

## 3/8 Solenoid Operated Directional Valves, DSG-03 Series

These are epoch-making solenoid operated valves of high pressure, high flow which have been developed incorporating a unique design concept into every part of the valve including the solenoid. With wet type solenoids, these valves ensure the low noise and the long life, moreover, ensure no leakage of oil outside of the valves.

### Wide Range of Models

Choose the optimum valve to meet your need from a large selection available. The DSG-03 50 design series solenoid operated directional valves are classified into the two basic models.

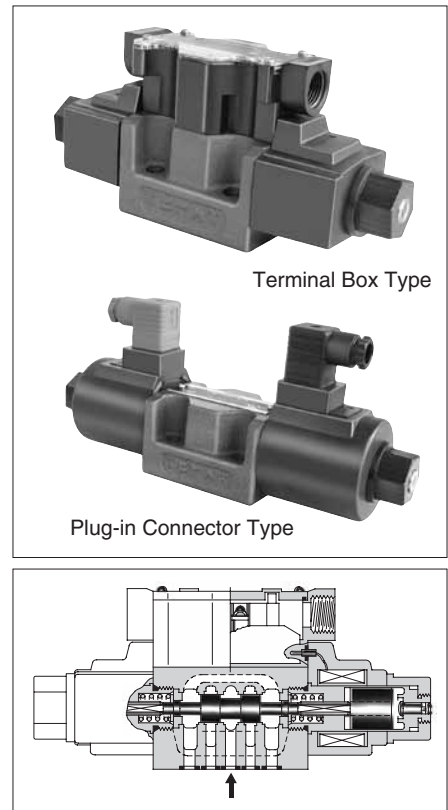
- Standard type .... Useable at high pressure: 31.5 MPa (4570 PSI) and high flow: 120 L/min (31.7 U.S.GPM)
- Shockless type .... A noise at spool changeover and a vibration in piping can be reduced to a minimum.

### Stable Operation

With a strong magnet and spring force, the valves are tough against contamination and thus ensure a stable operation.

### Usable in products of various standards

CE/UL/CSA certified products are available.



### Specifications

| Valve Type             | Model Numbers         | Max. Flow<br>L/min (U.S.GPM) | Max. Operating Pressure<br>MPa (PSI)              | Max. T-Line Back Pres.<br>MPa (PSI) | Max. Changeover Frequency<br>min <sup>-1</sup> (Cycles/Min) | Approx. Mass kg(1bs.) |           |
|------------------------|-----------------------|------------------------------|---|-------------------------------------|---|-----------------------|-----------|
|                        |                       |                              |   |                                     |   | Type of Solenoid      |           |
|                        |                       |                              |   |                                     |   | AC                    | DC, R, RQ |
| Standard Type          | DSG-03-3C*-50/5090    | 120 (31.7)                   | 31.5 (4570)<br>[Spool Type 60 Only]<br>25 (3630)] | 16 (2320)                           | 240<br>(R Type Sol. Only)<br>120                            | 3.6 (7.9)             | 5 (11)    |
|                        | DSG-03-2D2*-50/5090   |                              |   |                                     |   | 2.9 (6.4)             | 3.6 (7.9) |
|                        | DSG-03-2B*-50/5090    |                              |   |                                     |   | —                     | 3.6 (7.9) |
| Shockless Type         | S-DSG-03-3C*-50/5090  | 120 (31.7)                   | 25 (3630)   | 16 (2320)                           | 120   | —                     | 5 (11)    |
|                        | S-DSG-03-2B2*-50/5090 |                              |   |                                     |   | —                     | 3.6 (7.9) |
| Low Wattage (14W) Type | L-DSG-03-3C*-50/5090  | 60 (15.9)                    | 16 (2320)   | 16 (2320)                           | 240<br>(R Type Sol. Only)<br>120                            | 3.6 (7.9)             | 5 (11)    |
|                        | L-DSG-03-2D2*-50/5090 |                              |   |                                     |   | 2.9 (6.4)             | 3.6 (7.9) |
|                        | L-DSG-03-2B*-50/5090  |                              |   |                                     |   | —                     | 3.6 (7.9) |

★1 For details of L-DSG-03, please contact us.

★2 The maximum flow means the limited flow without inducing any abnormality to the operation (changeover) of the valve. The maximum flow differs according to the spool type and operating conditions. For details, please refer to the "List of Standard Models and Maximum Flow" on pages 364 to 368.

### Sub-plate

| Piping Size | Japanese Standard "JIS" |             | European Design Standard |             | N.American Design Standard |             | Approx. Mass kg (lbs.) |
|-------------|-------------------------|-------------|--------------------------|-------------|----------------------------|-------------|------------------------|
|             | Sub-plate Model Numbers | Thread Size | Sub-plate Model Numbers  | Thread Size | Sub-plate Model Numbers    | Thread Size |                        |
| 3/8         | DSGM-03-40              | Rc 3/8      | DSGM-03-2180             | 3/8 BSP.F   | DSGM-03-2190               | 3/8 NPT     | 3.0 (6.6)              |
| 1/2         | DSGM-03X-40             | Rc 1/2      | DSGM-03X-2180            | 1/2 BSP.F   | DSGM-03X-2190              | 1/2 NPT     | 3.0 (6.6)              |
| 3/4         | DSGM-03Y-40             | Rc 3/4      | DSGM-03Y-2180            | 3/4 BSP.F   | DSGM-03Y-2190              | 3/4 NPT     | 4.7 (10.4)             |

- Sub-plates are available. Specify the sub-plate model number from the table above. When sub-plates are not used, the mounting surface should have a good machined finish.

### Mounting Bolts

For socket head cap screws in the table below are included.

| Descriptions  | Soc. Hd. Cap Screw (4 pcs.) | Tightening Torque                  |
|---|-----------------------------|------------------------------------|
| Japanese Standard "JIS"<br>European Design Standard | M6 × 35 Lg.                 | 12 - 15 Nm<br>(106 - 133 in. lbs.) |
| N. American Design Standard                         | 1/4-20 UNC × 1-1/2 Lg.      |                                    |

E  
DSG-03 Series Solenoid Operated Directional Valves

**Solenoid Ratings**

| Valve Type     | Electric source                        | Coil Type | Frequency (Hz) | Voltage (V)   |                   | Current & Power at Rated Voltage |             |           |
|----------------|--|-----------|----------------|---------------|-------------------|----------------------------------|-------------|-----------|
|                |  |           |                | Source Rating | Serviceable Range | Inrush (A) <sup>★2</sup>         | Holding (A) | Power (W) |
| Standard Type  | AC <sup>★1</sup>                       | A100      | 50             | 100           | 80 - 110          | 5.37                             | 0.90        | —         |
|                |  |           | 60             | 100           | 90 - 120          | 4.57                             | 0.63        |           |
|                |  |           |                | 110           |                   | 5.03                             | 0.77        |           |
|                |  | A120      | 50             | 120           | 96 - 132          | 4.48                             | 0.75        |           |
|                |  |           | 60             |               | 108 - 144         | 3.81                             | 0.52        |           |
|                |  | A200      | 50             | 200           | 160 - 220         | 2.69                             | 0.45        |           |
|                |  |           |                |               | 180 - 240         | 2.29                             | 0.31        |           |
|                |  |           | 60             | 220           |                   | 2.52                             | 0.38        |           |
|                |  |           |                |               | A240              | 50                               | 240         |           |
|                |  | 60        | 216 - 288      | 1.91          |                   | 0.26                             |             |           |
| Shockless Type | DC (K Series)                          | D12       | —              | 12            | 10.8 - 13.2       | —                                | 3.16        | 38        |
|                |  | D24       |                | 24            | 21.6 - 26.4       |                                  | 1.57        |           |
|                |  | D100      |                | 100           | 90 - 110          |                                  | 0.38        |           |
|                | AC→DC Rectified (R)                    | R100      | 50/60          | 100           | 90 - 110          | —                                | 0.43        | 38        |
|                |  | R200      |                | 200           | 180 - 220         |                                  | 0.21        |           |
|                | AC→DC Rectified (RQ)<br>(Quick Return) | RQ100     | 50/60          | 100           | 90 - 110          | —                                | 0.43        | 38        |

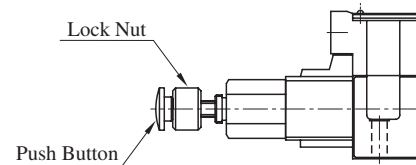
- ★1. AC solenoid is not available in shockless type.  
R or RQ type models with built-in current rectifier is recommended for shockless operation with AC power.
- ★2. Inrush current in the above table show rms values at maximum stroke.
- ★3. There are more coil types other than the above. For details, please make inquiries .

The coil type numbers in the shaded column are handled as optional extras. In case these coils are required to be chosen, please confirm the time of delivery with us before ordering .

**Options**

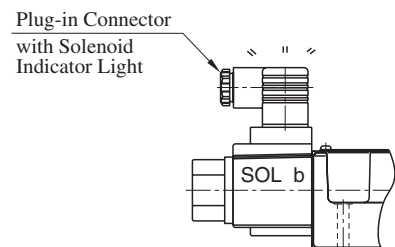
**● Push Button with Lock Nut**

Can be used for manual changeover of spool. The push button can be locked in the pressed condition.



**● Plug-in Connector with Solenoid Indicator Light**

These are the indicator light incorporated plug-in connector type solenoids. Energisation or de-energisation of the solenoid can be easily identified with the incorporated indicator light.



**● M8 Mounting Bolts.**

As the mounting bolts, M6 socket head cap screws are used for the standard valves, however, M8 socket head cap screws are also available for supply as optional extras. In case the M8 screws are required, suffix "02" to the design number of both valve and sub-plate model number like below.

(Example)

Valve: DSG-03-3C2-A100-5002  
Sub-plate: DSGM-03-4002

The valve is supplied with 4 pcs. hexagon socket head cap screws M8 × 38 Lg.

