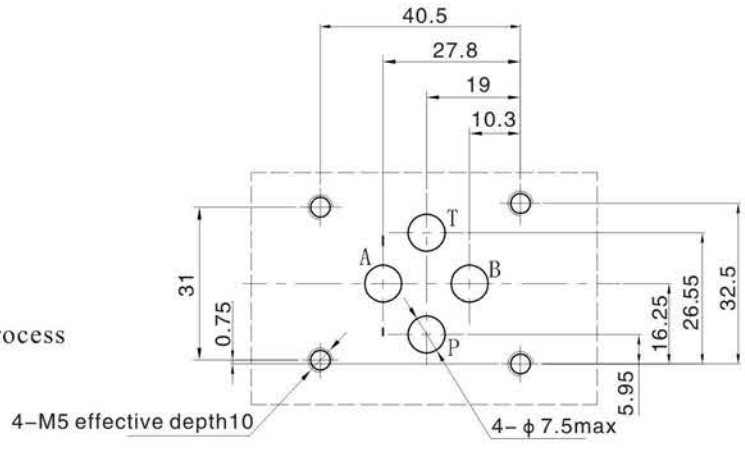


4WE6 E–A220–B



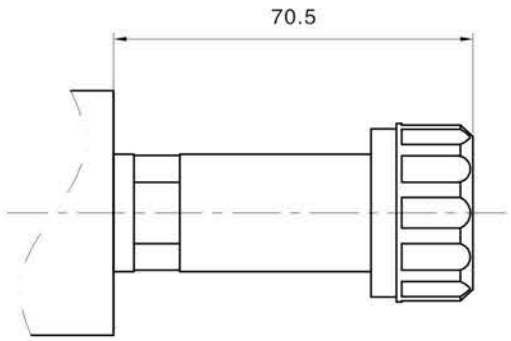


the surface of mating parts request precision process

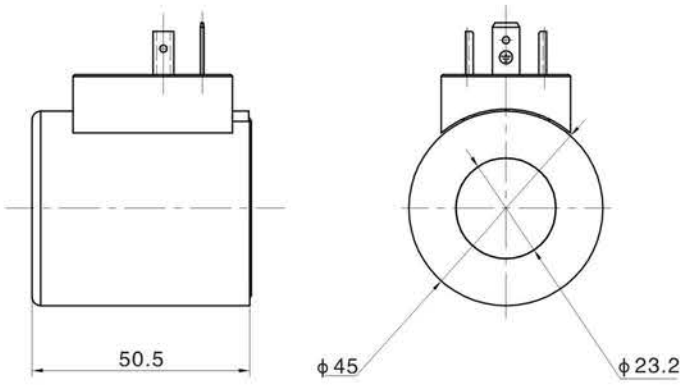


option of electronic connector

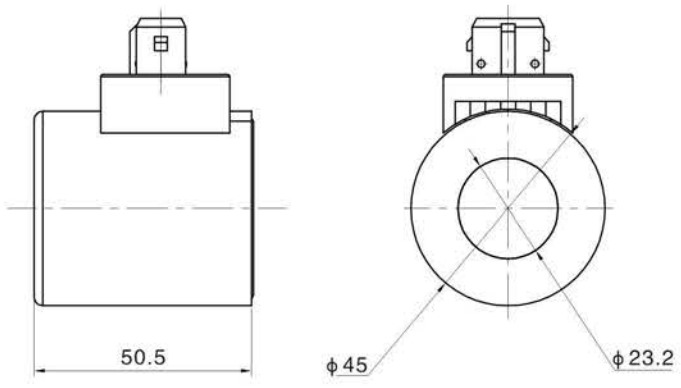
Without coil, fastening the tube and locknut on the homologous val ve body, according to the different IP grade, then choose the coil with homologous structure.



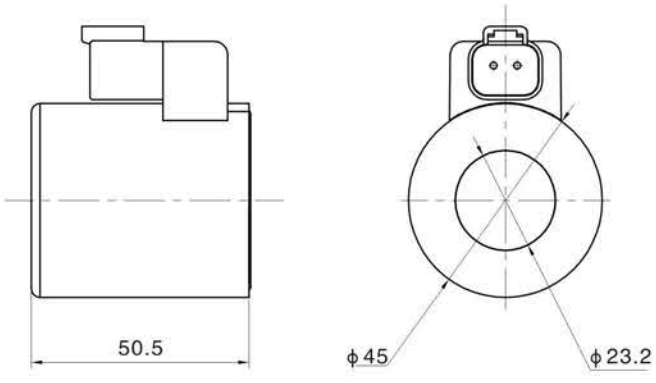
Coil with connector meets
DIN43650EN175301-803 ISO4400



