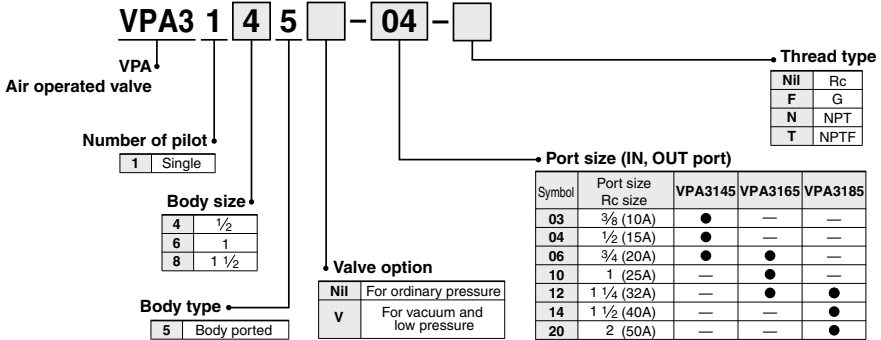


3 Port Air Operated Valve

VPA3145/3165/3185 Series

How to Order



VPA3165-06



VPA3145-03

Specifications

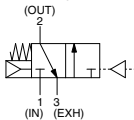
| | | |
|---|---|-----------------------|
| Fluid | Air | |
| Type of actuation | N.C. only (N.O. only for vacuum) | |
| Operating pressure range | For vacuum and low pressure | For ordinary pressure |
| | -101.2 kPa to 0.2 MPa | 0.2 to 0.8 MPa |
| Pilot pressure range | Refer to the graph of pilot pressure. | |
| Ambient and fluid temperature (°C) | 0 (No freezing) to 60 | |
| Lubrication | Required (Turbine oil, Class 1 ISO VG32 equivalent) | |
| Mounting orientation | Free | |
| Impact/Vibration resistance (m/s ²) ^{Note} | 150/50 | |

Note) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)

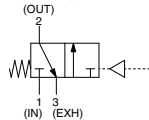
Vibration resistance: No malfunction from test with 45 to 1000 Hz one sweep, to axis and right angle direction of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)

Symbol

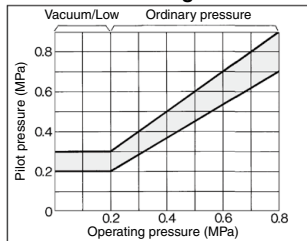
<Positive pressure>



<Vacuum pressure>



Pilot Pressure Range



Precautions

Be sure to read this before handling the products.
Refer to page 8 for safety instructions and pages 9 to 15 for 3/4/5 port solenoid valve precautions.



Caution

- Lubrication
Since this valve needs lubrication, use turbine oil Class 1 (ISO VG32).
- Refer to pages 1117 and 1124 for information about the pressure applied to piping and ports, quality of air and piping for vacuum applications.

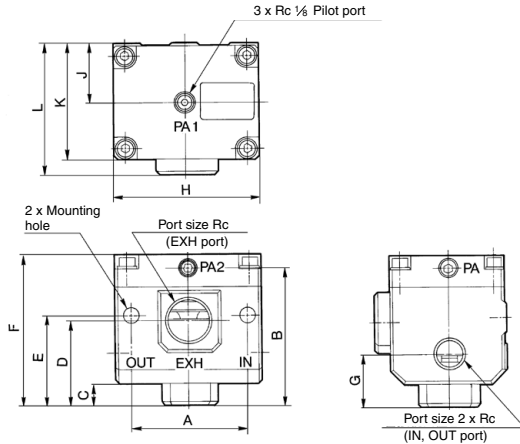
VPA31□5 Series

Flow Rate Characteristics/Weight

| Valve model | Port size | | Flow rate characteristics | | | | | | Weight (kg) |
|-------------|---------------|--------|-----------------------------|------|-----|-----------------------------|------|-----|-------------|
| | | | 1→2(IN→OUT) | | | 2→3(OUT→EXH) | | | |
| | 1(IN), 2(OUT) | 3(EXH) | C[dm ³ /(s·bar)] | b | Cv | C[dm ³ /(s·bar)] | b | Cv | |
| VPA3145 | 3/8 | 3/4 | 19 | 0.43 | 5.5 | 18 | 0.47 | 5.4 | 1.0 |
| | 1/2 | | 23 | 0.32 | 6.2 | 21 | 0.39 | 5.8 | |
| | 3/4 | | 28 | 0.36 | 7.6 | 26 | 0.35 | 7.0 | |

| Valve model | Port size | | Effective area (mm ²) | | Weight (kg) |
|-------------|---------------|--------|-----------------------------------|--------------|-------------|
| | 1(IN), 2(OUT) | 3(EXH) | 1→2(IN→OUT) | 2→3(OUT→EXH) | |
| VPA3165 | 3/4 | 1 1/4 | 230 | 280 | 1.5 |
| | 1 | | 280 | 310 | |
| | 1 1/4 | | 310 | 330 | |
| VPA3185 | 1 1/4 | 2 | 570 | 650 | 2.3 |
| | 1 1/2 | | 650 | 670 | |
| | 2 | | 650 | 670 | |

Dimensions



| Model | Port size Rc | | | A | B | C | D | E | F | G | H | J | K | L | Mounting hole |
|---------|--------------|-------|-----|------|-----|----|----|----|-----|----|------|----|----|-----|---------------|
| | IN | OUT | EXH | | | | | | | | | | | | |
| VPA3145 | 3/8 | 3/4 | 3/4 | 71 | 85 | 14 | 52 | 55 | 93 | 32 | 87.4 | 36 | 71 | 80 | Ø8.5 |
| | 1/2 | | | | | | | | | | | | | | |
| | 3/4 | | | | | | | | | | | | | | |
| VPA3165 | 1 | 1 1/4 | 3/4 | 82.6 | 110 | 17 | 68 | 75 | 118 | 45 | 113 | 36 | 71 | 95 | Ø8.5 |
| | 1 1/4 | | | | | | | | | | | | | | |
| | 1 1/4 | | | | | | | | | | | | | | |
| VPA3185 | 1 1/2 | 2 | 3/4 | 118 | 132 | 14 | 80 | 95 | 140 | 52 | 140 | 41 | 81 | 105 | Ø13 |
| | 1 1/2 | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | |