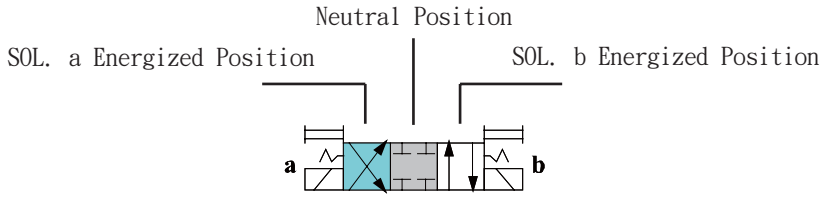
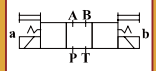
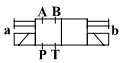
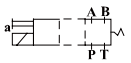
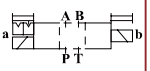
A

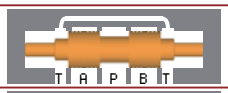
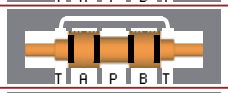
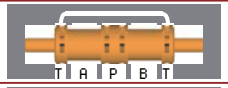
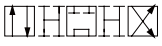
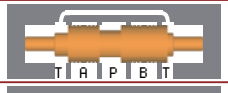
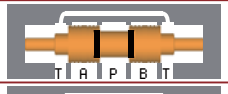
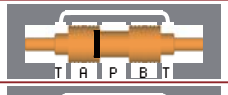
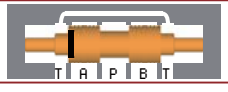
【GRAPHICAL SYMBOLS】

(Example)In Case Of Spool Type "3C2"



1) Example: Three switched position(3C) with spool type "2", ordering code "3C2".
2) Example: Two switched positon(2B) with spool type "2" , ordering code "2B2".
3) Example: Two switched position(2B) with spool type "2A" and reverse assembled, ordering code "2B2AL".
4) The dotted line of graphical symbol(2B, 2D, 2N) represent the momentary switched position.

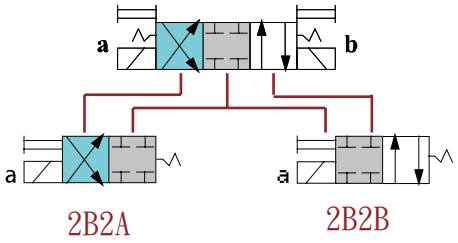
Three Switched Position	Graphical Symbol	Two Switched Position	Graphical Symbol	Two Switched Position	Graphical Symbol	Two Switched Position	Graphical Symbol
Spring Centred Model No: "3C"+ Spool Type		No Spring Model No: "2N"+ Spool Type		Spring Offset Model No: "2B"+ Spool Type		With Detent Model No: "2D"+ Spool Type	

Spool Type	Graphical Symbol	Physical Relationship (Neutral Position)	Spool SWG-02	Spool SWG-03	Remark
"2"					
"3"					
"4"					
"40"					
"5"					
"60"					In the momentary switched position, ABPT are all opened.
"7"					
"8"					
"85"					
"9"					
"10"					
"11"					
"12"					

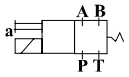
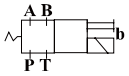
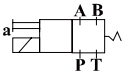
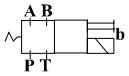
A

【GRAPHICAL SYMBOLS】

Model Explanation:



1) The graphical symbol represents the direction of assembling product.
2) The following graphical symbols are different from YUKEN's symbols. EX: SOLTECH's "2B2A" equal to YUKEN's "2B2B", and "2B2B" equal to YUKEN's "2B2A".
3) Valves Only Using Neutral Position and Side Position (Two Position Valve, No Intermediate or Momentary Swithched Position)

Two Switched Position Spring Offset Model No: "2B"+ Spool Type	Graphical Symbol: Standard Assembled	Graphical Symbol: Reverse Assembled Model No: Spool Type + "L"	3D Pictures	Three Switched Position Spring Offset Model No: "2B"+ Spool Type	Graphical Symbol: Standard Assembled	Graphical Symbol: Reverse Assembled Model No: Spool Type + "L"	3D Pictures
							

Spool Type	Graphical Symbols		3D Pictures SWG-02	3D Pictures SWG-03	Spool Type	Graphical Symbols		3D Pictures SWG-02	3D Pictures SWG-03
2A					2B			As The Same As Spool Type "2"~"12".	
3A					3B				
4A					4B				
40A					40B				
5A					5B				
60A					60B				
7A					7B				
8A					8B				
9A					9B				
10A					10B				
11A					11B				
12A					12B				

A

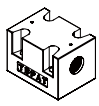
【MODEL DESIGNATION】

SWG	-	(H)	-	02	-	2B	2	(L)	-	A25	-	(N)
I		II		III		IV	V	VI		VII		VIII

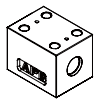
※ The item with "()" may be omitted.

I) Series No.

II) Omit: 31.5 MPa
315 kg/cm²(Bar)
4570 psi



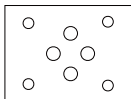
H: 35 MPa
350 kg/cm²(Bar)
5070 psi



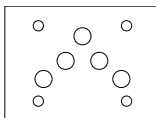
S: Shockless Type

III) Valve Size

02: 1/4"
ISO4401-03-02-0-90
NFPA-D03
CETOP 3
DIN 24340 NG6

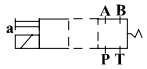


03: 3/8"
ISO 4401-AC-05-4-A
NFPA-D05(FORMERLY D02)
CETOP 5
DIN 24340 NG10

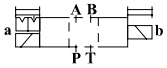


IV) 2B: Two Switched Position With Intermediate Or Momentary Switched Position

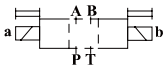
2B: Spring Offset



2D: With Detent

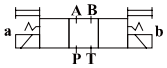


2N: No Spring



3C: Three Switched Position

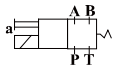
3C: Spring Centred



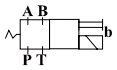
V) Spool Typev
(Referring to Graphical Symbols)

VI) Assembled Direction

Omit: Standard Assembled

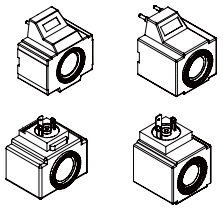


L: Reverse Assembled

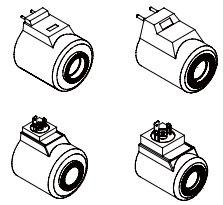


VII) Voltage

A15: AC 110V/50HZ
A16: AC 110V/60HZ
A24: AC 240V/50HZ
A25: AC 220V/50HZ
A26: AC 220V/60HZ
A38: AC 380V/50HZ

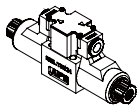


D1: DC 12V
D2: DC 24V
R1: RF 110V/50HZ
(Rectified)
R2: RF 220V/50HZ
(Rectified)

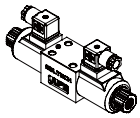


VIII) Connector Type

Omit: Terminal Box



N: Plug-In Connector
DIN 43650
ISO 4400

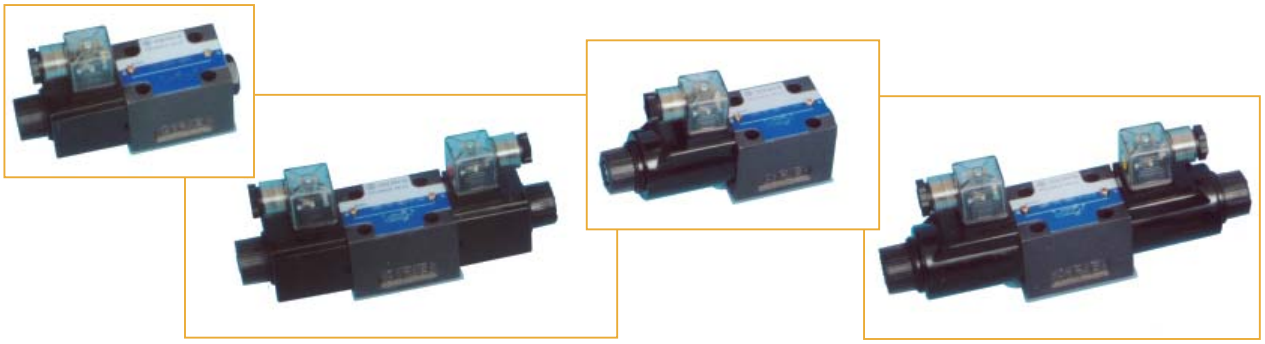


L: Lead Wire
SWP Connector
DT04-2P Connector

A

【SWG-02】

"ISO4401-03-02-0-94、NFPA-D03、CETOP 3、DIN 24340 NG6"



WITHIN CE MARKING REQUIREMENT

The apparatus meets the requirements of the following standards and hence fulfills the requirements of EMC Directive 89/336/EEC as amended by Directives 92/31/EEC and 93/68/EEC within CE marking requirement.

EN61000-6-3 : 2001+A11 : 2004 : CISPR 22 : 1997+A1:2000+A2 : 2002 Class B,
IEC61000-3-2 : 2000, modified
EN61000-3-3 :1994+A1:2001
EN61000-6-1 : 2001 : IEC61000-4-2 :1995+A1:1998+A2: 2000
IEC61000-4-3 : 2002, IEC61000-4-4 :2004
IEC61000-4-5 : 1995+A1:2000 IEC61000-4-6 :1996+A1:2000
IEC61000-4-8 : 1993+A1:2000 IEC61000-4-11:1994+A1:2000.

STABLE OPERATION

With a strong magnet and spring force, the valves are tough against contamination and thus ensure a stable operation. Under standard operation, the durability to 10 million spool shifts.(Average)

HIGH QUALITY & COMPETITIVE PRICE

All products are 100% tested by professional testing machinery. The material of tube is imported from Japan, and all parts are processed by professional specific automatic machinery. But the price is less 30% than leading brands.

EASY MAINTENANCE

Plug-in solenoid, all spools and bodies are interchangeable, the head of tube is design to hexnut to simplifying maintenance and reduce damage when assembl.

HIGH PERFORMANCE【SWGH SERIES】

High pressure(up to 35MPa), high flow rating, provides low pressure drop, with maximum performance. If need more details please consult our distributors.

CUSTOMIZATION

According to the requirement of customer to customize the product, and 100% satisfy their need.

※MOUNTING BOLTS：

Descriptions	Soc. Hd. Cap Screw(4 pcs.)	Tightening Torque
Taiwan Design Standard European Design Standard	02：M5 × 45 Lg 02	0.5 - 0.7Kgf m(43 - 60 in. lbs)
N. America Design Standard	No.10 - 24 UNC × 1 - 3/4 Lg.	

★Four socket head cap screws in the table below are included

※SPECIFICATION：

Max. Pressure (kgf/cm²)	Rated Flow (l/min.)	Max. T-Line Back Pressure (kg/cm²)	Max. Frequence of Operation (cycle/min.)	Filtration (Micron.)	Ambient Temperature Rrange(℃)	Weight (kgs)
315 (31.5 Mpa) (4570 psi)	65 (17.1gpm)	160 (16 MPa) (2320 psi)	240	25	-5 ~ 60	3C、2D、2N AC:2 DC:2.3 2B AC:1.7 DC:1.8

★Spool type "5", "6", "60" Max. Pressure : 250 kgf/cm²(25MPa, 3630psi)

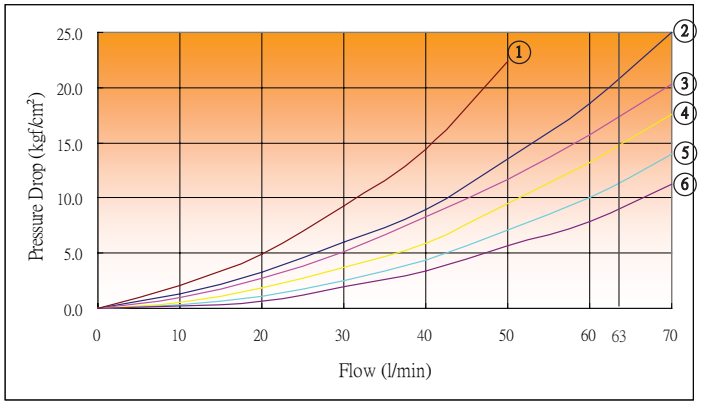
※SOLENOID RATING：

Power	Voltage (V)	Frequence (HZ)	Current At Rated Voltage		
			In-Rush Current(A)	Holding Current(A)	Power (W)
AC	A110	50	1.6	0.46	
		60	1.4	0.32	
			1.5	0.39	
	A120	50	1.3	0.38	
		60	1.2	0.27	
	A220	50	0.80	0.23	
		60	0.70	0.16	
			0.75	0.19	
	A240	50	0.67	0.19	
		60	0.59	0.13	
DC	D12			2.2	26
	D24			1.1	

★Solenoid Isulation Class: Class H

※PERFORMANCE CURVES：

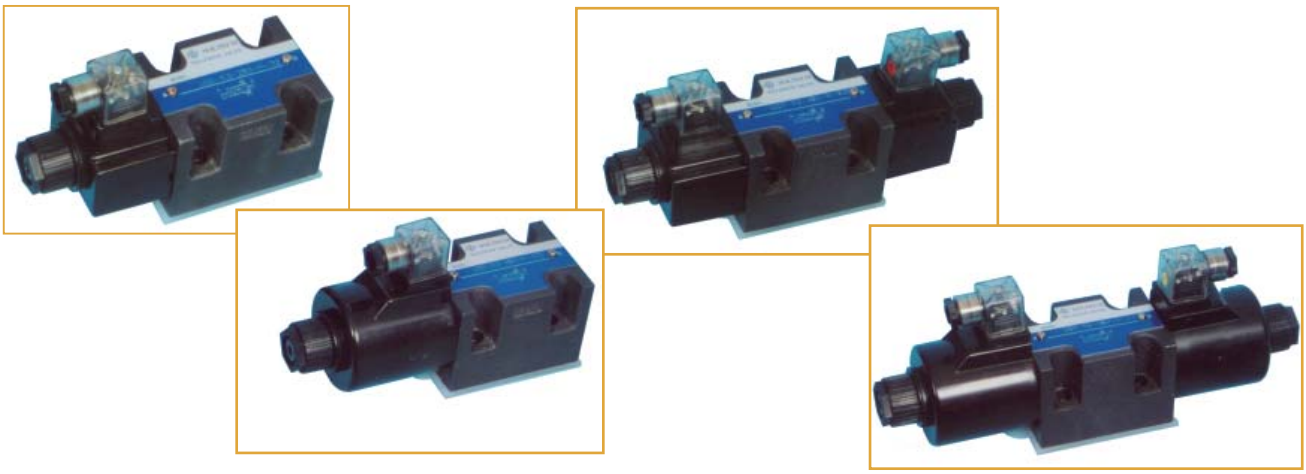
Test fluid viscosity:35 cst(175ssu)
Test temperature: 50℃(122°F)



Spool Type	P→A	B→T	P→B	A→T	P→T
3C2	5	5	5	5	-
3C3	6	6	6	6	4
3C4	5	6	5	6	-
3C40	5	5	5	5	-
3C5	1	1	1	1	4
3C6	1	1	1	1	4
3C60	1	1	1	1	4
3C7	6	5	6	5	-
3C8	5	5	5	6	-
3C9	6	5	6	5	-
3C10	5	6	5	5	-
3C11	6	5	5	5	-
3C12	5	5	5	6	-
2D2	5	2	5	2	-
2D3	6	3	5	3	-
2B2	2	2	5	5	-
2B3	3	3	5	5	-

【SWG-03】

"ISO4401-AC-05-4-A、NFPA-D05、CETOP 5、DIN 24340 NG10"



WITHIN CE MARKING REQUIREMENT

The apparatus meets the requirements of the following standards and hence fulfills the requirements of EMC Directive 89/336/EEC as amended by Directives 92/31/EEC and 93/68/EEC within CE marking requirement.