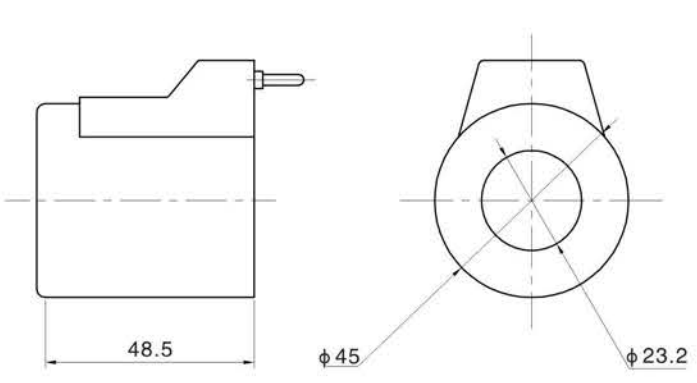
Coil with connector AMP, the IP grade of coil house is IP67



coil with connector
DEUTSCH DT04-2P, the IP grade of coil house is IP-69K



apply to pin type coil with connection type B



WE4-61 series solenoid operated directional valves

Product Specification

1.Direct-acting solenoid operational direction valve as standard type.
2.Installation a rea by DIN24 340 type A and CETOP-RP 121 H
3.DC or AC wet-type solenoid that can be arbitrary rotation and with detachable coi l.
4.Coil can be replaced without oil.
5.Equipped with manual emergency operation push rod .

Model Code

4	WE	10	E	3X		C	D24	N	L			L

3channel=3
4channel=4

Solenoid operated directional valves

Drift diameter :
10=10 diameter

Code Symbol:

30~39 series =3X
（30~39：installation and linkage Size remain the same）

O=no spring-return
OF=no spring-return，with positioning
No marks=Spring-return

Solenoid thread linkage：=C

D12 D24=DC 12V 24V
A110 A220=AC 110V/50Hz 220V/50Hz
R110 R220=RAC 110V 220V

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

H: DIN43650 plug L:DIN43650 plug（with lamp）
F: DEUTSCH，protection class IP69K/Deutsch
A: AMP，protection class IP67/AMP Junior-Timer
D: double lines
B: terminal box

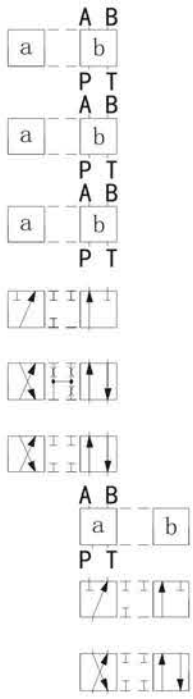
No marks=no cartridge choke
B12=orifice Φ1.0mm
B08=orifice Φ0.8mm
B12=orifice Φ1.2mm

Nitrile butadiene rubber seal=no marks
V=viton seal

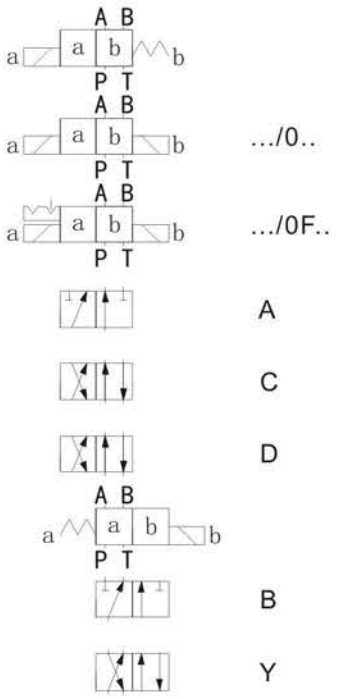
The coating of the valve body H：black L：blue

