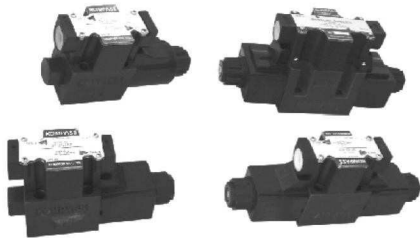
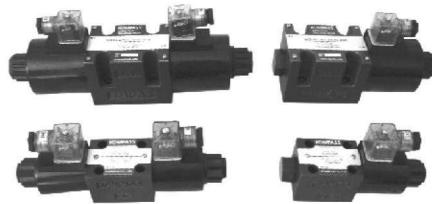


SOLENOID DIRECTIONAL CONTROL VALVES

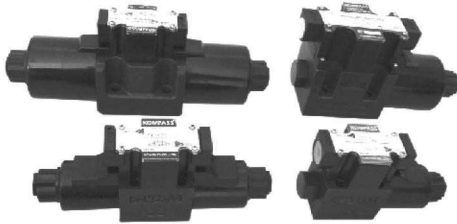
D4(AC) SERIES



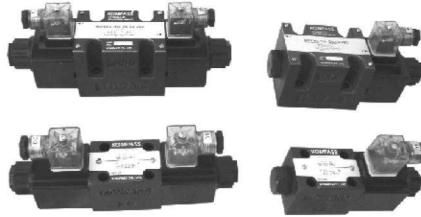
D5(AC) SERIES



D4(DC/RF) SERIES



D5(DC/RF) SERIES



Feature:

1. Mounting surfaces meet with ISO 4401 .CETOP.DIN 24340 NEPA standard with communion.
2. Submersed design.with cushioned.reduce noise,install easy, reduce the rub of spool and seal cause the leakage problem to add the using life.
3. Same specification spools.coils.tubes can change to use.install easy.reduce cost.
4. High pressure test can reach 1 500 V/min.coil insulation H class insulation resistance over 100m ϕ and 180 degree C temperature, with CE certification..
5. Tube with three sections welded by special equipment.with high hardness can with stand high pressure.

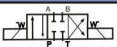
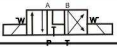

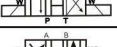

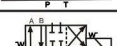


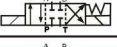
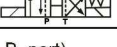
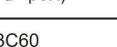
How To Order:

D5	-02	-2	B	2	-L	-A1	5	-
MODEL NO	PORT SIZE	MODEL NO				COIL TYPE	FREQUENCY	LAMP
		POSITIONS	SPRING ARRANGEMENT	SPOOL TYPE	COIL REVERSE POSITION			
D4: Terminal Box Type (JIS) D5: Plug-in connector Type(DIN)	02(6valve size) NG6	2	B:Single head 2 Positions (Spring offset) D:Two heads 2 positions (position mechanic)	2,3,4,5, 6,7,8,9 10,11,12 For details refer to "Spool Type" table	None: standard L:Reverse assembly	AC A1:AC 110V A2:AC 220V A3:AC 380V DC D1:DC 12V D2:DC 24V RF R1:RF 110V R2:RF 220V	5 : 50HZ	None: standard lamp with B:Lamp without
		3	C:two heads 3 positions (Spring centered)					
D4: Terminal Box Type (JIS) D5: Plug-in connector Type(DIN)	03(10valve size) Ng10	2	B:single head 2 positions (Spring offset) D:two heads 2 positions (position mechanic)	2,3,4,5, 6,7,8,9 10,11,12 For details refer to "Spool Type" table	None: standard L:Reverse assembly	AC A1:AC 110V A2:AC 220V A3:AC 380V DC D1:DC 12V D2:DC 24V RF R1:RF 110V R2:RF 220V	6 : 60HZ	None: standard lamp with B:Lamp without
		3	C:two heads 3 positions (Spring centered)					

Remarks:

1. Unlisted spool types, please refer to " spool type " , specially design please contact us.
2. Specially Coils Voltage please contact with us.
3. Plug-in connector type and Terminal box type, the connector all with indicating light.

