

SS Series (Wiring System: Central Terminal Box) Wet Type Solenoid Valve 26.4 to 42 gpm
 5075 psi

Features

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.

Low switching noise

The wet-type solenoid valve provides very low core switching noise, for quiet operation.

High pressure, large capacity, with minimal pressure loss

Comprehensive fluid reaction force

compensation and low pressure compensation construction provide large capacity and low pressure loss.

G01 : 5075 psi (26.4 gpm)

G03 : 5075 psi (42 gpm)

Easy connections

A special wiring box provides a COM port and indicator light as standard for simple wiring and maintenance.

Easy coil replacement

A plug-in type coil enables one-touch coil replacement.

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.

Compliant with global and international safety regulations (G01 size CE, UL, CSA, and G03 size UL). Can be used safely around the world. Contact us for models and specifications of compliant products.

Specifications

| Model No. | | SS-G01 (D03) | | | | SS-G03 (D05) | | | | | |
|-----------------------|------------------------------|-----------------------|------------------------------|-----------------------|------------------------------|-----------------------|------------------------------|--|------------------------------|----------------|------|
| | | Standard Type | | Shockless Type | | Standard Type | | | | Shockless Type | |
| | | Maximum Flow Rate gpm | Maximum Working Pressure psi | Maximum Flow Rate gpm | Maximum Working Pressure psi | AC Solenoid Type | | DC Solenoid Type (With built-in rectifier) | | | |
| Maximum Flow Rate gpm | Maximum Working Pressure psi | | | | | Maximum Flow Rate gpm | Maximum Working Pressure psi | Maximum Flow Rate gpm | Maximum Working Pressure psi | | |
| JIS Symbol | Operation Symbol | | | | | | | | | | |
| | -A2X- | 7.9 | 5075 | 7.9 | 3625 | 10.5 | 5075 | 22.4 | 5075 | 22.4 | 3625 |
| | -H2X- | | | | | 22.4 | | | | | |
| | -E2X- | | | | | | | | | | |
| | -A3X- | 21 | 5075 | 13.2 | 3625 | | 5075 | 42.2 | 5075 | 34.3 | 3625 |
| | -H3X- | | | | | | | | | | |
| | -E3X- | | | | | | | | | | |
| | -A3Z- | 17.1 | 5075 | 10.5 | 3625 | | 5075 | 26.4 | 5075 | 22.4 | 3625 |
| | -H3Z- | | | | | | | | | | |
| | -E3Z- | | | | | | | | | | |
| | -A4- | 13.2 | 5075 | 10.5 | 3625 | | 5075 | 26.4 | 5075 | 22.4 | 3625 |
| | -H4- | | | | | | | | | | |
| | -A5- | | | | | | | | | | |
| | -H5- | 26.4 | 5075 | 10.5 | 3625 | | 5075 | 26.4 | 5075 | 22.4 | 3625 |
| | -C2- | | | | | | | | | | |
| | -C5- | | | | | | | | | | |
| | -C9- | | | | | | | | | | |
| | -C1S- | | | | | | | | | | |
| | -C6S- | | | | | | | | | | |
| | -C1- | AC Solenoid 17.1 | | | | | | | | | |
| | -C6- | DC Solenoid 21.1 | | | | | | | | | |
| | -C4- | 13.2 | 5075 | 10.5 | 3625 | | 5075 | 26.4 | 5075 | 22.4 | 3625 |
| | -C7Y- | | | | | | | | | | |
| | -C8- | | | | | | | | | | |

Note: The maximum flow rate of each valve depends on the pressure. For details, see pages D-12 and D-13.

| | | SS-G01 | | | SS-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 | 5075 psi | | | | | |
| Maximum Allowable Backpressure | T port | 3045 psi | | 2320 psi | | | |
| Switching frequency (cycles/minute) | Standard Type | 300 | 120 | 300 | 300 | 120 | 240 |
| | Shockless Type | — | | 120 | — | | — |
| Standard | Indicator light | R | | | R | | |
| Option | Shockless | — | F | | — | F | |
| | Surgeless | G | — | G | G | — | G |
| | 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 | IP64 (Dust-tight, Splash-proof) | | | | | |
| | Ambient Temperature | -4 to 122°F | | | | | |
| | Operating Fluid | Temperature Range | -4 to 158°F | | | | |
| | | Viscosity Range | 15 to 300 centistokes | | | | |
| | | Filtration | 10 microns or less | | | | |
| Mounting bolt | Size × Length | 10-24 x 1 3/4 LG (not included) | | | 1/4-20 x 2 3/4 | | |
| | Tightening Torque | 3.6 to 5 ft lbs | | | 14.7 to 18.4 ft lbs | | |

Note: 1. Maximum operating pressure depends on the valve type. For details, see page D-1.
 2. For mounting bolts, use 12T, grade 8 or equivalent.
 3. Mounting bolts are not included with the O1 size. Bolts are included with the O3 size.

• Handling

- In order to realize the full benefits of the wet type solenoid valve, configure piping so oil is constantly supplied to the T port. Never use a stopper plug in the T port.
- Ensure that surge pressure in excess of the maximum allowable back pressure does not reach the T port.
- Note that the maximum flow rate is limited when used as a four-way valve, or by blocking ports for use as a two-way valve or one-way valve.
- Always keep the operating fluid clean. Allowable contamination is class NAS12 or less.
- When using petroleum type operating fluid, use ISO VG 32, 46.
- For details about using fire-resistant hydraulic fluid, contact your agent.
- Use this valve only within the allowable voltage range.
- Do not allow the AC solenoid to become charged until you install the coil into the valve.
- In the case of operation symbols A2X, H2X, and E2X, run drain piping from the valve T port.
- Maintaining a switching position under high pressure for a long period can cause

abnormal operation due to hydraulic lockup. Contact your agent when you need to maintain a switching position for a long period.