EN61000-6-3 : 2001+A11 : 2004 : CISPR 22 : 1997+A1:2000+A2 : 2002 Class B,
IEC61000-3-2 : 2000, modified
EN61000-3-3 :1994+A1:2001
EN61000-6-1 : 2001 : IEC61000-4-2 :1995+A1:1998+A2: 2000
IEC61000-4-3 : 2002, IEC61000-4-4 :2004
IEC61000-4-5 : 1995+A1:2000 IEC61000-4-6 :1996+A1:2000
IEC61000-4-8 : 1993+A1:2000 IEC61000-4-11:1994+A1:2000.

STABLE OPERATION

With a strong magnet and spring force, the valves are tough against contamination and thus ensure a stable operation. Under standard operation, the durability to 10 million spool shifts.(Average)

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All products are 100% tested by professional testing machinery. The material of tube is imported from Japan, and all parts are processed by professional specific automatic machinery. But the price is less 30% than leading brands.

EASY MAINTENANCE

Plug-in solenoid, all spools and bodies are interchangeable, the head of tube is design to hexnut to simplifying maintenance and reduce damage when assembl.

HIGH PERFORMANCE【SWGH SERIES】

High pressure(up to 35MPa), high flow rating, provides low pressure drop, with maximum performance. If need more details please consult our distributors.

CUSTOMIZATION

According to the requirement of customer to customize the product, and 100% satisfy their need.

※MOUNTING BOLTS：

Descriptions	Soc. Hd. Cap Screw(4 pcs.)	Tightening Torque
Taiwan Design Standard European Design Standard	03：M6 × 35 Lg 03	0.5 - 0.7Kgf m(43 - 60 in. lbs)
N. America Design Standard	No.10 - 24 UNC × 1-3/4 Lg.	

★Four socket head cap screws in the table below are included

※SPECIFICATION：

Max. Pressure (kgf/cm²)	Rated Flow (l/min.)	Max. T-Line Back Pressure (kg/cm²)	Max. Frequence of Operation (cycle/min.)	Filtration (Micron.)	Ambient Temperature Rrange(℃)	Weight (kgs)
315 (31.5MPa) (4570 psi)	100 (26.3gpm)	160 (16 MPa) (2320 psi)	240	25	-5 ~ 60	3C、2D、2N - AC:4.6 DC:5.8 2B - AC:3.8 DC:4.4

★Spool type "5", "6", "60" Max. Pressure : 250 kgf/cm²(25MPa, 3630psi)

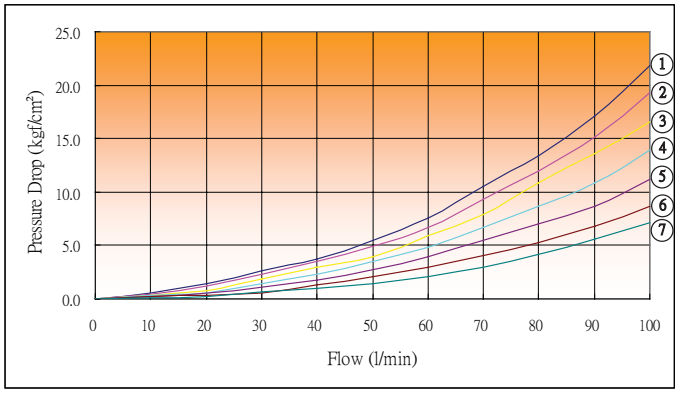
※SOLENOID RATING：

Power	Voltage (V)	Frequence (HZ)	Current At Rated Voltage		
			In-Rush Current(A)	Holding Current(A)	Power (W)
AC	A110	50	3.20	0.80	
		60	2.90	0.65	
			3.10	0.70	
	A120	50	2.50	0.84	
		60	2.97	0.64	
	A220	50	1.72	0.42	
		60	1.47	0.32	
			1.63	0.35	
	A240	50	1.73	0.42	
		60	1.47	0.32	
DC	D12			3.1	38
	D24			1.6	

★Solenoid Isulation Class: Class H

※PERFORMANCE CURVES：

Test fluid viscosity:35 cst(175ssu)
Test temperature: 50℃(122°F)



Spool Type	P→A	B→T	P→B	A→T	P→T
3C2	4	5	4	5	-
3C3	6	6	6	6	6
3C4	4	7	4	7	-
3C40	4	5	4	5	-
3C5	6	5	4	6	2
3C6	5	5	5	5	1
3C60	5	5	5	5	1
3C7	6	5	6	5	-
3C8	4	5	4	7	-
3C9	6	5	4	5	-
3C10	5	6	4	5	-
3C11	6	5	4	5	-
3C12	4	5	4	7	-
2D2	3	3	4	5	-
2D3	3	3	5	5	-
2B2	2	2	4	5	-
2B3	2	2	5	6	-

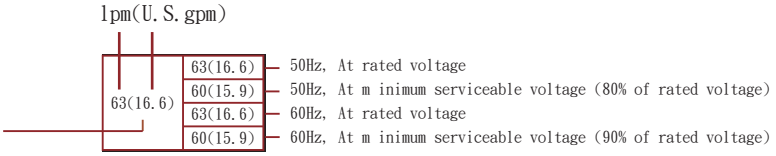
※LIST OF STANDARD MODEL AND MAXIMUM FLOW：【SWG-02-***-AC-(*)】：

No. Of Valve Position	Spool-Spring Arrangement	Model No. & Description	Graphic Symbols	Max. Flow lpm(U.S.GPM) P ↗↘ A → B ↘↗ T			P → A (PORT "B" BLOCKED)			P → B (PORT "B" BLOCKED)		
				5MPa (730psi)	16MPa (2320pis)	31.5MPa (4570psi)	5MPa (730psi)	16MPa (2320pis)	31.5MPa (4570psi)	5MPa (730psi)	16MPa (2320pis)	31.5MPa (4570psi)
Three Positions	Spring Centered	3C2		63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	40(10.6)	63(16.6)	63(16.6)	40(10.6)
							30(7.9)	15(4.0)	10(2.6)	30(7.9)	15(4.0)	10(2.6)
							45(11.9)	20(5.3)	13(3.4)	45(11.9)	20(5.3)	13(3.4)
							25(6.6)	10(2.6)	5(1.3)	25(6.6)	10(2.6)	5(1.3)
		3C3		63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)
		3C4		63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	55(14.5)	63(16.6)	63(16.6)	55(14.5)
						48(12.7)	25(6.6)	20(5.3)	10(2.6)	25(6.6)	20(5.3)	10(2.6)
						63(16.6)	58(15.3)	35(9.2)	13(3.4)	58(15.3)	35(9.2)	13(3.4)
						43(11.4)	20(5.3)	15(4)	5(1.3)	20(5.3)	15(4)	5(1.3)
		3C40		63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	40(10.6)	63(16.6)	63(16.6)	40(10.6)
							30(7.9)	15(4.0)	10(2.6)	30(7.9)	15(4.0)	10(2.6)
							45(11.9)	20(5.3)	13(3.4)	45(11.9)	20(5.3)	13(3.4)
							25(6.6)	10(2.6)	5(1.3)	25(6.6)	10(2.6)	5(1.3)
		3C60		45(11.9)	40(10.6)	-	45(11.9)	40(10.6)	-	45(11.9)	40(10.6)	-
		3C9		63(16.6)	63(16.6)	63(16.6)	28(7.4)	15(4)	10(2.6)	28(7.4)	15(4)	10(2.6)
		3C10		63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)
							38(10.0)	25(6.6)	13(3.4)	38(10.0)	25(6.6)	13(3.4)
							63(16.6)	30(7.9)	15(4.0)	63(16.6)	30(7.9)	15(4.0)
							33(8.7)	20(5.3)	8(2.1)	33(8.7)	20(5.3)	8(2.1)
		3C11		63(16.6)	63(16.6)	63(16.6)	30(7.9)	20(5.3)	10(2.6)	63(16.6)	63(16.6)	63(16.6)
										63(16.6)	50(13.2)	50(13.2)
										63(16.6)	63(16.6)	63(16.6)
										58(15.3)	45(11.9)	45(11.9)
		3C12		63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)
							30(7.9)	23(6.1)	15(4.0)	30(7.9)	23(6.1)	15(4.0)
							63(16.6)	25(6.6)	15(4.0)	63(16.6)	25(6.6)	15(4.0)
							25(6.6)	18(4.8)	10(2.6)	25(6.6)	18(4.8)	10(2.6)
Two Positions	Spring Offset	2B2		63(16.6)	63(16.6)	63(16.6)	20(5.3)	20(5.3)	20(5.3)	63(16.6)	63(16.6)	63(16.6)
											50(13.2)	45(11.9)
											63(16.6)	63(16.6)
											45(11.9)	40(10.6)
		2B3		63(16.6)	63(16.6)	63(16.6)	50(13.2)	50(13.2)	50(13.2)	63(16.6)	63(16.6)	63(16.6)
					60(15.9)	60(15.9)				63(16.6)	63(16.6)	63(16.6)
					63(16.6)	63(16.6)				63(16.6)	63(16.6)	63(16.6)
					60(15.9)	60(15.9)				55(14.5)	55(14.5)	55(14.5)
		2B8		-	-	-	25(6.6)	10(2.6)	10(2.6)	63(16.6)	63(16.6)	50(13.2)
										28(7.4)	20(5.3)	10(2.6)
										63(16.6)	23(6.1)	10(2.6)
										23(6.1)	15(4.0)	5(1.3)
	No Spring Detended	2D2		63(16.6)	63(16.6)	63(16.6)	45(11.9)	45(11.9)	45(11.9)	45(11.9)	45(11.9)	45(11.9)
									25(6.6)			25(6.6)
									30(7.9)			30(7.9)
									20(5.3)			20(5.3)

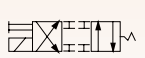
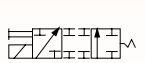
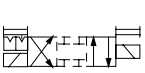
Notes : 1. The relation between the maximum flow in the table above and the frequency /voltage (within the serviceable voltage) is as shown below.

EX:

The maximum flow rate is 63 constant regardless of 50 Hz or 60 Hz and of any voltage variants within the serviceable voltage



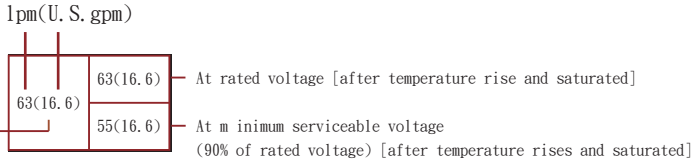
※LIST OF STANDARD MODEL AND MAXIMUM FLOW：【SWG-02-***-DC-(*)】：

No. Of Valve Position	Spool-Spring Arrangement	Model No. & Description	Graphic Symbols	Max. Flow lpm(U.S.GPM) P ↗↘ A → B ↘↗ T			P → A (PORT "B" BLOCKED)			P → B (PORT "B" BLOCKED)		
				5MPa (730psi)	16MPa (2320pis)	31.5MPa (4570psi)	5MPa (730psi)	16MPa (2320pis)	31.5MPa (4570psi)	5MPa (730psi)	16MPa (2320pis)	31.5MPa (4570psi)
Three Positions	Spring Centered	3C2		63(16.6)	63(16.6)	63(16.6)	45(11.9)	20(5.3)	13(3.4)	45(11.9)	20(5.3)	13(3.4)
							33(8.7)	15(4)	10(2.6)	33(8.7)	15(4)	10(2.6)
		3C3		63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)	63(16.6)
		3C4		63(16.6)	63(16.6)	35(9.2)	63(16.6)	35(9.2)	28(7.4)	63(16.6)	35(9.2)	28(7.4)
						23(6.1)	50(13.2)	23(6.1)	13(3.4)	50(13.2)	23(6.1)	13(3.4)
		3C40		63(16.6)	63(16.6)	63(16.6)	45(11.9)	20(5.3)	13(3.4)	45(11.9)	20(5.3)	13(3.4)
							33(8.7)	15(4)	10(2.6)	33(8.7)	15(4)	10(2.6)
		3C60		45(11.9)	40(10.6)	-	45(11.9)	40(10.6)	-	45(11.9)	40(10.6)	-
		3C9		63(16.6)	63(16.6)	63(16.6)	25(6.6)	15(4)	10(2.6)	25(6.6)	15(4)	10(2.6)
		3C10		63(16.6)	63(16.6)	45(11.9)	63(16.6)	40(10.6)	20(5.3)	63(16.6)	40(10.6)	20(5.3)
						23(6.1)		28(7.4)	13(3.4)		28(7.4)	13(3.4)
		3C11		63(16.6)	63(16.6)	63(16.6)	30(7.9)	20(5.3)	10(2.6)	63(16.6)	55(14.5)	55(14.5)
											50(13.2)	50(13.2)
		3C12		63(16.6)	63(16.6)	38(10.0)	63(16.6)	40(10.6)	20(5.3)	63(16.6)	40(10.6)	20(5.3)
						23(6.1)		28(7.4)	15(4.0)		28(7.4)	15(4.0)
Two Positions	Spring Offset	2B2		63(16.6)	63(16.6)	63(16.6)	20(5.3)	18(4.8)	18(4.8)	63(16.6)	40(10.6)	30(7.9)
				53(14.0)	53(14.0)	53(14.0)					28(7.4)	25(6.6)
		2B3		38(10.0)	38(10.0)	38(10.0)	48(12.7)	45(11.9)	40(10.6)	63(16.6)	63(16.6)	63(16.6)
				28(7.4)	28(7.4)	28(7.4)	45(11.9)	40(10.6)	38(10.00		60(15.9)	60(15.9)
		2B8		-	-	-	25(6.6)	10(2.6)	8(2.1)	63(16.6)	25(6.6)	15(10.0)
											20(5.3)	10(2.6)
	No Spring Detended	2D2		63(16.6)	63(16.6)	63(16.6)	45(11.9)	45(11.9)	30(7.9)	45(11.9)	45(11.9)	30(7.9)
				58(15.3)	55(14.5)	55(14.5)			25(6.6)			25(6.6)

Notes : 1. The relation between the maximum flow in the table above and the frequency /voltage (within the serviceable voltage) is as shown below.

