

ZEUS HYDRATECH LTD
Global Suppliers of Premium Hydraulic Components

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SA Series (Wiring System: DIN Connector Type)
Wet Type Solenoid Valve

26.4 to 42.3gpm
5000psi

Features

- ① Very long life
The movable iron core of the wet type solenoid is immersed in oil, which keeps it lubricated and cushions it from impact and vibration, ensuring very long life.
- ② Low switching noise
The wet-type solenoid valve provides very low core switching noise, for quiet operation.
- ③ Shockless
A switching speed adjustment mechanism enables direct, shockless operation (Option F).
- ④ No surge voltage
Sparkling and surge voltage during solenoid switching is canceled for stable switching (Option G).
- ⑤ Easy coil replacement
A DIN connector type coil enables one-touch coil replacement.
- ⑥ Wide-ranging backward compatibility makes it simple to replace previous valve models with this one. Combining this valve with a modular valve contributes to the compact configuration of the overall device.
- ⑦ Global support (G01 size)
Meets overseas safety standards (CE, UL, and CSA). It can be safely used anywhere in the world. Contact your agent for certified products.

Specifications

Model No.		SA-G01				SA-G03					
		Standard Type		Shockless Type		Standard Type				Shockless Type	
		Maximum Flow Rate ℓ /min	Maximum Working Pressure MPa(kg/cm ²)	Maximum Flow Rate ℓ /min	Maximum Working Pressure MPa(kg/cm ²)	AC Solenoid Type		DC Solenoid Type (With built-in rectifier)			
Maximum Flow Rate ℓ /min	Maximum Working Pressure MPa(kg/cm ²)					Maximum Flow Rate ℓ /min	Maximum Working Pressure MPa(kg/cm ²)				
JIS Symbol	Operation Symbol	(gpm)	(psi)	(gpm)	(psi)	(gpm)	(psi)	(gpm)	(psi)	(gpm)	(psi)
	-A2X-	30 (7.9)	35 (5000)	30 (7.9)	25(255) (3571)	40 (10.6)	35(357) (5000)	85 (22.4)	35(357) (5000)	130 (34.3)	25(255) (35.71)
	-H2X-					85 (22.4)					
	-E2X-										
	-A3X-	80 (21.1)	35 (5000)	50 (13.2)	25(255) (3571)	130 (34.3)	35(357) (5000)	160 (42.2)	35(357) (5000)	130 (34.3)	25(255) (35.71)
	-H3X-										
	-E3X-										
	-A3Z-	65 (17.1)	35 (5000)	50 (13.2)	25(255) (3571)	130 (34.3)	35(357) (5000)	160 (42.2)	35(357) (5000)	130 (34.3)	25(255) (35.71)
	-H3Z-										
	-E3Z-										
	--A4-	50 (13.2)	35 (5000)	50 (13.2)	25(255) (3571)	130 (34.3)	35(357) (5000)	160 (42.2)	35(357) (5000)	130 (34.3)	25(255) (35.71)
	-H4-										
	-A5-										
	-H5-	100 (26.4)	35 (5000)	50 (13.2)	25(255) (3571)	130 (34.3)	35(357) (5000)	160 (42.2)	35(357) (5000)	130 (34.3)	25(255) (35.71)
	-C2-										
	-C5-										
	-C9-										
	-C1S-										
	-C6S-										
	-C1-	AC Solenoid 65 (17.1) DC Solenoid 80 (21.1)	35 (5000)	50 (13.2)	25(255) (3571)	130 (34.3)	35(357) (5000)	160 (42.2)	35(357) (5000)	130 (34.3)	25(255) (35.71)
	-C6-										
	-C4-	50 (13.2)	35 (5000)	50 (13.2)	25(255) (3571)	130 (34.3)	35(357) (5000)	160 (42.2)	35(357) (5000)	130 (34.3)	25(255) (35.71)
	-C7Y-										
	-C8-										

Note) The maximum flow rate of each valve depends on the pressure. For details, see pages S-9 and S-10.

		SA-G01			SA-G03			
		AC Solenoid	DC Solenoid		AC Solenoid	DC Solenoid		
			Built-in Rectifier			Built-in Rectifier		
		C*	E*	D*	C*	E*	D*	
Maximum Working Pressure	P, A, B ports	35(25)MPa{357(255)kgf/cm ² }(Note 1)						
Maximum Allowable Backpressure	T port	21MPa{214kgf/cm ² }			16MPa{163kgf/cm ² }			
Switches/min.	Standard Type	300	120	300	240	120	240	
	Shockless Type	—		120	—		—	120
Option	Indicator light	R			R			
	Shockless	—	F		—	F		
	Surgeless	G	—	G	G	—	G	
	G Screw Connector	J	—	J	J	—	J	
	With manual push-button	N			N			
	Quick Return	—	Q	—	—	Q	—	
Weight (kg)	Double Solenoid	1.8	2.0		4.2	5.5		
	Single Solenoid	1.4	1.5		3.5	4.1		
Operating Environment	Dust Resistance/Water Resistance Rank	JIS C 0920 IP65 (Dust-tight, Waterjet-proof) (Note 2)						
	Ambient Temperature	- 20 to 50°C						
	Operating Fluid	Temperature Range	- 20 to 70°C					
		Viscosity Range	15 to 300mm ² /s					
		Filtration	25 microns or less					
Mounting bolt	Size × Length	M5 × 45 (Four) 10-24 × 1 3/4			M6 × 70 (Four) (M8 × 70 (Four)) 1/4-20 × 2 3/4			
	Tightening Torque	M5 5 to 7N·m{51 to 71kgf·cm} 10-24 to 3.6-5.1Lbs.ft.			M6 10 to 13N·m{102 to 133kgf·cm} (M8 20 to 25N·m{204 to 255kgf·cm}) 1/4-20 to 7.2-9.4Lbf.ft.			