- When using a detent type (E2X, 3X, E3Z), use constant energization in order to securely maintain the switching position.

12 Note that manual pin operating pressure changes in accordance with tank line back pressure.

13 The series described in the table below are available for use as RSS and RIS Series solenoid control relief valves.

| | |
|--|---|
| RSS-***-AR*(H)-** ¹⁵ / ₂₃ RIS-***-AR*(H)-** ²¹ | SS-G01-AR-R-**-31 |
| RSS-***-AQ*(H)-** ¹⁵ / ₂₃ RIS-***-AQ*(H)-** ²¹ | SS-G01-A3X-R-**-31 |
| RSS-***-F(H)-** ¹⁵ / ₂₃ RIS-***-F-**-21 | SS-G01-A8X0-R-**-31 SS-G01-A3X-R-**-31 |

- The coil surface temperature increases if this valve is kept continuously energized. Install the valve so there is no chance of it being touched directly by hand.

15 Use the following table for specification when a sub plate is required.

| Model No. | Pipe Diameter | Maximum Working Pressure psi | Recommended Flow Rate gpm | Weight lbs | Applicable Valve Type |
|-------------|---------------|------------------------------|---------------------------|------------|-----------------------|
| MSA-01X-E10 | 1/4 | 3625 | 5.2 | 1.2 | SS-G01-**-R-**-31 |
| MSA-01Y-E10 | 3/8 | | 10.4 | | |
| MS-03-E30 | 3/8 | | 11.8 | 2.3 | SS-G03-**-R-**-22 |
| MS-03X-E30 | 1/2 | | 21.1 | | |

Solenoid Assembly Specifications

| Solenoid Type | Power Supply Type | Voltage (V) | Frequency (Hz) | For SS-G01 | | | | For SS-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 | EDC64-C1 | 2.2 | 0.52 | 25 | 80 to 110 | ECB64-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 | EDC64-C115 | 2.0 | 0.47 | 25 | 90 to 120 | ECB64-C115 | 5.0 | 0.85 | 36.0 | 90 to 120 |
| | | | 60 | | 1.8 | 0.35 | 22 | 100 to 130 | | 4.2 | 0.57 | 34.0 | |
| | | AC115 | 60 | | 2.0 | 0.42 | 28 | | | 4.6 | 0.72 | 42.0 | |
| | C2 | AC200 | 50 | EDC64-C2 | 1.1 | 0.26 | 25 | 160 to 220 | ECB64-C2 | 2.7 | 0.46 | 36.0 | 160 to 220 |
| | | | 60 | | 1.0 | 0.19 | 22 | 180 to 240 | | 2.3 | 0.31 | 34.0 | |
| | | AC220 | 60 | | 1.1 | 0.23 | 28 | | | 2.5 | 0.39 | 42.0 | |
| | C230 | AC220 | 50 | EDC64-C230 | 1.0 | 0.24 | 25 | 180 to 240 | ECB64-C230 | 2.5 | 0.42 | 36.0 | 180 to 240 |
| | | | 60 | | 0.91 | 0.17 | 22 | 200 to 260 | | 2.1 | 0.29 | 34.0 | |
| | | AC230 | 60 | | 1.0 | 0.21 | 28 | | | 2.3 | 0.36 | 42.0 | |
| DC with Built-in Rectifier | E1 | AC100 | 50/60 | EDC64-E1-1A | 0.31 | | 27 | 90 to 110 | ECB64-E1 | 0.40 | | 34.0 | 90 to 110 |
| | E115 | AC110 | 50/60 | EDC64-E115-1A | 0.26 | | 25 | 100 to 125 | ECB64-E115 | 0.33 | | 31.0 | 100 to 125 |
| | | AC115 | | | 0.27 | | 27 | | | 0.34 | | 34.0 | |
| | E2 | AC200 | 50/60 | EDC64-E2-1A | 0.15 | | 26 | 180 to 220 | ECB64-E2 | 0.22 | | 37.0 | 180 to 220 |
| | E230 | AC220 | 50/60 | EDC64-E230-1A | 0.12 | | 24 | 200 to 250 | ECB64-E230 | 0.16 | | 30.0 | 200 to 250 |
| AC230 | | 0.13 | | | 27 | 0.17 | | | | 33.0 | | | |
| DC | D1 | DC12 | ☒ | EDC64-D1-1A | 2.2 | | 26 | 10.8 to 13.2 | ECB64-D1 | 2.6 | | 31.0 | 10.8 to 13.2 |
| | D2 | DC24 | ☒ | EDC64-D2-1A | 1.1 | | 26 | 21.6 to 26.4 | ECB64-D2 | 1.5 | | 36.0 | 21.6 to 26.4 |

Understanding Model Numbers

SS - G 03 - A 3 X - * R - C2 - E22

Design number
 E31: 01 size; 10 - 24 mounting bolt
 E22: 03 size; 1/4 - 20 mounting bolt

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

With indicator light

Auxiliary symbol (Can be combined in alphabetic sequence.)
 F: Shockless type (Available with power supply D*, E)
 G: Surgeless type (Available with power supply C*, D*)
 N: With manual push-button
 Q: Quick return type (Available with power supply E*)

Transition Flow Path (Specify for A2X, H2X, E2X, A3X, H3X, E3X, A3Z, H3Z, E3Z, 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=Connection port to tank

Operation Method

| A | H | C | E |
|---------------|---------------|---------------|--------|
| Spring Offset | Spring Center | Spring Center | Detent |
| | | | |