EX:

The m aximum flow rate is constant regardless of any voltage variants within the serviceable voltage



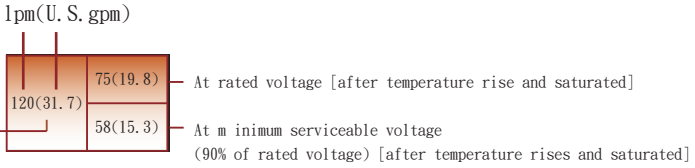
※LIST OF STANDARD MODEL AND MAXIMUM FLOW：【SWG-03-***-AC-(*)】：

No. Of Valve Position	Spool-Spring Arrangement	Model No. & Description	Graphic Symbols	Max. Flow lpm(U.S.GPM) P ↗↘ A → B ↘↗ T			P → A (PORT "B" BLOCKED)			P → B (PORT "B" BLOCKED)		
				10MPa (1450psi)	25MPa (3630pis)	31.5MPa (4570psi)	10MPa (1450psi)	25MPa (3630pis)	31.5MPa (4570psi)	10MPa (1450psi)	25MPa (3630pis)	31.5MPa (4570psi)
Three Positions	Spring Centered	3C2		100(26.4)	100(26.4)	100(26.4)	100(26.4)	96(25.4)	85(17.2)	100(26.4)	96(25.4)	85(17.2)
							70(18.5)	28(7.4)	24(6.3)	70(18.5)	28(7.4)	24(6.3)
							90(23.8)	34(9.0)	26(6.9)	90(23.8)	34(9.0)	26(6.9)
							49(12.9)	19(5.0)	15(4.0)	49(12.9)	19(5.0)	15(4.0)
		3C3		90(23.8)	90(23.8)	90(23.8)	100(26.4)	100(26.4)	100(26.4)	100(26.4)	100(26.4)	100(26.4)
							81(21.4)	81(21.4)	81(21.4)	81(21.4)	81(21.4)	81(21.4)
							100(26.4)	100(26.4)	100(26.4)	100(26.4)	100(26.4)	100(26.4)
							81(21.4)	81(21.4)	81(21.4)	81(21.4)	81(21.4)	81(21.4)
		3C4		80(21.1)	80(21.1)	80(21.1)	100(26.4)	76(20.1)	46(12.2)	100(26.4)	76(20.1)	46(12.2)
							65(17.6)	25(6.6)	58(15.3)	22(5.8)	19(5.0)	58(15.3)
							75(19.8)	30(7.9)	90(23.8)	28(7.4)	22(5.8)	90(23.8)
							20(5.3)	15(4.0)	47(12.4)	18(4.8)	15(4)	47(12.4)
		3C40		100(26.4)	100(26.4)	100(26.4)	100(26.4)	84(22.2)	48(12.7)	100(26.4)	84(22.2)	48(12.7)
						75(19.8)	62(16.4)	21(5.5)	18(4.8)	62(16.4)	21(5.5)	18(4.8)
						100(26.4)	62(16.4)	27(7.1)	20(5.3)	62(16.4)	27(7.1)	20(5.3)
						25(6.6)	40(10.6)	16(4.2)	12(3.2)	40(10.6)	16(4.2)	12(3.2)
		3C5		30(7.9)	30(7.9)	30(7.9)	26(6.9)	18(4.8)	16(4.2)	26(6.9)	18(4.8)	16(4.2)
		3C60		70(18.5)	70(18.5)	-	100(26.4)	100(26.4)	100(26.4)	100(26.4)	100(26.4)	100(26.4)
		3C9		100(26.4)	100(26.4)	100(26.4)	60(15.9)	60(15.9)	60(15.9)	60(15.9)	60(15.9)	60(15.9)
		3C10		80(23.8)	80(23.8)	80(23.8)	100(26.4)	60(15.9)	34(9.0)	100(26.4)	60(15.9)	34(9.0)
						30(7.9)	55(14.5)	23(5.5)	16(4.2)	55(14.5)	23(5.5)	16(4.2)
						30(7.9)	60(15.9)	23(6.1)	17(4.5)	60(15.9)	23(6.1)	17(4.5)
						25(6.6)	15(4)	38(10.1)	14(3.7)	11(2.9)	38(10.1)	14(3.7)
		3C11		100(26.4)	100(26.4)	100(26.4)	100(26.4)	85(22.5)	62(16.4)	100(26.4)	85(22.5)	62(16.4)
							80(21.1)	35(9.2)	28(7.4)	80(21.1)	35(9.2)	28(7.4)
							80(21.1)	51(13.5)	45(11.9)	80(21.1)	51(13.5)	45(11.9)
							60(15.9)	32(8.5)	25(6.6)	60(15.9)	32(8.5)	25(6.6)
		3C12		90(23.8)	90(23.8)	90(23.8)	100(26.4)	60(15.9)	34(9.0)	100(26.4)	60(15.9)	34(9.0)
						30(7.9)	55(14.5)	21(5.5)	16(4.2)	55(14.5)	21(5.5)	16(4.2)
						40(10.6)	60(15.9)	23(6.1)	17(4.5)	60(15.9)	23(6.1)	17(4.5)
						20(5.3)	15(4.0)	38(10.0)	14(3.8)	11(2.9)	38(10.0)	14(3.8)
Two Positions	Spring Offset	2B2		100(26.4)	100(26.4)	100(26.4)	34(9.0)	20(5.3)	19(5.0)	100(26.4)	100(26.4)	94(24.8)
										62(16.4)	44(11.6)	37(9.8)
				100(26.4)	100(26.4)	100(26.4)				80(21.1)	63(16.6)	51(13.5)
				90(23.8)	90(23.8)	90(23.8)				42(11.1)	34(9.0)	33(8.7)
		2B3		100(26.4)	100(26.4)	100(26.4)	57(15.1)	57(15.1)	57(15.1)	100(26.4)	100(26.4)	100(26.4)
										79(20.9)	64(16.9)	59(15.6)
				100(26.4)	100(26.4)	100(26.4)				92(24.3)	78(20.6)	70(18.5)
				75(19.8)	75(19.8)	75(19.8)				55(14.5)	28(7.4)	27(7.1)
		2B8		-	-	-	26(6.9)	18(4.8)	16(4.2)	100(26.4)	61(16.1)	49(12.9)
										35(9.2)	9(2.4)	7(1.8)
										45(11.9)	15(4.0)	11(2.9)
										21(5.5)	9(2.4)	6(1.6)
	No Spring Detended	2D2		120(31.7)	120(31.7)	120(31.7)	45(11.9)	30(7.9)	28(7.4)	60(15.9)	40(10.6)	35(9.2)

Notes : 1. The relation between the maximum flow in the table above and the frequency /voltage (within the serviceable voltage) is as shown below.

EX:

The m aximum flow rate is constant regardless of any voltage variants within the serviceable voltage



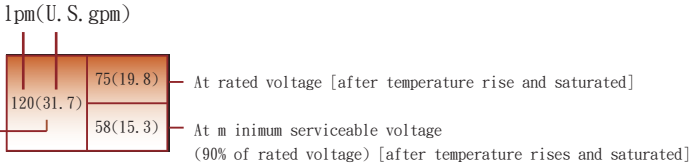
※LIST OF STANDARD MODEL AND MAXIMUM FLOW：【SWG-03-***-DC-(*)】：

No. Of Valve Position	Spool-Spring Arrangement	Model No. & Description	Graphic Symbols	Max. Flow lpm(U.S.GPM) P ↗↘ A → B ↘↗ T			P → A (PORT "B" BLOCKED)			P → B (PORT "B" BLOCKED)		
				10MPa (1450psi)	25MPa (3630pis)	31.5MPa (4570psi)	10MPa (1450psi)	25MPa (3630pis)	31.5MPa (4570psi)	10MPa (1450psi)	25MPa (3630pis)	31.5MPa (4570psi)
Three Positions	Spring Centered	3C2		120(31.7)	120(31.7)	120(31.7)	120(31.7)	80(21.1) 54(14.3)	55(14.5) 43(11.4)	120(31.7)	80(21.1) 54(14.3)	55(14.5) 43(11.4)
		3C3		120(31.7)	120(31.7)	120(31.7)	120(31.7)	120(31.7)	120(31.7)	120(31.7)	120(31.7)	120(31.7)
		3C4		120(31.7)	120(31.7)	120(31.7)	120(31.7)	84(22.2) 65(17.2)	64(16.9) 53(14.0)	120(31.7)	84(22.2) 65(17.2)	64(16.9) 53(14.0)
		3C40		120(31.7)	120(31.7)	120(31.7)	120(31.7)	62(16.4) 57(15.2)	49(12.9) 42(11.1)	120(31.7)	62(16.4) 57(15.2)	49(12.9) 42(11.1)
		3C5		50(13.2)	50(13.2)	50(13.2)	35(9.2)	21(5.5)	20(5.3)	45(11.9)	45(11.9)	45(11.9)
		3C60		120(31.7)	120(31.7)	-	120(31.7)	120(31.7)	-	120(31.7)	120(31.7)	-
		3C9		120(31.7)	120(31.7)	120(31.7)	100(26.4)	100(26.4)	100(26.4)	100(26.4)	100(26.4)	100(26.4)
		3C10		120(31.7)	120(31.7) 65(17.2)	65(17.2) 50(13.2)	120(31.7)	60(15.9) 46(12.2)	51(13.5) 40(10.6)	120(31.7)	60(15.9) 46(12.2)	51(13.5) 40(10.6)
		3C11		120(31.7)	120(31.7)	120(31.7)	100(26.4)	80(21.1) 62(16.4)	65(17.2) 52(13.7)	100(26.4)	80(21.1) 62(16.4)	65(17.2) 52(13.7)
		3C12		120(31.7)	120(31.7) 65(17.2)	65(17.2) 50(13.2)	120(31.7)	62(16.4) 47(12.4)	51(13.5) 40(10.6)	120(31.7)	62(16.4) 47(12.4)	51(13.5) 40(10.6)
Two Positions	Spring Offset	2B2		110(2.91) 100(26.4)	110(2.91) 100(26.4)	110(2.91) 100(26.4)	68(18.0)	38(10.0)	38(10.0)	120(31.7)	75(19.8) 58(15.3)	63(16.6) 48(12.7)
		2B3		120(31.7)	120(31.7)	120(31.7)	77(20.3)	77(20.3)	77(20.3)	120(31.7)	120(31.7)	120(31.7) 103(27.2)
		2B8		-	-	-	53(14.0)	24(6.3)	23(6.1)	120(31.7)	62(16.4) 40(10.6)	47(12.4) 37(9.8)
	No Spring Detended	2D2		120(31.7)	120(31.7)	120(31.7)	45(11.9)	30(7.9)	28(7.4)	60(15.9)	40(10.6)	35(9.2)

Notes : 1. The relation between the maximum flow in the table above and the frequency /voltage (within the serviceable voltage) is as shown below.

