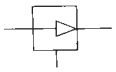
# Vacuum Ejector
# Box Type (Built in Silencer)/Body Ported Type
# Series ZH

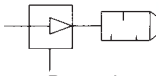
## Features

- Compact and lightweight desing.
- Choice of 7 nozzle diameters.
- Standard or low vacuum pressure options.
- One touch or threaded ports for easy connection in a system.
- Mounting holes available on all units to fix to machinery.

## Symbol



Body ported style
(without silencer)
ZH□□D



Box style
(Built-in silencer)
ZH□□B

## How to Order

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Box type (Built-in silencer) | E | ZH | 07 | B | S | – 06 | – F01 | |
| Body ported type (Without silencer) | E | ZH | 07 | D | S | – F01 | – F01 | – F01 |

| | |
|---|---|
| — | One touch fittings only |
| E | Threaded port included |

Nozzle diameter

| | |
|---|---|
| 05 | 0.5 mmø |
| 07 | 0.7 mmø |
| 10 | 1.0 mmø |
| 13 | 1.3 mmø |
| 15 | 1.5 mmø |
| 18 | 1.8 mmø |
| 20 | 2.0 mmø |

Maximum vacuum pressure

| | |
|---|---|
| S | –88 kPa |
| L | –48 kPa |

SUP. port size

| Symbol | Size | Style |
|---|---|---|
| 06 | ø6 | One-touch |
| 08 | ø8 | One-touch |
| 10 | ø10 | One-touch |
| 12 | ø12 | One-touch |
| F01 | G1/8 | Screw-in |
| F02 | G1/4 | Screw-in |
| F03 | G3/8 | Screw-in |

VAC. port size

| Symbol | Size | Style |
|---|---|---|
| 06 | ø6 | One-touch |
| 10 | ø10 | One-touch |
| 12 | ø12 | One-touch |
| 16 | ø16 | One-touch |
| F01 | G1/8 | Screw-in |
| F02 | G1/4 | Screw-in |
| F03 | G3/8 | Screw-in |
| F04 | G1/2 | Screw-in |

EXH. port size

| Symbol | Size | Style |
|---|---|---|
| 06 | ø6 | One-touch |
| 08 | ø8 | One-touch |
| 10 | ø10 | One-touch |
| 12 | ø12 | One-touch |
| 16 | ø16 | One-touch |
| F01 | G1/8 | Screw-in |
| F02 | G1/4 | Screw-in |
| F03 | G3/8 | Screw-in |
| F04 | G1/2 | Screw-in |

Note) See dimensions tables for all combinations available.
If a part number is not present there it cannot be ordered.

## Product Recommendation

### Stocked items for fast delivery

| | | | |
|---|---|---|---|
| ZH05BS-06-06 | ZH07DS-06-06-06 | ZH13BS-08-10 | ZH20DS-12-16-16 |
| EZH05BS-06-F01 | EZH07DS-F01-F01-F01 | ZH13BS-08-F02 | EZH20DS-F03-F04-F04 |
| EZH05BS-F01-F01 | ZH10BS-06-06 | EZH13BS-F01-F02 | |
| ZH05DS-06-06-06 | EZH10BS-06-F01 | ZH13DS-08-10-10 | |
| EZH05DS-F01-F01-F01 | EZH10BS-F01-F01 | EZH13DS-F01-F02-F02 | |
| ZH07BS-06-06 | ZH10DS-06-06-08 | ZH15DS-10-12-12 | |
| EZH07BS-06-F01 | EZH10DS-F01-F01-F01 | ZH18DS-12-12-12 | |

### Related Products

**Series V100 -** 3 Port Valve - page 353
**Series ZFZ -** Air Suction Filter - www.smc.eu
**Series ZPT -** Vacuum Pad - www.smc.eu
**Series ZP2 -** Vacuum Pad - page 1414
**Series PFM -** Flow Switch - page 1298
**Series ZSE40A(F)/ISE40A-** Vacuum Switch - page 1283
**Series GZ -** Pressure Gauge for Vacuum - www.smc.eu
**Series AC -** Air Preparation - page 1076
**Series TU -** Tubing - page 1223
**Series KQB2 -** Fittings - page 1212

## Specifications

| Model | Nozzle diameter [mm] | Body type | Max. vacuum pressure * [kPa] | | Maximum suction flow rate [ℓ/min (ANR)] | | Air consumption [ℓ/min (ANR)] | Connection (One-touch/Screw-in) | | | Weight [g] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type S | Type L | Type S | Type L | Type S/Type L | SUP | VAC | EXH | |
| ZH05B□ | 0.5 | Box type (Built-in silencer) | –88 | –48 | 5 | 8 | 13 | ø6/1/8 | ø6/1/8 | — | 28 |
| ZH07B□ | 0.7 | | | | 12 | 20 | 23 | | | | 28 |
| ZH10B□ | 1.0 | | | | 24 | 34 | 46 | | | | 33 |
| ZH13B□ | 1.3 | | | | 40 | 70 | 78 | ø8/1/8 | ø10/1/4 | | 66 |
| ZH05D□ | 0.5 | Body ported type (Without silencer) | –88 | –48 | 5 | 8 | 13 | ø6/1/8 | ø6/1/8 | ø6/1/8 | 11 |
| ZH07D□ | 0.7 | | | | 12 | 20 | 23 | | | | 12 |
| ZH10D□ | 1.0 | | | | 24 | 34 | 46 | ø6/1/8 | ø6/1/8 | ø8/1/8 | 16 |
| ZH13D□ | 1.3 | | | | 40 | 70 | 78 | ø8/1/8 | ø10/1/4 | ø10/1/4 | 27 |
| ZH15D□ | 1.5 | Body ported type (Without silencer) | –88 | –53 | 55 | 75 | 95 | ø10/1/4 | ø12/3/8 | ø12/3/8 | 43 |
| ZH18D□ | 1.8 | | | | 65 | 110 | 150 | ø12/3/8 | | | 55 |
| ZH20D□ | 2.0 | | | | 85 | 135 | 185 | ø12/3/8 | ø16/1/2 | ø16/1/2 | 95 |

* Supply pressure: 0.45 MPa.

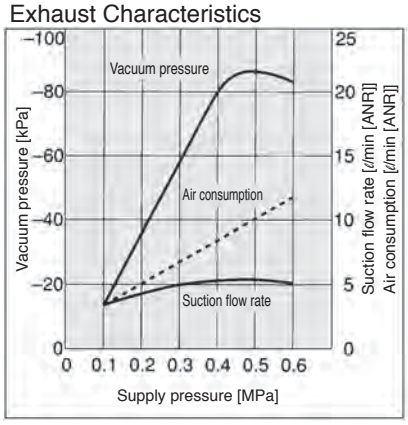
## Flow Characteristics

The flow characteristics correspond to a supply pressure of 0.45 MPa.

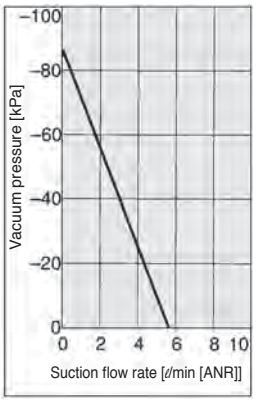
### ZH05□S

Max. vacuum pressure: –88 kPa

Exhaust Characteristics



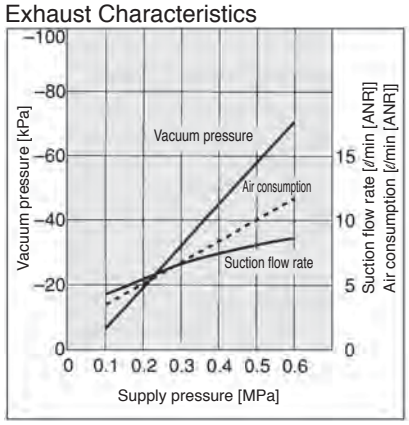

Flow Characteristics



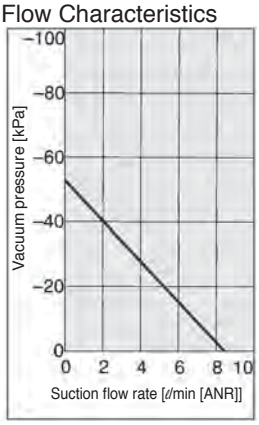

### ZH05□L

Max. vacuum pressure: –48 kPa

Exhaust Characteristics



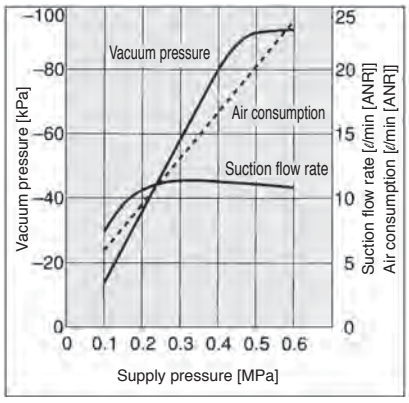

Flow Characteristics



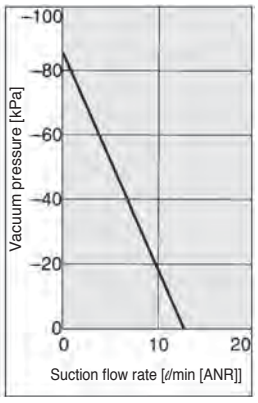

### ZH07□S

Max. vacuum pressure: –88 kPa

Exhaust Characteristics



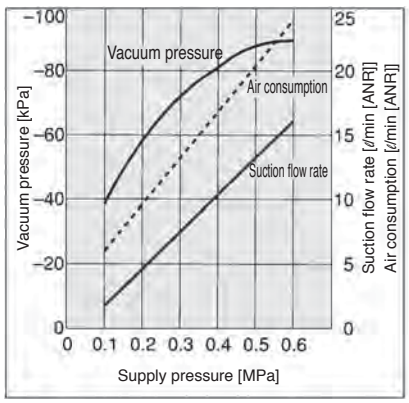

Flow Characteristics



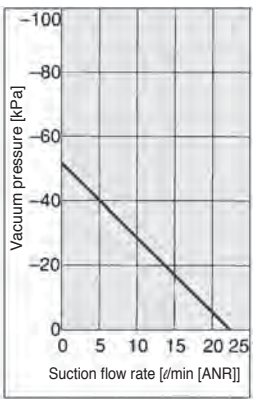

### ZH07□L

Max. vacuum pressure: –48 kPa

Exhaust Characteristics



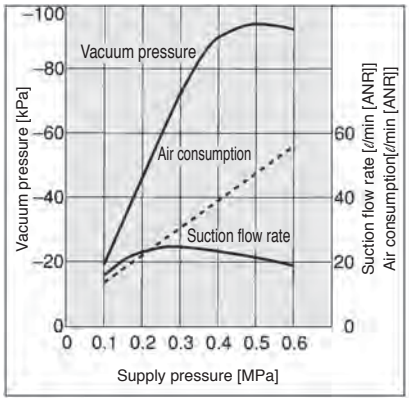

Flow Characteristics



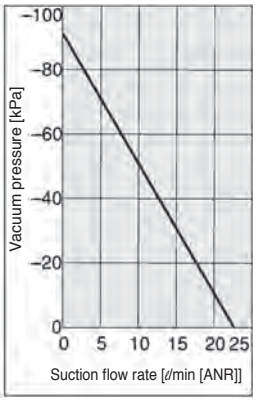

### ZH10□S

Max. vacuum pressure: –88 kPa

Exhaust Characteristics



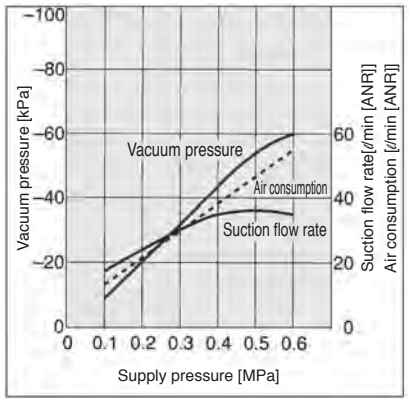

Flow Characteristics



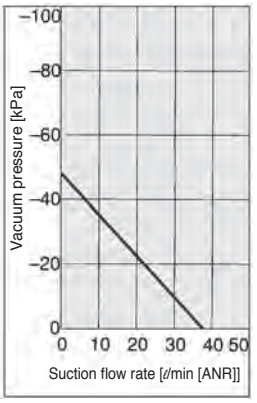

### ZH10□L

Max. vacuum pressure: –48 kPa

Exhaust Characteristics



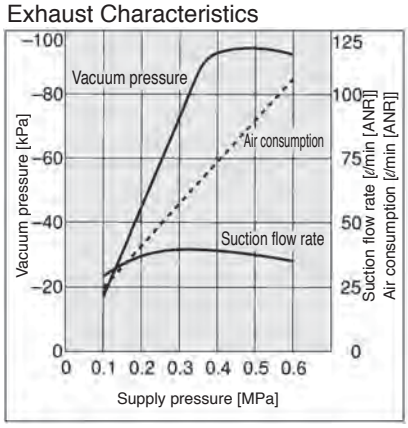

Flow Characteristics



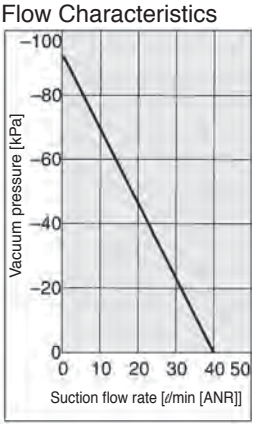

### ZH13□S

Max. vacuum pressure: –88 kPa

Exhaust Characteristics



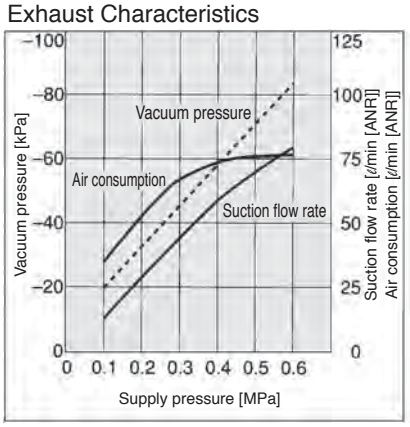

Flow Characteristics



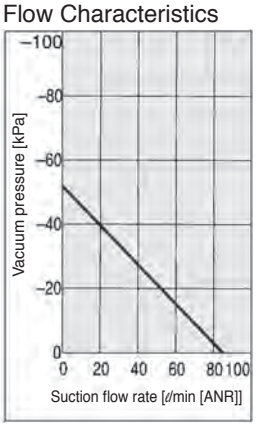

### ZH13□L

Max. vacuum pressure: –48 kPa

Exhaust Characteristics




Flow Characteristics



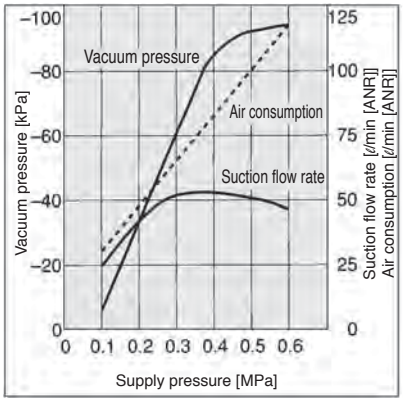

Vacuum

The flow characteristics correspond to a supply pressure of 0.45 MPa.

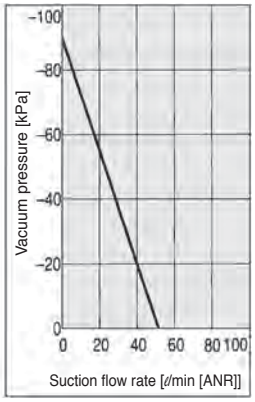
## ZH15□S

Max. vacuum pressure: –88 kPa

### Exhaust Characteristics



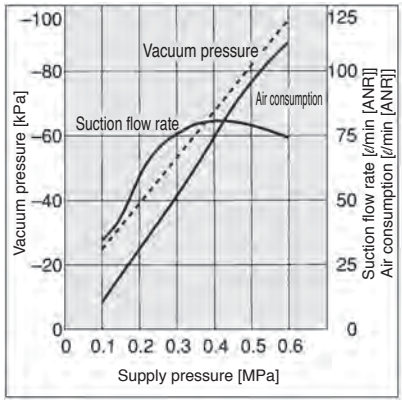

### Flow Characteristics



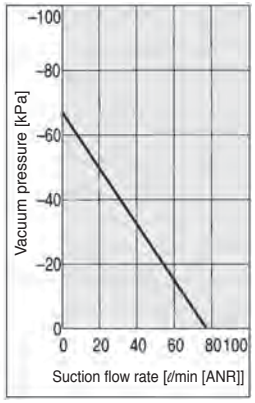

## ZH15□L

Max. vacuum pressure: –53 kPa

### Exhaust Characteristics



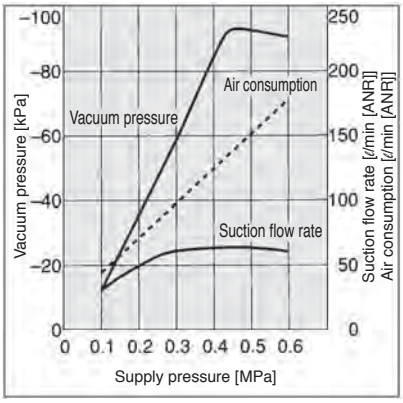

### Flow Characteristics



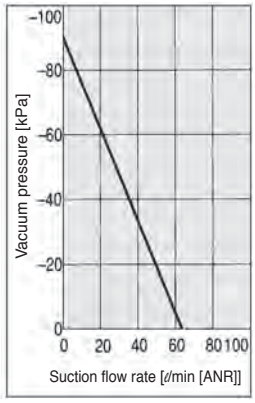

## ZH18□S

Max. vacuum pressure: –88 kPa

### Exhaust Characteristics



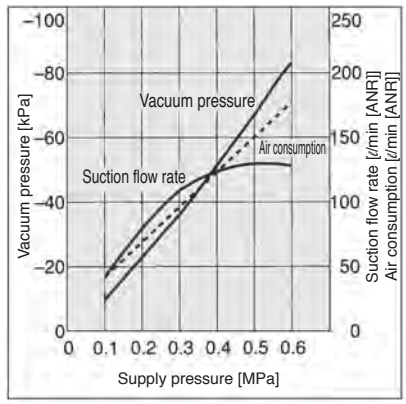

### Flow Characteristics



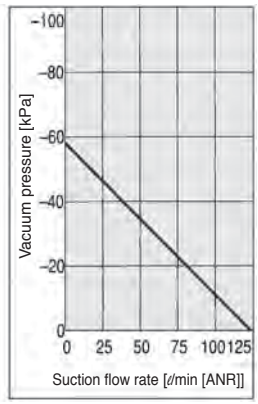

## ZH18□L

Max. vacuum pressure: –53 kPa

### Exhaust Characteristics



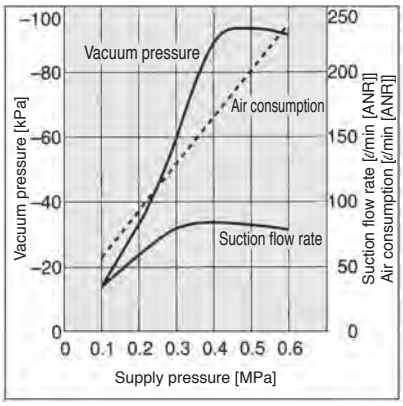

### Flow Characteristics



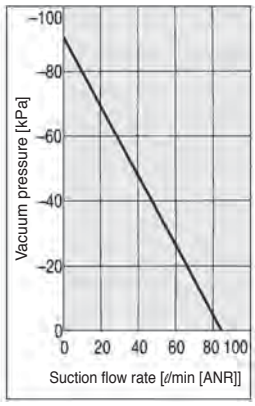

## ZH20□S

Max. vacuum pressure: –88 kPa

### Exhaust Characteristics



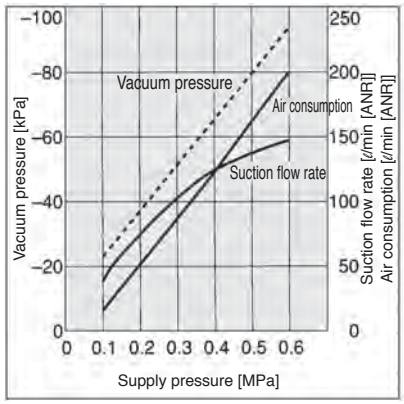

### Flow Characteristics



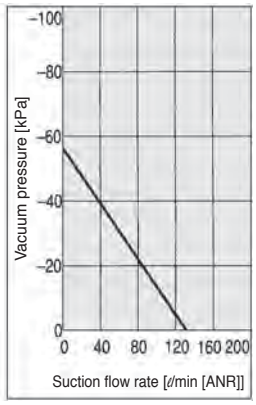

## ZH20□L

Max. vacuum pressure: –53 kPa

### Exhaust Characteristics



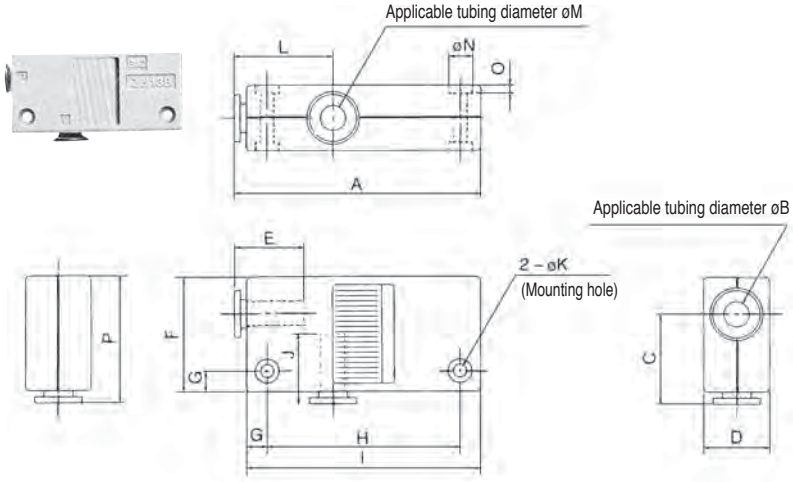

### Flow Characteristics



## Dimensions

### Box Type (Built-in silencer): ZH□B$^{S}_{L}$-□-□

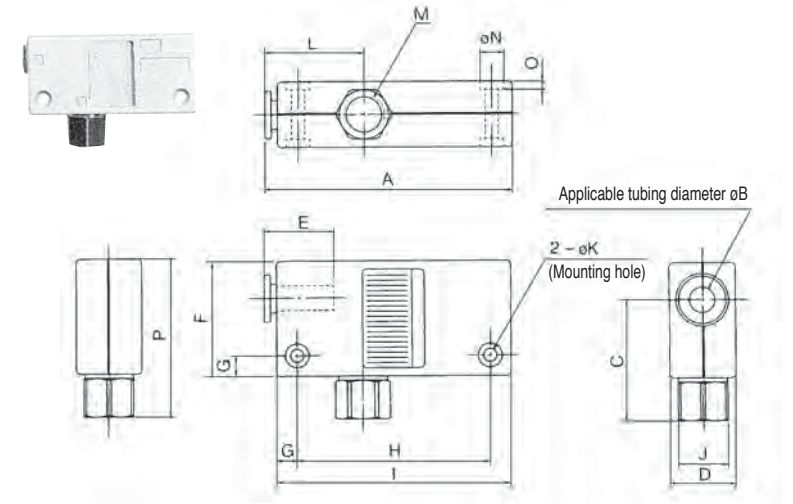
#### One-touch connections




| Model | A | øB | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| ZH05BS-06-06 | 60 | 6 | 22 | 16 | 12.8 | 28 | 5 | 47 |
| ZH05BL-06-06 | 60 | 6 | 22 | 16 | 12.8 | 28 | 5 | 47 |
| ZH07BS-06-06 | 60 | 6 | 22 | 16 | 12.8 | 28 | 5 | 47 |
| ZH07BL-06-06 | 60 | 6 | 22 | 16 | 12.8 | 28 | 5 | 47 |
| ZH10BS-06-06 | 63 | 6 | 23 | 18 | 12.8 | 29 | 5 | 50 |
| ZH10BL-06-06 | 63 | 6 | 23 | 18 | 12.8 | 29 | 5 | 50 |
| ZH13BS-08-10 | 78 | 8 | 27.5 | 23 | 13.7 | 35 | 7 | 61 |
| ZH13BL-08-10 | 78 | 8 | 27.5 | 23 | 13.7 | 35 | 7 | 61 |

| Model | I | J | øK | L | øM | øN | O | P |
|---|---|---|---|---|---|---|---|---|
| ZH05BS-06-06 | 57 | 12.8 | 3.2 | 24 | 6 | 5.8 | 2 | 31 |
| ZH05BL-06-06 | 57 | 12.8 | 3.2 | 24 | 6 | 5.8 | 2 | 31 |
| ZH07BS-06-06 | 57 | 12.8 | 3.2 | 24 | 6 | 5.8 | 2 | 31 |
| ZH07BL-06-06 | 57 | 12.8 | 3.2 | 24 | 6 | 5.8 | 2 | 31 |
| ZH10BS-06-06 | 60 | 12.8 | 3.2 | 26 | 6 | 5.8 | 2 | 32 |
| ZH10BL-06-06 | 60 | 12.8 | 3.2 | 26 | 6 | 5.8 | 2 | 32 |
| ZH13BS-08-10 | 75 | 15.3 | 4.2 | 28 | 10 | 7.5 | 3 | 38.5 |
| ZH13BL-08-10 | 75 | 15.3 | 4.2 | 28 | 10 | 7.5 | 3 | 38.5 |

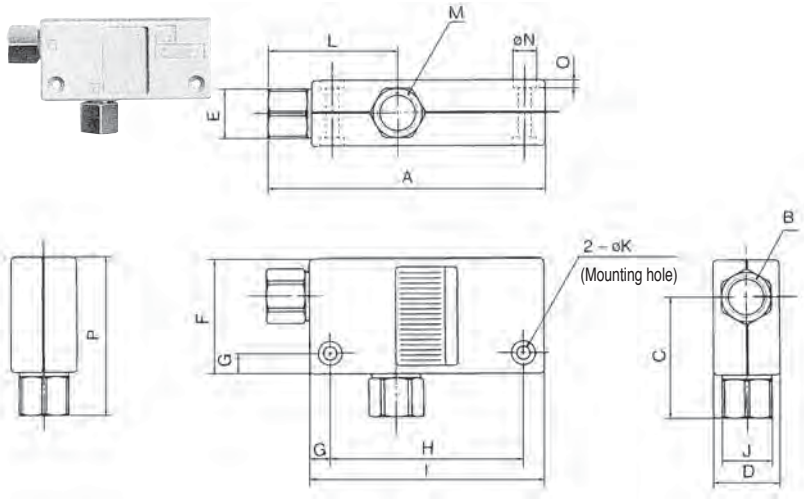
#### One-touch and screw-in vacuum connections




| Model | A | øB | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| EZH05BS-06-F01 | 60 | 6 | 29.5 | 16 | 12.8 | 28 | 5 | 47 |
| EZH05BL-06-F01 | 60 | 6 | 29.5 | 16 | 12.8 | 28 | 5 | 47 |
| EZH07BS-06-F01 | 60 | 6 | 29.5 | 16 | 12.8 | 28 | 5 | 47 |
| EZH07BL-06-F01 | 60 | 6 | 29.5 | 16 | 12.8 | 28 | 5 | 47 |
| EZH10BS-06-F01 | 63 | 6 | 30.5 | 18 | 12.8 | 29 | 5 | 50 |
| EZH10BL-06-F01 | 63 | 6 | 30.5 | 18 | 12.8 | 29 | 5 | 50 |
| EZH13BS-08-F02 | 78 | 8 | 39 | 23 | 13.7 | 35 | 7 | 61 |
| EZH13BL-08-F02 | 78 | 8 | 39 | 23 | 13.7 | 35 | 7 | 61 |

| Model | I | J | øK | L | M | øN | O | P |
|---|---|---|---|---|---|---|---|---|
| EZH05BS-06-F01 | 57 | 12 | 3.2 | 24 | G1⁄8 | 5.8 | 2 | 38.5 |
| EZH05BL-06-F01 | 57 | 12 | 3.2 | 24 | G1⁄8 | 5.8 | 2 | 38.5 |
| EZH07BS-06-F01 | 57 | 12 | 3.2 | 24 | G1⁄8 | 5.8 | 2 | 38.5 |
| EZH07BL-06-F01 | 57 | 12 | 3.2 | 24 | G1⁄8 | 5.8 | 2 | 38.5 |
| EZH10BS-06-F01 | 60 | 12 | 3.2 | 26 | G1⁄8 | 5.8 | 2 | 39.5 |
| EZH10BL-06-F01 | 60 | 12 | 3.2 | 26 | G1⁄8 | 5.8 | 2 | 39.5 |
| EZH13BS-08-F02 | 75 | 17 | 4.2 | 28 | G1⁄4 | 7.5 | 3 | 50 |
| EZH13BL-08-F02 | 75 | 17 | 4.2 | 28 | G1⁄4 | 7.5 | 3 | 50 |

#### Screw-in connections



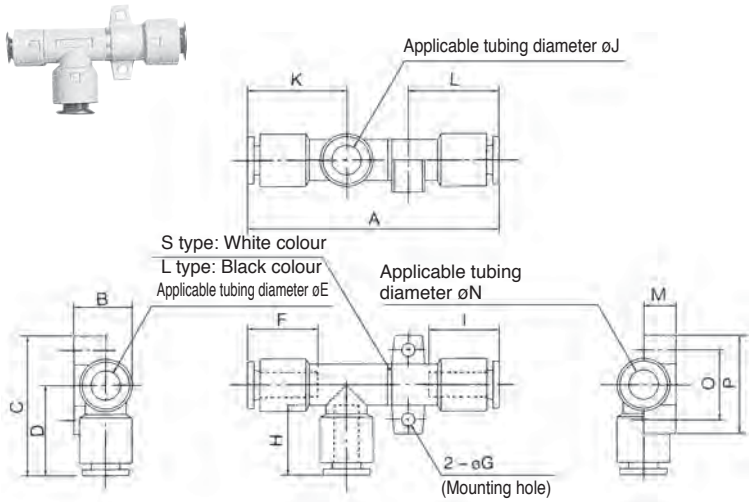

| Model | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| EZH05BS-F01-F01 | 67.5 | G1⁄8 | 29.5 | 16 | 12 | 28 | 5 | 47 |
| EZH05BL-F01-F01 | 67.5 | G1⁄8 | 29.5 | 16 | 12 | 28 | 5 | 47 |
| EZH07BS-F01-F01 | 67.5 | G1⁄8 | 29.5 | 16 | 12 | 28 | 5 | 47 |
| EZH07BL-F01-F01 | 67.5 | G1⁄8 | 29.5 | 16 | 12 | 28 | 5 | 47 |
| EZH10BS-F01-F01 | 70.5 | G1⁄8 | 30.5 | 18 | 12 | 29 | 5 | 50 |
| EZH10BL-F01-F01 | 70.5 | G1⁄8 | 30.5 | 18 | 12 | 29 | 5 | 50 |
| EZH13BS-F01-F02 | 86.5 | G1⁄8 | 39 | 23 | 14 | 35 | 7 | 61 |
| EZH13BL-F01-F02 | 86.5 | G1⁄8 | 39 | 23 | 14 | 35 | 7 | 61 |

| Model | I | J | øK | L | M | øN | O | P |
|---|---|---|---|---|---|---|---|---|
| EZH05BS-F01-F01 | 57 | 12 | 3.2 | 31.5 | G1⁄8 | 5.8 | 2 | 38.5 |
| EZH05BL-F01-F01 | 57 | 12 | 3.2 | 31.5 | G1⁄8 | 5.8 | 2 | 38.5 |
| EZH07BS-F01-F01 | 57 | 12 | 3.2 | 31.5 | G1⁄8 | 5.8 | 2 | 38.5 |
| EZH07BL-F01-F01 | 57 | 12 | 3.2 | 31.5 | G1⁄8 | 5.8 | 2 | 38.5 |
| EZH10BS-F01-F01 | 60 | 12 | 3.2 | 33.5 | G1⁄8 | 5.8 | 2 | 39.5 |
| EZH10BL-F01-F01 | 60 | 12 | 3.2 | 33.5 | G1⁄8 | 5.8 | 2 | 39.5 |
| EZH13BS-F01-F02 | 75 | 17 | 4.2 | 36.5 | G1⁄4 | 7.5 | 3 | 50 |
| EZH13BL-F01-F02 | 75 | 17 | 4.2 | 36.5 | G1⁄4 | 7.5 | 3 | 50 |

Vacuum

## Body Ported Type (Without silencer): ZH05D$^{S}_{L}$-□-□-□ to ZH15D$^{S}_{L}$-□-□-□

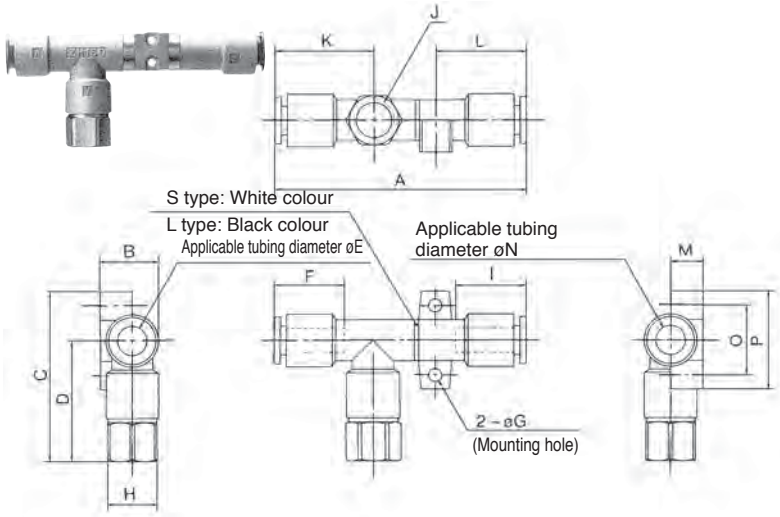
### One-touch connections




| Model | A | B | C | D | øE | F | øG | H |
|---|---|---|---|---|---|---|---|---|
| ZH05DS-06-06-06 | 58.5 | 14.2 | 34 | 22 | 6 | 12.8 | 3.2 | 12.8 |
| ZH05DL-06-06-06 | 58.5 | 14.2 | 34 | 22 | 6 | 12.8 | 3.2 | 12.8 |
| ZH07DS-06-06-06 | 61 | 14.2 | 34 | 22 | 6 | 12.8 | 3.2 | 12.8 |
| ZH07DL-06-06-06 | 61 | 14.2 | 34 | 22 | 6 | 12.8 | 3.2 | 12.8 |
| ZH10DS-06-06-08 | 66 | 17.2 | 37 | 23 | 6 | 12.8 | 4.2 | 12.8 |
| ZH10DL-06-06-08 | 70 | 17.2 | 37 | 23 | 6 | 12.8 | 4.2 | 12.8 |
| ZH13DS-08-10-10 | 74.5 | 20 | 42.5 | 27.5 | 8 | 13.7 | 4.2 | 15.3 |
| ZH13DL-08-10-10 | 79.5 | 20 | 42.5 | 27.5 | 8 | 13.7 | 4.2 | 15.3 |
| ZH15DS-10-12-12 | 93.3 | 22.45 | 47 | 29.5 | 10 | 15.3 | 4.2 | 15.8 |
| ZH15DL-10-12-12 | 93.3 | 22.45 | 47 | 29.5 | 10 | 15.3 | 4.2 | 15.8 |

| Model | I | øJ | K | L | M | øN | O | P |
|---|---|---|---|---|---|---|---|---|
| ZH05DS-06-06-06 | 12.8 | 6 | 24 | 21 | 7.8 | 6 | 17 | 24 |
| ZH05DL-06-06-06 | 12.8 | 6 | 24 | 21 | 7.8 | 6 | 17 | 24 |
| ZH07DS-06-06-06 | 12.8 | 6 | 24 | 22 | 7.8 | 6 | 17 | 24 |
| ZH07DL-06-06-06 | 12.8 | 6 | 24 | 22 | 7.8 | 6 | 17 | 24 |
| ZH10DS-06-06-08 | 13.7 | 6 | 26 | 24.5 | 9.6 | 8 | 20 | 28 |
| ZH10DL-06-06-08 | 13.7 | 6 | 26 | 24.5 | 9.6 | 8 | 20 | 28 |
| ZH13DS-08-10-10 | 15.3 | 10 | 28 | 27 | 10.7 | 10 | 22 | 30 |
| ZH13DL-08-10-10 | 15.3 | 10 | 28 | 27 | 10.7 | 10 | 22 | 30 |
| ZH15DS-10-12-12 | 15.8 | 12 | 31.5 | 32.8 | 12 | 12 | 27 | 35 |
| ZH15DL-10-12-12 | 15.8 | 12 | 31.5 | 32.8 | 12 | 12 | 27 | 35 |

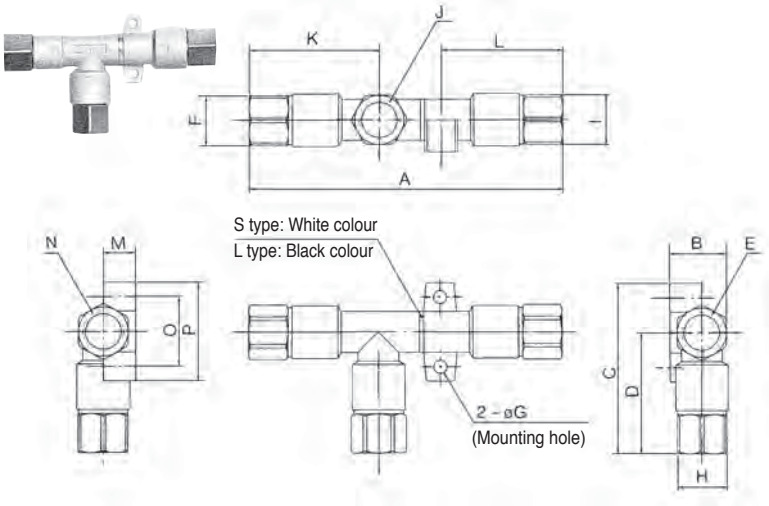
### One-touch and screw-in vacuum connections




| Model | A | B | C | D | øE | F | øG | H |
|---|---|---|---|---|---|---|---|---|
| EZH05DS-06-F01-06 | 58.5 | 14.2 | 41.5 | 29.5 | 6 | 12.8 | 3.2 | 12 |
| EZH05DL-06-F01-06 | 58.5 | 14.2 | 41.5 | 29.5 | 6 | 12.8 | 3.2 | 12 |
| EZH07DS-06-F01-06 | 61 | 14.2 | 41.5 | 29.5 | 6 | 12.8 | 3.2 | 12 |
| EZH07DL-06-F01-06 | 61 | 14.2 | 41.5 | 29.5 | 6 | 12.8 | 3.2 | 12 |
| EZH10DS-06-F01-08 | 66 | 17.2 | 44.5 | 30.5 | 6 | 12.8 | 4.2 | 12 |
| EZH10DL-06-F01-08 | 70 | 17.2 | 44.5 | 30.5 | 6 | 12.8 | 4.2 | 12 |
| EZH13DS-08-F02-10 | 74.5 | 19.95 | 54 | 39 | 8 | 13.7 | 4.2 | 17 |
| EZH13DL-08-F02-10 | 79.5 | 19.95 | 54 | 39 | 8 | 13.7 | 4.2 | 17 |
| EZH15DS-10-F03-12 | 93.3 | 22.45 | 58.5 | 41 | 10 | 15.3 | 4.2 | 19 |
| EZH15DL-10-F03-12 | 93.3 | 22.45 | 58.5 | 41 | 10 | 15.3 | 4.2 | 19 |

| Model | I | J | K | L | M | øN | O | P |
|---|---|---|---|---|---|---|---|---|
| EZH05DS-06-F01-06 | 12.8 | G1⁄8 | 24 | 21 | 7.8 | 6 | 17 | 24 |
| EZH05DL-06-F01-06 | 12.8 | G1⁄8 | 24 | 21 | 7.8 | 6 | 17 | 24 |
| EZH07DS-06-F01-06 | 12.8 | G1⁄8 | 24 | 22 | 7.8 | 6 | 17 | 24 |
| EZH07DL-06-F01-06 | 12.8 | G1⁄8 | 24 | 22 | 7.8 | 6 | 17 | 24 |
| EZH10DS-06-F01-08 | 13.7 | G1⁄8 | 26 | 24.5 | 9.6 | 8 | 20 | 28 |
| EZH10DL-06-F01-08 | 13.7 | G1⁄8 | 26 | 24.5 | 9.6 | 8 | 20 | 28 |
| EZH13DS-08-F02-10 | 15.3 | G1⁄4 | 28 | 27 | 10.7 | 10 | 22 | 30 |
| EZH13DL-08-F02-10 | 15.3 | G1⁄4 | 28 | 27 | 10.7 | 10 | 22 | 30 |
| EZH15DS-10-F03-12 | 15.8 | G3⁄8 | 31.5 | 32.8 | 12 | 12 | 27 | 35 |
| EZH15DL-10-F03-12 | 15.8 | G3⁄8 | 31.5 | 32.8 | 12 | 12 | 27 | 35 |

### Screw-in connections

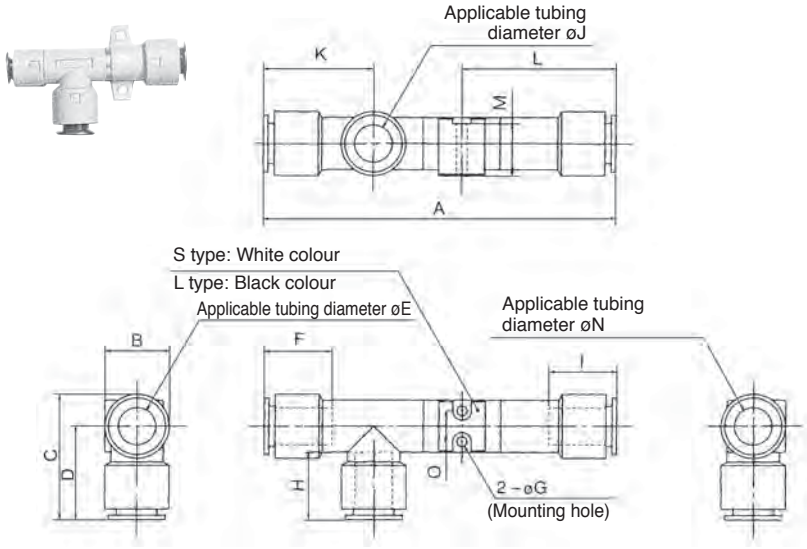



| Model | A | B | C | D | E | F | øG | H |
|---|---|---|---|---|---|---|---|---|
| EZH05DS-F01-F01-F01 | 73.5 | 14.2 | 41.5 | 29.5 | G1⁄8 | 12 | 3.2 | 12 |
| EZH05DL-F01-F01-F01 | 73.5 | 14.2 | 41.5 | 29.5 | G1⁄8 | 12 | 3.2 | 12 |
| EZH07DS-F01-F01-F01 | 76 | 14.2 | 41.5 | 29.5 | G1⁄8 | 12 | 3.2 | 12 |
| EZH07DL-F01-F01-F01 | 76 | 14.2 | 41.5 | 29.5 | G1⁄8 | 12 | 3.2 | 12 |
| EZH10DS-F01-F01-F01 | 82 | 17.2 | 44.5 | 30.5 | G1⁄8 | 12 | 4.2 | 12 |
| EZH10DL-F01-F01-F01 | 86 | 17.2 | 44.5 | 30.5 | G1⁄8 | 12 | 4.2 | 12 |
| EZH13DS-F01-F02-F02 | 94.5 | 19.95 | 54 | 39 | G1⁄8 | 14 | 4.2 | 17 |
| EZH13DL-F01-F02-F02 | 99.5 | 19.95 | 54 | 39 | G1⁄8 | 14 | 4.2 | 17 |
| EZH15DS-F02-F03-F03 | 116.5 | 22.45 | 58.5 | 41 | G1⁄4 | 17 | 4.2 | 19 |
| EZH15DL-F02-F03-F03 | 116.5 | 22.45 | 58.5 | 41 | G1⁄4 | 17 | 4.2 | 19 |

| Model | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|
| EZH05DS-F01-F01-F01 | 12 | G1⁄8 | 31.5 | 28.5 | 7.8 | G1⁄8 | 17 | 24 |
| EZH05DL-F01-F01-F01 | 12 | G1⁄8 | 31.5 | 28.5 | 7.8 | G1⁄8 | 17 | 24 |
| EZH07DS-F01-F01-F01 | 12 | G1⁄8 | 31.5 | 29.5 | 7.8 | G1⁄8 | 17 | 24 |
| EZH07DL-F01-F01-F01 | 12 | G1⁄8 | 31.5 | 29.5 | 7.8 | G1⁄8 | 17 | 24 |
| EZH10DS-F01-F01-F01 | 14 | G1⁄8 | 33.5 | 33 | 9.6 | G1⁄8 | 20 | 28 |
| EZH10DL-F01-F01-F01 | 14 | G1⁄8 | 33.5 | 33 | 9.6 | G1⁄8 | 20 | 28 |
| EZH13DS-F01-F02-F02 | 17 | G1⁄4 | 36.5 | 38.5 | 10.7 | G1⁄4 | 22 | 30 |
| EZH13DL-F01-F02-F02 | 17 | G1⁄4 | 36.5 | 38.5 | 10.7 | G1⁄4 | 22 | 30 |
| EZH15DS-F02-F03-F03 | 19 | G3⁄8 | 43 | 44.5 | 12 | G3⁄8 | 27 | 35 |
| EZH15DL-F02-F03-F03 | 19 | G3⁄8 | 43 | 44.5 | 12 | G3⁄8 | 27 | 35 |

## Body Ported Type (Without silencer): ZH18D$^{S}_{L}$-□-□-□, ZH20D$^{S}_{L}$-□-□-□

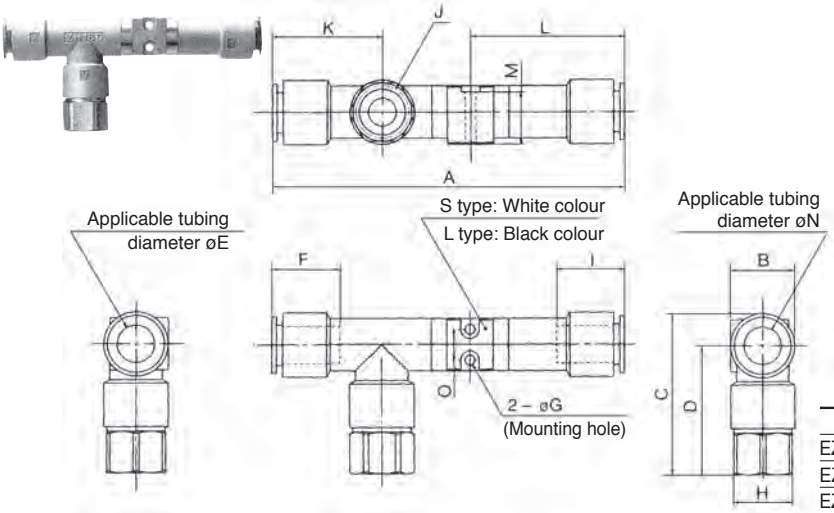
### One-touch connections




| Model | A | B | C | D | øE | F | øG | H |
|---|---|---|---|---|---|---|---|---|
| ZH18DS-12-12-12 | 114 | 20.95 | 40.95 | 30.5 | ø12 | 15.8 | ø3.5 | 15.8 |
| ZH18DL-12-12-12 | 114 | 20.95 | 40.95 | 30.5 | ø12 | 15.8 | ø3.5 | 15.8 |
| ZH20DS-12-16-16 | 124.6 | 26.75 | 45.95 | 32.7 | ø12 | 15.8 | ø3.5 | 17.2 |
| ZH20DL-12-16-16 | 124.6 | 26.75 | 45.95 | 32.7 | ø12 | 15.8 | ø3.5 | 17.2 |

| Model | I | øJ | K | L | M | øN | O |
|---|---|---|---|---|---|---|---|
| ZH18DS-12-12-12 | 15.8 | ø12 | 35.5 | 50 | 17 | ø12 | 10 |
| ZH18DL-12-12-12 | 15.8 | ø12 | 35.5 | 50 | 17 | ø12 | 10 |
| ZH20DS-12-16-16 | 17.2 | ø16 | 38.5 | 54.3 | 21.7 | ø16 | 12 |
| ZH20DL-12-16-16 | 17.2 | ø16 | 38.5 | 54.3 | 21.7 | ø16 | 12 |

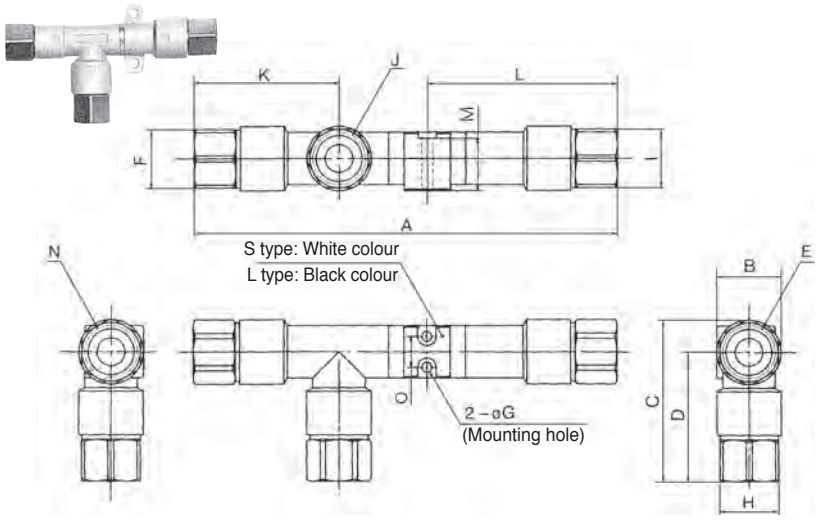
### One-touch and screw-in vacuum connections




| Model | A | B | C | D | øE | F | øG | H |
|---|---|---|---|---|---|---|---|---|
| EZH18DS-12-F03-12 | 110 | 20.95 | 52.45 | 42 | ø12 | 15.8 | ø3.5 | 19 |
| EZH18DL-12-F03-12 | 110 | 20.95 | 52.45 | 42 | ø12 | 15.8 | ø3.5 | 19 |
| EZH20DS-12-F04-16 | 124.6 | 26.75 | 60.95 | 47.7 | ø12 | 15.8 | ø3.5 | 24 |
| EZH20DL-12-F04-16 | 124.6 | 26.75 | 60.95 | 47.7 | ø12 | 15.8 | ø3.5 | 24 |

| Model | I | J | K | L | M | øN | O |
|---|---|---|---|---|---|---|---|
| EZH18DS-12-F03-12 | 15.8 | G 3/8 | 35.5 | 50 | 17 | ø12 | 10 |
| EZH18DL-12-F03-12 | 15.8 | G 3/8 | 35.5 | 50 | 17 | ø12 | 10 |
| EZH20DS-12-F04-16 | 17.2 | G 1/2 | 38.5 | 54.3 | 21.7 | ø16 | 12 |
| EZH20DL-12-F04-16 | 17.2 | G 1/2 | 38.5 | 54.3 | 21.7 | ø16 | 12 |

### Screw-in connections




| Model | A | B | C | D | E | F | øG | H |
|---|---|---|---|---|---|---|---|---|
| EZH18DS-F03-F03-F03 | 133 | 20.95 | 52.45 | 42 | G 3/8 | 19 | ø3.5 | 19 |
| EZH18DL-F03-F03-F03 | 133 | 20.95 | 52.45 | 42 | G 3/8 | 19 | ø3.5 | 19 |
| EZH20DS-F03-F04-F04 | 151.1 | 26.75 | 60.95 | 47.7 | G 3/8 | 19 | ø3.5 | 24 |
| EZH20DL-F03-F04-F04 | 151.1 | 26.75 | 60.95 | 47.7 | G 3/8 | 19 | ø3.5 | 24 |

| Model | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|
| EZH18DS-F03-F03-F03 | 19 | G 3/8 | 47 | 57.5 | 17 | G 3/8 | 10 |
| EZH18DL-F03-F03-F03 | 19 | G 3/8 | 47 | 57.5 | 17 | G 3/8 | 10 |
| EZH20DS-F03-F04-F04 | 24 | G 1/2 | 50 | 69.3 | 22 | G 1/2 | 12 |
| EZH20DL-F03-F04-F04 | 24 | G 1/2 | 50 | 69.3 | 22 | G 1/2 | 12 |

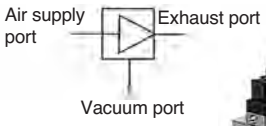
For more product options and details see our specific catalogues or on-line information.

# Vacuum Ejector with Valve and Switch Series EZM

## Features

- Narrow body and lightweight design.
- Can be specified with vacuum on/off valve.
- Optional air release (blow off) valve.
- Integrated vacuum switches and silencer.
- 2 stage ejector for maximum efficiency.

## Symbol




## How to Order

With supply and release valves: **EZM 07 1 H F – K 5 LZ □ □ – E55 L – Q**

**Nozzle diameter**

| | |
|---|---|
| 05 | 0.5 mm Note) |
| 07 | 0.7 mm |
| 10 | 1.0 mm |
| 13 | 1.3 mm |

Note) Only applicable to H supply pressure (0.5 MPa)

**Body style**

| Valve | Symbol | Application |
|---|---|---|
| With valve | 1 | For single unit |
| | 3 | For manifold, common SUP |
| | 5 | For manifold, individual SUP |

**Standard supply pressure**

| | |
|---|---|
| H | 0.5 MPa |
| M | 0.35 MPa (Except nozzle diameter "05" type) |

**Thread type**

| | |
|---|---|
| F | G Thread |

**Supply valve/Release valve combination**

| | |
|---|---|
| J | Supply valve |
| K | Supply valve and release valve |
| A | Supply valve (N.O.) |
| B | Supply valve (N.O.) and release valve |

**Rated voltage**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC |
| S | 5 VDC |
| R | 3 VDC |

**Electrical entry**

| | |
|---|---|
| G | Grommet type, with 0.3 m lead wire (applicable to DC) |
| L | L plug connector, with 0.3 m lead wire |
| LZ | L plug connector, with 0.3 m lead wire, with light/surge voltage suppressor |
| LO | L plug connector, without connector |

**Light/surge voltage suppresor**

| | |
|---|---|
| – | None |
| Z | With light/surge voltage suppresor |

**Manual override**

| | |
|---|---|
| – | Non-locking push type |
| B | Locking slotted type |

**Vacuum switch model**

| | |
|---|---|
| – | Without switch |
| E15 | 1 point setting/200 degrees setting (NPN) |
| E55 | 1 point setting/200 degrees setting (PNP) |
| M15 | 1 point setting/without analogue output/ Diaphragm (18 rotation setting)/Solid state(10 to 26 VDC) |
| M21 | 1 point setting/without analogue output/ Diaphragm (18 rotation setting)/Reed (100 VAC) |

**Vacuum switch electrical entry**

| | | |
|---|---|---|
| – | Grommet type, with 0.6 m lead wire | |
| L | Grommet type, with 3 m lead wire | Solid state: ZSE1 |
| CL | Connector type, with 3 m lead wire | |
| L | Grommet type, with 3 m lead wire | Diaphragm: ZSM1 |

## How to Order Ejector Manifold

**EZZM 06 – F 06 R – R**

Multi-ejector Series ZM Manifold

**Number of stations**

| | |
|---|---|
| 01 | 1 station |
| ⋮ | ⋮ |
| 05 | 5 stations |
| ⋮ | ⋮ |
| 10 | 10 stations (Max.) |

**Thread type**

| | |
|---|---|
| F | G Thread |

**Common EXH port size**

| | |
|---|---|
| 04 | 1/2 |
| 06 | 3/4 |
| S | Silencer for ZZM (ZZM-SA) |

**Exhaust port and silencer location**

| | |
|---|---|
| R | Right side |
| L | Left side |
| B | Both sides |

**Common SUP port location**

| | |
|---|---|
| – | Both sides |
| R | Right side |
| L | Left side |

Note: The above how to order supplies the manifold components only. The ejectors must be specified separately. Individual supply and common supply ejectors may be mixed on the some manifold.

## Product Recommendation

### Stocked items for fast delivery

| | | | | |
|---|---|---|---|---|
| EZM051HF-K5LOZ-Q | EZM101HF-J5LOZ-Q | EZM131HF-J5LZ-Q | EZM131HF-K5LO-Q | EZM131HF-K5LZ-M21L-Q |
| EZM051HF-K5LOZ-E55L-Q | EZM101HF-K5LZ-Q | EZM131HF-J5LZ-E55L-Q | EZM131HF-K5LZ-E55L-Q | EZM133HF-K5LOZ-E55L-Q |
| EZM071HF-K5LZ-M21L-Q | EZM101HF-K5LOZ-Q | EZM131HF-J5LZ-M21L-Q | EZM131HF-K5LOZ-E55L-Q | EZZM04-F04B |
| EZM073HF-K5LOZ-E55CL-Q | EZM101HF-K5LZ-E55L-Q | EZM131HF-K5LZ-Q | EZM131HF-K5LZ-E55CL-Q | |
| EZM101HF-J5LZ-Q | EZM101HF-K5LOZ-E55L-Q | EZM131HF-K5LOZ-Q | EZM131HF-K5LOZ-E55CL-Q | |

### Related Products

**Series ZSE1 -** Vacuum Pressure Switch - www.smc.eu
**Series ZP2 -** Vacuum Pad - page 1414
**Series GZ -** Pressure Gauge for Vacuum - www.smc.eu
**Series PFM -** Flow Switch - page 1298
**Series AC -** Air Preparation - page 1076
**Series TU -** Tubing - page 1223
**Series KQB2 -** Fittings - page 1212

## Specifications

### Ejector Models

| Nozzle dia. ø[mm] | Model | Standard supply pressure | | Maximum suction flow rate [ℓ/min (ANR)] | Air consumption [ℓ/min (ANR)] |
|---|---|---|---|---|---|
| | | H | M | | |
| 0.5 | EZM05□H | 0.5 MPa | — | 15 | 17 |
| 0.7 | EZM07□H | | | 30 | 30 |
| 1.0 | EZM10□H | | | 50 | 60 |
| 1.3 | EZM13□H | | | 66 | 90 |
| 0.7 | EZM07□M | — | 0.35 MPa | 23 | 33 |
| 1.0 | EZM10□M | | | 38 | 60 |
| 1.3 | EZM13□M | | | 44 | 85 |

### Vacuum Ejector Specifications

| | | |
|---|---|---|
| Fluid | | Air |
| Maximum operating pressure | | 0.7 MPa |
| Maximum vacuum pressure | | – 84 kPa |
| Supply pressure range | With valve | 0.25 to 0.55 MPa |
| Operating temperature range | With valve | 5 to 50°C |
| Air supply valve<br>Vacuum release valve | | Main valve ——— Poppet<br>Pilot valve ——— VJ114, VJ324M |
| Vacuum pressure switch | | Electronic ——— ZSE1-00-□□<br>Diaphragm ——— ZSM1-0□□ |
| Suction filter | | 30 μm PE (Polyethylene) |

### Solenoid Specifications

| | |
|---|---|
| Operating pressure range | 0.25 to 0.7 MPa |
| Electrical entry | Plug connector, Grommet |
| Max. operating frequency | 5Hz |
| Voltage | 24/12/6/5/3 VDC |
| Power consumption | DC: 1 W (With light: 1.2 W) |

## Specifications

Vacuum Pressure Switch/Solid State Switch (ZSE), Diaphragm Switch (ZSM)

Vacuum Switch Specifications

| Model | ZSE1-00-15-Q | ZSE1-00-55-Q | ZSM1-015-Q | ZSM1-021-Q |
|---|---|---|---|---|
| Sensor type | NPN Solid state | PNP Solid state | Diaphragm | |
| Switch | Electronic circuit | | Solid state | Reed |
| Set pressure range | 0 to -101 kPa | | –26.6 to –79.8 kPa | |
| Hysteresis | 1 to 10% of the set pressure (Changeable) | 1 to 10% of the set pressure (Changeable) | 17% full span | 23% full span |
| Repeatability | ±1% full span or less | | | |
| Temperature characteristics | ±3% full span or less | | ±5% full span | |
| Operating voltage | 12 to 24 VDC (Ripple ±10% or less ) | | DC10 to 26V | AC100V |
| ON-OFF output | 30 V Max. 80 mA | | Open collector 30 V, Max. 100 mA | – |
| Setting points | 1 point | | 1 point | |
| Operation indicator light | Lights up when ON | | Lights ON | |
| Setting trimmer | 3 rotations | 200 degrees | 18 rotations | |
| Current consumption | 17 mA or less (When 24 VDC is ON) | | 16 mA | – |
| Max. current | – | | – | 5 to 20 mA |
| Max. operating pressure | 0.2 MPa | | 0.5 MPa | |

EZZM Manifold Specifications

| | |
|---|---|
| Manifold style | Stacking |
| Common SUP port | 1/4 |
| Individual SUP port | 1/8 |
| Common EXH port | 1/2 , 3/4 |
| EXH port location | Right side/Left side/Both sides * |
| Max. number of stations | Max.10 stations |

* Right and left sides are viewed from the front side of vacuum port (V).