Nominal diameter
 01 size (D03)
 03 size (D05)

Mounting method
 G: Cascade mounting

Wet type solenoid operated directional control valve

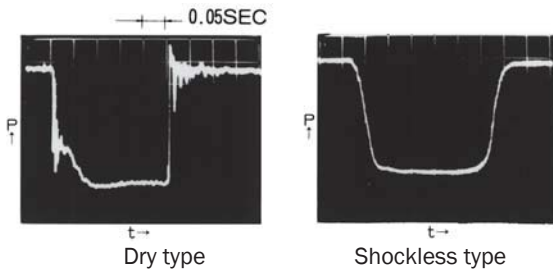
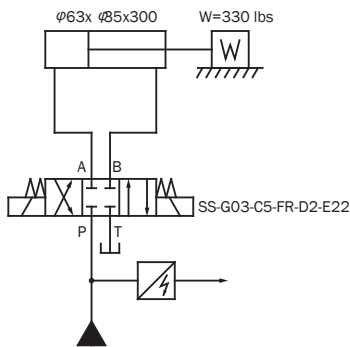
Options

(Auxiliary Symbol Explanations)

Shockless Type (Auxiliary Symbol: F)

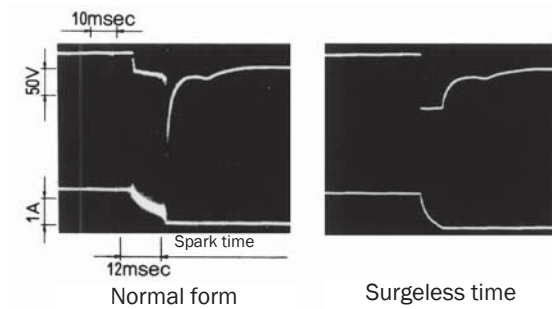
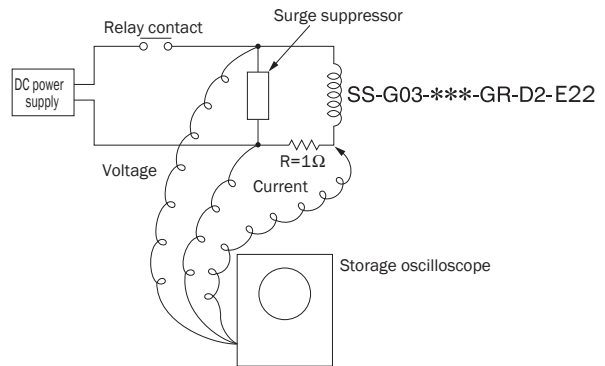
Switching Response Characteristics
The pressure waveforms for each valve in the hydraulic circuit shown below are shown at the bottom of this block.

Opening and closing of a dry type valve generates shock (noise) and pipe vibration due to the sudden drop or rise in pressure. With a shockless solenoid valve, pressure fluctuation when the valve is opened or closed is smoothed, which eliminates shock (noise) and pipe vibration.

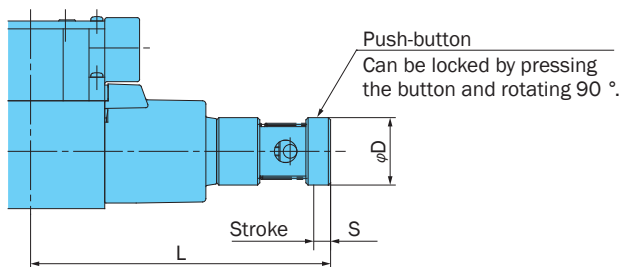


Surgeless Type (Auxiliary Symbol: G)

The surge pressure waveforms when the DC solenoid valve power supply is opened and closed by a relay are shown at the bottom of this block. A built-in surge absorber element eliminates sparking and surge pressure.



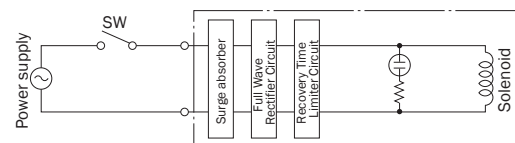
Manual Button Type (Auxiliary Symbol: N)



| Part No. | | L | S | D |
|------------|-------------|-------|-----|----|
| EDB14-D-1A | AC Solenoid | 133.5 | 7.5 | 30 |
| EDB14-A | DC Solenoid | 140.5 | | |
| ECB14-A | AC Solenoid | 155.5 | 9.5 | 35 |
| ECB14-D | DC Solenoid | 173.5 | | |

Quick Return (Auxiliary Symbol: Q)