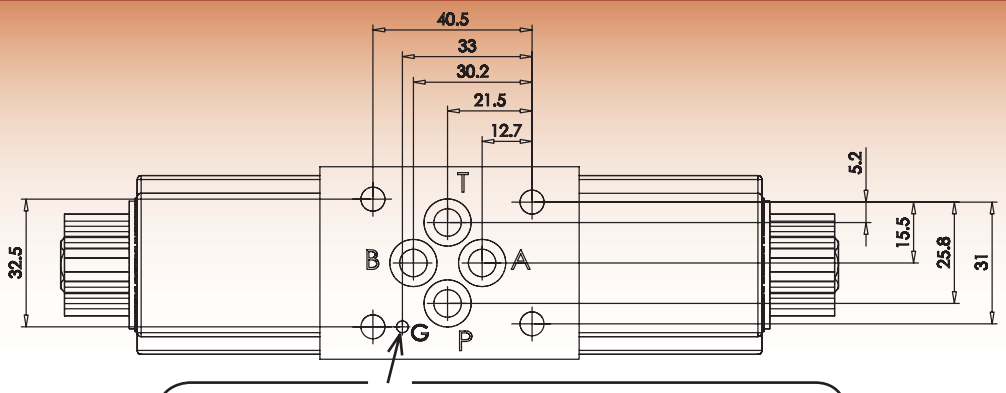
EX:

The m aximum flow rate is constant regardless of any voltage variants within the serviceable voltage



【DIMENSIONS】

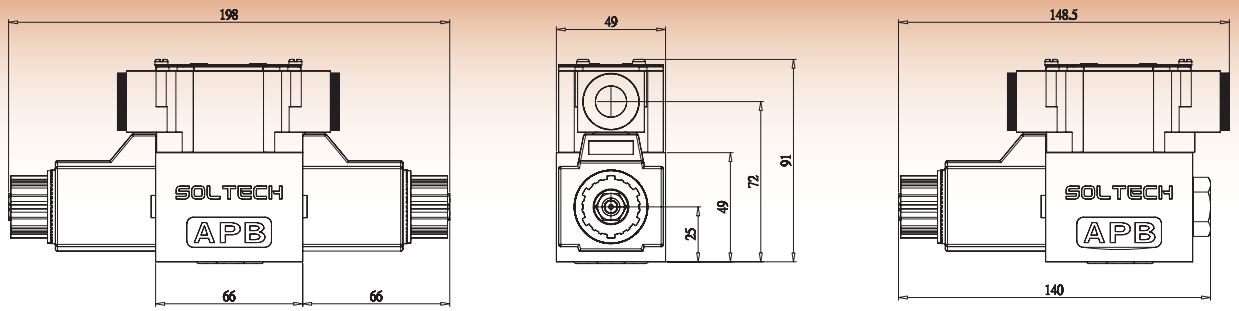
ISO4401-03-02-0-94、NFPA-D03、CETOP 3、DIN 24340 NG6



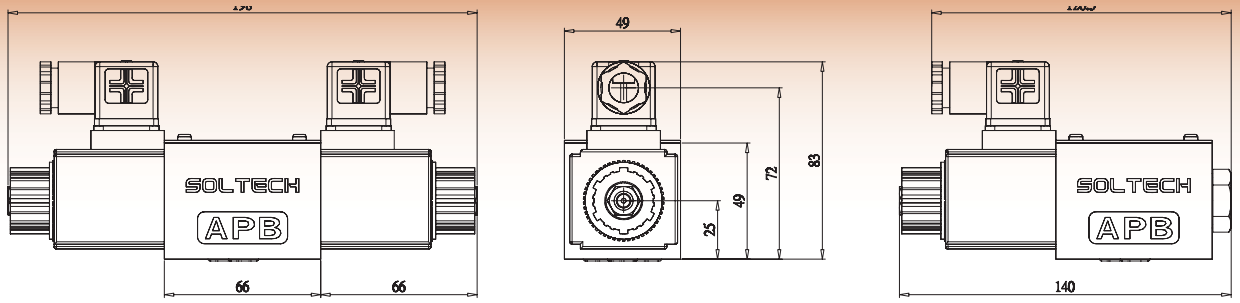
Locating pin can be fitted to this hole to conform with ISO 4401-03-02-0-94. However, locating pin is not provided to standard design valve. When ordering valve with a locating pin, please consult SOLTECH.

UNIT: M.M.

SWG-(H)-02-※※※-AC SERIES



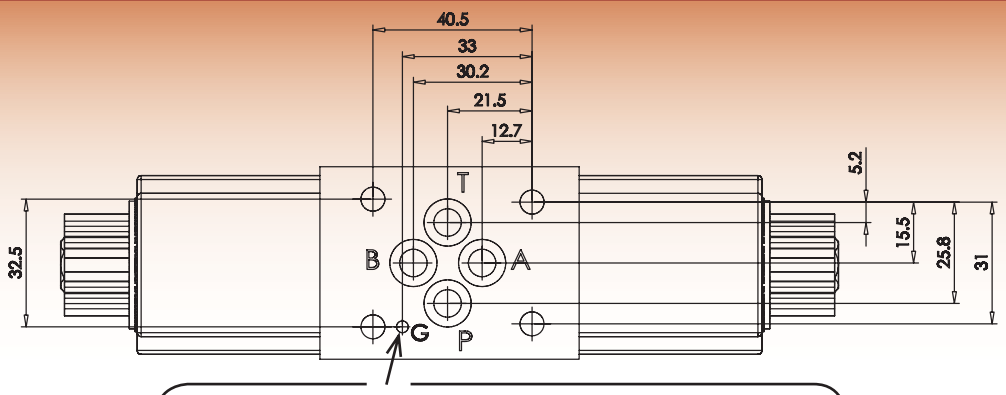
SWG-(H)-02-※※※-AC-N SERIES



SWG-(H)-02-※※※-AC-L SERIES

【DIMENSIONS】

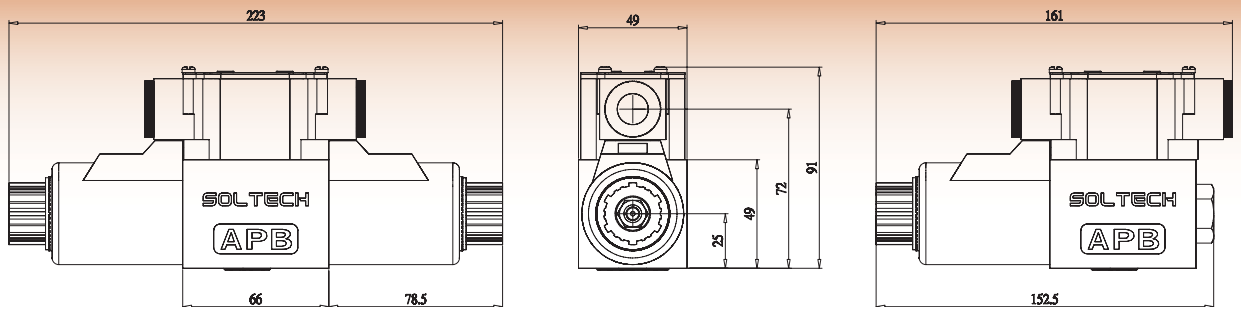
ISO4401-03-02-0-94、NFPA-D03、CETOP 3、DIN 24340 NG6



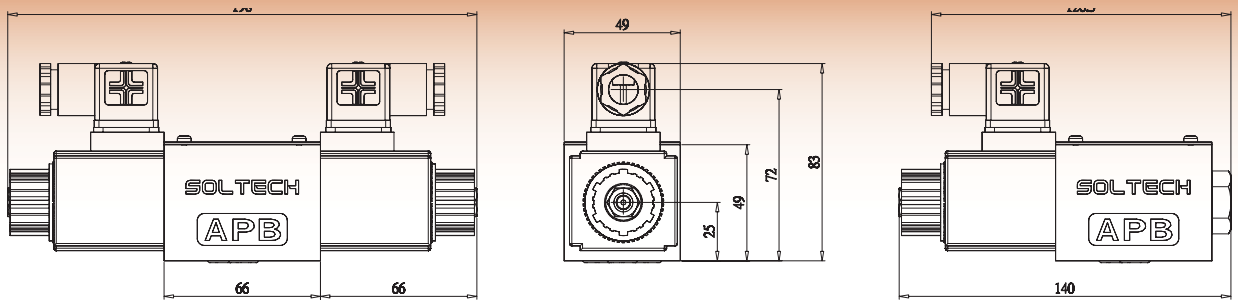
Locating pin can be fitted to this hole to conform with ISO 4401-03-02-0-94. However, locating pin is not provided to standard design valve. When ordering valve with a locating pin, please consult SOLTECH.

UNIT: M.M.

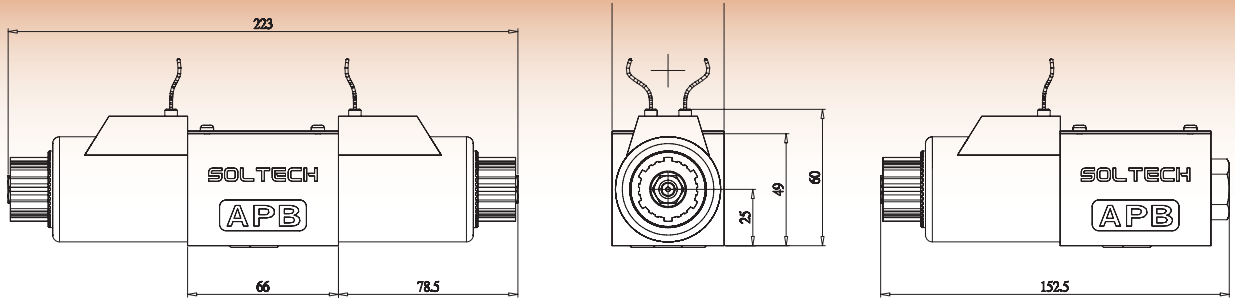
SWG-(H)-02-※※※-DC SERIES



SWG-(H)-02-※※※-DC-N SERIES



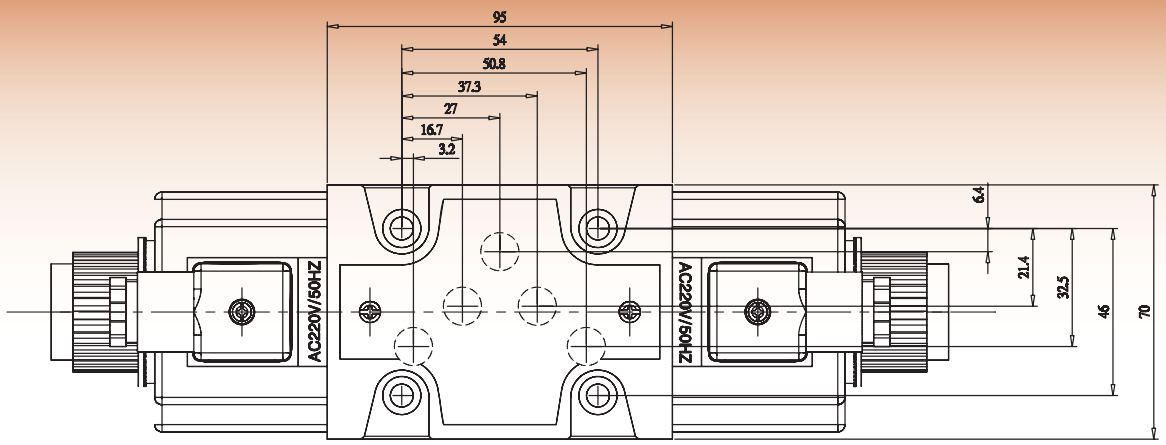
SWG-(H)-02-※※※-DC-L SERIES



A

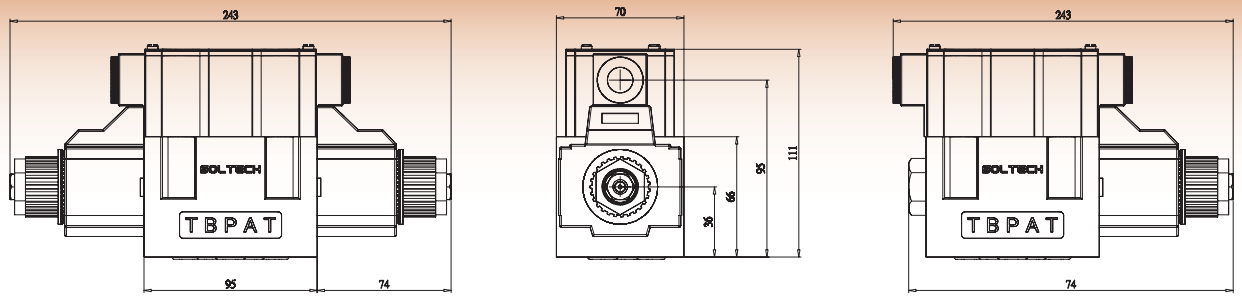
【DIMENSIONS】

ISO4401-AC-05-4-A、NFPA-D05、CETOP 5、DIN 24340 NG10

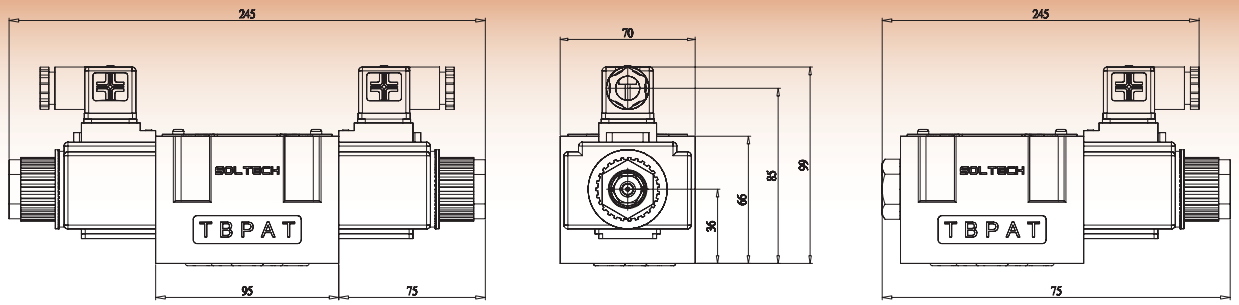


UNIT: M.M.