■ Solenoid Directional Control Specification Table:

Spool Type		Flow range <i>d</i> min			
		D4(D5)-02		D4(05)-03	
		Rated	MAX	Rated	MAX
C2	a  b	40	60	60	100
C4	a  b				
C10	a  b				
C3	a  b	30	40	50	80
C5	a  b				
C60	a  b				
B2	a  b	40	60	60	100
B3	a  b				
B8	a  b				
D2	a  b	40	60	60	100
D3	a  b				
Max.pressure(P、A、B port)		31.5MPa			
Max.pressure 3C5、3C60		25MPa			
Max.Back pressure		16MPa			
Weight KGS	Single head	1.5(AC)	1.6(DC、RF)	3.3(AC)	3.6(DC)
	Two heads	1.90(AC)	2 (DC、RF)	4.0(AC)	4.8(DC)
Max.Operating frequencies		AC、DC: 240C.PM Therefore: 120C.PM			
Ambient temperature range		5°C-60°C			
Viscosity		20-300cSt			
Filtration		25 μ			

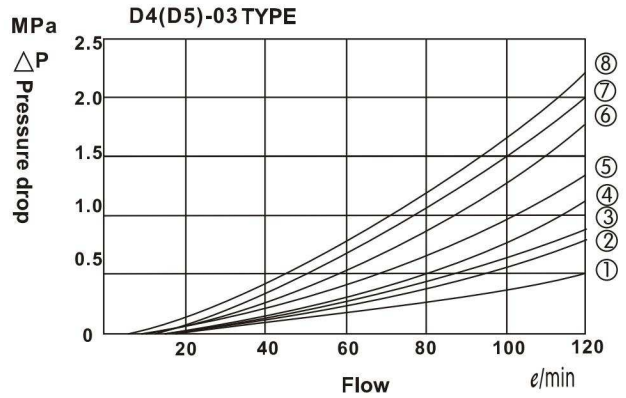
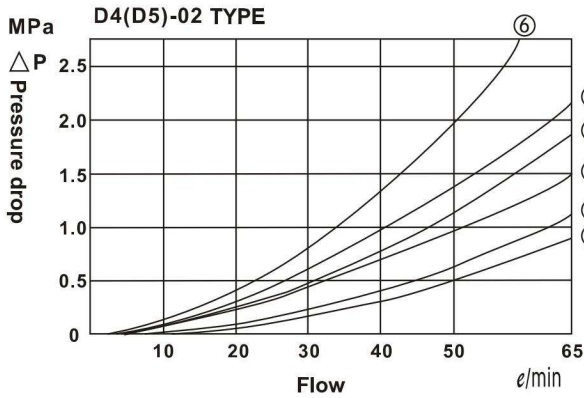
■ Coil Specification Table:

Current A/DC		AC				DC	
Frequency(Hz)		50	60	50	60	-	-
Rated Voltage(V)		110	110	220	220	12	24
02	Inrush(A)	2.0	2.2	1.0	1.1	1.9	0.95
	Holding(A)	0.38	0.4	0.16	0.18		
03	Inrush(A)	4.0	4.8	2.1	2.5	3	1.5
	Holding(A)	0.72	0.8	0.34	0.38		
02(RF)	Inrush(A)	0.34	0.34	0.17	0.17	-	-
	Holding(A)	0.22	0.22	0.11	0.11	-	-
03(RF)	Inrush(A)	0.66	0.66	0.33	0.33	-	-
	Holding(A)	0.48	0.48	0.24	0.24	-	-
VOLTAGE Range(v)		Rated Voltage + 10% or-15%					
Insulation Resistance(M Ω)		Over 100M Ω(DC 500V insulation tested)					

© Remarks: Tested under conditions of insulation high 1500V/sec, and momentary shift 0.1 sec/cycle.

