

# DP-100, 100F

# DP-100-C, 100F-C

**RED MAN™**  
 ULTRA-HIGH PERFORMANCE SOLENOID

|                 |                 |                 |           |
|-----------------|-----------------|-----------------|-----------|
| Pilot type      | Direct type     | Piston          | Diaphragm |
| Normally closed | Normally opened | AC coil         | DC coil   |
| Stainless steel | 110 V / 220 V   | Explosion-proof | JWWA      |
| Leak 0          |                 |                 |           |



DP-100



DP-100-C



DP-100F



DP-100F-C

## ■ Features

1. Ultra-high performance technology gives high precision in performance.
2. Three-times more durability than our conventional models.
3. ASM (Anti-Sticking Mechanism) for three-times more scale resistance.
4. Body and main parts made of stainless steel give higher corrosion resistance, making usable for clean fluid.
5. A combined internal component enables easy cartridge replacement with this product installed.
6. Improve air tightness by adopting PTFE gasket.
7. Usable for wide pressure range of 0-1.0 MPa (0.03-1.0 MPa if the coil is sideways).
8. Horizontal and vertical installation (within 90 degrees from upward position of the coil).

## ■ Specifications

| Model                        | Normally closed   | DP-100*                  | DP-100F*           |
|------------------------------|---|--------------------------|--------------------|
|                              | Normally opened   | DP-100-C                 | DP-100F-C          |
| Nominal size                 | 10A-50A   |                          | 15A-65A            |
| Structure                    | Pilot-operated piston type  |                          |                    |
| Application                  | Steam, Air, Cold and hot water, N <sub>2</sub> gas, CO <sub>2</sub> gas (dry), Ar gas, Oil (20 cSt or less) |                          |                    |
| Working pressure             | 0-1.0 MPa (unusable under vacuum)   |                          |                    |
| Min. differential pressure   | 0 MPa (0.03 MPa or more is required for vertical installation)  |                          |                    |
| Allowable valve seat leakage | 50 mL/min under standard conditions (at air pressure of 0.6 MPa)  |                          |                    |
| Temperature range            | 5-180°C (no freeze condition)   |                          |                    |
| Ambient temperature          | 5-60°C (no freeze condition)  |                          |                    |
| Installation posture         | Vertical or horizontal installation (within 90 degrees from upward position of the coil)                    |                          |                    |
| Material                     | Body  | Stainless steel (SCS14A) |                    |
|                              | Piston  | Stainless steel (SCS14A) |                    |
|                              | Valve disc  | PTFE                     |                    |
| Connection                   | JIS Rc screwed  |                          | JIS 10K FF flanged |

\* Recommended to use DP-200, DP-200F when using cold and hot water application.

■ Specifications of Coil

| Rated voltage           | AC 100 / 200 V selective type |               | AC 110 / 220 V selective type |               |
|-------------------------|-------------------------------|---------------|-------------------------------|---------------|
|                         | 50 / 60 Hz common             |               |                               |               |
| Nominal size            | 10-25A                        | 32-65A        | 10-25A                        | 32-65A        |
| Allowable fluctuation   | Rated voltage -5% to +10%     |               |                               |               |
| Rated current           | 0.34 / 0.17 A                 | 0.46 / 0.23 A | 0.32 / 0.16 A                 | 0.42 / 0.21 A |
| Starting current        | 1.64 / 0.82 A                 | 1.90 / 0.95 A | 1.48 / 0.74 A                 | 1.80 / 0.90 A |
| Insulation class        | Insulation class H            |               |                               |               |
| Protective structure    | Dust tight, Splash proof      |               |                               |               |
| Ingress protection code | IP64 (JIS C0920)              |               |                               |               |
| Insulation resistance   | 50 MΩ and more / 500 V megger |               |                               |               |
| Withstand voltage test  | 1500 V/min                    |               |                               |               |
| Removing lead wire      | Conduit G 1/2 (CTG 16)        |               |                               |               |

\* Available with a terminal box.

■ Dimensions (mm) and Weights (kg)

· DP-100, DP-100-C

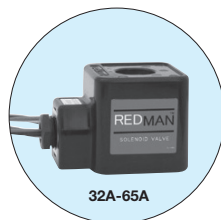
| Nominal size | d        | L   | H <sub>1</sub> | DP-100 |        | DP-100-C |        |
|--------------|----------|-----|----------------|--------|--------|----------|--------|
|              |          |     |                | H      | Weight | H        | Weight |
| 10A          | Rc 3/8   | 70  | 14.5           | 127    | 1.4    | 174      | 1.7    |
| 15A          | Rc 1/2   | 70  | 14.5           | 127    | 1.4    | 174      | 1.7    |
| 20A          | Rc 3/4   | 80  | 17.5           | 131    | 1.5    | 177      | 1.8    |
| 25A          | Rc 1     | 95  | 21.0           | 135    | 1.9    | 181      | 2.2    |
| 32A          | Rc 1-1/4 | 110 | 26.0           | 172    | 3.1    | 218      | 3.4    |
| 40A          | Rc 1-1/2 | 120 | 29.5           | 178    | 4.0    | 225      | 4.3    |
| 50A          | Rc 2     | 140 | 36.5           | 187    | 5.6    | 233      | 5.9    |