## Model Number Designation

| F-  | S-                            | DSG  | -03  | -2  | B                           | 2   | A   | -D24  | -C                                  | -N                                | -50           | *   | -L  |                                      |   |  |  |
|---|-------------------------------|--|--|---|-----------------------------|---|---|---|-------------------------------------|-----------------------------------|---------------|---|---|--------------------------------------|---|--|--|
| Special Seals   | Shockles Type                 | Series Number                                      | Valve Size                                       | Number of Valve Positions                   | Spool-Spring Arrangement    | Spool Type  | Special Two Position Valve (Omit if not required) | Coil Type   | Manual Override                     | Electrical Conduit Connection     | Design Number | Design Standard   | Models with Reverse Mtg. of Solenoid (Omit if not required) |                                      |   |  |  |
| <b>F:</b><br>For Phosphate Ester Type Fluids (Omit if not required) | <b>None:</b><br>Standard Type | <b>DSG:</b><br>Solenoid Operated Directional Valve | <b>03</b>  | <b>3:</b><br>Three Positions                | <b>C:</b><br>Spring Centred | 2, <b>3</b>   | —   | AC:<br><b>A100</b><br><b>A120</b><br><b>A200</b><br><b>A240</b> | <b>None:</b><br>Manual Override Pin | <b>None:</b><br>Terminal Box Type | <b>50</b>     | <b>None:</b><br>Japanese Std. "JIS"<br><br><b>90:</b><br>N.American Design Std. | —   |                                      |   |  |  |
|   |                               |  |  |   |                             | 4, <b>40</b>  |   | DC:<br><b>D12</b><br><b>D24</b><br><b>D100</b>                  |                                     |                                   |               |   |   |                                      |   |  |  |
|   |                               |  |  |   |                             | <b>5</b> , <b>60</b><br><b>9</b> , <b>10</b><br><b>11</b> , <b>12</b> |   | R:<br>(AC→DC)<br><b>R100</b><br><b>R200</b>                     |                                     |                                   |               |   |   |                                      |   |  |  |
|   | <b>2:</b><br>Two Positions    |  |  | <b>D:</b><br>No-Spring Detented             | 2                           | —   | RQ:<br>(AC→DC)<br><b>RQ100</b>                    | <b>N:</b> <sup>*2</sup><br>Plug-in Connector Type               |                                     |                                   |               |   |   | <b>90:</b><br>N.American Design Std. | L |  |  |
|   |                               |  |  |   | <b>B:</b><br>Spring Offset  |   | 2<br>3<br><b>8</b>                                |   |                                     |                                   |               |   |   |                                      |   | <b>A</b> <sup>*1</sup><br><b>B</b> <sup>*1</sup> | <b>N1:</b> <sup>*3</sup><br>Plug-in Connector Type with Indicator Light (Option) |
|   |                               |  |  |   |                             |   | <b>3:</b><br>Three Positions                      |   |                                     |                                   |               |   |   |                                      |   |  |  |
| <b>2:</b><br>Two Positions  | <b>B:</b><br>Spring Offset    | 2  | <b>A</b> <sup>*1</sup><br><b>B</b> <sup>*1</sup> | R:<br>(AC DC)<br><b>R100</b><br><b>R200</b> |                             |   |   |   |                                     |                                   |               |   |   |                                      |   |  |  |
|   |                               | RQ:<br>(AC DC)<br><b>RQ100</b>                     |  | <b>90:</b><br>N.American Design Std.        | L                           |   |   |   |                                     |                                   |               |   |   |                                      |   |  |  |

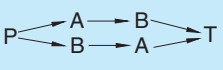
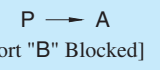
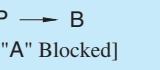
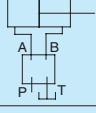
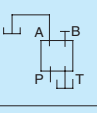
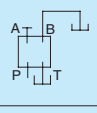
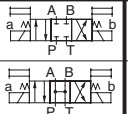
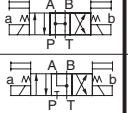
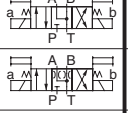
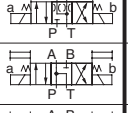

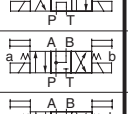

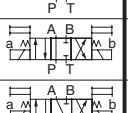
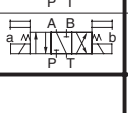
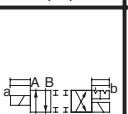
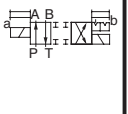

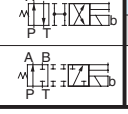
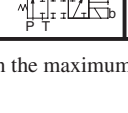
- ★ 1. In case of the special two position valve, please refer to [page 369](#) for details.
- ★ 2. N is not available for RQ-type solenoids .
- ★ 3. N1 is not available for R and RQ-type solenoids .

In the table above, the symbols or numbers highlighted with shade represent the optional extras. The valves with model number having such optional extras are handles as options, therefore, please confirm the time of delivery with us before ordering.

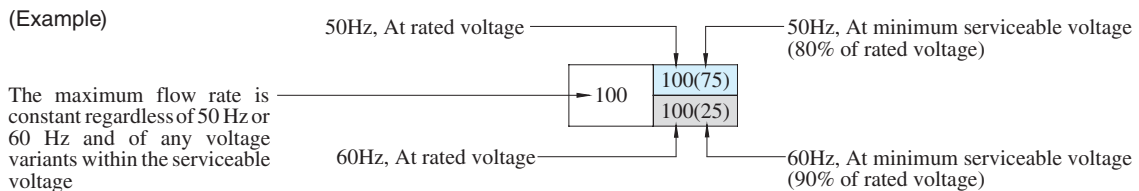


■ List of Standard Models and The Maximum Flow

● Models with AC Solenoids: DSG-03-\*\*\*-A\*

| No. of Valve Positions | Spool-Spring Arrangement | Model Numbers | Graphic Symbols   | Max. Flow L/min   |      |        |        |  |         |         |         |   |         |         |         |         |
|------------------------|--------------------------|---------------|---|---|------|--------|--------|--|---------|---------|---------|---|---------|---------|---------|---------|
|                        |                          |               |   |    |      |        |        |  |         |         |         |  |         |         |         |         |
|                        |                          |               |   |    |      |        |        |  |         |         |         |  |         |         |         |         |
|                        |                          |               |   | Working Pressure MPa  |      |        |        | Working Pressure MPa   |         |         |         | Working Pressure MPa  |         |         |         |         |
|                        |                          | 10            | 16  | 25  | 31.5 | 10     | 16     | 25   | 31.5    | 10      | 16      | 25  | 31.5    |         |         |         |
| Three Positions        | Spring Centred           | DSG-03-3C2    |    | 100   | 100  | 100    | 100    | 100(70)  | 100(48) | 96(28)  | 65(24)  | 100(70)   | 100(48) | 96(28)  | 65(24)  |         |
|                        |                          | DSG-03-3C3    |    | 90  | 90   | 90     | 90     | 100(81)  | 100(81) | 100(81) | 100(81) | 100(81)   | 100(81) | 100(81) | 100(81) | 100(81) |
|                        |                          | DSG-03-3C4    |    | 80  | 80   | 80(65) | 80(25) | 100(58)  | 100(33) | 76(22)  | 46(19)  | 100(58)   | 100(33) | 76(22)  | 46(19)  |         |
|                        |                          | DSG-03-3C40   |    | 100   | 100  | 100    | 100    | 100(75)  | 100(62) | 100(39) | 84(21)  | 48(18)  | 100(62) | 100(39) | 84(21)  | 48(18)  |
|                        |                          | DSG-03-3C5    |    | 30  | 30   | 30     | 30     | 26   | 21      | 18      | 16      | 30  | 28      | 28      | 28      |         |
|                        |                          | DSG-03-3C60   |   | 70  | 70   | 70     | —      | 100  | 100     | 100     | —       | 100   | 100     | 100     | —       |         |
|                        |                          | DSG-03-3C9    |  | 100   | 100  | 100    | 100    | 60   | 60      | 60      | 60      | 60  | 60      | 60      | 60      |         |
|                        |                          | DSG-03-3C10   |  | 80  | 80   | 80(30) | 80(20) | 100(55)  | 100(36) | 60(21)  | 34(16)  | 100(55)   | 100(36) | 60(21)  | 34(16)  |         |
|                        |                          | DSG-03-3C11   |  | 100   | 100  | 100    | 100    | 100(80)  | 100(65) | 85(35)  | 62(28)  | 100(80)   | 100(65) | 85(35)  | 62(28)  |         |
|                        |                          | DSG-03-3C12   |  | 90  | 90   | 90(30) | 90(20) | 100(55)  | 100(36) | 60(21)  | 34(16)  | 100(55)   | 100(36) | 60(21)  | 34(16)  |         |
| Two Positions          | No-Spring Detented       | DSG-03-2D2    |  | 100   | 100  | 100    | 100    | 40   | 40      | 30      | 28      | 60  | 60      | 40      | 35      |         |
|                        |                          | Spring Offset | DSG-03-2B2  |  | 100  | 100    | 100    | 100  | 100(90) | 100(90) | 100(90) | 100(90)   | 34      | 24      | 20      | 19      |
|                        |                          |               | DSG-03-2B3  |  | 100  | 100    | 100    | 100  | 100(75) | 100(75) | 100(75) | 100(75)   | 57      | 57      | 57      | 57      |
|                        |                          |               | DSG-03-2B8  |  | —    | —      | —      | —  | 26      | 19      | 18      | 16  | 100(35) | 87(15)  | 61(9)   | 49(7)   |

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

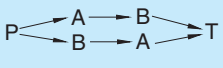
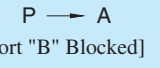
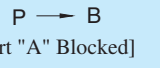






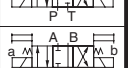
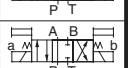

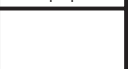
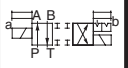
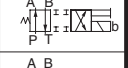
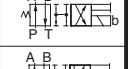
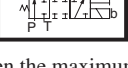
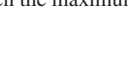


2. For the maximum flow rate in P → T of the valves with a ★ mark, please see page 368.

The valve models with a ◆ mark are handled as Options. If you choose such valves, check the time of delivery beforehand.