Maximum Ejector Stations (Max. operable nos. simultaneously)

| Manifold model \ Ejector model | EZM053 EZM054 | EZM073 EZM074 | EZM103 EZM104 | EZM133 EZM134 |
|---|---|---|---|---|
| ZZM [Stations] – 06 R/L | 10 | 8 | 5 | 4 |
| ZZM [Stations] – 06B | 10 | 10 | 8 | 6 |
| ZZM [Stations] – 04 R/L | 10 | 8 | 5 | 4 |
| ZZM [Stations] – 04B | 10 | 10 | 8 | 6 |

## Accessories and Replacement Kits

### Spare Parts

- Suction filter element: ZM-SF
- Exhaust silencer assembly: ZM-SA

### Connector leads (spare)

For valves:

- SY100-30-4A-30: 3m lead with plug
- SY100-30-4A: 300 mm lead with plug

For solid state vacuum switches (connector type):

- ZS-20-5A-30: 3m lead assembly
- ZS-20-5A: 300 mm lead assembly

### Also available

The following variants and options are also available for EZM series vacuum ejectors.

With solid state timer. Series ZMA

Air operated version

Side entry vacuum connection

High noise reduction silencer unit

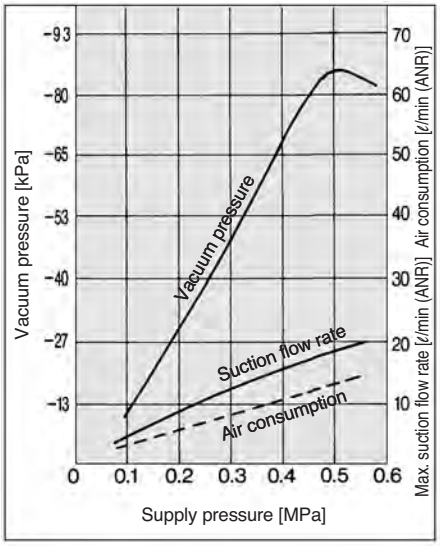
Without valves

Power saving pilot valve specification

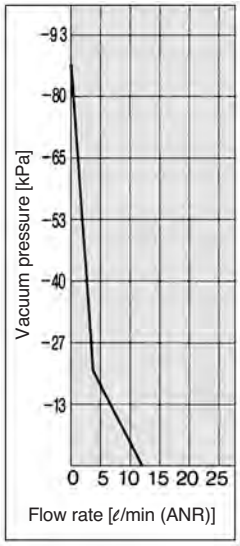
## Flow Characteristics

### EZM05□H

Exhaust Characteristics

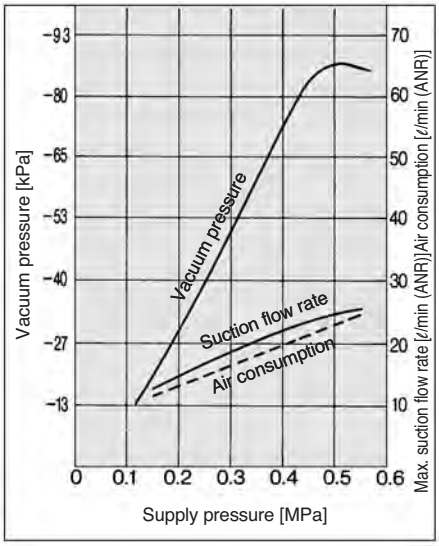



Flow Characteristics

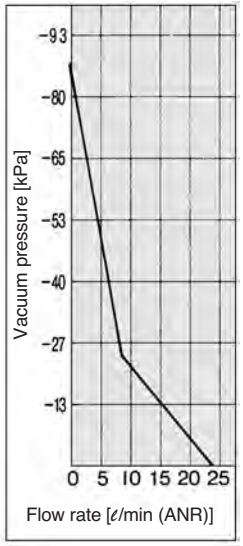



### EZM07□H

Exhaust Characteristics

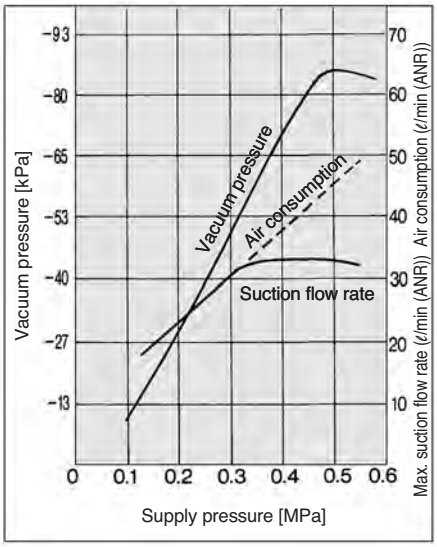



Flow Characteristics

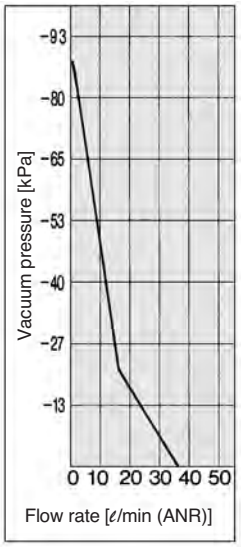



### EZM10□H

Exhaust Characteristics

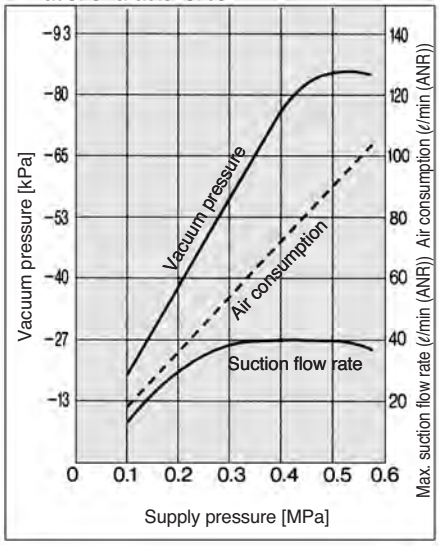



Flow Characteristics

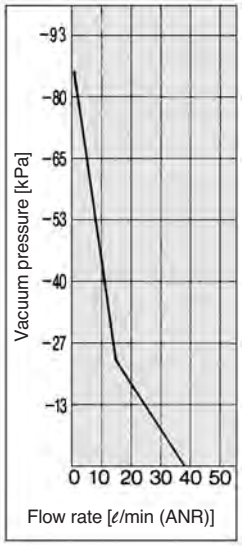



### EZM13□H

Exhaust Characteristics

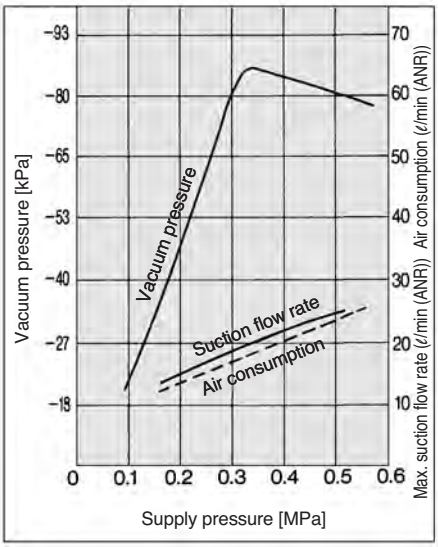



Flow Characteristics

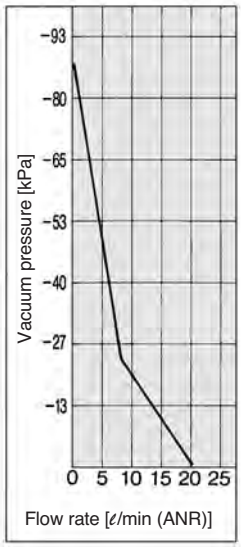



### EZM07□M

Exhaust Characteristics

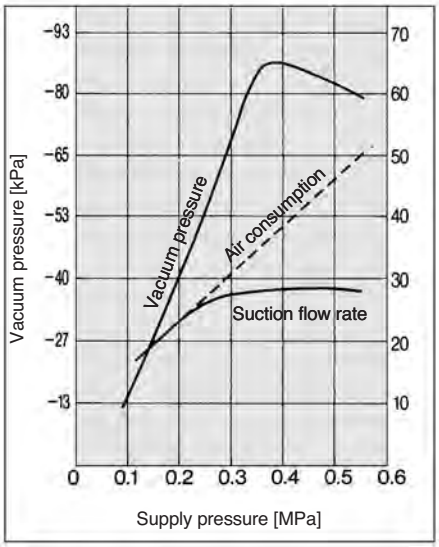



Flow Characteristics

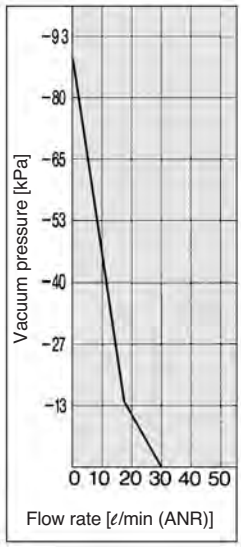



### EZM10□M

Exhaust Characteristics




Flow Characteristics

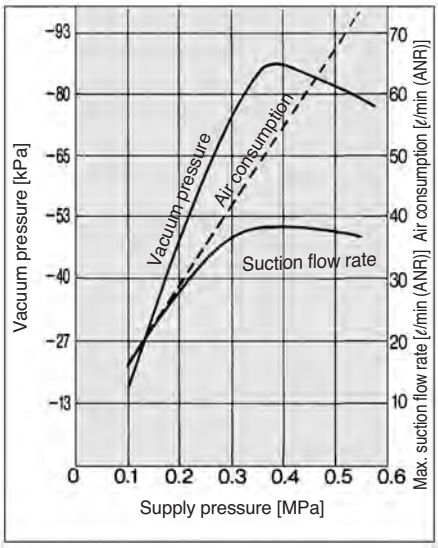



Vacuum

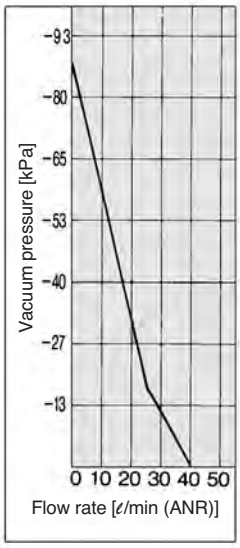
## Flow Characteristics

EZM13□M

Exhaust Characteristics



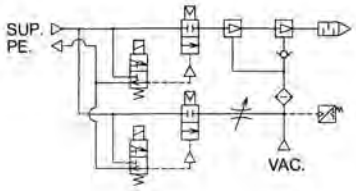

Flow Characteristics

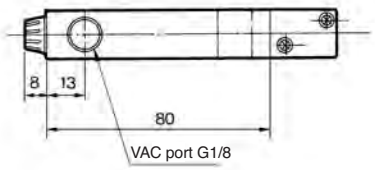



## Dimensions

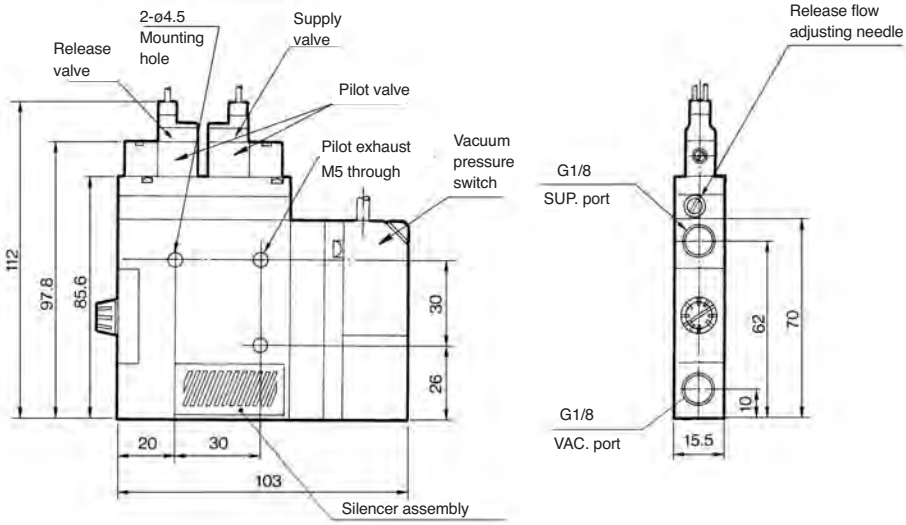
For Single Unit/With Valve Basic Type with Switch and Valve

EZM□1$^{H}_{M}$-K□□□-E□

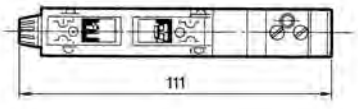



(Side entry style is equipped with plugs.)



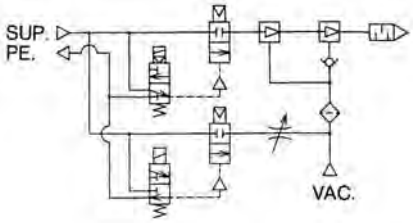

Dimensions of model with high noise reduction silencer assembly is the same as standard.

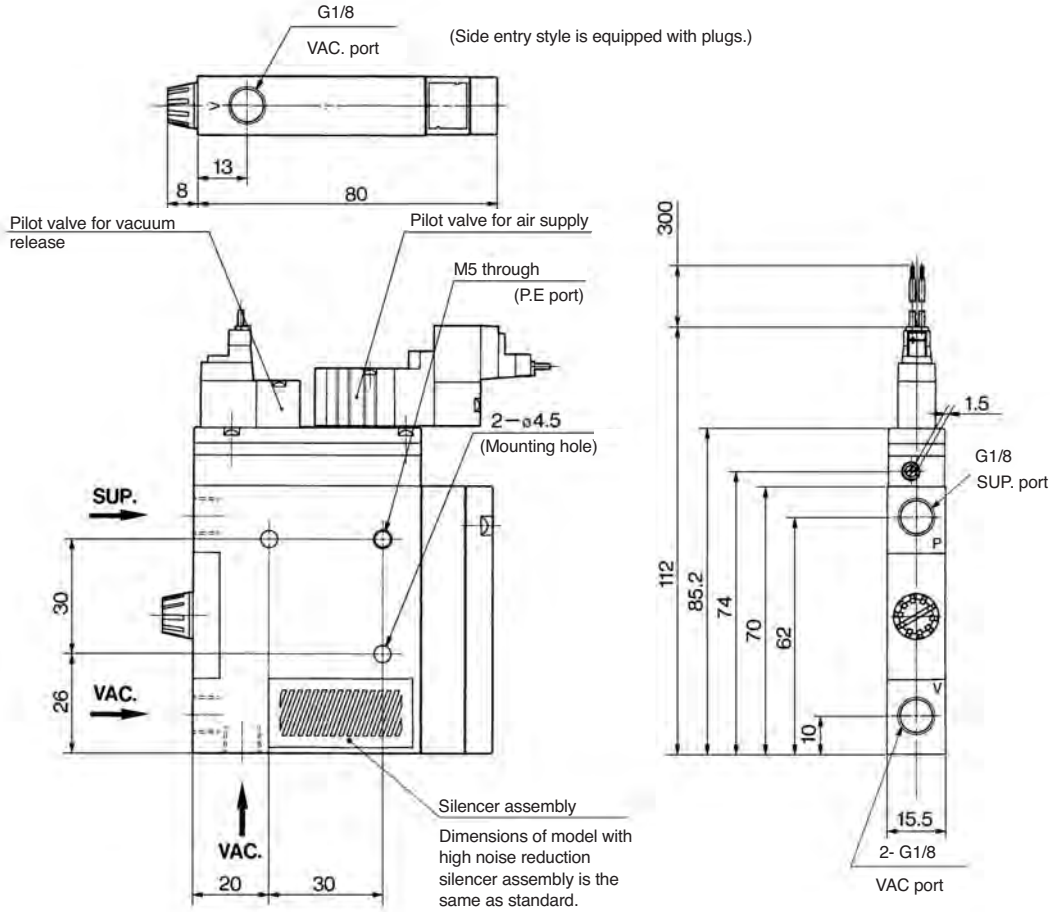


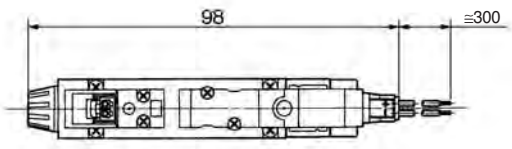
## Dimensions

Single/With Air Supply Valve (N.O.) and Vacuum Release Valve Basic Type with Valve

EZM□1 $^{H}_{M}$-B□□



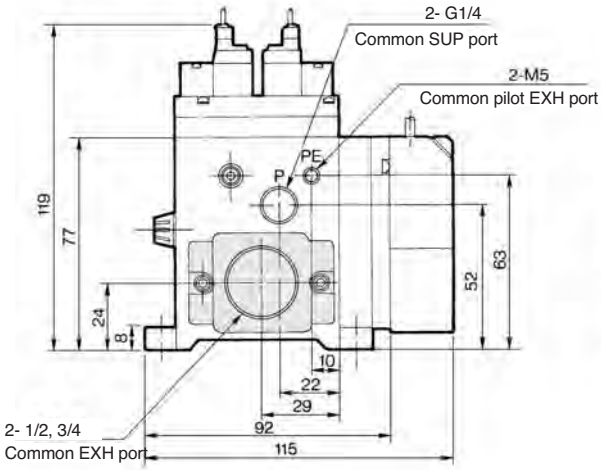



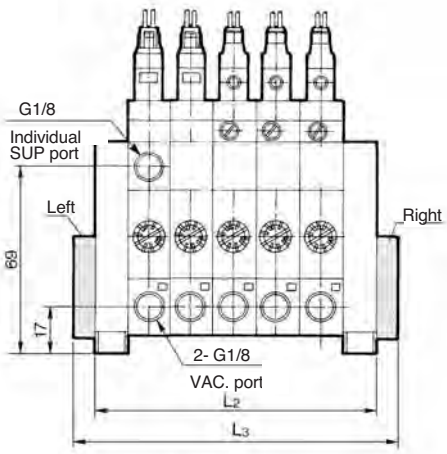

Vacuum

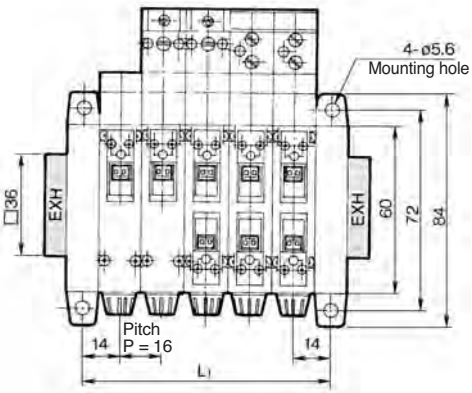
## Dimensions

Manifold

EZZM | Number of ejectors | — | Common EXH port | Port location



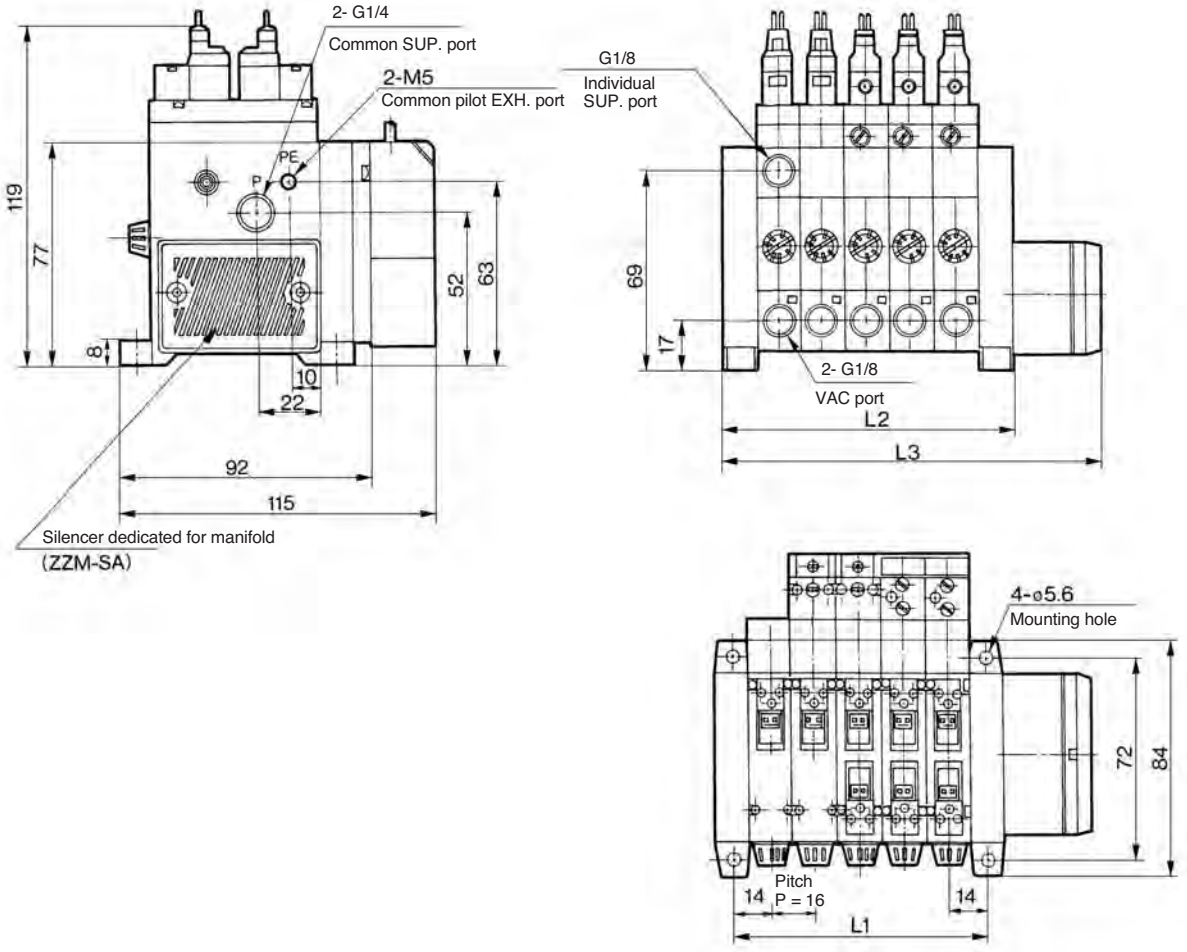

[mm]

| L \ Stations | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 28 1.5 | 44 1.5 | 60 1.5 | 76 1.5 | 92 1.5 | 108 2.0 | 124 2.0 | 140 2.0 | 156 2.0 | 172 2.0 |
| L2 | 40 1.5 | 56 1.5 | 72 1.5 | 88 1.5 | 104 1.5 | 120 2.0 | 136 2.0 | 152 2.0 | 168 2.0 | 184 2.0 |
| L3 | 56 1.5 | 72 1.5 | 88 1.5 | 104 1.5 | 120 1.5 | 136 2.0 | 152 2.0 | 168 2.0 | 184 2.0 | 200 2.0 |

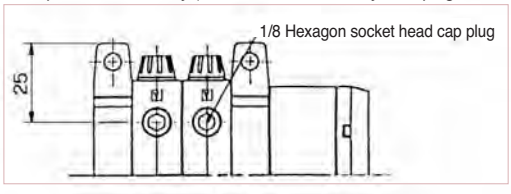
## Dimensions

Manifold/With Silencer  Manifold with Silencer Dedicated for Manifold

EZZM [Number of ejectors] — [Silencer location]




VAC. port electrical entry (In the case of side entry/With plug at the bottom)




[mm]

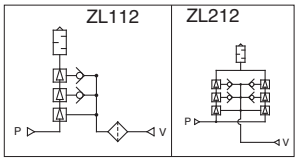
| L \ Stations | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| $L_1$ | 28 1.5 | 44 1.5 | 60 1.5 | 76 1.5 | 92 1.5 | 108 2.0 | 124 2.0 | 140 2.0 | 156 2.0 | 172 2.0 |
| $L_2$ | 40 1.5 | 56 1.5 | 72 1.5 | 88 1.5 | 104 1.5 | 120 2.0 | 136 2.0 | 152 2.0 | 168 2.0 | 184 2.0 |
| $L_3$ | 72 1.5 | 88 1.5 | 104 1.5 | 120 1.5 | 136 1.5 | 152 2.0 | 168 2.0 | 184 2.0 | 200 2.0 | 216 2.0 |

# Multistage Ejector
# Series ZL

## Features

- Three stage diffuser for greater efficiency.
- Suction flows up to 200 ℓ/min.
- Optional integrated pressure gauge or digital vacuum switch.
- Supply air control and release valves can be specified.
- Integrated silencer or ported exhaust.

## Symbol




## How to Order

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single body without valve | ZL1 | 12 | | | | | | | | | | | | | | Q |
| Dual body without valve | ZL2 | 12 | | | | | | | | | | | | | | Q |
| Single body with valve | ZL1 | 12 | | | — | K1 | 5 | L | Z | — | D | P | L | — | | Q |

**Nozzle diameter**

| | |
|---|---|
| 12 | 1.2 mm |

**Exhaust type**

| | |
|---|---|
| — | Built-in silencer |
| P | Bet exhaust |

**Exhaust port-thread type**

| | |
|---|---|
| — | Rc 1/2 |
| F | G 1/2 |

Note) Port exhaust only.

**Supply valve/Release valve combination**

| | |
|---|---|
| K1 | With supply and release valves |
| K2 | With supply valve |

**Rated voltage**

| DC specifications | |
|---|---|
| 5 | 24 V |
| 6 | 12 V |
| V | 6 V |
| S | 5 V |
| R | 3 V |

**Electrical entry**

| | | |
|---|---|---|
| L | L plug connector | Lead wire 0.3 m |
| M | M plug connector | Lead wire 0.3 m |

**Light/Surge voltage suppressor**

| | |
|---|---|
| — | Without light/surge voltage suppressor |
| Z | With light/surge voltage suppressor |

**Vacuum pressure detection**

| | |
|---|---|
| — | None |
| D | Vacuum pressure switch |
| G | With vacuum pressure gauge |

**Lead wire length**

| | |
|---|---|
| L | 1.9 m |

**Switch specification**

| For ZSE30A digital vacuum switch | |
|---|---|
| N | 1 NPN output open collector |
| P | 1 PNP output open collector |
| A | 2 NPN output open collector |
| B | 2 PNP output open collector |
| C | 1 NPN output open collector + analogue voltage output |
| D | 1 NPN output open collector + analogue current output |
| E | 1 PNP output open collector + analogue voltage output |
| F | 1 PNP output open collector + analogue current output |

## Product Recommendation

### Stocked items for fast delivery

| | | | |
|---|---|---|---|
| ZL112-G-Q | ZL112-DCL-Q | ZL212-Q | ZL212-DNL-Q |
| ZL112-DNL-Q | ZL112-K15LNZ-Q | ZL212P-Q | ZL212-DCL-Q |
| ZL112-DPL-Q | ZL112-K15MZ-DPL-Q | ZL212-G-Q | |

### Related Products

**Vacuum pressure gauge -** GZ30S- www.smc.eu
**Series ZSE30A(F) -** Vacuum Pressure Switch - page 1278
**Series V100 -** 3 Port Valve - page 353
**Series ZFZ -** Air Suction Filter - www.smc.eu
**Series ZP2 -** Vacuum Pad - page 1414
**Series PFM -** Flow Switch - page 1298
**Series AC -** Air Preparation - page 1076
**Series TU -** Tubing - page 1223
**Series KQB2 -** Fittings - page 1212

## Specifications

### Ejector Specifications

| Model | ZL112 | ZL212 |
|---|---|---|
| Nozzle diameter | ø1.2 mm | ø1.2 mm x 2 |
| Maximum suction flow rate | 100 ℓ/min (ANR) | 200 ℓ/min (ANR) |
| Air consumption | 63 ℓ/min (ANR) | 126 ℓ/min (ANR) |
| Maximum vacuum pressure | –84 kPa | –84 kPa |
| Maximum operating pressure | 0.7 MPa | 0.7 MPa |
| Supply pressure range | 0.2 to 0.5 MPa | 0.2 to 0.5 MPa |
| Standard supply pressure | 0.4 MPa | 0.4 MPa |
| Operating temperature range | 5 to 50°C | 5 to 50°C |

### Supply/Release Valve Specifications (ZL112 only)

| Part no. | | SYJ514-□□□ |
|---|---|---|
| Type of valve actuation | | N.C. |
| Fluid | | Air |
| Operating pressure range | Internal pilot type | 0.2 to 0.5 MPa |
| Ambient and fluid temperature | | 5 to 50°C |
| Response time (For 0.5 MPa) | | 25 ms or less |
| Maximum operating frequency | | 5 Hz |
| Manual override | | Non-locking push type/Locking slotted type |
| Pilot exhaust type | | Pilot valve individual exhaust, Main valve/Pilot valve common exhaust |
| Lubrication | | Not required |
| Mounting position | | Unrestricted |
| Impact/Vibration resistance | | 150/30 m/s² |
| Enclosure | | Dust proof |

### Vacuum Pressure Gauge Specifications

| Part no. | GZ30S |
|---|---|
| Fluid | Air |
| Pressure range | –100 to 100 kPa |
| Scale range (Angular) | 230° |
| Accuracy | ±3% F.S. (Full span) |
| Class | Class 3 |
| Operating temperature range | 0 to 50°C |
| Material | Housing: Polycarbonate /ABS resin |

### Digital Vacuum Pressure Switch Specifications

| Model | | | ZSE30A-00-□-□□□-X505 |
|---|---|---|---|
| Rated pressure range | | | 0.0 to –101.0 kPa |
| Regulating pressure range | | | 10.0 to –105.0 kPa |
| Proof pressure | | | 500 kPa |
| Setting/display resolution | | | 0.1 kPa |
| Applicable fluid | | | Air, non-corrosive gas, non-flammable gas |
| Power supply voltage | | | 12 to 24 VDC ±10% (with power supply polarity protection) |
| Current consumption | | | 40 mA or less |
| Switch output | | | NPN or PNP open collector 1 output, NPN or PNP open collector 2 outputs (selectable) |
| | Maximum load current | | 80 mA |
| | Maximum applied voltage | | 28 V (with NPN output) |
| | Residual voltage | | 1 V or less (with load current of 80 mA) |
| | Response time | | 2.5 ms or less (with anti-chattering function: 20, 100, 500, 1000, 2000 ms) |
| | Short circuit protection | | Yes |
| Repeatability | | | ±0.2% F.S. ±1 digit |
| Hysteresis | Hysteresis mode | | Variable (0 or above) |
| | Window comparator mode | | |
| Analogue output | Note 1) Voltage output | Output voltage | 1 to 5V ±2.5% F.S. or less (with rated pressure range) |
| | | Linearity | 1% F.S. or less |
| | | Output impedance | Approx. 1 k |
| | Note 2) Current output | Output current | 4 to 20 mA 2.5% F.S. or less (with rated pressure range) |
| | | Linearity | 1% F.S. or less |
| | | Load impedance | Maximum load impedance: 300Ω with power supply voltage of 12 V; 600Ω with power supply voltage of 24 V<br>Minimum load impedance: 50Ω |
| Display | | | 4-digit, 7-segment, 2-colour LCD (Red and Green) |
| Display accuracy | | | ±2% F.S. 1 digit (ambient temperature of 25 3°C) |
| Indicator light | | | Lights up when switch output is ON. OUT1: Green, OUT2: Red |
| Environment resistance | Enclosure | | IP40 |
| | Operating temperature range | | Operating: 0 to 50°C, Stored: –10 to 60°C (no freezing or condensation) |
| | Operating humidity range | | Operating/Stored: 35 to 85% RH (no condensation) |
| | Withstand voltage | | 1000 VAC for 1 minute between live parts and enclosure |
| | Insulation resistance | | 50 MΩ or more between live parts and enclosure (at 500 VDC measured via megohmmeter) |
| | Vibration resistance | | 10 to 150 Hz, 1.5 mm amplitude (or 20 m/s² acceleration), in X, Y, Z directions, for 2 hours each (Non-energized) |
| | Impact resistance | | 100 m/s² in X, Y, Z directions, 3 times each (non-energised) |
| Temperature characteristics | | | ±2% F.S. (based on 25°C) |
| Lead wire | | | Oilproof heavy-duty vinyl cable, 3 cores ø3.5, 2 m<br>4 cores Conductor area: 0.15 mm² (AWG26), Insulator O.D.: 1.0 mm |
| Standards | | | CE Marking, UL/CSA, RoHS compliance |

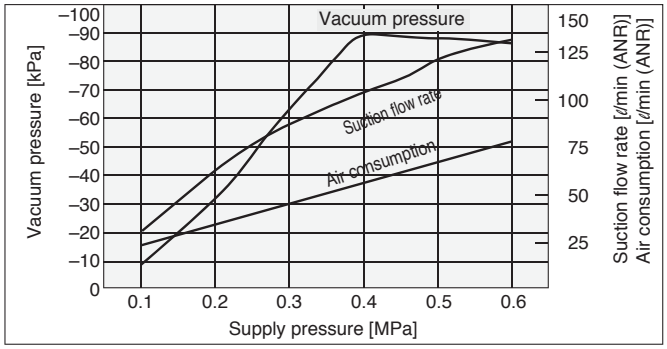
Note 1) When analog voltage output is selected, analog current output cannot be used together.
Note 2) When analog current output is selected, analog voltage output cannot be used together.

For more product options and details see our specific catalogues or on-line information.

## Flow Characteristics

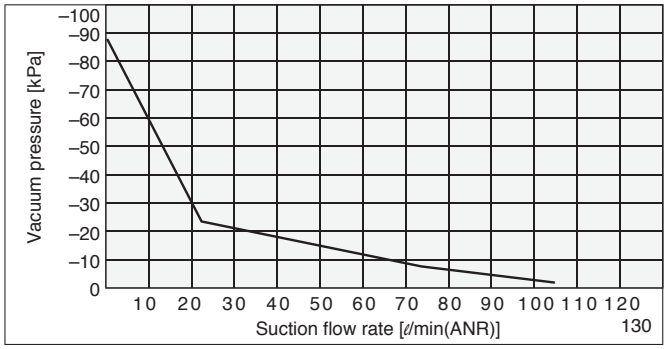
### ZL112

#### Exhaust Characteristics



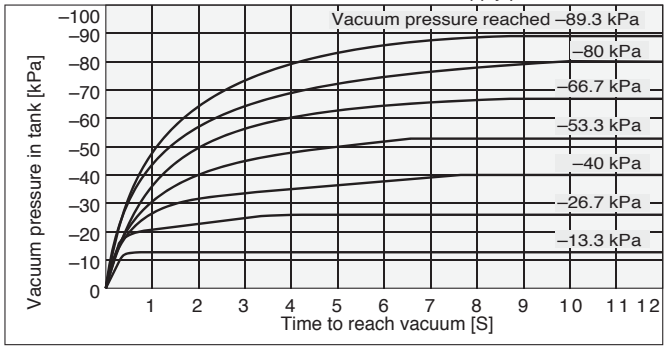

#### Flow Characteristics

Supply pressure: 0.4 MPa




#### Time to Reach Vacuum

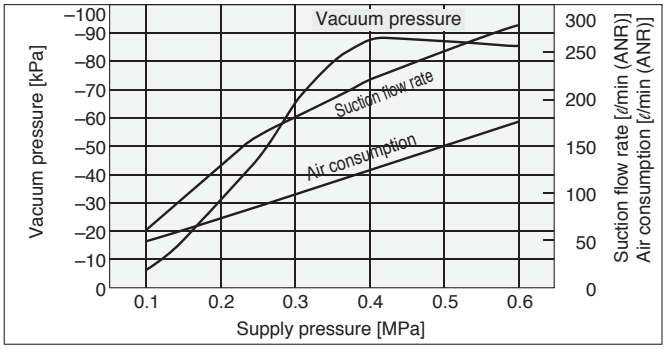
Tank capacity: 1ℓ
Supply pressure: 0.4 MPa




<How to Read the Graph>
The graphics indicate the time required to reach a vacuum pressure determined by adsorption conditions for workpieces, etc., starting from atmospheric pressure in a 1ℓ sealed tank. Approximately 8.8 seconds are necessary to attain a vacuum pressure of –89.3 kPa.

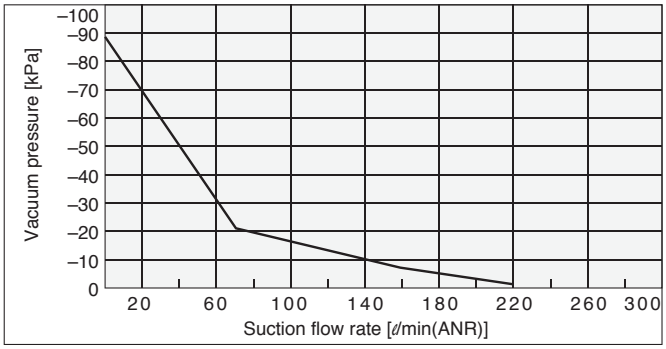
### ZL212

#### Exhaust Characteristics



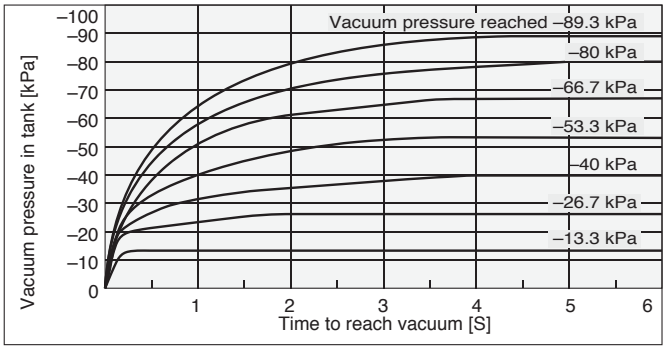

#### Flow Characteristics

Supply pressure: 0.4 MPa

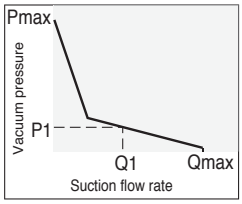



#### Time to Reach Vacuum

Tank capacity: 1ℓ
Supply pressure: 0.4 MPa




<How to Read the Graph>
The flow characteristics indicate the relationship between the vacuum pressure and the suction flow rate of the ejector, and show that when the suction flow rate changes the vacuum pressure also changes. In general, this indicates the relationship at the ejector's standard operating pressure. In the graph, Pmax indicates the maximum vacuum pressure, and Qmax indicates the maximum suction flow rate. These are the values that are published as specifications in catalogs, etc. Changes in vacuum pressure are explained below.

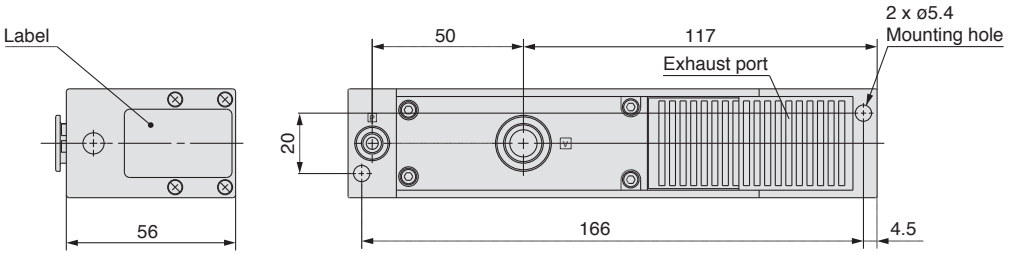



1. If the ejector's suction port is closed and sealed tight, the suction flow rate becomes "0" and the vacuum pressure increases to the maximum (Pmax).
2. If the suction port is opened and air is allowed to flow (the air leaks), the suction flow rate increases and the vacuum pressure decreases. (the condition of P1 and Q1)
3. If the suction port is opened completely, the suction flow rate increases to the maximum (Qmax), while the vacuum pressure then drops almost to "0" (atmospheric pressure). When adsorbing work pieces which are permeable or subject to leakage, etc., caution is required as the vacuum pressure will not be very high.

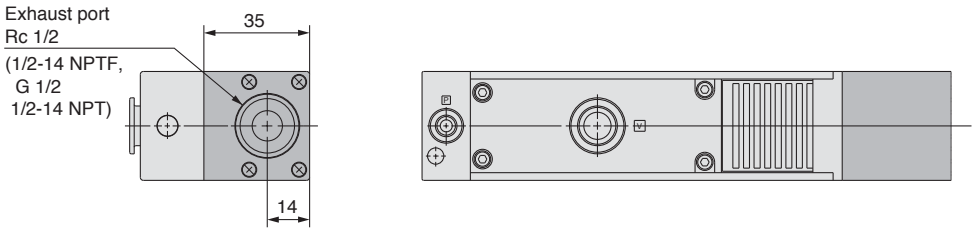
## Dimensions

Series ZL112 (Without valve)

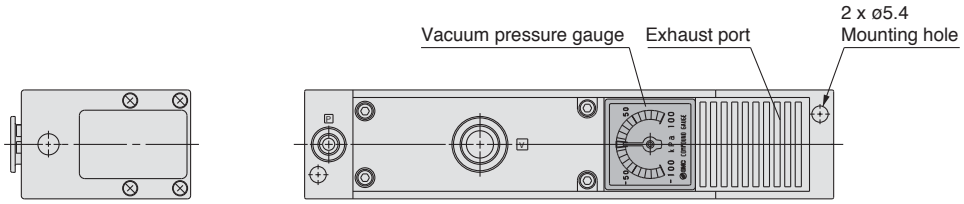
Standard
ZL112



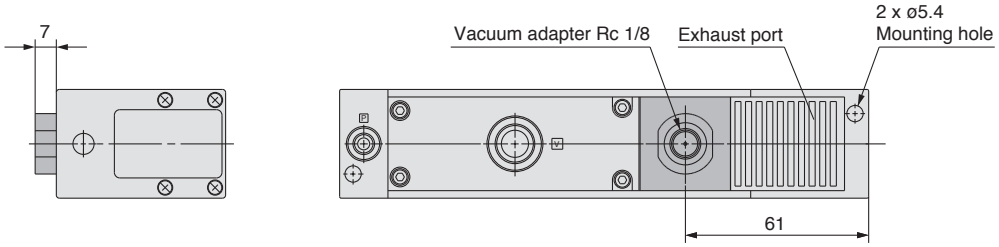

Port exhaust
ZL112P



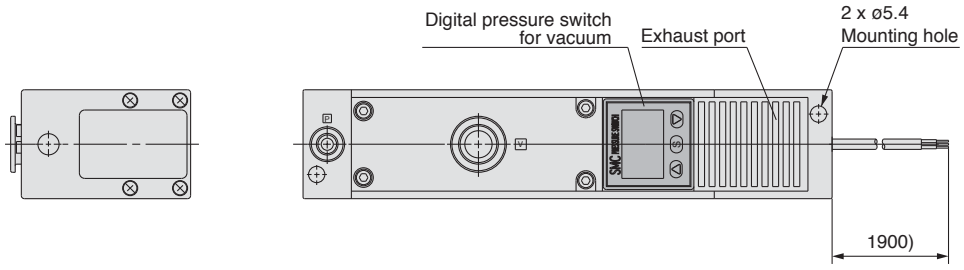

With vacuum pressure gauge
ZL112-G

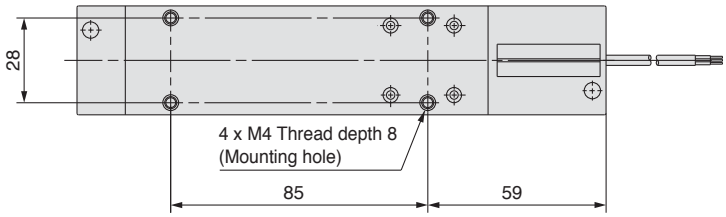



With vacuum adapter
ZL112-GN



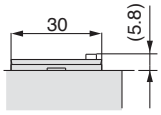

With digital vacuum pressure switch
ZL112-D□□□

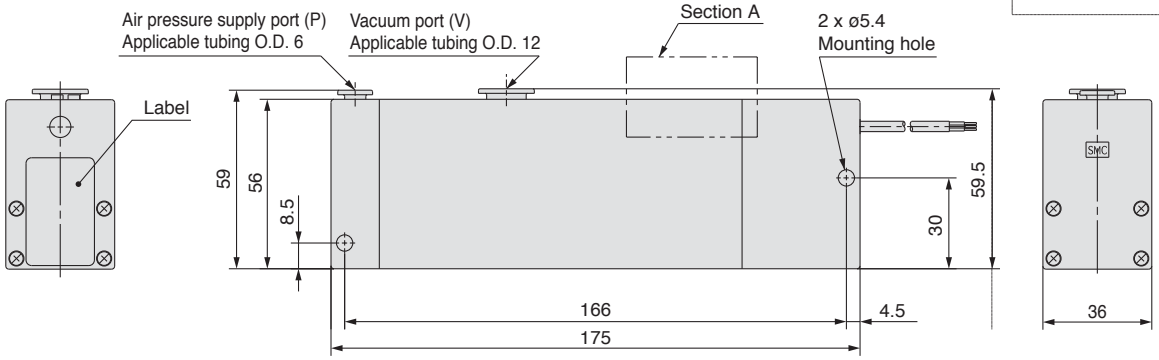



Section A/ With Digital Vacuum Pressure Switch

ZL112-D□□□(ZSE30A)



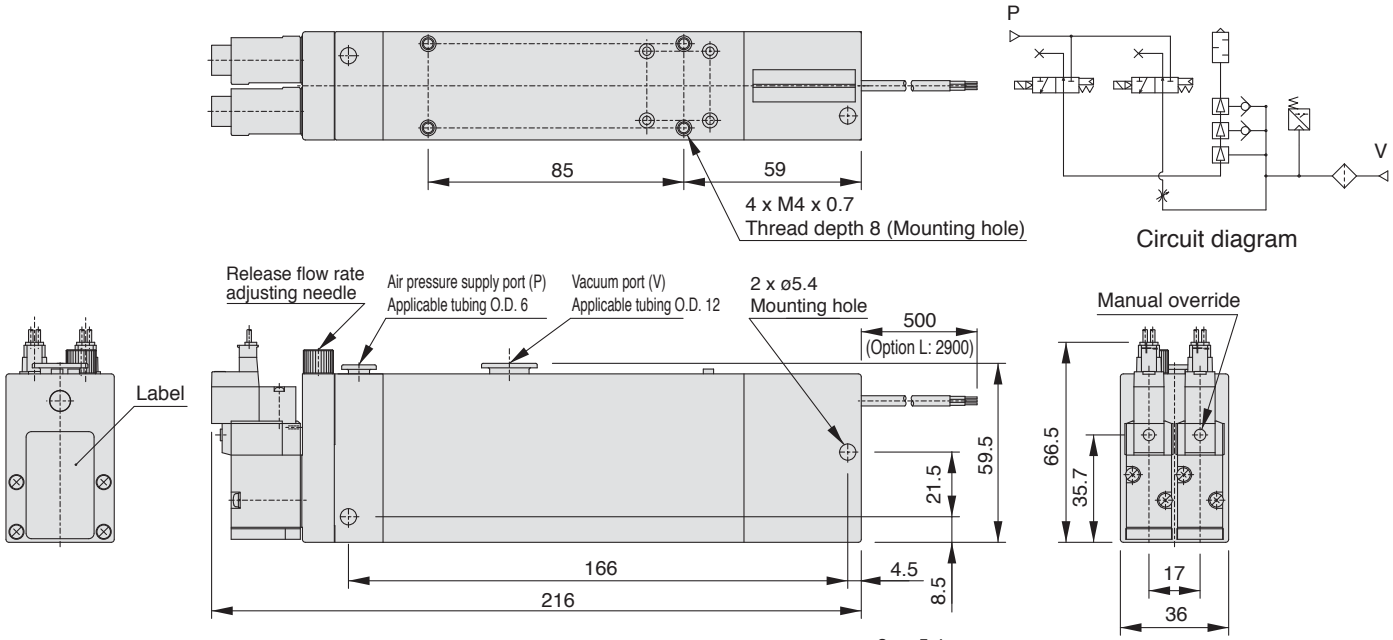

For more product options and details see our specific catalogues or on-line information.

## Dimensions

Series ZL112 (With Valve)

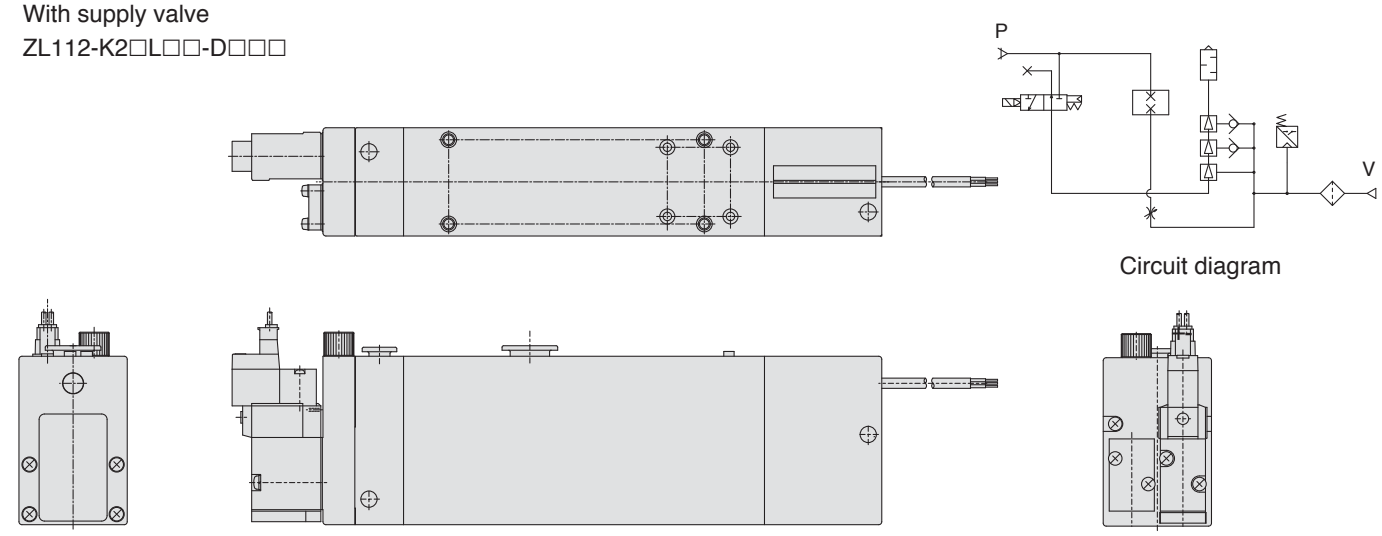
With supply valve and release valve

ZL112-K1□L□□-D□□□




With supply valve

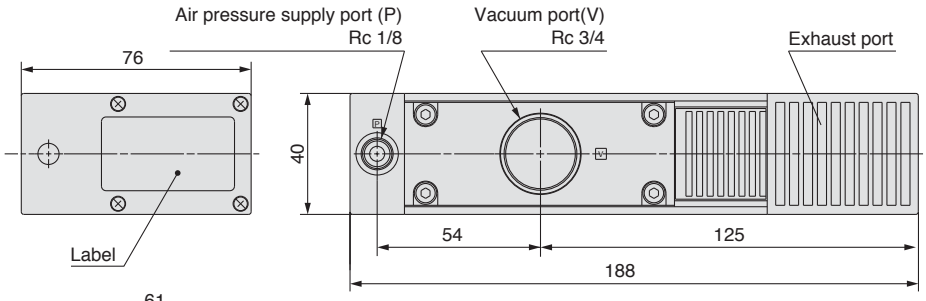
ZL112-K2□L□□-D□□□



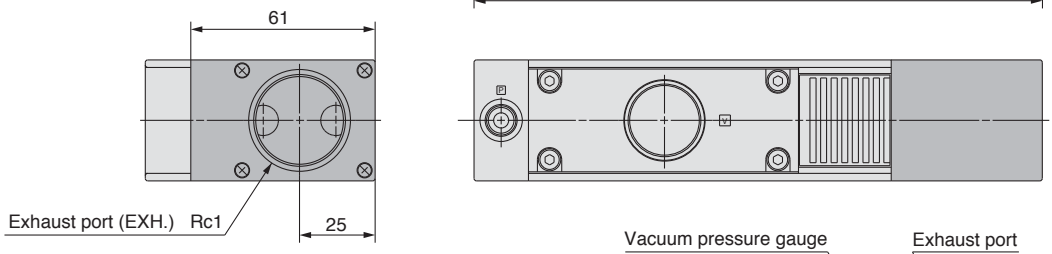
## Dimensions

Series ZL212

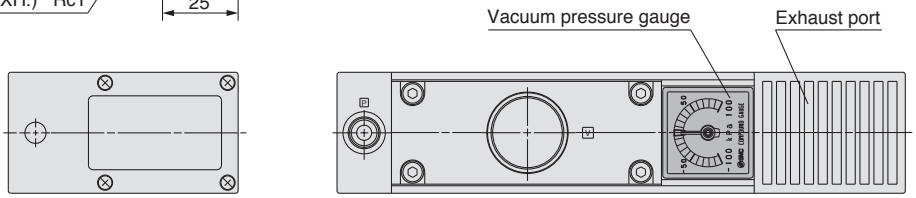
Standard
ZL212



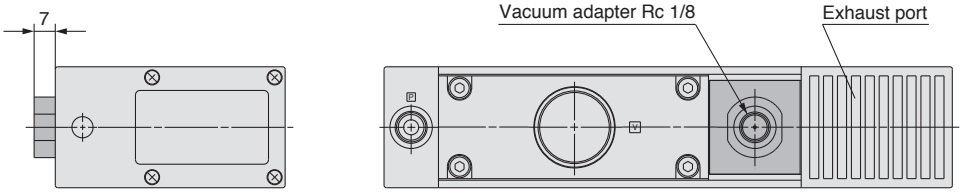

Port exhaust
ZL212P



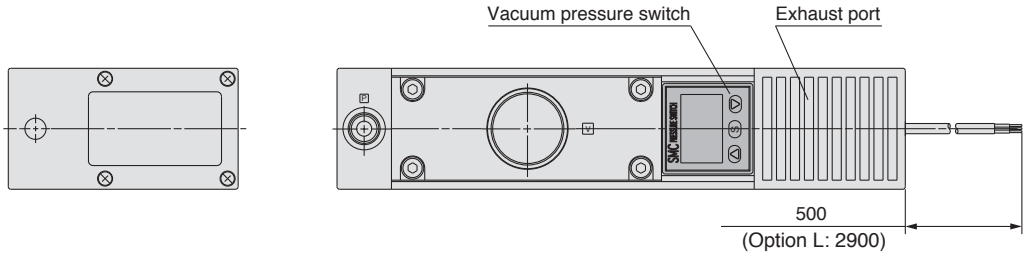

With vacuum pressure gauge
ZL212-G

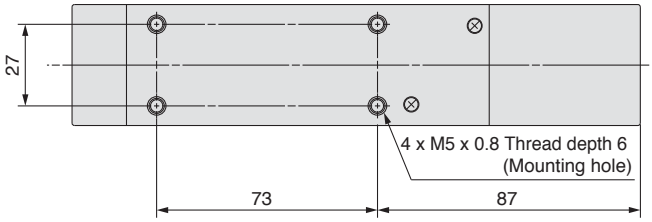



With vacuum adapter
ZL212-GN

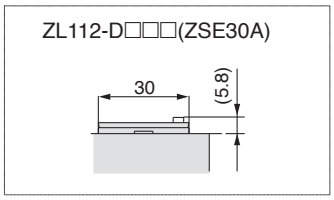


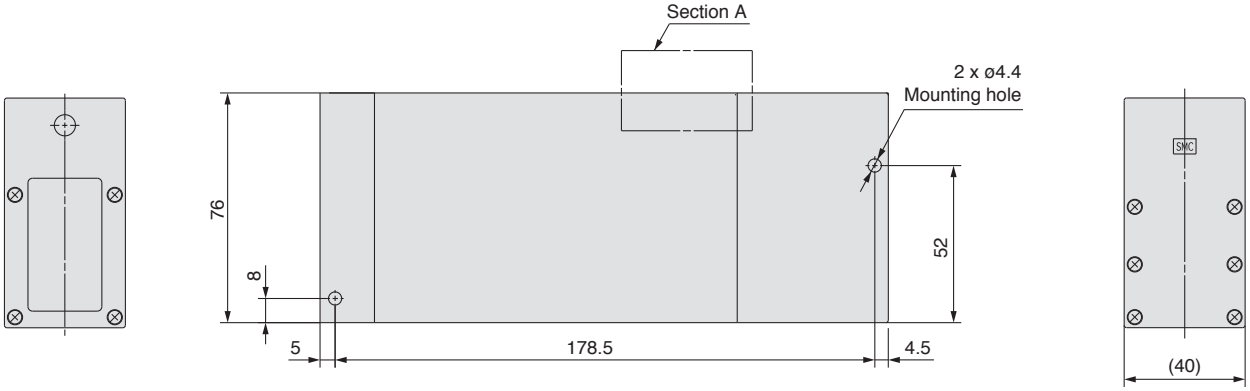

With digital vacuum pressure switch
ZL212-E



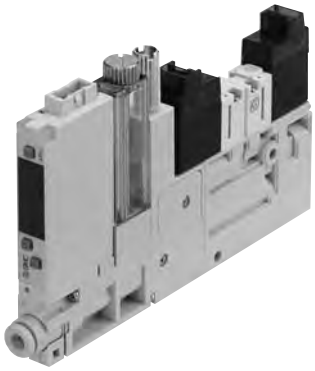




Section A/ With Digital Vacuum Pressure Switch



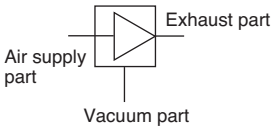
# Space Saving Vacuum Ejector
# Series ZQ



## Features

- Ultra slim modular vacuum ejector system.
- Single unit with vacuum pressure switch and suction filter.
- Easy-to-use vacuum pressure switch ZSE10.
- One-touch fittings.

## Symbol




## How to Order

ZQ1 [05] [1U] – [K1] [ ] [5] [L] [ ] – [EB] [G] [ ] – [0] [0] – Q

### Nozzle nominal size

| | |
|---|---|
| 05 | ø0.5 |
| 07 | ø0.7 |
| 10 | ø1.0 |

### Exhaust type

| | |
|---|---|
| 1U | With silencer for single unit |
| 3M | With silencer for manifold |

### Solenoid valve combination

| Symbol | Supply valve | Vacuum release valve |
|---|---|---|
| K1 | Normally closed | Normally closed |
| K2 | Normally open | Normally closed |
| J1 | Normally closed | None |
| J2 | Normally open | None |

### Pilot valve Note 1)

| | |
|---|---|
| – | Standard (DC: 1 W) Note 2) |
| Y | DC low wattage type (0.5 W) Note 2) |

Note 1) Avoid energizing the solenoid valve for long periods of time.