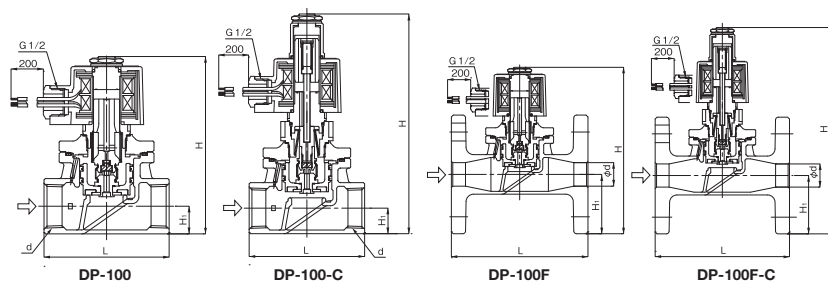
10A-25A

· DP-100F, DP-100F-C

| Nominal size | d  | L   | H <sub>1</sub> | DP-100F |        | DP-100F-C |        |
|--------------|----|-----|----------------|---------|--------|-----------|--------|
|              |    |     |                | H       | Weight | H         | Weight |
| 15A          | 15 | 120 | 47.5           | 161     | 2.7    | 207       | 3.0    |
| 20A          | 20 | 130 | 50.0           | 164     | 3.2    | 210       | 3.5    |
| 25A          | 25 | 145 | 62.5           | 177     | 4.5    | 223       | 4.8    |
| 32A          | 32 | 160 | 67.5           | 213     | 6.9    | 260       | 7.2    |
| 40A          | 40 | 170 | 70.0           | 219     | 8.0    | 265       | 8.3    |
| 50A          | 50 | 195 | 77.5           | 228     | 10.5   | 274       | 10.8   |
| 65A          | 65 | 198 | 87.5           | 238     | 12.3   | 284       | 12.6   |