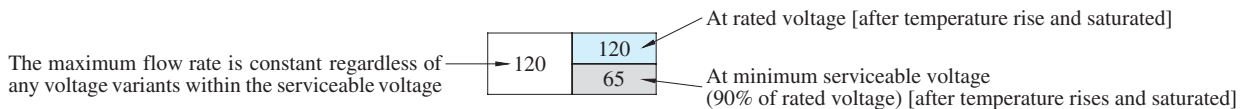
■ List of Standard Models and The Maximum Flow

- Models with DC Solenoids: DSG-03-\*\*\*-D\*
- Models with R Type Solenoids: DSG-03-\*\*\*-R\*
- Models with RQ Type Solenoids: DSG-03-\*\*\*-RQ100\*

| No. of Valve Positions | Spool-Spring Arrangement  | Model Numbers | Graphic Symbols   | Max. Flow L/min   |     |     |      |  |     |     |      |   |     |     |      |     |
|------------------------|---|---------------|---|---|-----|-----|------|--|-----|-----|------|---|-----|-----|------|-----|
|                        |   |               |   |    |     |     |      |  |     |     |      |  |     |     |      |     |
|                        |   |               |   | Working Pressure MPa  |     |     |      | Working Pressure MPa   |     |     |      | Working Pressure MPa  |     |     |      |     |
|                        |   |               |   | 10  | 16  | 25  | 31.5 | 10   | 16  | 25  | 31.5 | 10  | 16  | 25  | 31.5 |     |
| Three Positions        | Spring Centred  | DSG-03-3C2    |    | 120   | 120 | 120 | 120  | 120  | 120 | 80  | 55   | 120   | 120 | 80  | 55   |     |
|                        |   | DSG-03-3C3    |    | 120   | 120 | 120 | 120  | 120  | 120 | 120 | 120  | 120   | 120 | 120 | 120  |     |
|                        |   | DSG-03-3C4    |    | 120   | 120 | 120 | 120  | 120  | 120 | 84  | 64   | 120   | 120 | 84  | 64   |     |
|                        |   | DSG-03-3C40   |    | 120   | 120 | 120 | 120  | 120  | 120 | 62  | 49   | 120   | 120 | 62  | 49   |     |
|                        |   | DSG-03-3C5    |   | 50  | 50  | 50  | 50   | 35   | 24  | 21  | 20   | 45  | 45  | 45  | 45   |     |
|                        |   | DSG-03-3C60   |  | 120   | 120 | 120 | —    | 120  | 120 | 120 | —    | 120   | 120 | 120 | —    |     |
|                        |   | DSG-03-3C9    |  | 120   | 120 | 120 | 120  | 100  | 100 | 100 | 100  | 100   | 100 | 100 | 100  |     |
|                        |   | DSG-03-3C10   |  | 120   | 120 | 120 | 65   | 120  | 112 | 60  | 51   | 120   | 112 | 60  | 51   |     |
|                        |   | DSG-03-3C11   |  | 120   | 120 | 120 | 120  | 100  | 100 | 80  | 65   | 100   | 100 | 80  | 65   |     |
|                        |   | DSG-03-3C12   |  | 120   | 120 | 120 | 65   | 120  | 120 | 62  | 51   | 120   | 120 | 62  | 51   |     |
| Two Positions          | No-Spring Detented  | DSG-03-2D2    |  | 120   | 120 | 120 | 120  | 45   | 37  | 30  | 28   | 60  | 60  | 40  | 35   |     |
|                        |   | Spring Offset | DSG-03-2B2  |  | 110 | 110 | 110  | 110  | 68  | 47  | 38   | 38  | 120 | 114 | 75   | 63  |
|                        |   |               |   |  | 100 | 100 | 100  | 100  | —   | —   | —    | —   | 120 | 83  | 58   | 48  |
|                        |   |               | DSG-03-2B3  |  | 120 | 120 | 120  | 120  | 77  | 77  | 77   | 77  | 120 | 120 | 120  | 120 |
| DSG-03-2B8             |  | —             | —   | —   | —   | 53  | 33   | 24   | 23  | 120 | 120  | 62  | 47  |     |      |     |

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

(Example)



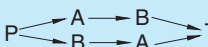
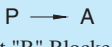
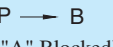
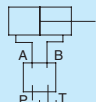
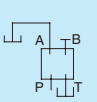
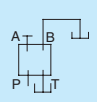
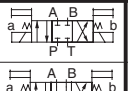


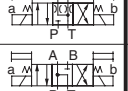
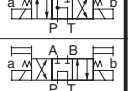


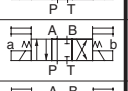
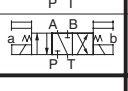
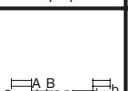
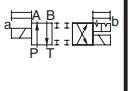
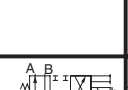
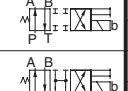
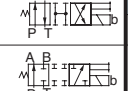
2. For the maximum flow rate in P → T of the valves with a ★ mark, please see page 368.

The valve models with a ◆ mark are handled as Options. If you choose such valves, check the time of delivery beforehand.

DSG-03 Series Solenoid Operated Directional Valves

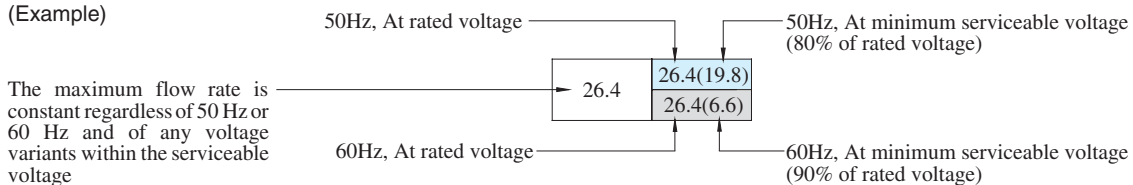
■ List of Standard Models and The Maximum Flow

● Models with AC Solenoids: DSG-03-\*\*\*-A\*

| No. of Valve Positions | Spool-Spring Arrangement | Model Numbers | Graphic Symbole   | Max. Flow U.S.GPM   |      |             |            |  |             |             |             |   |             |             |             |             |             |             |
|------------------------|--------------------------|---------------|---|---|------|-------------|------------|--|-------------|-------------|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|
|                        |                          |               |   |  |      |             |            | <br>[Port "B" Blocked] |             |             |             | <br>[Port "A" Blocked] |             |             |             |             |             |             |
|                        |                          |               |   |  |      |             |            |                        |             |             |             |                        |             |             |             |             |             |             |
|                        |                          |               |   | Working Pressure PSI  |      |             |            | Working Pressure PSI   |             |             |             | Working Pressure PSI  |             |             |             |             |             |             |
|                        |                          | 1450          | 2320  | 3630  | 4570 | 1450        | 2320       | 3630   | 4570        | 1450        | 2320        | 3630  | 4570        |             |             |             |             |             |
| Three Positions        | Spring Centred           | DSG-03-3C2    |    | 26.4  | 26.4 | 26.4        | 26.4       | 26.4 (18.5)  | 26.4 (12.7) | 25.4 (7.4)  | 17.2 (6.3)  | 26.4 (18.5)   | 26.4 (12.7) | 25.4 (7.4)  | 17.2 (6.3)  |             |             |             |
|                        |                          | DSG-03-3C3    |    | 23.8  | 23.8 | 23.8        | 23.8       | 26.4 (21.4)  | 26.4 (21.4) | 26.4 (21.4) | 26.4 (21.4) | 26.4 (21.4)   | 26.4 (21.4) | 26.4 (21.4) | 26.4 (21.4) | 26.4 (21.4) |             |             |
|                        |                          | DSG-03-3C4    |    | 21.1  | 21.1 | 21.1 (17.2) | 21.1 (6.6) | 26.4 (15.3)  | 26.4 (8.7)  | 20.1 (5.8)  | 12.2 (5.0)  | 26.4 (15.3)   | 26.4 (8.7)  | 20.1 (5.8)  | 12.2 (5.0)  | 19.8 (5.3)  | 7.9 (4.0)   |             |
|                        |                          | DSG-03-3C40   |    | 26.4  | 26.4 | 26.4        | 26.4       | 26.4 (19.8)  | 26.4 (16.4) | 26.4 (10.3) | 22.2 (5.5)  | 12.7 (4.8)  | 26.4 (16.4) | 26.4 (10.3) | 22.2 (5.5)  | 12.7 (4.8)  | 26.4 (6.6)  | 16.4 (10.6) |
|                        |                          | DSG-03-3C5    |    | 7.9   | 7.9  | 7.9         | 7.9        | 6.9  | 5.5         | 4.8         | 4.2         | 7.9   | 7.4         | 7.4         | 7.4         | 7.4         | 7.4         |             |
|                        |                          | DSG-03-3C60   |   | 18.5  | 18.5 | 18.5        | —          | 26.4   | 26.4        | 26.4        | —           | 26.4  | 26.4        | 26.4        | —           | 26.4        | 26.4        |             |
|                        |                          | DSG-03-3C9    |  | 26.4  | 26.4 | 26.4        | 26.4       | 15.9   | 15.9        | 15.9        | 15.9        | 15.9  | 15.9        | 15.9        | 15.9        | 15.9        | 15.9        |             |
|                        |                          | DSG-03-3C10   |  | 21.1  | 21.1 | 21.1 (7.9)  | 21.1 (5.3) | 26.4 (14.5)  | 26.4 (9.5)  | 15.9 (5.5)  | 9.0 (4.2)   | 26.4 (14.5)   | 26.4 (9.5)  | 15.9 (5.5)  | 9.0 (4.2)   | 7.9 (6.6)   | 5.3 (4.0)   |             |
|                        |                          | DSG-03-3C11   |  | 26.4  | 26.4 | 26.4        | 26.4       | 26.4 (21.1)  | 26.4 (17.2) | 22.5 (9.2)  | 16.4 (7.4)  | 26.4 (21.1)   | 26.4 (17.2) | 22.5 (9.2)  | 16.4 (7.4)  | 21.1 (15.9) | 18.5 (12.2) |             |
|                        |                          | DSG-03-3C12   |  | 23.8  | 23.8 | 23.8 (7.9)  | 23.8 (5.3) | 26.4 (14.5)  | 26.4 (9.5)  | 15.9 (5.5)  | 9.0 (4.2)   | 26.4 (14.5)   | 26.4 (9.5)  | 15.9 (5.5)  | 9.0 (4.2)   | 10.6 (5.3)  | 5.3 (4.0)   |             |
| Two Positions          | No-Spring Detented       | DSG-03-2D2    |  | 26.4  | 26.4 | 26.4        | 26.4       | 10.6   | 10.6        | 7.9         | 7.4         | 15.9  | 15.9        | 10.6        | 9.2         |             |             |             |
|                        | Spring Offset            | DSG-03-2B2    |  | 26.4  | 26.4 | 26.4        | 26.4       | 9.0  | 6.3         | 5.3         | 5.0         | 26.4 (16.4)   | 26.4 (16.4) | 26.4 (11.6) | 24.8 (9.8)  | 21.1 (11.1) | 19.3 (9.5)  |             |
|                        |                          | DSG-03-2B3    |  | 26.4  | 26.4 | 26.4        | 26.4       | 15.1   | 15.1        | 15.1        | 15.1        | 26.4 (20.9)   | 26.4 (19)   | 26.4 (16.9) | 26.4 (15.6) | 24.3 (14.5) | 23.5 (12.2) |             |
|                        |                          | DSG-03-2B8    |  | —   | —    | —           | —          | 6.9  | 5.0         | 4.8         | 4.2         | 26.4 (9.2)  | 23 (4.0)    | 16.1 (2.4)  | 12.9 (1.8)  | 11.9 (5.5)  | 9.0 (3.2)   |             |