Typical Performance Curves:

Pressure Drod-Flow Characteristics:



SPOOL TYPE	CURVE NO.FOR PORT INTERCONNECTIONS				
	P-A	P-B	A-T	B-T	P-T
3C2	②	②	②	②	-
3C3	①	①	①	①	③
3C4	②	②	①	①	-
3C5	⑤	⑤	⑤	⑤	③
3C60	⑥	⑥	⑥	⑥	③
3C10	②	②	②	①	-
2D2	②	②	②	②	-
2D3	②	②	④	④	-
2B2	③	③	②	②	-
2B3	④	②	②	④	-

SPOOL TYPE	CURVE NO.FOR PORT INTERCONNECTIONS				
	P-A	P-B	A-T	B-T	P-T
3C2	③	③	③	③	-
3C3	②	②	②	②	④
3C4	③	③	②	②	-
3C5	④	⑦	④	⑦	①
3C60	⑦	⑦	⑦	⑦	④
3C10	③	③	③	②	-
2D2	⑦	③	③	⑦	-
2D3	②	②	②	②	-
2B2	⑦	③	③	⑦	-
2B3	⑥	③	③	⑥	-

PRESSURE DROP CALCULATION:

The pressure drop (ΔP_1) can be obtained from the formula for other specific viscosity:

$\Delta P_2 = (V_2/V_1)^{1/4} \cdot P \Delta_1$
 $\Delta P_1 = \text{viscosity } V_1 \text{ kgf/cm}^2 \rightarrow ? \text{Kgf/cm}^2 \text{ pressure drop when it reach } V_1 \text{ viscosity}$
 $\Delta P_2 = \text{viscosity } V_2 \text{ kgf/cm}^2 \rightarrow ? \text{Kgf/cm}^2 \text{ pressure drop when it reach } V_2 \text{ viscosity}$
 $V_1 = \text{viscosity mm}^2/\text{s}$
 $V_2 = \text{viscosity mm}^2/\text{s}$

Test conditions:
 pressure: 7Mpa
 Viscosity: 20 cSt
 Temperature: 50°C
 Fluid: ISO-VG32

($\Delta P_1, V_1$ refer to pressure drop characteristics table
 $(V_2/V_1)^{1/4}$ refer to the following table.

Viscosity	CSt (mm ² /s)	15	20	30	32	35	40	50	60	70	80
	(SSU)	77	98	141	150	164	186	232	278	324	371
$(V^2/V_1)^{1/4}$		0.83	0.89	0.98	1.00	1.02	1.06	1.12	1.17	1.22	1.25

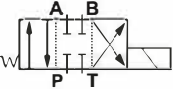
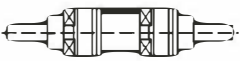
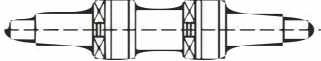
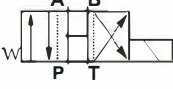


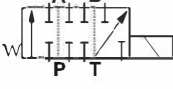


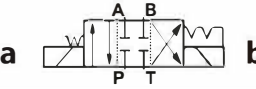
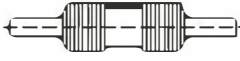

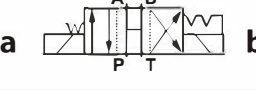


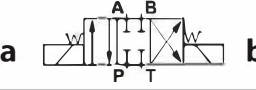


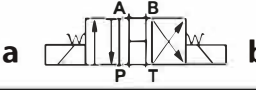











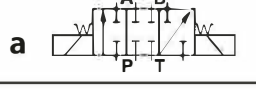


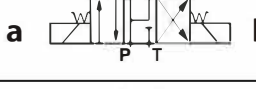








Viscosity	CSt (mm ² /s)	100	120	160	200	240	280	320	360	400
	(SSU)	464	556	742	927	1112	1298	1483	1669	1854
$(V^2/V_1)^{1/4}$		1.33	1.39	1.50	1.58	1.65	1.72	1.78	1.83	1.88