SWG-(H)-03-※※※-AC SERIES



SWG-(H)-03-※※※-AC-N SERIES

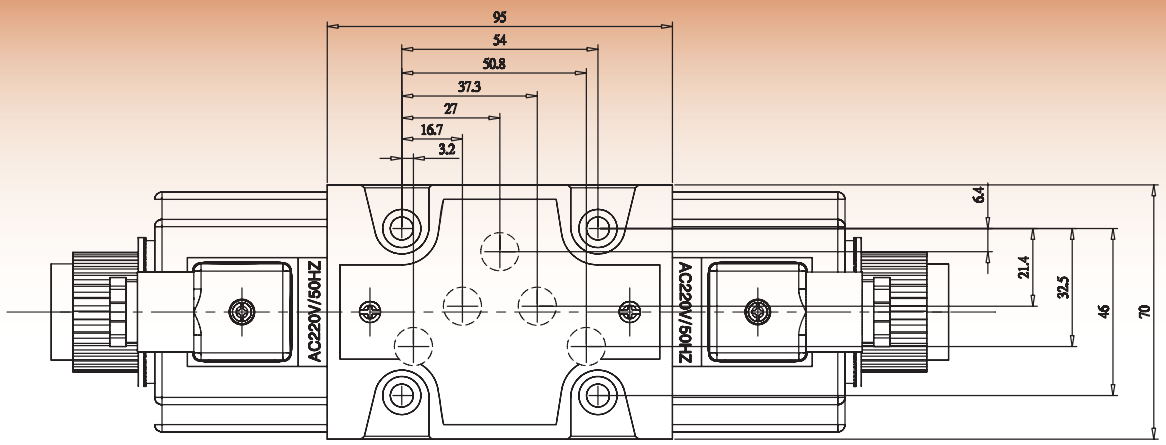


SWG-(H)-03-※※※-AC-L SERIES

A

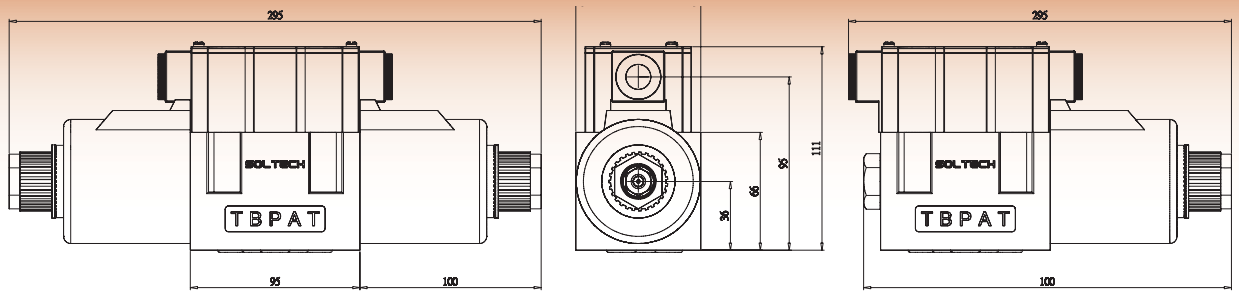
【DIMENSIONS】

ISO4401-AC-05-4-A、NFPA-D05、CETOP 5、DIN 24340 NG10

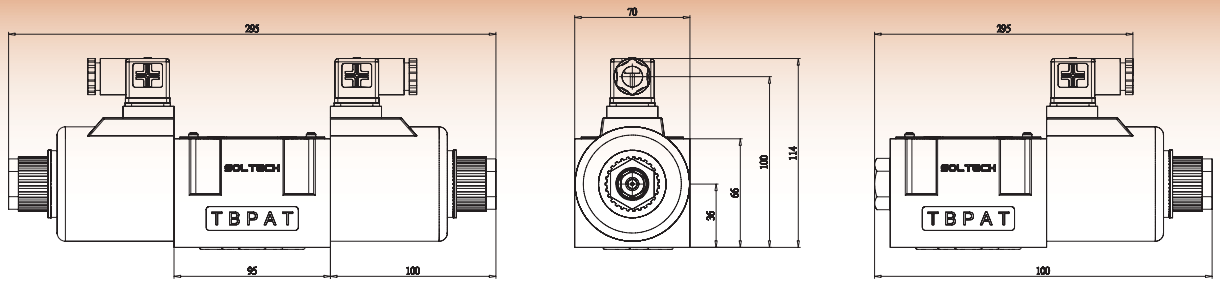


UNIT: M.M.

SWG-(H)-03-※※※-DC SERIES

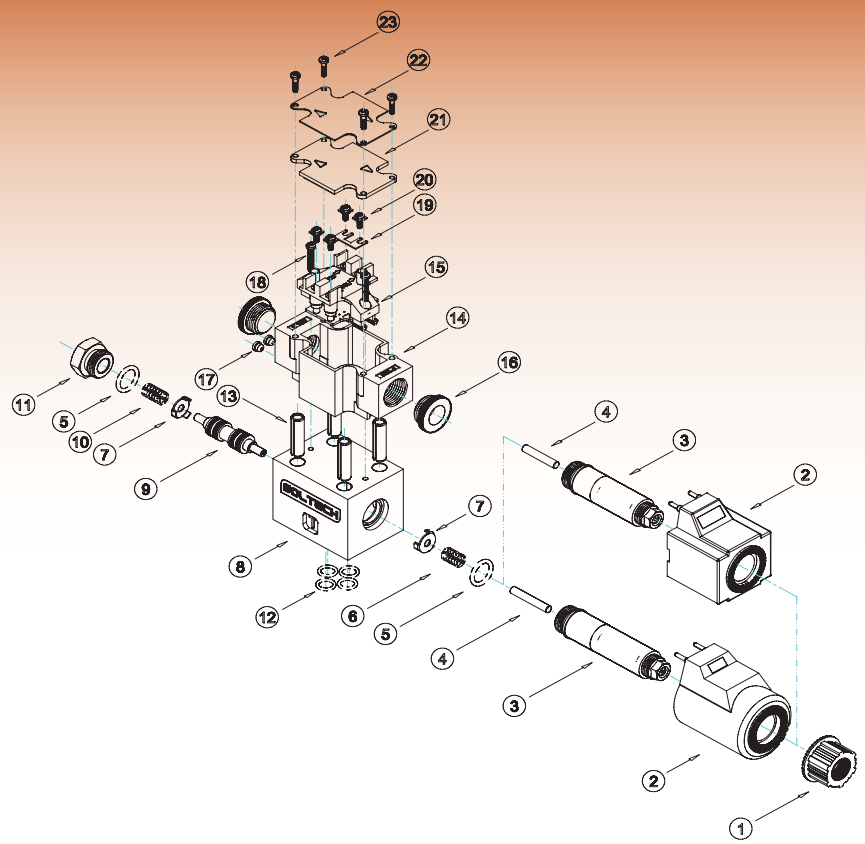


SWG-(H)-03-※※※-DC-N SERIES

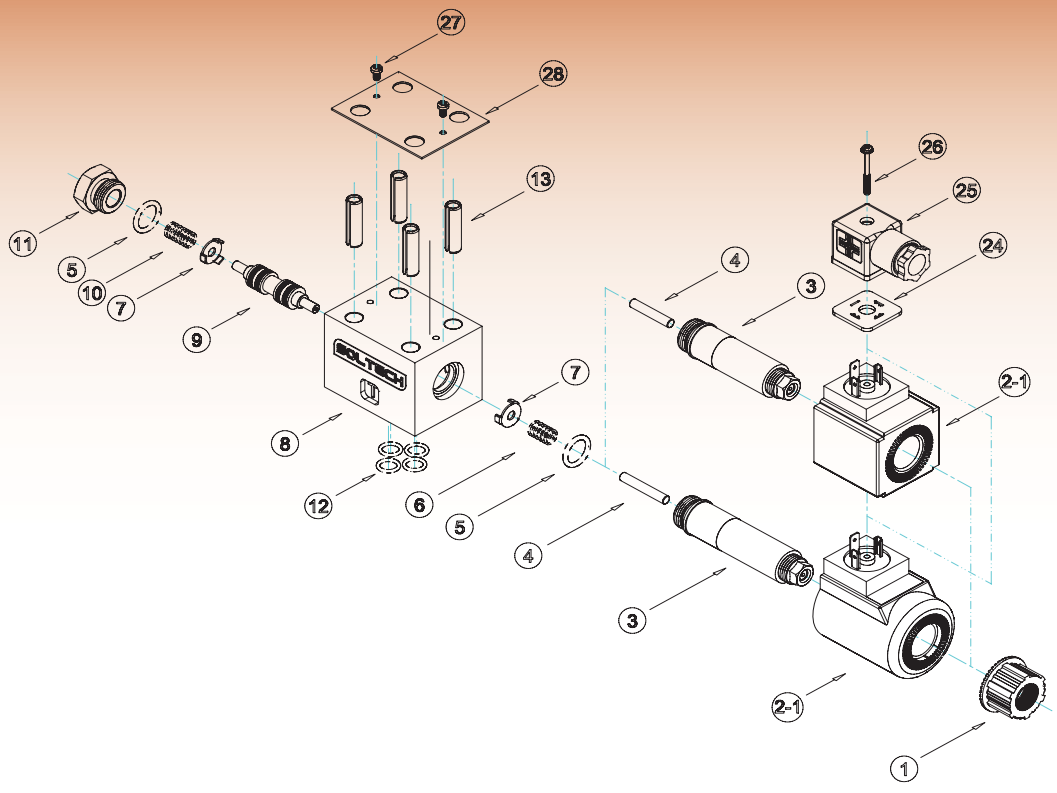


SWG-(H)-03-※※※-DC-L SERIES

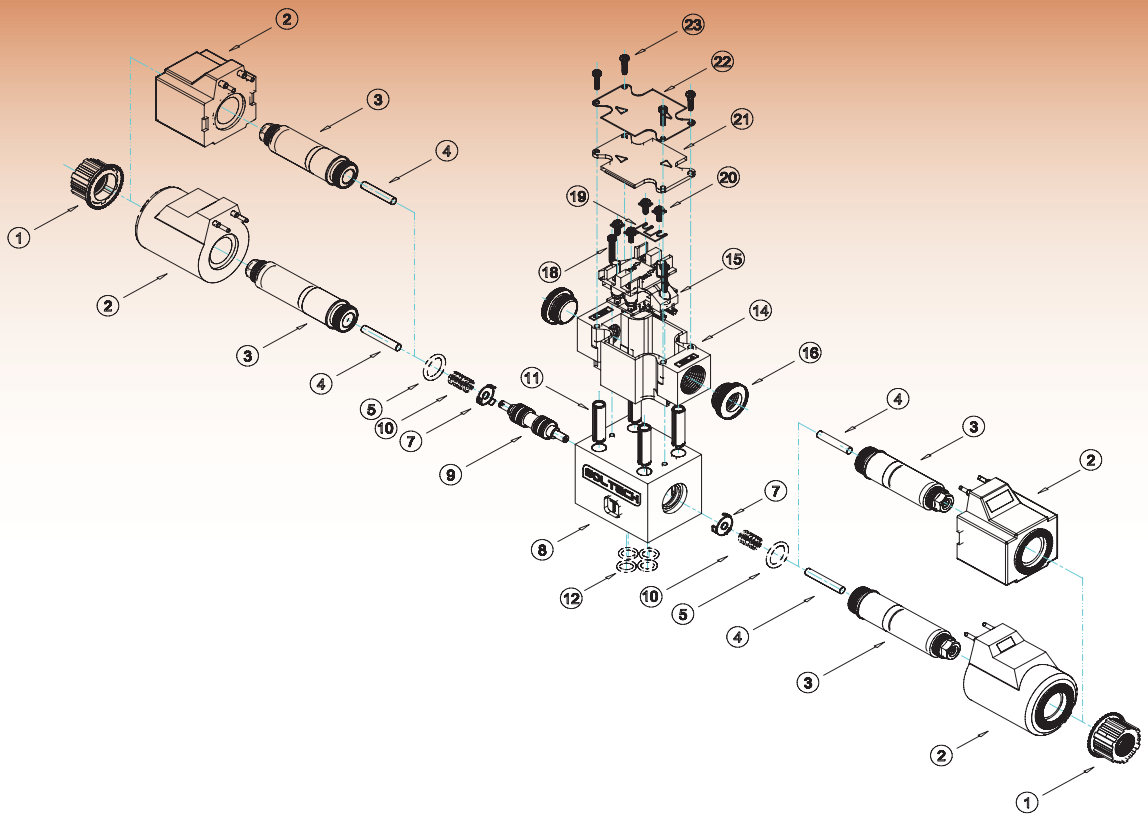
SWG-(H)-02-2B2-AC(DC) ASSEMBLY (PARTS LIST SEE PAGE 22)



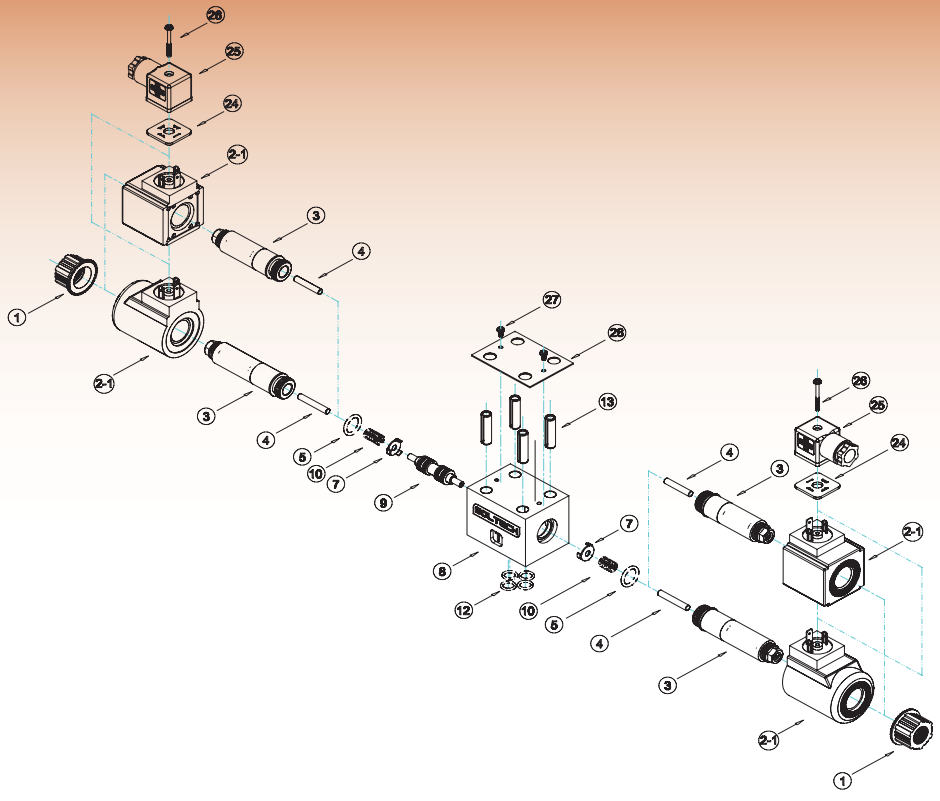
SWG-(H)-02-2B2-AC(DC)-N ASSEMBLY (PARTS LIST SEE PAGE 22)