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

(Example)


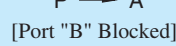

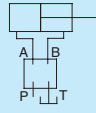
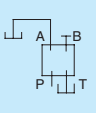
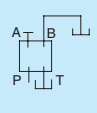
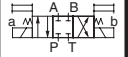

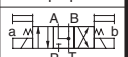
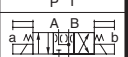

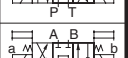
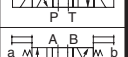
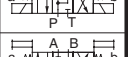
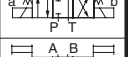
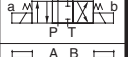
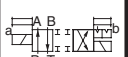
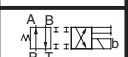
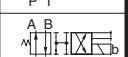
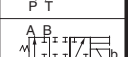


2. For the maximum flow rate in P → T of the valves with a ★ mark, please see page 368.

The valve models with a ◆ mark are handled as Options. If you choose such valves, check the time of delivery beforehand.

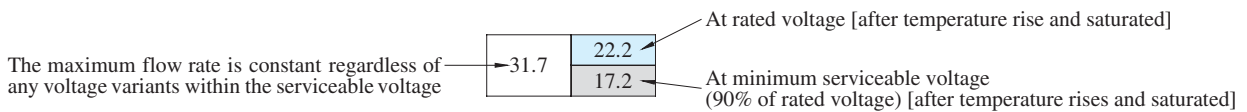
■ List of Standard Models and The Maximum Flow

- Models with DC Solenoids: DSG-03-\*\*\*-D\*
- Models with R Type Solenoids: DSG-03-\*\*\*-R\*
- Models with RQ Type Solenoids: DSG-03-\*\*\*-RQ100\*

| No. of Valve Positions | Spool-Spring Arrangement | Model Numbers | Graphic Symbols   | Max. Flow U.S. GPM  |      |      |      |  |      |      |      |   |      |      |      |
|------------------------|--------------------------|---------------|---|---|------|------|------|--|------|------|------|---|------|------|------|
|                        |                          |               |   |  |      |      |      | <br>[Port "B" Blocked] |      |      |      | <br>[Port "A" Blocked] |      |      |      |
|                        |                          |               |   |  |      |      |      |                        |      |      |      |                        |      |      |      |
|                        |                          |               |   | Working Pressure PSI  |      |      |      | Working Pressure PSI   |      |      |      | Working Pressure PSI  |      |      |      |
|                        |                          |               |   | 1450  | 2320 | 3630 | 4570 | 1450   | 2320 | 3630 | 4570 | 1450  | 2320 | 3630 | 4570 |
| Three Positions        | Spring Centred           | DSG-03-3C2    |    | 31.7  | 31.7 | 31.7 | 31.7 | 31.7   | 31.7 | 21.1 | 14.5 | 31.7  | 31.7 | 21.1 | 14.5 |
|                        |                          | DSG-03-3C3    |    | 31.7  | 31.7 | 31.7 | 31.7 | 31.7   | 31.7 | 31.7 | 31.7 | 31.7  | 31.7 | 31.7 | 31.7 |
|                        |                          | DSG-03-3C4    |    | 31.7  | 31.7 | 31.7 | 31.7 | 31.7   | 31.7 | 22.2 | 16.9 | 31.7  | 31.7 | 22.2 | 16.9 |
|                        |                          | DSG-03-3C40   |    | 31.7  | 31.7 | 31.7 | 31.7 | 31.7   | 31.7 | 16.4 | 12.9 | 31.7  | 31.7 | 16.4 | 12.9 |
|                        |                          | DSG-03-3C5    |    | 13.2  | 13.2 | 13.2 | 13.2 | 9.2  | 6.3  | 5.5  | 5.3  | 11.9  | 11.9 | 11.9 | 11.9 |
|                        |                          | DSG-03-3C60   |   | 31.7  | 31.7 | 31.7 | —    | 31.7   | 31.7 | 31.7 | —    | 31.7  | 31.7 | 31.7 | —    |
|                        |                          | DSG-03-3C9    |  | 31.7  | 31.7 | 31.7 | 31.7 | 26.4   | 26.4 | 26.4 | 26.4 | 26.4  | 26.4 | 26.4 | 26.4 |
|                        |                          | DSG-03-3C10   |  | 31.7  | 31.7 | 31.7 | 17.2 | 31.7   | 29.6 | 15.9 | 13.5 | 31.7  | 29.6 | 15.9 | 13.5 |
|                        |                          | DSG-03-3C11   |  | 31.7  | 31.7 | 31.7 | 31.7 | 26.4   | 26.4 | 21.1 | 17.2 | 26.4  | 26.4 | 21.1 | 17.2 |
|                        |                          | DSG-03-3C12   |  | 31.7  | 31.7 | 31.7 | 17.2 | 31.7   | 31.7 | 16.4 | 13.5 | 31.7  | 31.7 | 16.4 | 13.5 |
| Two Positions          | No-Spring Detented       | DSG-03-2D2    |  | 31.7  | 31.7 | 31.7 | 31.7 | 11.9   | 9.8  | 7.9  | 7.4  | 15.9  | 15.9 | 10.6 | 9.2  |
|                        | Spring Offset            | DSG-03-2B2    |  | 29.1  | 29.1 | 29.1 | 29.1 | 18   | 12.4 | 10   | 10   | 31.7  | 30.1 | 19.8 | 16.6 |
|                        |                          | DSG-03-2B3    |  | 31.7  | 31.7 | 31.7 | 31.7 | 20.3   | 20.3 | 20.3 | 20.3 | 31.7  | 31.7 | 31.7 | 27.2 |
|                        |                          | DSG-03-2B8    |  | —   | —    | —    | —    | 14   | 8.7  | 6.3  | 6.1  | 31.7  | 31.7 | 16.4 | 12.4 |

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

(Example)



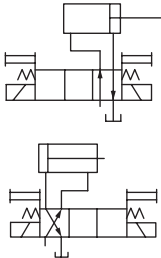
2. For the maximum flow rate in P → T of the valves with a ★ mark, please see [page 368](#).

The valve models with a ◆ mark are handled as Options. If you choose such valves, check the time of delivery beforehand.

DSG-03 Series Solenoid Operated Directional Valves

**Maximum Flow of Centre By-Pass**

In valve type 3C3, 3C5 and 3C60, in case where the actuator is put on in between the cylinder ports A and B as illustrated below and where the actuator moves and suspended at its stroke end and where the valve is then shifted to the neutral position in the suspended state of the actuator, the maximum flow rates available are those as shown as the table below regardless of any voltage in the range of serviceable voltage.



| Model Numbers           | Graphic Symbols | Max. Flow L/min (U.S.GPM) |                   |                   |                     |
|-------------------------|-----------------|---------------------------|-------------------|-------------------|---------------------|
|                         |                 | 10 MPa (1450 PSI)         | 16 MPa (2320 PSI) | 25 MPa (3630 PSI) | 31.5 MPa (4570 PSI) |
| DSG-03-3C3-A*           |                 | 100 (26.4)                | 100 (26.4)        | 100 (26.4)        | 100 (26.4)          |
| DSG-03-3C3-D*/R*/RQ100  |                 | 120 (31.7)                | 120 (31.7)        | 120 (31.7)        | 120 (31.7)          |
| DSG-03-3C5-A*           |                 | 26 (6.9)                  | 21 (5.5)          | 18 (4.8)          | 16 (4.2)            |
| DSG-03-3C5-D*/R*/RQ100  |                 | 35 (9.2)                  | 24 (6.3)          | 21 (5.5)          | 20 (5.3)            |
| DSG-03-3C60-A*          |                 | 84 (22.2)                 | 52 (13.7)         | 52 (13.7)         | —                   |
| DSG-03-3C60-D*/R*/RQ100 |                 | 68 (18.0)                 | 65 (17.2)         | 61 (16.1)         | —                   |

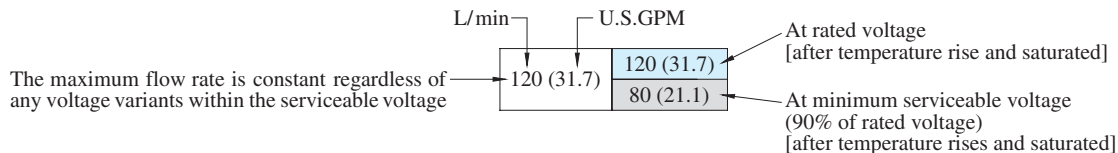
**List of Shockless Models and The Maximum Flow**