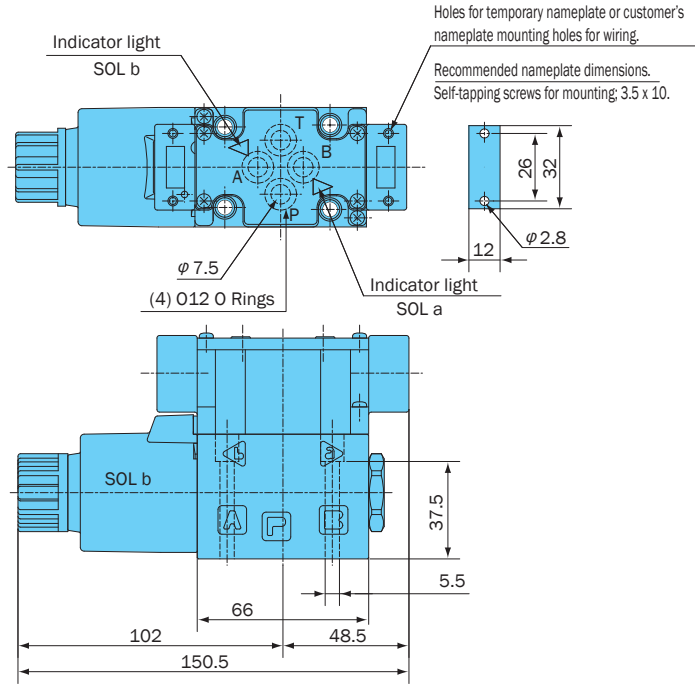
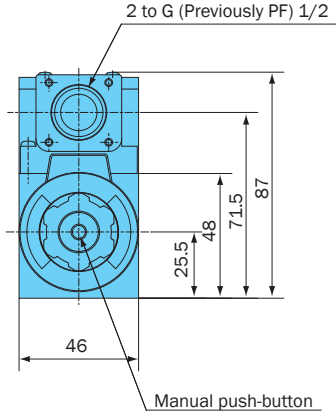
- Handling
1. This type is used in the case of power supply type E* (with built-in rectifier) to shorten the spring return time. This also applies to D*.
 2. Quick return device is built-in to central terminal box.



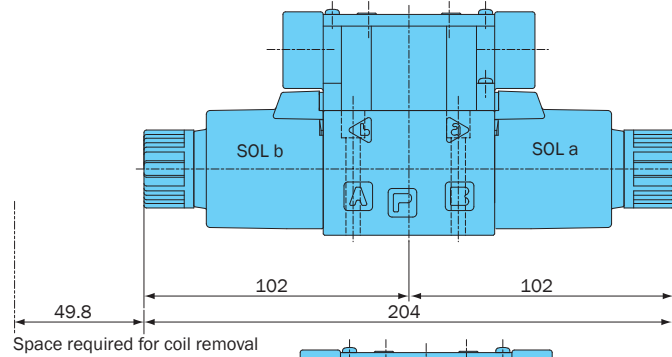
Installation Dimension Drawings

AC Solenoid
 SS-G01-A**-R-C*-31
 SS-G01-H**-R-C*-31

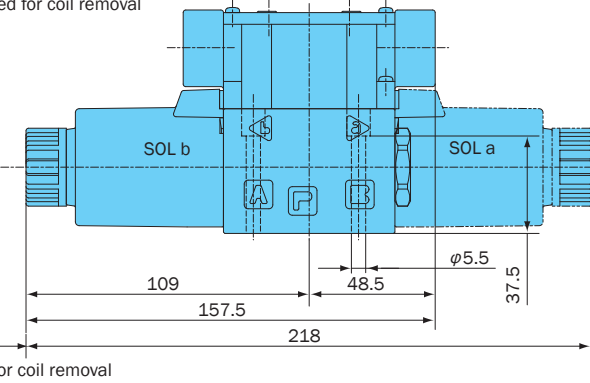
Note)
 SS-G01-H**-R**-31
 The solenoid is on the opposite side of that shown for SOLa in the illustrations shown here.



SS-G01-C **-R-C*-31
 SS-G01-E **-R-C*-31



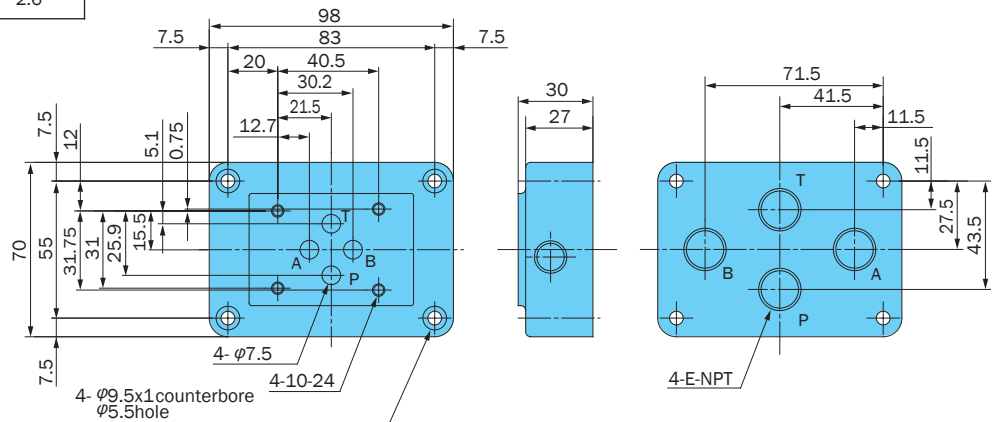
DDC Solenoid and Rectifier
 SS-G01-A **-R-D/E*-31
 SS-G01-H **-R-D/E*-31
 SS-G01-C **-R-D/E*-31
 SS-G01-E **-R-D/E*-31



For sub plate SS-G01

| Model No. | E | Weight lbs |
|-------------|-----|------------|
| MSA-01X-E10 | 1/4 | 2.6 |
| MSA-01Y-E10 | 3/8 | 2.6 |