■ Pool type table:

Two heads 3 positions spring centered	Graphic Symbols (standard)	Two heads 3 positions mechanic	Graphic Symbols (standard)
3C2	a b	2D2	a b
3C3	a b	2D3	a b
3C4	a b		
3C40	a b		
3C5	a b	One head 2 positions spring centered	Graphic Symbols (standard)
3C6	a b	2B2	b
3C60	a b	2B3	b
3C7	a b	2B8	b
3C8	a b	One head 2 positions spring centered	Graphic Symbols (Reverse Assembly)
3C9	a b	2B2L	a b
3C10	a b	2B3L	a b
3C11	a b	2B8L	a b
3C12	a b		

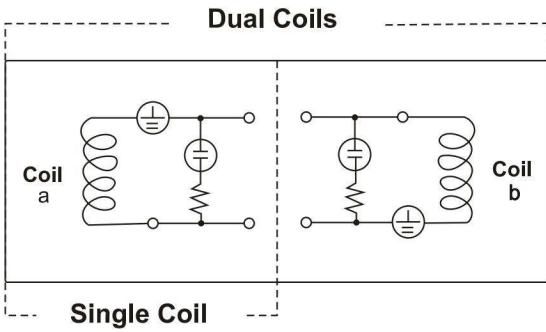
One head 2 positions spring centered	Graphic Symbols (standard)	One head 2 positions spring centered	Graphic Symbols (Reverse Assembly)	One head 2 positions spring centered	Graphic Symbols (standard)	One head 2 positions spring centered	Graphic Symbols (Reverse Assembly)
2B2A	b	2B2AL	a b	2B2B	b	2B2BL	a b
2B3A	b	2B3AL	a b	2B3B	b	2B3BL	a b
2B4A	b	2B4AL	a b	2B4B	b	2B4BL	a b
2B40A	b	2B40AL	a b	2B40B	b	2B40BL	a b
2B5A	b	2B5AL	a b	2B5B	b	2B5BL	a b
2B60A	b	2B60AL	a b	2B60B	b	2B60BL	a b
2B8A	b	2B8AL	a b	2B8B	b	2B8BL	a b
2B9A	b	2B9AL	a b	2B9B	b	2B9BL	a b
2B10A	b	2B10AL	a b	2B10B	b	2B10BL	a b
2B11A	b	2B11AL	a b	2B11B	b	2B11BL	a b
2B12A	b	2B12AL	a b	2B12B	b	2B12BL	a b

- Remarks: 1. type of port connections ● when coil " a " energized; P→A B→T ● When coil " b " energized; P→B A→T
 - spool types of 3C5 & 3C6 are reverse directions.
- 2. For special specifications please contact us.

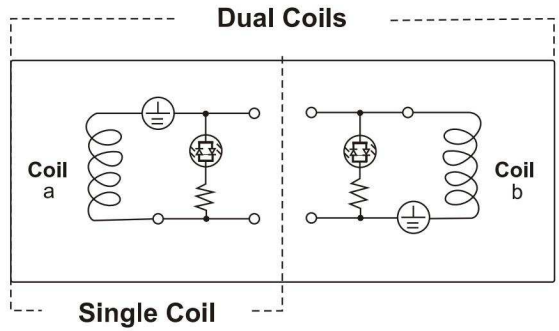
Spool Type	Graphic Symbols	02	03
2B2 2 positions instant center close			
2B3 2 positions instant center connection			
2B8 2 positions one connection instant center close			
2D2 2 positions instant center close, take poition			
2D3 2 positions instant center connection, take poition			
2C2 3 positions center close			
3C3 3 positions center connection			
3C4 3 positions center A.B.T connection			
3C5 3 positions center A.P.T connection			
3C60 3 positions center P.T connection			
3C8 3 positions , one connect, center close			
3C9 3 positions center A.B.P connection			
3C10 3 positions center B.T connection			
3C12 3 positions center A.T connection			