- Models with DC Solenoids: S-DSG-03-\*\*\* -D\*
- Models with R Type Solenoids: S-DSG-03-\*\*\* -R\*
- Models with RQ Type Solenoids: S-DSG-03-\*\*\* -RQ100

| No. of Valve Positions | Spool-Spring Arrangement | Model Numbers | Graphic Symbols | Max. Flow L/min (U.S.GPM)  |            |            |            |                            |            |           |           |                            |            |            |           |
|------------------------|--------------------------|---------------|-----------------|----------------------------|------------|------------|------------|----------------------------|------------|-----------|-----------|----------------------------|------------|------------|-----------|
|                        |                          |               |                 |                            |            |            |            | P → A [Port "B" Blocked]   |            |           |           | P → B [Port "A" Blocked]   |            |            |           |
|                        |                          |               |                 |                            |            |            |            |                            |            |           |           |                            |            |            |           |
|                        |                          |               |                 | Working Pressure MPa (PSI) |            |            |            | Working Pressure MPa (PSI) |            |           |           | Working Pressure MPa (PSI) |            |            |           |
|                        |                          |               |                 | 5 (730)                    | 10 (1450)  | 16 (2320)  | 25 (3630)  | 5 (730)                    | 10 (1450)  | 16 (2320) | 25 (3630) | 5 (730)                    | 10 (1450)  | 16 (2320)  | 25 (3630) |
| Three Positions        | Spring Centred           | S-DSG-03-3C2  |                 | 120 (31.7)                 | 120 (31.7) | 120 (31.7) | 120 (31.7) | 120 (31.7)                 | 120 (31.7) | 75 (19.8) | 50 (13.2) | 120 (31.7)                 | 120 (31.7) | 75 (19.8)  | 50 (13.2) |
|                        |                          | S-DSG-03-3C4  |                 | 120 (31.7)                 | 120 (31.7) | 85 (22.5)  | 65 (17.2)  | 120 (31.7)                 | 120 (31.7) | 75 (19.8) | 40 (10.6) | 120 (31.7)                 | 120 (31.7) | 75 (19.8)  | 40 (10.6) |
| Two Positions          | Spring Offset            | S-DSG-03-2B2  |                 | 120 (31.7)                 | 100 (26.4) | 75 (19.8)  | 40 (10.6)  | 39 (10.3)                  | 39 (10.3)  | 39 (10.3) | 39 (10.3) | 120 (31.7)                 | 120 (31.7) | 105 (27.7) | 60 (15.9) |
|                        |                          |               |                 |                            |            |            |            |                            |            |           |           |                            |            | 80 (21.1)  | 50 (13.2) |

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

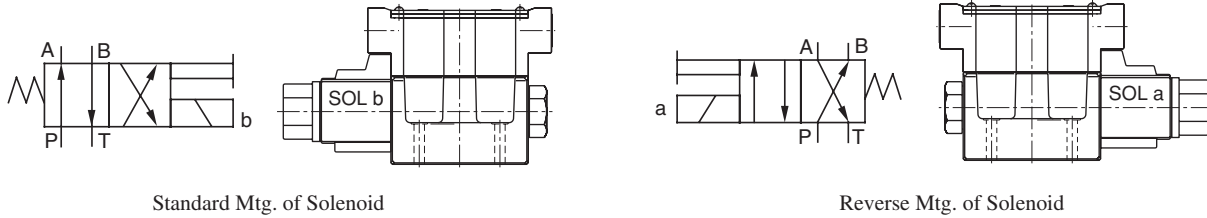
(Example)





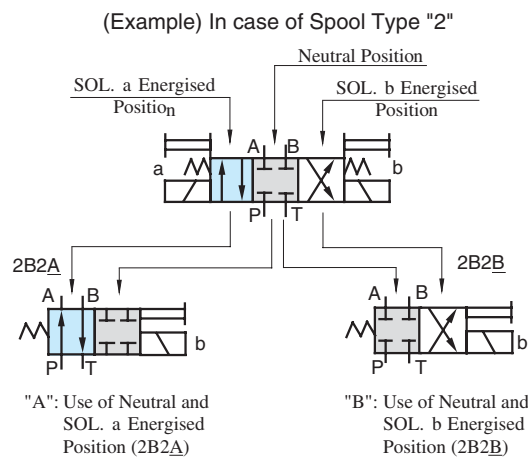
## Reverse Mounting of Solenoid

In spring offset type, it is a standard configuration that the solenoid is mounted onto the valve in the SOL b position (side). However, in this particular spool-spring arrangement, the mounting of the solenoid onto the valve in the reverse position -SOL a side- is also available. The graphic symbol for this reverse mounting is as shown below. As for the valve type 2B\*A and 2B\*B, please refer to the explanation under the heading of "Valves Using Neutral Position and Side Position" given below.



## Valves Using Neutral Position and Side Position (Special Two Position Valve)

Besides the use of the standard 2-position valves aforementioned in the "List of Standard Models and Maximum Flow", the 3-position valves also can be used as the 2-position valves using the two of their three positions. In this case, there are two kinds of the valve available. One is the valve using the neutral position and SOL a position (2B\*A) and another is the valve using the neutral position and SOL b position (2B\*B).



| Model Numbers    | Graphic SymbolsG   |                   |
|------------------|--------------------|-------------------|
|                  | Standard Mtg. Type | Reverse Mtg. Type |
| (S-) DSG-03-2B*A |                    |                   |
| (S-) DSG-03-2B2A |                    | —                 |

| Model Numbers    | raphic Symbols     |                   |
|------------------|--------------------|-------------------|
|                  | Standard Mtg. Type | Reverse Mtg. Type |
| DSG-03-2B*B      |                    |                   |
| (S-) DSG-03-2B2B |                    |                   |
| DSG-03-2B3B      |                    | —                 |
| (S-) DSG-03-2B4B |                    | —                 |
| DSG-03-2B60B     |                    | —                 |
| DSG-03-2B10B     |                    | —                 |

In the above table, the graphic symbols in mounting type highlighted with shade are optional extra, therefore, please confirm the time of delivery with us before ordering.

**E**  
DSG-03 Series Solenoid Operated Directional Valves

■ **Typical Changeover Time**

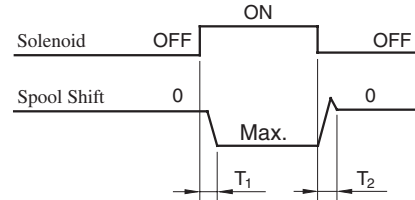
Changeover time varies according to oil viscosity, spool type and hydraulic circuit.

● **Standard Type (Without Shockless Function)**

[Test Conditions]

Pressure: 16 MPa (2320 PSI)  
 Flow Rate: 70 L/min (18.5 U.S.GPM)  
 Viscosity: 30 mm<sup>2</sup>/s (140 SSU)  
 Voltage: 100 %V (After coil temperature rises and saturated)

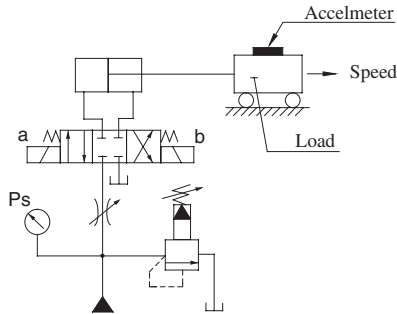
[Result of Measurement]



| Type          | Model Numbers    | Changeover Time ms |                |
|---------------|------------------|--------------------|----------------|
|               |                  | T <sub>1</sub>     | T <sub>2</sub> |
| Standard Type | DSG-03-3C2-A*    | 27                 | 22             |
|               | DSG-03-3C2-D*    | 97                 | 30             |
|               | DSG-03-3C2-R*    | 97                 | 204            |
|               | DSG-03-3C2-RQ100 | 97                 | 41             |

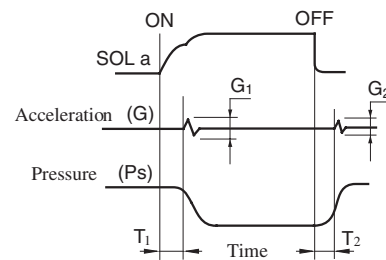
● **Shockless Type**

[Test Circuit and Conditions]



Setting Pressure (Ps): 7 MPa (1020 PSI)  
 Load (W): 1000 kg (2205 lbs.)  
 Speed: 8.8 m/min (28.9 ft./min)  
 Viscosity: 30 mm<sup>2</sup>/s (140 SSU)

[Result of Measurement]

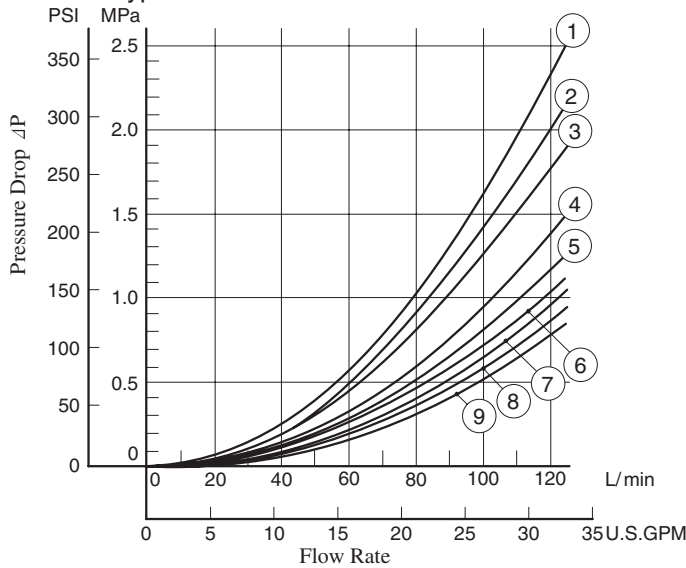


| Type           | Model Numbers      | Time ms        |                | Acceleration m/s <sup>2</sup> (G) |                |
|----------------|--------------------|----------------|----------------|-----------------------------------|----------------|
|                |                    | T <sub>1</sub> | T <sub>2</sub> | G <sub>1</sub>                    | G <sub>2</sub> |
| Shockless Type | S-DSG-03-3C2-D*    | 110            | 120            | 6.4<br>(.65)                      | 6.4<br>(.65)   |
|                | S-DSG-03-3C2-R*    | 110            | 220            |                                   |                |
|                | S-DSG-03-3C2-RQ100 | 110            | 120            |                                   |                |

## Pressure Drop

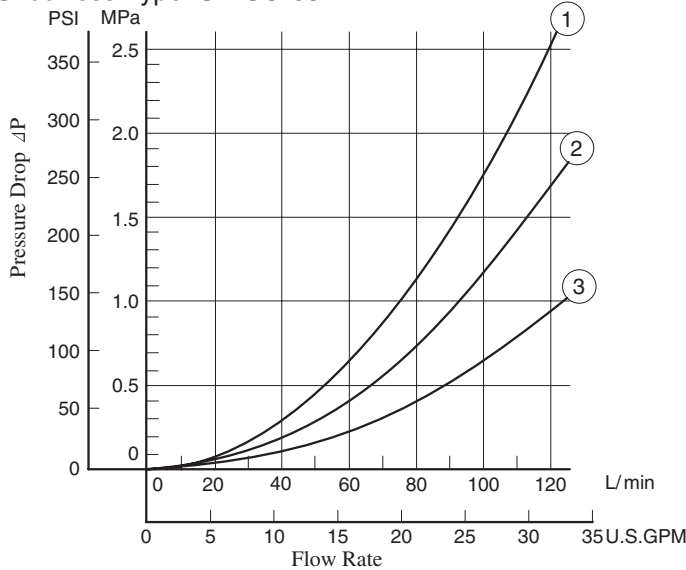
Pressure drop curves based on viscosity of 35 mm<sup>2</sup>/s (164 SSU) and specific gravity of 0.850.