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



Installation Dimension Drawings

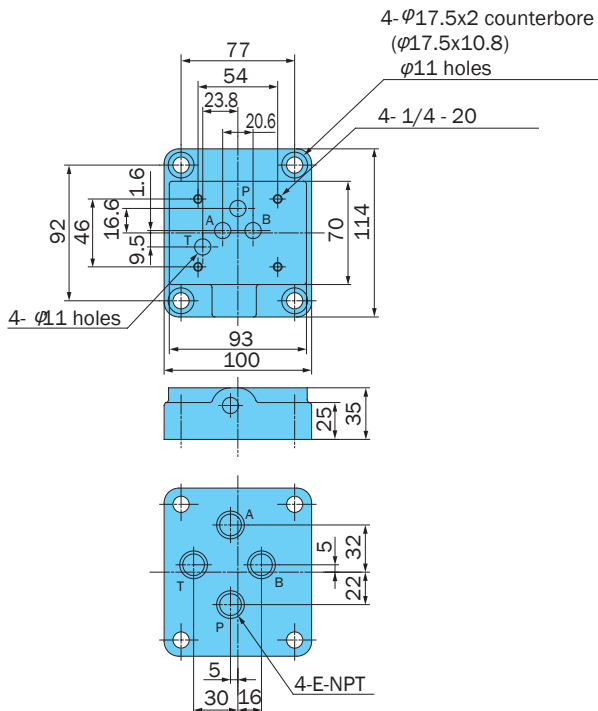
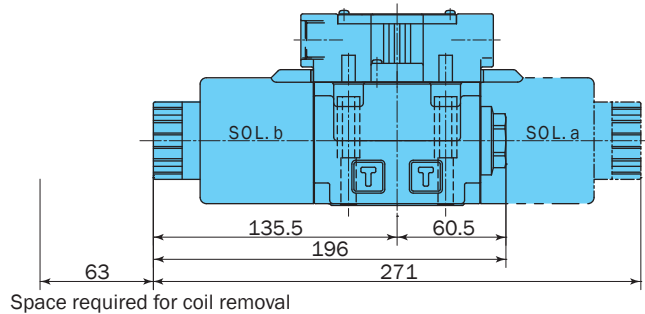
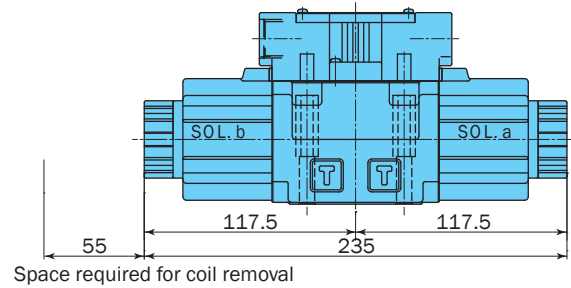
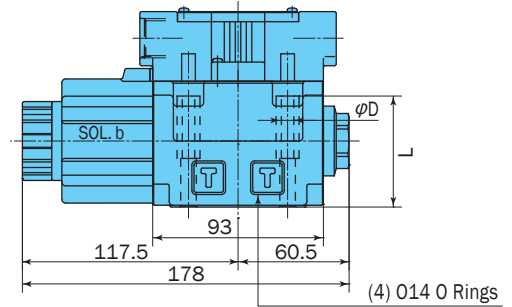
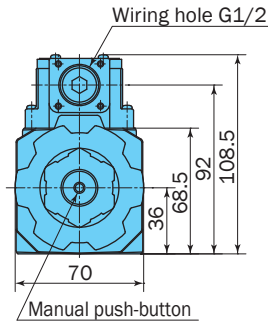
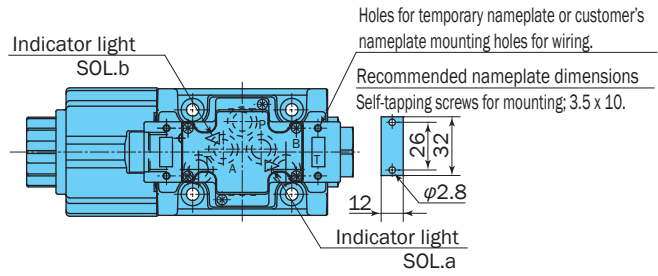
AC Solenoid
 SS-G03-A**-R-C*-E22
 SS-G03-H**-R-C*-E22

Note:
 SS-G03-H**-R**-E22
 The solenoid is on the opposite side of that shown for SOL.a in the illustrations shown here.

| | SS-G03-**-R**-J22 | SS-G03-**-R**-22 |
|----------|-------------------|------------------|
| ϕD | $\phi 6.8$ | $\phi 8.5$ |
| L | 60.5 | 58 |

SS-G03-C**-R-C*-E22
 SS-G03-E**-R-C*-E22

DC Solenoid and Rectifier
 SS-G03-A **-R-D*/E*-E22
 SS-G03-H **-R-D*/E*-E22
 SS-G03-C **-R-D*/E*-E22
 SS-G03-E **-R-D*/E*-E22



For sub plate SS-G03

| Mounting bolt | Model No. | E | Weight lbs |
|------------------|-------------|-----|------------|
| 1/4 - 20 x 2 3/4 | MSA-03-E10 | 3/8 | 5.0 |
| | MSA-03X-E10 | 1/2 | |

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

Wiring Diagram

The diagram shows a top-down view of a solenoid valve with four electrical terminals. Two terminals on the left are labeled 'SOL b' and two on the right are labeled 'SOL a'. A central terminal is labeled 'COM'. Two terminals at the top and bottom are labeled 'Ground terminal'.

Note:

1. In the case of a double solenoid valve, a common terminal is provided to simplify wiring. When the common terminal is not used, remove the terminal screws.
2. Use the ground terminal when grounding is required.
3. In the case of a solderless terminal, M3 screws.
4. Tighten terminal screws to a torque of 3.6 to 5 ft lbs.