- Note) 1. Maximum operating pressure depends on the valve type. For details, see page S-13.
2. The power supply type for E* is IP64 (dust-tight, splash-proof).
3. For mounting bolts, use 12T or equivalent.

Notes

- 1 Pipe system so that tank line is always filled with oil.
- 2 Surge pressure should be kept below maximum tank line back pressure rating.
- 3 When using a 4-way valve as a 2-way or 3-way and blocking unused ports lowers the maximum flow.
- 4 Keep hydraulic oil clean. (Degree of contamination: NAS grade 12 or better). When petroleum hydraulic oil is used, it should conform to ISO VG32, 46.
- 5 Do not exceed permissible voltage range of the coil used.
- 6 Do not supply electric power to the AC solenoid unless the coil is mounted to the valve.
- 7 Provide drain piping from the T port, when valve spool types are A2X, H2X, E2X.
- 8 If the changeover position is kept under high pressure for an extended period, malfunctions may occur due to hydraulic lock. Please consult us when you have such application.
- 9 When the detent-type (E2X, E3X, E3Z) is used, we recommend that the electric power supply be continuous in order that the changeover position may be firmly maintained.
- 10 Resistance force against the manual override pin changes, depending on the back pressure of the tank line.
- 11 Solenoid coil could be hot by continuous operation. Do not touch the coil directly by hand.
- 12 Gasket dimension
SA/SS-G01 = ISO 4401-03-02-0-94
SA/SS-G03 = ISO 4401-05-04-0-94

● Solenoid Assembly Specifications

Solenoid Type	Power Supply Type	Voltage (V)	Frequency (Hz)	For SA-G01				For SA-G03							
				Solenoid Coil Type	Drive Current (A)	Holding Current (A)	Holding Power (W)	Allowable Voltage Range (V)	Solenoid Coil Type	Drive Current (A)	Holding Current (A)	Holding Power (W)	Allowable Voltage Range (V)		
AC	C1	AC100	50	EAC64-C1	2.2	0.52	25	80 to 110	EBB64-C1	5.4	0.92	36.0	80 to 110		
			60		2.0	0.38	22			90 to 120	4.6	0.62		34.0	
		AC110	60		2.2	0.46	28				5.0	0.78		42.0	
	C115	AC110	50		EAC64-C115	2.0	0.47	25		90 to 120	EBB64-C115	5.0	0.85	36.0	90 to 120
			60			1.8	0.35	22				100 to 130	4.2	0.57	
		AC115	60			2.0	0.42	28					4.6	0.72	
	C2	AC200	50	EAC64-C2		1.1	0.26	25	160 to 220	EBB64-C2		2.7	0.46	36.0	160 to 220
			60			1.0	0.19	22				180 to 240	2.3	0.31	
	AC220	60	1.1			0.23	28	2.5					0.39	42.0	
	C230	AC220	50		EAC64-C230	1.0	0.24	25	180 to 240		EBB64-C230	2.5	0.42	36.0	180 to 240
			60			0.91	0.17	22				200 to 260	2.1	0.29	
		AC230	60			1.0	0.21	28					2.3	0.36	
DC with Built-in Rectifier	E1	AC100	50/60	EAC64-E1-1A		0.31		27	90 to 110	EBB64-E1		0.40		34.0	90 to 110
	E115	AC110	50/60	EAC64-E115-1A		0.26		25	100 to 125	EBB64-E115		0.33		31.0	100 to 125
						0.27		27				0.34		34.0	
	E2	AC200	50/60	EAC64-E2-1A	0.15		26	180 to 220	EBB64-E2	0.22		37.0	180 to 220		
	E230	AC220	50/60	EAC64-E230-1A	0.12		24	200 to 250	EBB64-E230	0.16		30.0	200 to 250		
					0.13		27			0.17		33.0			
DC	D1	DC12	—	EAC64-D1-1A	2.2		26	10.8 to 13.2	EBB64-D1	2.6		31.0	10.8 to 13.2		
	D2	DC24	—	EAC64-D2-1A	1.1		26	21.6 to 26.4	EBB64-D2	1.5		36.0	21.6 to 26.4		

Understanding Model Numbers

SA - G 01 - A 3 X - * * - C 2 - 31

Design number
 31: 01 size for mounting bolt M5
 E31: for mounting bolt 10-34
 21: 03 size for mounting bolt M8
 J21: 03 size for mounting bolt M6
 E21: 03 size for mounting bolt 1/4-20

Power supply
 C: AC (50/60Hz) C1=AC100V C115=AC110V C2=AC200V C230=AC220V
 D: DC D1=DC12V D2=DC24V
 E: AC (Built-in rectifier; 50/60Hz)
 E1=AC100V E115=AC115V E2=AC200V E230=AC230V

Auxiliary symbol (Can be combined in alphabetic sequence.)
 F : Shockless type (Available with power supply D*, E)
 GR: Surgeless type with indicator (Available with power supply C*, D*)
 J : G screw conversion adapter (For power supply C*, D*)
 N : With manual push-button
 Q : Quick return type (Available with power supply E*)
 R : With indicator light

Transition Flow Path (Specify for A2X, H2X, E2X, *3*, C7Y only.)