spool symbol

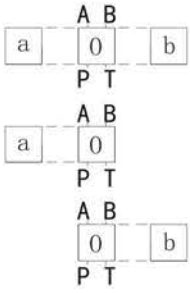
TRANSITION SPOOL



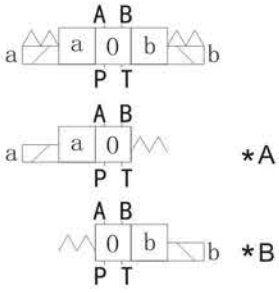
SLIDE VALVE SPOOL



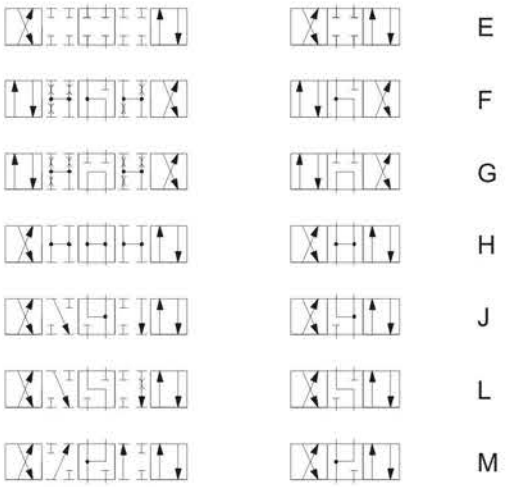
TRANSITION SPOOL

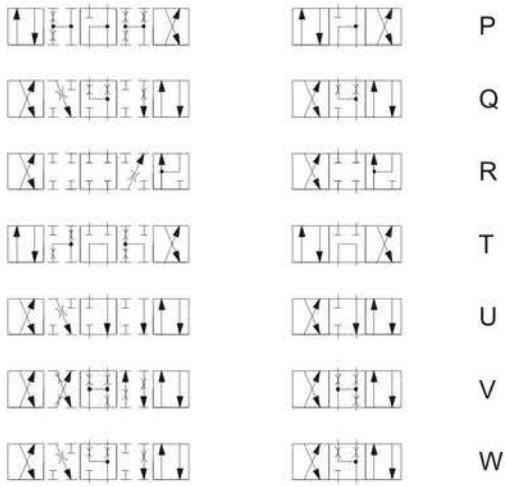


SLIDE VALVE SPOOL



☆ spool symbol with core a or b then code should be XA or XB
for example: spool E with core posifion a ,then code should be EA





Technical Data

General Data

Mounting position			anywhere
Operating temperature		℃	-30-+50 (ni trile rubber seal) -20-+50 (rubber seal)
weight	Single solenoid valve	kg	4.3 (DC) 3.5(AC)
	Double solenoid val ve	kg	6.0 (DC) 4.9 (AC)

HYDRAULIC DATA

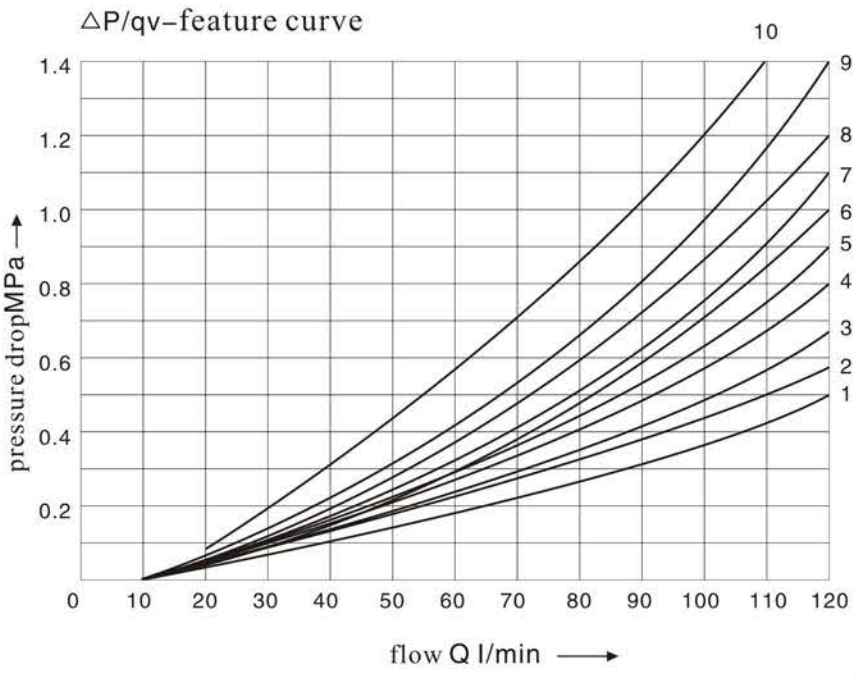
Maximum operating voltage fluid port P, A, B		MP a	31.5
Hydraulic fluid port		MP a	21 (DC) : 16 (AC) When working pressure exceeds the allowable pressure, val ves with the sign bit A,B must use Tas oíl drain port
Maximum flow rate		l/min	120
Flux areas	TypeQ	mm'2	11 { A/B-->T) ; 10.3 { P-->A/B)
(when in the median)	TypeW	mm'2	2.5(A/B-->T)
	TypeQ	mm'2	2.5(A/B-->T)
Hydraulic oíl Mineral l , suitable for ni trile rubber and fluoro rubber seal			Mineral oíl (HL,HLP) by DIN5 l 524 Rapid biological solution oíl by VDMA24 568
Fluoro seal only		°C	-30-+80 (ni trile rubber seal) -20-+80 (rubber seal)
The oíl temperature range			
Yiscosity range			The highest oíl pollution leve! by NAS! 1639 Class 9 recommend mínimum filter filtration precision ¡310~75
Oíl cleanliness			