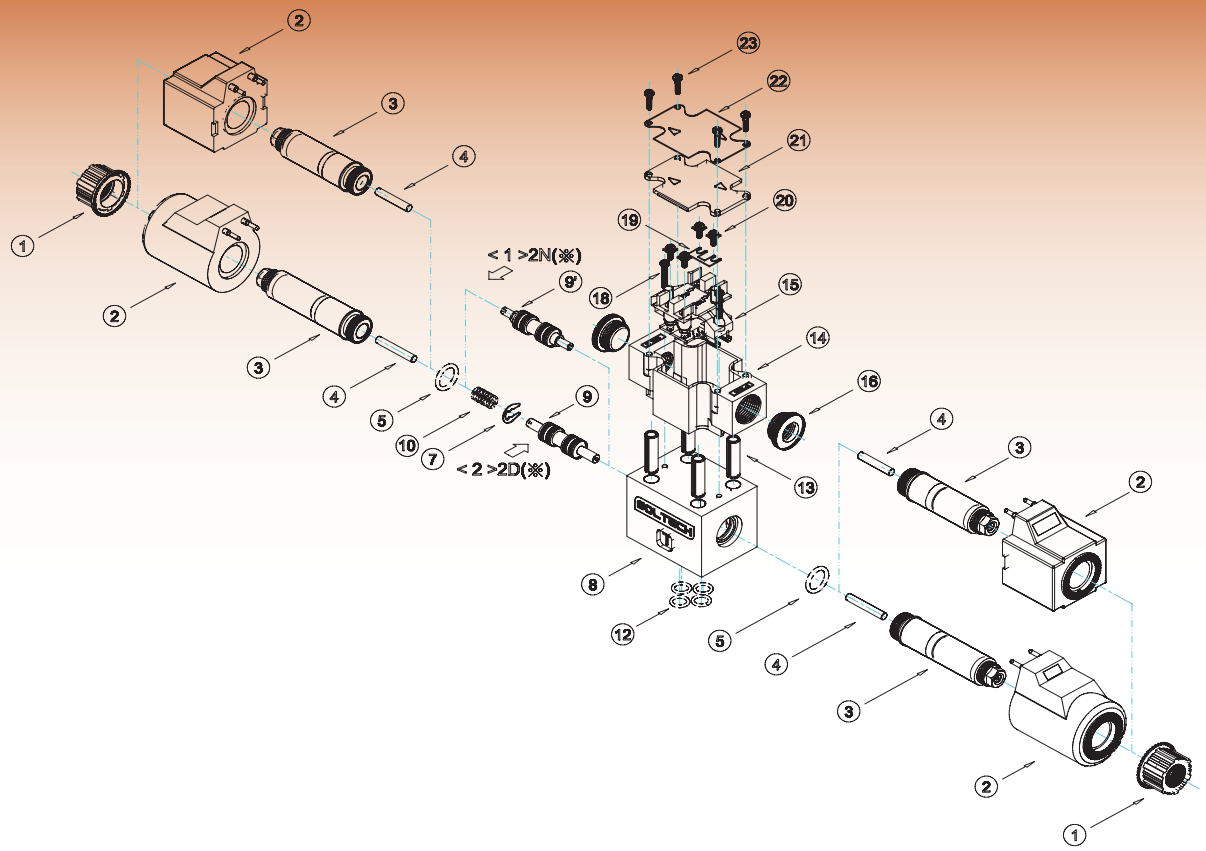
SWG-(H)-02-3C2-AC(DC) ASSEMBLY (PARTS LIST SEE PAGE 22)



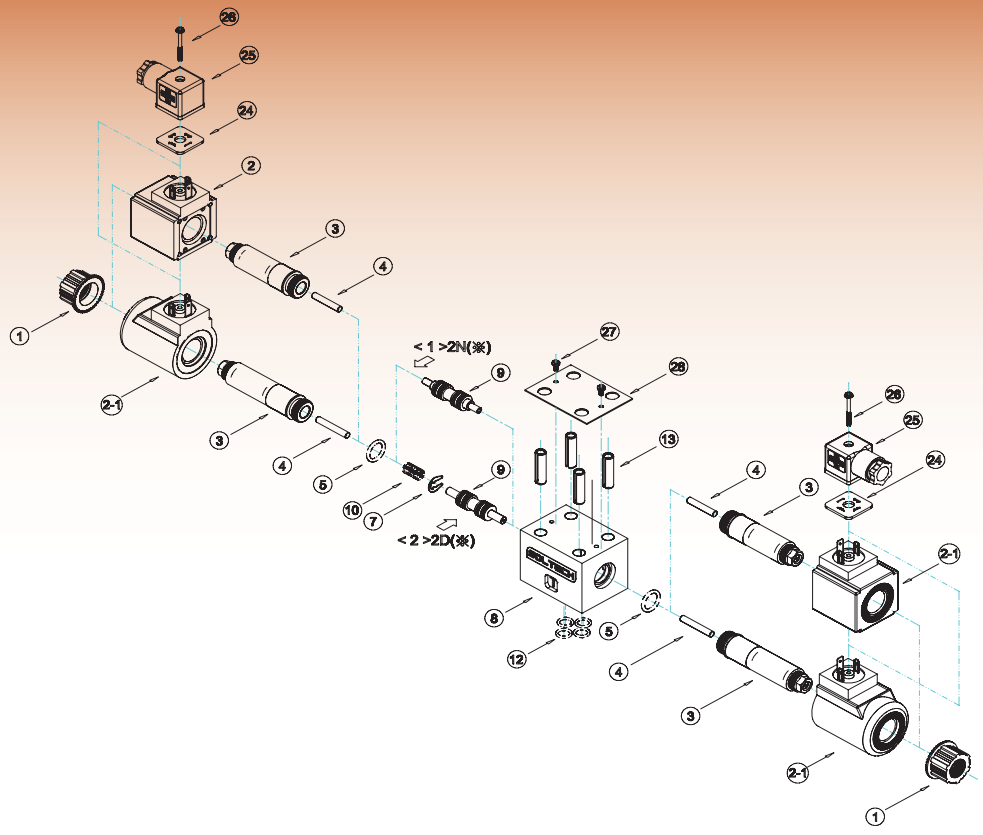
SWG-(H)-02-3C2-AC(DC)-N ASSEMBLY (PARTS LIST SEE PAGE 22)



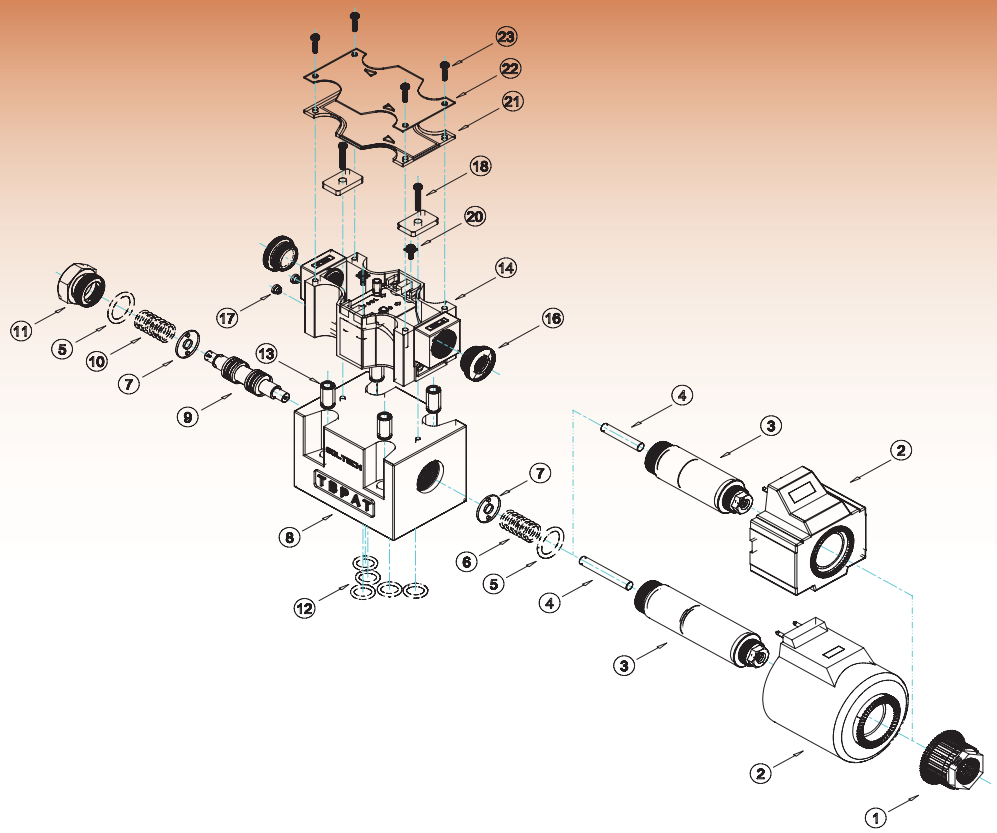
SWG-(H)-02-2D2(2N2)-AC(DC) ASSEMBLY (PARTS LIST SEE PAGE 22)



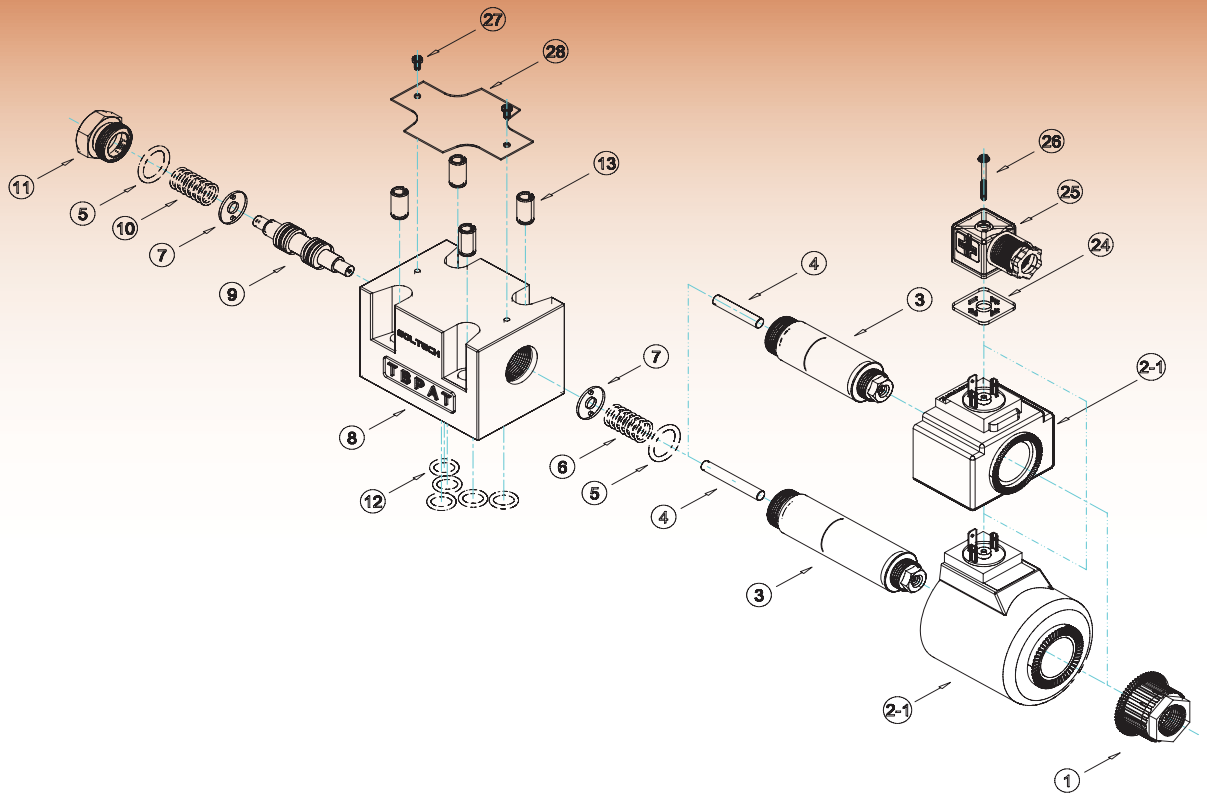
SWG-(H)-02-2D2(2N2)-AC(DC)-N ASSEMBLY (PARTS LIST SEE PAGE 22)