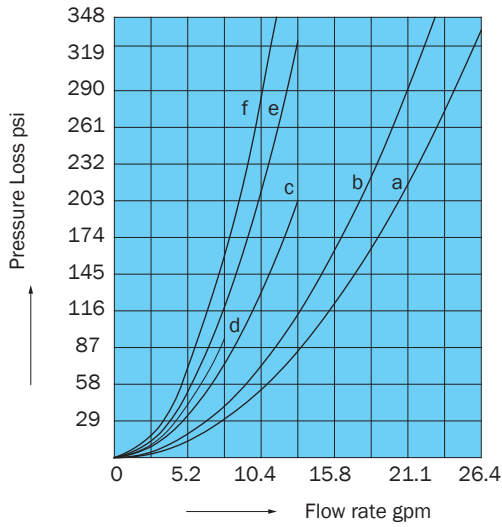
Electrical Circuit Diagram

| Type | Model No. | Electrical Circuit |
|--------------------------------------|--|------------------------------------|
| AC Solenoid | SS- G01-***-R-C*- 31 G03-***-R-C*- 22 | |
| AC Solenoid Surgeless Type | SS- G01-***-GR-C*- 31 G03-***-GR-C*- 22 | |
| Built-in Rectifier | SS- G01-***-R-E*- 31 G03-***-R-E*- 22 | |
| DC Solenoid | SS- G01-***-R-D*- 31 G03-***-R-D*- 22 | |
| DC Solenoid Surgeless Type | SS- G01-***-GR-D*- 31 G03-***-GR-D*- 22 | |
| Built-in Rectifier Quick Return Type | SS- G01-***-QR-E*- 31 G03-***-QR-E*- 22 | See page D-7 for more information. |

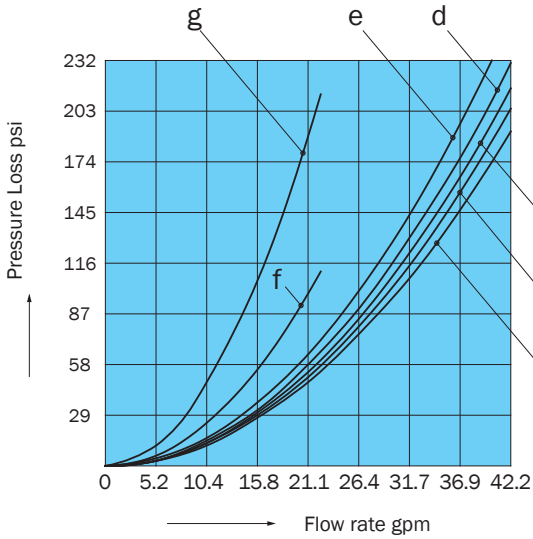
Performance Curves

Hydraulic Operating Fluid Viscosity 32 centistokes

Pressure Loss Characteristics



| Pump Type | Flow Path | P/ A | P/ B | A/ T | B/ T | P/ T |
|-----------|-----------------|------|------|------|------|------|
| SS-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 |
|-----------|---------------|------|------|------|------|------|
| SS-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 | |
| SS-G01-**-R-C*-E31 | 0.02 to 0.03 | 0.02 to 0.03 | 2030 psi 7.9 gpm |
| SS-G01-**-(G)R-D*-E31 | 0.03 to 0.04 | 0.02 to 0.04 | |
| SS-G01-**-R-E*-E31 | 0.03 to 0.04 | 0.07 to 0.10 | |
| SS-G01-**-F(G)R-D*-E31 | 0.07 to 0.10 | 0.04 to 0.07 | |
| SS-G01-**-FR-E*-E31 | 0.07 to 0.10 | 0.10 to 0.15 | |
| SS-G03-**-R-C*-E22 | 0.02 to 0.03 | 0.02 to 0.03 | 2030 psi 18.4 gpm |
| SS-G03-**-(G)R-D*-E22 | 0.06 to 0.09 | 0.03 to 0.05 | |
| SS-G03-**-R-E*-E22 | 0.07 to 0.10 | 0.10 to 0.15 | |
| SS-G03-**-F(G)R-D*-E22 | 0.13 to 0.15 | 0.08 to 0.15 | |
| SS-G03-**-FR-E*-E22 | 0.10 to 0.15 | 0.15 to 0.20 | |

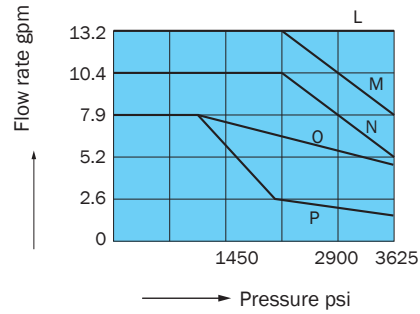
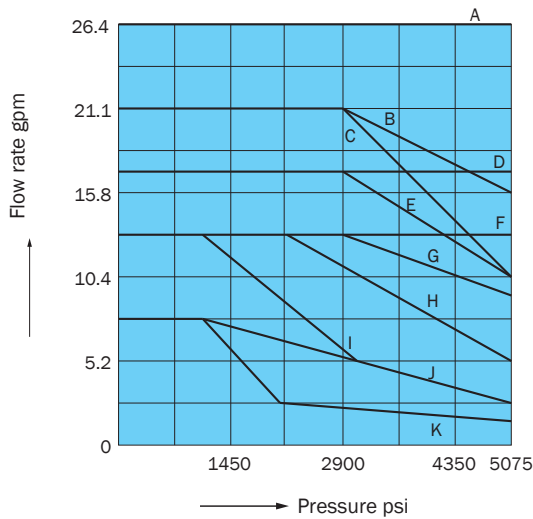
Note: 1. The switching response time changes slightly with operating conditions (pressure, flow rate, viscosity, etc.)
 2. In the case of power supply type E* (with built-in rectifier), the spring return time using Quick Return (option symbol: Q) is the same as D*.