■ Connection Type

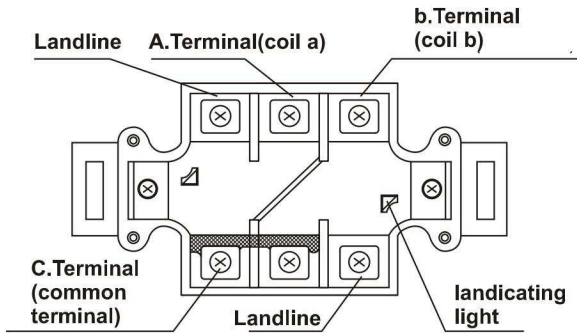
- D4(JIS)Terminal Box(with Indicating lights)



- D5(DIN)Plug-in connector(with LED lights)

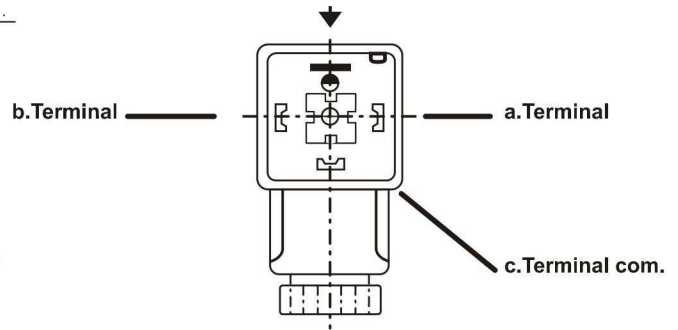


- D4(JIS)Terminal Box



- D5(DIN)Plug-in connector

Mounting Surface : ISO 4401 standard



- ◎ Remarks: 1.The indicating light of terminal Box Type is made of filement lamp,and DIN plug-in connectors is made of bipolar LED lamp.
2.DC solenoid has no pole limitation.

- Subplates(DSGM)

Please see the spcifications and dimensions,please contact us for special port and dimensions.

■ Accessories

- Mounting Bolts

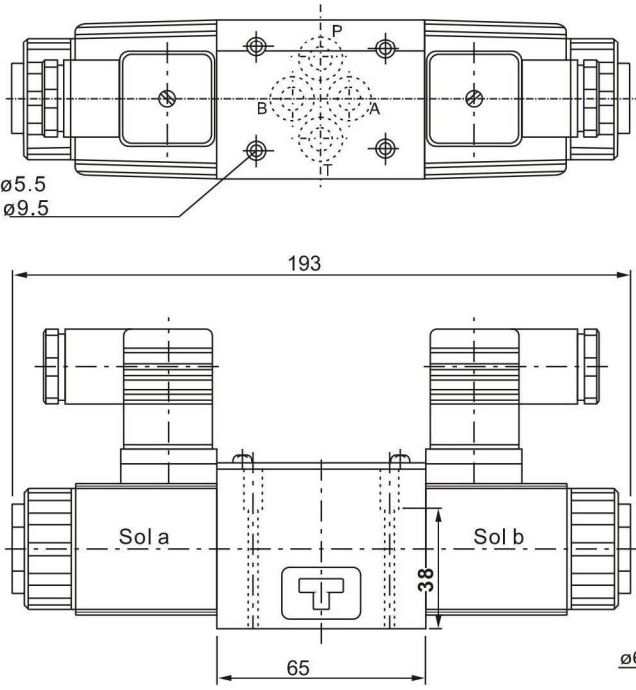
MODEL	DESCRIPTION SIZE	Q'TY	TIGHT TORQUE(N-m)
D4(D5)-02	Soc.Hex cap bolt(4mm) M5 x 45	4	6-7
D4(D5)-03	Soc.Hex cap bolt(5mm) M6 x 35	4	12-15