ELECTRIC DATA

Voltage category		DC	AC(50HZ)
Supply voltage	V	12, 24, 48, 96, 110, 220V	110, 220
Allowable voltage tolerance	%	+10--15	
Power consumption	W	36	---
Holding current	A	--	0.42(220V)
Starting current	A	--	1.40(220V)
Working system	ED%	100	
Reversing time	ms	145-160	10-20
Resetting time	ms	120-130	15-40
Switching time	times/h	~ 15000	~ 7200
Protection class by DIN 40050		IP65(AMP: IP66)	(Deutsch: 1 P69k)
Maximum coil temperature	℃	135°C (Class B)	180"C(Class H)

feature curve

(testing result on bas is ofusing HLP46, t=40 °C)



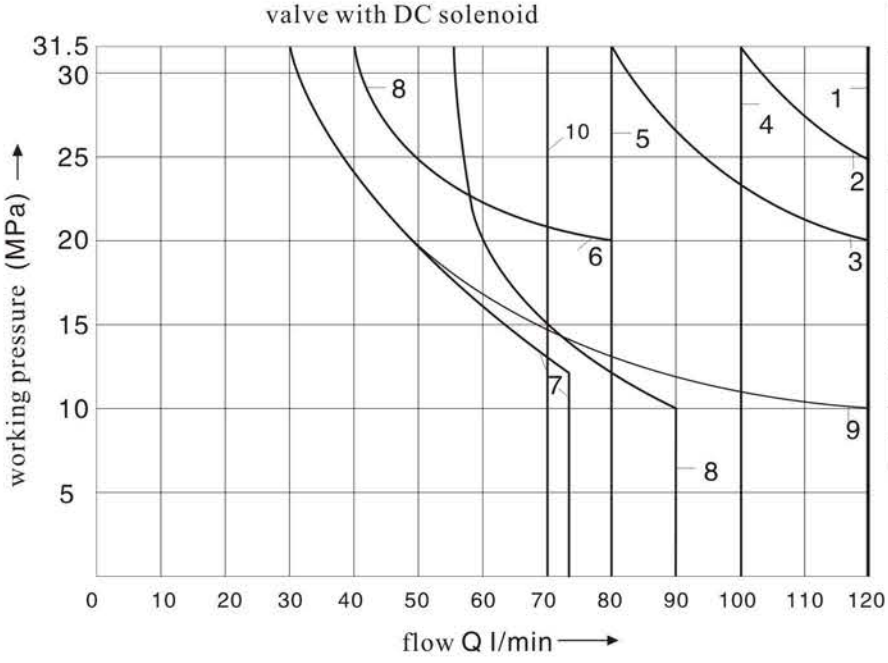
symbol	flow direction			
	P→A	P→B	A→T	B→T
A,B	3	3	–	–
C	3	3	4	5
D,Y	5	5	6	6
E	1	1	4	4
F	2	3	7	4
G	3	3	6	7
H	1	1	6	7
J	1	1	3	3
L	2	2	3	5
M	1	1	4	5
P	4	2	5	7
Q	1	2	1	3
R	3	6	4	–
T	3	3	6	7
U,V	2	2	3	3
W	2	3	4	5

on-position	P→A	P→B	A→T	B→T
R	–	9	–	–

on-position	P→A	P→B	B→T	A→T	P→T
F	4	–	–	9	9
P	–	5	8	–	10
G,T			–	–	9
H			–	–	3

power limit

(testing result on basis ofusing HLP46, t=40 °C)
l .The working limit can be used for both the two flow direction
(For example: Flow return from B to T, at the same time, flow from P to A)
2.Power limit tested when so leno id is at working temperature, under voltage 10%,
and port T have no back pressure.
3.When unidirectional flow (ifflow from P to A, port B closed) , dueto the
fluid power in the va lve, the allowed reverse power limit wi ll drop obviously.