Pressure – Flow Volume Allowable Value

| Size | Standard Form, with AC, DC solenoid | | |
|---------------------------------------|-------------------------------------|---|---|
| | SS-G01-**-R-**-31 | | |
| 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 |

Note: 1. Letter in parentheses is for AC solenoid.
 2. 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.

| Size | Shockless Type, with DC solenoid | | |
|---------------------------------------|----------------------------------|---|---|
| | SS-G01-**-FR-**-31 | | |
| Operation Example Operation Symbol | | | |
| A2X, H2X | - | P | P |
| E2X | - | O | O |
| A3X, H3X | L | P | P |
| E3X | L | O | O |
| A3Z, H3Z | L | L | L |
| E3Z | L | L | L |
| A5 | L | - | P |
| H5 | L | P | - |
| C1, C6 | M | P | P |
| C1S, C2, C5, C6S, C9 | L | P | P |
| A4, H4 | L | L | L |
| C4 | L | L | L |
| C7Y, C8 | N | P | P |



Pressure – Flow Volume Allowable Value

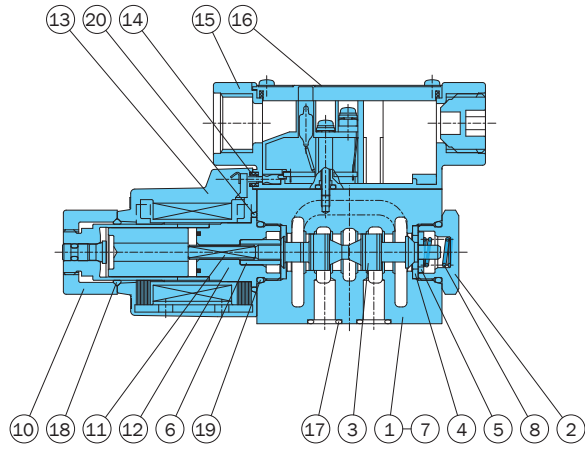
| Model No. | Standard Form, with AC Solenoid | | | Standard Form, with DC Solenoid | | |
|----------------------|----------------------------------|---------------------|------|---------------------------------|--------------------|------|
| | | SS-G03-**-R-C*-E22 | | | SS-G03-**-R-**-E22 | |
| Operation Example | | | | | | |
| Operation Symbol | | | | | | |
| A2X | — | F | E | ☒ | G | H |
| H2X | — | E | F | ☒ | H | G |
| E2X | — | C | C | ☒ | D | D |
| A3X | A | E | E | A | F | H |
| H3X | A | E | E | A | H | F |
| A3Z | A | A | C | A | D | D |
| H3Z | A | C | A | A | D | D |
| E3X, E3Z | A | C | C | A | D | D |
| A5 | A | — | D | A | — | G |
| H5 | A | D | — | A | G | — |
| C1S, C5, C6S | A | D | D | A | G | G |
| C1, C6 | A | D | D | B | G | G |
| C2 | A | G | D | A | I | G |
| A4, H4, C4 | A | A | A | A | A | A |
| C9 | A | G | G | A | I | I |
| C7Y, C8 | B | B | B | Note1) C(E) | C(E) | C(E) |
| | | | | | | |
| Model No. | Shockless Type, with DC solenoid | | | | | |
| | | SS-G03-**-FR-**-E22 | | | | |
| 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:

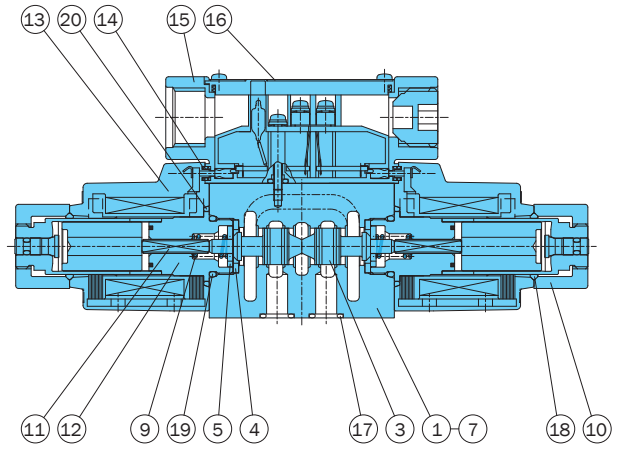
- Letter in parentheses is for solenoid with built-in rectifier (E*), but without Quick Return, and for DC solenoid (D*) with surge voltage absorbing diode on the electrical circuit.
- There is no shockless type for the AC solenoid (C*), so use a solenoid with built-in rectifier (E*) when shockless operation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