### Solenoid valve rated voltage

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |

### Electrical entry

| | |
|---|---|
| L | L-type plug connector, with 0.3 m lead wire, with light/surge voltage suppressor |
| LO | L-type plug connector, without connector, with light/surge voltage suppressor |
| G | Grommet, with 0.3 m lead wire |

### Manual override

| | |
|---|---|
| – | Non-locking push type<br>Latching type: Push-locking type |
| B | Locking type |

### Fitting (P port) Note 3)

| Symbol | Applicable tubing O.D. | Part no. | Object spec. |
|---|---|---|---|
| – | Without port | – | Manifold |
| 0 | Without fitting (M5 x 0.8) | – | Single unit |
| 2 | ø4 (Straight) | KJS04-M5 | |
| 3 | ø6 (Straight) | KJS06-M5 | |
| 5 | ø4 (Elbow) | KJL04-M5 | |

### Fitting (V port) Note 3)

| Symbol | Applicable tubing O.D. | Part no. | |
|---|---|---|---|
| | | Vacuum pressure switch | Filter only |
| 0 | Without fitting (M5 x 0.8) | VVQ1000-50A-M5 | – |
| 1 | ø3.2 (Straight) | VVQ1000-50A-C3 | KJS23-M5 |
| 2 | ø4 (Straight) | VVQ1000-50A-C4 | KJS04-M5 |
| 3 | ø6 (Straight) | VVQ1000-50A-C6 | KJS06-M5 |
| 4 | ø3.2 (Elbow) | VVQ1000-F1-LC3 | KJL23-M5 |
| 5 | ø4 (Elbow) | VVQ1000-F1-LC4 | KJL04-M5 |

Note 3) For filter only (Without vacuum pressure switch)
When neither V port fitting nor P port fitting are needed, enter nothing or –00 in the dotted line above "How to Order".

### Check valve

| | |
|---|---|
| – | None |
| K | With check valve |

### Vacuum pressure switch lead wire specifications

| | |
|---|---|
| – | Without connector |
| G | Lead wire with connector (Lead wire length 2 m) With connector cover |

### Vacuum pressure switch suction filter Note 2)

| | |
|---|---|
| EA | 0 to –101 kPa/NPN open collector 2 outputs, with suction filter |
| EB | 0 to –101 kPa/PNP open collector 2 outputs, with suction filter |
| EC | 0 to –101 kPa/NPN open collector 1 output + analogue voltage, with suction filter |
| EE | 0 to –101 kPa/PNP open collector 1 output + analogue voltage, with suction filter |
| FA | 100 to –100 kPa/NPN open collector 2 outputs, with suction filter |
| FB | 100 to –100 kPa/PNP open collector 2 outputs, with suction filter |
| FC | 100 to –100 kPa/NPN open collector 1 output + analogue voltage, with suction filter |
| FE | 100 to –100 kPa/PNP open collector 1 output + analogue voltage, with suction filter |
| F | Suction filter only |

Note 2) The filter included in this product is of a simple type.

## How to Order Manifold

ZZQ1 [07] – [B] [S] [C]

**Number of stations** Note)

| | |
|---|---|
| 01 | 1 station |
| 02 | 2 stations |
| ⋮ | ⋮ |
| 08 | 8 stations |

Note) Number of stations varies according to nozzle nominal size during simultaneous operation.

**Maximum Number of Stations in Simultaneous Operation**

| Nozzle nominal size | Maximum number of stations in simultaneous operation |
|---|---|
| ø0.5 | 8 stations |
| ø0.7 | 6 stations |
| ø1.0 | 4 stations |

**Air pressure supply (P) port position**

| | |
|---|---|
| B | Both sides |

**Exhaust**

| | |
|---|---|
| S | With silencers (Both sides) |

**Vacuum release pressure supply port (PD port)**

| | |
|---|---|
| B | None (Release pressure is supplied from the P port.) |
| C | Provided (Air can be alternatively supplied from the P port.) |

## Product Recommendation

**Stocked items for fast delivery**

ZQ1101U-K1Y5L-EBG-00-Q | ZQ1101U-K1Y5LO-EB-00-Q | ZZQ104-BSB

## Related Products

**Series ZSE10(F) -** Vacuum Pressure Switch - page 1273
**Series VQ100 -** Supply Valve / Vacuum Release Valve - www.smc.eu
**Series ZFZ -** Air Suction Filter - www.smc.eu
**Series ZPT -** Vacuum Pad - www.smc.eu
**Series ZP2 -** Vacuum Pad - page 1414
**Series IRV -** Vacuum Regulator - www.smc.eu
**Series ITV209 -** Electronic Vacuum Regulator - page 1119
**Series GZ -** Pressure Gauge for Vacuum - www.smc.eu
**Series PFM -** Flow Switch - page 1298
**Series AC -** Air Preparation - page 1076
**Series TU -** Tubing - page 1223
**Series KQB2 -** Fittings - page 1212

## Specifications

### Ejector

| Model | ZQ105 | ZQ107 | ZQ110 |
|---|---|---|---|
| Nozzle nominal diameter [mm] | 0.5 | 0.7 | 1.0 |
| Maximum suction flow [ℓ/min (ANR)] | 5 | 10 | 22 |
| Air consumption [ℓ/min (ANR)] | 14 | 23 | 46 |
| Maximum vacuum pressure | –80 kPa | | |
| Supply pressure range | 0.3 to 0.5 MPa (Normally open: 0.3 to 0.45 MPa) | | |
| Supply pressure Note) | 0.35 MPa | 0.43 MPa | |
| Operating temperature range | 5 to 50°C | | |
| Fluid | Air / Inert gas | | |

Note) Maximum suction flow can be obtained by standard supply pressure.

### Supply Valve / Vacuum Release Valve

| Type | | Normally closed | | Normally open |
|---|---|---|---|---|
| | | Standard (1 W) | Low wattage type (0.5 W) | |
| Model | | VQ110-□ | VQ110Y-□ | ZQ1-VQ120-□ |
| Manual override | | Non-locking push type / Locking type (Tool type) | | Non-locking push type / Locking type (Tool type) |
| Rated coil voltage | | 12, 24 VDC | 12, 24 VDC | 12, 24 VDC |
| Power consumption (current value) | DC | 1 W | 0.5 W | 1 W |
| Electrical entry | | Grommet | | Grommet |
| | | L-type plug connector (with light/surge voltage suppressor) | | L-type plug connector (with light/surge voltage suppressor) |

## Specifications

### Vacuum Pressure Switch

| Model | | | ZQ1-ZSE (ZSE10) | ZQ1-ZSF (ZSE10F) |
|---|---|---|---|---|
| Rated pressure range | | | 0 to –101 kPa | –100 to 100 kPa |
| Set pressure range/Display pressure range | | | 10 to –105 kPa | –105 to 105 kPa |
| Withstand pressure | | | 500 kPa | |
| Minimum setting unit | | | 0.1 kPa | |
| Power supply voltage | | | 12 to 24 VDC ±10%, Ripple (p-p) 10% or less (with power supply polarity protection) | |
| Current consumption | | | 40 mA or less | |
| Switch output | | | NPN or PNP open collector: 2 outputs (selectable) | |
| | Maximum load current | | 80 mA | |
| | Maximum applied voltage | | 28 V (with NPN output) | |
| | Residual voltage | | 2 V or less (with load current of 80 mA) | |
| | Response time | | 2.5 ms or less (Response time selections with anti-chattering function: 20, 100, 500, 1000 and 2000 ms) | |
| | Short circuit protection | | With short-circuit protection | |
| Repeatability | | | ±0.2% F.S. 1 digit | |
| Hysteresis | Hysteresis mode | | Variable (0 or above) Note 1) | |
| | Window comparator mode | | | |
| Analogue output | Voltage output | Output voltage (rated pressure range) | 1 to 5 V ±2.5% F.S. | |
| | | Linearity | ±1% F.S. or less | |
| | | Output impedance | Approx. 1 kΩ | |
| Display system | | | 3 1/2-digit, 7 segment LED 1-colour display (Red) | |
| Display accuracy | | | ±2% F.S. ±1 digit (at ambient temperature of 25 3°C) | |
| Operation indicator light | | | Lights when ON, OUT1: Green, OUT2: Red | |
| Environ-mental resistance | Enclosure | | IP40 | |
| | Ambient humidity range | | Operating/Stored: 35 to 85% RH (with no condensation) | |
| | Withstand voltage | | 1000 VAC for 1 min. between live parts and case | |
| | Insulation resistance | | 50 MΩ or more (at 500 VDC measured via megohmmeter) between live parts and case | |
| | Vibration resistance | | 10 to 150 Hz at the smaller of amplitude 1.5 mm or acceleration 20 $m/s^2$ in X, Y, Z directions for 2 hrs. each (De-energized) | |
| | Impact resistance | | 100 $m/s^2$ in X, Y, Z directions 3 times each (De-energized) | |
| Temperature characteristics | | | ±2% F.S. (at 25°C of ambient temperature range between –5 and 50°C) | |
| Lead wires | | | Oil-resistant cabtire cord<br>Cross section: 0.15 $mm^2$ (AWG26), 5 cores, 2 m, Conductor O.D.: 1.0 mm | |

Note 1) If the applied voltage fluctuates around the set-value, the hysteresis must be set to a value more than the fluctuating width, otherwise chattering will occur.

## Accessories and Replacement Kits

### How to order connector assembly

• Single

AXT661-14A-□

Lead wire length

| | |
|---|---|
| – | 300 mm |
| 20 | 2000 mm |
| 30 | 3000 mm |

**Lead wire length of the plug connector**

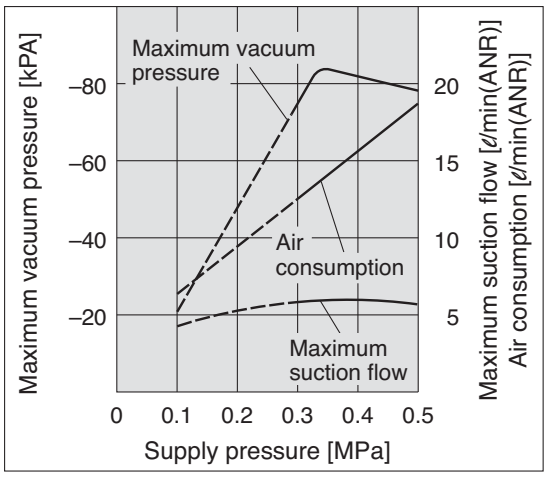
The lead wire length for a valve with a lead wire is 300 mm. When in need of a valve with a lead wire longer than 600 mm, place an order for a valve without a connector and connector assembly.

For vacuum pressure switch

Lead wire with connector and cover (legth 2m) ZS-39-5G

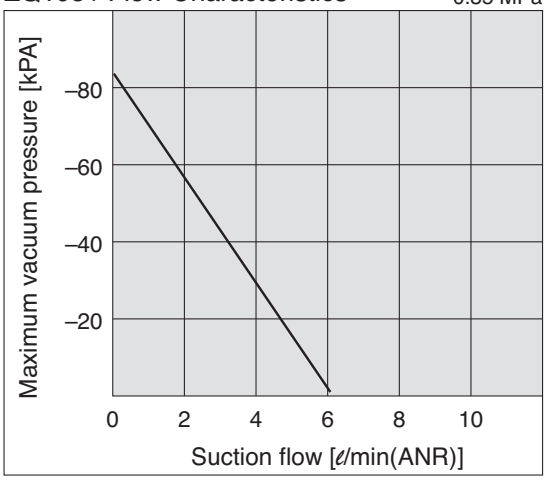
## Flow Characteristics

### ZQ105 / Exhaust Characteristics

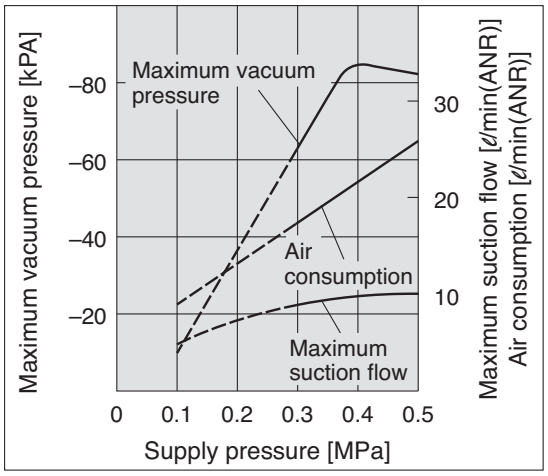



### ZQ105 / Flow Characteristics

Supply pressure 0.35 MPa

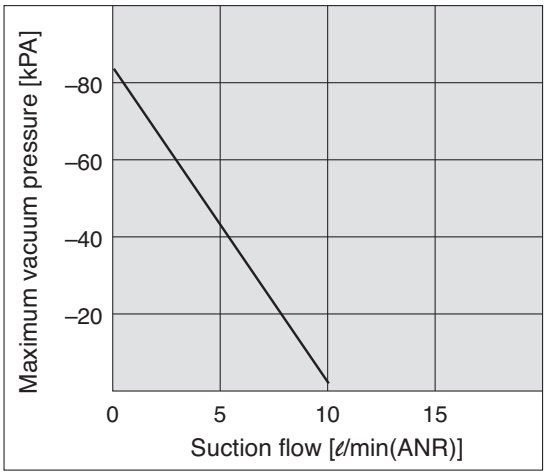



### ZQ107 / Exhaust Characteristics

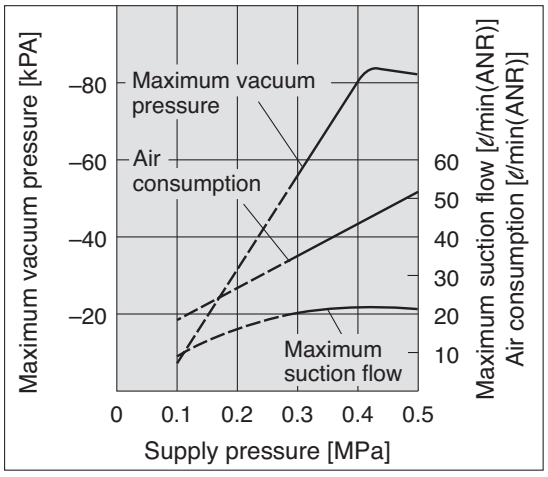



### ZQ107 / Flow Characteristics

Supply pressure 0.43 MPa

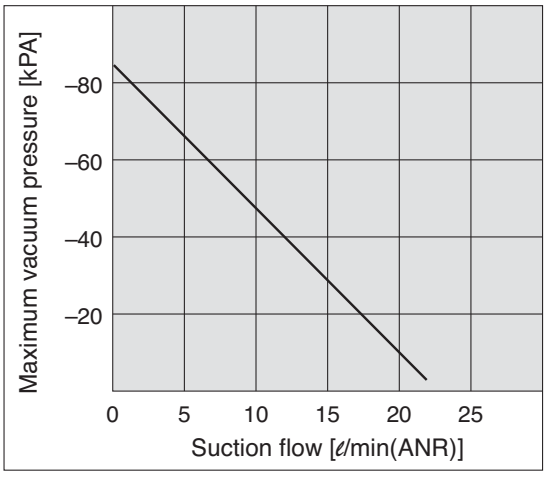



### ZQ110 / Exhaust Characteristics




### ZQ110 / Flow Characteristics

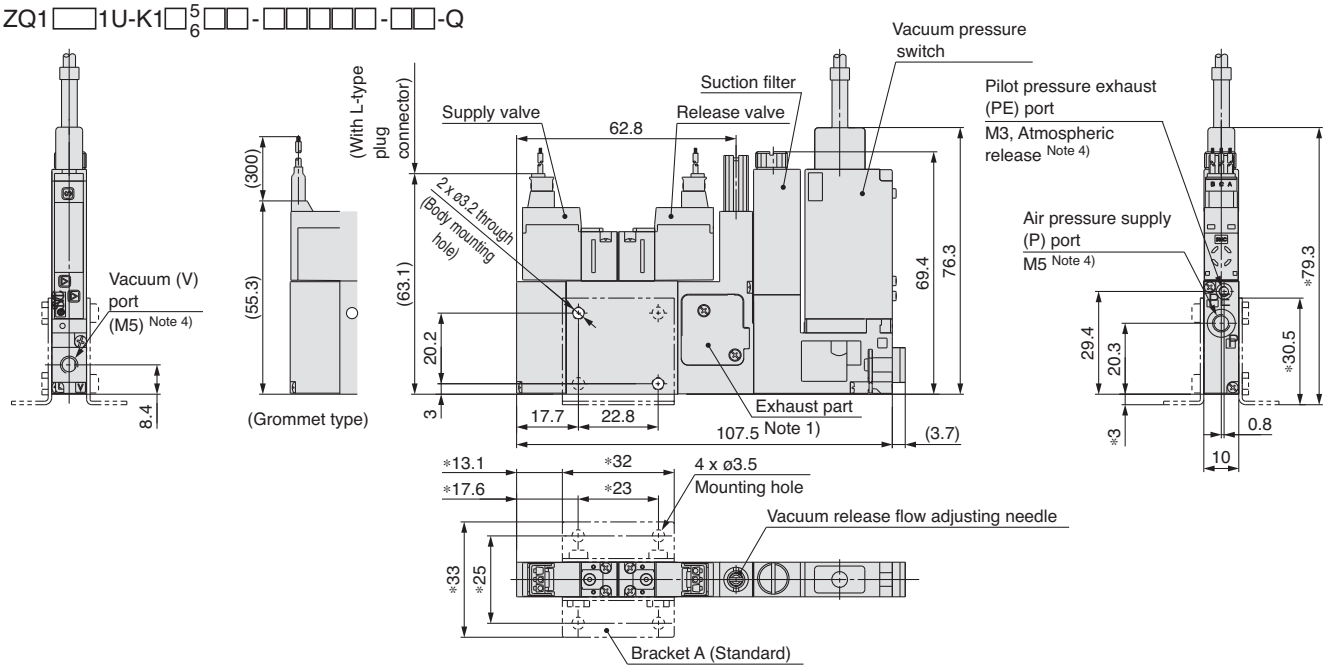
Supply pressure 0.43 MPa

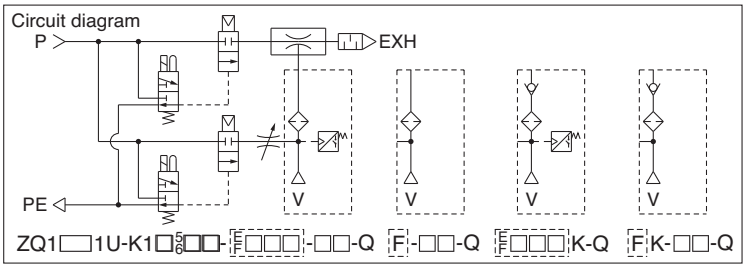


## Dimensions

### Type K1

ZQ1□1U-K1□$^{5}_{6}$□□-□□□□□-□□-Q

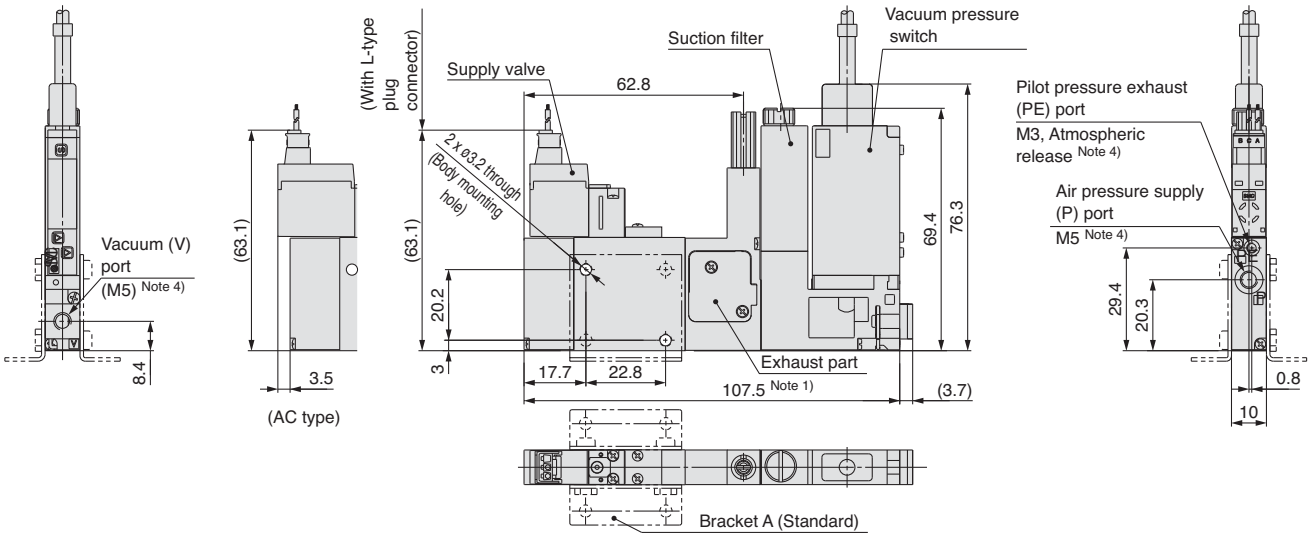


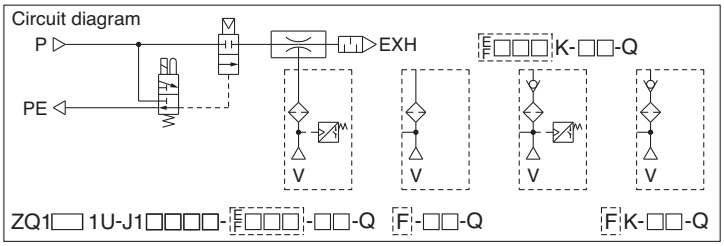




Note 1) The above dimensions are for ZQ1□1U-K1□$^{5}_{6}$L-E□□G□-00-Q. In case of ZQ1□1U-K1□$^{5}_{6}$□□-F□-00-Q, the overall length is 87.2.
Note 2) Dimensions marked with "*" are those after bracket A is mounted.
Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m. Using excessive torque may cause damage to the body.
Note 4) The pitches of P, V and PE ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.

### Type J1

ZQ1□1U-J1□□□□-□□□□□-□□-Q



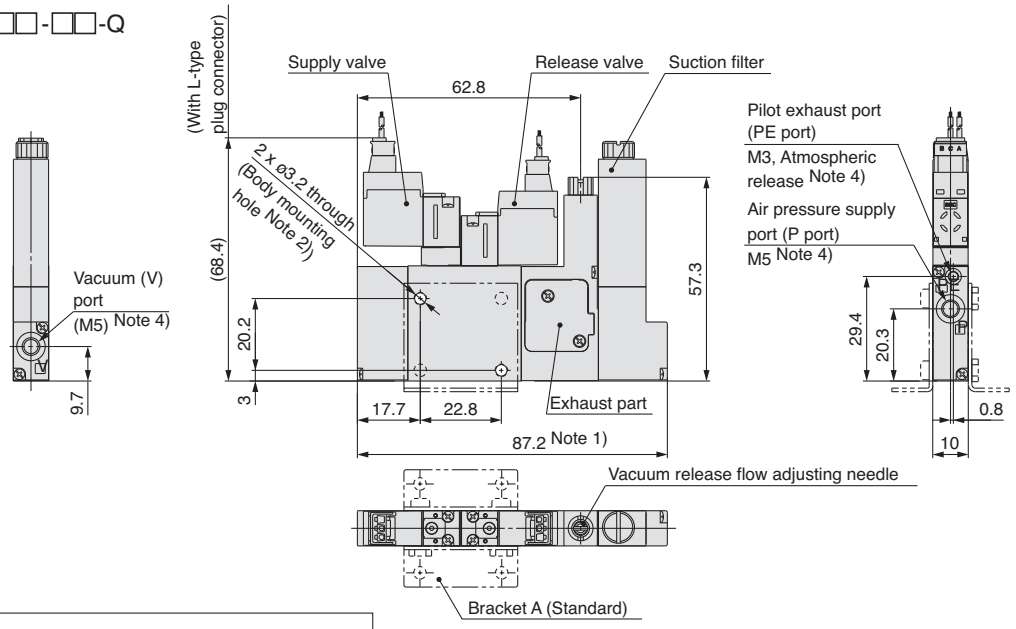



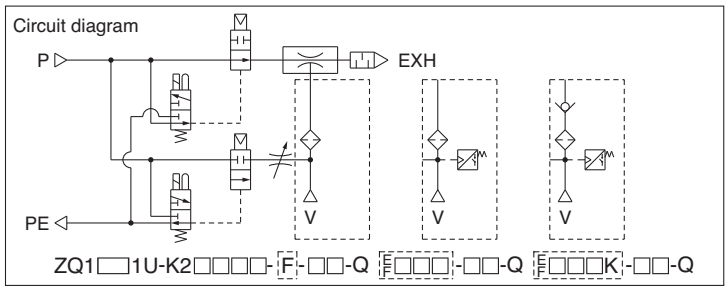

Note 1) The above dimensions are for ZQ1□1U-J1□$^{5}_{6}$L-E□□G□-00-Q. In case of ZQ1□1U-J1□□□□-F□-00-Q, the overall length is 87.2.
Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m. Using excessive torque may cause damage to the body.
Note 4) The pitches of P, V and PE ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.

## Dimensions

### Type K2

ZQ1□1U-K2□□□-□□□□□-□□-Q

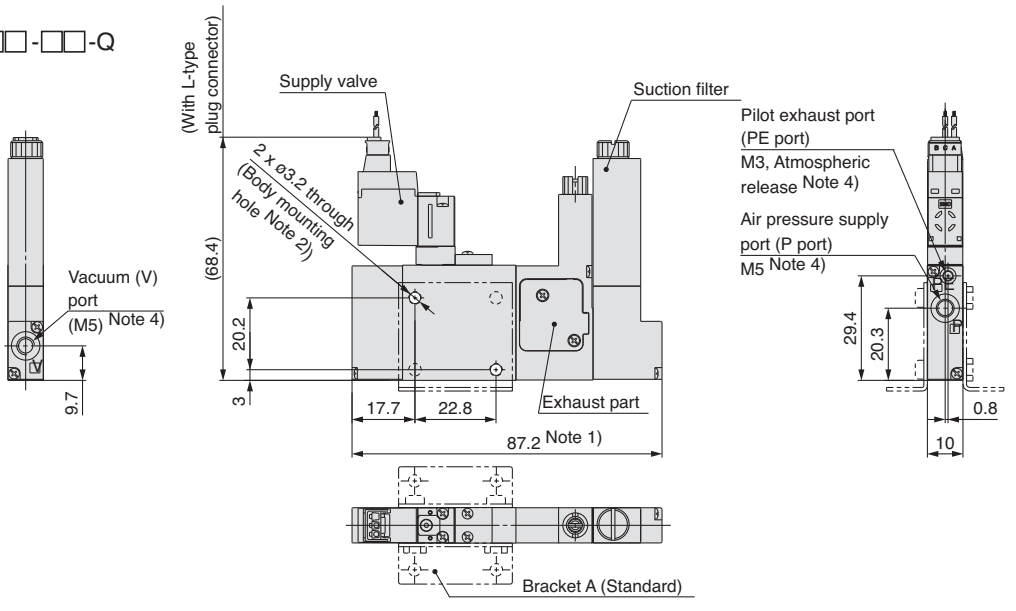


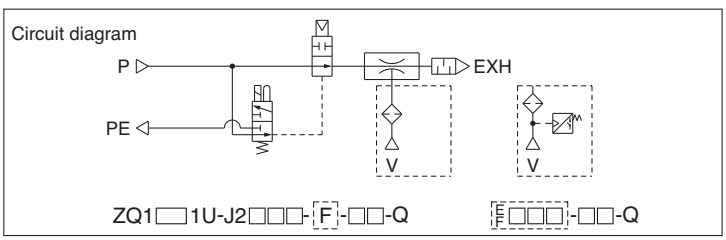




Note 1) The above dimensions are for ZQ1□1U-K2$^{5}_{6}$L-F□-□□-Q.
In case of ZQ1□1U-K2□□□-F□□□□□-□□-Q, the overall length is 107.5.
Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m. Using excessive torque may cause damage to the body.
Note 4) The pitches of P, V and PE ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.

### Type J2

ZQ1□1U-J2□□□-□□□□□-□□-Q




Note 1) The above dimensions are for ZQ1□1U-J2$^{5}_{6}$L-F□-Q.
In case of ZQ1□1U-J2□□□-F□□□□□-□□-Q, the overall length is 107.5.
Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m. Using excessive torque may cause damage to the body.
Note 4) The pitches of P, V and PE ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.

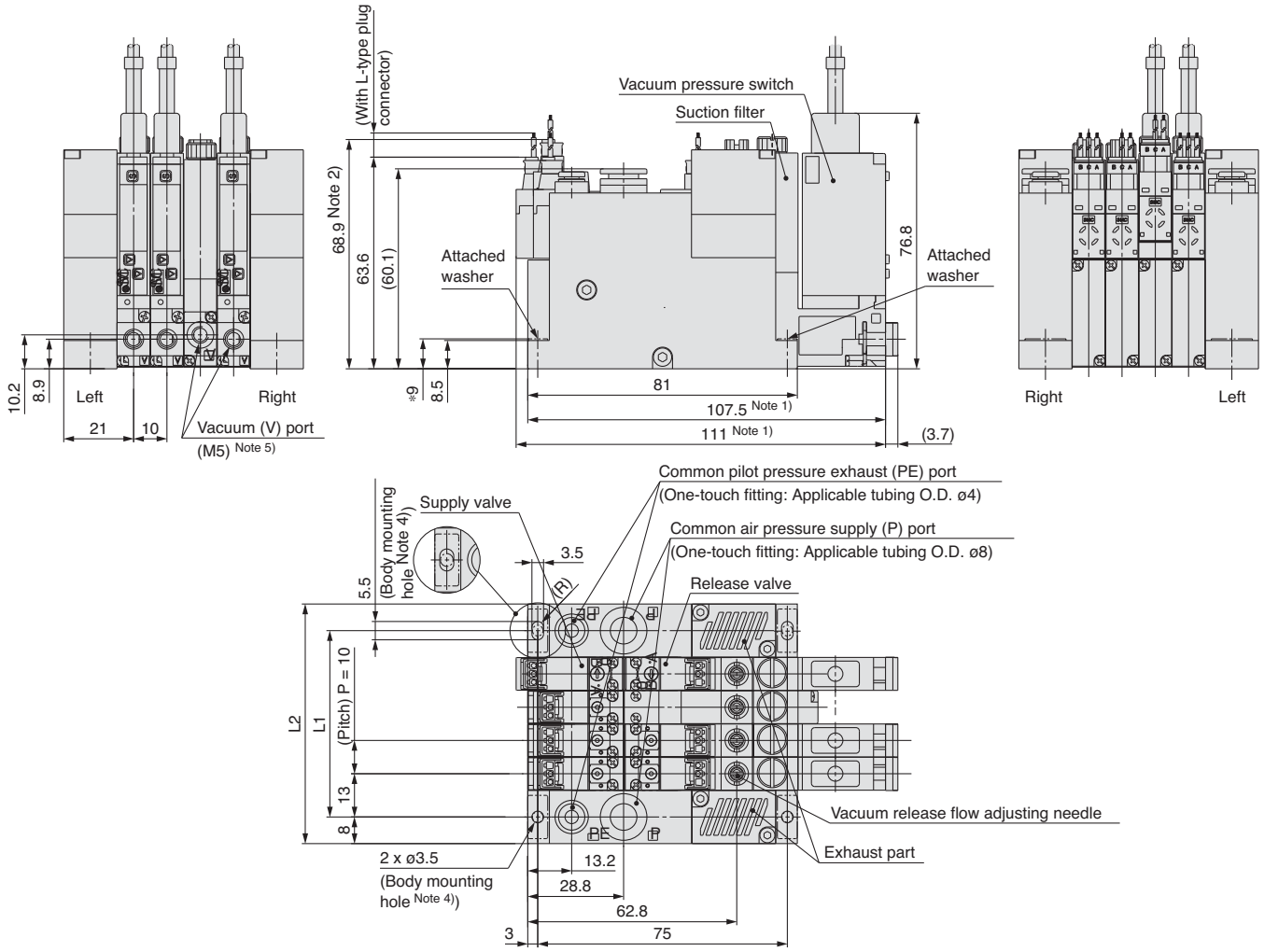
For more product options and details see our specific catalogues or on-line information.

## Dimensions

Manifold type (without PD port)

ZZQ1□-BSB

∗ZQ1□3M-□□□□□-□□□□□-□□-Q




### Dimensions [mm]

| n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| L1 | 26 | 36 | 46 | 56 | 66 | 76 | 86 | 96 |
| L2 | 42 | 52 | 62 | 72 | 82 | 92 | 102 | 112 |

Note 1) The above dimensions are for ZZQ104-BSB.
- ∗ ZQ1□3M-K1□$^{5}_{6}$L-E□G-00-Q.
- ∗ ZQ1□3M-K2$^{5}_{6}$L-E□GK-00-Q.
- ∗ ZQ1□3M-J1□$^{5}_{6}$L-F-00-Q.
- ∗ In case of ZQ1□3M-$^{K}_{J}$□□□□□-F□-00-Q, the overall length is 87.2.
- ∗ In case of ZQ1□3M-$^{K}_{J}$□□□□□-$^{E}_{F}$□□□□-00-Q, the overall length is 107.5.

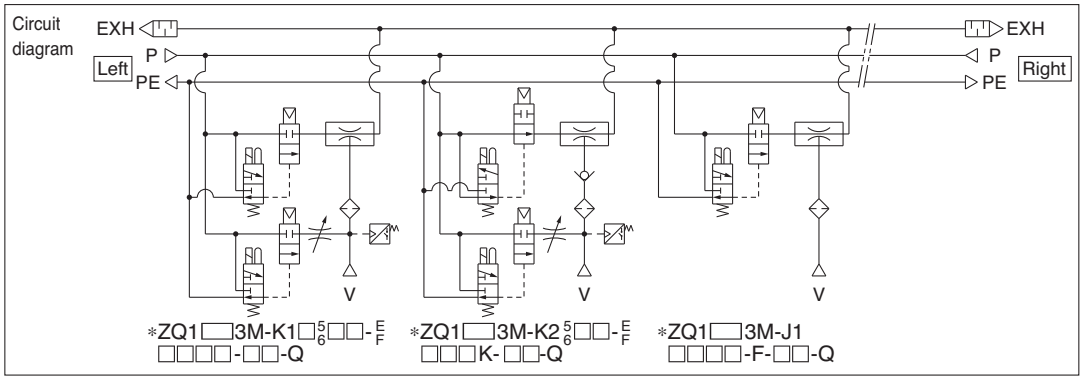
Note 2) ∗ The above dimensions are for ZQ1□3M-$^{K}_{J}$2$^{5}_{6}$□□-$^{E}_{F}$□□□□-□□-Q.

Note 3) ∗ Dimensions marked with "∗" are those after the attached square bracket is mounted.

Note 4) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m.
Using excessive torque may cause damage to the body.

Note 5) The pitches of V ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.

Note 6) When the release valve is not used, design the circuit for vacuum release separately in order to release a workpiece.



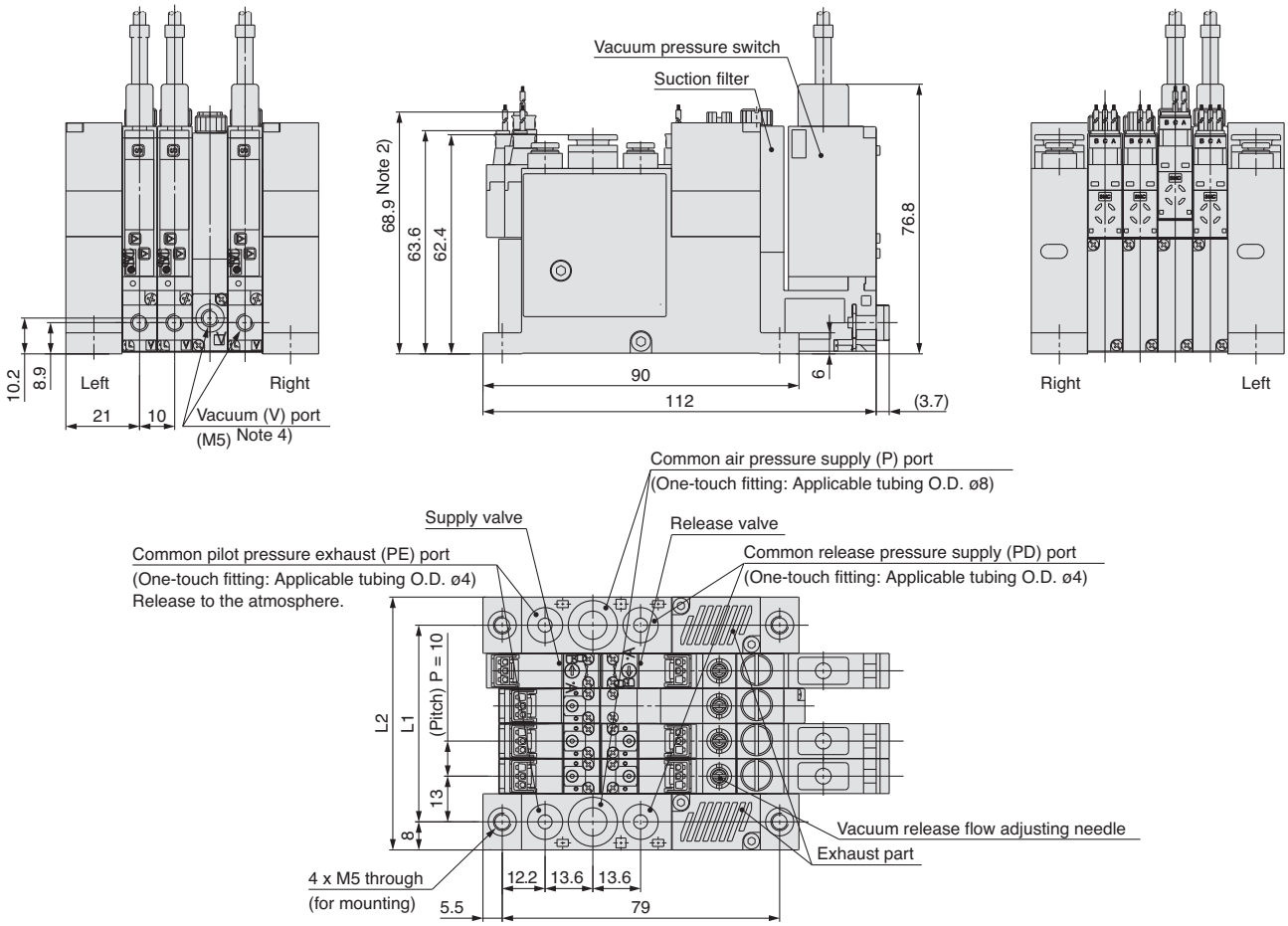

Vacuum

## Dimensions

Manifold type (with PD port)

ZZQ1□-BSC

∗ZQ1□3M-□□□□□-□□□□□-□□-Q




### Dimensions [mm]

| n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| L1 | 26 | 36 | 46 | 56 | 66 | 76 | 86 | 96 |
| L2 | 42 | 52 | 62 | 72 | 82 | 92 | 102 | 112 |

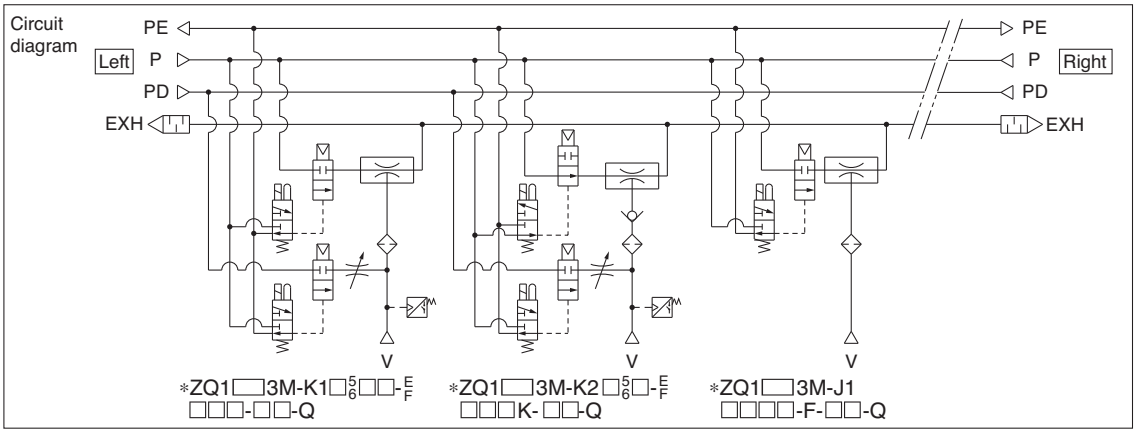
Note 1) The above dimensions are for ZZQ104-BSC.
- ∗ ZQ1□3M-K1□$^{5}_{6}$L-E□G-00-Q.
- ∗ ZQ1□3M-K2$^{5}_{6}$L-E□G-00-Q.
- ∗ ZQ1□3M-J1□$^{5}_{6}$L-F□-00-Q.
- ∗ In case of ZQ1□3M-□□□□□-F□-00-Q, the overall length is 91.7.
- ∗ In case of ZQ1□3M-□□□□□-E□G-00-Q, the overall length is 112.

Note 2) ∗ The above dimensions are for ZQ1□3M-$^{K}_{J}2^{5}_{6}$□□-□□□□□-□□-Q.

Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m. Using excessive torque may cause damage to the body.

Note 4) The pitches of V ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.

Note 5) When the release valve is not used, design the circuit for vacuum release separately in order to release a workpiece.



# Space Saving Vacuum Ejector
# Series ZQ

## How to Order Vacuum Pump Unit

ZQ1000 [U] – [K1] [ ] [5] [L] [ ] – [EB] [G] – [0] [0] – Q

### Body type

| | |
|---|---|
| U | For single unit |
| M | For manifold |

### Solenoid valve combination

| Symbol | Supply valve | Vacuum release valve |
|---|---|---|
| K1 | Normally closed | Normally closed |
| K2 | Normally open | Normally closed |
| J1 | Normally closed | None |
| J2 | Normally open | None |

### Pilot valve Note 1)

| | |
|---|---|
| – | Standard (DC: 1 W) |
| Y | DC low wattage type (0.5 W) |

Note 1) Avoid energizing the solenoid valve for long periods of time.

### Solenoid valve rated voltage

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |

### Electrical entry

| | |
|---|---|
| L | L-type plug connector, with 0.3 m lead wire, with light/surge voltage suppressor |
| LO | L-type plug connector, without connector, with light/surge voltage suppressor |
| G | Grommet, with 0.3 m lead wire |

### Manual override

| | |
|---|---|
| – | Non-locking push type<br>Latching type: Push-locking type |
| B | Locking type |

### Fitting (Ps/PV port) Note 3)

| Symbol | Applicable tubing O.D. | Part no. | Object spec. |
|---|---|---|---|
| – | Without port | – | Manifold |
| 0 | Without fitting (M5 x 0.8) | – | Single unit |
| 2 | ø4 (Straight) | KJS04-M5 | |
| 3 | ø6 (Straight) | KJS06-M5 | |
| 5 | ø4 (Elbow) | KJL04-M5 | |

### Fitting (V port) Note 3)

| Symbol | Applicable tubing O.D. | Part no. | |
|---|---|---|---|
| | | Vacuum pressure switch | Filter only |
| 0 | Without fitting (M5 x 0.8) | VVQ1000-50A-M5 | – |
| 1 | ø3.2 (Straight) | VVQ1000-50A-C3 | KJS23-M5 |
| 2 | ø4 (Straight) | VVQ1000-50A-C4 | KJS04-M5 |
| 3 | ø6 (Straight) | VVQ1000-50A-C6 | KJS06-M5 |
| 4 | ø3.2 (Elbow) | VVQ1000-F1-LC3 | KJL23-M5 |
| 5 | ø4 (Elbow) | VVQ1000-F1-LC4 | KJL04-M5 |

Note 3) For filter only (Without vacuum pressure switch)
When neither V port fitting nor P port fitting are needed, enter nothing or –00 in the dotted line above "How to Order".

### Vacuum pressure switch lead wire specifications

| | |
|---|---|
| – | Without connector |
| G | Lead wire with connector (Lead wire length 2 m)<br>With connector cover |

### Vacuum pressure switch suction filter Note 2)

| | |
|---|---|
| EA | 0 to –101 kPa/NPN open collector 2 outputs, with suction filter |
| EB | 0 to –101 kPa/PNP open collector 2 outputs, with suction filter |
| EC | 0 to –101 kPa/NPN open collector 1 output + analogue voltage, with suction filter |
| EE | 0 to –101 kPa/PNP open collector 1 output + analogue voltage, with suction filter |
| FA | 100 to –100 kPa/NPN open collector 2 outputs, with suction filter |
| FB | 100 to –100 kPa/PNP open collector 2 outputs, with suction filter |
| FC | 100 to –100 kPa/NPN open collector 1 output + analogue voltage, with suction filter |
| FE | 100 to –100 kPa/PNP open collector 1 output + analogue voltage, with suction filter |
| F | Suction filter only |

Note 2) The filter included in this product is of a simple type.

## How to Order Manifold

ZZQ1 [08] – [L] O [B]

### Number of stations

| | |
|---|---|
| 01 | 1 station |
| 02 | 2 stations |
| ⋮ | ⋮ |
| 08 | 8 stations |

### Vacuum pressure supply port (PV port) Port location

| | |
|---|---|
| L | Left side |
| R | Right side |

### Release pressure supply port (PD port)

| | |
|---|---|
| B | None (Release pressure is supplied from the PS port.) |
| C | Provided (Air can be alternatively supplied from the PS port.) |

Table (1) Air Pressure Supply Port Location on the Manifold

| PD port | Manifold Port location | Left | | | Right | | |
|---|---|---|---|---|---|---|---|
| | | PS | PV | PD | PS | PV | PD |
| B | L (Left side) | – | ● | – | ● Note) | – | – |
| | R (Right side) | ● Note) | – | – | – | ● | – |
| C | L (Left side) | – | ● | ● | ● | – | ● |
| | R (Right side) | ● | – | ● | – | ● | ● |

Note) The position of each port is shown as right and left sides viewed from the front side of the vacuum port.Release pressure is commonly supplied from the PS port.
∗ PS: Pilot presure supply port, PV: Vacuum pressure supply port, PD: Release pressure supply port

## Specifications

### Common

| | | |
|---|---|---|
| Switching method for vacuum/release valve | | Piloted |
| Cv factor | | 0.11 |
| Supply pressure range | Vacuum pressure supply port (PV) | 0 to –101.3 kPa |
| | Pilot/Pressure port (PS) | 0.3 to 0.5 MPa<br>(Normally open: 0.3 to 0.45 MPa) |
| | Supply pressure port for vacuum release (PD) | 0.3 to 0.5 MPa<br>(Normally open: 0.3 to 0.45 MPa),<br>and also PD pressure PS pressure |
| Operating temperature range | | 5 to 50°C |
| Fluid | | Air / Inert gas |

### Ejector

| Model | ZQ105 | ZQ107 | ZQ110 |
|---|---|---|---|
| Nozzle nominal diameter [mm] | 0.5 | 0.7 | 1.0 |
| Maximum suction flow [ℓ/min (ANR)] | 5 | 10 | 22 |
| Air consumption [ℓ/min (ANR)] | 14 | 23 | 46 |
| Maximum vacuum pressure | –80 kPa | | |
| Supply pressure range | 0.3 to 0.5 MPa<br>(Normally open: 0.3 to 0.45 MPa) | | |
| Supply pressure Note) | 0.35 MPa | 0.43 MPa | |
| Operating temperature range | 5 to 50°C | | |
| Fluid | Air / Inert gas | | |

Note) Maximum suction flow can be obtained by standard supply pressure.

### Supply Valve / Vacuum Release Valve

| Type | | Normally closed | | Normally open |
|---|---|---|---|---|
| | | Standard (1 W) | Low wattage type (0.5 W) | |
| Model | | VQ110-□ | VQ110Y-□ | ZQ1-VQ120-□ |
| Manual override | | Non-locking push type / Locking type (Tool type) | | Non-locking push type / Locking type (Tool type) |
| Rated coil voltage | | 12, 24 VDC | 12, 24 VDC | 12, 24 VDC |
| Power consumption (current value) | DC | 1 W | 0.5 W | 1 W |
| Electrical entry | | Grommet | | Grommet |
| | | L-type plug connector<br>(with light/surge voltage suppressor) | | L-type plug connector<br>(with light/surge voltage suppressor) |

## Accessories and Replacement Kits

### How to order connector assembly

• Single

AXT661-14A-□

Lead wire length

| | |
|---|---|
| – | 300 mm |
| 20 | 2000 mm |
| 30 | 3000 mm |

**Lead wire length of the plug connector**

The lead wire length for a valve with a lead wire is 300 mm. When in need of a valve with a lead wire longer than 600 mm, place an order for a valve without a connector and connector assembly.

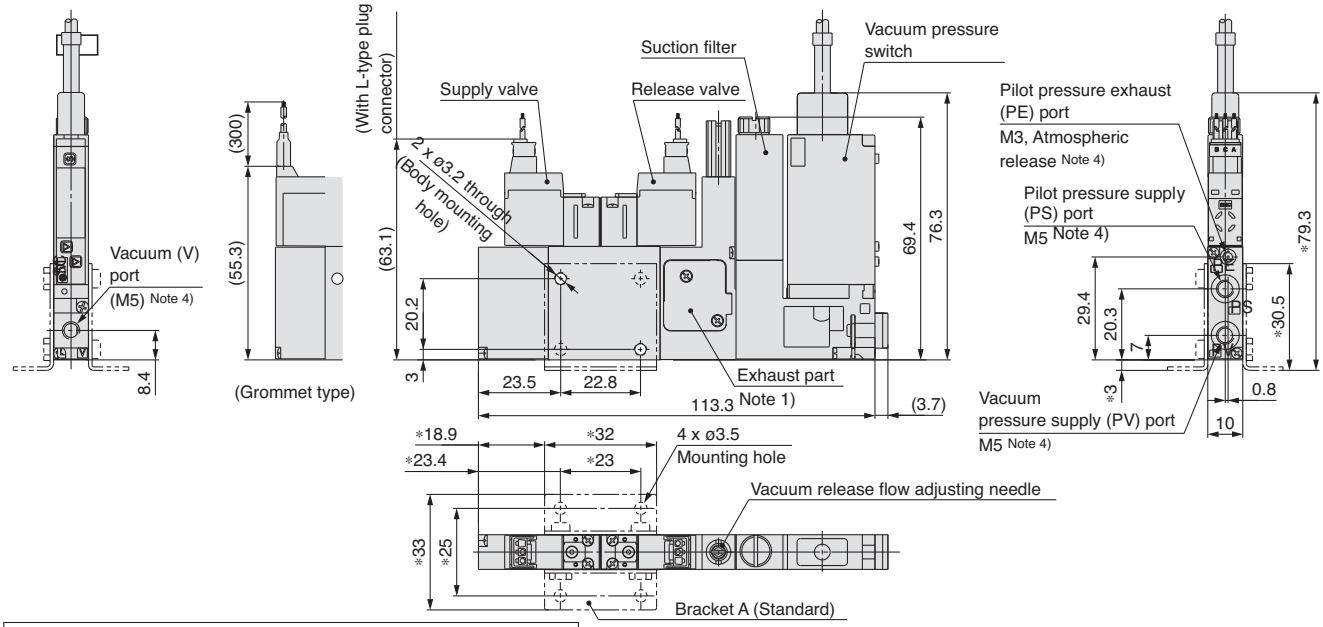
### For vacuum pressure switch

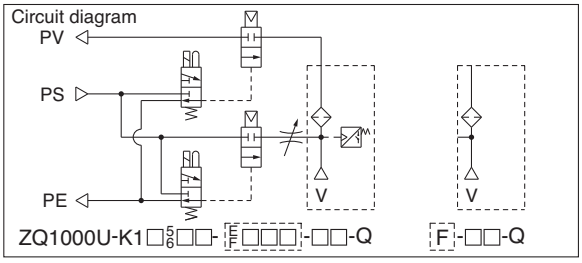
Lead wire with connector and cover (legth 2m) ZS-39-5G

## Dimensions

### Type K1

ZQ1000U-K1□$^{5}_{6}$□□-□□□□-□□-Q

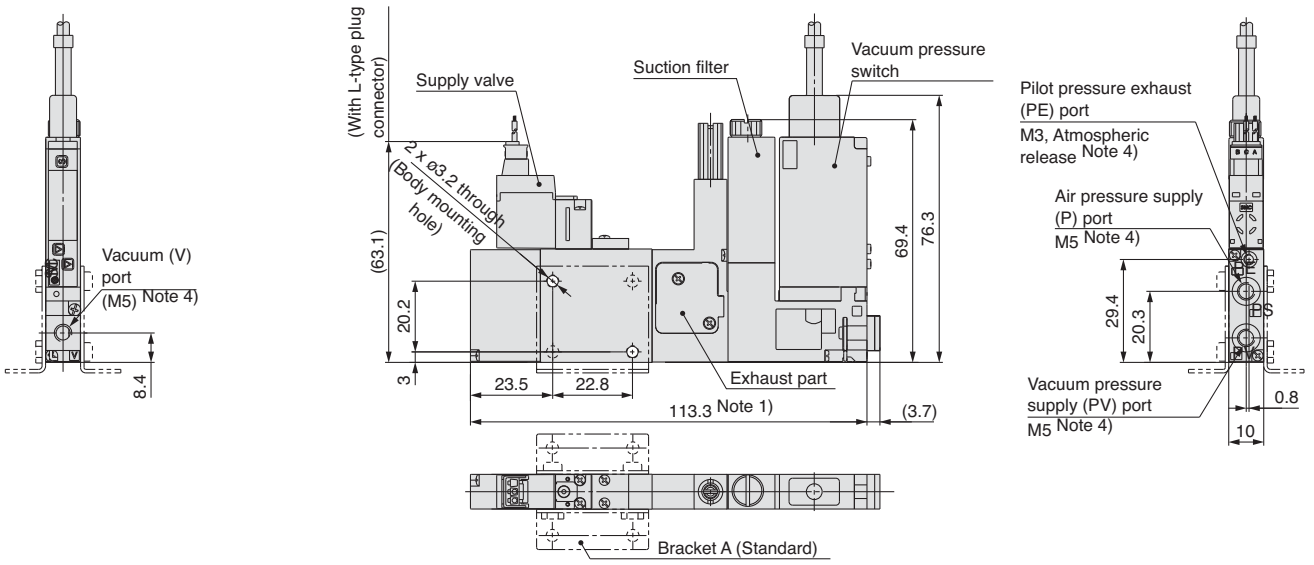


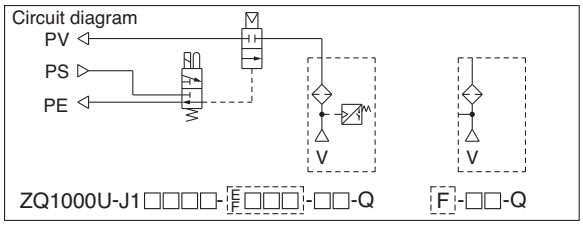




Note 1) The above dimensions are for ZQ1000U-K1□$^{5}_{6}$L-E□□G□-00-Q.
In case of ZQ1000U-K1□$^{5}_{6}$□□-F□-00-Q, the overall length is 87.2.
Note 2) Dimensions marked with "*" are those after bracket A is mounted.
Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m.
Using excessive torque may cause damage to the body.
Note 4) The pitches of PS, PV, V and PE ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.

### Type J1

ZQ1000U-J1□□□□-□□□□-□□-Q



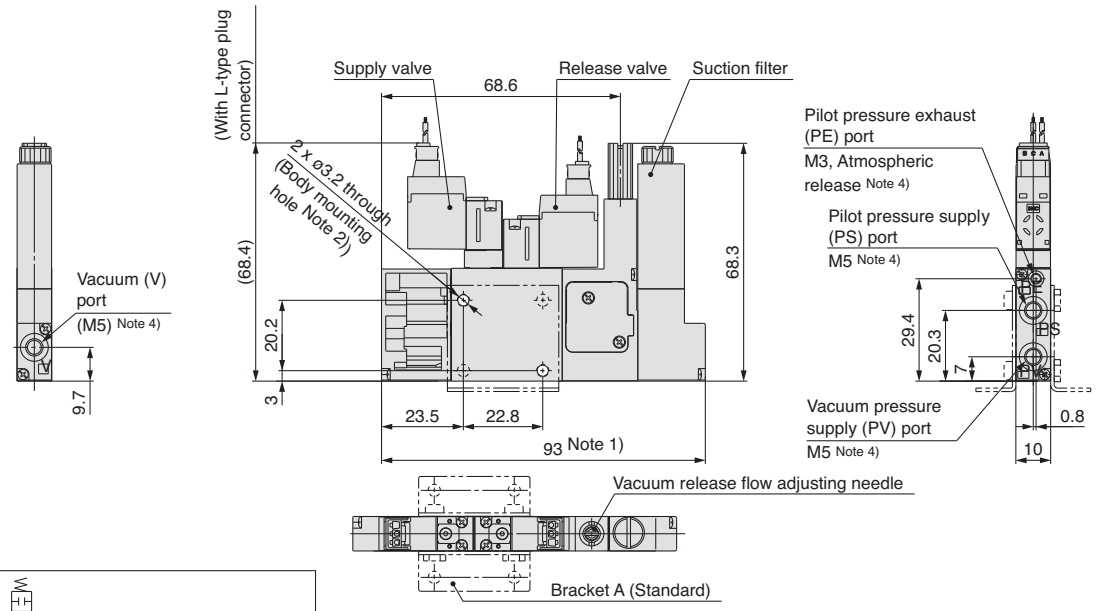



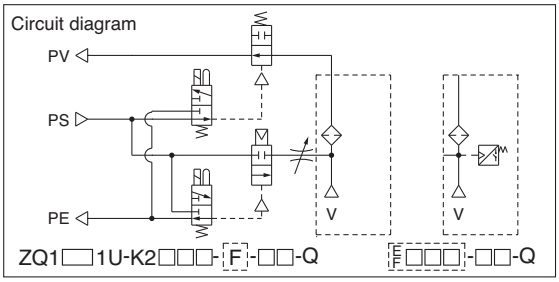

Note 1) The above dimensions are for ZQ1000U-J1□$^{5}_{6}$L-E□□G-00-Q.
In case of ZQ1000U-J1□□□□-F□-00-Q, the overall length is 87.2.
Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m.
Using excessive torque may cause damage to the body.
Note 4) The pitches of PS, PV, V and PE ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.

## Dimensions

Type K2

ZQ1000U-K2□□□-□□□□-□□□-Q

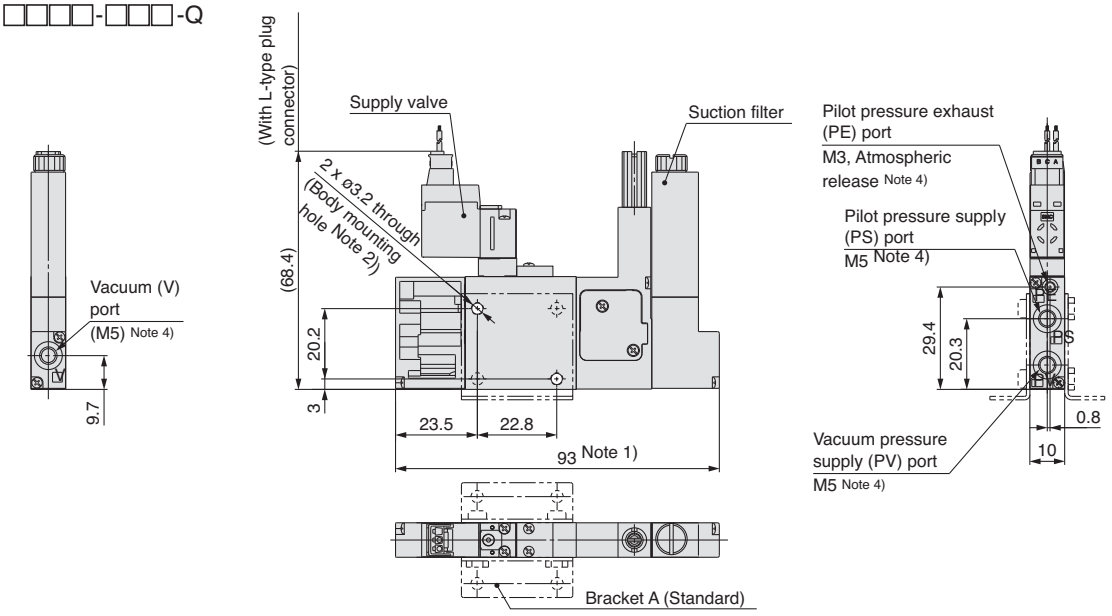


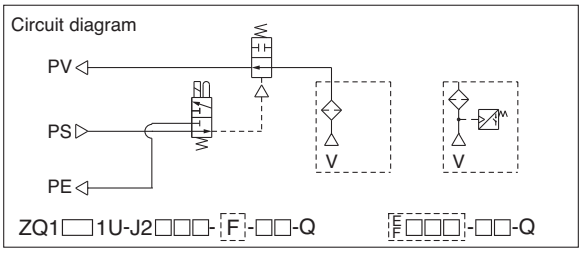




Note 1) The above dimensions are for ZQ1000U-J1□□□□-F-00-Q.
In case of ZQ1000U-K1□5/6□-F□□□-00-Q, the overall length is 113.3.
Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m.
Using excessive torque may cause damage to the body.
Note 4) The pitches of PS, PE, PV and V ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.

Type J2

ZQ1000U-J2□□□-□□□□-□□□-Q



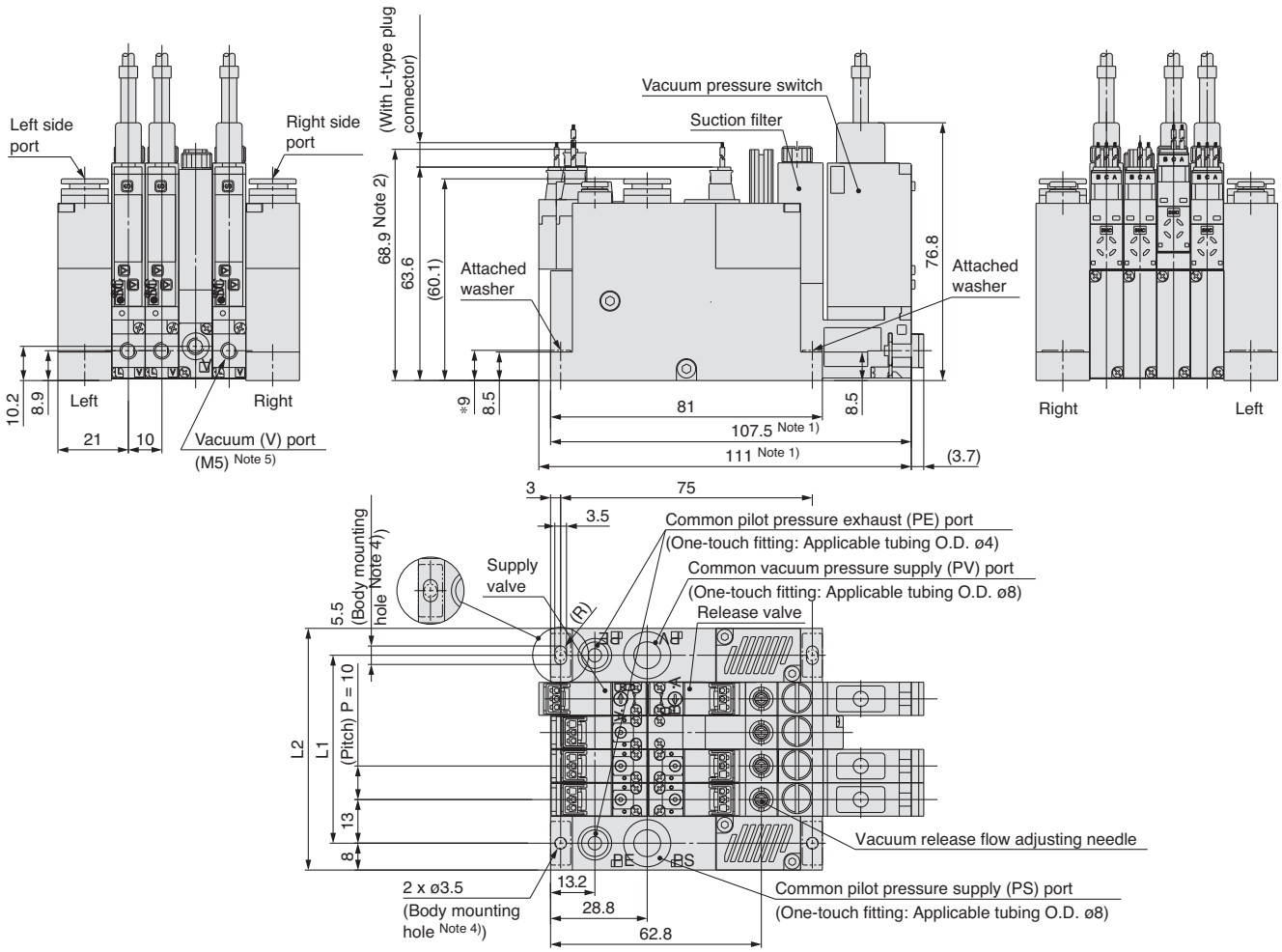

Note 1) The above dimensions are for ZQ1000U-J1□□□□-F-00-Q.
In case of ZQ1000U-K1□5/6□-F□□□-00-Q, the overall length is 113.3.
Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m.
Using excessive torque may cause damage to the body.
Note 4) The pitches of PS, PE, PV and V ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.
Note 5) In order to release a workpiece, design the circuit for vacuum release separately.

## Dimensions

Manifold type (without PD port)

ZZQ1□-□OB

∗ZQ1000M-□□□□□-□□□□-□□-Q




Dimensions [mm]

| n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| L1 | 26 | 36 | 46 | 56 | 66 | 76 | 86 | 96 |
| L2 | 42 | 52 | 62 | 72 | 82 | 92 | 102 | 112 |

Note 1) The above dimensions are for ZZQ104-ROB.
- ∗ ZQ1000M-K1□$^{5}_{6}$L-E□□G-00-Q.
- ∗ ZQ1000M-K2$^{5}_{6}$L-E□□G-00-Q.
- ∗ ZQ1000M-J1□$^{5}_{6}$L-F-00-Q.
- ∗ In case of ZQ1000M-$^{K}_{J}$□□□□□-F-00-Q, the overall length is 87.2.
- ∗ In case of ZQ1000M-$^{K}_{J}$□□□□□-$^{E}_{F}$□□□-00-Q, the overall length is 107.5.

Note 2) ∗ The above dimensions are for ZQ1000M-$^{K}_{J}$2$^{5}_{6}$□□-□□□□-□□-Q.

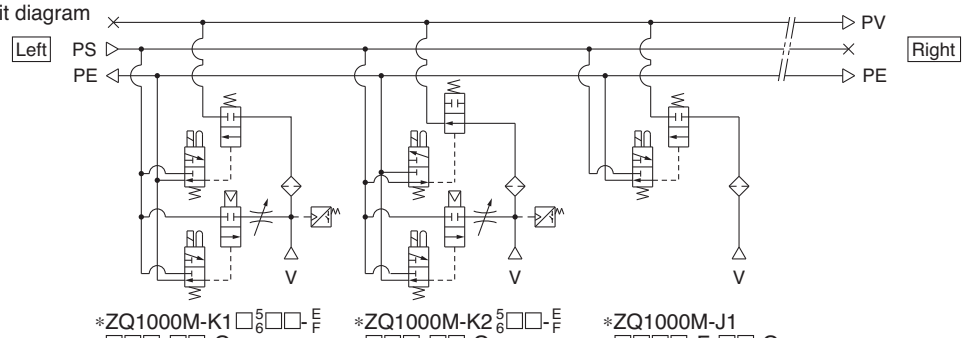
Note 3) Dimensions marked with "∗" are those after the attached washer is mounted.

Note 4) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N•m. Using excessive torque may cause damage to the body.

Note 5) The pitches of V ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.

Note 6) When the release valve is not used, design the circuit for vacuum release separately in order to release a workpiece.

Circuit diagram



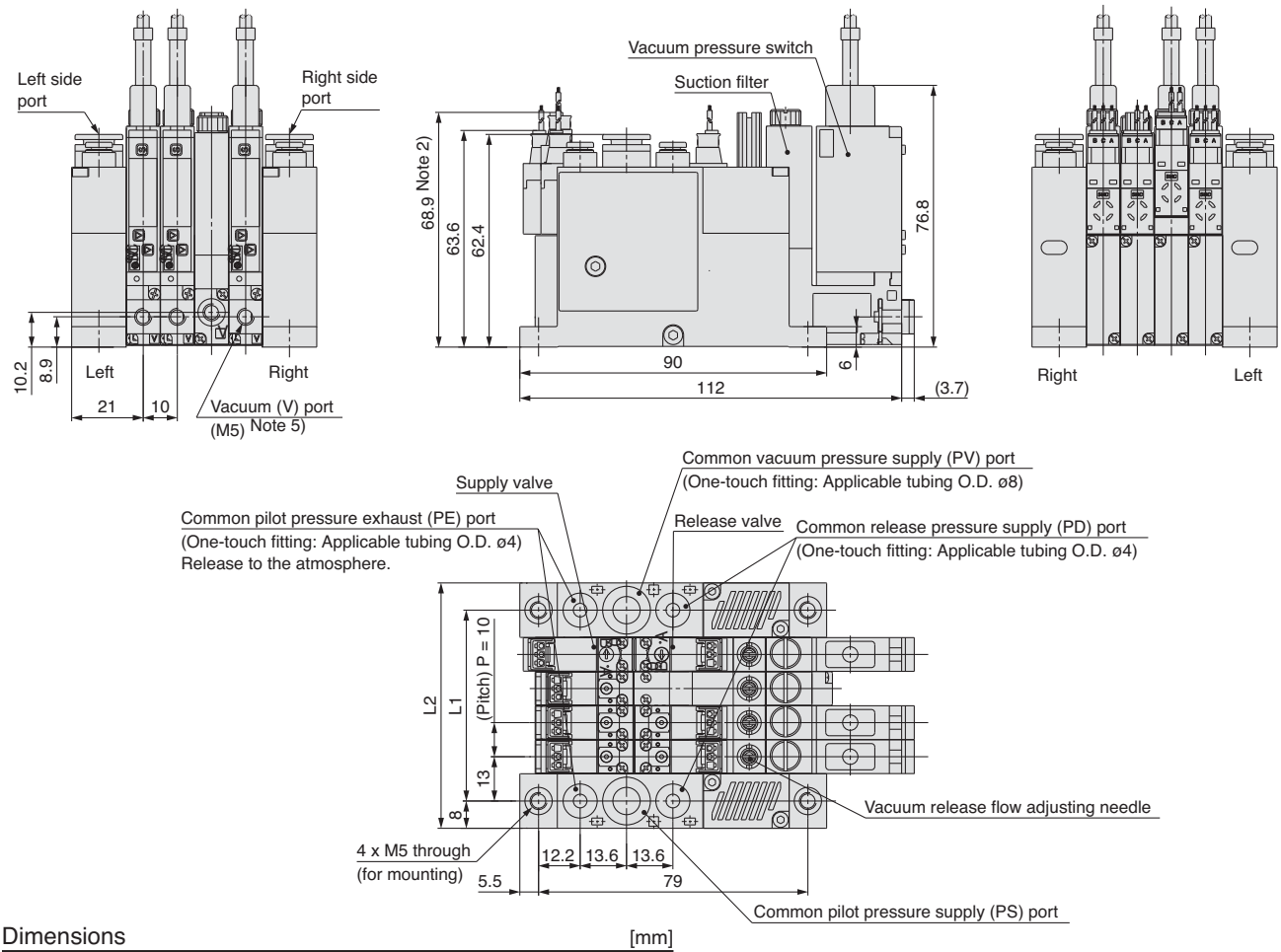

∗ZQ1000M-K1□$^{5}_{6}$□□-$^{E}_{F}$□□□-□□-Q

∗ZQ1000M-K2$^{5}_{6}$□□-$^{E}_{F}$□□□-□□-Q

∗ZQ1000M-J1□□□□-F-□□-Q

## Dimensions

Manifold type (with PD port)
ZZQ1□-□OC
*ZQ1000M-□□□□-□□□□-□□-Q



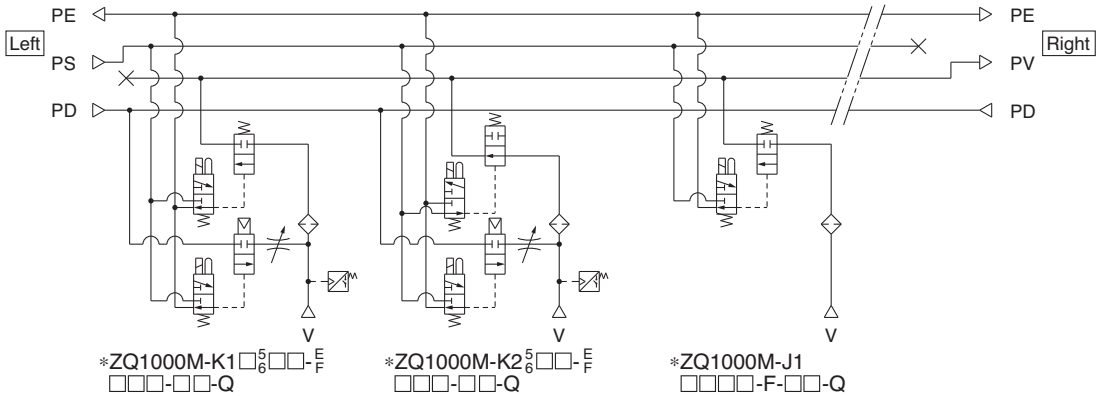

Dimensions [mm]

| n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| L1 | 26 | 36 | 46 | 56 | 66 | 76 | 86 | 96 |
| L2 | 42 | 52 | 62 | 72 | 82 | 92 | 102 | 112 |

Note 1) The above dimensions are for ZZQ104-LOC.
- * ZQ1000M-K1□$^{5}_{6}$L-E□G-00-Q.
- * ZQ1000M-K2$^{5}_{6}$L-E□G-00-Q.
- * ZQ1000M-J1□$^{5}_{6}$L-F-00-Q.
- * In case of ZQ1000M-□□□□□-F-00-Q, the overall length is 91.7.
- * In case of ZQ1000M-□□□□□-E□G-00-Q, the overall length is 112.

Note 2) * The above dimensions are for ZQ1000M-$^{K}_{J}2^{5}_{6}$□□-□□□□-□□-Q.
Note 3) When the body is mounted, tighten with a torque of 0.6 0.06 N•m. Using excessive torque may cause damage to the body.
Note 4) The pitches of V ports are determined assuming the use of the KJ series one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.
Note 5) When the vacuum release valve is not used, design the circuit for vacuum release separately in order to release a workpiece.

Circuit diagram




For more product options and details see our specific catalogues or on-line information.

Vacuum

# Compact Vacuum Unit
# Series ZB

## Features

- Used in an ejector or in a vacuum pump system.
- All in one product: supply and release valves, suction filter and silencer.
- Energy saving design.
- Integrated pressure sensor or digital vacuum switch with copy function.
- High speed absorption.

## How to Order Single Unit

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vacuum Pump System | ZB | 00 | 2 | 0 | – | K1 | 5 | L | | – | P1 | – | C4 |
| Ejector | ZB | 04 | 1 | 1 | – | K1 | 5 | L | | – | P1 | – | C4 |

### Nominal Nozzle Size

| Symbol | Nominal nozzle size | Applicable supply valve and standard supply pressure |
|---|---|---|
| | | Large flow (N.C.) |
| 00 Note 1) | — | P |
| 03 | ø0.3 | P (0.35 MPa) |
| 04 | ø0.4 | P (0.35 MPa) |
| 05 | ø0.5 | P (0.35 MPa) |
| 06 | ø0.6 | P (0.5 MPa) |

Note 1) Vacuum pump system only

### Body Type

| Symbol | Body specification | Port specification Note 2) |
|---|---|---|
| 1 | Single unit | PV, PD common port (PV = PD) |
| 2 | Single unit | PV, PD individual port (PV PD) |
| 3 | For manifold | No distinction |

Note 2) PV : Air pressure SUP port (Ejector)
Vacuum pressure SUP port (Vacuum pump system)
PD : Release pressure SUP port

### Exhaust Type

| | |
|---|---|
| 0 | For vacuum pump system (Without silencer) |
| 1 | Silencer exhaust (Individual exhaust) |
| 2 | Port exhaust (Individual exhaust) |

### Combination of Supply Valve and Release Valve

| Symbol | Supply valve | Release valve | Applicable body type | | | |
|---|---|---|---|---|---|---|
| | | | Ejector | | Pump system | |
| | | | PV = PD | PV ≠ PD | PV = PD | PV ≠ PD |
| K1 | Normally closed | Normally closed | ● | ● | – | ● |
| J1 | Normally closed | None | ●* | – | ●* | – |

* Vacuum break by port open to atmosphere

### Rated Voltage

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |

### Vacuum (V) Port Note 6)

| | |
|---|---|
| C2 | Straight ø2 one-touch fitting |
| C4 | Straight ø4 one-touch fitting |
| L2 | Elbow ø2 one-touch fitting |
| L4 | Elbow ø4 one-touch fitting |

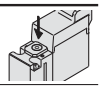
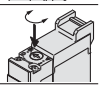
Note 6) With suction fuction: The filter included in this product is of a simple type

### Pressure Sensor/ Vacuum Pressure Switch Specifications

| Symbol | Type | Pressure range [kPa] | Specifications | |
|---|---|---|---|---|
| — | Without pressure sensor/vacuum pressure switch | | | |
| P1 | Pressure sensor | 0 to –101 | Output: 1 to 5 V, accuracy: 2% F.S. or less Note 5) | |
| P3 | | –100 to 100 | Output: 1 to 5 V, accuracy: 2% F.S. or less Note 5) | |
| EA | Vacuum pressure switch | 0 to –101 | NPN 2 outputs | With unit switching function |
| EB | | | PNP 2 outputs | With unit switching function |
| FA | | –100 to 100 | NPN 2 outputs | With unit switching function |
| FB | | | PNP 2 outputs | With unit switching function |

Note 5) Only the lead wire length 3 m is available for the pressure sensor.

### Manual Override

| | | |
|---|---|---|
| — | Non-locking push type |  |
| B | Locking type (Tool required) Semi-standard |  |

### Supply Valve/Release Valve Electrical Entry Note 3)

| | |
|---|---|
| L | L-type plug connector With lead wire |
| LO | L-type plug connector Without connector |
| M | M-type plug connector With lead wire Note 4) |
| MO | M-type plug connector Without connector Note 4) |

Note 3) All with light and surge suppressor.
Lead wire length is 300 mm for the models with lead wire.
Note 4) M- and MO-type connectors cannot be selected for models with pressure sensor or pressure switch for vacuum.

## How to Order Manifold

ZZB 08 – 01F S – M5

Stations

| | |
|---|---|
| 01 | 1 station |
| 02 | 2 stations |
| ⋮ | ⋮ |
| 12 | 12 stations |

Common Supply (PV) Port Size

| | |
|---|---|
| 01F | G1/8 |
| M5 | M5 x 0.8 |

Common Release Pressure (PD) Port Size

| | |
|---|---|
| – | Without PD port (PV = PD) |
| M5 | M5 x 0.8 (PV PD) |

Pressure Sensor/Vacuum Pressure Switch Mountable Note)

| | |
|---|---|
| – | Sensor/switch non-mountable base |
| S | Sensor/switch mountable base |

Note) Select "S" when the model with either the pressure sensor or the vacuum pressure switch is selected for the single unit.)

## Product Recommendation

### Stocked items for fast delivery

ZB0421-K15L-C4 ZB0611-K15L-C4 ZB0621-K15L-C4

### Related Products

**Series ZSE10(F) -** Vacuum Pressure Switch - page 1273
**Series PSE1000/1100 -** Pressure Sensor - www.smc.eu
**Series VQ100 -** Supply Valve / Vacuum Release Valve - www.smc.eu
**Series ZFZ -** Air Suction Filter - www.smc.eu
**Series ZP2 -** Vacuum Pad - page 1414
**Series IRV -** Vacuum Regulator - www.smc.eu
**Series ITV209 -** Electronic Vacuum Regulator - page 1119
**Series GZ -** Pressure Gauge for Vacuum - www.smc.eu
**Series PFM -** Flow Switch - page 1298
**Series AC -** Air Preparation - page 1076
**Series TU -** Tubing - page 1223
**Series KQB2 -** Fittings - page 1212

## Specifications

### Ejector Specifications

| Model | ZB03 | ZB04 | ZB05 | ZB06 |
|---|---|---|---|---|
| Supply valve type | Large flow (N.C.) | Large flow (N.C.) | Large flow (N.C.) | Large flow (N.C.) |
| Nozzle size [mm] | 0.3 | 0.4 | 0.5 | 0.6 |
| Supply pressure range [MPa] | 0.2 to 0.55 | | | 0.3 to 0.55 |
| Standard supply pressure [MPa] | 0.35 | 0.35 | 0.35 | 0.5 |
| Air consumption [ℓ/min (ANR)] | 3.5 | 6.5 | 10 | 18 |
| Maximum suction flow [ℓ/min (ANR)] | 2 | 3.5 | 4.5 | 7 |
| Maximum vacuum pressure [kPa] | –86 | –90 | | |
| Operating temperature range | –5 to 50°C (No condensation) | | | |
| Fluid | Air, Inert gas | | | |
| Nominal filtration rating | 30 μm | | | |

### Supply Valve/Release Valve Specifications

| Type | | Supply valve | | Release valve |
|---|---|---|---|---|
| | | Large flow type (N.C.) | | Standard |
| Supply valve/release valve model | | ZB1-VQ110U-□ | ZB1-VQ120U-□ | ZB1-VQ110-□ |
| Applicable system | | Ejector (N.C.) | Pump system (N.C.) | Ejector (N.C.) Pump system (N.C.) |
| Maximum operating pressure | | 0.55 MPa | 0.1 MPa | 0.55 MPa |
| Minimum operating pressure | | 0.1 MPa | –0.1 MPa | 0 MPa |
| Response time | | 5 ms or less | 5 ms or less | ON: 3.5 ms OFF: 2 ms |
| Rated coil voltage Power consumption (Current) | 24 VDC | 0.7 W (29 mA) | 0.7 W (29 mA) | 1 W (42 mA) |
| | 12 VDC | 0.7 W (29 mA) | 0.7 W (58 mA) | 1 W (42 mA) |
| Electrical entry | | L-type plug connector (With light/surge voltage suppressor) M-type plug connector (With light/surge voltage suppressor) | | |

Vacuum

## Specifications

### Pressure Sensor/ZB1-PS□-A

| Model | | ZB1-PS1-A (PSE541) | ZB1-PS3-A (PSE543) |
|---|---|---|---|
| Rated pressure range | | 0 to –101 kPa | –100 to 100 kPa |
| Proof pressure | | 500 kPa | |
| Output voltage | | 1 to 5 VDC | |
| Output impedance | | Approx. 1 k | |
| Power supply voltage | | 10 to 24 VDC±10%, Ripple (p-p) 10% or less | |
| Current consumption | | 15 mA or less | |
| Accuracy | | ±2% F.S. (Ambient temperature: 25°C) | |
| Linearity | | ±0.4% F.S. or less | |
| Repeat accuracy | | ±0.2% F.S. or less | |
| Effect of power supply voltage | | ±0.8% F.S. or less | |
| Temperature characteristics | | ±2% F.S. or less (Ambient temperature: based on 25°C) | |
| Material | Case | Resin | |
| | Pressure sensing section | Sensor pressure receiving area: Silicon, O-ring: HNBR | |
| Lead wire | | Oil-resistant vinyl cabtire cable<br>2.7 x 3.2 mm (elliptic), Cross section: 0.15 mm$^2$, 3 cores, 3 m, Insulator O.D.: 0.9 mm | |

### Vacuum Pressure Switch/ZB1-ZS□□□□-A

| Model | | ZB1-ZSE□□□-A (ZSE10) | ZB1-ZSF□□□-A (ZSE10F) |
|---|---|---|---|
| Rated pressure range | | 0 to –101 kPa | –100 to 100 kPa |
| Set pressure range/Pressure display range | | 10 to –105 kPa | –105 to 105 kPa |
| Proof pressure | | 500 kPa | |
| Minimum unit setting | | 0.1 kPa | |
| Power supply voltage | | 12 to 24 VDC±10%, Ripple (p-p) 10% or less (with power supply polarity protection) | |
| Current consumption | | 40 mA or less | |
| Switch output | | NPN or PNP open collector 2 outputs (Select) | |
| | Maximum load current | 80 mA | |
| | Maximum applied voltage | 28 V (with NPN output) | |
| | Residual voltage | 2 V or less (with load current of 80 mA) | |
| | Response time | 2.5 ms or less (Response time selections with anti-chattering function: 20, 100, 500, 1000, 2000 ms) | |
| | Short circuit protection | Yes | |
| Repeat accuracy | | ±0.2% F.S. 1 digit | |
| Hysteresis | Hysteresis mode | Variable (0 or above) Note 1) | |
| | Window comparator mode | | |
| Display | | 3 1/2 digit, 7-segment LED, 1-colour display (Red) | |
| Display accuracy | | ±2% F.S. 1 digit (Ambient temperature of 25 ±3°C) | |
| Indicator light | | Lights up when output is turned ON. OUT1: Green, OUT2: Red | |
| Environ-mental resistance | Enclosure | IP40 | |
| | Operating humidity range | Operating/Stored: 35 to 85% RH (No condensation) | |
| | Withstand voltage | 1000 VAC for 1 minute between live parts and enclosure | |
| | Insulation resistance | 50 MΩ or more between live parts and enclosure (at 500 VDC measured via megohmmeter) | |
| Temperature characteristics | | ±2% F.S. (at 25°C in an operating temperature range of –5 and 50°C) | |
| Lead wire | | Oil-resistant vinyl cabtire cable<br>Cross section: 0.15 mm$^2$ (AWG26), 5 cores, 2 m, Insulator O.D.: 1.0 mm | |

Note 1) If the applied voltage fluctuates around the set value, the hysteresis must be set to a value more than the fluctuating width, otherwise chattering will occur.

## Accessories and Remplacement Kits

### Connector assembly

AXT661 – □ – □

| | Applicable valve |
|---|---|
| 14A | (1), (3), (4) (N.C.) |

| Lead wire length [mm] | |
|---|---|
| – | 300 |
| 20 | 2000 |
| 30 | 3000 |

For vacuum pressure switch:
Lead wire with connector (with connector cover) (length: 2m)
Part number of the lead wire with connector: ZS-39-5G

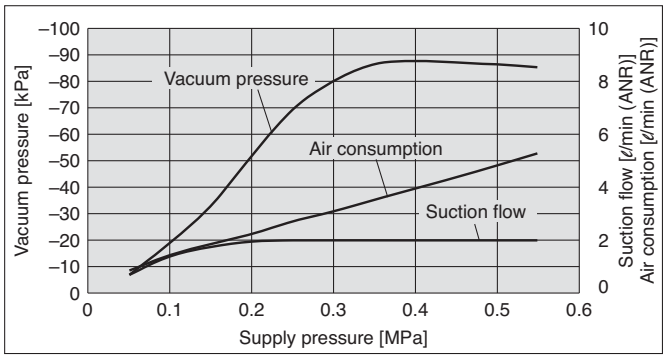
Bracket mounting dimensions for single unit
Bracket part number for single unit: ZB1-BK1-A

Filter element (10 pcs. in 1 set): ZB1-FE3-A

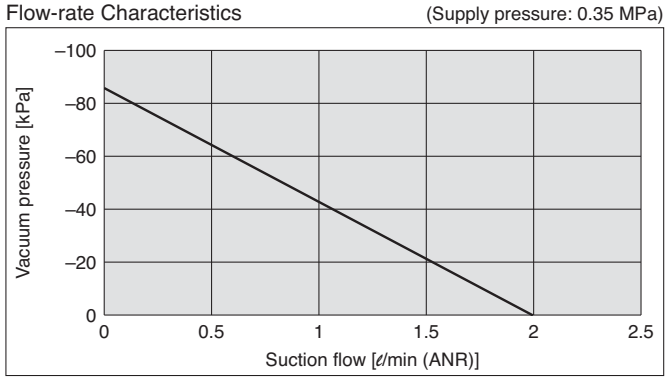
## Flow Characteristics

### Nozzle Size ø0.3 Supply Valve, Large Flow Type (N.C.)/ZB03□□-K/J1

Exhaust Characteristics

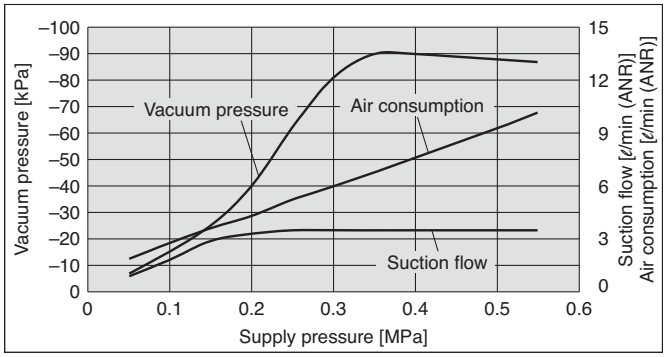



Flow-rate Characteristics (Supply pressure: 0.35 MPa)

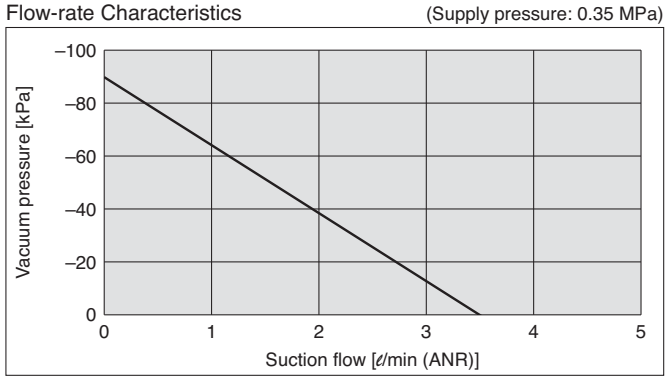



### Nozzle Size ø0.4 Supply Valve, Large Flow Type (N.C.)/ZB04□□-K/J1

Exhaust Characteristics

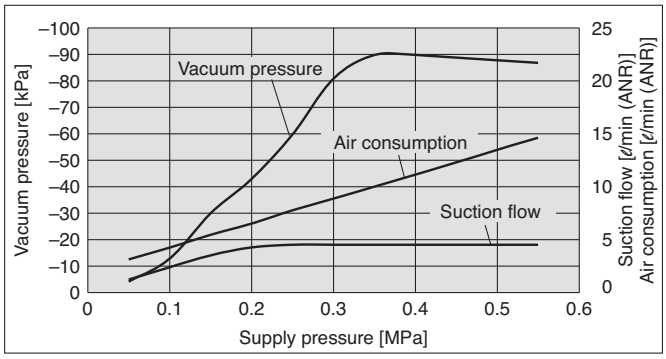



Flow-rate Characteristics (Supply pressure: 0.35 MPa)

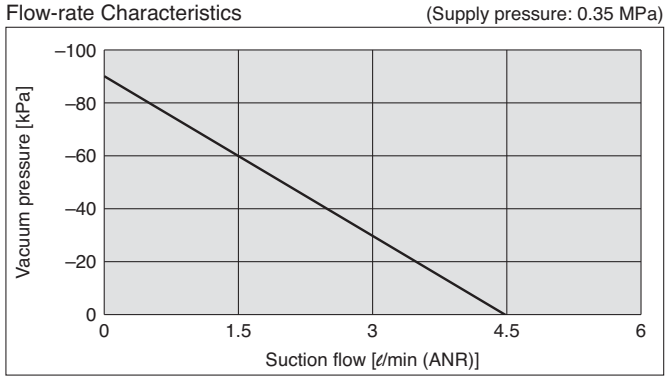



### Nozzle Size ø0.5 Supply Valve, Large Flow Type (N.C.)/ZB05□□-K/J1

Exhaust Characteristics

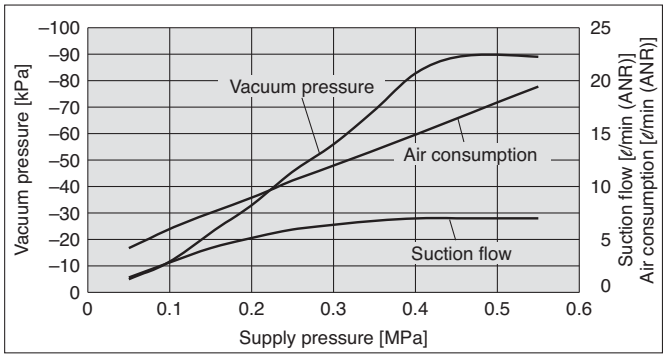



Flow-rate Characteristics (Supply pressure: 0.35 MPa)

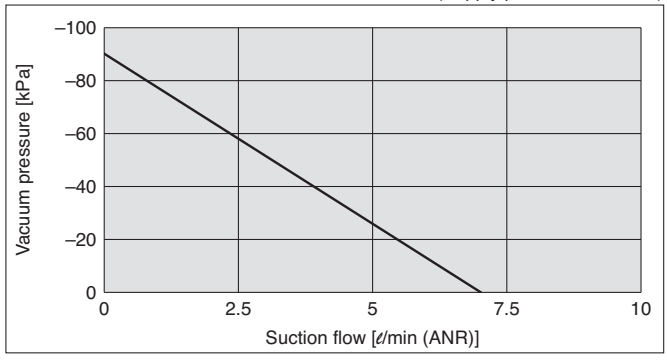



### Nozzle Size ø0.6 Supply Valve, Large Flow Type (N.C.)/ZB06□□-K/J1

Exhaust Characteristics



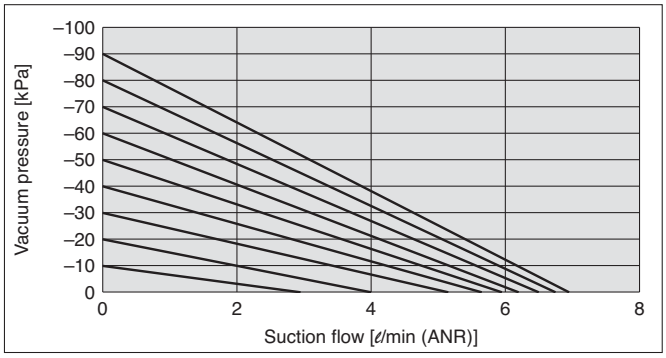

Flow-rate Characteristics (Supply pressure: 0.5 MPa)



## Flow Characteristics

### Vacuum Pump System Flow-rate Characteristics/ZB00

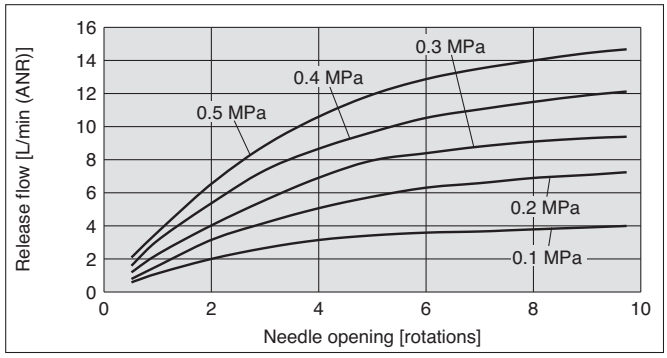
The graph shows the suction flow-rate characteristics of the vacuum pump system at different vacuum pressures.




The actual suction flow at the point of suction varies depending on the vacuum pump's piping conditions. (For above graph, vacuum (V) port is ø4 x 50 mm.)

### Release Flow-rate Characteristics (Ejector/Pump System)

The graph shows the flow-rate characteristics with various supply pressures when the vacuum break flow adjustment needle is opened from the fully close state.

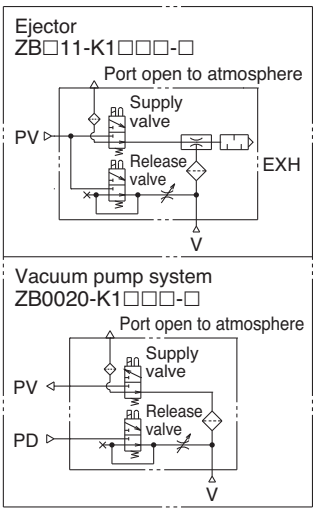


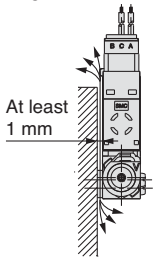

Note) The flow-rate characteristics shown in this graph are representative values, and the flow at the absorption part may vary depending on the piping conditions to the vacuum (V) port, etc.

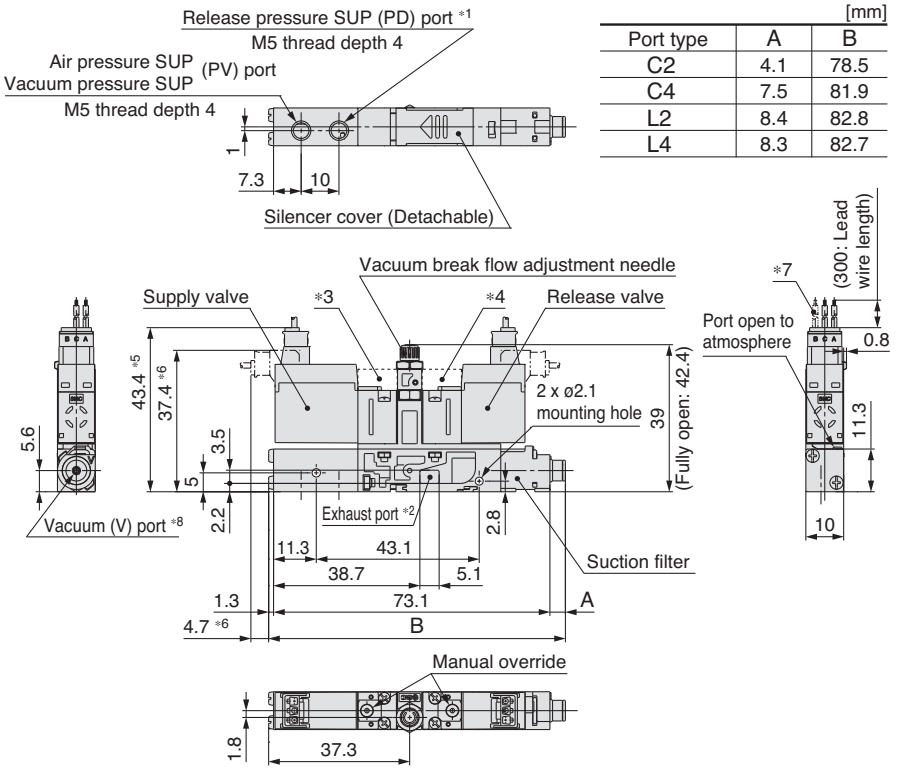
## Dimensions

ZB□ 10/11/20/21 - K1 □ L(O)/M(O) □-□

Ejector/Vacuum pump system
Silencer exhaust, With supply valve/release valve, Without sensor/switch




[mm]

| Port type | A | B |
|---|---|---|
| C2 | 4.1 | 78.5 |
| C4 | 7.5 | 81.9 |
| L2 | 8.4 | 82.8 |
| L4 | 8.3 | 82.7 |

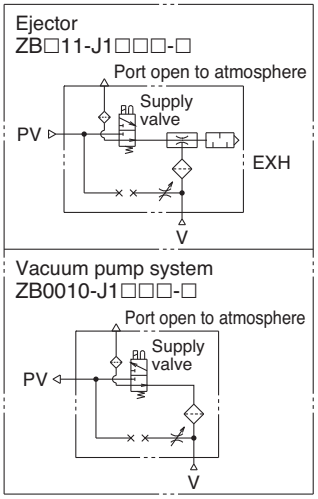
## Dimensions

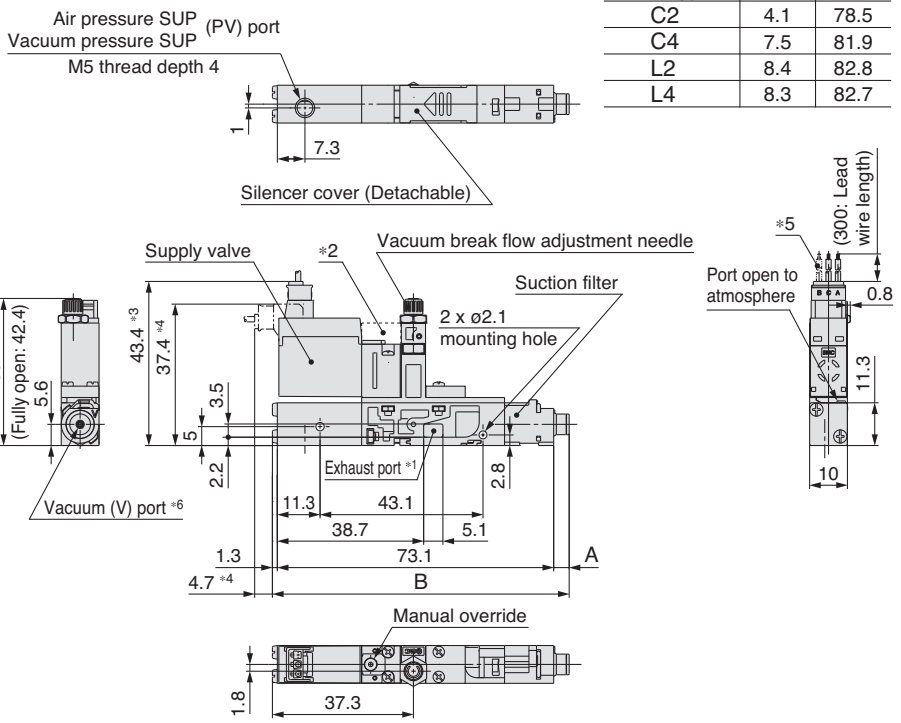
### ZB□ 10/11/20/21 -J1□ L(O)/M(O) □-□

Ejector/Vacuum pump system
Silencer exhaust, With supply valve only,
Without sensor/switch

[mm]

| Port type | A | B |
|---|---|---|
| C2 | 4.1 | 78.5 |
| C4 | 7.5 | 81.9 |
| L2 | 8.4 | 82.8 |
| L4 | 8.3 | 82.7 |



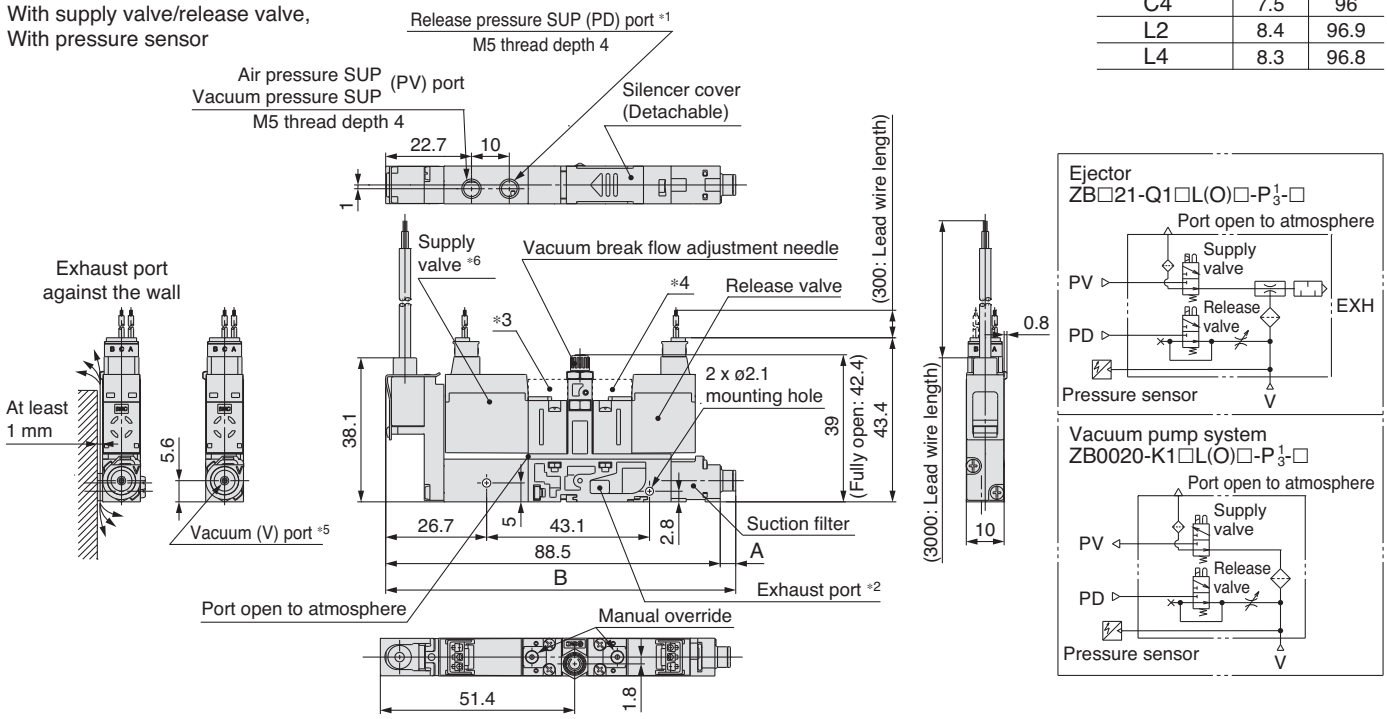




### ZB□ 10/11/20/21 -K1□L(0)□ P 1/3 -□

Ejector/Vacuum pump system
Silencer exhaust,
With supply valve/release valve,
With pressure sensor

[mm]

| Port type | A | B |
|---|---|---|
| C2 | 4.1 | 92.6 |
| C4 | 7.5 | 96 |
| L2 | 8.4 | 96.9 |
| L4 | 8.3 | 96.8 |

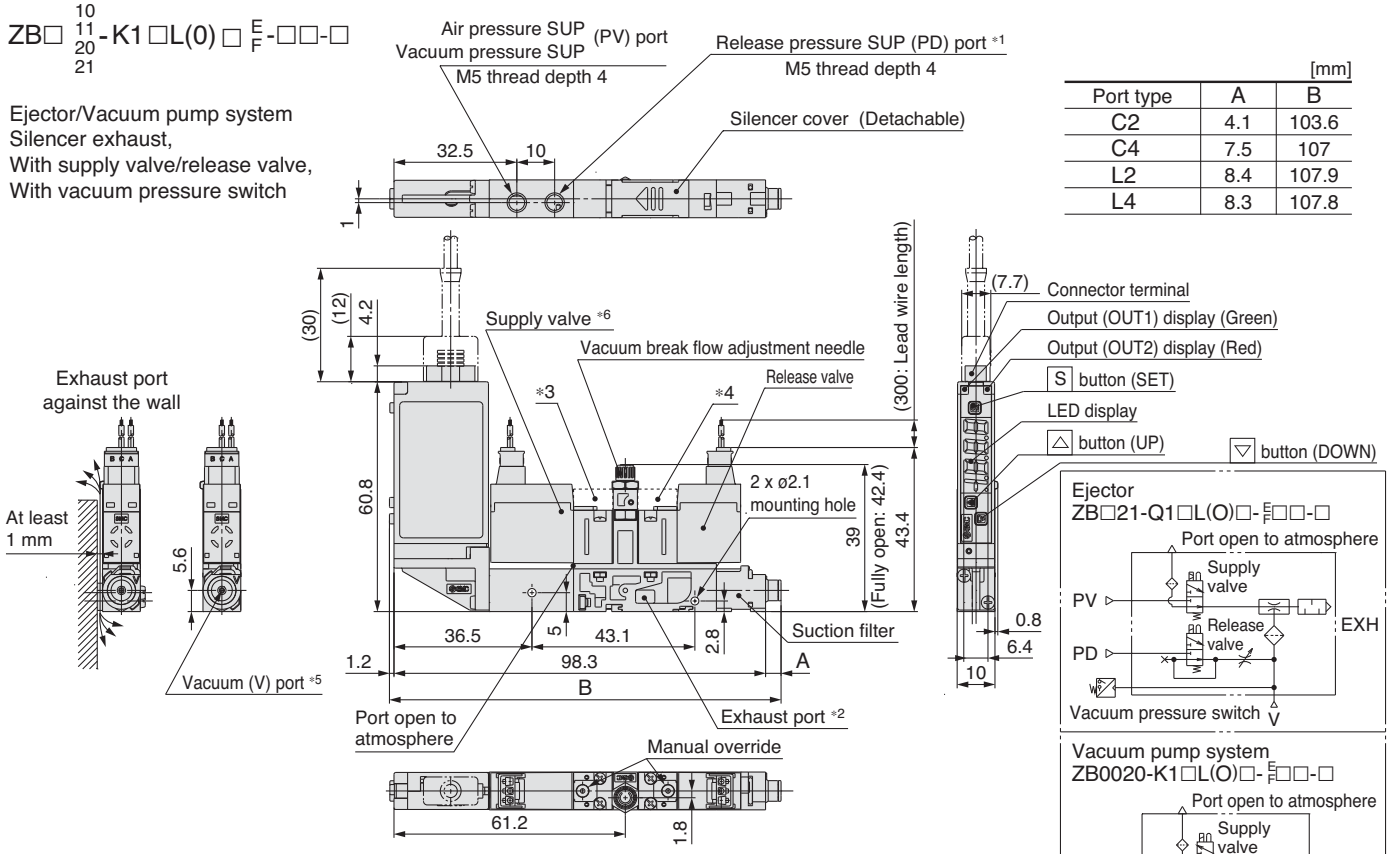



Vacuum

## Dimensions

### ZB□ 10/11/20/21 - K1 □L(0) □ E/F -□□-□

Ejector/Vacuum pump system
Silencer exhaust,
With supply valve/release valve,
With vacuum pressure switch



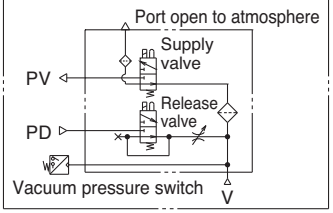

[mm]

| Port type | A | B |
|---|---|---|
| C2 | 4.1 | 103.6 |
| C4 | 7.5 | 107 |
| L2 | 8.4 | 107.9 |
| L4 | 8.3 | 107.8 |

**Ejector**
**ZB□21-Q1□L(O)□- E/F □□-□**




**Vacuum pump system**
**ZB0020-K1□L(O)□- E/F □□-□**




### ZZB□- 01/M5 □

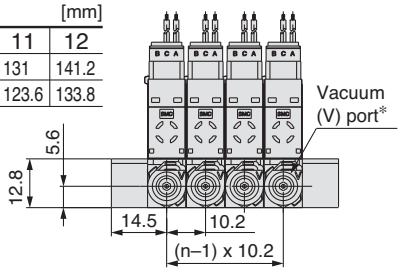
### *ZB□31-K1□ L(O)/M(O) □-□

Ejector
Silencer exhaust,
With supply valve/release valve,
Without sensor/switch,
PV, PD common port (PV = PD)

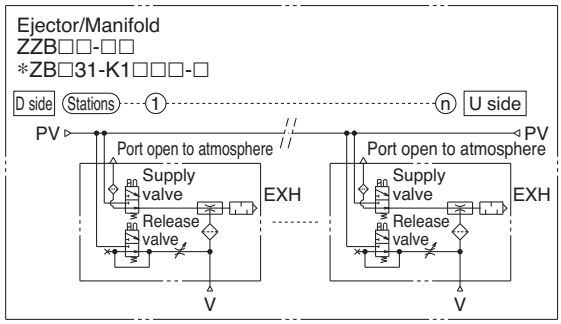
[mm]

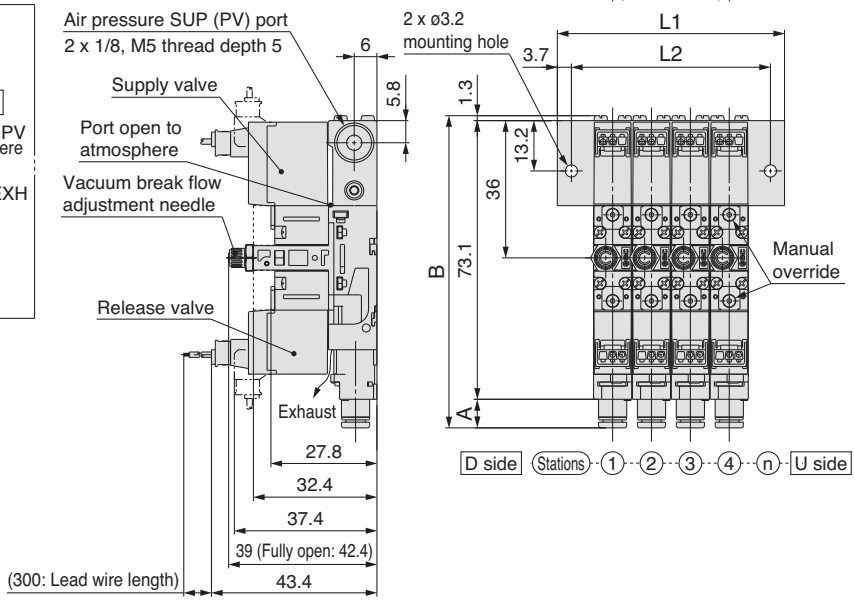
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 29 | 39.2 | 49.4 | 59.6 | 69.8 | 80 | 90.2 | 100.4 | 110.6 | 120.8 | 131 | 141.2 |
| L2 | 21.6 | 31.8 | 42 | 52.2 | 62.4 | 72.6 | 82.8 | 93 | 103.2 | 113.4 | 123.6 | 133.8 |

* Refer to page 14 for the dimensions for the various vacuum (V) ports.




**Ejector/Manifold**
**ZZB□□-□□**
***ZB□31-K1□□□-□**




[mm]

| Port type | A | B |
|---|---|---|
| C2 | 4.1 | 78.5 |
| C4 | 7.5 | 81.9 |
| L2 | 8.4 | 82.8 |
| L4 | 8.3 | 82.7 |

## Dimensions

### ZZB□-S $^{01\square}_{M5}$ M5

### *ZB□3$^{0}_{1}$-K1□L(O)□-P$^{1}_{3}$-□

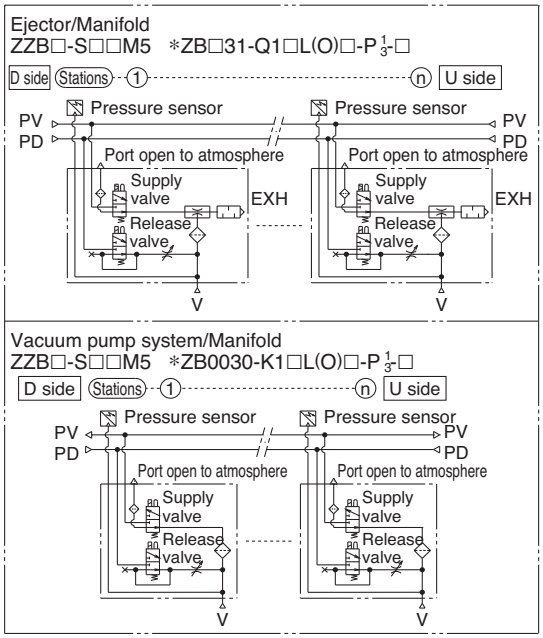
Ejector/Vacuum pump system
Silencer exhaust, With supply valve/release valve,
With pressure sensor, PV, PD individual port (PV PD)

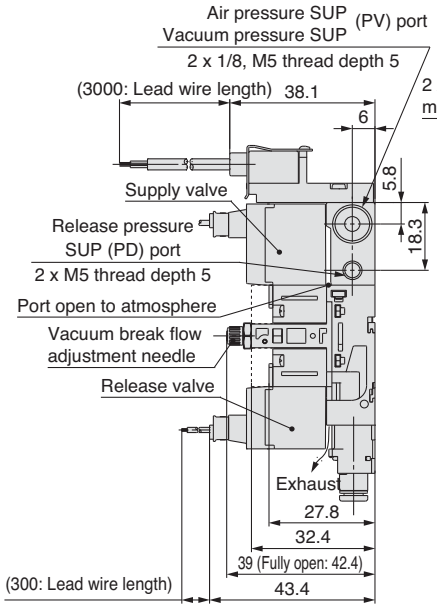
[mm]

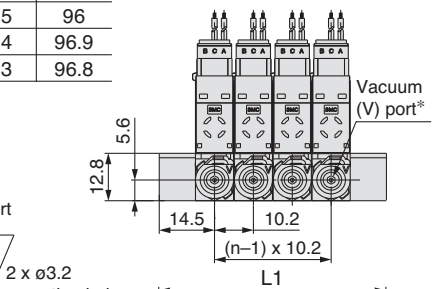
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 29 | 39.2 | 49.4 | 59.6 | 69.8 | 80 | 90.2 | 100.4 | 110.6 | 120.8 | 131 | 141.2 |
| L2 | 21.6 | 31.8 | 42 | 52.2 | 62.4 | 72.6 | 82.8 | 93 | 103.2 | 113.4 | 123.6 | 133.8 |

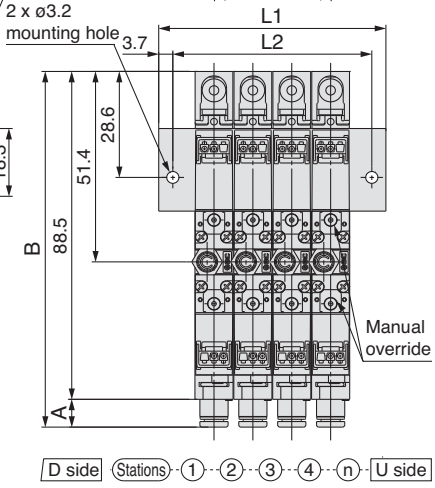
[mm]

| Port type | A | B |
|---|---|---|
| C2 | 4.1 | 92.6 |
| C4 | 7.5 | 96 |
| L2 | 8.4 | 96.9 |
| L4 | 8.3 | 96.8 |



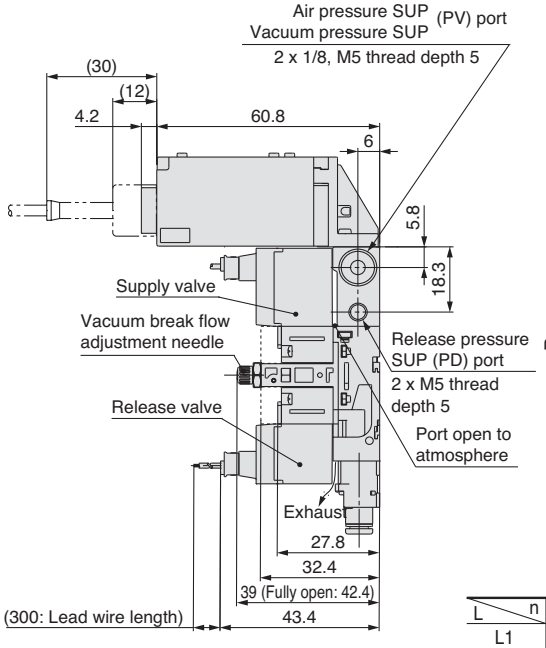



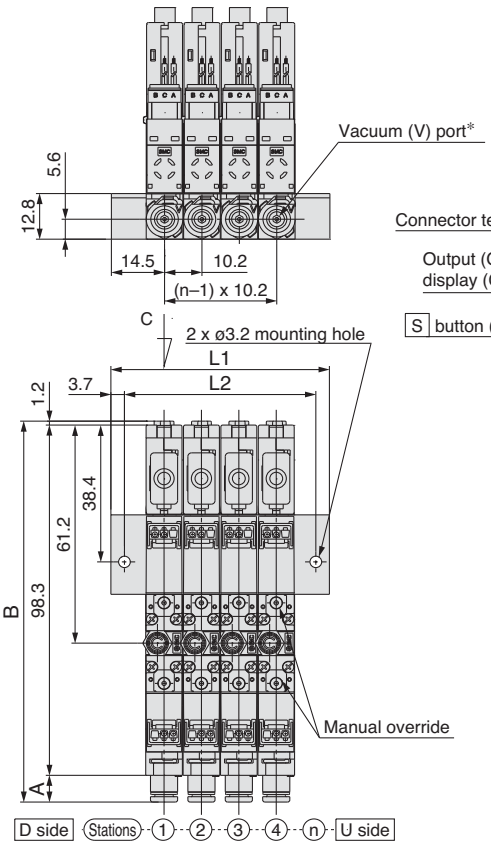



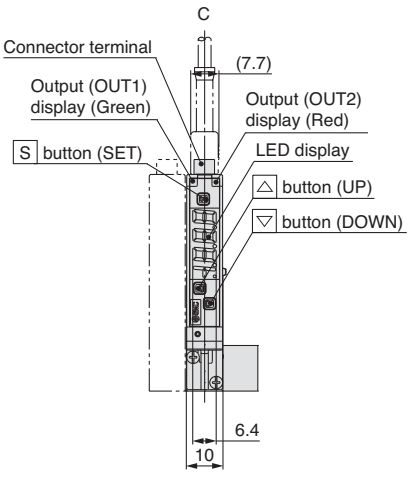

### ZZB□-S $^{01\square}_{M5}$ M5

### *ZB□3$^{0}_{1}$-K1□L(O)□-$^{E}_{F}$□□-□

Ejector/Vacuum pump system
Silencer exhaust,
With supply valve/release valve,
With vacuum pressure switch,
PV, PD individual port (PV PD)




[mm]

| Port type | A | B |
|---|---|---|
| C2 | 4.1 | 103.6 |
| C4 | 7.5 | 107 |
| L2 | 8.4 | 107.9 |
| L4 | 8.3 | 107.8 |

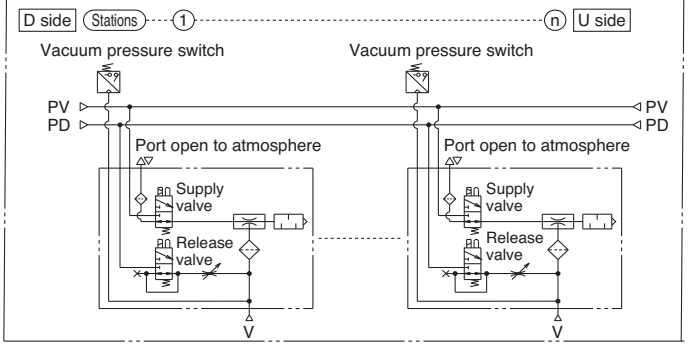
[mm]

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 29 | 39.2 | 49.4 | 59.6 | 69.8 | 80 | 90.2 | 100.4 | 110.6 | 120.8 | 131 | 141.2 |
| L2 | 21.6 | 31.8 | 42 | 52.2 | 62.4 | 72.6 | 82.8 | 93 | 103.2 | 113.4 | 123.6 | 133.8 |

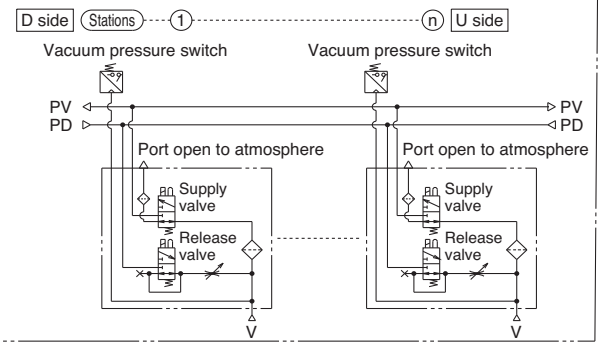
For more product options and details see our specific catalogues or on-line information.