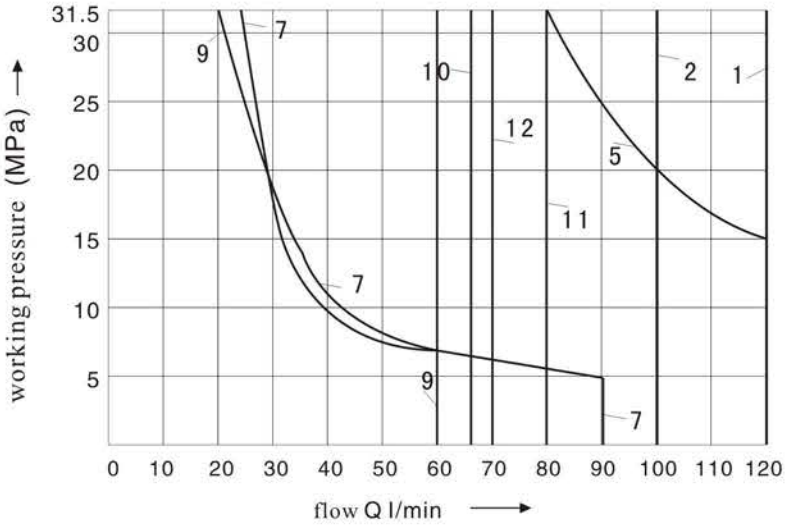


feature curve	symbol
1	C, C/O, C/OF D, D/O, D/OF Y,M
2	E
3	A/O, A/OF L, U, J, Q, W
4	H
51)	R, L2) ,U2)
6	G
7	T
8	F, P
9	A, B
10	V

Notic e: 1) the flow ofoil return (have no relat ion with area ratio)
2) Be on ly appl ied to the condition that spool is in the median position

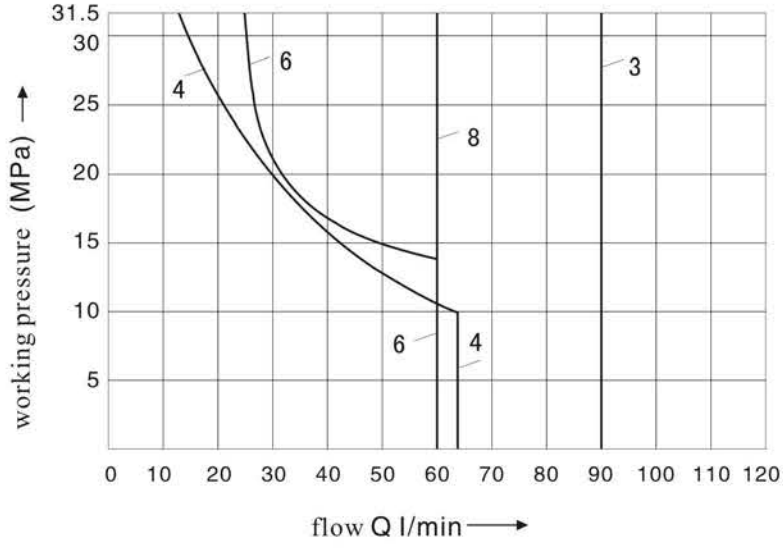
power limit

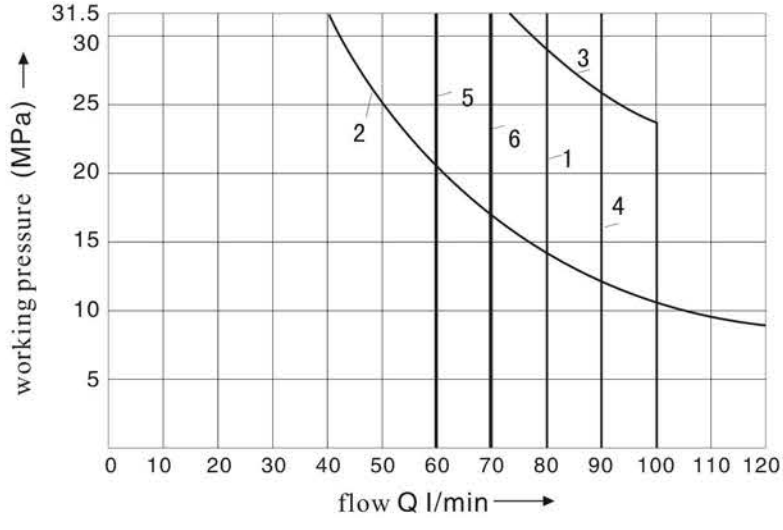
（testing result on basis of using HLP46, t=40℃）



feature curve	spool symbol
1	C, C/O, C/OF D, D/O, D/OF Y
2	E,L,U,Q,W
3	M
4	A, B
5	A/O, A/OF,J
6	G
7	F, P
8	V
9	T
10	H
11	R
121)	L ,U