X	Y	Z
Closed	Semi-open	Open

Center position

0	1	2	3	4	5
6	7	8	9	1S	6S

Note 1: P=Pressure port; A and B=Connection port to cylinder, etc.; T(R)=Connection port to tank

Operation Method

A	H	C	E
Spring Offset	Spring Center	Spring Center	Detent

Nominal diameter
 01 size
 03 size

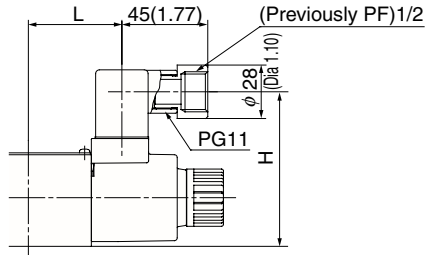
Mounting method
 G: Cascade mounting

Wet type solenoid operated directional control valve with DIN connector

Options

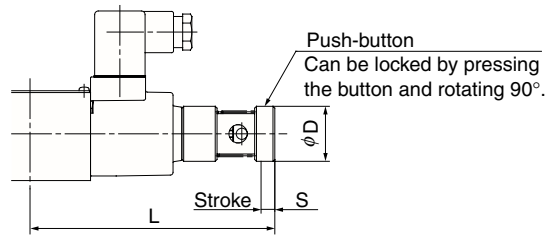
(Auxiliary Symbol Explanations)

G Screw Adapter (Auxiliary Symbol: J)



Model No.	L	H
SA-G01	49(1.92)	81(3.19)
SA-G03	60.5(2.38)	100.5(3.96)

With manual push-button (Auxiliary Symbol: N)

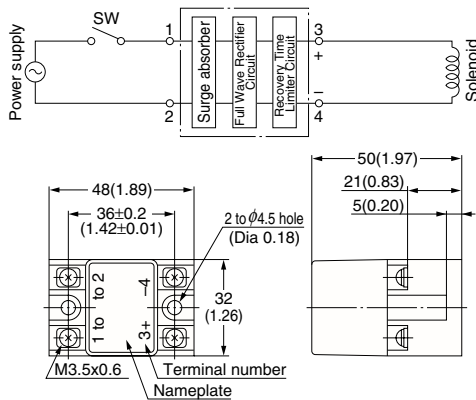


Model No.		L	S	D
SA-G01	AC Solenoid	133.5(5.26)	7.5(0.30)	30(1.18)
	DC Solenoid	140.5(5.53)		
SA-G03	AC Solenoid	155.5(6.12)	9.5(0.37)	35(1.38)
	DC Solenoid	173.5(6.83)		

Quick Return Type (Auxiliary Symbol: Q)

● Handling

- 1 This type is used in the case of power supply type E* (with built-in rectifier) to shorten the spring return time. This also applies to D*.
- 2 The Quick Return device is not built in. Mount to the electrical box, etc.
- 3 Even when power supply type E* is equipped with a Quick Return mechanism, response is not fast. (Replace the DIN connector with EA41-1A or EA41-R*-1C, without changing the coil.)
- 4 When multiple Quick Return devices are used, do not wire COM to the output side (pin number 3 and 4 side).



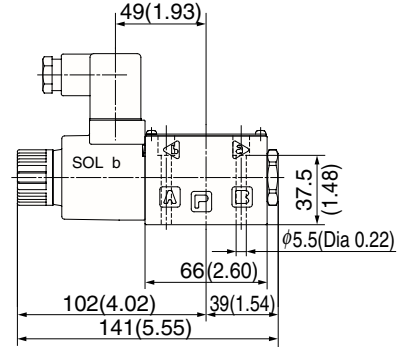
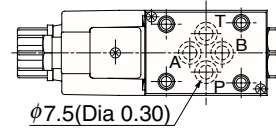
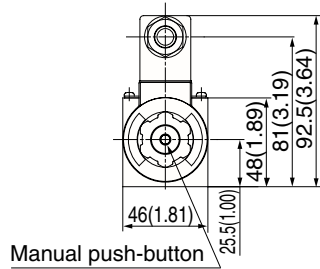
Other Options

Note) For information about the shockless and surgeless options, see page S-4.

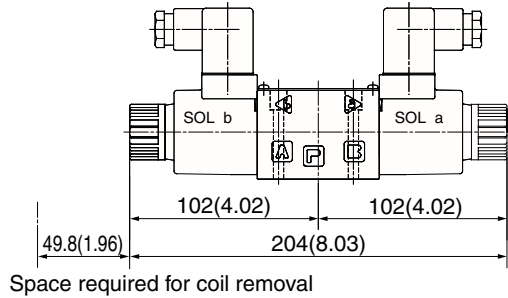
Installation Dimension Drawings

AC Solenoid
 SA-G01-A**-*-C*-E31
 SA-G01-H**-*-C*-E31

Note) SA-G01-H**-R**-31
 The solenoid is on the opposite side of that shown for SOLa in the illustrations shown here.

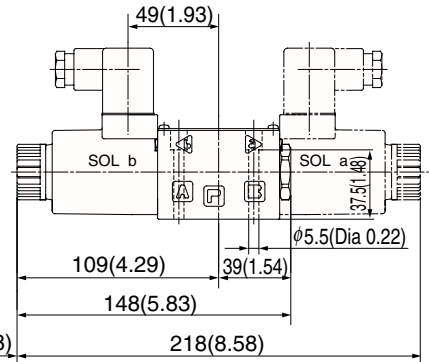
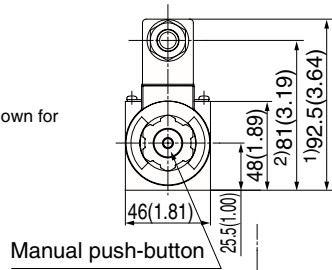


SA-G01-C**-R-C*-E31
 SA-G01-E**-R-C*-E31



DC Solenoid and Rectifier
 SA-G01-A**-D*/E*-E31
 SA-G01-H**-D*/E*-E31
 SA-G01-C**-D*/E*-E31
 SA-G01-E**-D*/E*-E31