### Standard Type: DSG-03



| Model Numbers | Pressure Drop Curve Number |     |     |     |     |
|---------------|----------------------------|-----|-----|-----|-----|
|               | P→A                        | B→T | P→B | A→T | P→T |
| DSG-03-3C2    | ⑦                          | ⑦   | ⑦   | ⑦   | —   |
| DSG-03-3C3    | ⑨                          | ⑨   | ⑨   | ⑨   | ⑤   |
| DSG-03-3C4    | ⑦                          | ⑧   | ⑦   | ⑧   | —   |
| DSG-03-3C40   | ⑦                          | ⑦   | ⑦   | ⑦   | —   |
| DSG-03-3C5    | ⑨                          | ⑦   | ⑦   | ⑨   | ①   |
| DSG-03-3C60   | ⑥                          | ⑤   | ⑥   | ⑤   | ①   |
| DSG-03-3C9    | ⑨                          | ⑦   | ⑨   | ⑦   | —   |
| DSG-03-3C10   | ⑦                          | ⑧   | ⑦   | ⑦   | —   |
| DSG-03-3C11   | ⑨                          | ⑦   | ⑦   | ⑦   | —   |
| DSG-03-3C12   | ⑦                          | ⑦   | ⑦   | ⑧   | —   |
| DSG-03-2D2    | ④                          | ③   | ⑥   | ⑥   | —   |
| DSG-03-2B2    | ②                          | ①   | ⑦   | ⑦   | —   |
| DSG-03-2B3    | ③                          | ②   | ⑨   | ⑨   | —   |
| DSG-03-2B8    | ⑥                          | —   | ⑤   | —   | —   |

### Shockless Type: S-DSG-03



| Model Numbers | Pressure Drop Curve Number |     |     |     |
|---------------|----------------------------|-----|-----|-----|
|               | P→A                        | B→T | P→B | A→T |
| S-DSG-03-3C2  | ②                          | ②   | ②   | ②   |
| S-DSG-03-3C4  | ②                          | ②   | ③   | ③   |
| S-DSG-03-2B2  | ①                          | ②   | ②   | ②   |

● For any other viscosity, multiply the factors in the table below.

| Viscosity | mm <sup>2</sup> /s | 15   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  |
|-----------|--------------------|------|------|------|------|------|------|------|------|------|------|
|           | SSU                |      | 77   | 98   | 141  | 186  | 232  | 278  | 324  | 371  | 417  |
| Factor    |                    | 0.81 | 0.87 | 0.96 | 1.03 | 1.09 | 1.14 | 1.19 | 1.23 | 1.27 | 1.30 |

● For any other specific gravity (G'), the pressure drop (ΔP') may be obtained from the formula below.

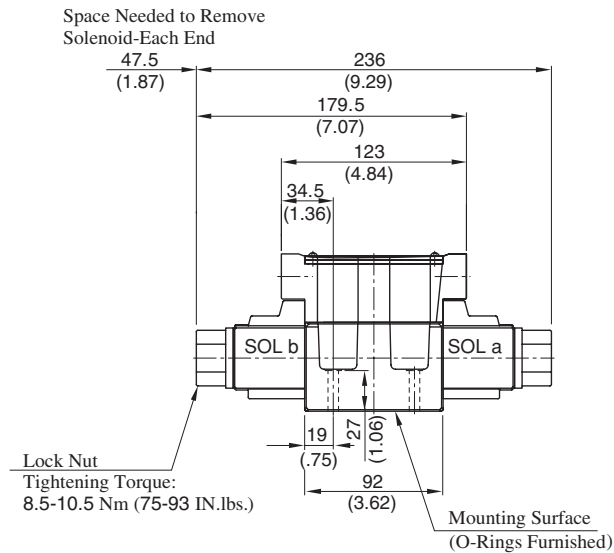
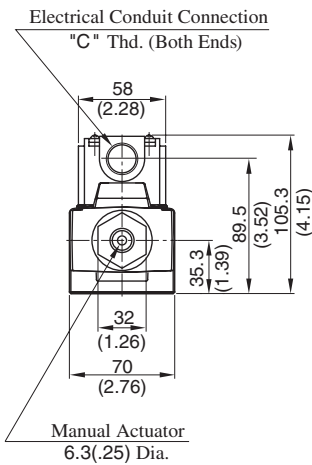
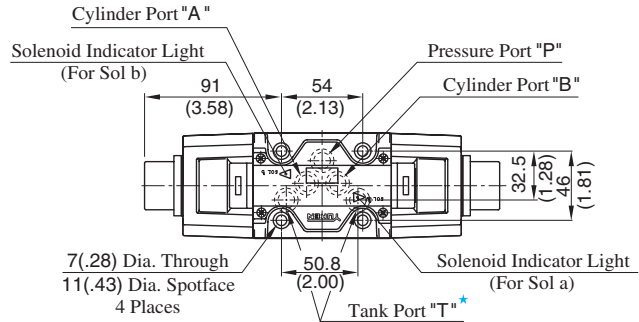
$$\Delta P' = \Delta P (G'/0.850)$$

**DSG-03 Series Solenoid Operated Directional Valves**

**TERMINAL BOX TYPE**

- Models with AC Solenoids: DSG-03- \*\*\*-A\* -50/5090
- Double Solenoid: Spring Centred & No-Spring Detended

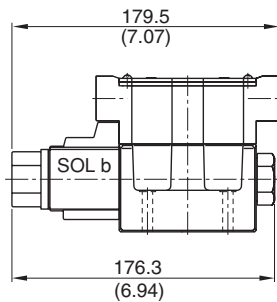
| Model Numbers        | "C" Thd. |
|----------------------|----------|
| DSG-03- ***-A* -50   | G 1/2    |
| DSG-03- ***-A* -5090 | 1/2 NPT  |



★. Of the two of tank port "T", the tank port in the left side is normally used in our standard sub-plate, though, either side of the tank port "T" can be used without problem.

**DIMENSIONS IN MILLIMETRES (INCHES)**

- Single Solenoid: Spring Offset

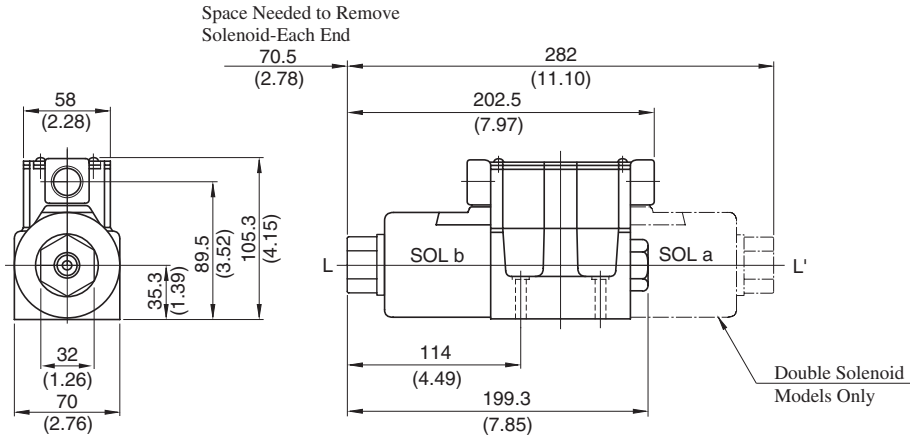


- For other dimensions, refer to "Spring Centred and No-Spring Detended" models.
- Solenoid being mounted in the reverse position -SOL a side- is also available.

Mounting surface: ISO 4401-AC-05-4-A

## TERMINAL BOX TYPE

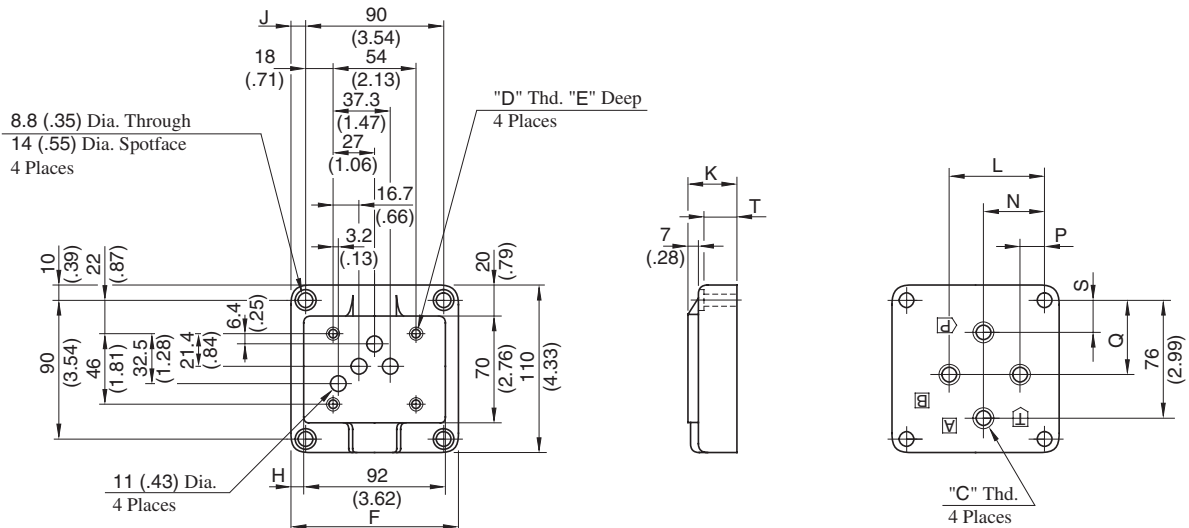
- Models with DC Solenoids : (S-)DSG-03- \*\*\* -D\* -50/5090
- Models with R Type Solenoids : (S-)DSG-03- \*\*\* -R\* -50/5090
- Models with RQ Type Solenoids : (S-)DSG-03- \*\*\* -RQ100-50/5090
- Double Solenoid: Spring Centred & No-Spring Detented
- Single Solenoid: Spring Offset



● For other dimensions, refer to Models with AC solenoids (Page 372).