Be only applied to the condition that spool is in the median position



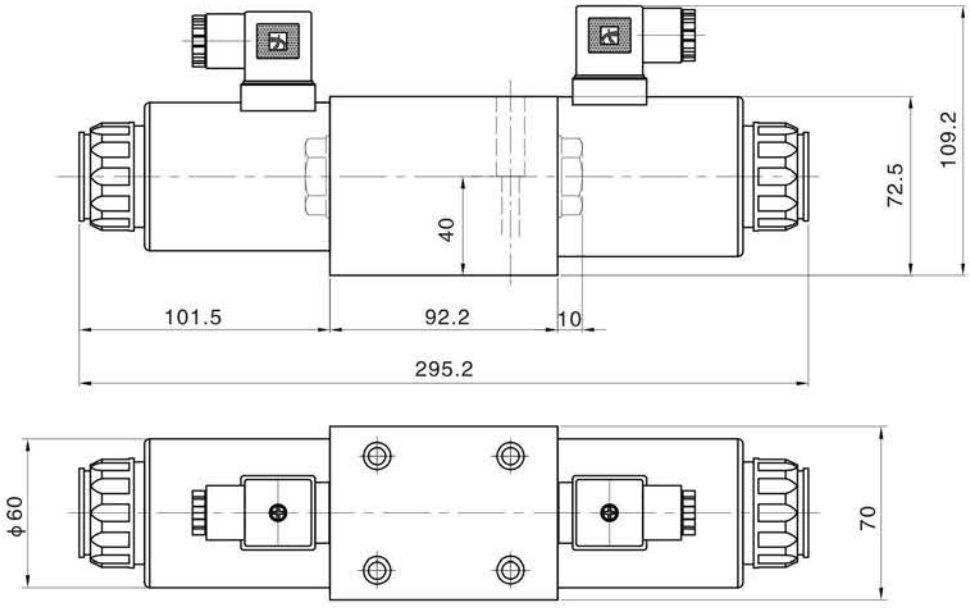


feature curve	spool symbol
1	C, C/O, C/OF D, D/O, D/OF Y
2	A/O, A/OF
3	E
4	M
5	V
6	H