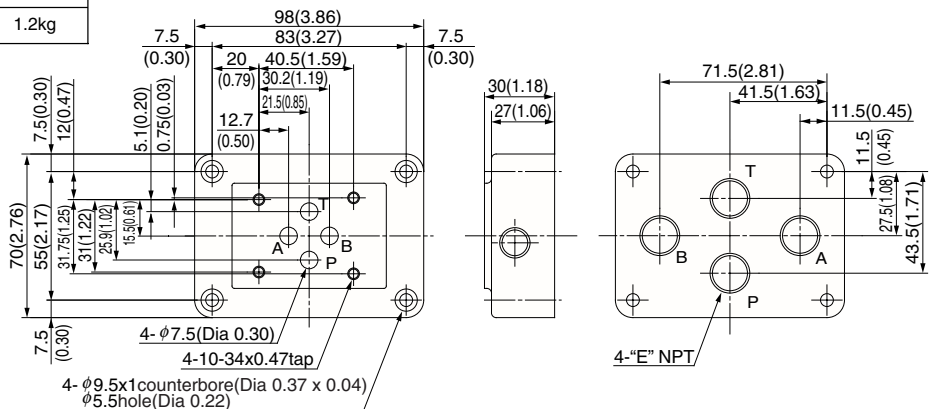
Note) 1.SA-G01-H**-D*/E*-E31
 The solenoid is on the opposite side of that shown for SOLa in the illustrations shown here.
 2.SA-G01-E*-E*-E31
 Dimension 1 is 96.
 Dimension 2 is 73.



For sub plate SA-G01

Model No.	E	Weight
MSA-01X-E10	1/4	1.2kg
MSA-01Y-E10	3/8	1.2kg

Gasket Surface Dimensions
 (ISO 4401-03-02-0-94
 JIS B 8355 D-03-02-0-94)

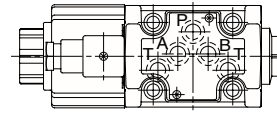


Installation Dimension Drawings

AC Solenoid

SA-G03-A**-*-C*-E21

SA-G03-H**-*-C*-E21



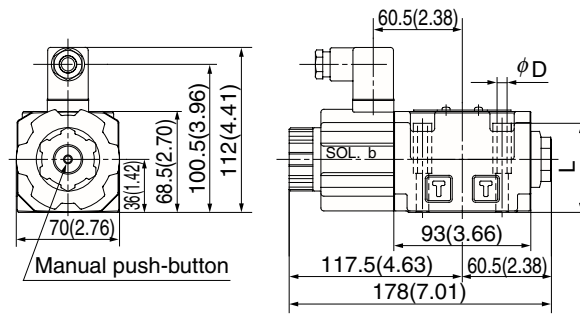
Note) SA-G03-H**-*-C*-E21

The solenoid is on the opposite side of that shown for SOLa in the illustrations shown here.

	SA-G03**-*-E21	SA-G03**-*-E21
φD	φ6.8(Dia 0.27)	φ8.5(Dia 0.33)
L	60.5(2.38)	58(2.28)

SA-G03-C**-*-C*-E21

SA-G03-E**-*-C*-E21



DC Solenoid and Rectifier

SA-G03-A**-*-D*/E*-E21

SA-G03-H**-*-D*/E*-E21

SA-G03-C**-*-D*/E*-E21

SA-G03-E**-*-D*/E*-E21

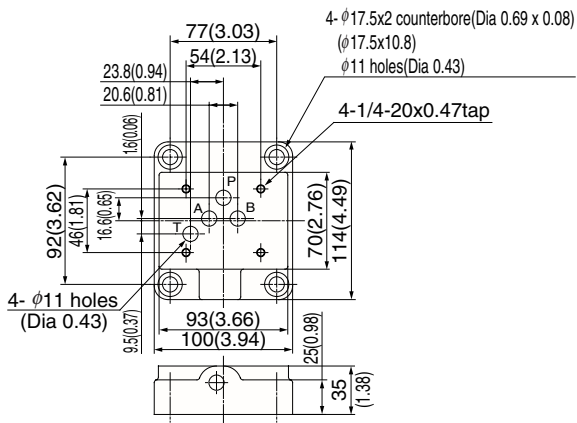
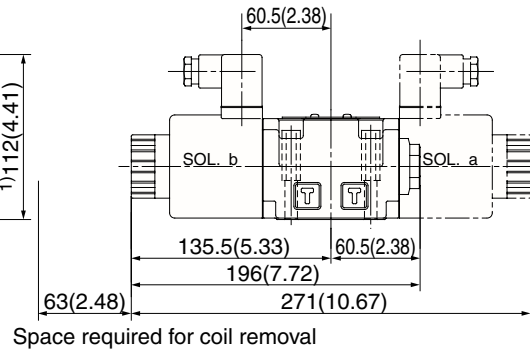
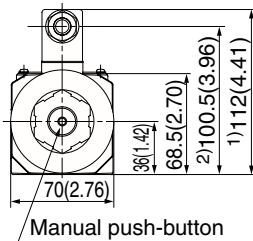
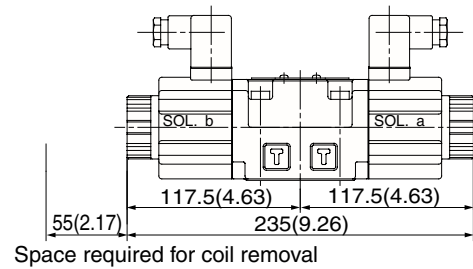
Note) 1.SA-G03-H**-*-D*/E*-E21

The solenoid is on the opposite side of that shown for SOLa in the illustrations shown here.