Dimensions

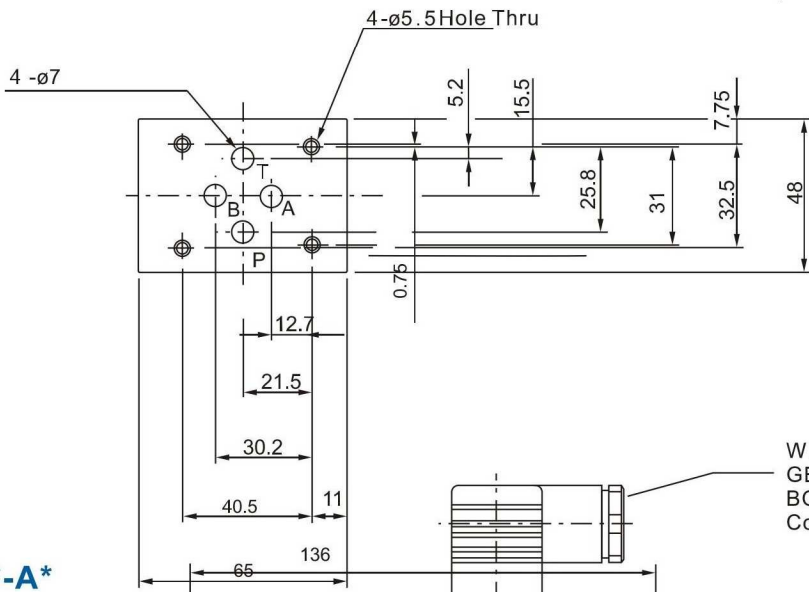
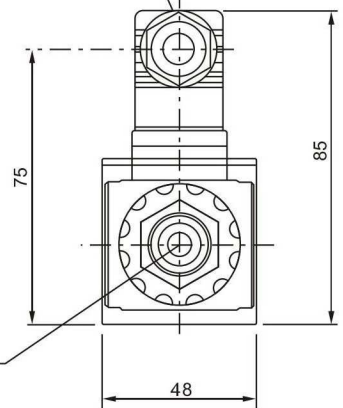
D5-02-3C*-A
2D*

Mounting Surface: ISO 4401 standard

Hole Thru 4- $\phi 5.5$
C'bore $\phi 9.5$

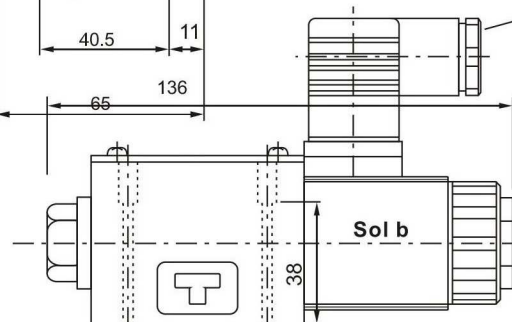


Connector can be optionally turned
90° angle to right or left position



WIRE SPECIFICATIONS:
GENERAL WIRE:
BORE: $\phi 8 \sim \phi 10$
Conductor Area: under 1.5mm^2