32A-65A



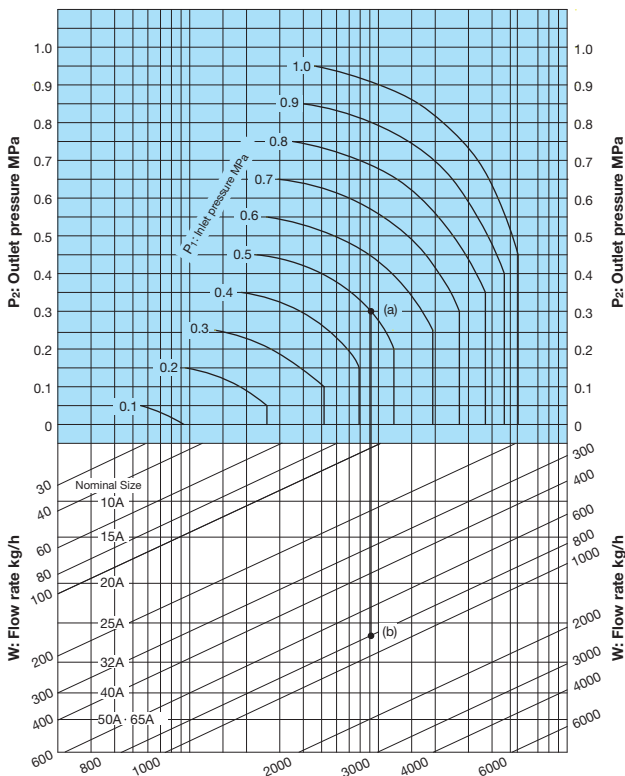
DP-100

DP-100-C

DP-100F

DP-100F-C

## Nominal Size Selection Chart (For Steam)



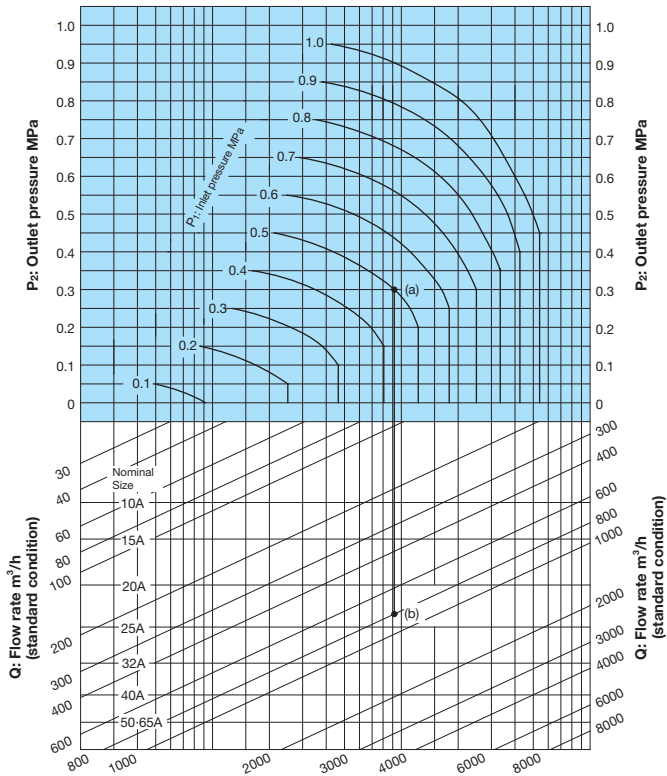
### How to use the chart

When selecting the nominal size of a solenoid valve whose inlet pressure (P<sub>1</sub>), outlet pressure (P<sub>2</sub>), and steam (saturated steam) flow rate (W) are 0.5 MPa, 0.3 MPa, and 800 kg/h, respectively, first find intersection point (a) of P<sub>1</sub> = 0.5 MPa and P<sub>2</sub> = 0.3 MPa.

Trace down vertically from intersection point (a) to find intersection point (b) with W = 800 kg/h. Since this intersection point (b) lies between nominal sizes 25A and 32A, select the larger one, 32A.

\* Please refer to P.11-9 for Cv value and calculation formula.

## ■ Nominal Size Selection Chart (For Air)

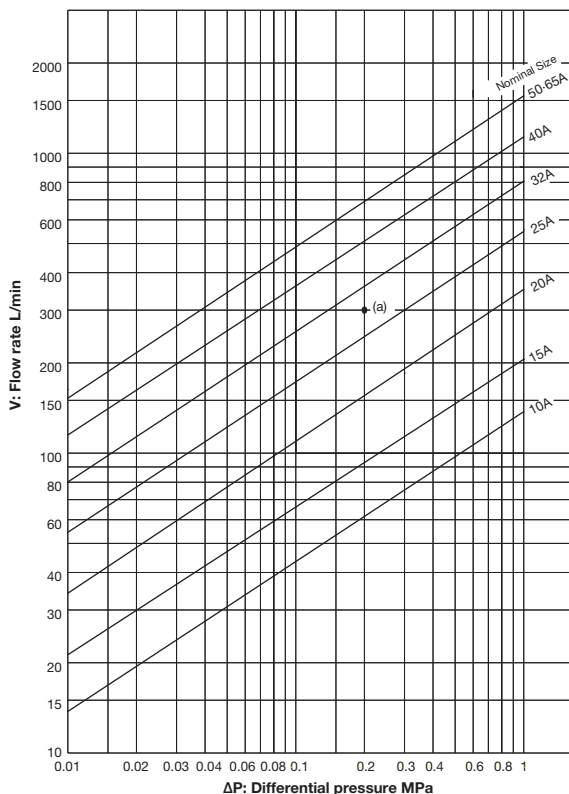


### How to use the chart

When selecting the nominal size of a solenoid valve whose inlet pressure ( $P_1$ ), outlet pressure ( $P_2$ ), and air (20°C) flow rate ( $Q$ ) are 0.5 MPa, 0.3 MPa, and 800 m<sup>3</sup>/h (standard condition), respectively, first find intersection point (a) of  $P_1 = 0.5$  MPa and  $P_2 = 0.3$  MPa. Trace down vertically from this intersection point (a) to find intersection point (b) with  $Q = 800$  m<sup>3</sup>/h (standard condition). Since this intersection point (b) lies between nominal sizes 20A and 25A, select the larger one, 25A.

\* Please refer to P.11-9 for  $C_v$  value and calculation formula.

### ■ Nominal Size Selection Chart (For Water)



#### How to use the chart

When selecting the nominal size of a solenoid valve whose inlet pressure ( $P_1$ ), outlet pressure ( $P_2$ ), and flow rate ( $V$ ) are 0.5 MPa, 0.3 MPa, and 300 L/min, respectively, first find intersection point (a) of the differential pressure before and after the valve [ $\Delta P = 0.5 - 0.3 = 0.2$  MPa] and  $V = 300$  L/min. Since this intersection point (a) lies between nominal sizes 25A and 32A, select the larger one, 32A.

\* Please refer to P.11-9 for Cv value and calculation formula.