2.SA-G03**-*-E*-E21

Dimension 1 is 115.5 (4.55)

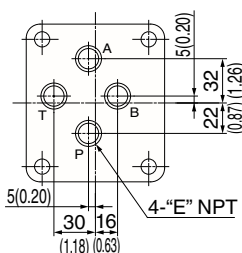
Dimension 2 is 92.5 (3.64)



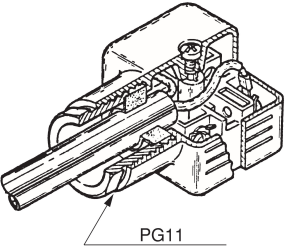
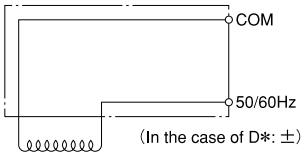
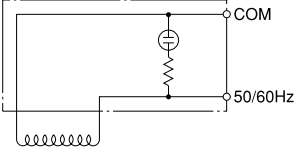
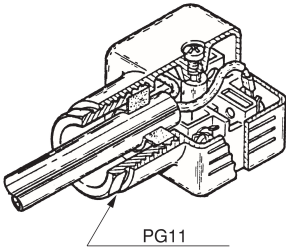
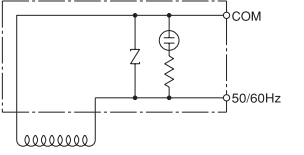
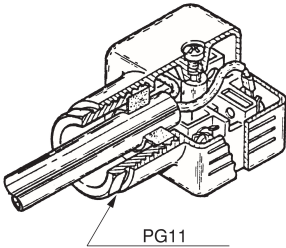
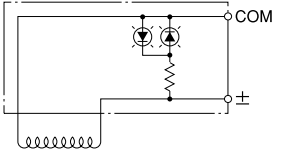
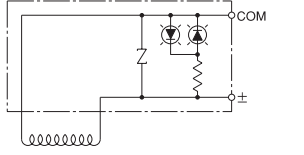
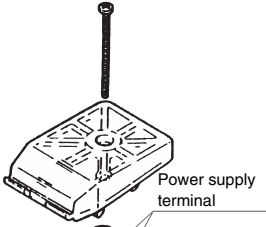
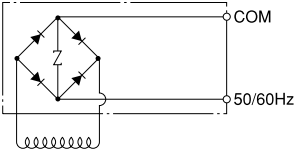
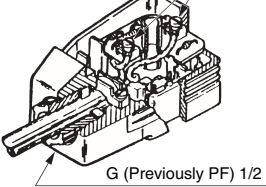
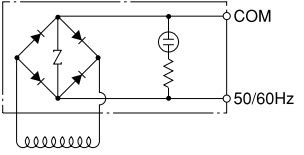
For sub plate SA-G03

Mounting bolt	Model No.	E	Weight
1/4-20	MSA-03-E10	3/8	2.3kg
M6	MSA-03X-E10	1/2	

M6 gasket surface dimensions
(ISO 4401-05-04-0-94
JIS B 8355 D-05-04-0-94)



● Connectors

Model No.	Wiring	Electrical Circuit Diagram
<p>SA-G01-***-C* E31 G03-D*(J)E21 (EA41-1A)</p>	 <p>PG11</p>	 <p>(In the case of D*: ±)</p>
<p>SA-G01-***-R-C* E31 G03-(J)E21 (EA41-R*1C)</p>		
<p>SA-G01-***-GR-C* E31 G03-(J)E21 (EA41-GRC*1C)</p>	 <p>PG11</p>	
<p>SA-G01-***-R-D* E31 G03-(J)E21 (EA41-DR*1C)</p>	 <p>PG11</p>	
<p>SA-G01-***-GR-D* E31 G03-(J)E21 (EA41-GRD*1C)</p>		
<p>SA-G01-***-E* E31 G03-(J)E21 (EA42-1B)</p>	 <p>Power supply terminal</p>	
<p>SA-G01-***-R-E* E31 G03-(J)E21 (EA42-R*1B)</p>	 <p>G (Previously PF) 1/2</p>	

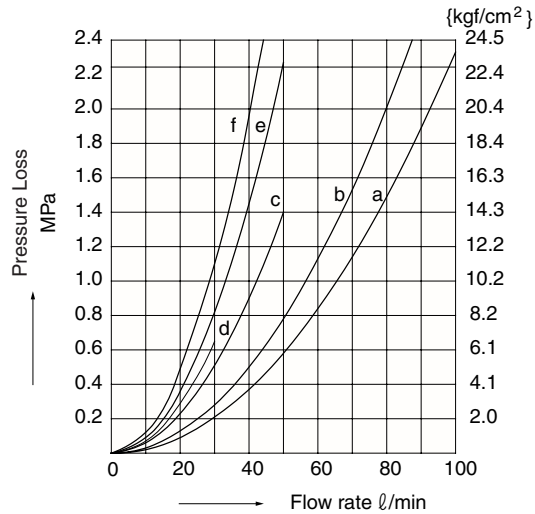
Symbols in parentheses indicate connector configuration.

- Note) 1. Asterisks in the connector configuration and power supply symbols are fillers for the voltage symbol (1 or 2).
 2. The connector cord diameter is ϕ 8 to 10. Anything outside this range causes water tightness to be lost.
 3. The orientation of the connectors can be changed in 90° increments by changing the terminal block.
 4. The cover cannot be removed unless the installation screws are removed.
 5. When J is specified for the auxiliary symbol, a G screw conversion adapter is attached to the connector, and the wiring port is a G (previously PF) 1/2 screw (standard: PG11). EA42 and EA42-R* also have a G (previously PF) wiring port.
 6. Use M3 for round type and Y type solderless terminals.
 7. Tighten the M3 screws that secure connectors and terminals to a torque of 0.3 to 0.5Nm (3.1 to 5.1kgf·cm).
 8. An EA-41-1A or EA41-R*1C connector is used in the case of power supply type E* with Quick Return type Q.