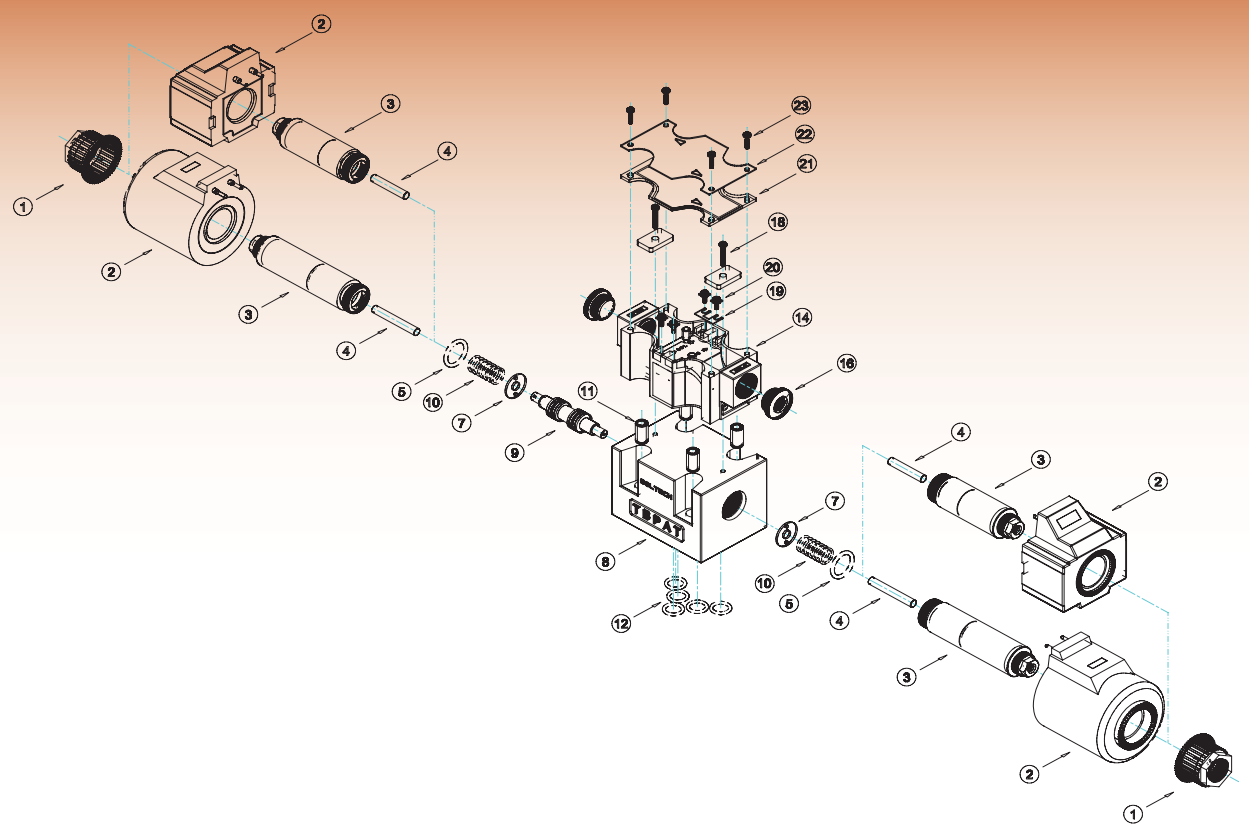
SWG-03-2B2-AC(DC) ASSEMBLY (PARTS LIST SEE PAGE 22)



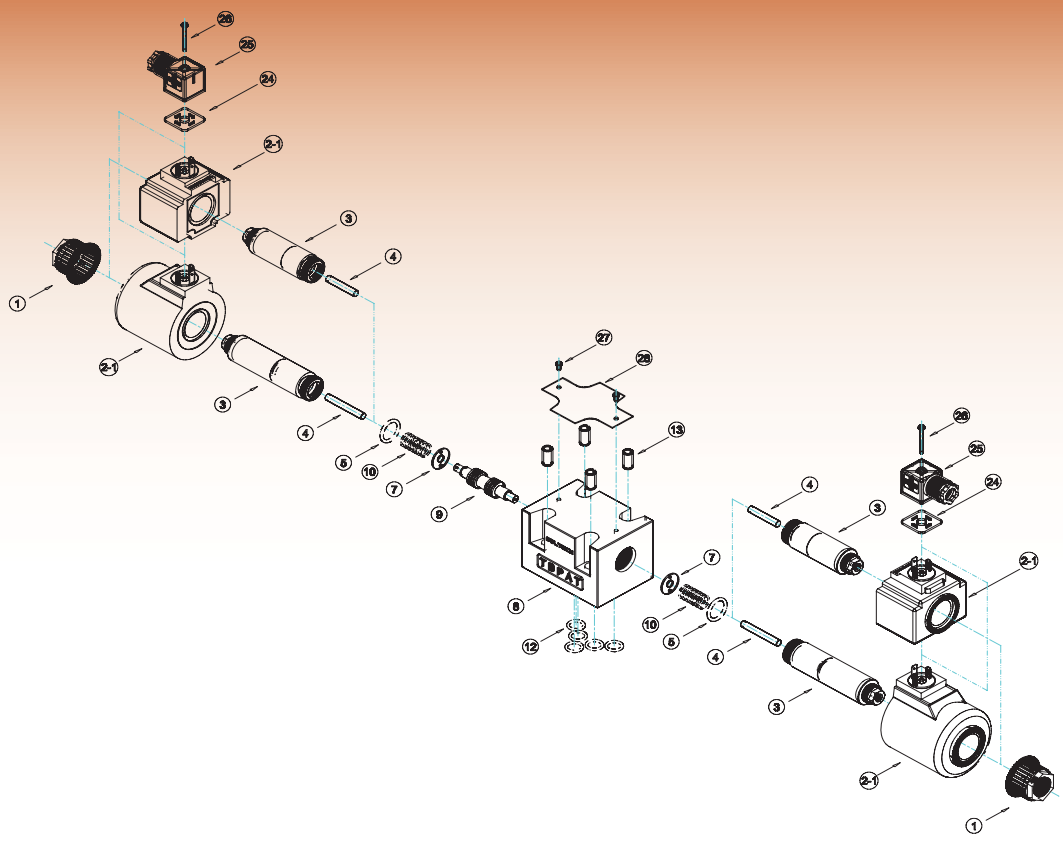
SWG-03-2B2-AC(DC)-N ASSEMBLY (PARTS LIST SEE PAGE 22)



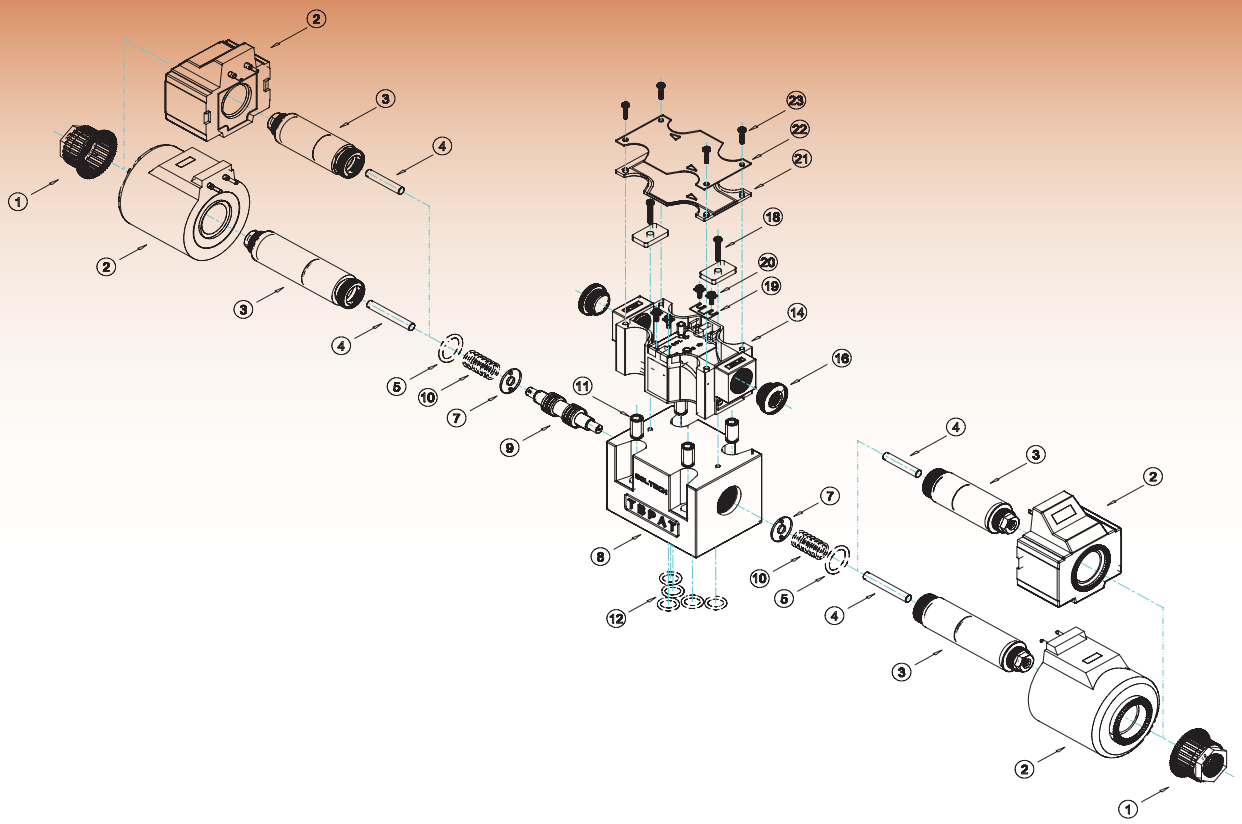
SWG-03-3C2-AC(DC) ASSEMBLY (PARTS LIST SEE PAGE 22)



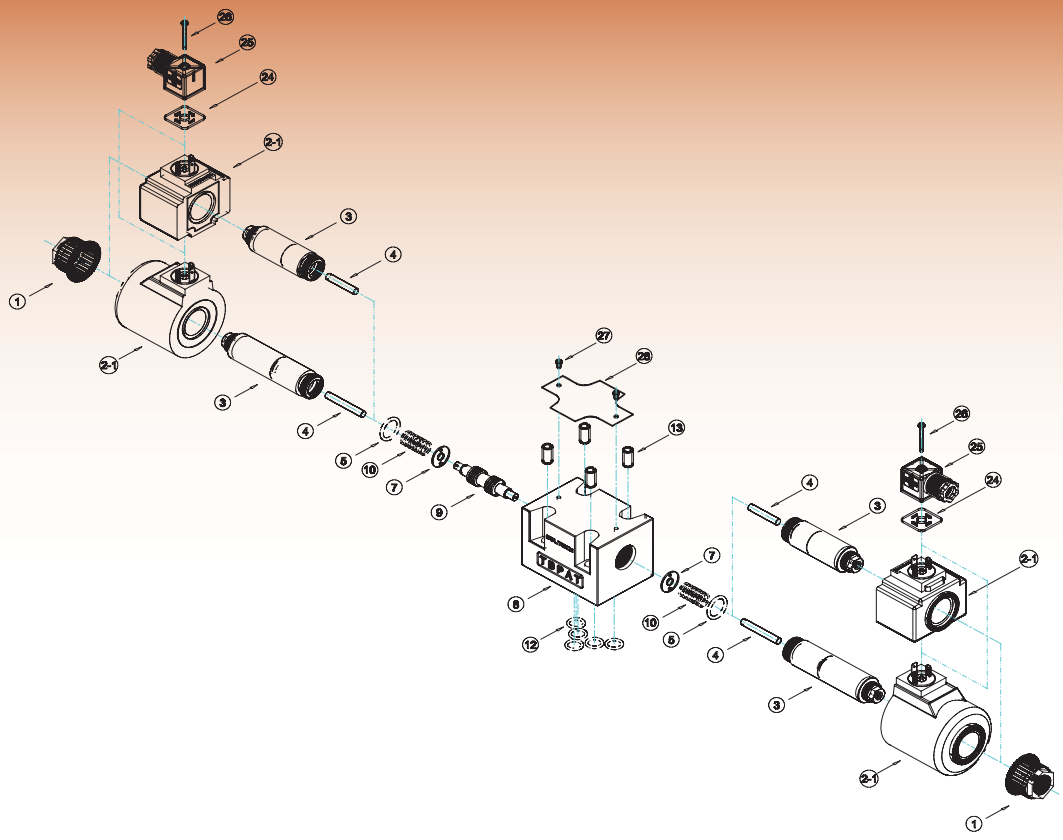
SWG-03-3C2-AC(DC)-N ASSEMBLY (PARTS LIST SEE PAGE 22)



SWG-03-2D2(2N2)-AC(DC) ASSEMBLY (PARTS LIST SEE PAGE 22)



SWG-03-2D2(2N2)-AC(DC)-N ASSEMBLY (PARTS LIST SEE PAGE 22)



【PARTS LIST OF "SWG" SERIES】

NO.	PART NAME	SWG-02-AC	QTY.	SWG-02-DC	QTY.	SWG-03-AC	QTY.	SWG-03-DC	QTY.
1	Lock Nut	05080102	1~2	05080102	1~2	05080101	1~2	05080101	1~2
3	Tube	05072901	1~2	05072903	1~2	05072904	1~2	05072905	1~2
4	Push Pin	06011701	1~2	05071409	1~2	05071408	1~2	05071407	1~2
5	O Ring-AS113	05072601	1~2	05072601	1~2	05072605	1~2	05072605	1~2
6	Spring for Single Sol.	05081004	0~1	05081004	0~1	05081003	0~1	05081003	0~1
7	Retainer	05071501	2	05071501	2	05071502	2	05071502	2
8	Body	05010701	1	05010701	1	05010801	1	05010801	1
9	Spool	See page 3,4	1	See page 3,4	1	See page 3,4	1	See page 3,4	1
10	Spring for Double Sol.	05080103	1~2	05080103	1~2	05081002	1~2	05081002	1~2
11	Back Cover	05072001	0~1	05072001	0~1	05071903	0~1	05071903	0~1
12	O Ring	05072603	4	05072603	4	05072604	4	05072604	4
13	Pin	05071503	4	05071503	4	05071504	4	05071504	4

TERMINAL BOX TYPE

NO.	PART NAME	SWG-02-AC	QTY.	SWG-02-DC	QTY.	SWG-03-AC	QTY.	SWG-03-DC	QTY.
2	Coil	05080403	1~2	05081108	1~2	05081107	1~2	05080404	1~2
14	Terminal Box	05100608	1	05100608	1	05100705	1	05100705	1
15	Terminal Base	06012003	1	06012003	1	----	1	----	1
16	Gland Nut	05081001	2	05081001	2	05081001	2	05081001	2
17	Plastic Cover for	05072909	0~2	05072909	0~2	05072909	0~2	05072909	0~2
18	Fixing Screw-M3.5x19	06011801	2	06011801	2	06011801	2	06011801	2
19	Cooper	04050801	0~1	04050801	0~1	04050801	0~1	04050801	0~1
20	Fixing Screw-M3x8	06012502	2	06012502	2	06012502	2	06012502	2
21	Plastic Cover	05100701	1	05100701	1	05100708	1	05100708	1
22	NamePlate	06021605	1	06021605	1	06021607	1	06021607	1
23	Fixing Screw	06012004	2	06012004	2	06012004	2	06012004	2