D5-02-2B*-A*

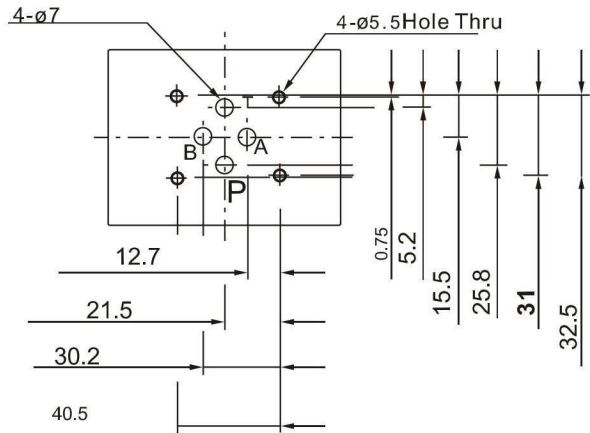
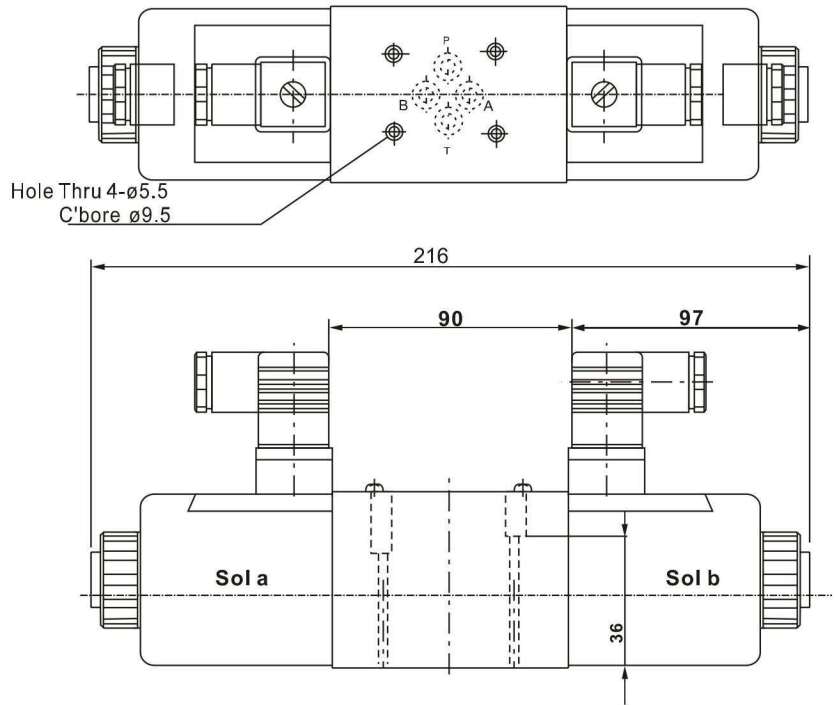
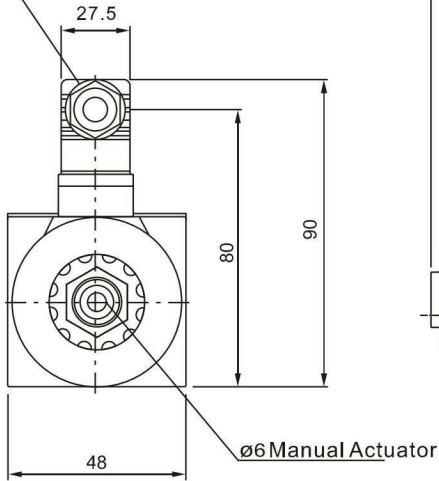


Dimensions

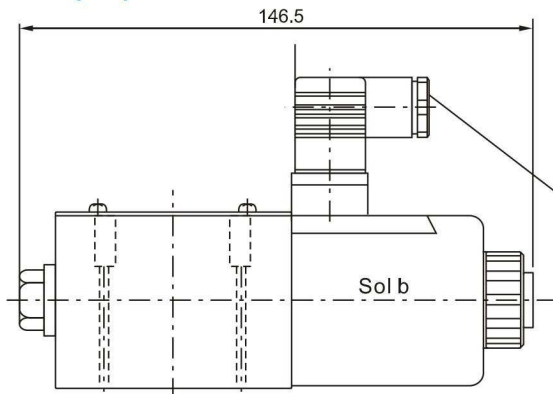
**D5-02-3C*-D*(R*)
2D***

Mounting Surface: ISO 4401 standard

Connector be optionally turned
90° angle to right or left position



D5-02-2B*-D*(R*)



WIRE SPECIFICATIONS:
GENERAL WIRE:
BORE: $\Phi 8 \sim \Phi 10$
Conductor Area: under 1.5mm^2