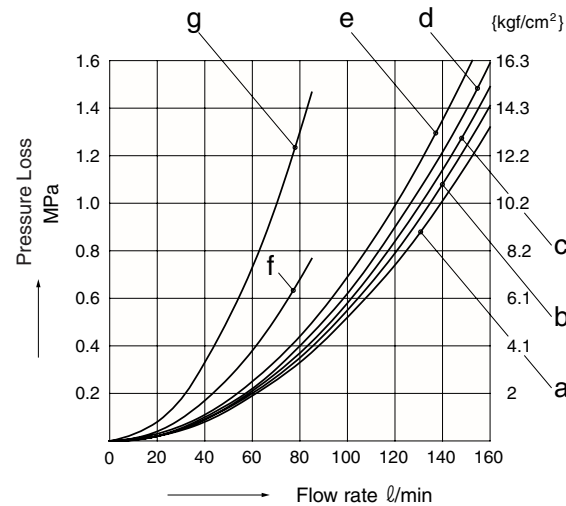
Performance Curves

Hydraulic Operating Fluid Viscosity 32mm²/s

Pressure Loss Characteristics



Pump Type	Flow Path	P→A	P→B	A→T	B→T	P→T
SA-G01	A2X, H2X, E2X	d	d	—	—	—
	A3X, H3X	b	b	b	b	—
	E3X	b	b	b	b	—
	A3Z, H3Z, E3Z	a	a	a	a	—
	A4, H4, C4	a	a	a	a	a
	A5, H5, C5, C6S	b	b	b	b	—
	C1, C1S	b	b	a	b	—
	C2	a	b	b	b	—
	C6	b	b	a	a	—
	C7Y	f	f	e	e	c
	C8	a	f	b	e	c
C9	a	a	b	b	—	



Pump Type	Flow Path	P→A	P→B	A→T	B→T	P→T
SA-G03	A2X, H2X, E2X	e	e	—	—	—
	A5	—	c	c	—	—
	H5	c	—	—	c	—
	A3X, H3X, E3X	c	c	d	d	—
	A3Z, H3Z	a	a	d	d	—
	E3Z	b	b	a	a	—
	C1	c	c	a	c	—
	C2	a	c	c	c	—
	A4, H4, C4	a	a	a	a	a
	C5, C1S, C6S	c	c	c	c	—
	C6	c	c	a	a	—
	C7Y	g	g	g	g	f
	C8	a	g	a	g	f
	C9	a	a	c	c	—

Switching Response Time

Model No.	Response Time (sec)		Measurement Conditions
	Solenoid ON	Spring Return	
SA-G01-**-*(GR)-C*-E31	0.02 to 0.03	0.02 to 0.03	14MPa{143kgf/cm ² } 30 l /min
SA-G01-**-*(GR)-D*-E31	0.03 to 0.04	0.02 to 0.04	
SA-G01-**-*(R)-E*-E31	0.03 to 0.04	0.07 to 0.10	
SA-G01-**-*(F)(GR)-D*-E31	0.07 to 0.10	0.04 to 0.07	
SA-G01-**-*(F)(R)-E*-E31	0.07 to 0.10	0.10 to 0.15	
SA-G03-**-*(GR)-C*-E21	0.02 to 0.03	0.02 to 0.03	14MPa{143kgf/cm ² } 70 l /min
SA-G03-**-*(GR)-D*-E21	0.06 to 0.09	0.03 to 0.05	
SA-G03-**-*(R)-E*-E21	0.07 to 0.10	0.10 to 0.15	
SA-G03-**-*(F)(GR)-D*-E21	0.13 to 0.15	0.08 to 0.15	
SA-G03-**-*(F)(R)-E*-E21	0.10 to 0.15	0.15 to 0.20	

Note) 1.The switching response time changes slightly with operating conditions (pressure, flow rate, viscosity, etc.)

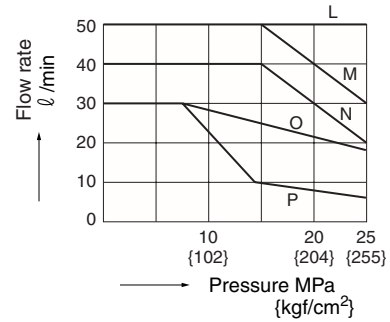
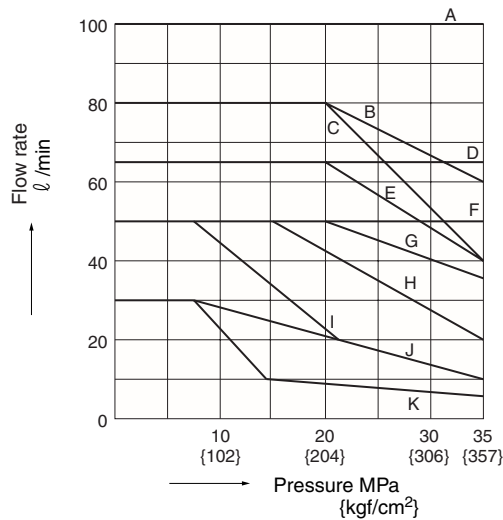
2.In the case of power supply type E* (with built-in rectifier), the spring return time using Quick Return (option symbol: Q) is the same as D*.

Pressure – Flow Volume Allowable Value

Size	Standard Form, with AC, DC solenoid		
	SS/SA-G01-**-R**-E31		
Operation Example Operation Symbol			
A2X, H2X	–	K	K
E2X	–	J	J
A3X, H3X	B	K	K
E3X	A	J	J
A3Z, H3Z	D	D	D
E3Z	D	D	D
A5	A	–	I
H5	A	I	–
C1, C6	Note1) C(E)	I	I
C1S, C5, C6S	A	I	I
C2, C9	A	K	K
A4	F	F	F
H4	F	F	F
C4	F	F	F
C7Y, C8	Note2) G(H)	K	K

Size	Shockless Type, with DC solenoid		
	SS/SA-G01-**-FR**-E31		
Operation Example Operation Symbol			
A2X, H2X	–	P	–
E2X	–	O	P
A3X, H3X	L	P	P
E3X	L	O	L
A3Z, H3Z	L	L	L
E3Z	L	L	P
A5	L	–	–
H5	L	P	–
C1, C6	M	P	–
C1S, C2, C5, C6S, C9	L	P	–
A4, H4	L	L	–
C4	L	L	–
C7Y, C8	N	P	–

Note) 1. Letter in parentheses is for AC solenoid.
 2. Letter in parentheses is for solenoid with built-in rectifier, but without Quick Return, and for DC solenoid with surge voltage absorbing diode on the electrical circuit.