## Dimensions

Ejector/Manifold
ZZB□-S□□M5
∗ZB□31-K1□L(O)□-$^{E}_{F}$□□-□

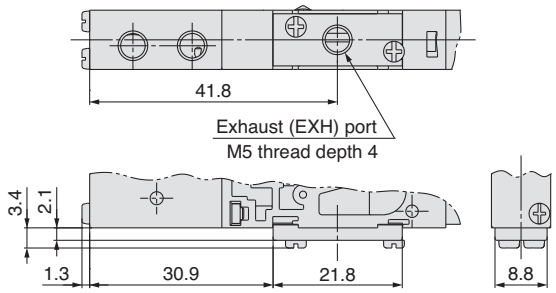



Vacuum pump system/Manifold
ZZB□-S□□M5
∗ZB0030-K1□L(O)□-$^{E}_{F}$□□-□




### Common dimensions of the individual EXH port

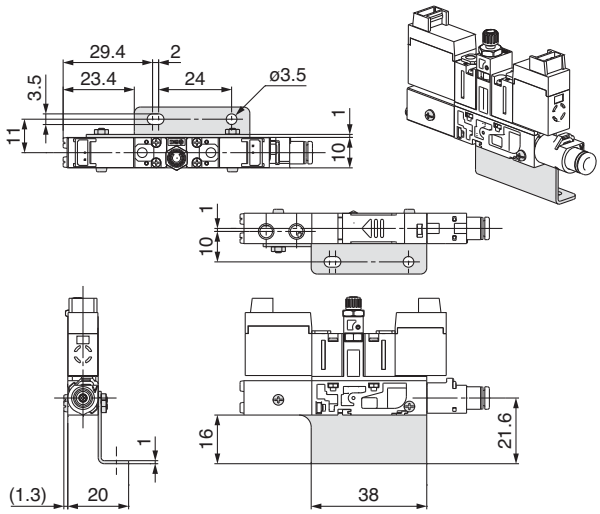
ZB□$^{1}_{3}$$^{}_{2}$2-□



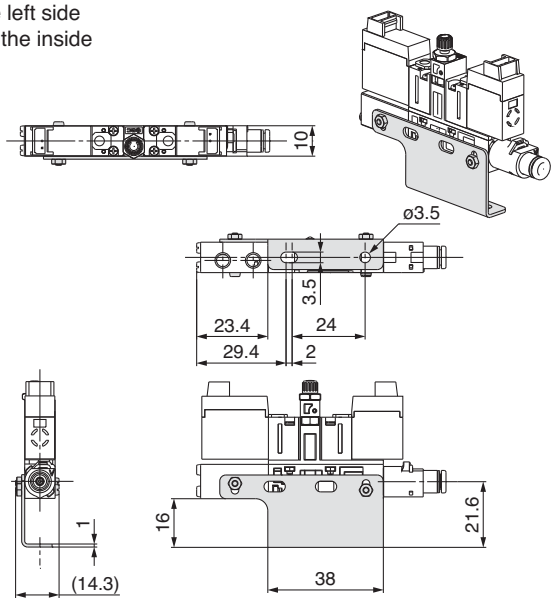

### Bracket mounting dimensions for single unit

Bracket part number for single unit: ZB1-BK1-A
∗ Mounting screw (M2 x 14, with washer) 2 pcs., M2 nut 2 pcs. included

Mounting the right side of the unit to the outside



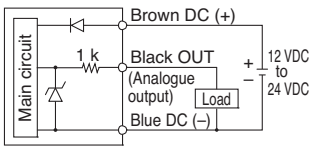

Mounting the left side of the unit to the inside




## Wiring

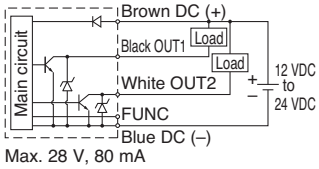
∗ The FUNC terminal is connected when using the copy function. (Refer to the Operation Manual.)

Pressure Sensor
ZB1-PS□-A



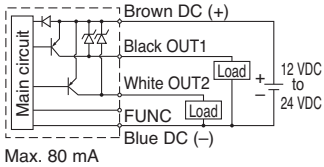

Voltage output type: 1 to 5 V
Output impedance: Approx. 1 k

Vacuum Pressure Switch
ZB1-ZS□A□□-A
NPN (2 outputs)




Max. 28 V, 80 mA
Residual voltage: 2 V or less

ZB1-ZS□B□□-A
PNP (2 outputs)




Max. 80 mA
Residual voltage: 2 V or less

# Vacuum Pad
# Series ZP2

## Features

- Range of diameter from 0.8mm to 340mm plus ellictical pads.
- Wide range of pad shapes and materials.
- Solid stem or buffer, to cater for varying workplace heights, can be selected.
- Rigid pad attachment or ball joint types.

## How to Order - Spare Pads

ZP2 – 04 U N

- 04: Pad diameter
- U: Pad type
- N: Pad material

Note) Refer to table below for pad type-pad diameter combinations

| Symbol | Material |
|---|---|
| N | NBR |
| S | Silicone rubber |
| U | Urethane rubber Note 1) |
| F | FKM |
| GN | Conductive NBR |
| GS | Conductive silicone rubber |
| GC | Conductive CR Note 2) |

Note 1) Not available for MT pad type
Note 2) Only available for S pad type

Table) Pad type - Pad diameter

○ Normal Pad
● Blast type pad: Add "B" before symbol

| Pad type \ Pad diameter ø | 0.8 | 1.1 | 2 | 3 | 3.5 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 15 | 16 | 18 | 20 | 25 | 30 | 40 | 46 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Symbol | 08 | 11 | 02 | 03 | 035 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 13 | 14 | 15 | 16 | 18 | 20 | 25 | 30 | 40 | 46 |
| U Flat | – | – | – | ○ | – | ● | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| C Flat with rib | – | – | – | – | – | – | – | ● | ○ | ● | – | – | – | – | – | – | – | – | – | – | – | – | – |
| UT Thin flat | – | – | – | – | – | – | ○ | ○ | – | – | – | – | ○ | – | ○ | – | – | ○ | ○ | – | – | – | – |
| B Bellows | – | – | – | – | – | – | – | ● | – | ● | – | – | – | – | – | – | – | – | – | – | – | – | – |
| MT Thin flat (with groove) | – | – | – | – | – | – | – | – | – | – | – | ● | – | – | – | ● | – | – | ● | ● | ● | – | – |
| MU Flat, short type | – | – | ● | – | ● | ● | ● | ● | – | ● | – | ● | – | – | – | ● | – | – | – | – | – | – | – |
| EU Flat | – | – | ● | – | – | – | – | – | – | ○ | – | – | – | – | – | ○ | – | – | – | – | – | – | – |
| AU Flat | – | – | ○ | ○ | – | ○ | – | ○ | – | ● | – | – | – | – | – | – | – | – | – | – | – | – | – |
| J Bellows (multistage type) | – | – | – | – | – | – | – | – | – | – | – | ● | – | – | – | ● | – | – | – | ● | ● | – | – |
| MB Bellows | – | – | – | – | – | ● | – | ● | – | ● | – | ● | – | – | – | ● | – | – | ● | – | – | – | – |
| ZJ Bellows | – | – | ○ | – | – | ○ | ○ | ○ | – | – | – | – | – | – | – | – | – | – | – | – | – | ○ | ○ |
| AN Nozzle Pad | ○ | ○ | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| S Sponge | – | – | – | – | – | ○ | – | ○ | – | ○ | – | ○ | – | – | – | – | ○ | – | – | – | – | – | – |

## Related Products

**Series V100** - 3 Port Valve - page 353
**Series ZL** - One-stage Ejector - page 1360
**Series ZB** - Modular Ejector - page 1380
**Series IRV** - Vacuum Regulator - www.smc.eu
**Series ITV209** - Electronic Vacuum Regulator - page 1119
**Series ZFZ** - Air Suction Filter - www.smc.eu
**Series ZP2** - Vacuum Pad - page 1414
**Series GZ** - Pressure Gauge for Vacuum - www.smc.eu
**Series PFM** - Flow Switch - page 1298
**Series ZSE40A(F)/ISE40A** - Vacuum Switch - page 1283
**Series AC** - Air Preparation - page 1076
**Series TU** - Tubing - page 1223
**Series KQB2** - Fitting - page 1212

## How to Order

ZP2 – 3507 W N

Pad size

| Symbol | Size | Symbol | Size |
|---|---|---|---|
| 3507 | 3.5 x 7 | 6020 | 6 x 20 |
| 4010 | 4 x 10 | 8020 | 8 x 20 |
| 5010 | 5 x 10 | 4030 | 4 x 30 |
| 6010 | 6 x 10 | 5030 | 5 x 30 |
| 4020 | 4 x 20 | 6030 | 6 x 30 |
| 5020 | 5 x 20 | 8030 | 8 x 30 |

Pad type

| Symbol | Type |
|---|---|
| W | Oval |

Pad material

| Symbol | Material |
|---|---|
| N | NBR |
| S | Silicone rubber |
| U | Urethane rubber |
| F | FKM |
| GN | Conductive NBR |
| GS | Conductive silicone rubber |

## How to Order - Heavy Duty Pads

ZP2 – 32 H N

Pad diameter

Pad type

Note) Refer to table below for pad type-pad diameter combinations

Pad material

| Symbol | Material |
|---|---|
| N | NBR |
| S | Silicone rubber Note 1) |
| F | FKM |
| C | CR |
| U | Urethane rubber Note 2) |
| E | EPR Note 2) |

Note 1) Silicone rubber is only applicable to the ø32 pad.
Note 2) Only applicable to H, HB, sizes 40, 50, 63, 80, 100, 125

Table) Pad type - Pad diameter

| Pad type \ Pad size / Symbol | ø32 | ø40 | ø50 | ø63 | ø80 | ø100 | ø125 | ø150 | ø250 | ø300 | ø340 | 30x50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 150 | 250 | 300 | 340 | 3050 |
| H Flat with rib | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | – | ○ | ○ | – |
| HT Thin flat with rib | – | – | – | – | – | – | – | ○ | ○ | – | – | – |
| HB Heavy-duty (bellows) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | – | – | – |
| HW Heavy-duty (oval) | – | – | – | – | – | – | – | – | – | – | – | ○ |

## How to Order - Pad with Ball Spline Buffer

ZP2 – T □ U N – S 6

Vacuum inlet direction

| Symbol | Direction |
|---|---|
| T | Vertical |

Pad diameter

| Symbol | Pad diameter |
|---|---|
| 02 | ø2 |
| 04 | ø4 |
| 06 | ø6 |
| 08 | ø8 |

Pad type

| Symbol | Type |
|---|---|
| U | Flat |

Pad material

| Symbol | Material |
|---|---|
| N | NBR |
| S | Silicone rubber |
| U | Urethane rubber |
| F | FKM |
| GN | Conductive NBR |
| GS | Conductive silicone rubber |

Buffer specification

| Symbol | Specification |
|---|---|
| S | Ball spline |

Buffer stroke

| Symbol | Stroke |
|---|---|
| 6 | 6 mm |

## How to Order - Mark-free Pads

ZP2 – 04 U CL

Pad diameter

| Symbol | Pad diameter |
|---|---|
| 04 | ø4 |
| 06 | ø6 |
| 08 | ø8 |
| 10 | ø10 |
| 16 | ø16 |
| 25 | ø25 |
| 32 | ø32 |
| 40 | ø40 |
| 50 | ø50 |
| 63 | ø63 |
| 80 | ø80 |
| 100 | ø100 |
| 125 | ø125 |

Pad type

| Symbol | Type |
|---|---|
| U | Flat |

Pad material

| Symbol | Material |
|---|---|
| CL | Mark-free NBR |
| NT | NBR + Stude fluororesin Note) |
| FT | Fluororubber + Stude fluororesin Note) |

Note) Not applicable to pad diameters ø4 to ø32

## How to Order - Resin Attachment

ZP2 – 06 K P

Pad diameter

| Symbol | Pad diameter |
|---|---|
| 06 | ZP06B□ |
| 08 | ZP08B□ |
| 10 | ZP10B□ |
| 13 | ZP13B□ |
| 16 | ZP16B□ |
| 20 | ZP20B□ |
| 25 | ZP25B□ |
| 32 | ZP32B□ |

Attachment material

| Symbol | Material |
|---|---|
| P | PEEK |
| GP | Conductive PEEK |

## How to Order - Pads for Transfering Disks

ZP2 – Z1 – 001 – S

Pad material

| Symbol | Material |
|---|---|
| S | Silicone rubber |
| GS | Urethane rubber |

## Specifications

Pad Material and Characteristics

◎: Little or no influence ○: Can be used depending on conditions X: Not suitable

| Material \ Characteristics | Durometer HS (±5°) | Operating temperature range [°C] | Oil resistance gasoline | Oil resistance benzol | Base resistance | Acid resistance | Weatherability | Ozone resistance | Abrasion resistance | Waterproof | Solvent resistance (Benzene, toluene) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NBR | 50° | 0 to 120 | ◎ | X | ○ | ○ | X | X | ◎ | ○ | X |
| Silicon rubber | 40° | –30 to 200 | X | X | ○ | X | ◎ | ◎ | X | ○ | X |
| Urethane rubber | 60° | 0 to 60 | ◎ | X | X | X | ○ | ◎ | ◎ | X | X |
| Fluoro rubber | 60° | 0 to 250 | ◎ | ◎ | X | ◎ | ◎ | ◎ | ○ | ◎ | ◎ |
| Conductive NBR | 50° | 0 to 100 | ○ | X | ○ | X | ○ | X | ○ | ○ | X |
| Conductive silicon rubber | 50° | –10 to 200 | X | X | ○ | X | ◎ | ◎ | X | ○ | X |

* The above table covers only general characteristics of subject rubber materials. Pad materials used by SMC pass the JIS standards; however the actual performance depends on operating conditions.

For more product options and details see our specific catalogues or on-line information.

## How to Order

ZP2 – T | B10 | MT | N | – H5

**Vacuum inlet direction**

| Symbol | Direction |
|---|---|
| T | Vertical |

**Pad diameter**

Note) Refer to table below for pad type-pad diameter combinations

**Pad type**

| Symbol | Type |
|---|---|
| MT | Thin flat (With groove) |
| MU | Flat |
| EU | Flat |
| MB | Bellows |
| AN | Nozzle |
| S | Sponge |

**Pad material**

| Symbol | Material |
|---|---|
| N | NBR |
| S | Silicone rubber |
| U | Urethane rubber Note 1) |
| F | FKM |
| GN | Conductive NBR |
| GS | Conductive silicone rubber |
| GC | Conductive CR Note 2) |

Note 1) Not available for MT pad type
Note 2) Only available for S pad type
Note 3) Pad type S only available with pad materials GS and GC

**Mounting**

| Symbol | Thread size | Applicable Series |
|---|---|---|
| A3 | M3x0.5 male thread | MU (ø2 to ø5), MB (ø4), S (ø4) |
| A5 | M5x0.8 male thread | B, AN, S (ø6 to ø15) |
| B3 | M3x0.5 famale thread | S (ø4) |
| B5 | M5x0.8 famale thread | MT (ø10 to ø15), MU (ø6 to ø15), MB (ø6 to ø8), S (ø6 to ø15) |
| H5 | M5x0.8 male thread | MT, EU, MU (ø6 to ø15), MB (ø6 to ø15) |

Table) Pad type - Pad diameter

○ Normal Pad
● Blast type pad: Add "B" before symbol

| Pad type \ Pad diameter ø | 0.8 | 1.1 | 2 | 3 | 3.5 | 4 | 5 | 6 | 8 | 10 | 15 | 20 | 25 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Symbol | 08 | 11 | 02 | 03 | 035 | 04 | 05 | 06 | 08 | 10 | 15 | 20 | 25 | 30 |
| MT Thin flat (with groove) | – | – | – | – | – | – | – | – | – | ● | ● | ● | ● | ● |
| MU Flat | – | – | ● | – | ● | ● | ● | ● | ● | ● | ● | – | – | – |
| EU Flat | – | – | ● | – | – | ● | – | ● | ○ | – | ○ | – | – | – |
| MB Bellows | – | – | – | – | – | ● | – | ● | ● | ● | ● | ● | – | – |
| AN Nozzle Pad | ○ | ○ | – | – | – | – | – | – | – | – | – | – | – | – |
| S Sponge | – | – | – | – | – | ○ | – | ○ | ○ | ○ | ○ | – | – | – |

## How to Order - Oval Pads

ZP2 – T | 3507 | W | N | – B5

**Vacuum inlet direction**

| Symbol | Direction |
|---|---|
| T | Vertical |

**Pad size**

| Symbol | Size | Symbol | Size |
|---|---|---|---|
| 3507 | 3.5 x 7 | 6020 | 6 x 20 |
| 4010 | 4 x 10 | 8020 | 8 x 20 |
| 5010 | 5 x 10 | 4030 | 4 x 30 |
| 6010 | 6 x 10 | 5030 | 5 x 30 |
| 4020 | 4 x 20 | 6030 | 6 x 30 |
| 5020 | 5 x 20 | 8030 | 8 x 30 |

**Pad type**

| Symbol | Type |
|---|---|
| W | Oval |

**Pad material**

| Symbol | Material |
|---|---|
| N | NBR |
| S | Silicone rubber |
| U | Urethane rubber |
| F | FKM |
| GN | Conductive NBR |
| GS | Conductive silicone rubber |

**Vacuum inlet**

| Symbol | Thread size |
|---|---|
| B5 | M5 x 0.8 |

## How to Order - Heavy Duty Pads

ZP2 – T | F | 40 | H | N

**Vacuum inlet direction**

| Symbol | Direction |
|---|---|
| T | Vertical |
| X | Lateral |

**Specification (mechanism)**

| Symbol | Specification |
|---|---|
| F | Ball joint |

**Pad diameter**

| Symbol | Pad diameter |
|---|---|
| 40 | ø40 |
| 50 | ø50 |
| 63 | ø63 |
| 80 | ø80 |
| 100 | ø100 |
| 125 | ø125 |

**Pad type**

| Symbol | Type |
|---|---|
| H | Heavy-duty (Flat with rib) |
| HB | Heavy-duty (bellows) |

**Pad material**

| Symbol | Material |
|---|---|
| N | NBR |
| S | Silicone rubber |
| U | Urethane rubber |
| F | FKM |
| E | EPR |

## How to Order - Oval Pads

**ZP2 – T 3507 W N K 10 – B5**

Vacuum inlet direction

| Symbol | Direction |
|---|---|
| T | Vertical |
| R | Lateral |

Pad size

| Symbol | Size | Symbol | Size |
|---|---|---|---|
| 3507 | 3.5 x 7 | 6020 | 6 x 20 |
| 4010 | 4 x 10 | 8020 | 8 x 20 |
| 5010 | 5 x 10 | 4030 | 4 x 30 |
| 6010 | 6 x 10 | 5030 | 5 x 30 |
| 4020 | 4 x 20 | 6030 | 6 x 30 |
| 5020 | 5 x 20 | 8030 | 8 x 30 |

Pad type

| Symbol | Type |
|---|---|
| W | Oval |

Pad material

| Symbol | Material |
|---|---|
| N | NBR |
| S | Silicone rubber |
| U | Urethane rubber |
| F | FKM |
| GN | Conductive NBR |
| GS | Conductive silicone rubber |

Buffer specification

| Symbol | Specification |
|---|---|
| K | Non-rotating |

Buffer stroke

| Symbol | Stroke |
|---|---|
| 10 | 10 mm |
| 20 | 20 mm |
| 30 | 30 mm |
| 40 | 40 mm |
| 50 | 50 mm |

Vacuum inlet

| Symbol | Applicable tube O.D. |
|---|---|
| B5 | M5 x 0.8 Note) |
| 04 | ø4 one-touch fitting |
| 06 | ø6 one-touch fitting |

Note) Only applicable to vertical vacuum inlet direction.

**ZP2 – T F 40 H N JB 25**

Vacuum inlet direction

| Symbol | Direction |
|---|---|
| T | Vertical |
| X | Lateral |

Specification (mechanism)

| Symbol | Specification |
|---|---|
| | Ball joint |

Pad diameter

| Symbol | Pad diameter |
|---|---|
| 40 | ø40 |
| 50 | ø50 |
| 63 | ø63 |
| 80 | ø80 |
| 100 | ø100 |
| 125 | ø125 |

Pad type

| Symbol | Type |
|---|---|
| H | Heavy-duty (Flat with rib) |
| HB | Heavy-duty (bellows) |

Pad material

| Symbol | Material |
|---|---|
| N | NBR |
| S | Silicone rubber |
| U | Urethane rubber |
| F | FKM |
| E | EPR |

Buffer specification

| Symbol | Specification |
|---|---|
| JB | Rotating<br>With bushing<br>Material: Brass |
| JF | Rotating<br>With bushing<br>Material: Steel |

Buffer stroke

| Stroke \ Applicable ø | 40<br>50 | 63<br>80 | 100<br>125 |
|---|---|---|---|
| 25 | ● | ● | ● |
| 50 | ● | ● | ● |
| 75 | ● | ● | ● |
| 100 | – | ● | ● |

**ZP2 – R 3507 W N – 04 – A5**

Vacuum inlet direction

| Symbol | Direction |
|---|---|
| R | Lateral |

Pad size

| Symbol | Size |
|---|---|
| 3507 | 3.5 x 7 |
| 4010 | 4 x 10 |
| 5010 | 5 x 10 |
| 6010 | 6 x 10 |
| 4020 | 4 x 20 |
| 5020 | 5 x 20 |
| 6020 | 6 x 20 |
| 8020 | 8 x 20 |
| 4030 | 4 x 30 |
| 5030 | 5 x 30 |
| 6030 | 6 x 30 |
| 8030 | 8 x 30 |

Pad type

| Symbol | Type |
|---|---|
| W | Oval |

Pad material

| Symbol | Material |
|---|---|
| N | NBR |
| S | Silicone rubber |
| U | Urethane rubber |
| F | FKM |
| GN | Conductive NBR |
| GS | Conductive silicone rubber |

Vacuum inlet

| Symbol | Applicable tube O.D. |
|---|---|
| 04 | ø4 |
| 06 | ø6 |

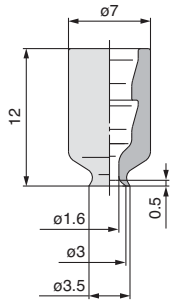
Mounting

| Symbol | Thread size |
|---|---|
| A5 | M5 x 0.8 (Male thread) |
| B5 | M5 x 0.8 (Female thread) |

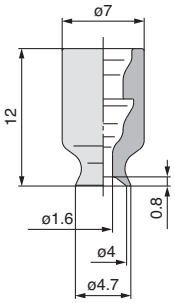
## Dimensions

### Compact Pad

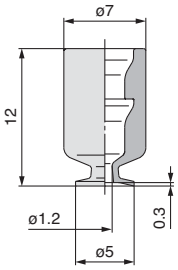
ZP2-03U□



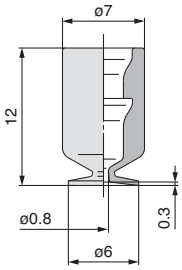

ZP2-B04U□



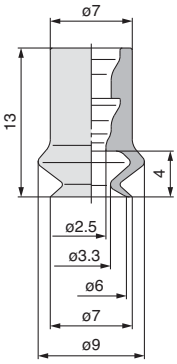

ZP2-05UT□



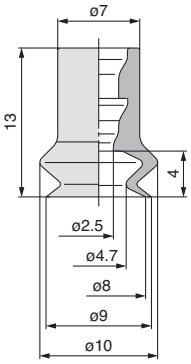

ZP2-06UT□



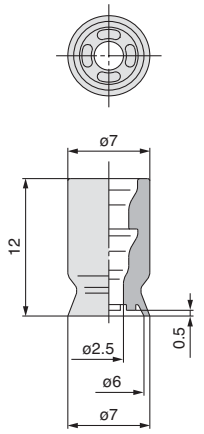

ZP2-B06B□



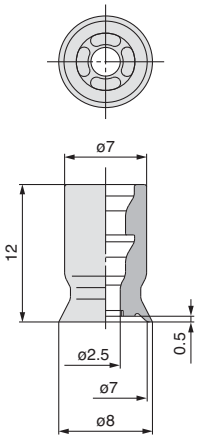

ZP2-B08B□



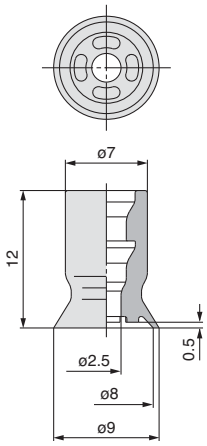

ZP2-B06C□




ZP2-07C□

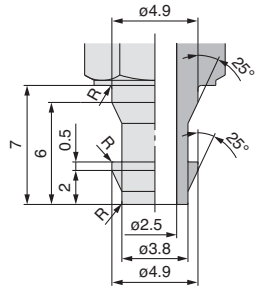



ZP2-B08C□




**Adapter Mounting Dimensions**

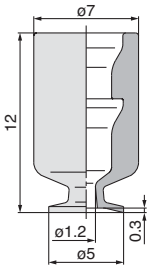
If an adapter is made by the customer, design the adapter with the dimensions shown below.



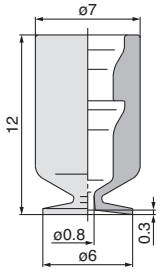

Note) R part has to be smooth with no corners.

### Thin Flat Pad

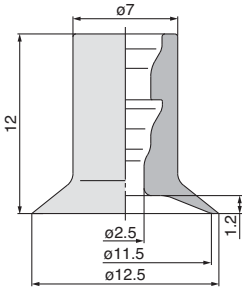
ZP2-05UT□



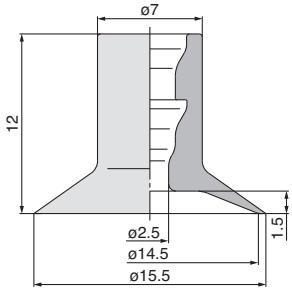

ZP2-06UT□



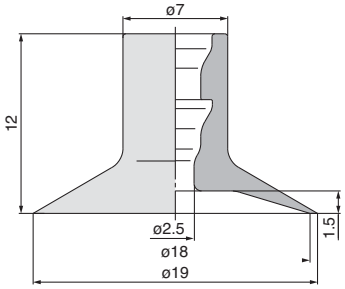

ZP2-11UT□



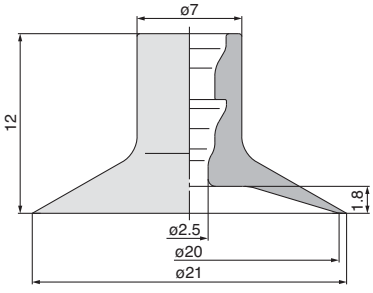

ZP2-14UT□




ZP2-18UT□

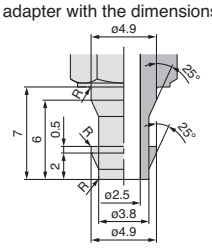



ZP2-20UT□




**Adapter Mounting Dimensions**

If an adapter is made by the customer, design the adapter with the dimensions shown below.




Note) R part has to be smooth with no corners.

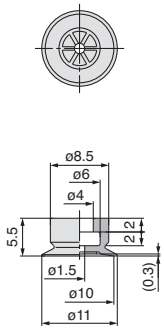
Vacuum

## Dimensions

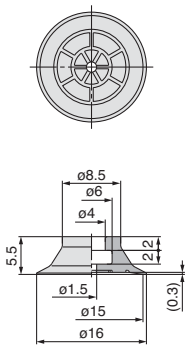
### Flat Pad

Dimensions: Pad Unit

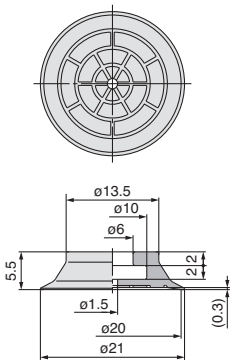
ZP2-B10MT□



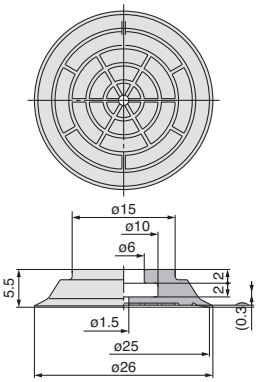

ZP2-B15MT□



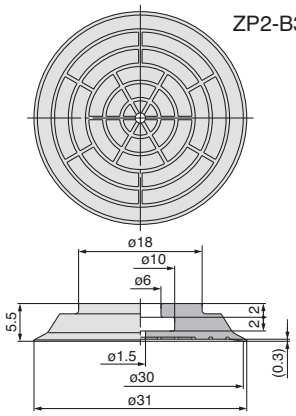

ZP2-B20MT□




ZP2-B25MT□



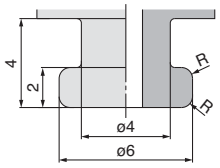

ZP2-B30MT□



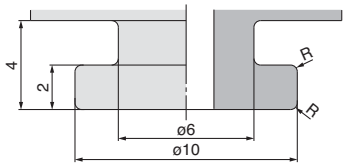

**Adapter Mounting Dimensions**

If an adapter made by the customer, design the adapter with the dimensions shown below.

Applicable pad
B10MT/B15MT



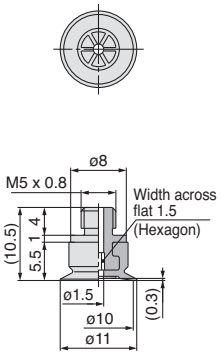

Applicable pad
B20MT/B25MT/B30MT



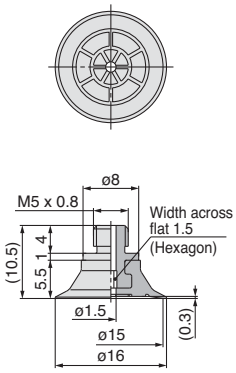

Note) R part has to be smooth with no corners.

Dimensions: With Adapter

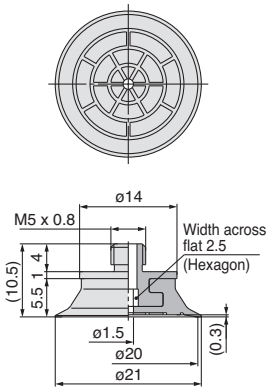
ZP2-TB10MT□-H5



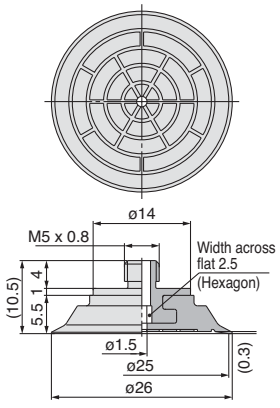

ZP2-TB15MT□-H5



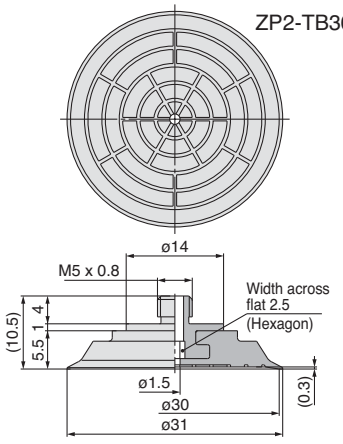

ZP2-TB20MT□-H5



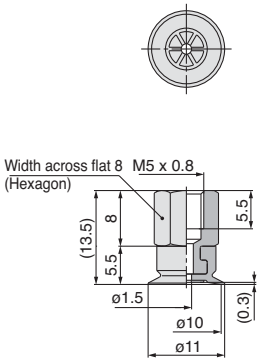

ZP2-TB25MT□-H5



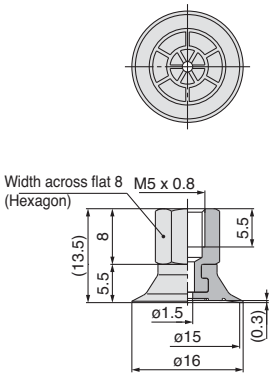

ZP2-TB30MT□-H5




ZP2-TB10MT□-B5




ZP2-TB15MT□-B5



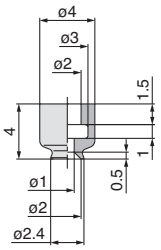

For more product options and details see our specific catalogues or on-line information.

## Dimensions

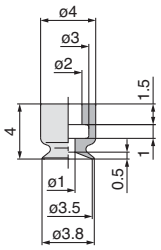
### Short-type Pad

Dimensions: Pad Unit

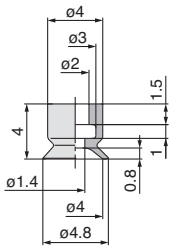
ZP2-B02MU□



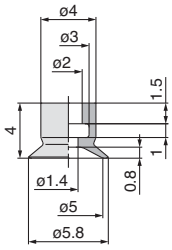

ZP2-B035MU□



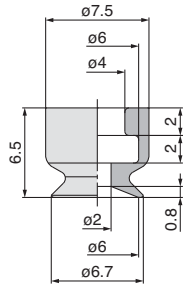

ZP2-B04MU□



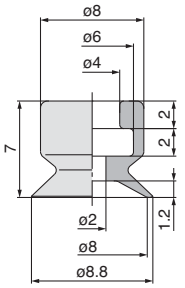

ZP2-B05MU□



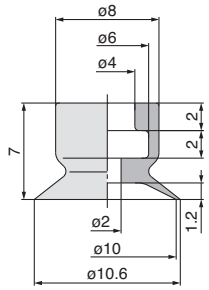

ZP2-B06MU□



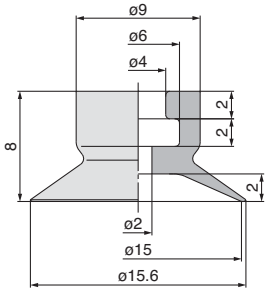

ZP2-B08MU□




ZP2-B10MU□



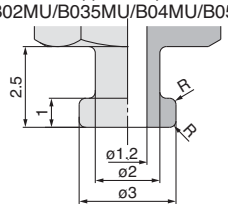

ZP2-B15MU□



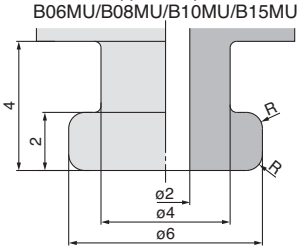

**Adapter Mounting Dimensions**

If an adapter is made by the customer, design the adapter with the dimensions shown below.

Applicable pad
B02MU/B035MU/B04MU/B05MU



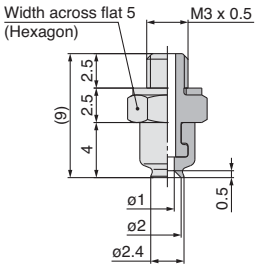

Applicable pad
B06MU/B08MU/B10MU/B15MU



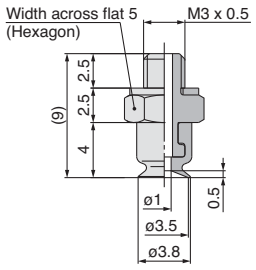

Note) R part has to be smooth with no corners.

Dimensions: With Adapter

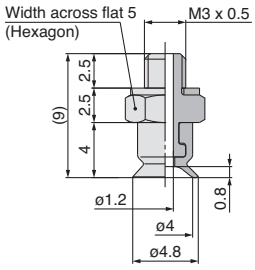
ZP2-TB02MU□-A3



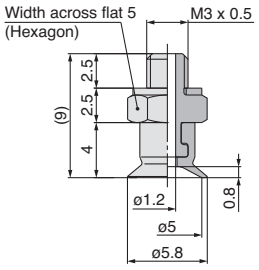

ZP2-TB035MU□-A3



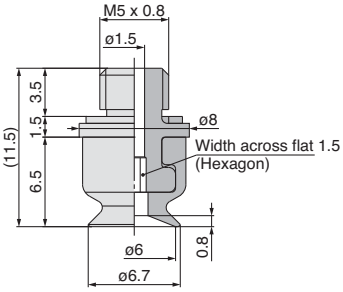

ZP2-TB04MU□-A3



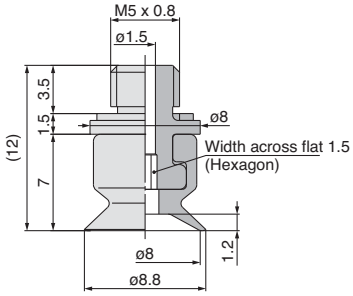

ZP2-TB05MU□-A3




ZP2-TB06MU□-H5



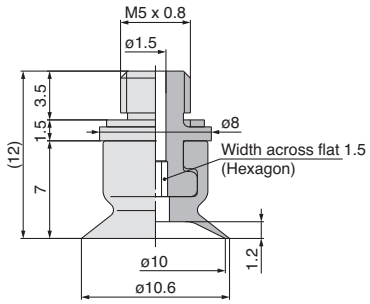

ZP2-TB08MU□-H5



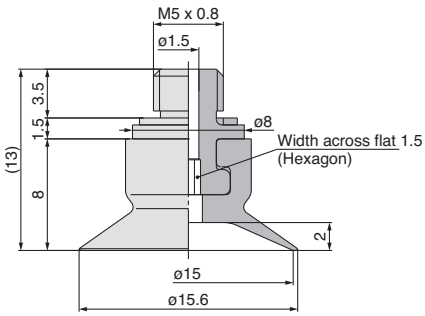
## Dimensions

Dimensions: With Adapter

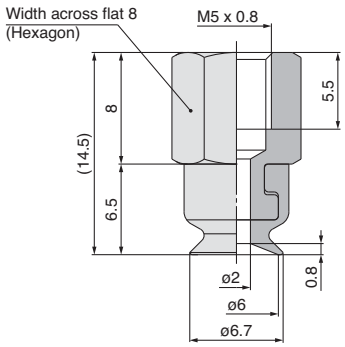
ZP2-TB10MU□-H5



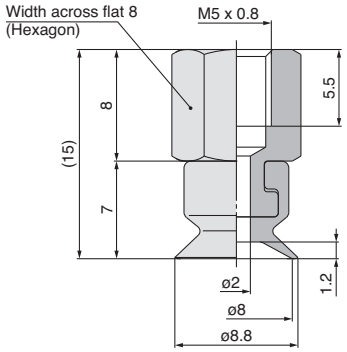

ZP2-TB15MU□-H5



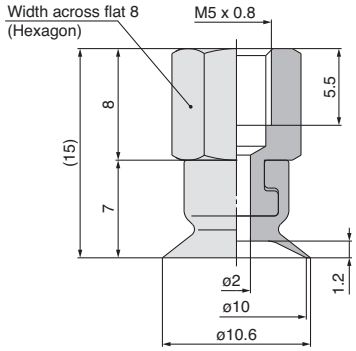

ZP2-TB06MU□-B5



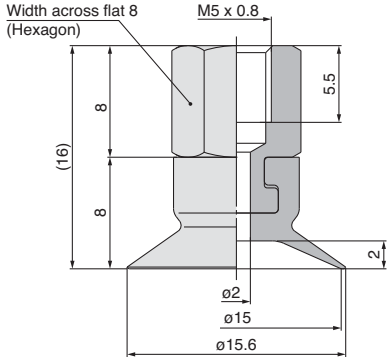

ZP2-TB08MU□-B5




ZP2-TB10MU□-B5

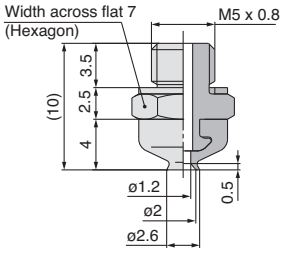



ZP2-TB15MU□-B5

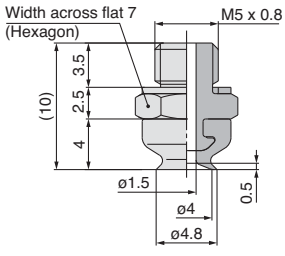



Dimensions: With Adapter

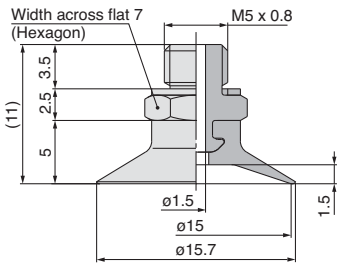
ZP2-TB02EU□-A5



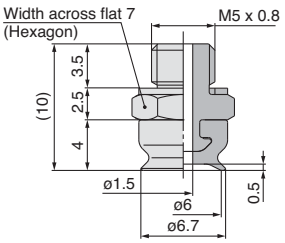

ZP2-TB04EU□-A5



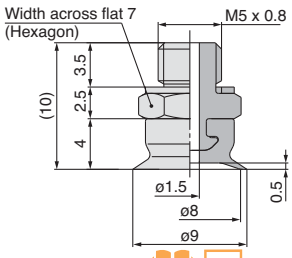

ZP2-T15EU□-A5




ZP2-TB06EU□-A5




ZP2-T08EU□-A5

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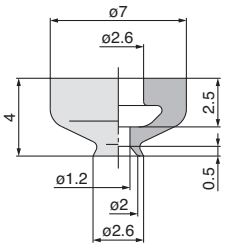
Vacuum

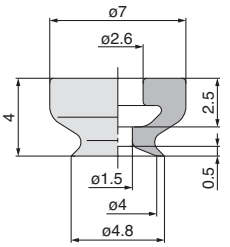
## Dimensions

Dimensions: Pad Unit

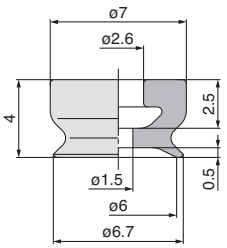
ZP2-B02EU□



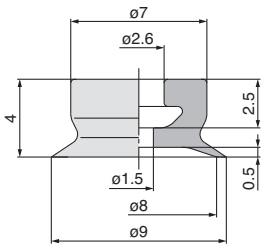

ZP2-B04EU□



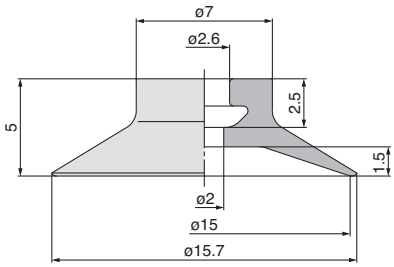

ZP2-B06EU□




ZP2-08EU□

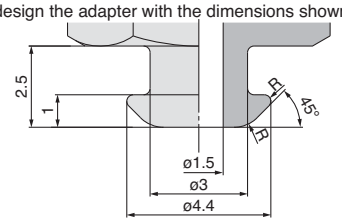



ZP2-15EU□




**Adapter Mounting Dimensions**

If an adapter is made by the customer, design the adapter with the dimensions shown below.

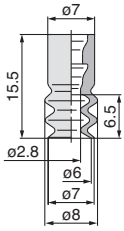



Note) R part has to be smooth with no corners.

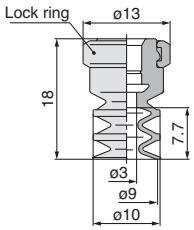
## Bellows Pad

Dimensions: Pad Unit

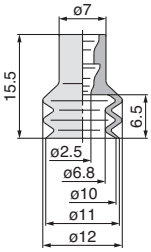
ZP2-06J□



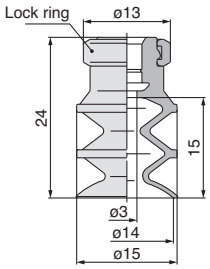

ZP2-09J□



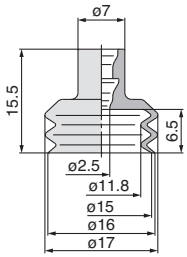

ZP2-B10J□



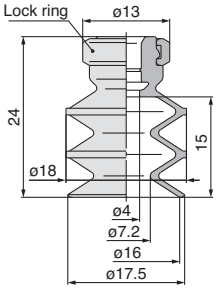

ZP2-14J□



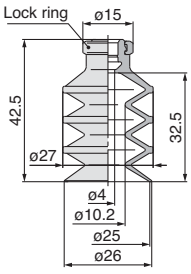

ZP2-B15J□



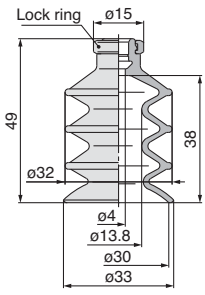

ZP2-16J□




ZP2-B25J□



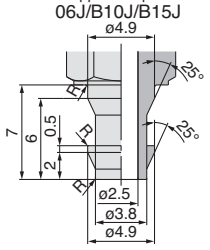

ZP2-B30J□



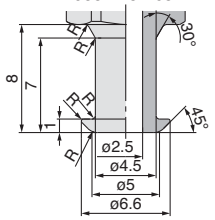

**Adapter Mounting Dimensions**

If an adapter is made by the customer, design the adapter with the dimensions shown below.

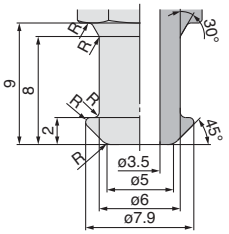
Applicable pad
06J/B10J/B15J




Applicable pad
09J/14J/16J




Applicable pad
B25J/B30J



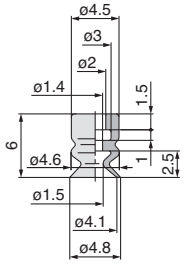

Note) R part has to be smooth with no corners.

Vacuum

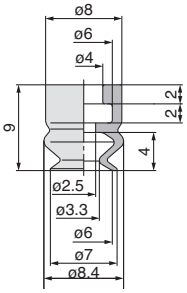
## Dimensions

Dimensions: Pad Unit

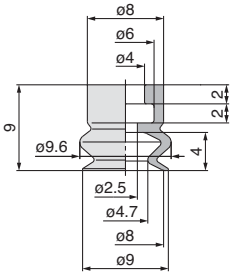
ZP2-B04MB□



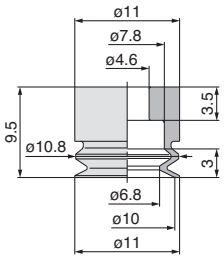

ZP2-B06MB□



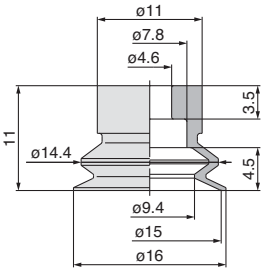

ZP2-B08MB□



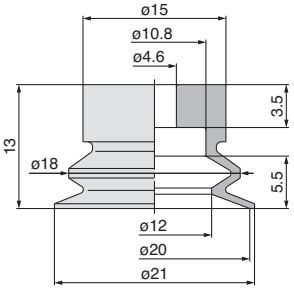

ZP2-B10MB□




ZP2-B15MB□



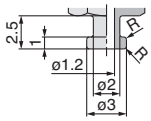

ZP2-B20MB□



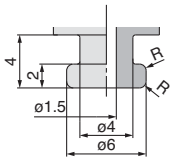

### Adapter Mounting Dimensions

If an adapter is made by the customer, design the adapter with the dimensions shown below.

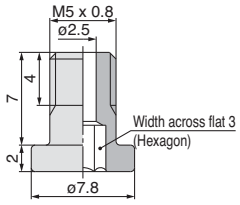
Applicable pad B04MB



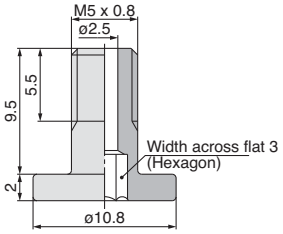

Applicable pad B06MB/B08MB




Applicable pad B10MB/B15MB



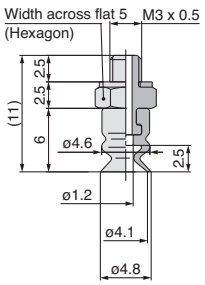

Applicable pad B20MB



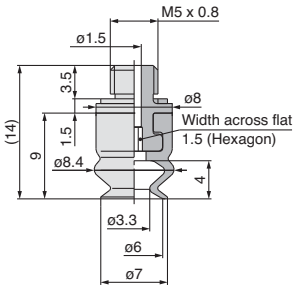

Note) R part has to be smooth with no corners.

Dimensions: With Adapter

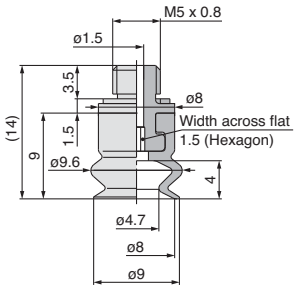
ZP2-TB04MB□□-A3



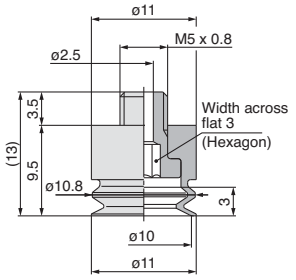

ZP2-TB06MB□-H5



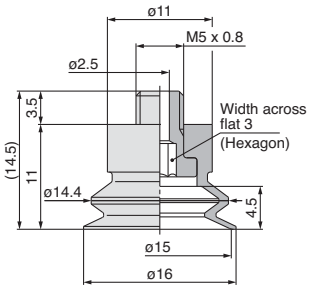

ZP2-TB08MB□-H5



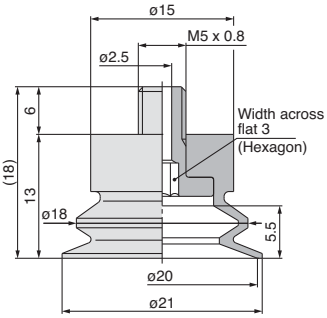

ZP2-TB10MB□-H5



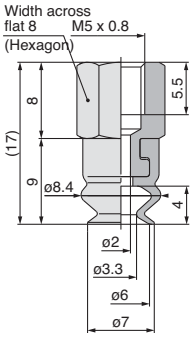

ZP2-TB15MB□-H5



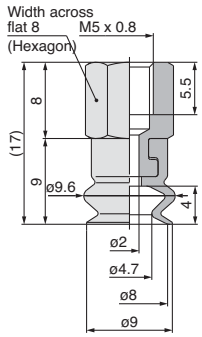

ZP2-TB20MB□-H5




ZP2-TB06MB□-B5




ZP2-TB08MB□-B5

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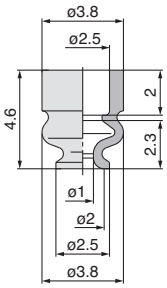
Vacuum

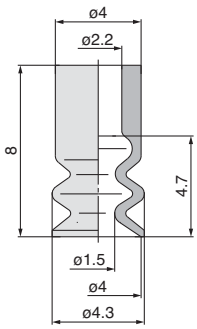
## Dimensions

### Dimensions: Pad Unit

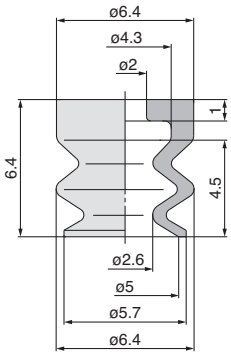
ZP2-02ZJ□



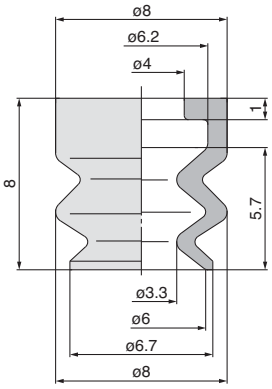

ZP2-04ZJ□



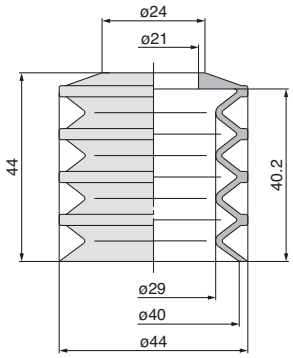

ZP2-05ZJ□



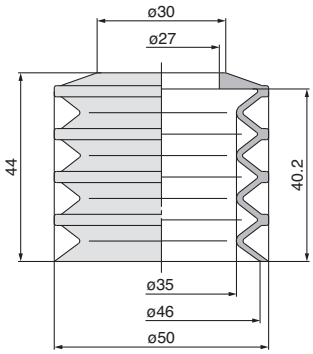

ZP2-06ZJ□




ZP2-40ZJ□□



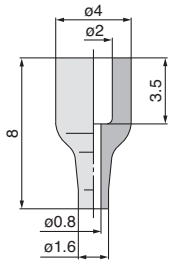

ZP2-46ZJ□□



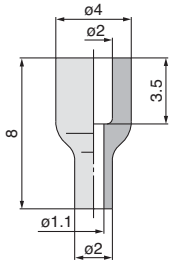

## Nozzle Pad

### Dimensions: Pad Unit

ZP2-08AN□

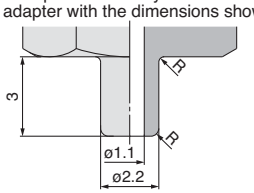



ZP2-11AN□




**Adapter Mounting Dimensions**

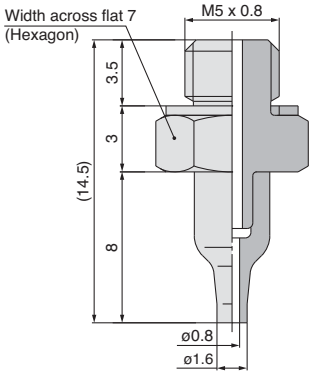
If an adapter is made by the customer, design the adapter with the dimensions shown below.



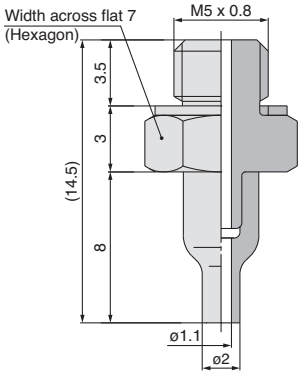

Note) R part has to be smooth with no corners.

### Dimensions: With Adapter

ZP2-T08AN□-A5




ZP2-T11AN□-A5

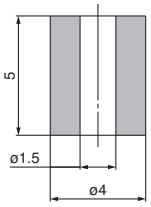


## Dimensions

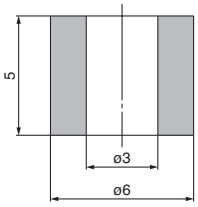
### Sponge Pad

Dimensions: Pad Unit

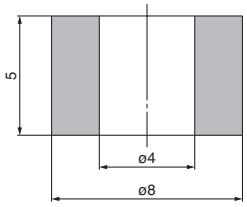
ZP2-04S□



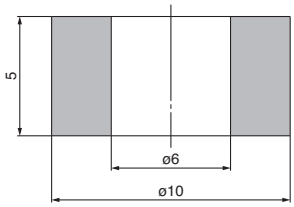

ZP2-06S□



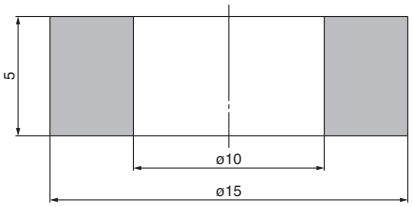

ZP2-08S□




ZP2-10S□



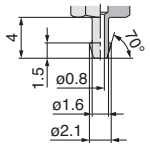

ZP2-15S□



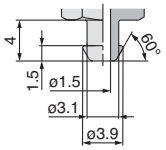

**Adapter Mounting Dimensions**

If an adapter is made by the customer, design the adapter with the dimensions shown below.