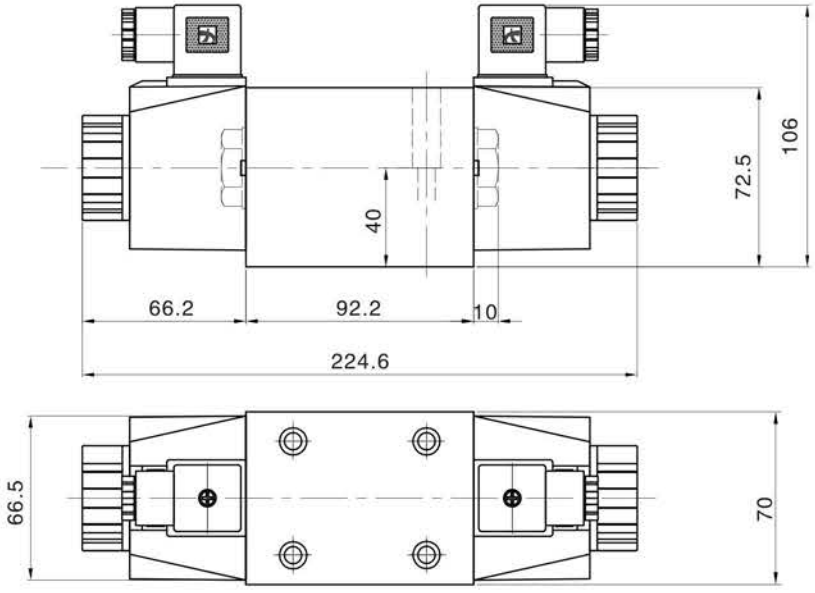
110V,60Hz
220V,60Hz

drawing of installation dimension

4WE10-DC-H

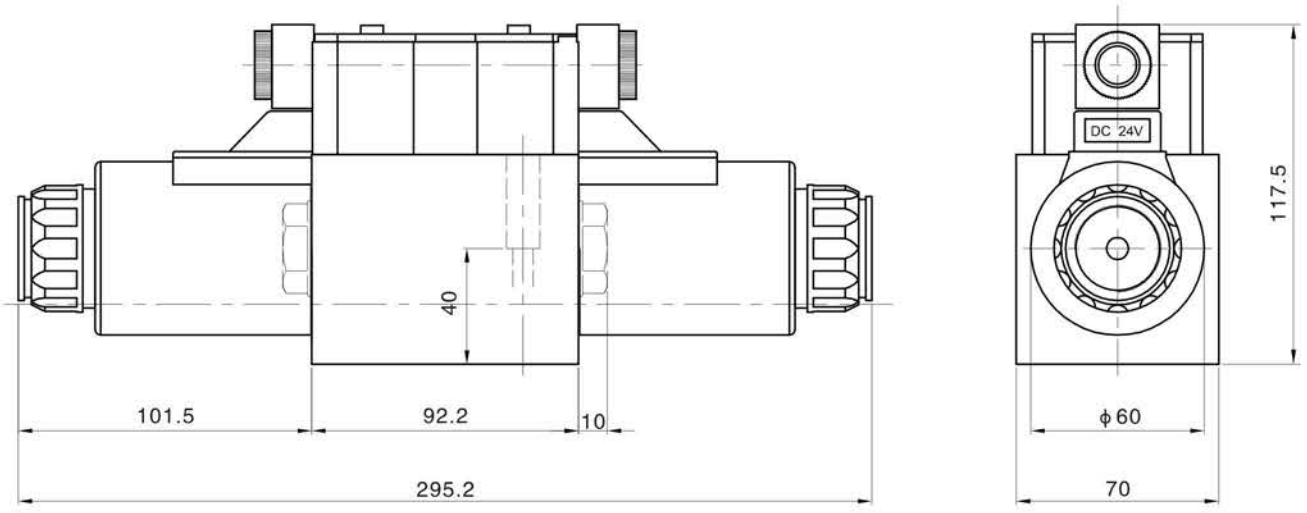


4WE10-AC-H

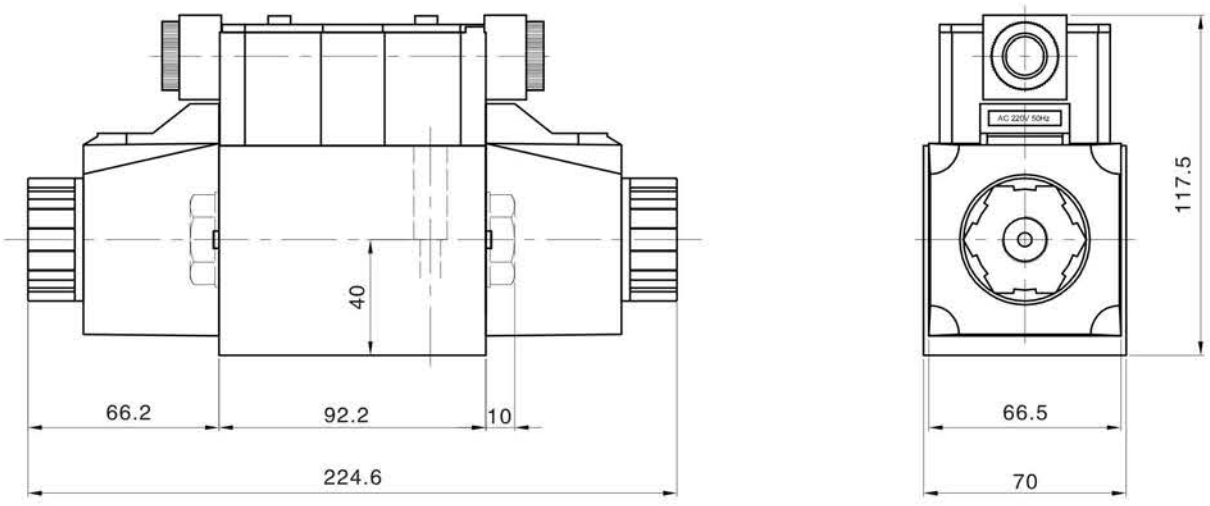


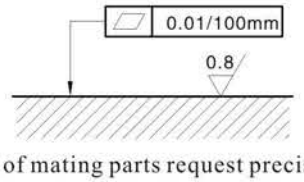
drawing of installation dimension

4WE10-DC-B

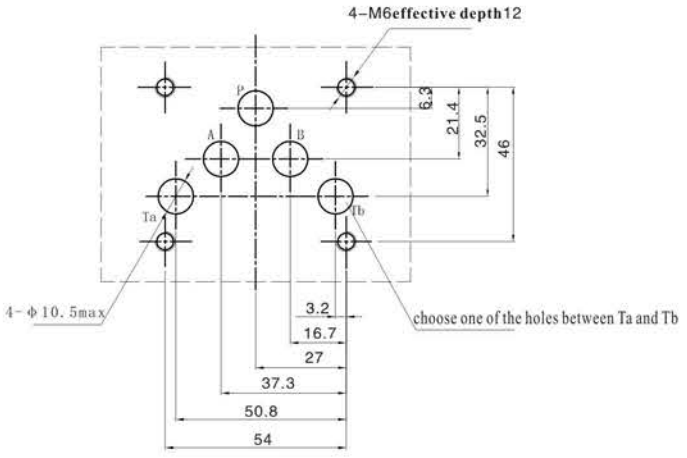


4WE10-AC-B



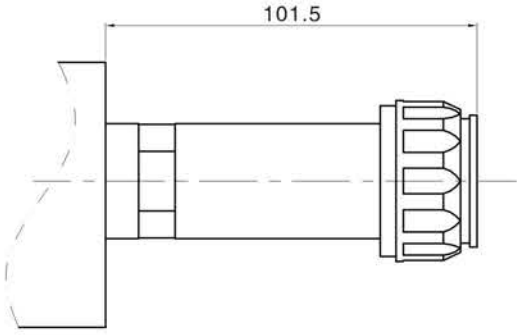


the surface of mating parts request precision process

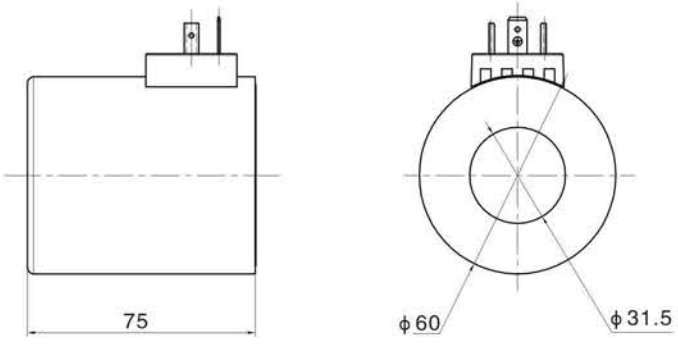


option of electronic connector

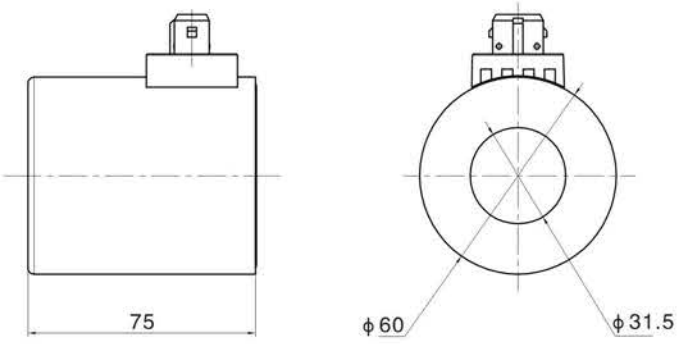