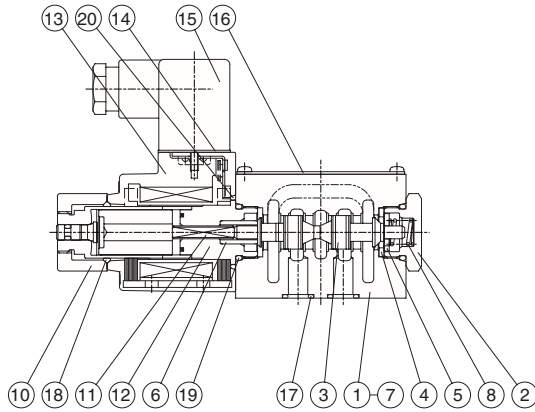
Pressure – Flow Volume Allowable Value

Model No.	Standard Form, with AC, DC solenoid			Standard Form, with DC solenoid		
	SA-G03-**-C*-E21			SA-G03-**-**-E21		
Operation Example						
Operation Symbol						
A2X	—	F	E	—	E	F
H2X	—	E	F	—	F	E
E2X	—	C	C	—	C	C
A3X	A	E	E	A	D	F
H3X	A	E	E	A	F	D
A3Z	A	A	C	A	C	C
H3Z	A	C	A	A	C	C
E3X, E3Z	A	C	C	A	C	C
A5	A	—	D	A	—	E
H5	A	D	—	A	E	—
C1, C1S, C5, C6, C6S	A	D	D	A	E	E
C2	A	G	D	A	G	E
A4, H4, C4	A	A	A	A	A	A
C9	A	G	G	A	G	G
C7Y, C8	B	B	B	Note1) B(H)	B(H)	B(H)
Model No.	Shockless Type, with DC solenoid					
	SA-G03-**-F**-E21					
Operation Example						
Operation Symbol						
A2X	—	E	F			
H2X	—	F	E			
E2X	—	C	C			
A3X	A	D	F			
H3X	A	F	D			
A3Z	A	C	C			
H3Z	A	C	C			
E3X, E3Z	A	C	C			
A5	A	—	E			
H5	A	E	—			
C1, C1S, C5, C6, C6S	A	E	E			
C2	A	G	E			
A4, H4, C4	A	A	A			
C9	A	G	G			
C7Y, C8	Note1) B(H)	B(H)	B(H)			

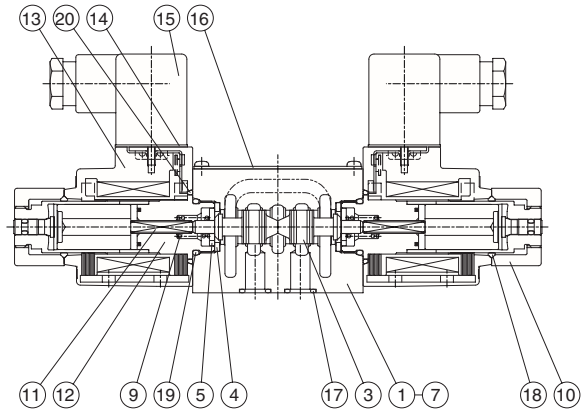
- Note) 1. Letter in parentheses is for solenoid with built-in rectifier (E*), but without Quick Return, and for DC solenoid (D*) with surge voltage absorbing diode on the electrical circuit.
 2. There is no shockless type for the AC solenoid (C*), so use a solenoid with built-in rectifier (E*) when shockless operation is required with an AC power supply.
 3. The maximum flow rate is the allowable value of each port.

Cross-sectional Drawing

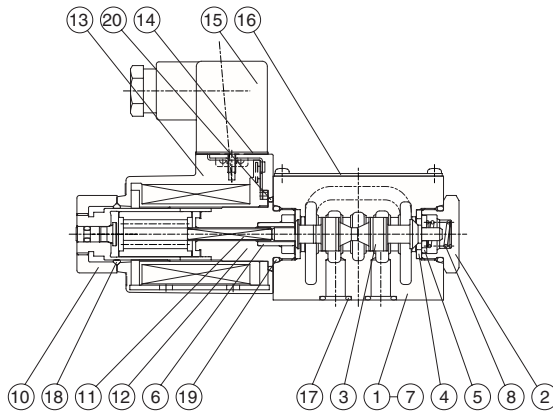
SA-G01-A**-C*-E31



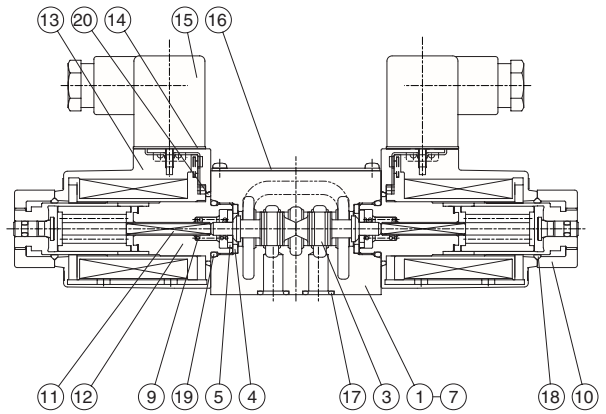
SA-G01-C**-C*-E31



SA-G01-A**-D/E*-E31



SA-G01-C**-D/E*-E31



List of Sealing Parts

Part No.	Part Name	Part Number	Q'ty	
			Single Solenoid	Double Solenoid
17	O-ring	AS568-012(Hs90)	4	4
18	O-ring	1A-P20	1	2
19	O-ring	1B-P18	2	2
20	O-ring	S-25	1	2

Note) 1A and 1B are JIS Standard B 2401, while AS568 is SAE standard.

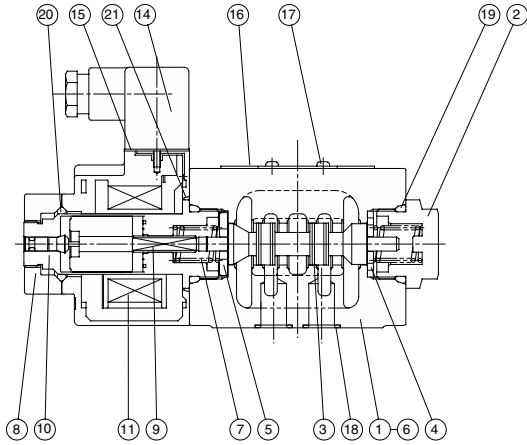
Seal Kit Number

Single Solenoid	Double Solenoid
EDCS-A	EDCS-C

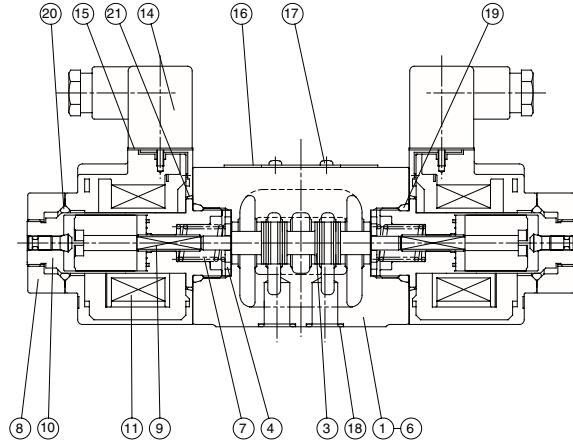
Part No.	Part Name	Part No.	Part Name
1	Body	11	Rod
2	Plug	12	Solenoid guide
3	Spool	13	Solenoid coil
4	Retainer A	14	Connector
5	Retainer B	15	Nameplate
6	Retainer C	16	Screw
7	Spacer	17	O-ring
8	Spring A	18	O-ring
9	Spring C	19	O-ring
10	Nut	20	O-ring

Cross-sectional Drawing

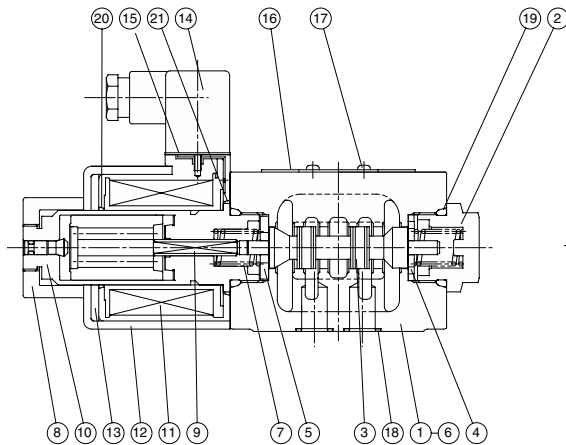
SA-G03-A**-C*-(J)E21



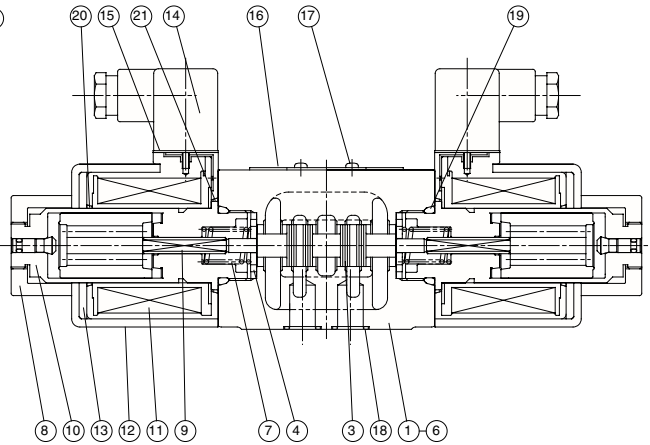
SA-G03-C**-C*-(J)E21



SA-G03-A**-D/E*-(J)E21



SA-G03-C**-D/E*-(J)E21



List of Sealing Parts

Part No.	Part Name	Type/Part Number		Q'ty	
		AC SOL.	DC SOL.	Single Solenoid	Double Solenoid
18	O-ring	AS568-014(Hs90)		5	5
19	O-ring	1B-P28		2	2
20	O-ring	1A-P26	AS568-026	1	2
21	O-ring	AS568-029		1	2

Note) O-ring 1A/B-*** refers to JIS B2401-1A/B.

Part No.	Part Name	Part No.	Part Name
1	Body	11	Solenoid coil
2	Plug	12	Coil case
3	Spool	13	Coil yoke
4	Retainer	14	Connector
5	Retainer B	15	Connector packing
6	Spacer	16	Nameplate
7	Spring	17	Screw
8	Nut	18	O-ring
9	Rod	19	O-ring
10	Solenoid guide	20	O-ring
		21	O-ring

Seal Kit Number

AC SOL.		DC SOL.	
Single Solenoid	Double Solenoid	Single Solenoid	Double Solenoid
ECBS-AA	ECBS-CA	ECBS-AD	ECBS-CD



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