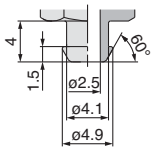
Applicable pad 04S



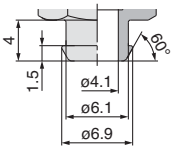

Applicable pad 06S



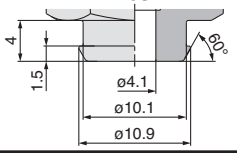

Applicable pad 08S




Applicable pad 10S

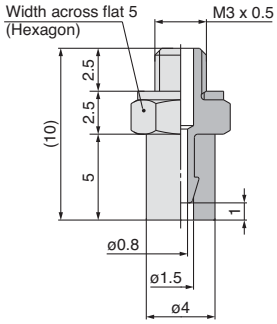



Applicable pad 15S

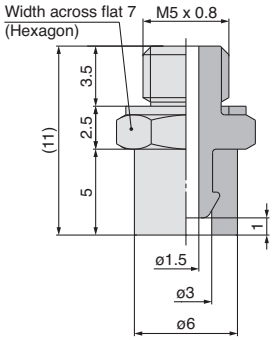



Dimensions: With Adapter

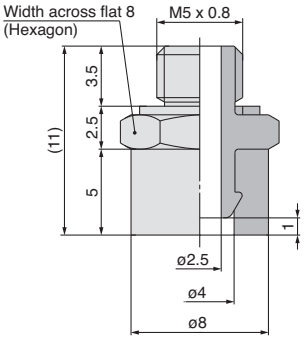
ZP2-T04S□-A3




ZP2-T06S□-A5

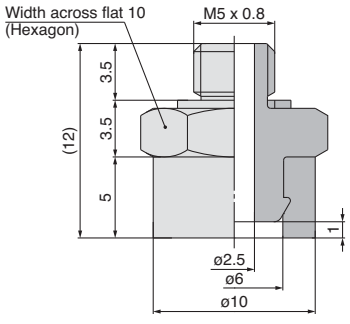



ZP2-T08S□-A5

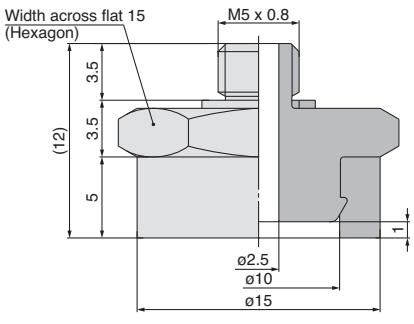



Dimensions: With Adapter

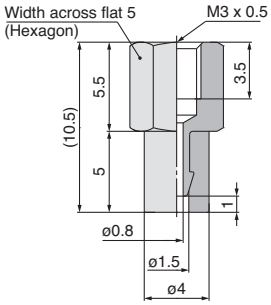
ZP2-T10S□-A5



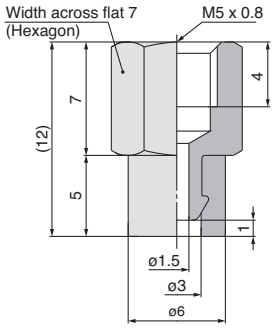

ZP2-T15S□-A5



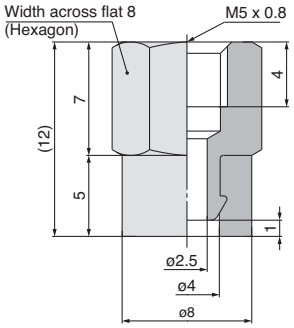

ZP2-T04S□-B3



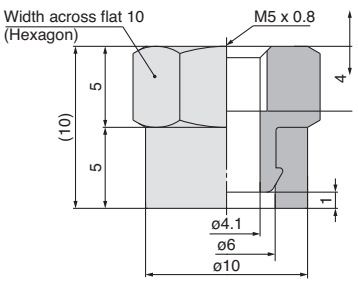

ZP2-T06S□-B5



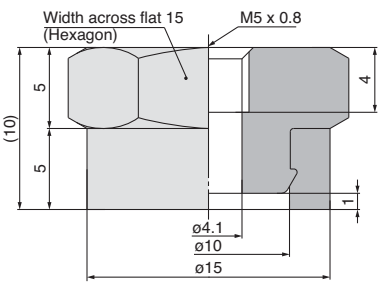

ZP2-T08S□-B5




ZP2-T10S□-B5




ZP2-T15S□-B5




For more product options and details see our specific catalogues or on-line information.

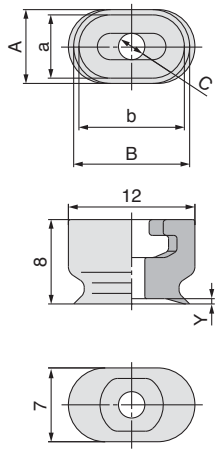
Vacuum

## Dimensions

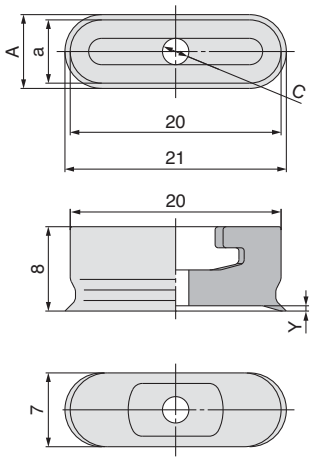
### Oval Pad

Dimensions: Pad Unit

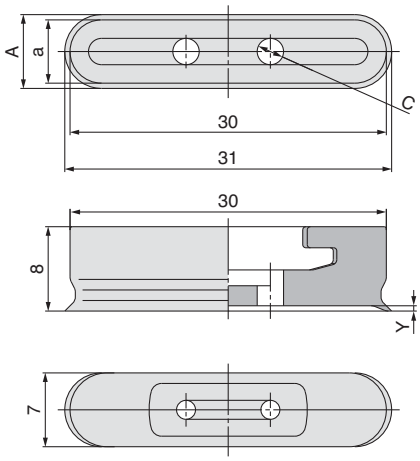
ZP2-□W□




ZP2-20W□




ZP2-30W□




Dimensions

| Model | a | A | b | B | C | Y |
|---|---|---|---|---|---|---|
| ZP2-3507W□ | 3.5 | 4.5 | 7 | 8 | 2 x 1.5 | 0.5 |
| ZP2-4010W□ | 4 | 5 | 10 | 11 | | |
| ZP2-5010W□ | 5 | 6 | | | 2.5 | |
| ZP2-6010W□ | 6 | 7 | | | | |

Dimensions

| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-4020W□ | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-5020W□ | 5 | 6 | 2 x 2 | |
| ZP2-6020W□ | 6 | 7 | 2.5 | |
| ZP2-8020W□ | 8 | 9 | 3 | 0.8 |

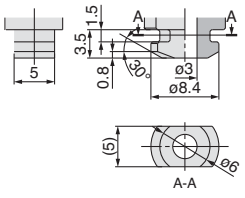
Dimensions

| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-4030W□ | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-5030W□ | 5 | 6 | 2 x 2.5 | |
| ZP2-6030W□ | 6 | 7 | | |
| ZP2-8030W□ | 8 | 9 | | 0.8 |

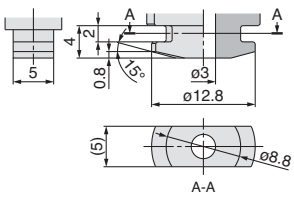
### Adapter Mounting Dimensions

If an adapter is made by the customer, design the adapter with the dimensions shown below.

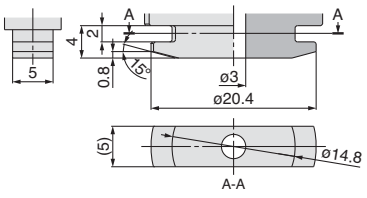
Applicable pad
3507W/4010W/5010W/6010W




Applicable pad
4020W/5020W/6020W/8020W




Applicable pad
4030W/5030W/6030W/8030W

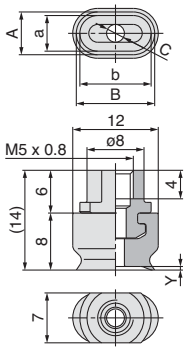



Note) R part has to be smooth with no corners.

## Dimensions

### Dimensions: With Adapter

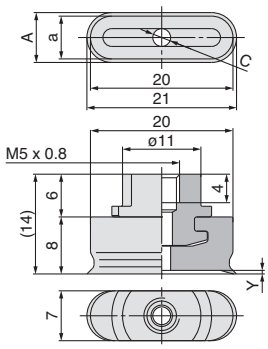
ZP2-T□W□-B5




Dimensions

| Model | a | A | b | B | C | Y |
|---|---|---|---|---|---|---|
| ZP2-T3507W□-B5 | 3.5 | 4.5 | 7 | 8 | 2 x 1.5 | 0.5 |
| ZP2-T4010W□-B5 | 4 | 5 | 10 | 11 | | |
| ZP2-T5010W□-B5 | 5 | 6 | | | 2.5 | |
| ZP2-T6010W□-B5 | 6 | 7 | | | | |

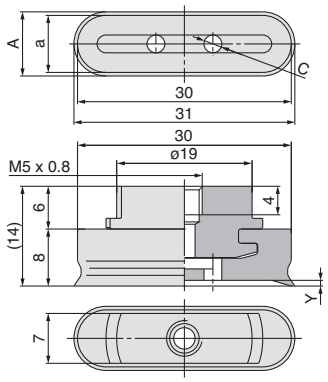
ZP2-T 20 W□-B5




Dimensions

| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-T4020W□-B5 | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-T5020W□-B5 | 5 | 6 | 2 x 2 | |
| ZP2-T6020W□-B5 | 6 | 7 | 2.5 | |
| ZP2-T8020W□-B5 | 8 | 9 | 3 | 0.8 |

ZP2-T 30 W□-B5

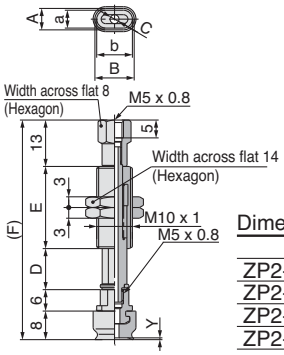



Dimensions

| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-T4030W□-B5 | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-T5030W□-B5 | 5 | 6 | 2 x 2.5 | |
| ZP2-T6030W□-B5 | 6 | 7 | | |
| ZP2-T8030W□-B5 | 8 | 9 | | 0.8 |

### Dimensions: With Buffer

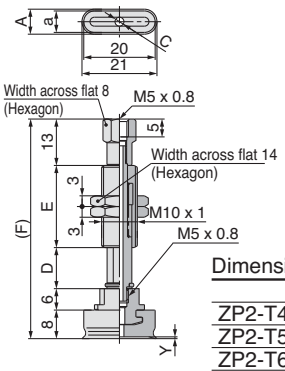
ZP2-T□W□K★-B5




Dimensions

| Model | a | A | b | B | C | Y |
|---|---|---|---|---|---|---|
| ZP2-T3507W□K★-B5 | 3.5 | 4.5 | 7 | 8 | 2 x 1.5 | 0.5 |
| ZP2-T4010W□K★-B5 | 4 | 5 | 10 | 11 | | |
| ZP2-T5010W□K★-B5 | 5 | 6 | | | 2.5 | |
| ZP2-T6010W□K★-B5 | 6 | 7 | | | | |

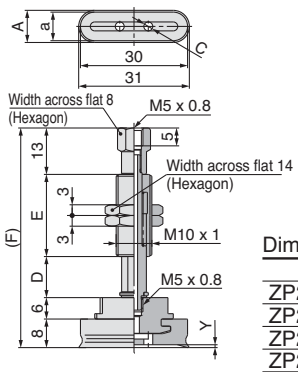
ZP2-T 20 W□K★-B5




Dimensions

| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-T4020W□K★-B5 | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-T5020W□K★-B5 | 5 | 6 | 2 x 2 | |
| ZP2-T6020W□K★-B5 | 6 | 7 | 2.5 | |
| ZP2-T8020W□K★-B5 | 8 | 9 | 3 | 0.8 |

ZP2-T 30 W□K★-B5




Dimensions

| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-T4030W□K★-B5 | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-T5030W□K★-B5 | 5 | 6 | 2 x 2.5 | |
| ZP2-T6030W□K★-B5 | 6 | 7 | | |
| ZP2-T8030W□K★-B5 | 8 | 9 | | 0.8 |

Dimensions common for all three drawings
Dimensions (per buffer stroke)

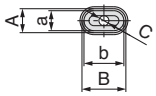
| Stroke (★) | D | E | F |
|---|---|---|---|
| 10 | 11.5 | 23 | 61.5 |
| 20 | 21.5 | 51 | 99.5 |
| 30 | 31.5 | | 109.5 |
| 40 | 41.5 | 77 | 145.5 |
| 50 | 51.5 | | 155.5 |

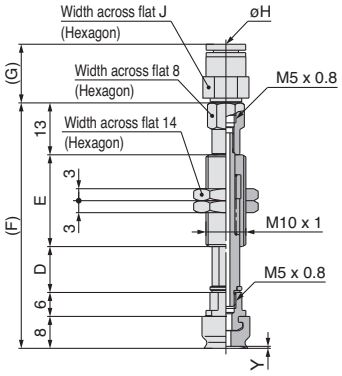
For more product options and details see our specific catalogues or on-line information.

## Dimensions

### Dimensions: With Buffer

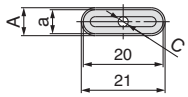
ZP2-T□W□K★-$^{04}_{06}$

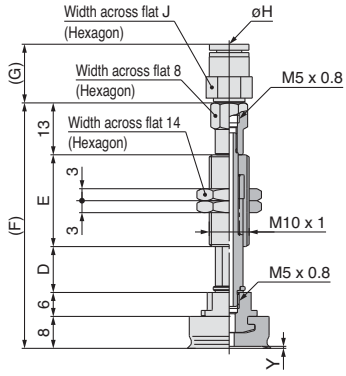



| Model | a | A | b | B | C | Y |
|---|---|---|---|---|---|---|
| ZP2-T3507W□K★-$^{04}_{06}$ | 3.5 | 4.5 | 7 | 8 | 2 x 1.5 | 0.5 |
| ZP2-T4010W□K★-$^{04}_{06}$ | 4 | 5 | 10 | 11 | 2.5 | |
| ZP2-T5010W□K★-$^{04}_{06}$ | 5 | 6 | | | | |
| ZP2-T6010W□K★-$^{04}_{06}$ | 6 | 7 | | | | |

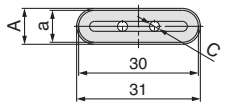
ZP2-T 20 W□K★-$^{04}_{06}$

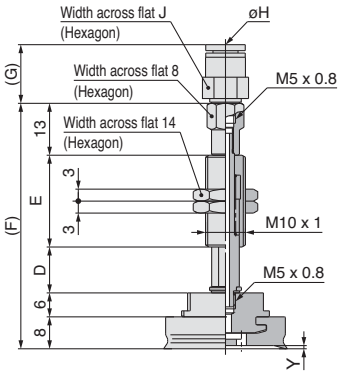



| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-T4020W□K★-$^{04}_{06}$ | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-T5020W□K★-$^{04}_{06}$ | 5 | 6 | 2 x 2 | |
| ZP2-T6020W□K★-$^{04}_{06}$ | 6 | 7 | 2.5 | |
| ZP2-T8020W□K★-$^{04}_{06}$ | 8 | 9 | 3 | 0.8 |

ZP2-T 30 W□K★-$^{04}_{06}$




| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-T4030W□K★-$^{04}_{06}$ | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-T5030W□K★-$^{04}_{06}$ | 5 | 6 | 2 x 2.5 | |
| ZP2-T6030W□K★-$^{04}_{06}$ | 6 | 7 | | |
| ZP2-T8030W□K★-$^{04}_{06}$ | 8 | 9 | | 0.8 |

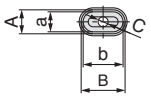
**Dimensions common for all three drawings**

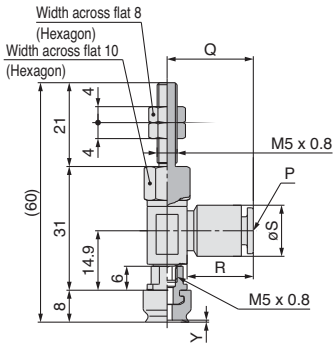
**Dimensions (per buffer stroke)**

| Stroke (★) | D | E | F | H: ø4 | | H: ø6 | |
|---|---|---|---|---|---|---|---|
| | | | | G | J | G | J |
| 10 | 11.5 | 23 | 61.5 | 13.9 | 8 | 14.7 | 10 |
| 20 | 21.5 | 51 | 99.5 | | | | |
| 30 | 31.5 | | 109.5 | | | | |
| 40 | 41.5 | 77 | 145.5 | | | | |
| 50 | 51.5 | | 155.5 | | | | |

### Dimensions: Without Buffer

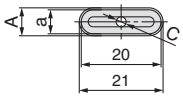
ZP2-R□W□-$^{04}_{06}$-A5

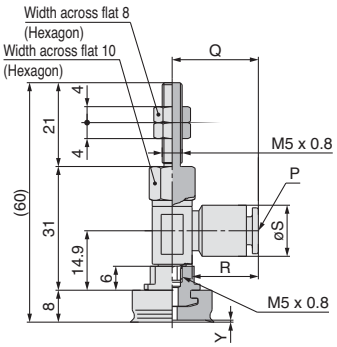



| Model | a | A | b | B | C | Y |
|---|---|---|---|---|---|---|
| ZP2-R3507W□-□-A5 | 3.5 | 4.5 | 7 | 8 | 2 x 1.5 | 0.5 |
| ZP2-R4010W□-□-A5 | 4 | 5 | 10 | 11 | 2.5 | |
| ZP2-R5010W□-□-A5 | 5 | 6 | | | | |
| ZP2-R6010W□-□-A5 | 6 | 7 | | | | |

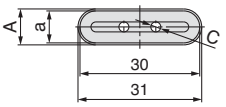
ZP2-R 20 W□-$^{04}_{06}$-A5

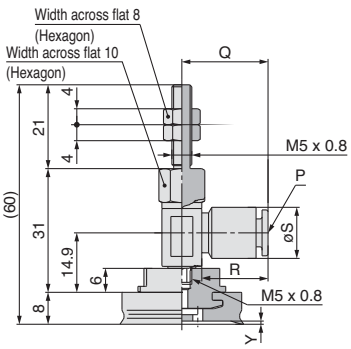



| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-R4020W□-□-A5 | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-R5020W□-□-A5 | 5 | 6 | 2 x 2 | |
| ZP2-R6020W□-□-A5 | 6 | 7 | 2.5 | |
| ZP2-R8020W□-□-A5 | 8 | 9 | 3 | 0.8 |

ZP2-R 30 W□-$^{04}_{06}$-A5




| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-R4030W□-□-A5 | 4 | 4.8 | 2 x 1.8 | 0.5 |
| ZP2-R5030W□-□-A5 | 5 | 6 | 2 x 2.5 | |
| ZP2-R6030W□-□-A5 | 6 | 7 | | |
| ZP2-R8030W□-□-A5 | 8 | 9 | | 0.8 |

**Dimensions common for all three drawings**

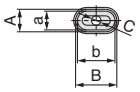
**Dimensions (per applicable tube)**

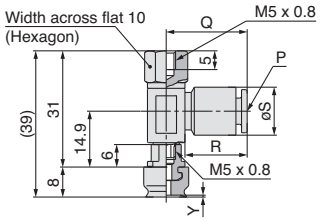
| Applicable tube O.D. (□) | P | Q | R | S |
|---|---|---|---|---|
| ø4 | 4 | 20.6 | 15.6 | 10.4 |
| ø6 | 6 | 21.6 | 16.6 | 12.8 |

## Dimensions

Dimensions: Without Buffer

ZP2-R□W□-$^{04}_{06}$-B5

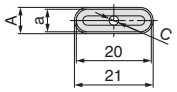


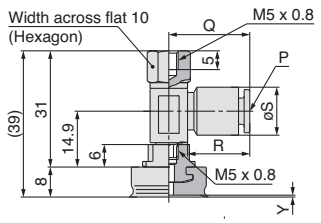




Dimensions

| Model | a | A | b | B | C | Y |
|---|---|---|---|---|---|---|
| ZP2-R3507W□-□-B5 | 3.5 | 4.5 | 7 | 8 | 2 x 1.5 | 0.5 |
| ZP2-R4010W□-□-B5 | 4 | 5 | 10 | 11 | | |
| ZP2-R5010W□-□-B5 | 5 | 6 | | | 2.5 | |
| ZP2-R6010W□-□-B5 | 6 | 7 | | | | |

ZP2-R 20 W□-$^{04}_{06}$-B5

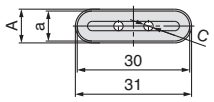


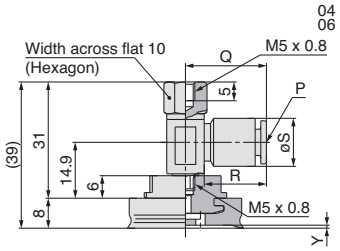




Dimensions

| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-R4020W□-□-B5 | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-R5020W□-□-B5 | 5 | 6 | 2 x 2 | |
| ZP2-R6020W□-□-B5 | 6 | 7 | 2.5 | |
| ZP2-R8020W□-□-B5 | 8 | 9 | 3 | 0.8 |

ZP2-R 30 W□-□-B5




Dimensions

| Model | a | A | C | Y |
|---|---|---|---|---|
| ZP2-R4030W□-□-B5 | 4 | 5 | 2 x 1.8 | 0.5 |
| ZP2-R5030W□-□-B5 | 5 | 6 | 2 x 2.5 | |
| ZP2-R6030W□-□-B5 | 6 | 7 | | |
| ZP2-R8030W□-□-B5 | 8 | 9 | | 0.8 |

Dimensions common for all three drawings

Dimensions (per applicable tube)

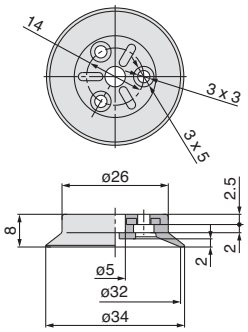
| Applicable tube O.D. (□) | P | Q | R | S |
|---|---|---|---|---|
| ø4 | 4 | 20.6 | 15.6 | 10.4 |
| ø6 | 6 | 21.6 | 16.6 | 12.8 |

## Dimensions

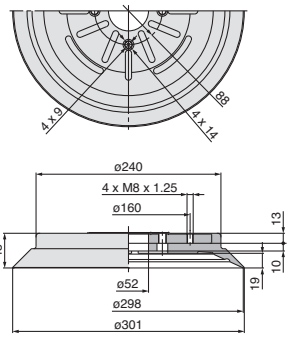
Heavy-duty Pad

Dimensions: Pad Unit

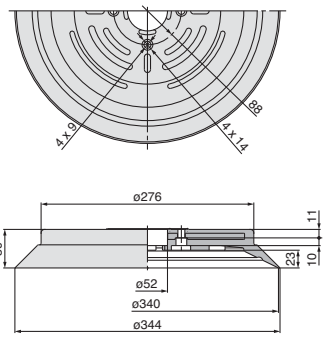
ZP2-32H□




ZP2-300H□

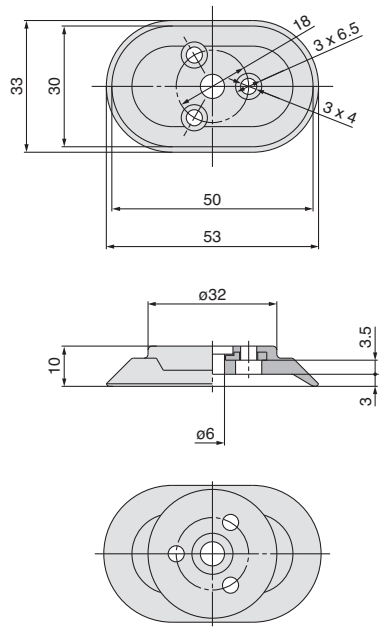



ZP2-340H□



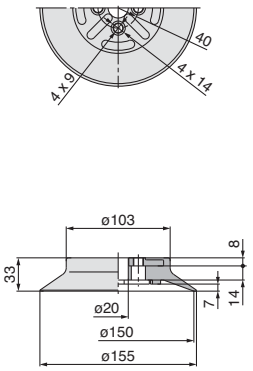

Dimensions: Pad Unit

ZP2-3050HW□

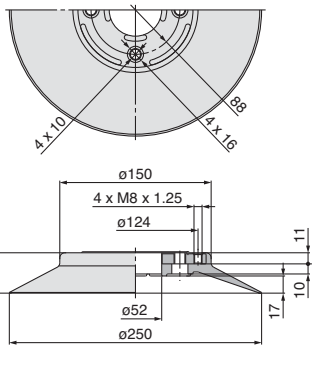



Dimensions: Pad Unit

ZP2-150HT□

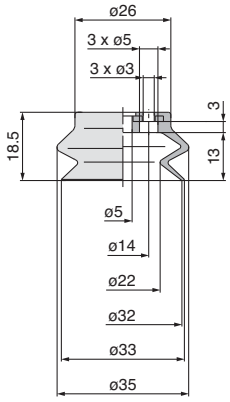



ZP2-250HT□

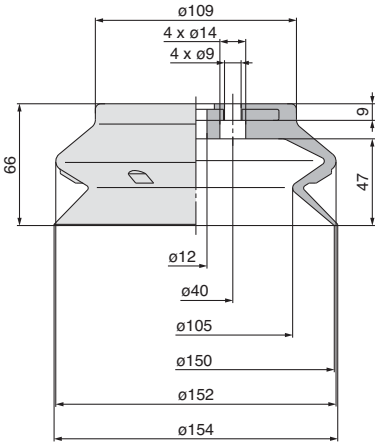



Dimensions: Pad Unit

ZP2-32HB□

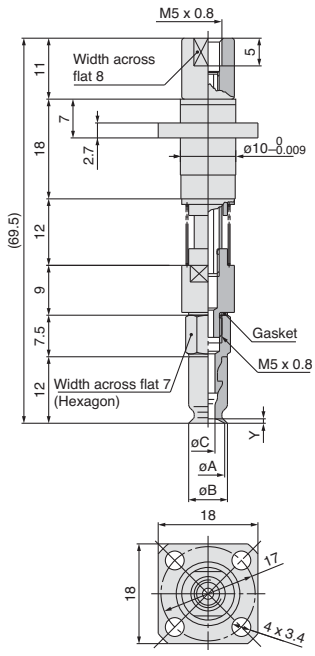



ZP2-150HB□




Pad with Ball Spline Buffer

ZP2-T02U□S6




Dimensions

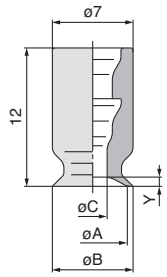
| Model | A | B | C | Y |
|---|---|---|---|---|
| ZP2-T02U□S6 | 2 | 2.6 | 1.2 | 0.5 |
| ZP2-T04U□S6 | 4 | 4.8 | 1.6 | 0.8 |
| ZP2-T06U□S6 | 6 | 7 | 2.5 | |
| ZP2-T08U□S6 | 8 | 9 | | 1 |

## Dimensions

Mark-free Pad

Dimensions: Pad Unit

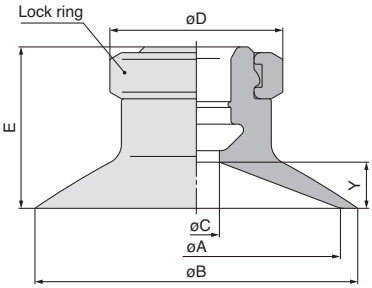
ZP2-04 to 08UCL




Dimensions

| Model | A | B | C | Y |
|---|---|---|---|---|
| ZP2-04UCL | 4 | 4.8 | 1.6 | 0.8 |
| ZP2-06UCL | 6 | 7 | 2.5 | |
| ZP2-08UCL | 8 | 9 | | 1 |

ZP2-10 to 50UCL

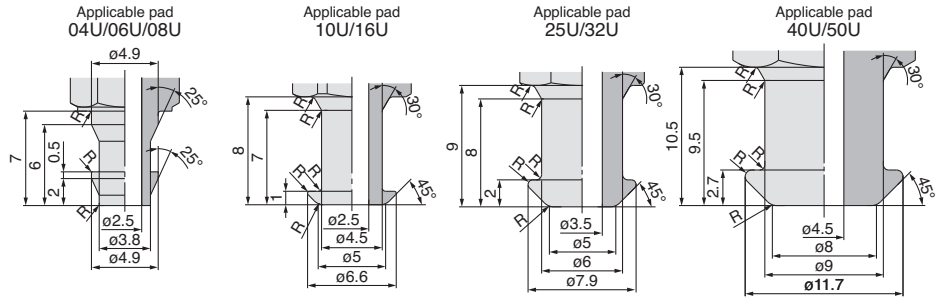



Dimensions

| Model | A | B | C | D | E | Y |
|---|---|---|---|---|---|---|
| ZP2-10UCL | 10 | 12 | 4 | 13 | 12 | 3 |
| ZP2-16UCL | 16 | 18 | | | 12.5 | 3.5 |
| ZP2-25UCL | 25 | 28 | | 15 | 14 | 4 |
| ZP2-32UCL | 32 | 35 | | | 14.5 | 4.5 |
| ZP2-40UCL | 40 | 43 | 7 | 18 | 18.5 | 6.5 |
| ZP2-50UCL | 50 | 53 | | | 19.5 | 7.5 |

### Adapter Mounting Dimensions

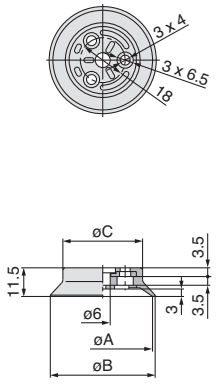
If an adapter is made by the customer, design the adapter with the dimensions shown below.




Note) R part has to be smooth with no corners.

Dimensions: Pad Unit

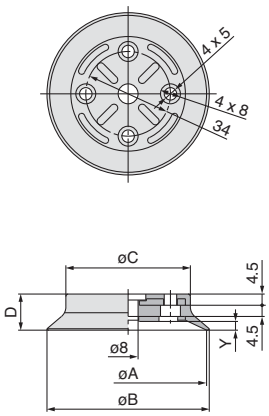
ZP2-$^{40}_{50}$H□




Dimensions

| Model | A | B | C |
|---|---|---|---|
| ZP2-40H□ | 40 | 43 | 32 |
| ZP2-50H□ | 50 | 53 | 42 |

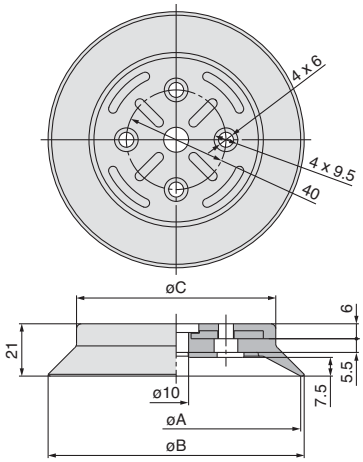
ZP2-$^{63}_{80}$H□




Dimensions

| Model | A | B | C | D | Y |
|---|---|---|---|---|---|
| ZP2-63H□ | 63 | 65 | 50 | 14.5 | 3.5 |
| ZP2-80H□ | 80 | 82 | 61 | 16.5 | 4.5 |

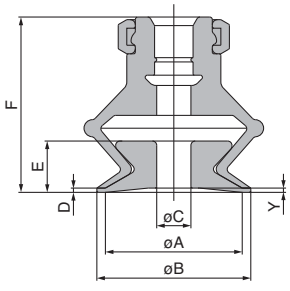
ZP2-$^{100}_{125}$H□




Dimensions

| Model | A | B | C |
|---|---|---|---|
| ZP2-100H□ | 100 | 103 | 80 |
| ZP2-125H□ | 125 | 128 | 104 |

Dimensions: Pad Unit




Dimensions

| Model | Applicable pad | A | B | C | D | E | F | Y |
|---|---|---|---|---|---|---|---|---|
| ZP2-06K■ | ZP06B□ | 6 | 7 | 1.6 | 0.5 | 3 | 13.5 | 0.5 |
| ZP2-08K■ | ZP08B□ | 8 | 9 | 3 | | | | |
| ZP2-10K■ | ZP10B□ | 10 | 12 | 3.5 | | 3.5 | 16.5 | |
| ZP2-13K■ | ZP13B□ | 13 | 15 | 4 | | 5.5 | 19 | |
| ZP2-16K■ | ZP16B□ | 16 | 18 | | | 6 | 20.5 | |
| ZP2-20K■ | ZP20B□ | 20 | 22 | 8 | 1 | 8.5 | 24.5 | 1 |
| ZP2-25K■ | ZP25B□ | 25 | 27 | 10 | | | 25 | |
| ZP2-32K■ | ZP32B□ | 32 | 34 | | | 11.5 | 30 | |

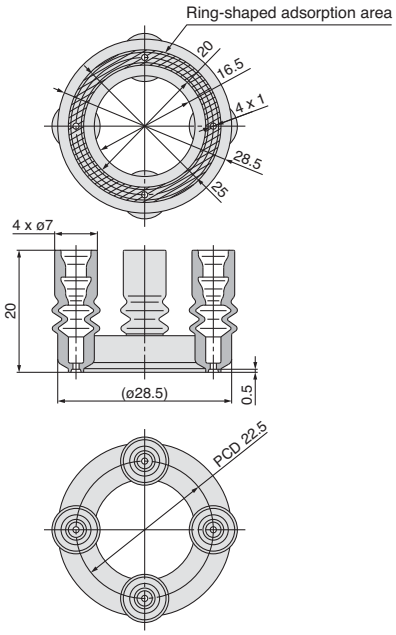
Note 1) ■ Indicates the attachment material.
Note 2) □ Indicates the pad material.

For more product options and details see our specific catalogues or on-line information.

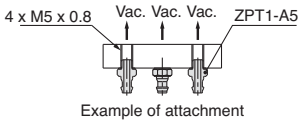
## Dimensions

Vacuum Pad for Transfering Disks

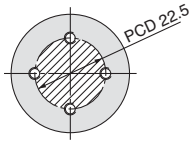
ZP2-Z1-001-□□




ZPT1-A5 is a recommended adapter.
(Four adapters are necessary.)



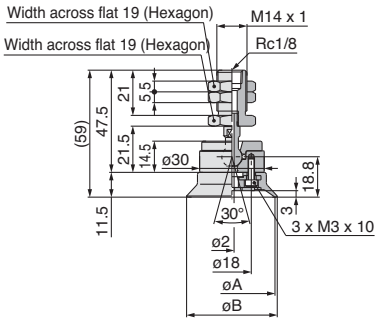

Example of attachment




## Dimensions

Heavy-duty Ball Joint Pad
Dimensions: With Adapter

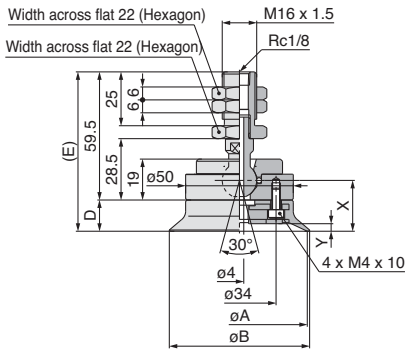
ZP2-TF$^{40}_{50}$H□




Dimensions

| Model | A | B |
|---|---|---|
| ZP2-TF40H□ | 40 | 42 |
| ZP2-TF50H□ | 50 | 52 |

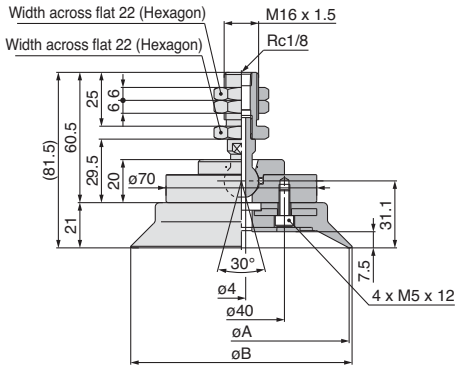
ZP2-TF$^{63}_{80}$H□




Dimensions

| Model | A | B | D | E | X | Y |
|---|---|---|---|---|---|---|
| ZP2-TF63H□ | 63 | 65 | 14.5 | 74 | 23.6 | 3.5 |
| ZP2-TF80H□ | 80 | 82 | 16.5 | 76 | 25.6 | 4.5 |

ZP2-TF$^{100}_{125}$H□

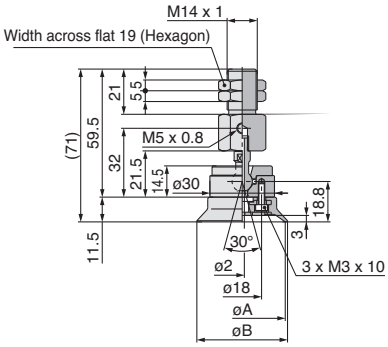



Dimensions

| Model | A | B |
|---|---|---|
| ZP2-TF100H□ | 100 | 103 |
| ZP2-TF125H□ | 125 | 128 |

Dimensions: With Adapter

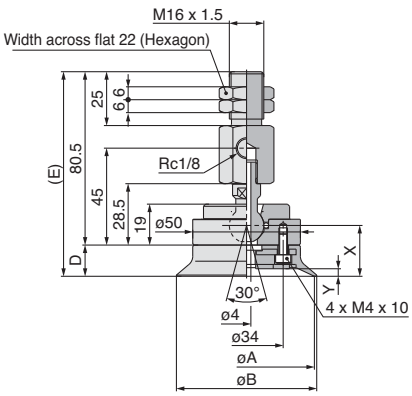
ZP2-XF$^{40}_{50}$H□




Dimensions

| Model | A | B |
|---|---|---|
| ZP2-XF40H□ | 40 | 42 |
| ZP2-XF50H□ | 50 | 52 |

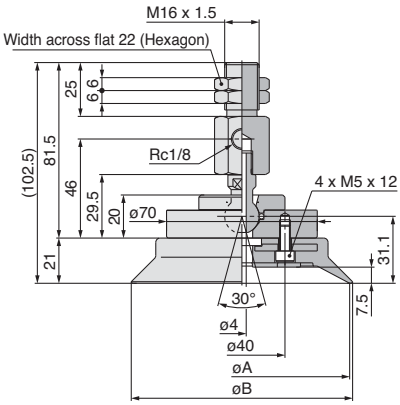
ZP2-XF$^{63}_{80}$H□




Dimensions

| Model | A | B | D | E | X | Y |
|---|---|---|---|---|---|---|
| ZP2-XF63H□ | 63 | 65 | 14.5 | 95 | 23.6 | 3.5 |
| ZP2-XF80H□ | 80 | 82 | 16.5 | 97 | 25.6 | 4.5 |

ZP2-XF$^{100}_{125}$H□



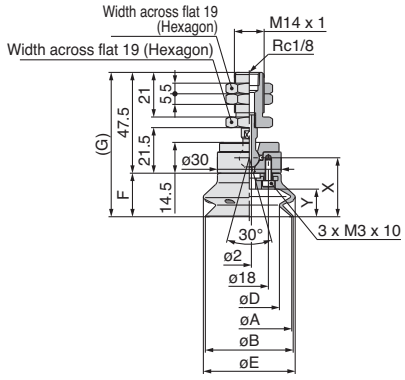

Dimensions

| Model | A | B |
|---|---|---|
| ZP2-XF100H□ | 100 | 103 |
| ZP2-XF125H□ | 125 | 128 |

## Dimensions

### Dimensions: With Adapter

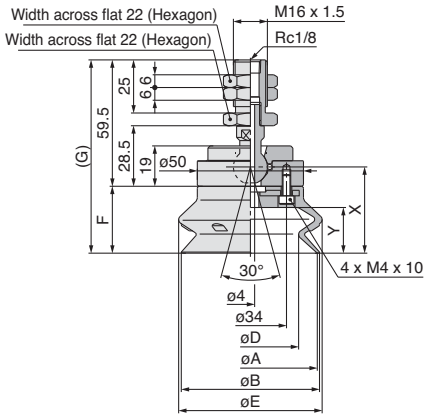
ZP2-TF$^{40}_{50}$HB□




Dimensions

| Model | A | B | D | E | F | G | X | Y |
|---|---|---|---|---|---|---|---|---|
| ZP2-TF40HB□ | 40 | 41 | 28 | 43 | 20.5 | 68 | 27.8 | 13 |
| ZP2-TF50HB□ | 50 | 52 | 36 | 54 | 24 | 71.5 | 31.3 | 16.5 |

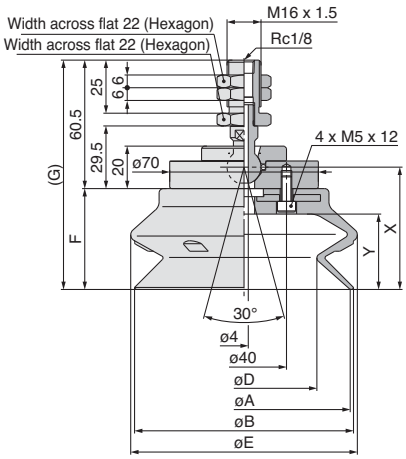
ZP2-TF$^{63}_{80}$HB□




Dimensions

| Model | A | B | D | E | F | G | X | Y |
|---|---|---|---|---|---|---|---|---|
| ZP2-TF63HB□ | 63 | 65 | 46 | 68 | 31.5 | 91 | 40.6 | 21 |
| ZP2-TF80HB□ | 80 | 83 | 58 | 85 | 37 | 96.5 | 46.1 | 27.5 |

ZP2-TF$^{100}_{125}$HB□

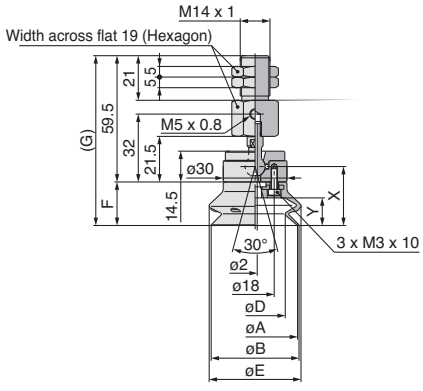



Dimensions

| Model | A | B | D | E | F | G | X | Y |
|---|---|---|---|---|---|---|---|---|
| ZP2-TF100HB□ | 100 | 103 | 69 | 107 | 47.5 | 108 | 57.6 | 35.5 |
| ZP2-TF125HB□ | 125 | 129 | 89 | 135 | 56 | 116.5 | 66.1 | 44 |

### Dimensions: With Adapter

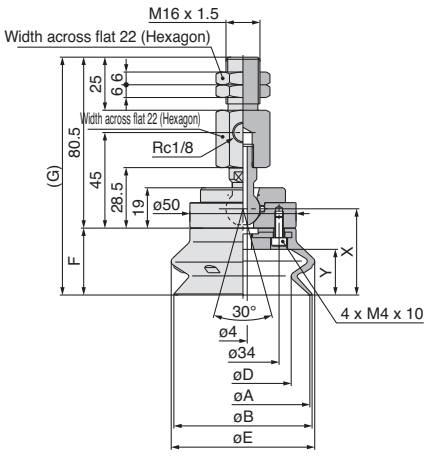
ZP2-XF$^{40}_{50}$HB□




Dimensions

| Model | A | B | D | E | F | G | X | Y |
|---|---|---|---|---|---|---|---|---|
| ZP2-XF40HB□ | 40 | 41 | 28 | 43 | 20.5 | 80 | 27.8 | 13 |
| ZP2-XF50HB□ | 50 | 52 | 36 | 54 | 24 | 83.5 | 31.3 | 16.5 |

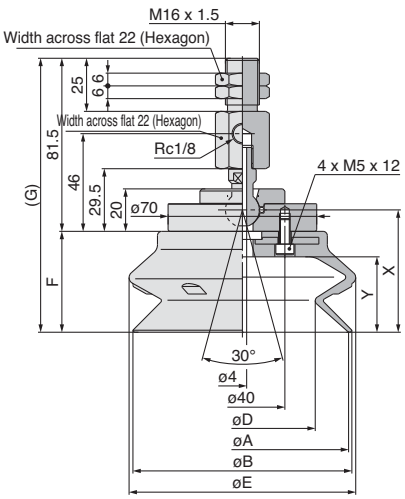
ZP2-XF$^{63}_{80}$HB□




Dimensions

| Model | A | B | D | E | F | G | X | Y |
|---|---|---|---|---|---|---|---|---|
| ZP2-XF63HB□ | 63 | 65 | 46 | 68 | 31.5 | 112 | 40.6 | 21.5 |
| ZP2-XF80HB□ | 80 | 83 | 58 | 85 | 37 | 117.5 | 46.1 | 27.5 |

ZP2-XF$^{100}_{125}$HB□



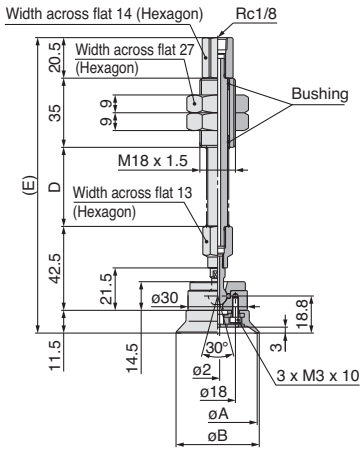

Dimensions

| Model | A | B | D | E | F | G | X | Y |
|---|---|---|---|---|---|---|---|---|
| ZP2-XF100HB□ | 100 | 103 | 69 | 107 | 47.5 | 129 | 57.6 | 35.5 |
| ZP2-XF125HB□ | 125 | 129 | 89 | 135 | 56 | 137.5 | 66.1 | 44 |

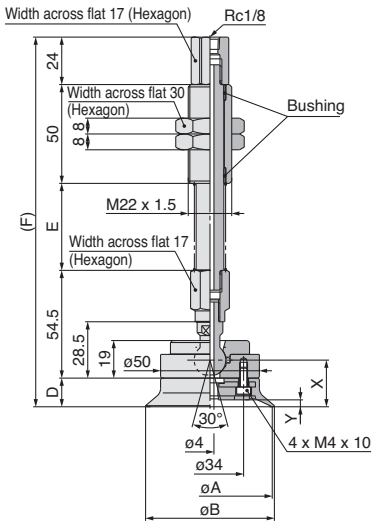
## Dimensions

### Dimensions: With Buffer

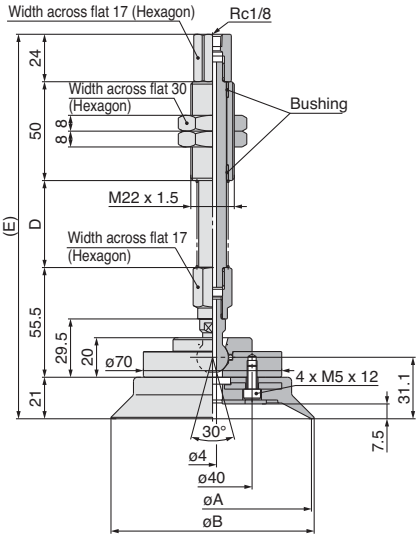
ZP2-TF$^{40}_{50}$H□$^{JB}_{JF}$□




ZP2-TF$^{63}_{80}$H□$^{JB}_{JF}$□




ZP2-TF$^{100}_{125}$H□$^{JB}_{JF}$□




Dimensions

| Model | A | B | D | E |
|---|---|---|---|---|
| ZP2-TF40H□(JB/JF)25 | 40 | 42 | 40 | 149.5 |
| ZP2-TF40H□(JB/JF)50 | | | 75 | 184.5 |
| ZP2-TF40H□(JB/JF)75 | | | 111 | 220.5 |
| ZP2-TF50H□(JB/JF)25 | 50 | 52 | 40 | 149.5 |
| ZP2-TF50H□(JB/JF)50 | | | 75 | 184.5 |
| ZP2-TF50H□(JB/JF)75 | | | 111 | 220.5 |

Dimensions

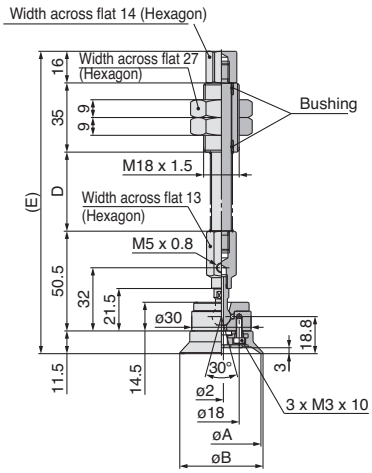
| Model | A | B | D | E | F | X | Y |
|---|---|---|---|---|---|---|---|
| ZP2-TF63H□(JB/JF)25 | 63 | 65 | 14.5 | 44 | 187 | 23.6 | 3.5 |
| ZP2-TF63H□(JB/JF)50 | | | | 80 | 223 | | |
| ZP2-TF63H□(JB/JF)75 | | | | 120 | 263 | | |
| ZP2-TF63H□(JB/JF)100 | | | | 155 | 298 | | |
| ZP2-TF80H□(JB/JF)25 | 80 | 82 | 16.5 | 44 | 189 | 25.6 | 4.5 |
| ZP2-TF80H□(JB/JF)50 | | | | 80 | 225 | | |
| ZP2-TF80H□(JB/JF)75 | | | | 120 | 265 | | |
| ZP2-TF80H□(JB/JF)100 | | | | 155 | 300 | | |

Dimensions

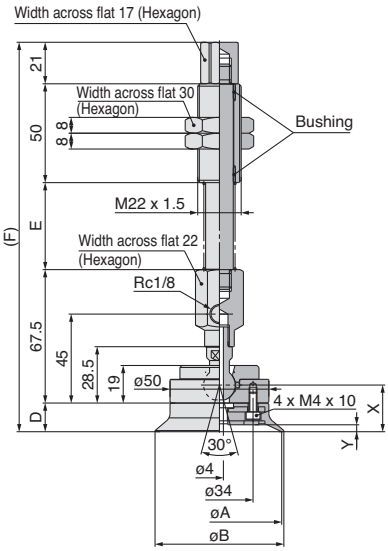
| Model | A | B | D | E |
|---|---|---|---|---|
| ZP2-TF100H□(JB/JF)25 | 100 | 103 | 44 | 194.5 |
| ZP2-TF100H□(JB/JF)50 | | | 80 | 230.5 |
| ZP2-TF100H□(JB/JF)75 | | | 120 | 270.5 |
| ZP2-TF100H□(JB/JF)100 | | | 155 | 305.5 |
| ZP2-TF125H□(JB/JF)25 | 125 | 128 | 44 | 194.5 |
| ZP2-TF125H□(JB/JF)50 | | | 80 | 230.5 |
| ZP2-TF125H□(JB/JF)75 | | | 120 | 270.5 |
| ZP2-TF125H□(JB/JF)100 | | | 155 | 305.5 |

### Dimensions: With Buffer

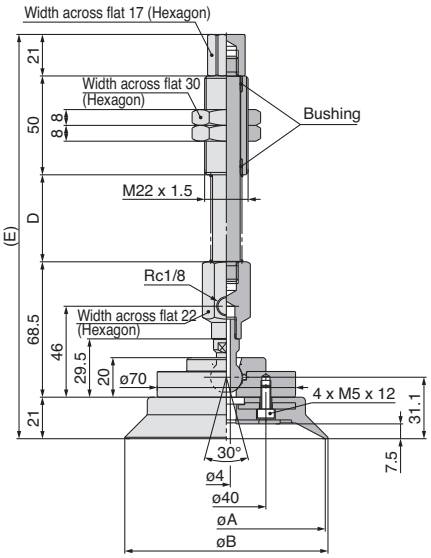
ZP2-XF$^{40}_{50}$H□$^{JB}_{JF}$□




ZP2-XF$^{63}_{80}$H□$^{JB}_{JF}$□




ZP2-XF$^{100}_{125}$H□$^{JB}_{JF}$□




Dimensions

| Model | A | B | D | E |
|---|---|---|---|---|
| ZP2-XF40H□(JB/JF)25 | 40 | 42 | 40 | 153 |
| ZP2-XF40H□(JB/JF)50 | | | 75 | 188 |
| ZP2-XF40H□(JB/JF)75 | | | 111 | 224 |
| ZP2-XF50H□(JB/JF)25 | 50 | 52 | 40 | 153 |
| ZP2-XF50H□(JB/JF)50 | | | 75 | 188 |
| ZP2-XF50H□(JB/JF)75 | | | 111 | 224 |

Dimensions

| Model | A | B | D | E | F | X | Y |
|---|---|---|---|---|---|---|---|
| ZP2-XF63H□(JB/JF)25 | 63 | 65 | 14.5 | 44 | 197 | 23.6 | 3.5 |
| ZP2-XF63H□(JB/JF)50 | | | | 80 | 233 | | |
| ZP2-XF63H□(JB/JF)75 | | | | 120 | 273 | | |
| ZP2-XF63H□(JB/JF)100 | | | | 155 | 308 | | |
| ZP2-XF80H□(JB/JF)25 | 80 | 82 | 16.5 | 44 | 199 | 25.6 | 4.5 |
| ZP2-XF80H□(JB/JF)50 | | | | 80 | 235 | | |
| ZP2-XF80H□(JB/JF)75 | | | | 120 | 275 | | |
| ZP2-XF80H□(JB/JF)100 | | | | 155 | 310 | | |

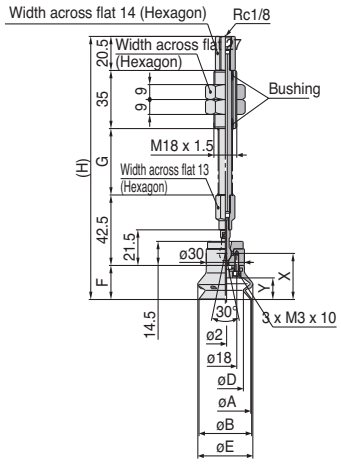
Dimensions

| Model | A | B | D | E |
|---|---|---|---|---|
| ZP2-XF100H□(JB/JF)25 | 100 | 103 | 44 | 204.5 |
| ZP2-XF100H□(JB/JF)50 | | | 80 | 240.5 |
| ZP2-XF100H□(JB/JF)75 | | | 120 | 280.5 |
| ZP2-XF100H□(JB/JF)100 | | | 155 | 315.5 |
| ZP2-XF125H□(JB/JF)25 | 125 | 128 | 44 | 204.5 |
| ZP2-XF125H□(JB/JF)50 | | | 80 | 240.5 |
| ZP2-XF125H□(JB/JF)75 | | | 120 | 280.5 |
| ZP2-XF125H□(JB/JF)100 | | | 155 | 315.5 |

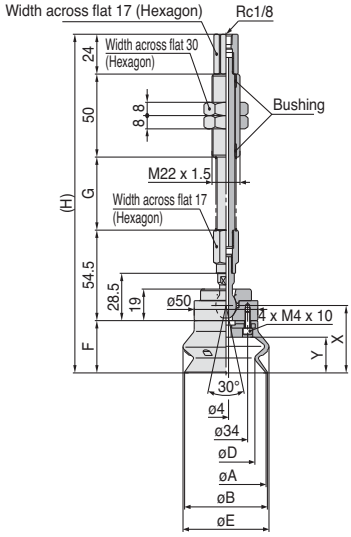
## Dimensions

### Dimensions: With Buffer

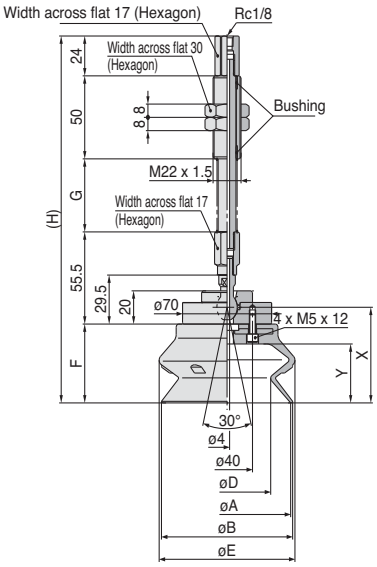
ZP2-TF$^{40}_{50}$HB□$^{JB}_{JF}$□




ZP2-TF$^{63}_{80}$HB□$^{JB}_{JF}$□




ZP2-TF$^{100}_{125}$HB□$^{JB}_{JF}$□




**Dimensions**

| Model | A | B | D | E | F | G | H | X | Y |
|---|---|---|---|---|---|---|---|---|---|
| ZP2-TF40HB□(JB/JF)25 | 40 | 42 | 28 | 43 | 20.5 | 40 | 158.5 | 27.8 | 13 |
| ZP2-TF40HB□(JB/JF)50 | | | | | | 75 | 193.5 | | |
| ZP2-TF40HB□(JB/JF)75 | | | | | | 111 | 229.5 | | |
| ZP2-TF50HB□(JB/JF)25 | 50 | 52 | 36 | 54 | 24 | 40 | 162 | 31.3 | 16.5 |
| ZP2-TF50HB□(JB/JF)50 | | | | | | 75 | 197 | | |
| ZP2-TF50HB□(JB/JF)75 | | | | | | 111 | 233 | | |

**Dimensions**

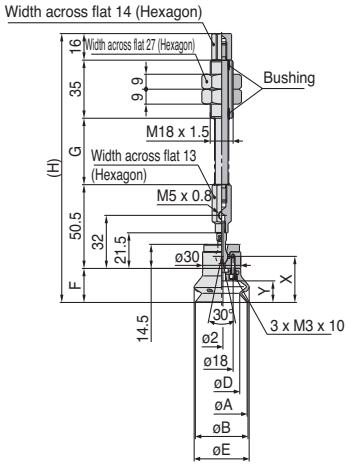
| Model | A | B | D | E | F | G | H | X | Y |
|---|---|---|---|---|---|---|---|---|---|
| ZP2-TF63HB□(JB/JF)25 | 63 | 65 | 46 | 68 | 31.5 | 44 | 204 | 40.6 | 21.5 |
| ZP2-TF63HB□(JB/JF)50 | | | | | | 80 | 240 | | |
| ZP2-TF63HB□(JB/JF)75 | | | | | | 120 | 280 | | |
| ZP2-TF63HB□(JB/JF)100 | | | | | | 155 | 315 | | |
| ZP2-TF80HB□(JB/JF)25 | 80 | 83 | 58 | 85 | 37 | 44 | 209.5 | 46.1 | 27.5 |
| ZP2-TF80HB□(JB/JF)50 | | | | | | 80 | 245.5 | | |
| ZP2-TF80HB□(JB/JF)75 | | | | | | 120 | 285.5 | | |
| ZP2-TF80HB□(JB/JF)100 | | | | | | 155 | 320.5 | | |

**Dimensions**

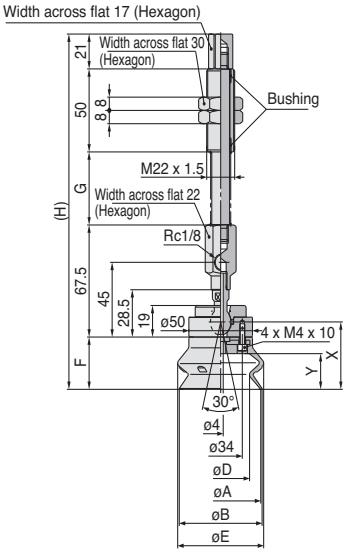
| Model | A | B | D | E | F | G | H | X | Y |
|---|---|---|---|---|---|---|---|---|---|
| ZP2-TF100HB□(JB/JF)25 | 100 | 103 | 69 | 107 | 47.5 | 44 | 221 | 57.6 | 35.5 |
| ZP2-TF100HB□(JB/JF)50 | | | | | | 80 | 257 | | |
| ZP2-TF100HB□(JB/JF)75 | | | | | | 120 | 297 | | |
| ZP2-TF100HB□(JB/JF)100 | | | | | | 155 | 332 | | |
| ZP2-TF125HB□(JB/JF)25 | 125 | 129 | 89 | 135 | 56 | 44 | 229.5 | 66.1 | 44 |
| ZP2-TF125HB□(JB/JF)50 | | | | | | 80 | 265.5 | | |
| ZP2-TF125HB□(JB/JF)75 | | | | | | 120 | 305.5 | | |
| ZP2-TF125HB□(JB/JF)100 | | | | | | 155 | 340.5 | | |

### Dimensions: With Buffer

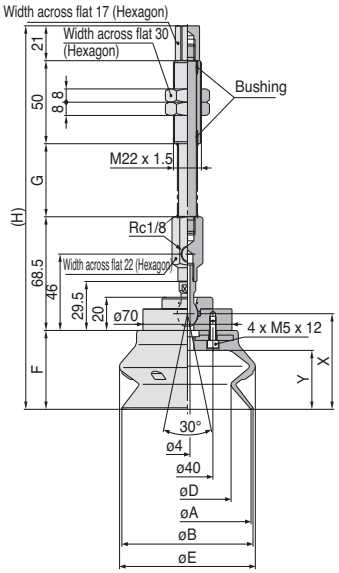
ZP2-XF$^{40}_{50}$HB□$^{JB}_{JF}$□




ZP2-XF$^{63}_{80}$HB□$^{JB}_{JF}$□




ZP2-XF$^{100}_{125}$HB□$^{JB}_{JF}$□




**Dimensions**

| Model | A | B | D | E | F | G | H | X | Y |
|---|---|---|---|---|---|---|---|---|---|
| ZP2-XF40HB□(JB/JF)25 | 40 | 42 | 28 | 43 | 20.5 | 40 | 162 | 27.8 | 13 |
| ZP2-XF40HB□(JB/JF)50 | | | | | | 75 | 197 | | |
| ZP2-XF40HB□(JB/JF)75 | | | | | | 111 | 233 | | |
| ZP2-XF50HB□(JB/JF)25 | 50 | 52 | 36 | 54 | 24 | 40 | 165.5 | 31.3 | 16.5 |
| ZP2-XF50HB□(JB/JF)50 | | | | | | 75 | 200.5 | | |
| ZP2-XF50HB□(JB/JF)75 | | | | | | 111 | 236.5 | | |

**Dimensions**

| Model | A | B | D | E | F | G | H | X | Y |
|---|---|---|---|---|---|---|---|---|---|
| ZP2-XF63HB□(JB/JF)25 | 63 | 65 | 46 | 68 | 31.5 | 44 | 214 | 40.6 | 21.5 |
| ZP2-XF63HB□(JB/JF)50 | | | | | | 80 | 250 | | |
| ZP2-XF63HB□(JB/JF)75 | | | | | | 120 | 290 | | |
| ZP2-XF63HB□(JB/JF)100 | | | | | | 155 | 325 | | |
| ZP2-XF80HB□(JB/JF)25 | 80 | 83 | 58 | 85 | 37 | 44 | 219.5 | 46.1 | 27.5 |
| ZP2-XF80HB□(JB/JF)50 | | | | | | 80 | 255.5 | | |
| ZP2-XF80HB□(JB/JF)75 | | | | | | 120 | 295.5 | | |
| ZP2-XF80HB□(JB/JF)100 | | | | | | 155 | 330.5 | | |

**Dimensions**

| Model | A | B | D | E | F | G | H | X | Y |
|---|---|---|---|---|---|---|---|---|---|
| ZP2-XF100HB□(JB/JF)25 | 100 | 103 | 69 | 107 | 47.5 | 44 | 231 | 57.6 | 35.5 |
| ZP2-XF100HB□(JB/JF)50 | | | | | | 80 | 267 | | |
| ZP2-XF100HB□(JB/JF)75 | | | | | | 120 | 307 | | |
| ZP2-XF100HB□(JB/JF)100 | | | | | | 155 | 342 | | |
| ZP2-XF125HB□(JB/JF)25 | 125 | 129 | 89 | 135 | 56 | 44 | 239.5 | 66.1 | 44 |
| ZP2-XF125HB□(JB/JF)50 | | | | | | 80 | 275.5 | | |
| ZP2-XF125HB□(JB/JF)75 | | | | | | 120 | 315.5 | | |
| ZP2-XF125HB□(JB/JF)100 | | | | | | 155 | 350.5 | | |

For more product options and details see our specific catalogues or on-line information.