DIN CONNECTOR TYPE "DIN 46350"

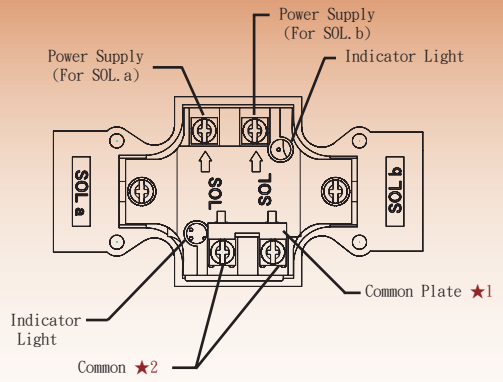
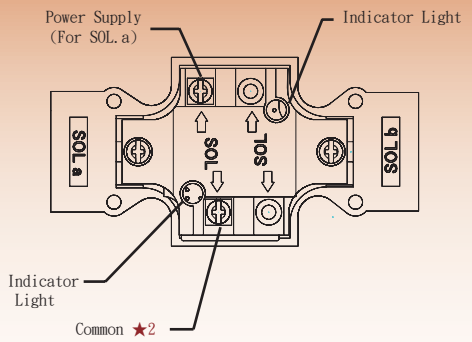
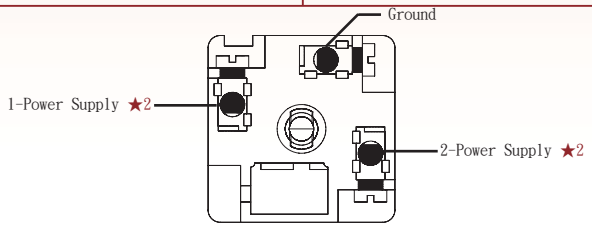
NO.	PART NAME	SWG-02-AC	QTY.	SWG-02-DC	QTY.	SWG-03-AC	QTY.	SWG-03-DC	QTY.
2-1	Coil	05081107	1~2	05080404	1~2	05040801	1~2	05080505	1~2
24	Gasket	06021603	1~2	06021603	1~2	06021603	1~2	06021603	1~2
25	Housing	06021601	1~2	06021602	1~2	06021601	1~2	06021602	1~2
26	Fixing Screw	06021604	1~2	06021604	1~2	06021604	1~2	06021604	1~2
27	Fixing Screw-M3.5x6	05100501	2	05100501	2	05100501	2	05100501	2
28	Nameplate	06021606	1	06021606	1	06021608	1	06021608	1

LEAD WIRE TYPE: "SWP CONNECTOR OR DT-04-2P CONNECTOR"

NO.	PART NAME	SWG-02-AC	QTY.	SWG-02-DC	QTY.	SWG-03-AC	QTY.	SWG-03-DC	QTY.
2-2	Coil	06021609	1~2	06021610	1~2	06021611	1~2	06021612	1~2
29	SWP Connector	06021613	1~2	06021613	1~2	06021613	1~2	06021613	1~2
30	DT04-2P Connector	06021614	1~2	06021614	1~2	06021614	1~2	06021614	1~2

- The value of "1~2" in the "QTY.", means that if the valve is single solenoid, it needs "1" unit, if the valve is double solenoid, it needs "2" units.
- The value of "06021614" in the "SWG-02-AC", means the part No. and CAD No., if you need the CAD file, please contact with SOLTECH.
- The spool type includes "2B2, 2B3, 3C2, 3C3...", please see the page 3 and 4.
- The coil include Alternate Current: AC 110V/50HZ, 220V/50HZ, 240V/50HZ or Direct Current: DC 12V, 24V...

LEAD WIRE CONNECTION AND DETAILS OF RECEPTACLE-"SWG-02 SERIES"

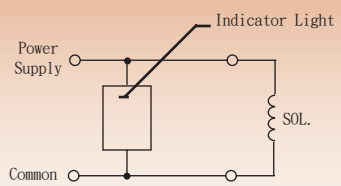
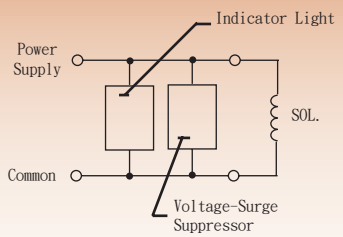
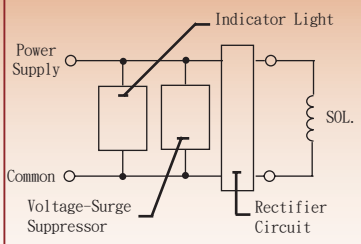
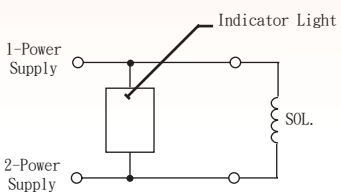
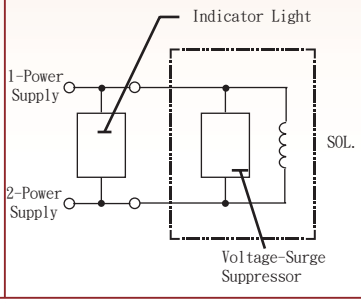
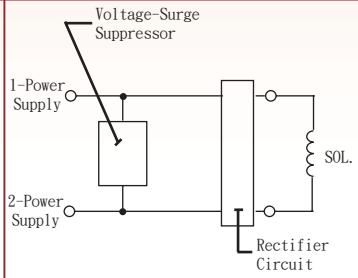
Type of Electrical Conduit Connection	Double Solenoid Type	Single Solenoid Type
Terminal Box Type		
Plug-in Connector Type		

★1. If you do not need the common plate, remove it.
★2. With DC solenoids, polarity is no question.

! DANGER !

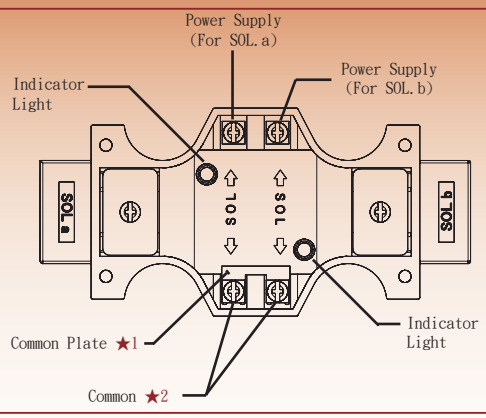
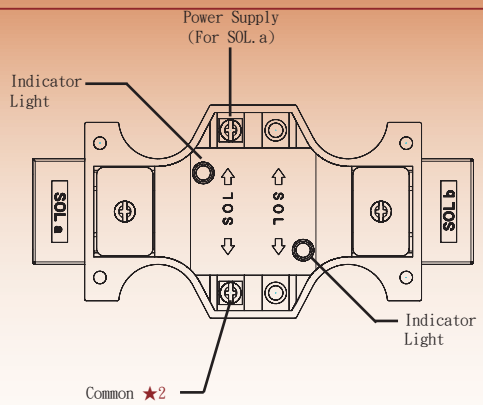
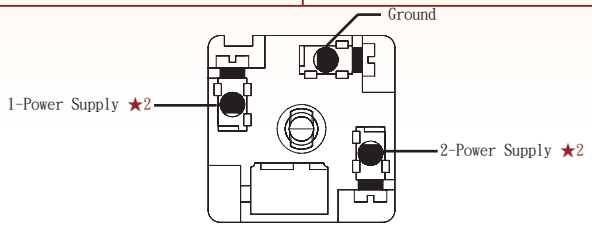
- Do not perform wiring while the power is on. Doing so may result in electric shock, burns or death.
- Make the wiring properly. Improper wiring will cause an irregular movement of the machine, resulting in a grave accident.

ELECTRICAL CIRCUIT

Type of Electrical Conduit Connection	Electric Source		
	AC	DC	AC→DC Recetified
Terminal Box Type			
Plug-in Connector Type			

● Voltage-Surge Suppressor(Circuit composed in coil) is not added in standard design. if need please consult SOLTECH.

LEAD WIRE CONNECTION AND DETAILS OF RECEPTACLE-"SWG-03 SERIES"

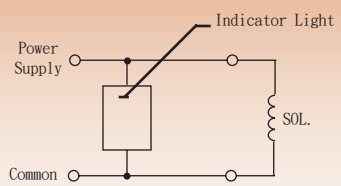
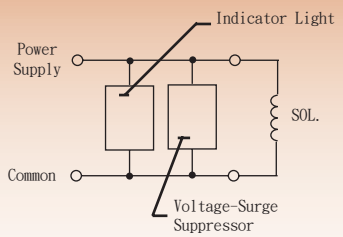
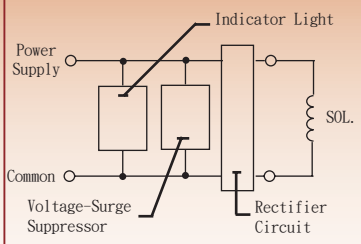
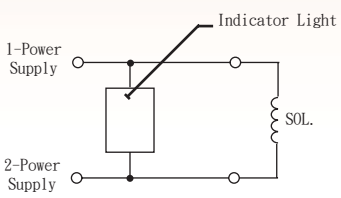
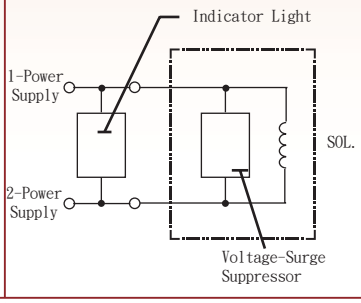
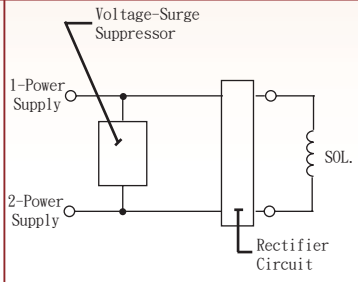
Type of Electrical Conduit Connection	Double Solenoid Type	Single Solenoid Type
Terminal Box Type		
Plug-in Connector Type		

★1. If you do not need the common plate, remove it.
★2. With DC solenoids, polarity is no question.

! DANGER !

- Do not perform wiring while the power is on. Doing so may result in electric shock, burns or death.
- Make the wiring properly. Improper wiring will cause an irregular movement of the machine, resulting in a grave accident.

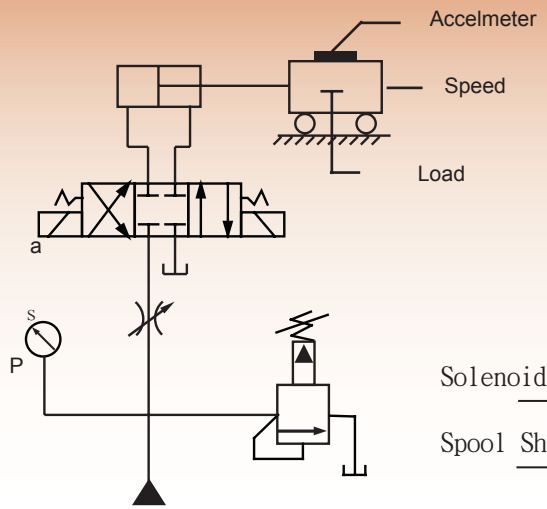
ELECTRICAL CIRCUIT

Type of Electrical Conduit Connection	Electric Source		
	AC	DC	AC→DC Recetified
Terminal Box Type			
Plug-in Connector Type			

● Voltage-Surge Suppressor(Circuit composed in coil) is not added in standard design. if need please consult SOLTECH.

【CHANGEOVER TIME】

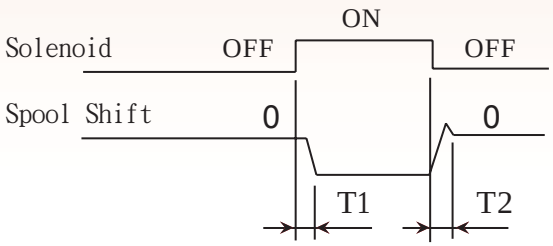
●Test Circuit and Conditions



●Test Conditions

Pressure: 16MPa(163 kgf/cm²)
Flow: 31.5 L/min
Viscosity: 35mm²/s{cst}
Voltage:100% of rated voltage(After the coil temperature raises and saturated)

●Result of Measurement



Type	Model No.	Time(ms)	
		T1	T2
AC	SWG-(H)-02-3C2-A※-(※)	12	5
DC	SWG-(H)-02-3C2-D※-(※)	51	22
RF	SWG-(H)-02-3C2-R※-(※)	57	104

Type	Model No.	Time(ms)	
		T1	T2
AC	SWG-(H)-03-3C2-A※-(※)	29	25
DC	SWG-(H)-03-3C2-D※-(※)	100	37
RF	SWG-(H)-03-3C2-R※-(※)	100	204

【INSTRUCTIONS】

※ MOUNTING：No-spring detented models not energized continuously must be installed so that the spool axis will be horizontal. Other models are not restricted to mounting horizontally.

※ ENERGIZATION：On double solenoid valves, do not energize both solenoids at the same time. Solenoid burn-out may occur.

※ VALVE TANK PORT：Avoid connection of the valve tank port to a line where surge pressure is likely to occur. Pipe end of tank line should be submerged in oil.

※ HYDRAULIC FLUID：

◎ Type of Fluid

★ Petroleum based fluids: Equivalent to ISO VG32 or 46.
★ Synthetic fluids: Phosphate ester or Polyol ester type.
★ Water Containing Fluids: Water-glycol fluids or W/O emulsion type.

◎ Recommended Viscosity and Temperature

★ Always be sure to use hydraulic fluids within the stipulated conditions as follows:
Oil Temperature: 5 to 160 degrees F
Viscosity: 77 to 1800 SSU

◎ Control of Contamination

★ Due caution must be used to maintain control over contamination of hydraulic fluids which may otherwise lead to breakdown and shorter valve life.
★ Please maintain the degrees of contamination between NAS 1638-Grade 12, Use 9.8 x 10 inch or filter line filter.