Cross-sectional Drawing

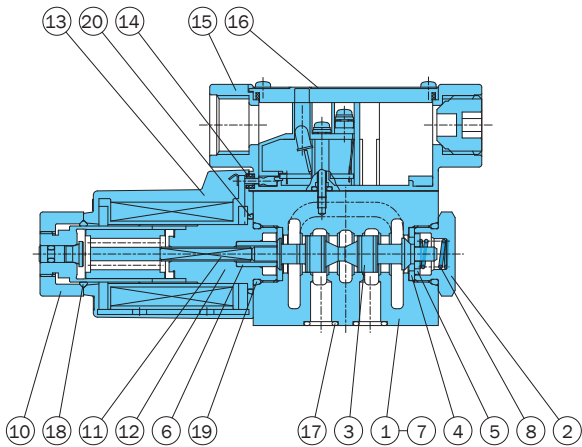
SS-G01-A**-R-C*-31



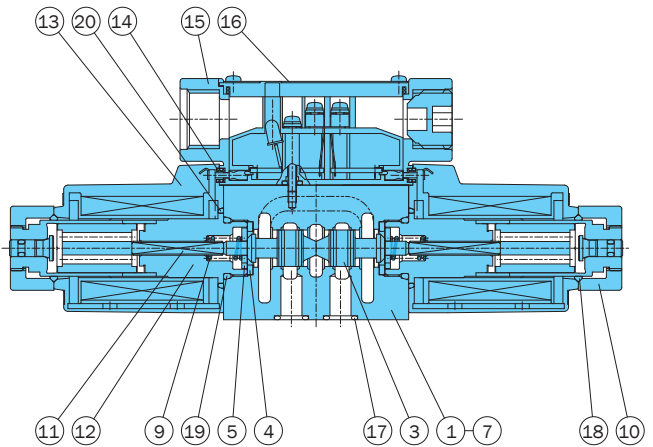
SS-G01-C**-R-C*-31



SS-G01-A**-R-D/E*-31



SS-G01-C**-R-D/E*-31



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.

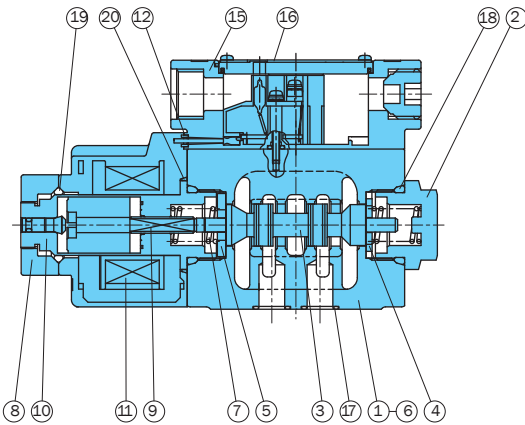
Seal Kit Number

| Single Solenoid | Double Solenoid |
|-----------------|-----------------|
| EDCS-A | EDCS-C |

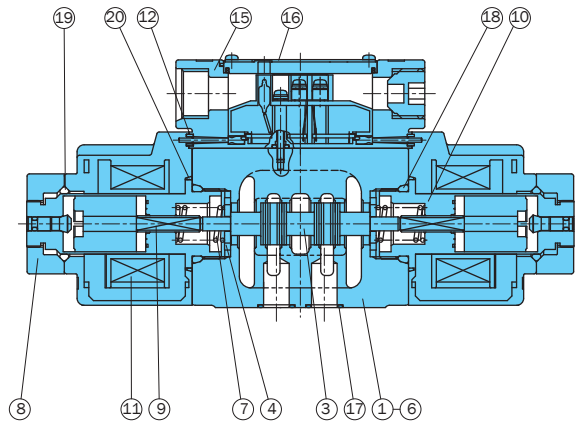
| Part No. | Part Name | Part No. | Part Name |
|----------|------------|----------|------------------|
| 1 | Body | 11 | Rod |
| 2 | Plug | 12 | Solenoid guide |
| 3 | Spool | 13 | Solenoid coil |
| 4 | Retainer A | 14 | Packing |
| 5 | Retainer B | 15 | Terminal box kit |
| 6 | Retainer C | 16 | Nameplate |
| 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

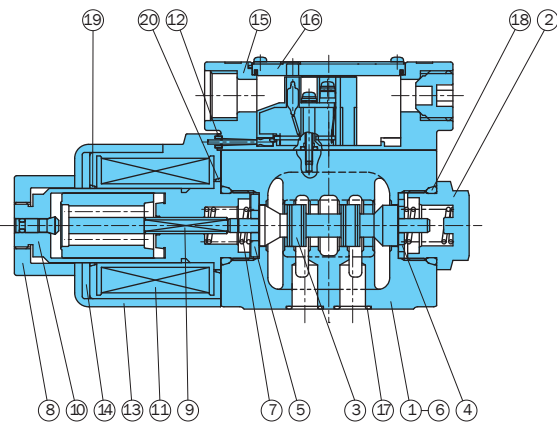
SS-G03-A**-R-C*-E22



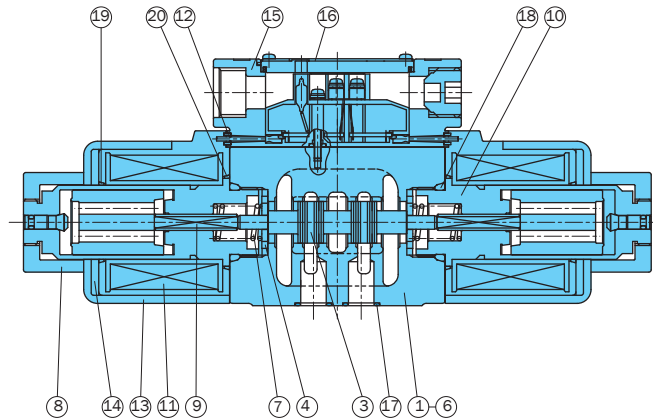
SS-G03-C**-R-C*-E22



SS-G03-A**-R-D/E*-E22



SS-G03-C**-R-D/E*-E22



List of Sealing Parts

| Part No. | Part Name | Type/Part Number | | Q'ty | |
|----------|-----------|------------------|-----------|-----------------|-----------------|
| | | AC SOL. | DC SOL. | Single Solenoid | Double Solenoid |
| 17 | O-ring | AS568-014(Hs90) | | 5 | 5 |
| 18 | O-ring | 1B-P28 | | 2 | 2 |
| 19 | O-ring | 1A-P26 | AS568-026 | 1 | 2 |
| 20 | O-ring | AS568-029 | | 2 | 2 |

Note: 1A and 1B** indicate JIS Standard B 2401-1A/1B-**.

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

Seal Kit Number

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