## Vacuum Pad
## Series ZP

| Pad Diameter / size | Standard Design | Heavy duty | Ball joint type |
|---|---|---|---|
| | {ZPT series} | {ZPT series} | {ZPT series} |
| 2mm | ○ | | |
| 4mm | ○ | | |
| 6mm | ○ | | |
| 8mm | ○ | | |
| 10mm | ○ | | ○ |
| 13mm | ○ | | ○ |
| 16mm | ○ | | ○ |
| 20mm | ○ | | ○ |
| 25mm | ○ | | ○ |
| 32mm | ○ | | ○ |
| 40mm | ○ | ○ | ○ |
| 50mm | ○ | ○ | ○ |
| 63mm | | ○ | |
| 80mm | | ○ | |
| 100mm | | ○ | |
| 125mm | | ○ | |
| 2mm x 4mm elliptical | ○ | | |
| 3.5mm x 7mm elliptical | ○ | | |
| 4mm x 10mm elliptical | ○ | | |

### Features

| | | | |
|---|---|---|---|
| Buffer available? | ○ | ○ | ○ |
| Threaded vacuum connection? | ○ | ○ | ○ |
| One touch vacuum connection? (direct tube fitting) | ○ (Buffer type only) | | ○ |
| **See Page** | 1393 | 1404 | 1408 |

## Features

- Range of diameters from 2mm to 125mm plus elliptical pads.
- Choice of 5 different pad shapes and 6 different materials.
- Solid stem or buffer, to cater for varying workplace heights, can be selected.
- Rigid pad attachment or ball joint types.
- Wide variations of entry direction (top or side) and vacuum connection (threaded or one touch).
- Replacement pad are available.

## Identification of pads

1. Size

Pads are identified by diameter, which is measured at the inside edge of the rim, i.e. the effective diameters in contact with the material.

2. Materials

Pads are available in several materials, these are identified by colour.

| Pad material | NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluoro rubber (Black with green mark), Conductive NBR (Black with one white mark), Conductive silicon rubber (Black with two white marks) |
|---|---|

The different materials have different chemical resistance for different enviroments and applications.The table below gives a guide to this.

### Pad Material and Characteristics

◎: Little or no influence ○: Can be used depending on conditions X: Not suitable

| Characteristics / Material | Durometer HS (5) | Operating temperature range (°C) | Oil resistance gasoline | Oil resistance benzol | Base resistance | Acid resistance | Weatherability | Ozone resistance | Abrasion resistance | Waterproof | Solvent resistance (Benzene, toluene) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NBR | 50 | 0 to 120 | ◎ | X | ○ | ○ | X | X | ◎ | ○ | X |
| Silicon rubber | 40 | –30 to 200 | X | X | ○ | X | ◎ | ◎ | X | ○ | X |
| Urethane rubber | 60 | 0 to 60 | ◎ | X | X | X | ○ | ◎ | ◎ | X | X |
| Fluoro rubber | 60 | 0 to 250 | ◎ | ◎ | X | ◎ | ◎ | ◎ | ○ | ◎ | ◎ |
| Conductive NBR | 50 | 0 to 100 | ○ | X | ○ | X | ○ | X | ○ | ○ | X |
| Conductive silicon rubber | 50 | –10 to 200 | X | X | ○ | X | ◎ | ◎ | X | ○ | X |

* The above table covers only general characteristics of subject rubber materials. Pad materials used by SMC pass the JIS standards; however the actual performance depends on operating conditions.

3. Pad shape

Pads are available in several shapes, to suit different substrates.

| Pad form (Compatible with all models) | Flat (U) | Flat with ribs (C) | Deep (D) | Bellows (B) | Thin flat (UT) Thin with ribs (CT) |
|---|---|---|---|---|---|

Elliptical pad

| Pad diameter | 2 x 4 | 3.5 x 7 | 4 x 10 | ø2 | ø4 | ø6 | ø8 | ø10 | ø13 | ø16 | ø20 | ø25 | ø32 | ø40 | ø50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flat | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Flat with ribs | – | – | – | – | – | – | – | ● | ● | ● | ● | ● | ● | ● | ● |
| Deep | – | – | – | – | – | – | – | ● | – | ● | – | ● | – | ● | – |
| Bellows | – | – | – | – | – | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Thin flat | – | – | – | – | – | – | – | ● | ● | ● | – | – | – | – | – |
| Thin flat with ribs | – | – | – | – | – | – | – | ● | ● | ● | – | – | – | – | – |

Vacuum

## How to Order ZP

The ZP Series can be ordered as complete assemblies, i.e. the pad, holder and stem/ buffer are pre-assembled.

Alternatively, the individual components for a new assembly can be specified and ordered. Assembly takes a few moments only and this route may give a much faster delivery of the completed item if the finished assembly is not ready to ship.
The part number breakdowns of the components are shown on the following pages.

In the event of wear or damage, the components (Pads, holders, stems, etc) are available individually.

Pads with ball joint (ZPT/ZPR ball joint) are different, because the adaptor and cap are unique for this range.
Replacements pads are available but loose adaptors cannot be purchased. Buffer assemblies are common to the "fixed" ZPT/ZPR Series.

## How to order - Spare Pads (rubber part only)

Note: The part numbers on this page are for pads (rubber)only with locking rings
For complete assemblies, see later pages.

### Standard Pads

ZP **10** **U** **N**

Pad dia. [mm]

| | |
|---|---|
| 02 | ø2 |
| 04 | ø4 |
| 06 | ø6 |
| 08 | ø8 |
| 10 | ø10 |
| 13 | ø13 |
| 16 | ø16 |
| 20 | ø20 |
| 25 | ø25 |
| 32 | ø32 |
| 40 | ø40 |
| 50 | ø50 |

Material

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| GN | Conductive NBR (ø2 to ø16) |
| GS | Conductive silicon rubber (ø2 to ø16) |

Pad type

| | |
|---|---|
| U | Flat |
| C | Flat with ribs |
| D | Deep |
| B | Bellows |
| UT | Thin flat (ø10 - ø16) |
| CT | Thin flat with ribs(ø10 - ø16) |

## How to order - Heavy Duty Flat Pads

ZP **40** **H** **N**

Pad dia. [mm]

| | |
|---|---|
| 40 | ø40 |
| 50 | ø50 |
| 63 | ø63 |
| 80 | ø80 |
| 100 | ø100 |
| 125 | ø125 |

Material

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| E | EPR |

Pad type

| | |
|---|---|
| H | Heavy duty pad |

## How to order - Spare Lock Rings

ZPL **1**

Applicable pad dia. [mm]

| | |
|---|---|
| 1 | ø10 to ø16 |
| 2 | ø20 to ø32 |
| 3 | ø40, ø50 |
| F | ø40, ø50 Ball joint type |

## How to order - Elliptical Pads

ZP **2004** **U** **N**

Pad diameter

| | |
|---|---|
| 2004 | 2 x 4 (Breadth x Length) |
| 3507 | 3.5 x 7 |
| 4010 | 4 x 10 |

Pad type

| | |
|---|---|
| U | Flat |

Material

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| GN | Conductive NBR |
| GS | Conductive silicon rubber |

## How to order - Heavy Duty Bellows Pads

ZP **40** **HB** **N**

Pad diameter [mm]

| | |
|---|---|
| 40 | ø40 |
| 50 | ø50 |
| 63 | ø63 |
| 80 | ø80 |
| 100 | ø100 |
| 125 | ø125 |

Material

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| E | EPR |

Pad type

| | |
|---|---|
| HB | Heavy duty bellows pad |

## How to order - Ball Joint Pads

ZP **10** **F** **GN**

Pad diameter [mm]

| | |
|---|---|
| 10 | ø10 |
| 13 | ø13 |
| 16 | ø16 |
| 20 | ø20 |
| 25 | ø25 |
| 32 | ø32 |
| 40 | ø40 |
| 50 | ø50 |

Material

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| GN | Conductive NBR (ø10-ø16 only) |
| GS | Conductive silicon rubber(ø10-ø16 only) |

Pad type

| | |
|---|---|
| F | Ball joint type |

Note) Pads are exclusively ball joint type and are not interchangeable with other pads.

## Component Parts: Adaptor/Buffer (Series ZPT)

Appropriate adaptor or buffer can be selected for the currently used pad model.

### Without buffer

The same symbol

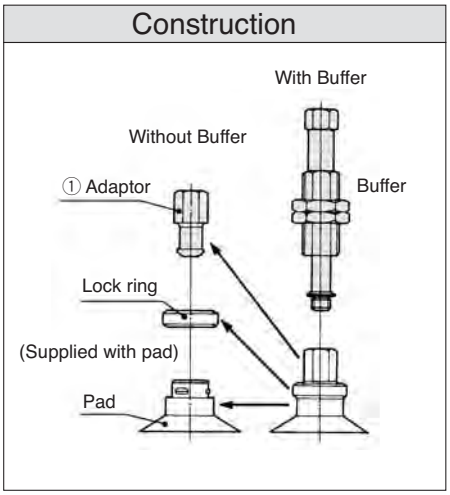
Replacement of the symbol

[Assembly model no.] ZP T 02 UN A5

| Symbol | Pad dia. |
|---|---|
| 1 | 02 to 08 |
| 2 | 10 to 16 |
| 3 | 20 to 32 |
| 4 | 40, 50 |

[① Adaptor] ZP T 1 A5

### Construction




### With buffer

[Pad model no.] ZP T 16 UGN K20 06 A10

| Symbol | Pad dia. | Buffer connection thread |
|---|---|---|
| 2 | 10 to 16 | B5 |
| 3 | 20 to 32 | |
| 4 | 40, 50 | B8 |

| Symbol | Thread dia. |
|---|---|
| 1 | A8 |
| 2 | A10 |
| 3 | A14 |

[① Adaptor] ZP T 2 B5

Not used for 02 to 08 diameter.

[② Buffer] ZP B 2 K20 06

∗ Refer to ø2 to ø8 for Thin flat, Thin flat with ribs, and Elliptic type.

Using this information, the assembly part number can be broken down into components

Examples:

Without buffer

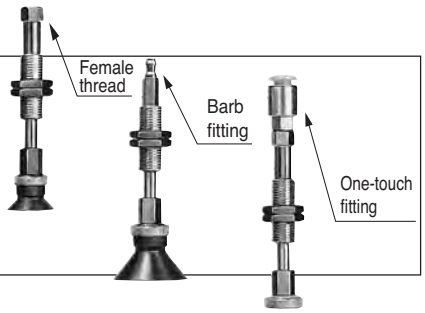
| | |
|---|---|
| Assembly | ZPT08UF-A6 |
| Breaks down to: | |
| Pad | ZP08UF |
| Adaptor | ZPT1-A6 |

With buffer

| | |
|---|---|
| Assembly | ZPT25BSJ50-B5-A10 |
| Breaks down to: | |
| Pad | ZP25BS |
| Adaptor | ZPT3-B5 |
| Buffer | ZPB2J50-06 |

## How to Order ZPT Standard Pads

| Type | Without buffer | | With buffer | |
|---|---|---|---|---|
| | Vacuum entry port | Mounting | Vacuum entry port | Mounting |
| Series **ZPT** Vertical vacuum entry Pads diameter 2mm to 50mm | Male thread | Male thread | Female thread | Buffer body |
| | Female thread | Female thread | Barb fitting | Buffer body |
| | | | One-touch fitting | Buffer body |




### Series ZPT Without buffer

**ZPT 02 U N – A5**

**Pad diameter [mm]**

| | |
|---|---|
| 2004 | 2 x 4 |
| 3507 | 3.5 x 7 |
| 4010 | 4 x 10 |
| 02 | ø2 |
| 04 | ø4 |
| 06 | ø6 |
| 08 | ø8 |
| 10 | ø10 |
| 13 | ø13 |
| 16 | ø16 |
| 20 | ø20 |
| 25 | ø25 |
| 32 | ø32 |
| 40 | ø40 |
| 50 | ø50 |

**Vacuum entry/Mounting thread diameter**

| Connection | Symbol | Thread diameter | ø2 to ø8 2 x 4, 3.5 x 7, 4 x 10 ø10 to ø16 (Thin section series) | ø10 to ø16 | ø20 to ø32 | ø40, ø50 |
|---|---|---|---|---|---|---|
| Male thread | A5 | M5 | ● | ● | – | – |
| | A6 | M6 | ● | ● | ● | ● |
| | A8 | M8 | – | – | ● | ● |
| Female thread | B4 | M4 | ● | – | – | – |
| | B5 | M5 | ● | ● | ● | – |
| | B6 | M6 | – | ● | ● | ● |
| | B8 | M8 x 1.25 | – | – | ● | ● |
| | B01 | 1/8 | – | ● | ● | ● |

**Material**

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| GN | Conductive NBR (ø2 to ø16) |
| GS | Conductive silicon rubber (ø2 to ø16) |

**Pad type**
(Refer to "Table (1)" for availability.)

| | |
|---|---|
| U | Flat |
| C | Flat with ribs |
| D | Deep |
| B | Bellows |
| UT | Thin flat |
| CT | Thin flat with ribs |

**Table (1) Pad Diameter/Pad Type**

| Type \ Diameter [mm] | 2 x 4 | 3.5 x 7 | 4 x 10 | 2 | 4 | 6 | 8 | 10 | 13 | 16 | 20 | 25 | 32 | 40 | 50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flat | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Flat with ribs | – | – | – | – | – | – | – | ● | ● | ● | ● | ● | ● | ● | ● |
| Deep | – | – | – | – | – | – | – | ● | – | ● | – | ● | – | ● | – |
| Bellows | – | – | – | – | – | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Thin flat | – | – | – | – | – | – | – | ● | ● | ● | – | – | – | – | – |
| Thin flat with ribs | – | – | – | – | – | – | – | ● | ● | ● | – | – | – | – | – |

## Product Recommendation

**Stocked items for fast delivery**

| | | |
|---|---|---|
| ZPT*UN-☐ | ZPT**BN-☐ | ZPT***CN-☐ |
| ZPT*US-☐ | ZPT**BS-☐ | ZPT***CS-☐ |

* Pad diameters ø2 to ø16
** Pad diameters ø6 to ø16
*** ø10 to ø16
☐ A5, B5

**Stocked items for fast delivery**

| | | |
|---|---|---|
| ZPT*UN-☐☐☐ | ZPT*BN-☐ | ZPT*CN-☐ |
| ZPT**UN-☐☐ | ZPT*BS-☐ | ZPT*CS-☐ |
| ZPT*US-☐ | | |

* Pad diameters ø20 to ø50
** Pad diameters ø20 to ø32
*** ø10 to ø16
☐ B01
☐☐ B5, B6
☐☐☐ A6, B8, B01

### Accessories and Related Products

**Series V100** - 3 Port Valve - page 353
**Series ZL** - One-stage Ejector - page 1360
**Series ZB** - Modular Ejector - page 1380
**Series IRV** - Vacuum Regulator - www.smc.eu
**Series ITV209** - Electronic Vacuum Regulator - page 1119
**Series ZFZ** - Air Suction Filter - www.smc.eu
**Series ZP2** - Vacuum Pad - page 1414
**Series GZ** - Pressure Gauge for Vacuum - www.smc.eu
**Series PFM** - Flow Switch - page 1298
**Series ZSE40A(F)/ISE40A** - Vacuum Switch - page 1283
**Series AC** - Air Preparation - page 1076
**Series TU** - Tubing - page 1223
**Series KQB2** - Fitting - page 1212

## How to Order ZPT Standard Pads

Series ZPT With buffer **ZPT** **16** **U** **N** **K** **20** **06** **A10**

**Pad diameter [mm]**

| | | | |
|---|---|---|---|
| 2004 | 2 x 4 | 13 | ø13 |
| 3507 | 3.5 x 7 | 16 | ø16 |
| 4010 | 4 x 10 | 20 | ø20 |
| 02 | ø2 | 25 | ø25 |
| 04 | ø4 | 32 | ø32 |
| 06 | ø6 | 40 | ø40 |
| 08 | ø8 | 50 | ø50 |
| 10 | ø10 | | |

**Pad type**
("Table (1)" for applications.)

| | |
|---|---|
| U | Flat |
| C | Flat with ribs |
| D | Deep |
| B | Bellows |
| UT | Thin flat |
| CT | Thin flat with ribs |

**Buffer type**

| | |
|---|---|
| J | Rotating |
| K | Non-rotating |

**Material**

| | | | |
|---|---|---|---|
| N | NBR | F | Fluoro rubber |
| S | Silicon rubber | GN | Conductive NBR |
| U | Urethane rubber | GS | Conductive silicon rubber |

**Buffer stroke**
(Refer to "Table (2)" for applications.)

**Vacuum entry port**
(Refer to "Table (3)" for applications.)

**Mounting thread diameter/ Male thread**
(Refer to "Table (3)" for applications.)

## Product Recommendation

### Stocked items for fast delivery

| | | | | |
|---|---|---|---|---|
| ZPT02UNK6-06-A8 | ZPT08UNK6-04-A8 | ZPT13CNK10-B5-A10 | ZPT20BNK10-B5-A10 | ZPT40UNK10-08-A14 |
| ZPT02UNK6-B5-A8 | ZPT08BNK6-B5-A8 | ZPT13BNK10-B5-A10 | ZPT25UNK10-06-A10 | ZPT40CNK10-08-A14 |
| ZPT04UNK6-04-A8 | ZPT10UNK10-06-A10 | ZPT16UNK10-06-A10 | ZPT25CNK10-06-A10 | ZPT40CNK10-B01-A14 |
| ZPT04UNK6-06-A8 | ZPT10UNK10-B5-A10 | ZPT16USK10-06-A10 | ZPT25CNK10-B5-A10 | ZPT40BNK10-06-A14 |
| ZPT04UNK6-B5-A8 | ZPT10USK10-06-A10 | ZPT16CNK10-06-A10 | ZPT25BNK10-06-A10 | ZPT40BNK10-B01-A14 |
| ZPT04USK6-04-A8 | ZPT10CNK10-06-A10 | ZPT16CNK10-B5-A10 | ZPT25BNK10-B5-A10 | ZPT50UNK10-06-A14 |
| ZPT04USK6-B5-A8 | ZPT10CNK10-B5-A10 | ZPT16BNK10-06-A10 | ZPT32UNK10-06-A10 | ZPT50UNK10-08-A14 |
| ZPT06UNK6-04-A8 | ZPT10BNK10-06-A10 | ZPT16BNK10-B5-A10 | ZPT32UNK10-B5-A10 | ZPT50CNK10-B01-A14 |
| ZPT06UNK6-06-A8 | ZPT10BNK10-B5-A10 | ZPT20UNK10-06-A10 | ZPT32CNK10-B5-A10 | ZPT50BNK10-06-A14 |
| ZPT06UNK6-B5-A8 | ZPT10BSK10-06-A10 | ZPT20USK10-06-A10 | ZPT32BNK10-06-A10 | |
| ZPT06BNK6-06-A8 | ZPT10BSK10-B5-A10 | ZPT20CNK10-B5-A10 | ZPT32BNK10-B5-A10 | |
| ZPT06BNK6-B5-A8 | ZPT13CUJ10-B5-A10 | ZPT20BNK10-06-A10 | ZPT40UNK10-06-A14 | |

## Tables

Table (1) Pad Diameter/Pad Type

| Type \ Diameter [mm] | 2 x 4 | 3.5 x 7 | 4 x 10 | 2 | 4 | 6 | 8 | 10 | 13 | 16 | 20 | 25 | 32 | 40 | 50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flat | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Flat with ribs | — | — | — | — | — | — | — | ● | ● | ● | ● | ● | ● | ● | ● |
| Deep | — | — | — | — | — | — | — | ● | — | ● | — | ● | — | ● | — |
| Bellows | — | — | — | — | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Thin flat | — | — | — | — | — | — | — | ● | ● | ● | — | — | — | — | — |
| Thin flat with ribs | — | — | — | — | — | — | — | ● | ● | ● | — | — | — | — | — |

Table (2) Pad Diameter/Stroke

| Stroke [mm] \ Diameter [mm] | 2 x 4 | 3.5 x 7 | 4 x 10 | 2 | 4 | 6 | 8 | Thin flat/Thin flat with ribs 10 | 13 | 16 | 10 | 13 | 16 | 20 | 25 | 32 | 40 | 50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | — | — | — | — | — | — | — | — |
| 10 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 15 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | — | — | — | — | — | — | — | — |
| 20 | — | — | — | — | — | — | — | — | — | — | ● | ● | ● | ● | ● | ● | ● | ● |
| 25 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | — | — | — | — | — | — | — | — |
| 30 | — | — | — | — | — | — | — | — | — | — | ● | ● | ● | ● | ● | ● | ● | ● |
| 40 | — | — | — | — | — | — | — | — | — | — | ● | ● | ● | ● | ● | ● | — | — |
| 50 | — | — | — | — | — | — | — | — | — | — | ● | ● | ● | ● | ● | ● | ● | ● |

Table (3) Vacuum Entry/Mounting Thread Diameter

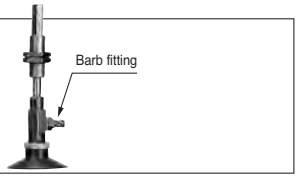
| Connection | | Symbol | Thread dia./Port size | ø2 to ø8 2 x 4, 3.5 x 7, 4 x 10 Thin section series ø10 to ø16 | ø10 to ø32 | ø40, ø50 |
|---|---|---|---|---|---|---|
| Vacuum entry | Female thread | B3 | M3 | ● | — | — |
| | | B5 | M5 | ● | ● | ● |
| | | B01 | 1/8 | — | — | ● |
| | One-touch fitting | 04 | ø4 tube | ● | ● | — |
| | | 06 | ø6 tube | ● | ● | ● |
| | | 08 | ø8 tube | — | — | ● |
| Mounting | Male thread | A8 | M8 x 1 | ● | — | — |
| | | A10 | M10 x 1 | — | ● | — |
| | | A14 | M14 x 1 | — | — | ● |

Pad Types

| Pad form | Flat | Flat with ribs | Deep | Bellows | Thin flat/Thin flat with ribs |
|---|---|---|---|---|---|
| Pad diameter [mm] | 2, 4, 6, 8, 2 x 4, 3.5 x 7, 4 x 10, 10, 13, 16, 20, 25, 32, 40, 50 | 10, 13, 16, 20, 25, 32, 40, 50 | 10, 16, 25, 40 | 6, 8, 10, 13, 16, 20, 25, 32, 40, 50 | 10, 13, 16 |
| Material (Color) | NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluoro rubber (Black with green mark) Conductive NBR (Black with one white mark), Conductive silicon rubber (Black with two white marks) | | | | |
| Durometer | NBR (50), Silicon rubber (40), Urethane rubber/Fluoro rubber (60) Conductive NBR (50), Conductive silicon rubber (50) | | | | |

For more product options and details see our specific catalogues or on-line information.

## Also Available

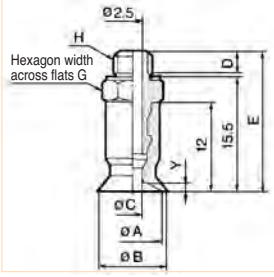
| Type | Without buffer | | | With buffer | | |
|---|---|---|---|---|---|---|
| | Vacuum entry port | Mounting | | Vacuum entry port | Mounting | |
| Series **ZPY** Side vacuum entry Pad diameters 2mm to 50mm | Barb fitting | Male thread |  | Barb fitting | Buffer body |   |
| | Barb fitting | Female thread | | | | |

## Dimensions

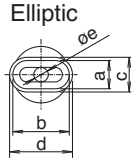
| | | | |
|---|---|---|---|
| Connection | Male thread | Pad Form | Flat/Flat with ribs/Deep/Thin flat/Thin flat with ribs/Elliptic |
| Vacuum Entry Port | Vertical | Mounting | Use connection for vacuum |

**Size** ø2, ø4, ø6, ø8

Flat/Thin flat/Thin flat with ribs

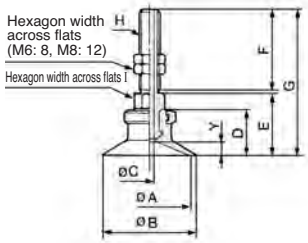



Elliptic

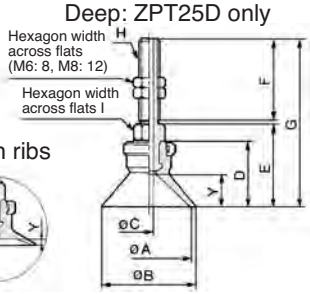



**Size** ø20, ø25, ø32

Flat




Deep: ZPT25D only




Flat with ribs


### Flat/Thin Flat/Thin Flat with Ribs

| Model | øA | øB | øC | H: M5 | | | H: M6 x 1 | | | Y |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D | E | G | D | E | G | |
| ZPT02U | 2 | 2.6 | 1.2 | 3 | 19 | 7 | 4 | 20 | 8 | 0.5 |
| ZPT04U | 4 | 4.8 | 1.6 | | | | | | | 0.8 |
| ZPT06U | 6 | 7 | 2.5 | | | | | | | 1 |
| ZPT08U | 8 | 9 | | | | | | | | |
| ZPT10UT | 10 | 11 | | | | | | | | |
| ZPT13UT | 13 | 14 | | | | | | | | 1.5 |
| ZPT16UT | 16 | 17 | | | | | | | | |
| ZPT10CT | 10 | 11 | | | | | | | | 0.8 |
| ZPT13CT | 13 | 14 | | | | | | | | 1 |
| ZPT16CT | 16 | 17 | | | | | | | | |

### Flat/Flat with Ribs

| Model | øA | øB | D | H: M6 | | | | | H: M8 x 1 | | | | | Y | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | øC | E | F | G | I | øC | E | F | G | I | Flat | Flat with ribs |
| ZPT20 U C | 20 | 23 | 14 | 3 | 19 | 25 | 45 | 8 | 3.5 | 24 | 15 | 40 | 12 | 4 | 1.7 |
| ZPT25 U C | 25 | 28 | | | | | | | | | | | | | 1.8 |
| ZPT32 U C | 32 | 35 | 14.5 | | 19.5 | | 45.5 | | | 24.5 | | 40.5 | | 4.5 | 2.3 |

### Deep

| Model | øA | øB | D | H: M6 | | | | | H: M8 x 1 | | | | | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | øC | E | F | G | I | øC | E | F | G | I | |
| ZPT25D | 25 | 28 | 20 | 3 | 25 | 25 | 51 | 8 | 3.5 | 30 | 15 | 46 | 12 | 10 |

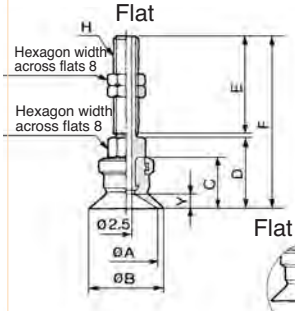
### Elliptic

| Model | a | b | c | d | øe | Y |
|---|---|---|---|---|---|---|
| ZPT2004U | 2 | 4 | 2.6 | 4.6 | 1.2 | 0.3 |
| ZPT3507U | 3.5 | 7 | 4.3 | 7.8 | 1.8 | 0.5 |
| ZPT4010U | 4 | 10 | 5 | 11 | 2 | 0.8 |

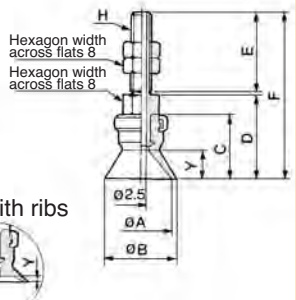
∗ Dimensions of D, E, G are the same.

**Size** ø10, ø13, ø16

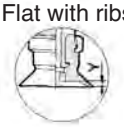
Flat




Deep: ZPT10D/16D only




Flat with ribs




### Flat/Flat with Ribs

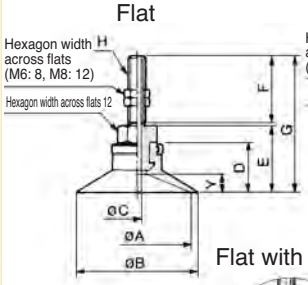
| Model | øA | øB | C | D | H: M5 | | H: M6 | | Y | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | E | F | E | F | Flat | Flat with ribs |
| ZPT10 U C | 10 | 12 | 12 | 17 | 20 | 38 | 25 | 43 | 3 | 1.7 |
| ZPT13 U C | 13 | 15 | | | | | | | | 1.8 |
| ZPT16 U C | 16 | 18 | 12.5 | 17.5 | | 38.5 | | 43.5 | 3.5 | 1.2 |

### Deep

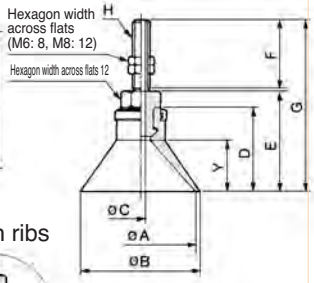
| Model | øA | øB | C | D | H: M5 | | H: M6 | | Y |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | E | F | E | F | |
| ZPT10D | 10 | 12 | 15 | 20 | 20 | 41 | 25 | 46 | 6 |
| ZPT16D | 16 | 18 | 16 | 21 | 20 | 42 | 25 | 47 | 7 |

**Size** ø40, ø50

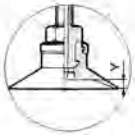
Flat




Deep: ZPT40D only




Flat with ribs




### Flat/Flat with Ribs

| Model | øA | øB | D | E | H: M6 | | | H: M8 x 1 | | | Y | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | øC | F | G | øC | F | G | Flat | Flat with ribs |
| ZPT40 U C | 40 | 43 | 18.5 | 24.5 | 3 | 25 | 50.5 | 4.5 | 15 | 40.5 | 6.5 | 3.3 |
| ZPT50 U C | 50 | 53 | 19.5 | 25.5 | | | 51.5 | | | 41.5 | 7.5 | 3.8 |

### Deep

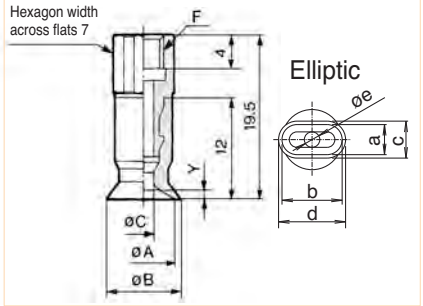
| Model | øA | øB | D | E | H: M6 | | | H: M8 x 1 | | | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | øC | F | G | øC | F | G | |
| ZPT40D | 40 | 43 | 29 | 35.5 | 3 | 25 | 61 | 4.5 | 15 | 51 | 17 |

## Dimensions

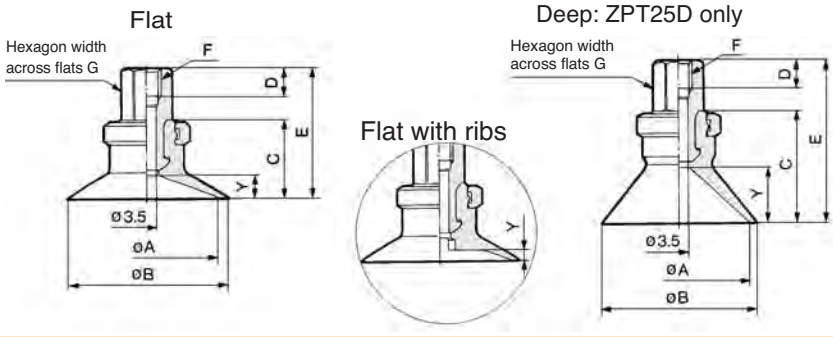
| | | | |
|---|---|---|---|
| Connection | Female thread | Pad Form | Flat/Flat with ribs/Deep |
| Vacuum Entry Port | Vertical | Mounting | Use connection for vacuum entry |

**Size** ø2, ø4, ø6, ø8

Flat/Thin flat/Thin flat with ribs




**Size** ø20, ø25, ø32




### Flat

| Model | øA | øB | C | F | Y |
|---|---|---|---|---|---|
| ZPT02U | 2 | 2.6 | 1.2 | M4 | 0.5 |
| ZPT04U | 4 | 4.8 | 1.6 | | 0.8 |
| ZPT06U | 6 | 7 | 2.5 | | |
| ZPT08U | 8 | 9 | | | 1 |
| ZPT10UT | 10 | 11 | | M5 | |
| ZPT13UT | 13 | 14 | | | 1.5 |
| ZPT16UT | 16 | 17 | | | |
| ZPT10CT | 10 | 11 | | | 0.8 |
| ZPT13CT | 13 | 14 | | | 1 |
| ZPT16CT | 16 | 17 | | | |

### Elliptic

| Model | a | b | c | d | øe | Y |
|---|---|---|---|---|---|---|
| ZPT2004U | 2 | 4 | 2.6 | 4.6 | 1.2 | 0.3 |
| ZPT3507U | 3.5 | 7 | 4.3 | 7.8 | 1.8 | 0.5 |
| ZPT4010U | 4 | 10 | 5 | 11. | 2 | 0.8 |

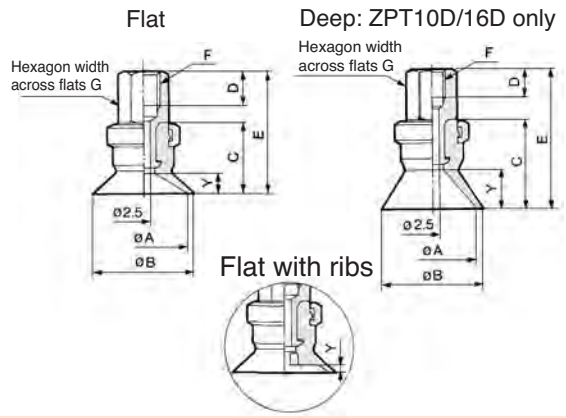
### Flat/Flat with Ribs

| Model | øA | øB | C | F: M5 | | | F: M6 | | | F: M8 x 1.25 | | | F: 1/8 | | | Y | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D | E | G | D | E | G | D | E | G | D | E | G | Flat | Flat with ribs |
| ZPT20 UC | 20 | 23 | 14 | 5 | 23 | 8 | 6 | 23 | 8 | 8 | 29 | 12 | 6.2 | 29 | 12 | 4 | 1.7 |
| ZPT25 UC | 25 | 28 | | | | | | | | | | | | | | | 1.8 |
| ZPT32 UC | 32 | 35 | 14.5 | | 23.5 | | | 23.5 | | | 29.5 | | | 29.5 | | 4.5 | 2.3 |

### Deep

| Model | øA | øB | C | F: M5 | | | F: M6 | | | F: M8 x 1.25 | | | F: 1/8 | | | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D | E | G | D | E | G | D | E | G | D | E | G | |
| ZPT25D | 25 | 28 | 20 | 5 | 29 | 8 | 6 | 29 | 8 | 8 | 35 | 12 | 6.2 | 35 | 12 | 10 |

**Size** ø10, ø13, ø16



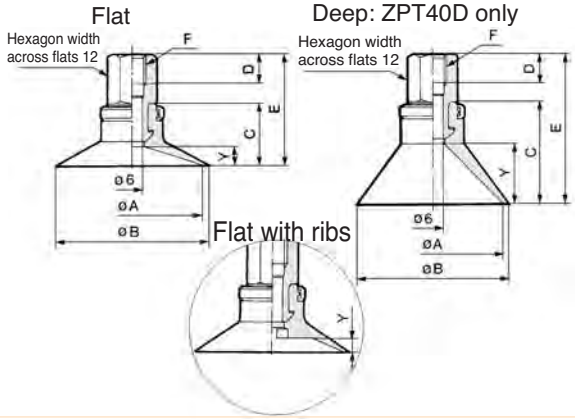

### Flat/Flat with Ribs

| Model | øA | øB | C | F: M5 | | | F: M6 | | | F: 1/8 | | | Y | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D | E | G | D | E | G | D | E | G | Flat | Flat with ribs |
| ZPT10 UC | 10 | 12 | 12 | 5 | 21 | 8 | 6 | 21 | 8 | 6.2 | 27 | 12 | 3 | 1.7 |
| ZPT13 UC | 13 | 15 | | | | | | | | | | | | 1.8 |
| ZPT16 UC | 16 | 18 | 12.5 | | 21.5 | | | 21.5 | | | 27.5 | | 3.5 | 1.2 |

### Deep

| Model | øA | øB | C | F: M5 | | | F: M6 | | | F: 1/8 | | | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D | E | G | D | E | G | D | E | G | |
| ZPT10D | 10 | 12 | 15 | 5 | 24 | 8 | 6 | 24 | 8 | 6.2 | 30 | 12 | 6 |
| ZPT16D | 16 | 18 | 16 | | 25 | | | 25 | | | 31 | | 7 |

**Size** ø40, ø50




### Flat/Flat with Ribs

| Model | øA | øB | C | F: M6 | F: M8 x 1.25 | F: 1/8 | E | Y | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | D | D | D | | Flat | Flat with ribs |
| ZPT40 UC | 40 | 43 | 18.5 | 6 | 8 | 6.2 | 32 | 6.5 | 3.3 |
| ZPT50 UC | 50 | 53 | 19.5 | | | | 33 | 7.5 | 3.8 |

### Deep

| Model | øA | øB | C | F: M6 | F: M8 x 1.25 | F: 1/8 | E | Y |
|---|---|---|---|---|---|---|---|---|
| | | | | D | D | D | | |
| ZPT40D | 40 | 43 | 29 | 6 | 8 | 6.2 | 42.5 | 17 |

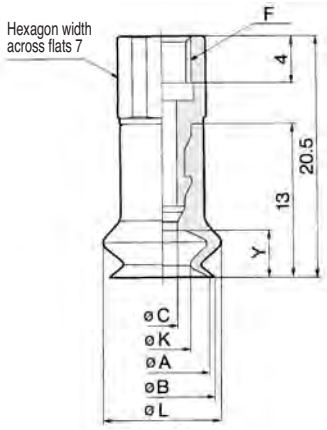
Vacuum

## Dimensions

| | | | |
|---|---|---|---|
| Connection | Female thread | Pad Form | Bellows |
| Vacuum Entry Port | Vertical | Mounting | Use connection for vacuum entry |

### Size ø6, ø8

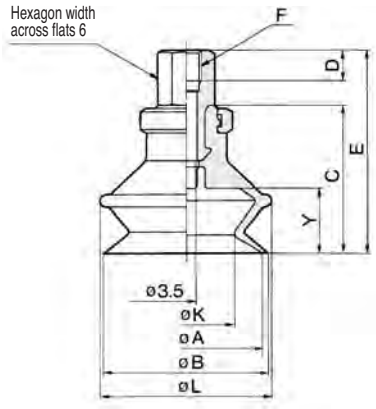
Bellows




| Model | øA | øB | øC | F | øK | øL | Y |
|---|---|---|---|---|---|---|---|
| ZPT06B | 6 | 7 | 2.5 | M4 | 3.3 | 9.1 | 4 |
| ZPT08B | 8 | 9 | | M5 | 4.7 | 10.1 | |

### Size ø20, ø25, ø32

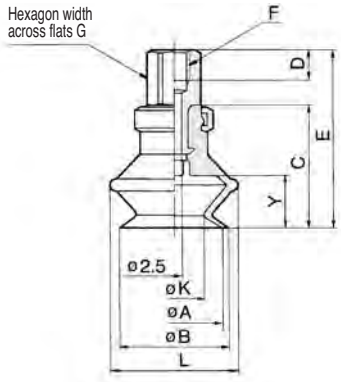
Bellows




| Model | øA | øB | øC | F: M5 | | | F: M6 | | | F: M8 x 1.25 | | | F: 1/8 | | | øK | øL | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D | E | G | D | E | G | D | E | G | D | E | G | | | |
| ZPT20B | 20 | 22 | 23.5 | 5 | 32.5 | 8 | 6 | 32.5 | 8 | 8 | 38.5 | 12 | 6.2 | 38.5 | 12 | 12.4 | 25 | 10.5 |
| ZPT25B | 25 | 27 | 24 | | 33 | | | 33 | | | 39 | | | 39 | | 15.6 | 28 | 10.5 |
| ZPT32B | 32 | 34 | 29 | | 38 | | | 38 | | | 44 | | | 44 | | 18.9 | 37 | 14 |

### Size ø10, ø13, ø16

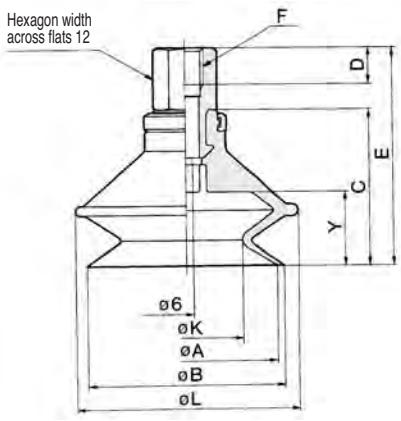
Bellows




| Model | øA | øB | øC | F: M5 | | | F: M6 | | | F: 1/8 | | | øK | øL | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D | E | G | D | E | G | D | E | G | | | |
| ZPT10B | 10 | 12 | 16 | 5 | 25 | 8 | 6 | 25 | 8 | 6.2 | 31 | 12 | 5.5 | 13.8 | 5.5 |
| ZPT13B | 13 | 15 | 18.5 | | 27.5 | | | 27.5 | | | 33.5 | | 8.7 | 19 | 7.5 |
| ZPT16B | 16 | 18 | 20 | | 29 | | | 29 | | | 35 | | 9.9 | 21 | 8.5 |

### Size ø40, ø50

Bellows

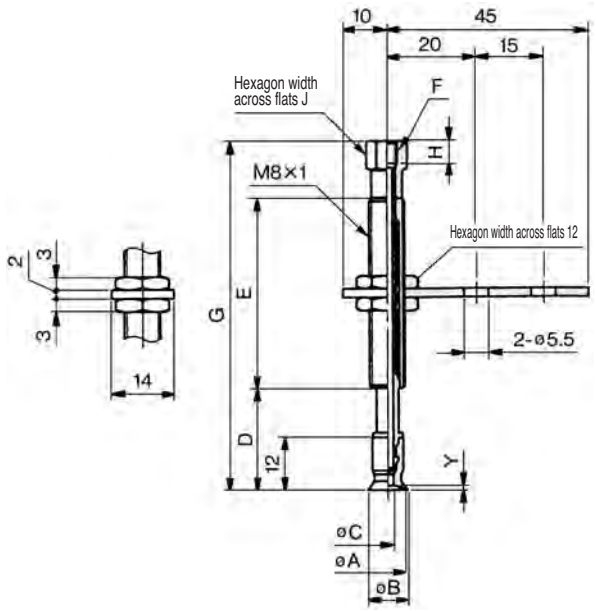



| Model | øA | øB | øC | F: M6 | F: M8 x 1.25 | F: 1/8 | E | øK | øL | Y |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | D | D | D | | | | |
| ZPT40B | 40 | 43 | 34 | 6 | 8 | 6.2 | 47.5 | 24.4 | 48 | 16 |
| ZPT50B | 50 | 53 | 38 | | | | 51.5 | 32.4 | 57 | 19 |

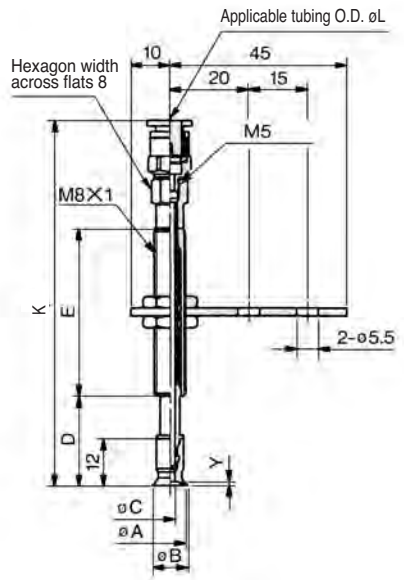
## Dimensions

| | | | |
|---|---|---|---|
| Connection | Female thread (Buffer) | Pad Form | Flat/Thin flat/Thin flat with ribs/Elliptic |
| Vacuum Entry Port | Vertical | Mounting | Buffer body |

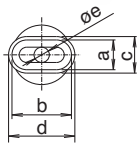
Flat ø2, ø4, ø6, ø8




(One Touch Type)




Elliptic




### Flat

| Model | A | B | C | Y |
|---|---|---|---|---|
| ZPT02U□□□□□-B□-A8 | 2 | 2.6 | 1.2 | 0.5 |
| ZPT04U□□□□□-B□-A8 | 4 | 4.8 | 1.6 | 0.8 |
| ZPT06U□□□□□-B□-A8 | 6 | 7 | 2.5 | |
| ZPT08U□□□□□-B□-A8 | 8 | 9 | | 1 |

### Elliptic

| Model | a | b | c | d | øe | Y |
|---|---|---|---|---|---|---|
| ZPT2004U | 2 | 4 | 2.6 | 4.6 | 1.2 | 0.3 |
| ZPT3507U | 3.5 | 7 | 4.3 | 7.8 | 1.8 | 0.5 |
| ZPT4010U | 4 | 10 | 5 | 11 | 2 | 0.8 |

### Thin Flat/Thin Flat with Ribs

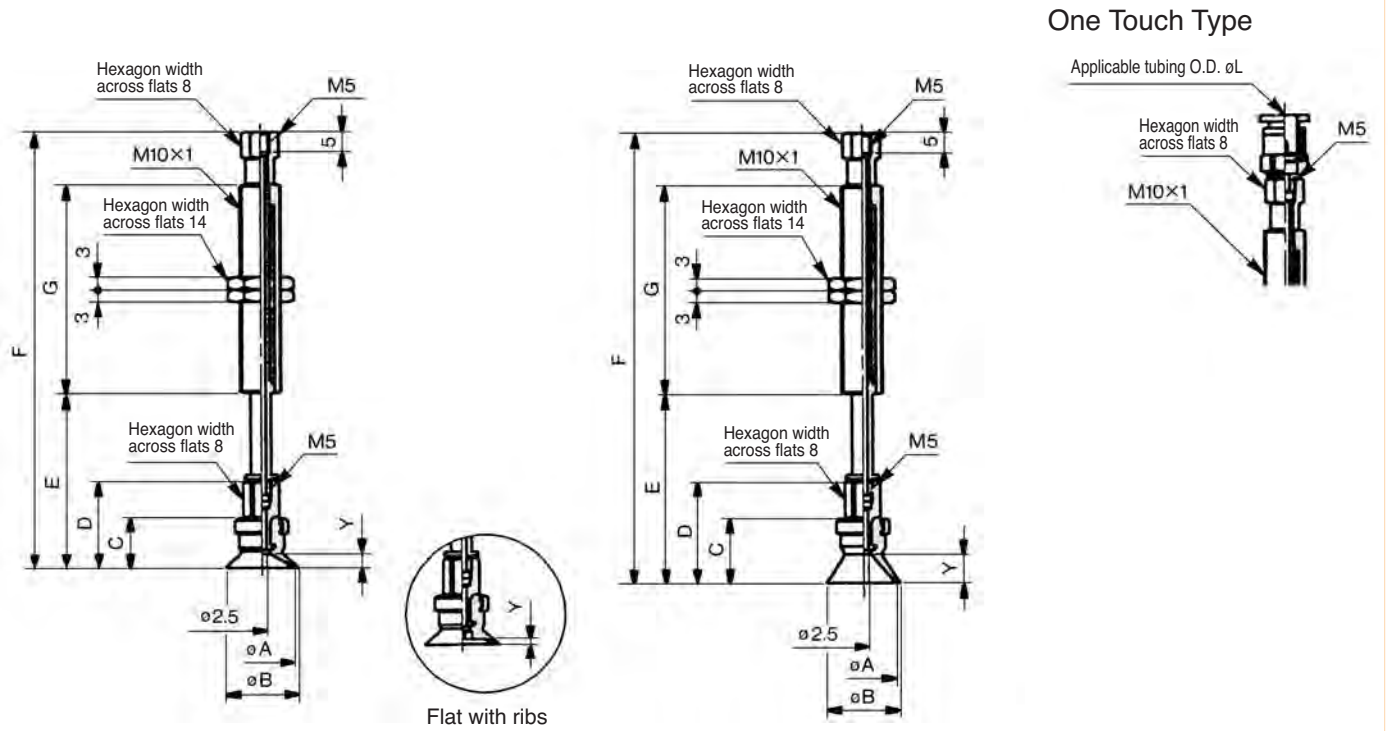
| Model | A | B | C | Y |
|---|---|---|---|---|
| ZPT10UT | 10 | 11 | 2.5 | 1 |
| ZPT13UT | 13 | 14 | | 1.5 |
| ZPT16UT | 16 | 17 | | |
| ZPT10CT | 10 | 11 | | 0.8 |
| ZPT13CT | 13 | 14 | | 1 |
| ZPT16CT | 16 | 17 | | |

### Dimensions by Stroke

| Model | D | E | F: M3 | | | F: M5 | | | L04 | L06 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | G | H | J | G | H | J | K | K |
| ZPT□□□□□□ 6-B□-A8 | 18 | 15 | 44 | 3 | 6 | 46 | 5 | 8 | 60 | 61 |
| ZPT□□□□□□10-B□-A8 | 23 | 43 | 77 | | | 79 | | | 93 | 94 |
| ZPT□□□□□□15-B□-A8 | 28 | | 82 | | | 84 | | | 98 | 99 |
| ZPT□□□□□□25-B□-A8 | 38 | | 92 | | | 94 | | | 108 | 109 |

## Dimensions

| | | | |
|---|---|---|---|
| Connection | Female thread (Buffer) | Pad Form | Flat/Flat with ribs/Deep |
| Vacuum Entry Port | Vertical | Mounting | Buffer body |
| Flat/Flat with ribs | ø10, ø13, ø16 | Deep | ø10, ø16 |




### Flat/Flat with Ribs

| Model | A | B | C | D | Y | |
|---|---|---|---|---|---|---|
| | | | | | Flat | Flat with ribs |
| ZPT10U□□□□□-B5-A10 | 10 | 12 | 12 | 21 | 3 | 1.7 |
| ZPT13U□□□□□-B5-A10 | 13 | 15 | | | | 1.8 |
| ZPT16U□□□□□-B5-A10 | 16 | 18 | 12.5 | 21.5 | 3.5 | 1.2 |

### Dimensions by Stroke

| Model | ø10, ø13 | | ø16 | | G |
|---|---|---|---|---|---|
| | E | F | E | F | |
| ZPT□□U□□□10-B5-A10 | 32.5 | 68.5 | 33 | 69 | 23 |
| ZPT□□U□□□20-B5-A10 | 42.5 | 106.5 | 43 | 107 | 51 |
| ZPT□□U□□□30-B5-A10 | 52.5 | 116.5 | 53 | 117 | |
| ZPT□□U□□□40-B5-A10 | 62.5 | 152.5 | 63 | 153 | 77 |
| ZPT□□U□□□50-B5-A10 | 72.5 | 162.5 | 73 | 163 | 77 |

### Deep

| Model | A | B | C | D | Y |
|---|---|---|---|---|---|
| ZPT10D□□□□□-B5-A10 | 10 | 12 | 15 | 24 | 6 |
| ZPT16D□□□□□-B5-A10 | 16 | 18 | 16 | 25 | 7 |

### Dimensions by Stroke

| Model | ø10 | | ø16 | | G |
|---|---|---|---|---|---|
| | E | F | E | F | |
| ZPT□□D□□□10-B5-A10 | 35.5 | 71.5 | 36.5 | 72.5 | 23 |
| ZPT□□D□□□20-B5-A10 | 45.5 | 109.5 | 46.5 | 110.5 | 51 |
| ZPT□□D□□□30-B5-A10 | 55.5 | 119.5 | 56.5 | 120.5 | |
| ZPT□□D□□□40-B5-A10 | 65.5 | 155.5 | 66.5 | 156.5 | 77 |
| ZPT□□D□□□50-B5-A10 | 75.5 | 165.5 | 76.5 | 166.5 | |

### One Touch Type

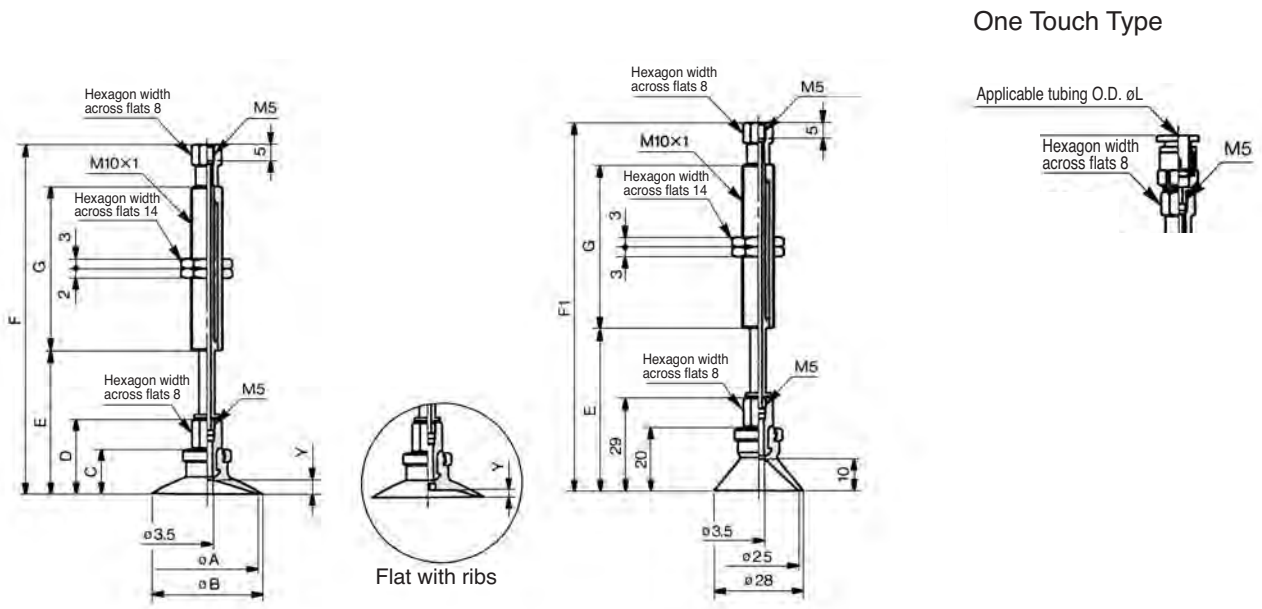
| Model | ø10, ø13 | | ø16 | |
|---|---|---|---|---|
| | K | | K | |
| | L: ø4 | L: ø6 | L: ø4 | L: ø6 |
| ZPT□□U□□□10-0□-A10 | 82.5 | 83.5 | 83 | 84 |
| ZPT□□U□□□20-0□-A10 | 120.5 | 121.5 | 121 | 122 |
| ZPT□□U□□□30-0□-A10 | 130.5 | 131.5 | 131 | 132 |
| ZPT□□U□□□40-0□-A10 | 166.5 | 167.5 | 167 | 168 |
| ZPT□□U□□□50-0□-A10 | 176.5 | 177.5 | 177 | 178 |

### One Touch Type

| Model | ø10 | | ø16 | |
|---|---|---|---|---|
| | K | | K | |
| | L: ø4 | L: ø6 | L: ø4 | L: ø6 |
| ZPT□□D□□□10-0□-A10 | 85.5 | 86.5 | 86.5 | 87.5 |
| ZPT□□D□□□20-0□-A10 | 123.5 | 124.5 | 124.5 | 125.5 |
| ZPT□□D□□□30-0□-A10 | 133.5 | 134.5 | 134.5 | 135.5 |
| ZPT□□D□□□40-0□-A10 | 169.5 | 170.5 | 170.5 | 171.5 |
| ZPT□□D□□□50-0□-A10 | 179.5 | 180.5 | 180.5 | 181.5 |

## Dimensions

| | | | |
|---|---|---|---|
| Connection | Female thread (Buffer) | Pad Form | Flat/Flat with ribs/Deep |
| Vacuum Entry Port | Vertical | Mounting | Buffer body |
| Flat/Flat with ribs | ø20, ø25, ø32 | Deep | ø25 |




### Flat/Flat with Ribs

| Model | A | B | C | D | Y | |
|---|---|---|---|---|---|---|
| | | | | | Flat | Flat with ribs |
| ZPT20U,C□□□□□-B5-A10 | 20 | 23 | 14 | 23 | 4 | 1.7 |
| ZPT25U,C□□□□□-B5-A10 | 25 | 28 | | | | 1.8 |
| ZPT32U,C□□□□□-B5-A10 | 32 | 35 | 14.5 | 23.5 | 4.5 | 2.3 |

### Deep

| Model | E | F | G |
|---|---|---|---|
| ZPT25D□□□10-B5-A10 | 40.5 | 76.5 | 23 |
| ZPT25D□□□20-B5-A10 | 50.5 | 114.5 | 51 |
| ZPT25D□□□30-B5-A10 | 60.5 | 124.5 | |
| ZPT25D□□□40-B5-A10 | 70.5 | 160.5 | 77 |
| ZPT25D□□□50-B5-A10 | 80.5 | 170.5 | |