Without coil, fastening the tube and locknut on the homologous valve body, according to the different IP grade, then choose the coil with homologous structure.



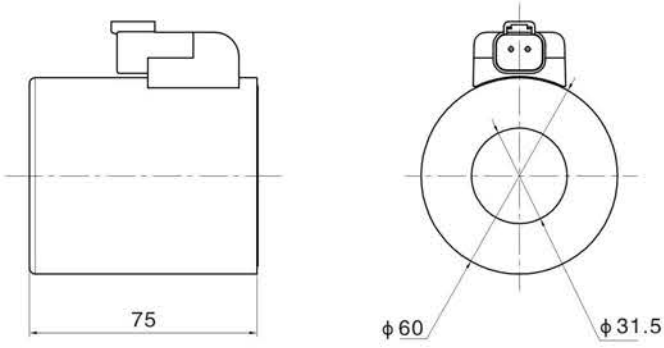
Coil with connector meets
DIN43650EN175301-803 ISO4400



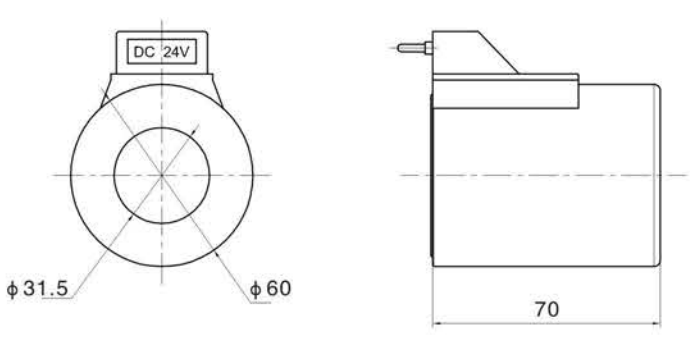
Coil with connector AMP, the IP grade of coil house is IP67



coil with connector
DEUTSCH DT04-2P, the IP grade of coil house is IP-69K



apply to pin type coil with connection type B



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