DIMENSIONS IN  
MILLIMETRES (INCHES)

- Sub- plates  
DSGM-03\*-40/2180/2190

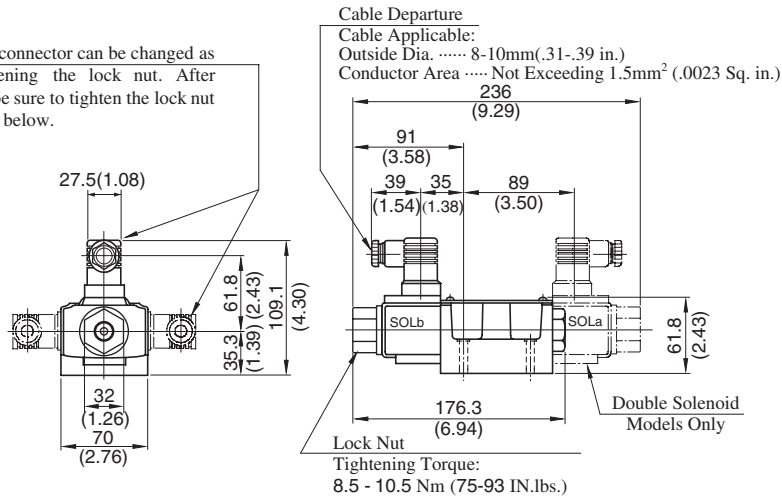


| Sub-plate<br>Model Numbers | Piping Size<br>"C" Thd. | "D" Thd. | Dimensions mm (Inches) |          |       |        |        |        |       |        |       |        |    |
|----------------------------|-------------------------|----------|------------------------|----------|-------|--------|--------|--------|-------|--------|-------|--------|----|
|                            |                         |          | E                      | F        | H     | J      | K      | L      | N     | P      | Q     | S      | T  |
| DSGM-03-40                 | Rc 3/8                  | M6       | 13 (.51)               | 110      | 9     | 10     | 32     | 62     | 40    | 16     | 48    | 21     | 24 |
| DSGM-03-2180               | 3/8 BSP.F               |          | (4.33)                 | (.35)    | (.39) | (1.26) | (2.44) | (1.57) | (.63) | (1.89) | (.83) | (.94)  |    |
| DSGM-03-2190               | 3/8 NPT                 |          | 1/4-20 UNC             | 15 (.59) |       |        |        |        |       |        |       |        |    |
| DSGM-03X-40                | Rc 1/2                  | M6       | 13 (.51)               | 110      | 9     | 10     | 32     | 62     | 40    | 16     | 48    | 21     | 24 |
| DSGM-03X-2180              | 1/2 BSP.F               |          | (4.33)                 | (.35)    | (.39) | (1.26) | (2.44) | (1.57) | (.63) | (1.89) | (.83) | (.94)  |    |
| DSGM-03X-2190              | 1/2 NPT                 |          | 1/4-20 UNC             | 15 (.59) |       |        |        |        |       |        |       |        |    |
| DSGM-03Y-40                | Rc 3/4                  | M6       | 13 (.51)               | 120      | 14    | 15     | 50     | 80     | 45    | 10     | 47    | 16     | 42 |
| DSGM-03Y-2180              | 3/4 BSP.F               |          | (4.72)                 | (.55)    | (.59) | (1.97) | (3.15) | (1.77) | (.39) | (1.85) | (.63) | (1.65) |    |
| DSGM-03Y-2190              | 3/4 NPT                 |          | 1/4-20 UNC             | 15 (.59) |       |        |        |        |       |        |       |        |    |

■ **PLUG-IN CONNECTOR TYPE (N)**  
**PLUG-IN CONNECTOR WITH INDICATOR LIGHT (N1)**

● **Models with AC Solenoids: DSG-03- \*\*\* -A\* -  $\frac{N}{N1}$  -50/5090**

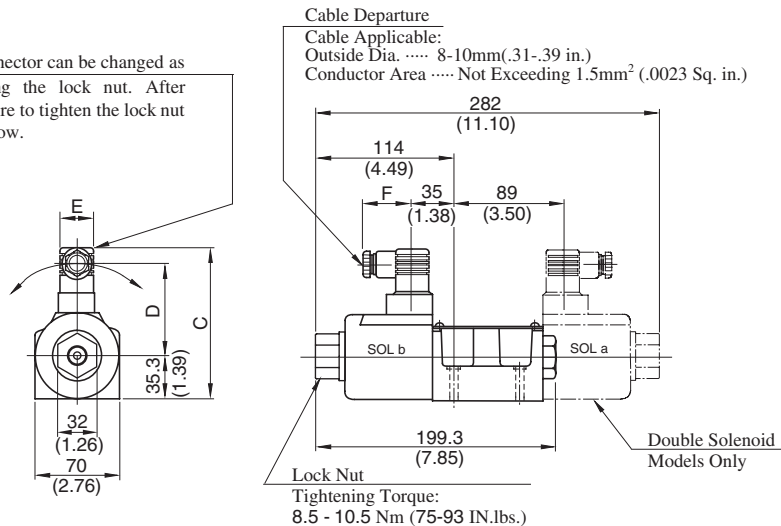
The position of the Plug-in connector can be changed as illustrated below by loosening the lock nut. After completion of the change, be sure to tighten the lock nut with the torque as specified below.



● **Models with DC Solenoids: (S-)DSG-03- \*\*\* -D\* -  $\frac{N}{N1}$  -50/5090**

● **Models with R Type Solenoids: (S-)DSG-03- \*\*\* -R\* -N-50/5090**

The position of the Plug-in connector can be changed as illustrated below by loosening the lock nut. After completion of the change, be sure to tighten the lock nut with the torque as specified below.



| Model Numbers                             | Dimensions mm (Inches) |             |             |           |
|---|------------------------|-------------|-------------|-----------|
|   | C                      | D           | E           | F         |
| DSG-03- *** -D* - $\frac{N}{N1}$ -50/5090 | 121.1 (4.77)           | 73.8 (2.91) | 27.5 (1.08) | 39 (1.54) |
| DSG-03- *** -R* -N-50/5090                | 124.9 (4.92)           | 62.6 (2.46) | 34 (1.34)   | 53 (2.09) |

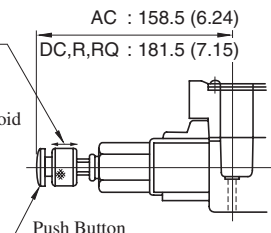
● For other dimensions, refer to "Terminal Box Type" (Page 372 - 373).

**DIMENSIONS IN MILLIMETRES (INCHES)**

■ **Options**

**Models with Push Button & Lock Nut: (S-)DSG-03- \*\*\* -\*C(-  $\frac{N}{N1}$ )-50/5090**

**Lock Nut**  
 Press the "Push Button" then turn "Lock Nut" clockwise. The position of the "Push Button" is held.  
 Be sure to loosen "LockNut" fully before solenoid is energised



## Details of Receptacle

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

- ★1. There are two grounding terminals. You can use either one.
- ★2. If you do not need the common plate, remove it.
- ★3. With DC solenoids, polarity is no question.

### DANGER

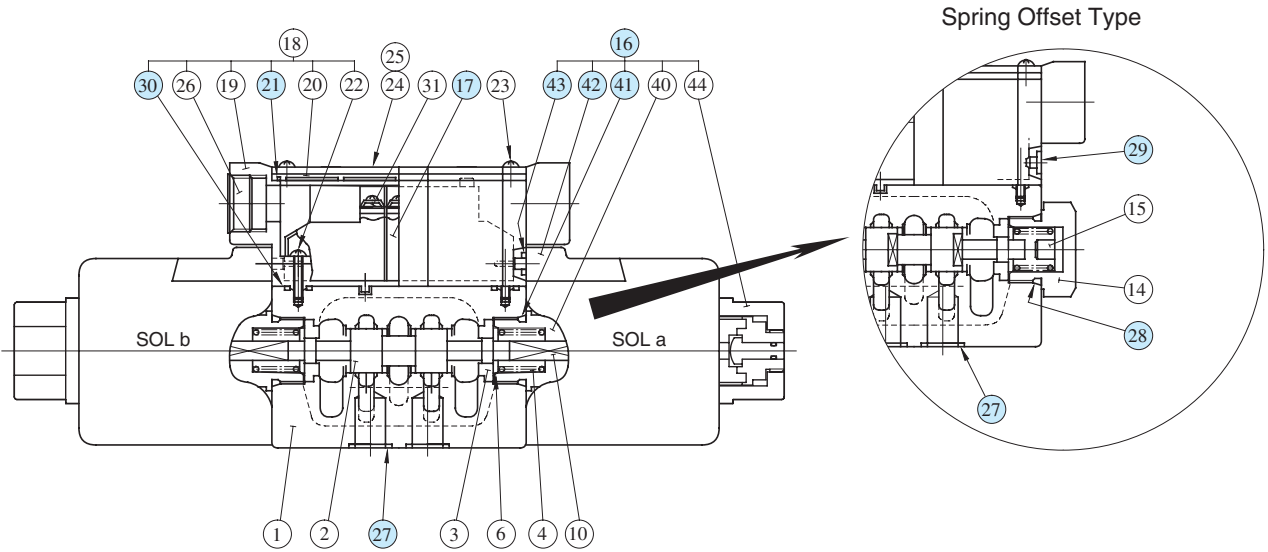
- Do not perform wiring while the power is on. Doing so may result in electric shock, burns or death.
- Make the wiring properly. Improper wiring will cause an irregular movement of the machine, resulting in a grave accident.

## Electrical Circuit

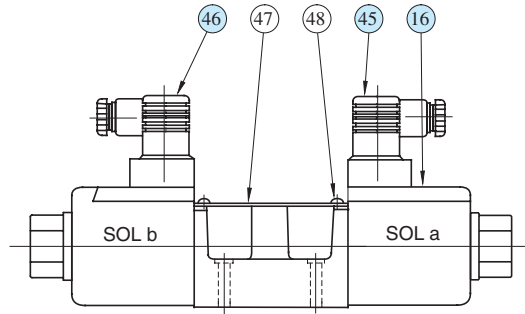
| Type of Electrical Conduit Connection | Electric Source |    |                 |
|---------------------------------------|-----------------|----|-----------------|
|                                       | AC              | DC | AC→DC Rectified |
| Terminal Box Type                     |          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

■ List of Seals

\*-DSG-03-\*\*\*-\*50/5090



\*-DSG-03-\*\*\*-N/N1-50/5090



● List of Seals

| Item | Name of Parts | Part Numbers          | Qty. |     |    | Remarks                                |
|------|---------------|-----------------------|------|-----|----|--|
|      |               |                       | 3C   | 2D2 | 2B |  |
| 21   | Gasket        | 1751S-VK418689-6      | 1    | 1   | 1  |  |
| 27   | O-Ring        | SO-NB-A014(NBR, Hs90) | 5    | 5   | 5  |  |
| 28   | O-Ring        | SO-NB-P21             | —    | —   | 1  |  |
| 29   | Plug          | 1790S-VK418329-9      | —    | —   | 2  |  |
| 30   | O-Ring        | S6                    | 2    | 2   | 2  |  |
| 41   | O-Ring        | SO-NB-P21             | 2    | 2   | 1  | } Included in Solenoid Ass'y (Item 16) |
| 43   | O-Ring        | SO-NA-P4              | 4    | 4   | 2  |  |

★ When ordering the O-Rings, please specify the seal kit number from the table below.

| Valve Model Numbers  | Seal Kit No.   | O-Ring Details for Seal Kit                        |
|----------------------|----------------|--|
| DSG-03-***-*50/5090  | KS-DSG-03-50   | 27(5 Pcs.), 28 & 41(2 Pcs., see above), 43(4 Pcs.) |
| DSG-03-***-N-50/5090 | KS-DSG-03-N-50 | 27(5 Pcs.), 28 & 41(2 Pcs., see above)             |

● Solenoid Ass'y, Coil, Receptacle and Connector

Refer to Page 377 for the details of these parts.



**Solenoid Ass'y, Coil, Receptacle and Connector Ass'y No.**

| Valve Model Numbers      | ⑩<br>Solenoid Ass'y No. | ④②<br>Coil No. | ⑰<br>Receptacle Part No. | ④⑤<br>Connector Ass'y Part No. | ④⑥<br>Connector Ass'y Part No. | Remarks                      |  |
|--------------------------|-------------------------|----------------|--------------------------|--------------------------------|--------------------------------|------------------------------|--|
| DSG-03-***-A100-50*      | SA3-100-51              | C-SA3-100-51   | R3-60                    | —                              | —                              | Terminal<br>Box<br>Type      |  |
| DSG-03-***-A120-50*      | SA3-120-51              | C-SA3-120-51   |                          |                                |                                |                              |  |
| DSG-03-***-A200-50*      | SA3-200-51              | C-SA3-200-51   |                          |                                |                                |                              |  |
| DSG-03-***-A240-50*      | SA3-240-51              | C-SA3-240-51   |                          |                                |                                |                              |  |
| DSG-03-***-D12-50*       | SD3-12-51               | C-SD3-12-51    | KR3-A-60                 |                                |                                |                              |  |
| DSG-03-***-D24-50*       | SD3-24-51               | C-SD3-24-51    | KR3-C-60                 |                                |                                |                              |  |
| DSG-03-***-D100-50*      | SD3-100-51              | C-SD3-100-51   | RR3-60                   |                                |                                |                              |  |
| DSG-03-***-R100-50*      | SR3-100-51              | C-SR3-100-51   | RR3-60                   |                                |                                |                              |  |
| DSG-03-***-R200-50*      | SR3-200-51              | C-SR3-200-51   | RR3-60                   |                                |                                |                              |  |
| DSG-03-***-RQ100-50*     | SR3-100-51              | C-SR3-100-51   | QR3-C-60                 |                                |                                |                              |  |
| S-DSG-03-***-D12-50*     | SD3-12-S-51             | C-SD3-12-51    | KR3-A-60                 |                                |                                |                              |  |
| S-DSG-03-***-D24-50*     | SD3-24-S-51             | C-SD3-24-51    | KR3-C-60                 |                                |                                |                              |  |
| S-DSG-03-***-D100-50*    | SD3-100-S-51            | C-SD3-100-51   | KR3-C-60                 |                                |                                |                              |  |
| S-DSG-03-***-R100-50*    | SR3-100-S-51            | C-SR3-100-51   | RR3-60                   |                                |                                |                              |  |
| S-DSG-03-***-R200-50*    | SR3-200-S-51            | C-SR3-200-51   | RR3-60                   |                                |                                |                              |  |
| S-DSG-03-***-RQ100-50*   | SR3-100-51              | C-SR3-100-51   | QR3-C-60                 |                                |                                |                              |  |
| DSG-03-***-A100-N-50*    | SA3-100-N-51            | C-SA3-100-N-51 | —                        | GDM-211-A-11                   | GDM-211-B-11                   | Plug-in<br>Connector<br>Type |  |
| DSG-03-***-A120-N-50*    | SA3-120-N-51            | C-SA3-120-N-51 |                          |                                |                                |                              |  |
| DSG-03-***-A200-N-50*    | SA3-200-N-51            | C-SA3-200-N-51 |                          |                                |                                |                              |  |
| DSG-03-***-A240-N-50*    | SA3-240-N-51            | C-SA3-240-N-51 |                          |                                |                                |                              |  |
| DSG-03-***-D12-N-50*     | SD3-12-N-51             | C-SD3-12-N-51  |                          |                                |                                |                              |  |
| DSG-03-***-D24-N-50*     | SD3-24-N-51             | C-SD3-24-N-51  |                          |                                |                                |                              |  |
| DSG-03-***-D100-N-50*    | SD3-100-N-51            | C-SD3-100-N-51 |                          |                                |                                |                              |  |
| DSG-03-***-R100-N-50*    | SR3-100-N-51            | C-SR3-100-N-51 |                          |                                |                                |                              |  |
| DSG-03-***-R200-N-50*    | SR3-200-N-51            | C-SR3-200-N-51 |                          | GDME-211-R-A-10                | GDME-211-R-B-10                |                              |  |
| S-DSG-03-***-D12-N-50*   | SD3-12-S-N-51           | C-SD3-12-N-51  |                          | GDM-211-A-11                   | GDM-211-B-11                   |                              |  |
| S-DSG-03-***-D24-N-50*   | SD3-24-S-N-51           | C-SD3-24-N-51  |                          | GDM-211-A-11                   | GDM-211-B-11                   |                              |  |
| S-DSG-03-***-D100-N-50*  | SD3-100-S-N-51          | C-SD3-100-N-51 |                          | GDM-211-A-11                   | GDM-211-B-11                   |                              |  |
| S-DSG-03-***-R100-N-50*  | SR3-100-S-N-51          | C-SR3-100-N-51 |                          | GDME-211-R-A-10                | GDME-211-R-B-10                |                              |  |
| S-DSG-03-***-R200-N-50*  | SR3-200-S-N-51          | C-SR3-200-N-51 |                          | GDME-211-R-A-10                | GDME-211-R-B-10                |                              |  |
| DSG-03-***-A100-N1-50*   | SA3-100-N-51            | C-SA3-100-N-51 |                          | —                              | GDML-211-1-11                  | GDML-211-1-11                | Plug-in<br>Connector<br>with<br>Indicator<br>Light |
| DSG-03-***-A120-N1-50*   | SA3-120-N-51            | C-SA3-120-N-51 |                          |                                |                                |                              |  |
| DSG-03-***-A200-N1-50*   | SA3-200-N-51            | C-SA3-200-N-51 |                          |                                |                                |                              |  |
| DSG-03-***-A240-N1-50*   | SA3-240-N-51            | C-SA3-240-N-51 |                          |                                |                                |                              |  |
| DSG-03-***-D12-N1-50*    | SD3-12-N-51             | C-SD3-12-N-51  | GDML-211-2-11            |                                | GDML-211-2-11                  |                              |  |
| DSG-03-***-D24-N1-50*    | SD3-24-N-51             | C-SD3-24-N-51  | GDML-211-3-11            |                                | GDML-211-3-11                  |                              |  |
| DSG-03-***-D100-N1-50*   | SD3-100-N-51            | C-SD3-100-N-51 | GDML-211-1-11            |                                | GDML-211-1-11                  |                              |  |
| S-DSG-03-***-D12-N1-50*  | SD3-12-S-N-51           | C-SD3-12-N-51  | GDML-211-2-11            |                                | GDML-211-2-11                  |                              |  |
| S-DSG-03-***-D24-N1-50*  | SD3-24-S-N-51           | C-SD3-24-N-51  | GDML-211-3-11            |                                | GDML-211-3-11                  |                              |  |
| S-DSG-03-***-D100-N1-50* | SD3-48-S-N-51           | C-SD3-100-N-51 | GDML-211-1-11            |                                | GDML-211-1-11                  |                              |  |

Note : The connector assembly is not included in the solenoid assembly.

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DSG-03 Series Solenoid Operated Directional Valves