### Dimensions by Stroke

| Model | ø20, ø25 | | ø32 | | G |
|---|---|---|---|---|---|
| | E | F | E | F | |
| ZPT□□U,C□□□10-B5-A10 | 34.5 | 70.5 | 35 | 71 | 23 |
| ZPT□□U,C□□□20-B5-A10 | 44.5 | 108.5 | 45 | 109 | 51 |
| ZPT□□U,C□□□30-B5-A10 | 54.5 | 118.5 | 55 | 119 | |
| ZPT□□U,C□□□40-B5-A10 | 64.5 | 154.5 | 65 | 155 | 77 |
| ZPT□□U,C□□□50-B5-A10 | 74.5 | 164.5 | 75 | 165 | |

### One Touch Type

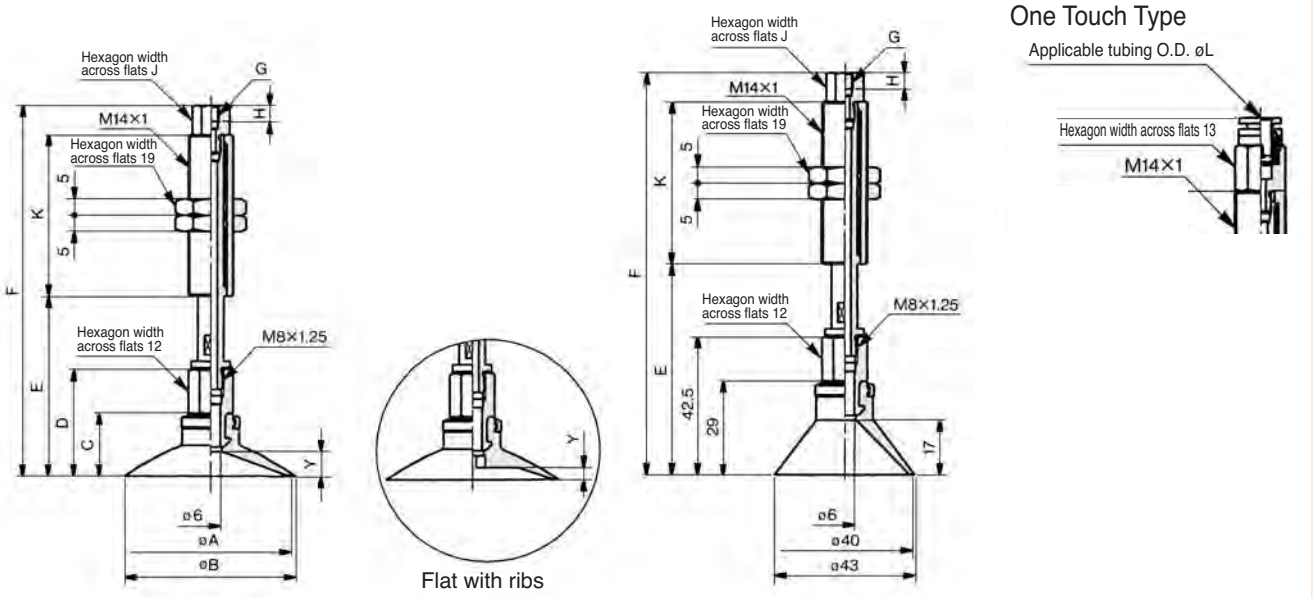
| Model | ø20, ø25 | | ø32 | |
|---|---|---|---|---|
| | K | | K | |
| | L: ø4 | L ø6 | L: ø4 | L: ø6 |
| ZPT□□U,C□□□10-0□-A10 | 84.5 | 85.5 | 85 | 86 |
| ZPT□□U,C□□□20-0□-A10 | 122.5 | 123.5 | 123 | 124 |
| ZPT□□U,C□□□30-0□-A10 | 132.5 | 133.5 | 133 | 134 |
| ZPT□□U,C□□□40-0□-A10 | 168.5 | 169.5 | 169 | 170 |
| ZPT□□U,C□□□50-0□-A10 | 178.5 | 179.5 | 179 | 180 |

### One Touch Type

| Model | K | |
|---|---|---|
| | L: ø4 | L: ø6 |
| ZPT25D□□□10-0□-A10 | 90.5 | 91.5 |
| ZPT25D□□□20-0□-A10 | 128.5 | 129.5 |
| ZPT25D□□□30-0□-A10 | 138.5 | 139.5 |
| ZPT25D□□□40-0□-A10 | 174.5 | 175.5 |
| ZPT25D□□□50-0□-A10 | 184.5 | 185.5 |

## Dimensions

| | | | |
|---|---|---|---|
| Connection | Female thread (Buffer) | Pad Form | Flat/Flat with ribs/Deep |
| Vacuum Entry Port | Vertical | Mounting | Buffer body |
| Flat/Flat with ribs | ø40, ø50 | Deep | ø40 |




### Flat/Flat with Ribs

| Model | A | B | C | D | Y | |
|---|---|---|---|---|---|---|
| | | | | | Flat | Flat with ribs |
| ZPT40 U C □□□□□-B□□-A14 | 40 | 43 | 18.5 | 32 | 6.5 | 3.3 |
| ZPT50 U C □□□□□-B□□-A14 | 50 | 53 | 19.5 | 33 | 7.5 | 3.8 |

### Deep

| Model | E | G: M5 | | | G: 1/8 | | | K |
|---|---|---|---|---|---|---|---|---|
| | | F | H | J | F | H | J | |
| ZPT40D□□□10-B□□-A14 | 55 | 120 | 5 | 10 | 121.5 | 6.2 | 13 | 50 |
| ZPT40D□□□20-B□□-A14 | 65 | 124 | | | 127 | | | |
| ZPT40D□□□30-B□□-A14 | 75 | 134 | | | 137 | | | |
| ZPT40D□□□50-B□□-A14 | 95 | 179 | | | 182 | | | 75 |

### Dimensions by Stroke

| Model | E | | G: M5 | | | | G: 1/8 | | | | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ø40 | ø50 | F | | H | J | F | | H | J | |
| | | | ø40 | ø50 | | | ø40 | ø50 | | | |
| ZPT□□ U C □□□10-B□□-A14 | 44.5 | 45.5 | 109.5 | 110.5 | 5 | 10 | 111 | 112 | 6.2 | 13 | 50 |
| ZPT□□ U C □□□20-B□□-A14 | 54.5 | 55.5 | 113.5 | 114.5 | | | 116.5 | 117.5 | | | |
| ZPT□□ U C □□□30-B□□-A14 | 64.5 | 65.5 | 123.5 | 124.5 | | | 126.5 | 127.5 | | | |
| ZPT□□ U C □□□50-B□□-A14 | 84.5 | 85.5 | 168.5 | 169.5 | | | 171.5 | 172.5 | | | 75 |

### One Touch Type

| Model | ø40 | | ø50 | |
|---|---|---|---|---|
| | K | | K | |
| | L: ø6 | L: ø8 | L: ø6 | L: ø8 |
| ZPT□□ U C □□□10-0□-A14 | 129.5 | 135 | 130.5 | 136 |
| ZPT□□ U C □□□20-0□-A14 | 124.4 | 129.4 | 125.4 | 130.4 |
| ZPT□□ U C □□□30-0□-A14 | 134.4 | 139.4 | 135.4 | 140.4 |
| ZPT□□ U C □□□50-0□-A14 | 179.4 | 184.4 | 180.4 | 185.4 |

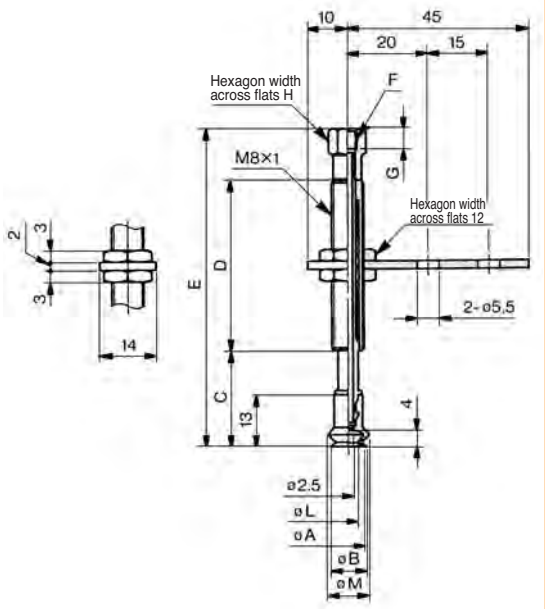
### One Touch Type

| Model | K | |
|---|---|---|
| | L: ø6 | L: ø8 |
| ZPT40D□□□10-0□-A14 | 140 | 145.5 |
| ZPT40D□□□20-0□-A14 | 134.9 | 139.9 |
| ZPT40D□□□30-0□-A14 | 144.9 | 149.9 |
| ZPT40D□□□50-0□-A14 | 189.9 | 194.9 |

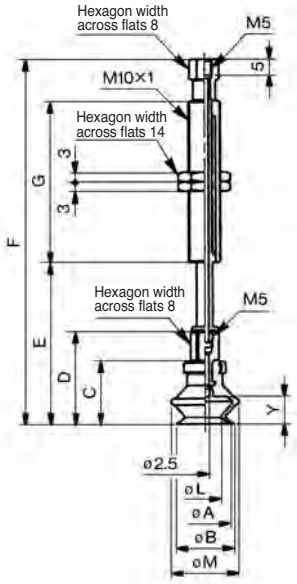
## Dimensions

| | | | |
|---|---|---|---|
| Connection | Female thread (Buffer) | Pad Form | Bellows |
| Vacuum Entry Port | Vertical | Mounting | Buffer body |

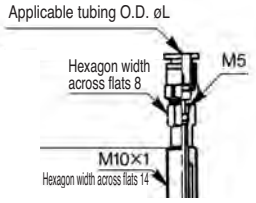
Bellows ø6, ø8




Bellows ø10, ø13, ø16




One Touch Type




### Bellows

| Model | A | B | L | M |
|---|---|---|---|---|
| ZPT06B□□□□□-B□-A8 | 6 | 7 | 3.3 | 9.1 |
| ZPT08B□□□□□-B□-A8 | 8 | 9 | 4.7 | 10.1 |

### Dimensions by Stroke

| Model | C | D | F: M3 | | | F: M5 | | |
|---|---|---|---|---|---|---|---|---|
| | | | E | G | H | E | G | H |
| ZPT□□B□□□ 6-B□-A8 | 19 | 15 | 45 | 3 | 6 | 47 | 5 | 8 |
| ZPT□□B□□□10-B□-A8 | 24 | 43 | 78 | | | 80 | | |
| ZPT□□B□□□15-B□-A8 | 29 | | 83 | | | 85 | | |
| ZPT□□B□□□25-B□-A8 | 39 | | 93 | | | 95 | | |

### Bellows

| Model | A | B | C | D | L | M | Y |
|---|---|---|---|---|---|---|---|
| ZPT10B□□□□□-B5-A10 | 10 | 12 | 16 | 25 | 5.5 | 13.8 | 5.5 |
| ZPT13B□□□□□-B5-A10 | 13 | 15 | 18.5 | 27.5 | 8.7 | 19 | 7.5 |
| ZPT16B□□□□□-B5-A10 | 16 | 18 | 20 | 29 | 9.9 | 21 | 8.5 |

### Dimensions by Stroke

| Model | ø10 | | ø13 | | ø16 | | G |
|---|---|---|---|---|---|---|---|
| | E | F | E | F | E | F | |
| ZPT□□B□□□10-B5-A10 | 36.5 | 72.5 | 39 | 75 | 40.5 | 76.5 | 23 |
| ZPT□□B□□□20-B5-A10 | 46.5 | 110.5 | 49 | 113 | 50.5 | 114.5 | 51 |
| ZPT□□B□□□30-B5-A10 | 56.5 | 120.5 | 59 | 123 | 60.5 | 124.5 | |
| ZPT□□B□□□40-B5-A10 | 66.5 | 156.5 | 69 | 159 | 70.5 | 160.5 | 77 |
| ZPT□□B□□□50-B5-A10 | 76.5 | 166.5 | 79 | 169 | 80.5 | 170.5 | |

### One Touch Type

| Model | K | |
|---|---|---|
| | L: ø4 | L: ø6 |
| ZPT□□B□□□16-0□-A8 | 61 | 62 |
| ZPT□□B□□□10-0□-A8 | 94 | 95 |
| ZPT□□B□□□15-0□-A8 | 99 | 100 |
| ZPT□□B□□□25-0□-A8 | 109 | 110 |

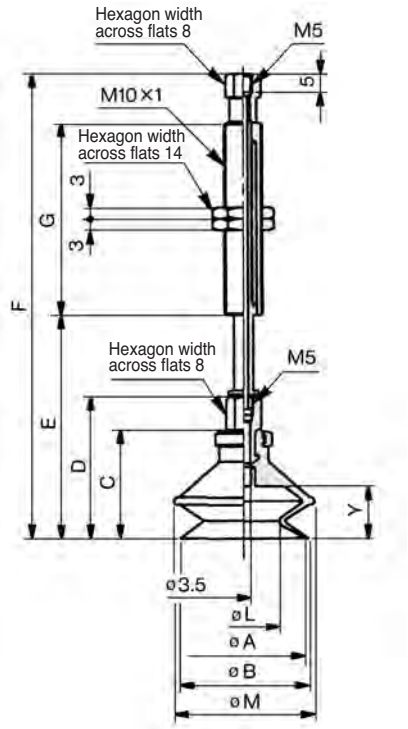
### One Touch Type

| Model | ø10 | | ø13 | | ø16 | |
|---|---|---|---|---|---|---|
| | K | | K | | K | |
| | L: ø4 | L: ø6 | L: ø4 | L: ø6 | L: ø4 | L: ø6 |
| ZPT□□B□□□10-0□-A10 | 86.5 | 87.5 | 89 | 90 | 90.5 | 91.5 |
| ZPT□□B□□□20-0□-A10 | 124.5 | 125.5 | 127 | 128 | 128.5 | 129.5 |
| ZPT□□B□□□30-0□-A10 | 134.5 | 135.5 | 137 | 138 | 138.5 | 139.5 |
| ZPT□□B□□□40-0□-A10 | 170.5 | 171.5 | 173 | 174 | 174.5 | 185.5 |
| ZPT□□B□□□50-0□-A10 | 180.5 | 181.5 | 183 | 184 | 184.5 | 185.5 |

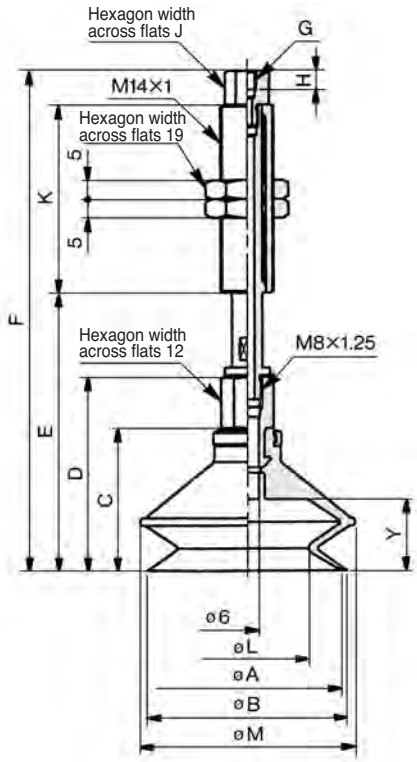
## Dimensions

| | | | |
|---|---|---|---|
| Connection | Female thread (Buffer) | Pad Form | Bellows |
| Vacuum Entry Port | Vertical | Mounting | Buffer body |

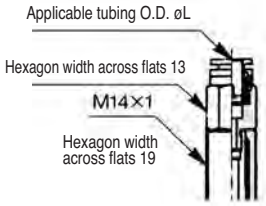
Bellows ø20, ø25, ø32




Bellows ø40, ø50




One Touch Type




### Bellows

| Model | A | B | C | D | L | M | Y |
|---|---|---|---|---|---|---|---|
| ZPT20B□□□□□-B5-A10 | 20 | 22 | 23.5 | 32.5 | 12.4 | 25 | 10.5 |
| ZPT25B□□□□□-B5-A10 | 25 | 27 | 24 | 33 | 15.6 | 28 | |
| ZPT32B□□□□□-B5-A10 | 32 | 34 | 29 | 38 | 18.9 | 37 | 14 |

### Dimensions by Stroke

| Model | ø20 | | ø25 | | ø32 | | G |
|---|---|---|---|---|---|---|---|
| | E | F | E | F | E | F | |
| ZPT□□B□□□10-B5-A10 | 44 | 80 | 44.5 | 80.5 | 49.5 | 85.5 | 23 |
| ZPT□□B□□□20-B5-A10 | 54 | 118 | 54.5 | 118.5 | 59.5 | 123.5 | 51 |
| ZPT□□B□□□30-B5-A10 | 64 | 128 | 64.5 | 128.5 | 69.5 | 133.5 | |
| ZPT□□B□□□40-B5-A10 | 74 | 164 | 74.5 | 164.5 | 79.5 | 169.5 | 77 |
| ZPT□□B□□□50-B5-A10 | 84 | 174 | 84.5 | 174.5 | 89.5 | 179.5 | |

### Bellows

| Model | A | B | C | D | L | M | Y |
|---|---|---|---|---|---|---|---|
| ZPT40B□□□□□-B□□-A14 | 40 | 43 | 34 | 47.5 | 24.4 | 48 | 16 |
| ZPT50B□□□□□-B□□-A14 | 50 | 53 | 38 | 51.5 | 32.4 | 57 | 19 |

### Dimensions by Stroke

| Model | E | | G: M5 | | | | G: 1/8 | | | K |
|---|---|---|---|---|---|---|---|---|---|---|
| | ø40 | ø50 | F | | H | J | F | | H | J | |
| | | | ø40 | ø50 | | | ø40 | ø50 | | | |
| ZPT□□B□□□10-B□□-A14 | 60 | 64 | 125 | 129 | 5 | 10 | 126.5 | 130.5 | 6.2 | 13 | 50 |
| ZPT□□B□□□20-B□□-A14 | 70 | 74 | 129 | 133 | | | 132 | 136 | | | |
| ZPT□□B□□□30-B□□-A14 | 80 | 84 | 139 | 143 | | | 142 | 146 | | | |
| ZPT□□B□□□50-B□□-A14 | 100 | 104 | 184 | 188 | | | 187 | 191 | | | 75 |

### One Touch Type

| Model | ø20 | | ø25 | | ø32 | |
|---|---|---|---|---|---|---|
| | K | | K | | K | |
| | L: ø4 | L: ø6 | L: ø4 | L: ø6 | L: ø4 | L: ø6 |
| ZPT□□B□□□10-0□-A10 | 94 | 95 | 94.5 | 95.5 | 99.5 | 100.5 |
| ZPT□□B□□□20-0□-A10 | 132 | 133 | 132.5 | 133.5 | 137.5 | 138.5 |
| ZPT□□B□□□30-0□-A10 | 142 | 143 | 142.5 | 143.5 | 147.5 | 148.5 |
| ZPT□□B□□□40-0□-A10 | 178 | 179 | 178.5 | 179.5 | 183.5 | 184.5 |
| ZPT□□B□□□50-0□-A10 | 188 | 189 | 188.5 | 189.5 | 193.5 | 194.5 |

### One Touch Type

| Model | ø40 | | ø50 | |
|---|---|---|---|---|
| | K | | K | |
| | L: ø6 | L: ø8 | L: ø6 | L: ø8 |
| ZPT□□B□□□10-0□-A14 | 145 | 150.5 | 149 | 154.5 |
| ZPT□□B□□□20-0□-A14 | 139.9 | 144.9 | 143.9 | 148.9 |
| ZPT□□B□□□30-0□-A14 | 149.9 | 154.9 | 153.9 | 158.9 |
| ZPT□□B□□□50-0□-A14 | 194.9 | 199.9 | 198.9 | 203.9 |

## How to Order ZPT Heavy Duty Pads

| Type | Without buffer | | | With buffer | | |
|---|---|---|---|---|---|---|
| | Vacuum entry port | Mounting | | Vacuum entry port | Mounting | |
| Series **ZPT** Heavy duty vertical vacuum entry. Pad diameters. 40mm to 125mm | Female thread | Male thread |  | One-touch fitting | Buffer body (Male thread) |  |
| | Female thread | Female thread | | | | |

## How to order ZPT heavy duty without buffer

ZPT **40** **H** **N** — **A14**

**Pad diameter [mm]**

| | |
|---|---|
| 40 | ø40 |
| 50 | ø50 |
| 63 | ø63 |
| 80 | ø80 |
| 100 | ø100 |
| 125 | ø125 |

**Pad type**

| | |
|---|---|
| H | Heavy duty |
| HB | Heavy duty Bellows type |

**Material**

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| E | EPR |

**Vacuum entry/Mounting thread diameter**

| (Vacuum entry port) | | ø40, ø50 | ø63, ø80 | ø100, ø125 |
|---|---|---|---|---|
| A14 | M14 x 1 | ● | — | — |
| A16 | M16 x 1.5 | — | ● | ● |
| B8 | M8 x 1.25 | ● | ● | — |
| B10 | M10 x 1.5 | ● | ● | — |
| B12 | M12 x 1.75 | — | ● | ● |
| B16 | M16 x 1.5 | — | ● | ● |

## Product Recommendation

**Stocked items for fast delivery**

| | | | | |
|---|---|---|---|---|
| ZPT40HN-A14 | ZPT50HN-B10 | ZPT63HN-A16 | ZPT80HN-A16 | ZPT100HBN-A16 |
| ZPT40HBN-A14 | ZPT50HS-B8 | ZPT63HS-B10 | ZPT80HBN-B16 | ZPT125HN-A16 |
| ZPT40HN-B8 | ZPT50HBN-A14 | ZPT63HU-A16 | ZPT80HBF-A16 | ZPT125HS-B16 |
| ZPT50HN-A14 | ZPT50HBN-B10 | ZPT63HBN-A16 | ZPT100HN-A16 | ZPT125HBN-A16 |
| ZPT50HN-B8 | ZPT50HBS-B8 | ZPT63HBS-A16 | ZPT100HN-B12 | |

**Related Products**

**Series V100** - 3 Port Valve - page 353
**Series ZL** - One-stage Ejector - page 1360
**Series ZB** - Modular Ejector - page 1380
**Series IRV** - Vacuum Regulator - www.smc.eu
**Series ITV209** - Electronic Vacuum Regulator - page 1119
**Series ZFZ** - Air Suction Filter - www.smc.eu
**Series ZP2** - Vacuum Pad - page 1414
**Series GZ** - Pressure Gauge for Vacuum - www.smc.eu
**Series PFM** - Flow Switch - page 1298
**Series ZSE40A(F)/ISE40A** - Vacuum Switch - page 1283
**Series AC** - Air Preparation - page 1076
**Series TU** - Tubing - page 1223
**Series KQB2** - Fitting - page 1212

## How to order ZPT heavy duty with buffer

ZPT **40** **H** **N** J **25** — **B01** — **A18**

**Pad diameter [mm]**

| | |
|---|---|
| 40 | ø40 |
| 50 | ø50 |
| 63 | ø63 |
| 80 | ø80 |
| 100 | ø100 |
| 125 | ø125 |

**Pad type**

| | |
|---|---|
| H | Heavy duty |
| HB | Heavy duty with bellows |

**Material**

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| E | EPR |

**Vacuum entry**

| | |
|---|---|
| B01 | Rc 1/8 |

**Mounting thread**

| | |
|---|---|
| A18 | M18 x 1.5 (ø40 to ø80) |
| A22 | M22 x 1.5 (ø100, ø125) |

**Buffer stroke (Rotating)**

| Stroke | ø40 | ø50 | ø63 | ø80 | ø100 | ø125 |
|---|---|---|---|---|---|---|
| 25 | ● | ● | ● | ● | ● | ● |
| 50 | ● | ● | ● | ● | ● | ● |
| 75 | ● | ● | ● | ● | ● | ● |
| 100 | — | — | — | — | ● | ● |

## Product Recommendation

**Stocked items for fast delivery**

| | | |
|---|---|---|
| ZPT50HBNJ50-B01-A18 | ZPT80HFJ50-B01-A18 | ZPT80HBNJ75-B01-A18 |
| ZPT63HNJ25-B01-A18 | ZPT80HBNJ50-B01-A18 | ZPT100HBNJ25-B01-A22 |

**Related Products**

**Series V100** - 3 Port Valve - page 353
**Series ZL** - One-stage Ejector - page 1360
**Series ZB** - Modular Ejector - page 1380
**Series IRV** - Vacuum Regulator - www.smc.eu
**Series ITV209** - Electronic Vacuum Regulator - page 1119
**Series ZFZ** - Air Suction Filter - www.smc.eu
**Series ZP2** - Vacuum Pad - page 1414
**Series GZ** - Pressure Gauge for Vacuum - www.smc.eu
**Series PFM** - Flow Switch - page 1298
**Series ZSE40A(F)/ISE40A** - Vacuum Switch - page 1283
**Series AC** - Air Preparation - page 1076
**Series TU** - Tubing - page 1223
**Series KQB2** - Fitting - page 1212

## Pad types

| Pad diameter [mm] | ø40, ø50, ø63, ø80, ø100, ø125 |
|---|---|
| Material (color) | NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluoro rubber (Black with mark F), EPR (Black with mark E) |
| Durometer | NBR/Silicone rubber/EPR (50), Urethane/Fluoro rubber (60) |

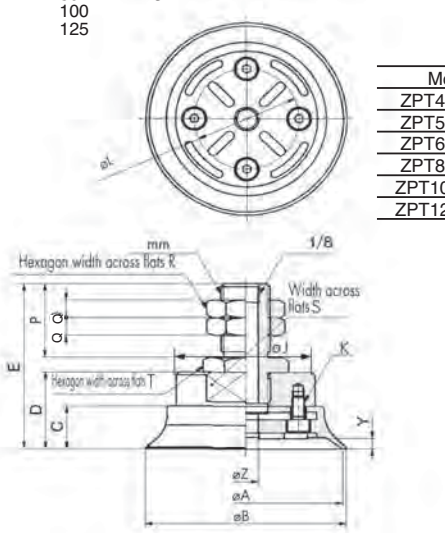
For more product options and details see our specific catalogues or on-line information.

## Also Available

| Type | Without buffer | | | With buffer | | |
|---|---|---|---|---|---|---|
| | Vacuum entry port | Mounting | | Vacuum entry port | Mounting | |
| Series **ZPX** Heavy duty Side vacuum entry Pad diameter 40mm to 125mm | Female thread | Female thread |  | Female thread | Buffer body (Male thread) |  |

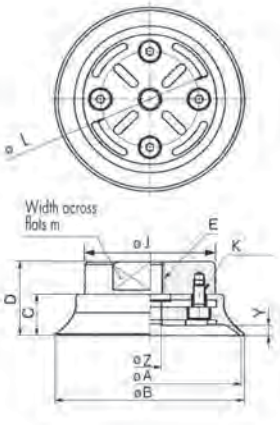
## Dimensions

ZPT $\begin{matrix}40\\50\\63\\80\\100\\125\end{matrix}$ H□-A $\begin{matrix}14\\16\end{matrix}$ (Male thread, flat pad without buffer)




| Model | ØA | ØB | C | D | E | MM | Y | ØZ | ØJ | K | Ø L | P | Q | R | S | T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZPT40H*-A14 | 40 | 42 | 11.5 | 23 | 53 | M14X1 | 3 | 3 | 28 | 3-M3 | 18 | 25 | 5 | 19 | 24 | 19 |
| ZPT50H*-A14 | 50 | 52 | | | | | | | | | | | | | | |
| ZPT63H*-A16 | 63 | 65 | 14.5 | 26 | 56 | M16X1.5 | 3.5 | 8 | 45 | 4-M4 | 34 | | 6 | 22 | 37 | 24 |
| ZPT80H*-A16 | 80 | 82 | 16.5 | 28 | 58 | | 4.5 | | | | | | | | | |
| ZPT100H*-A16 | 100 | 103 | 21 | 34 | 64 | | 7.5 | | 70 | 4-M5 | 40 | | | | 60 | |
| ZPT125H*-A16 | 125 | 128 | | | | | | | | | | | | | | |

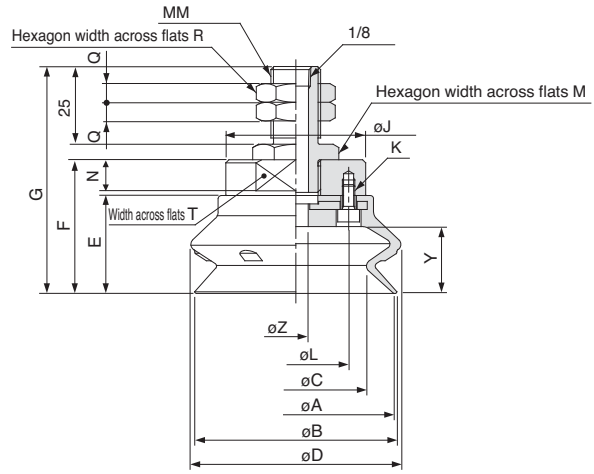
ZPT $\begin{matrix}40\\50\\63\\80\\100\\125\end{matrix}$ H□-B□ (Female thread, flat pad without buffer)




| Model | ØA | ØB | C | D | E | Y | ØZ | ØJ | K | Ø L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ZPT40H*-B8 | 40 | 42 | 11.5 | 23 | M8X1.25 | 3 | 6 | 28 | 3-M3 | 18 | 24 |
| ZPT40H*-B10 | | | | | M10X1.5 | | | | | | |
| ZPT50H*-B8 | 50 | 52 | | | M8X1.25 | | | | | | |
| ZPT50H*-B10 | | | | | M10X1.5 | | | | | | |
| ZPT63H*-B8 | 63 | 65 | 14.5 | 26 | M8X1.25 | 3.5 | 8 | 45 | 4-M4 | 34 | 37 |
| ZPT63H*-B10 | | | | | M10X1.5 | | | | | | |
| ZPT63H*-B12 | | | | | M12X1.75 | | | | | | |
| ZPT63H*-B14 | | | | | M16X1.5 | | | | | | |
| ZPT80H*-B8 | 80 | 82 | 16.5 | 28 | M8X1.25 | 4.5 | | | | | |
| ZPT80H*-B10 | | | | | M10X1.5 | | | | | | |
| ZPT80H*-B12 | | | | | M12X1.75 | | | | | | |
| ZPT80H*-B14 | | | | | M16X1.5 | | | | | | |
| ZPT100H*-B12 | 100 | 103 | 21 | 34 | M12X1.75 | 7.5 | 10 | 70 | 4-M5 | 40 | 60 |
| ZPT100H*-B16 | | | | | M16X1.5 | | | | | | |
| ZPT125H*-B12 | 125 | 128 | | | M12X1.75 | | | | | | |
| ZPT125H*-B16 | | | | | M16X1.5 | | | | | | |

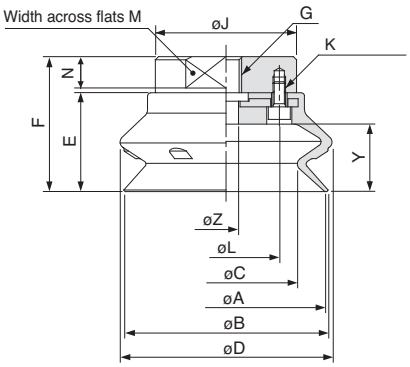
## Dimensions

### ZPT 40/50/63/80/100/125 HB□-A 14/16 (Male thread, bellows pad without buffer)




| Model | ØA | ØB | Ø C | Ø D | E | F | G | [mm] | Y | ØZ | ØJ | K | Ø L | N | R | M | T | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZPT40HB*-B8 | 40 | 41.4 | 28.4 | 43.2 | 20.5 | 32 | 62 | M14X1 | 13 | 3 | 28 | 3-M3 | 18 | 10 | 19 | 24 | 19 | 5 |
| ZPT50HB*-B8 | 50 | 51.9 | 35.7 | 54 | 24 | 35.5 | 65.5 | | 16.5 | | | | | | | | | |
| ZPT63HB*-B8 | 63 | 65.1 | 45.5 | 67.6 | 31.5 | 43 | 73 | M16X1.5 | 21.5 | 8 | 45 | 4-M4 | 34 | | 22 | 37 | 24 | 6 |
| ZPT80HB*-B8 | 80 | 83 | 58.4 | 85.1 | 37 | 48.5 | 78.5 | | 27.5 | | | | | | | | | |
| ZPT100HB*-B12 | 100 | 103.1 | 68.6 | 107 | 47.5 | 60.5 | 90.5 | | 35.5 | 8 | 70 | 4-M5 | 40 | 11 | | 40 | | |
| ZPT125HB*-B12 | 125 | 128.5 | 88.6 | 135 | 56 | 69 | 99 | | 44 | | | | | | | | | |

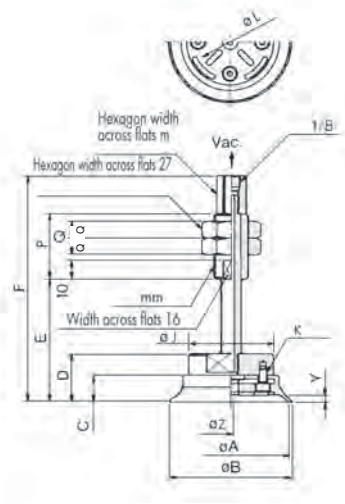
### ZPT 40/50/63/80/100/125 HB□-B□ (Female thread, bellows pad without buffer)




| Model | ØA | ØB | C | D | E | F | G | Y | ØZ | ØJ | K | Ø L | M | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZPT40HB*-B8 | 40 | 41.4 | 28.4 | 43.2 | 21 | 32 | M8X1.25 | 13 | 6 | 28 | 3-M3 | 18 | 24 | 10 |
| ZPT40HB*-B10 | | | | | | | M10X1.5 | | | | | | | |
| ZPT50HB*-B8 | 50 | 51.9 | 35.7 | 54 | 24 | 36 | M8X1.25 | 16.5 | | | | | | |
| ZPT50HB*-B10 | | | | | | | M10X1.5 | | | | | | | |
| ZPT63HB*-B8 | 63 | 65.1 | 45.5 | 67.6 | 32 | 43 | M8X1.25 | 21.5 | 8 | 45 | 4-M4 | 34 | 37 | |
| ZPT63HB*-B10 | | | | | | | M10X1.5 | | | | | | | |
| ZPT63HB*-B12 | | | | | | | M12X1.75 | | | | | | | |
| ZPT63HB*-B14 | | | | | | | M16X1.5 | | | | | | | |
| ZPT80HB*-B8 | 80 | 83 | 58.4 | 85.1 | 37 | 49 | M8X1.25 | 27.5 | | | | | | |
| ZPT80HB*-B10 | | | | | | | M10X1.5 | | | | | | | |
| ZPT80HB*-B12 | | | | | | | M12X1.75 | | | | | | | |
| ZPT80HB*-B14 | | | | | | | M16X1.5 | | | | | | | |
| ZPT100HB*-B12 | 100 | 103 | 68.6 | 107 | 48 | 61 | M12X1.75 | 35.5 | 10 | 70 | 4-M5 | 40 | 60 | 11 |
| ZPT100HB*-B16 | | | | | | | M16X1.5 | | | | | | | |
| ZPT125HB*-B12 | 125 | 129 | 88.6 | 135 | 56 | 69 | M12X1.75 | 44 | | | | | | |
| ZPT125HB*-B16 | | | | | | | M16X1.5 | | | | | | | |

## Dimensions

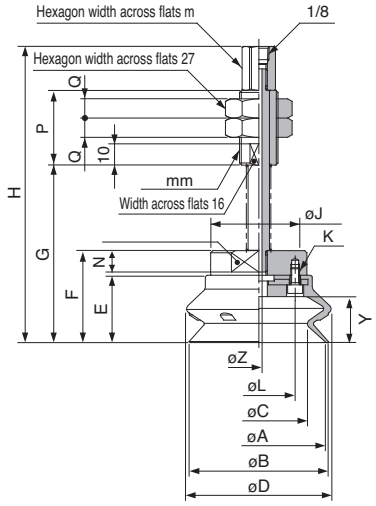
ZPT $\begin{matrix}40\\50\\63\\80\\100\\125\end{matrix}$ H□J□-B01-A $\begin{matrix}18\\22\end{matrix}$ (With buffer, flat pad)




| Model | ØA | ØB | C | D | E | F | Y | ØZ | M M | Ø J | K | ØL | M | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZPT40H*J25-B01-A18 | 40 | 42 | 11.5 | 23 | 63 | 118.5 | 3 | 3 | M18X1.5 | 28 | 3-M3 | 18 | 14 | 35 | 9 |
| ZPT40H*J50-B01-A18 | | | | | 98 | 153.5 | | | | | | | | | |
| ZPT40H*J75-B01-A18 | | | | | 134 | 189.5 | | | | | | | | | |
| ZPT50H*J25-B01-A18 | 50 | 52 | 11.5 | 23 | 63 | 118.5 | 3 | | | | | | | | |
| ZPT50H*J50-B01-A18 | | | | | 98 | 153.5 | | | | | | | | | |
| ZPT50H*J75-B01-A18 | | | | | 134 | 189.5 | | | | | | | | | |
| ZPT63H*J25-B01-A18 | 63 | 65 | 14.5 | 26 | 66 | 121.5 | 3.5 | | | 45 | 4-M4 | 34 | | | |
| ZPT63H*J50-B01-A18 | | | | | 101 | 156.5 | | | | | | | | | |
| ZPT63H*J75-B01-A18 | | | | | 137 | 192.5 | | | | | | | | | |
| ZPT80H*J25-B01-A18 | 80 | 83 | 16.5 | 28 | 68 | 123.5 | 4.5 | | | | | | | | |
| ZPT80H*J50-B01-A18 | | | | | 103 | 158.5 | | | | | | | | | |
| ZPT80H*J75-B01-A18 | | | | | 139 | 194.5 | | | | | | | | | |
| ZPT100H*J25-B01-A22 | 100 | 103 | 21 | 34 | 78 | 152 | 7.6 | 4 | M22X1.5 | 70 | 4-M5 | 40 | 17 | 50 | 8 |
| ZPT100H*J50-B01-A22 | | | | | 114 | 188 | | | | | | | | | |
| ZPT100H*J75-B01-A22 | | | | | 154 | 228 | | | | | | | | | |
| ZPT100H*J100-B01-A22 | | | | | 189 | 263 | | | | | | | | | |
| ZPT125H*J25-B01-A22 | 125 | 128 | 21 | 34 | 78 | 152 | 7.6 | | | | | | | | |
| ZPT125H*J50-B01-A22 | | | | | 114 | 188 | | | | | | | | | |
| ZPT125H*J75-B01-A22 | | | | | 154 | 228 | | | | | | | | | |
| ZPT125H*J100-B01-A22 | | | | | 189 | 263 | | | | | | | | | |

## Dimensions

ZPT $\begin{matrix}40\\50\\63\\80\\100\\125\end{matrix}$ HB□J□-B01-A $\begin{matrix}18\\22\end{matrix}$ (With buffer, bellows pad)




| Model | ØA | ØB | ØC | ØD | E | F | G | H | Y | ØZ | M M | Ø J | K | ØL | M | N | P | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZPT40HB*J25-B01-A18 | 40 | 41.4 | 28.4 | 43.2 | 20.5 | 32 | 72 | 127. 5 | 13 | 3 | M18X1. 5 | 28 | 3-M3 | 18 | 14 | 10 | 35 | 9 |
| ZPT40HB*J50-B01-A18 | | | | | | | 107 | 162. 5 | | | | | | | | | | |
| ZPT40HB*J75-B01-A18 | | | | | | | 143 | 198. 5 | | | | | | | | | | |
| ZPT50HB*J25-B01-A18 | 50 | 51.9 | 35.7 | 54 | 24 | 35. 5 | 75.5 | 131 | 16.5 | | | | | | | | | |
| ZPT50HB*J50-B01-A18 | | | | | | | 110.5 | 166 | | | | | | | | | | |
| ZPT50HB*J75-B01-A18 | | | | | | | 146.5 | 202 | | | | | | | | | | |
| ZPT63HB*J25-B01-A18 | 63 | 65.1 | 45.5 | 67.6 | 31.5 | 43 | 83 | 138. 5 | 21.5 | | | 45 | 4-M4 | 34 | | | | |
| ZPT63HB*J50-B01-A18 | | | | | | | 118 | 173. 5 | | | | | | | | | | |
| ZPT63HB*J75-B01-A18 | | | | | | | 154 | 209 | | | | | | | | | | |
| ZPT80HB*J25-B01-A18 | 80 | 83 | 58.5 | 85.1 | 37 | 48. 5 | 88.5 | 144 | 27.5 | | | | | | | | | |
| ZPT80HB*J50-B01-A18 | | | | | | | 123.5 | 179 | | | | | | | | | | |
| ZPT80HB*J75-B01-A18 | | | | | | | 159.5 | 215 | | | | | | | | | | |
| ZPT100HB*J25-B01-A22 | 100 | 103 | 68.6 | 107 | 47.5 | 60. 5 | 104.5 | 178. 5 | 35.5 | 4 | M22X1. 5 | 70 | 4-M5 | 40 | 17 | 11 | 50 | 8 |
| ZPT100HB*J50-B01-A22 | | | | | | | 140.5 | 214. 5 | | | | | | | | | | |
| ZPT100HB*J75-B01-A22 | | | | | | | 180.5 | 254. 5 | | | | | | | | | | |
| ZPT100HB*J100-B01-A22 | | | | | | | 215.5 | 289. 5 | | | | | | | | | | |
| ZPT125HB*J25-B01-A22 | 125 | 129 | 88.6 | 135 | 56 | 69 | 113 | 187 | 44 | | | | | | | | | |
| ZPT125HB*J50-B01-A22 | | | | | | | 149 | 223 | | | | | | | | | | |
| ZPT125HB*J75-B01-A22 | | | | | | | 189 | 263 | | | | | | | | | | |
| ZPT125HB*J100-B01-A22 | | | | | | | 224 | 298 | | | | | | | | | | |

## How to Order ZPT Ball Joint Pads

| Type | Without buffer | | | With buffer | | |
|---|---|---|---|---|---|---|
| | Vacuum entry port | Mounting | | Vacuum entry port | Mounting | |
| Series **ZPT** Ball joint type Pad diameter 10mm to 50mm | Female thread | Female thread |  | Female thread | Buffer Body |  |
| | Female thread | Male thread | | One-touch fitting | Buffer body | |
| | One-touch fitting | Female thread | | | | |

## How to Order Ball joint pads without buffer, vertical entry

ZPT **25** **F** **N** — **B5** — **A8**

Pad diameter [mm]

| | |
|---|---|
| 10 | ø10 |
| 13 | ø13 |
| 16 | ø16 |
| 20 | ø20 |
| 25 | ø25 |
| 32 | ø32 |
| 40 | ø40 |
| 50 | ø50 |

Pad type

| | |
|---|---|
| F | Ball joint type |

Material

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| GN | Conductive NBR |
| GS | Conductive silicon rubber |

Vacuum entry port

| | |
|---|---|
| B5 | M5 |

Mounting thread diameter/ Male thread

| Symbol | Thread | Pad dia. [mm] |
|---|---|---|
| A8 | M8 x 1 | ø10 to ø16 |
| A10 | M10 x 1 | ø20 to ø32 |
| A14 | M14 x 1 | ø40, ø50 |

Note) Pads are exclusively for ball joint type and are not interchangeable with other pads.

**Series V100** - 3 Port Valve - page 353
**Series ZL** - One-stage Ejector - page 1360
**Series ZB** - Modular Ejector - page 1380
**Series IRV** - Vacuum Regulator - www.smc.eu
**Series ITV209** - Electronic Vacuum Regulator - page 1119
**Series ZFZ** - Air Suction Filter - www.smc.eu
**Series ZP2** - Vacuum Pad - page 1414
**Series GZ** - Pressure Gauge for Vacuum - www.smc.eu
**Series PFM** - Flow Switch - page 1298
**Series ZSE40A(F)/ISE40A** - Vacuum Switch - page 1283
**Series AC** - Air Preparation - page 1076
**Series TU** - Tubing - page 1223
**Series KQB2** - Fitting - page 1212

## Product Recommendation

Stocked items for fast delivery

| | | | | |
|---|---|---|---|---|
| ZPT10FN-B5-A8 | ZPT25FU-B5-A10 | ZPT40FS-B5-A14 | ZPT40FF-B5-A14 | ZPT40FGS-B5-A14 |
| ZPT20FN-B5-A10 | ZPT32FGN-B5-A10 | ZPT40FU-B5-A14 | ZPT40FGN-B5-A14 | ZPT50F5N-B5-A14 |

## How to Order Ball Joint Pads Without Buffer, Vertical Entry

ZPT **20** **F** **N** **B01**

Pad diameter [mm]

| | |
|---|---|
| 10 | ø10 |
| 13 | ø13 |
| 16 | ø16 |
| 20 | ø20 |
| 25 | ø25 |
| 32 | ø32 |
| 40 | ø40 |
| 50 | ø50 |

Material

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| GN | Conductive NBR |
| GS | Conductive silicon rubber |

Pad type

| | |
|---|---|
| F | Ball joint type |

Vacuum entry/ Mounting thread diameter

| Connection | Symbol | Thread dia. | Pad dia. [mm] ø10 to ø16 | ø20 to ø32 | ø40, ø50 |
|---|---|---|---|---|---|
| Female thread | B5 | M5 | ● | ● | – |
| | B8 | M8 x 1.25 | – | ● | ● |
| | B01 | 1/8 | – | ● | ● |

Note) Pads are exclusively ball joint type and are not interchangeable with other pads.

## Product Recommendation

Stocked items for fast delivery

| | | | | |
|---|---|---|---|---|
| ZPT10FN-B5 | ZPT16FN-B5 | ZPT25FS-B5 | ZPT40FS-B8 | ZPT50FN-B01 |
| ZPT10FS-B5 | ZPT16FS-B5 | ZPT25FU-B5 | ZPT40FS-B01 | ZPT50FS-B8 |
| ZPT10FU-B5 | ZPT16FU-B5 | ZPT25FGN-B5 | ZPT40FU-B8 | ZPT50FS-B01 |
| ZPT10FF-B5 | ZPT16FF-B5 | ZPT32FN-B01 | ZPT40FU-B01 | ZPT50FU-B8 |
| ZPT10FGN-B5 | ZPT16FGN-B5 | ZPT32FN-B5 | ZPT40FF-B8 | ZPT50FU-B01 |
| ZPT13FN-B5 | ZPT20FN-B5 | ZPT32FU-B5 | ZPT40FF-B01 | ZPT50FF-B8 |
| ZPT13FS-B5 | ZPT20FS-B5 | ZPT32FF-B5 | ZPT40FGN-B8 | ZPT50FF-B01 |
| ZPT13FU-B5 | ZPT20FF-B5 | ZPT32FGN-B5 | ZPT40FGN-B01 | ZPT50FGN-B8 |
| ZPT13FF-B5 | ZPT20FGN-B5 | ZPT32FGS-B5 | ZPT40FGS-B8 | ZPT50FGN-B01 |
| ZPT13FGN-B5 | ZPT20FGS-B5 | ZPT40FN-B8 | ZPT40FGS-B01 | ZPT50FGS-B8 |
| ZPT13FGS-B5 | ZPT25FN-B5 | ZPT40FN-B01 | ZPT50FN-B8 | ZPT50FGS-B01 |

**Series V100** - 3 Port Valve - page 353
**Series ZL** - One-stage Ejector - page 1360
**Series ZB** - Modular Ejector - page 1380
**Series IRV** - Vacuum Regulator - www.smc.eu
**Series ITV209** - Electronic Vacuum Regulator - page 1119
**Series ZFZ** - Air Suction Filter - www.smc.eu
**Series ZP2** - Vacuum Pad - page 1414
**Series GZ** - Pressure Gauge for Vacuum - www.smc.eu
**Series PFM** - Flow Switch - page 1298
**Series ZSE40A(F)/ISE40A** - Vacuum Switch - page 1283
**Series AC** - Air Preparation - page 1076
**Series TU** - Tubing - page 1223
**Series KQB2** - Fitting - page 1212

For more product options and details see our specific catalogues or on-line information.

## How to Order

Ball Joint Pads Without Buffer, Vertical Entry

ZPT [10] [F] [N] [K] [20] – [04] – [A10]

**Pad diameter [mm]**

| | |
|---|---|
| 10 | ø10 |
| 13 | ø13 |
| 16 | ø16 |
| 20 | ø20 |
| 25 | ø25 |
| 32 | ø32 |
| 40 | ø40 |
| 50 | ø50 |

**Pad type**

| | |
|---|---|
| F | Ball joint type |

**Material**

| | |
|---|---|
| N | NBR |
| S | Silicon rubber |
| U | Urethane rubber |
| F | Fluoro rubber |
| GN | Conductive NBR |
| GS | Conductive silicon rubber |

**Buffer type**

| | |
|---|---|
| K | Non-rotating |
| J | Rotating |

**Buffer stroke**

| Symbol | Stroke | Pad dia. [mm] ø10 to ø16 | Pad dia. [mm] ø20 to ø50 |
|---|---|---|---|
| 10 | 10 mm | ● | ● |
| 20 | 20 mm | ● | ● |
| 30 | 30 mm | ● | ● |
| 40 | 40 mm | ● | – |
| 50 | 50 mm | ● | ● |

**Mounting thread diameter/Male thread**
(Refer to "Table (1)" for applications.)

**Vacuum entry port**
(Refer to "Table (1)" for applications.)

Table (1) Vacuum Entry/Mounting Thread Diameter

| | | | | Mounting thread diameter (Male thread) ø10 to ø16 | ø20 to ø50 |
|---|---|---|---|---|---|
| Pad dia. [mm] | | | | | |
| Connection | | Thread dia./ Port size | Symbol | M10 x 1 | M14 x 1 |
| | | | | A10 | A14 |
| Vacuum entry | Female thread | M5 | B5 | ● | – |
| | | 1/8 | B01 | – | ● |
| | One-touch fitting | ø4 tube | 04 | ● | – |
| | | ø6 tube | 06 | ● | ● |
| | | ø8 tube | 08 | – | ● |

### Related Products

**Series V100** - 3 Port Valve - page 353
**Series ZL** - One-stage Ejector - page 1360
**Series ZB** - Modular Ejector - page 1380
**Series IRV** - Vacuum Regulator - www.smc.eu
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**Series ZP2** - Vacuum Pad - page 1414
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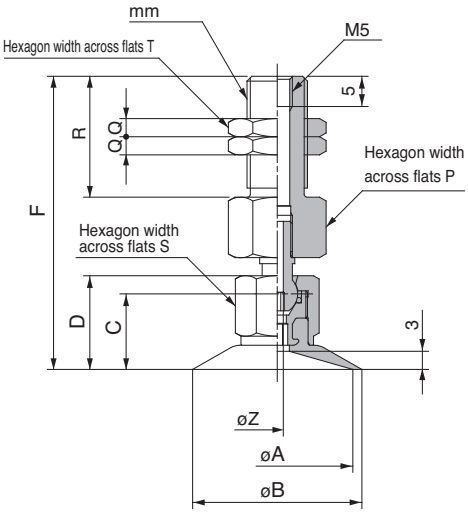
**Series PFM** - Flow Switch - page 1298
**Series ZSE40A(F)/ISE40A** - Vacuum Switch - page 1283
**Series AC** - Air Preparation - page 1076
**Series TU** - Tubing - page 1223
**Series KQB2** - Fitting - page 1212

## Dimensions

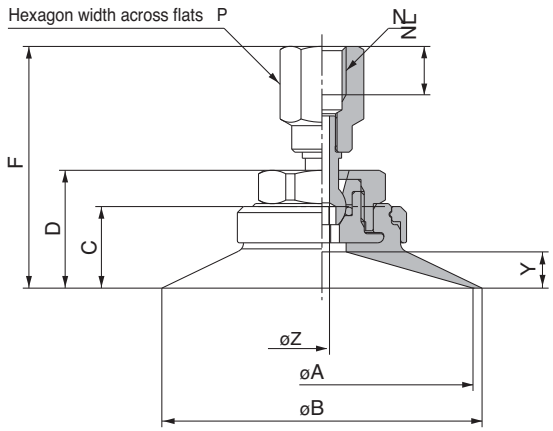
ZPT 10 13 16 20 25 32 40 50 F□□-B5-A 8 10 14 (Without buffer/Male thread, ball joint pad)




| Model | øA | øB | C | D | F | Y | MM | P | Q | R | S | T | øZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZPT10F**-B5-A8 | 10 | 12 | 10 | 12.5 | 37.5 | 1.5 | M8X1 | 12 | 3 | 15 | 10 | 12 | 2 |
| ZPT13F**-B5-A8 | 13 | 15 | 10.5 | 13 | 38 | | | | | | | | |
| ZPT16F**-B5-A8 | 16 | 18 | | | | 2 | | | | | | | |
| ZPT20F**-B5-A10 | 20 | 22 | 12.5 | 15.5 | 48.5 | 3 | M10X1 | 16 | | 20 | 12 | 14 | |
| ZPT25F**-B5-A10 | 25 | 28 | | | | | | | | | | | |
| ZPT32F**-B5-A10 | 32 | 35 | 13 | 16 | 49 | | | | | | | | |
| ZPT40F**-B5-A14 | 40 | 43 | 12.5 | 18.5 | 51.5 | 5 | M14X1 | 21 | 5 | | 19 | 19 | 2.5 |
| ZPT50F**-B5-A14 | 50 | 53 | 13.5 | 19.5 | 52.5 | 6 | | | | | | | |

## Dimensions

ZPT 10 13 16 20 25 32 40 50 F□□-B 5 8 01 (Without buffer/Female thread, ball joint pad)

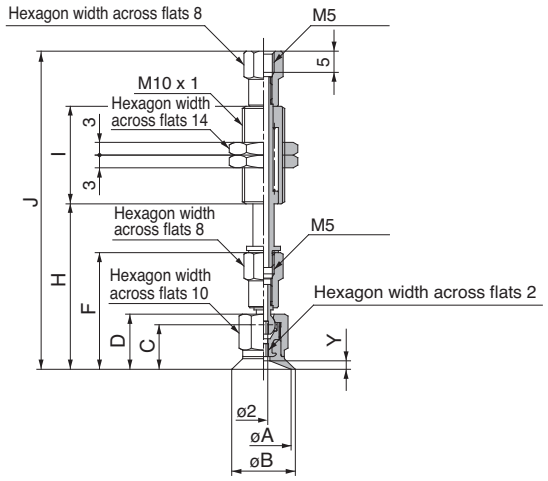



[mm]

| Model | øA | øB | C | D | F | N | NL | P | Y | øZ |
|---|---|---|---|---|---|---|---|---|---|---|
| ZPT10F□□-B5 | 10 | 12 | 10 | 12.5 | 27 | M5 | 5 | 8 | 1.5 | 2 |
| ZPT13F□□-B5 | 13 | 15 | 10.5 | 13 | 27.5 | | | | | |
| ZPT16F□□-B5 | 16 | 18 | | | | | | | 2 | |
| ZPT20F□□-B5 | 20 | 22 | 12.5 | 15.5 | 32 | M5 | 5 | 9 | 3 | 2 |
| ZPT20F□□-B8 | | | | | 36 | M8 x 1.25 | 8 | 12 | | |
| ZPT20F□□-B01 | | | | | | 1/8 | 6.2 | 14 | | |
| ZPT25F□□-B5 | 25 | 28 | | | 32 | M5 | 5 | 9 | | |
| ZPT25F□□-B8 | | | | | 36 | M8 x 1.25 | 8 | 12 | | |
| ZPT25F□□-B01 | | | | | | 1/8 | 6.2 | 14 | | |
| ZPT32F□□-B5 | 32 | 35 | 13 | 16 | 32.5 | M5 | 5 | 9 | | |
| ZPT32F□□-B8 | | | | | 36.5 | M8 x 1.25 | 8 | 12 | | |
| ZPT32F□□-B01 | | | | | | 1/8 | 6.2 | 14 | | |
| ZPT40F□□-B8 | 40 | 43 | 12.5 | 18.5 | 39 | M8 x 1.25 | 8 | 12 | 5 | 2.5 |
| ZPT40F□□-B01 | | | | | | 1/8 | 6.2 | 14 | | |
| ZPT50F□□-B8 | 50 | 53 | 13.5 | 19.5 | 40 | M8 x 1.25 | 8 | 12 | 6 | |
| ZPT50F□□-B01 | | | | | | 1/8 | 6.2 | 14 | | |

## Dimensions

### ZPT{10/13/16}F□□{J/K}10-B5-A{10/20/30/40/50} (With buffer/Female thread)



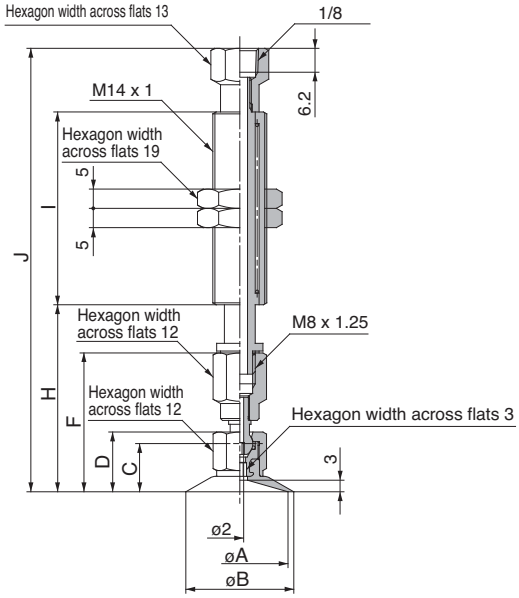

Dimensions: 10 mm Stroke [mm]

| Model | A | B | C | D | F | H | I | J | Y |
|---|---|---|---|---|---|---|---|---|---|
| ZPT10F□□□10-B5-A10 | 10 | 12 | 10 | 12.5 | 27 | 38.5 | 23 | 74.5 | 1.5 |
| ZPT13F□□□10-B5-A10 | 13 | 15 | 10.5 | 13 | 27.5 | 39 | | 75 | 2 |
| ZPT16F□□□10-B5-A10 | 16 | 18 | | | | | | | |

Additional Dimensions by Stroke [mm]

| Stroke | H | I | J |
|---|---|---|---|
| 20 | +10 | +28 | +38 |
| 30 | +20 | | +48 |
| 40 | +30 | +54 | +84 |
| 50 | +40 | | +94 |

### ZPT{20/25/32}F□□{J/K}{10/20/30/40/50}-B01-A14 (With buffer/Female thread)




Dimensions: 10 mm Stroke [mm]

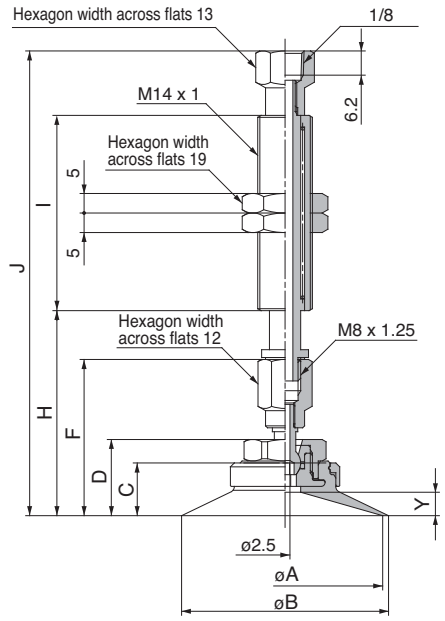
| Model | A | B | C | D | F | H | I | J |
|---|---|---|---|---|---|---|---|---|
| ZPT20F□□□10-B01-A14 | 20 | 22 | 12.5 | 15.5 | 36 | 48.5 | 50 | 115 |
| ZPT25F□□□10-B01-A14 | 25 | 28 | | | | | | |
| ZPT32F□□□10-B01-A14 | 32 | 35 | 13 | 16 | 36.5 | 49 | | 115.5 |

Additional Dimensions by Stroke [mm]

| Stroke | H | I | J |
|---|---|---|---|
| 20 | +10 | 0 | +5.5 |
| 30 | +20 | | +15.5 |
| 50 | +40 | +25 | +60.5 |

## Dimensions

### ZPT$^{40}_{50}$F□□$^{J}_{K}$ $^{10}_{20}_{30}_{40}_{50}$-B01-A14 (With buffer/Female thread)



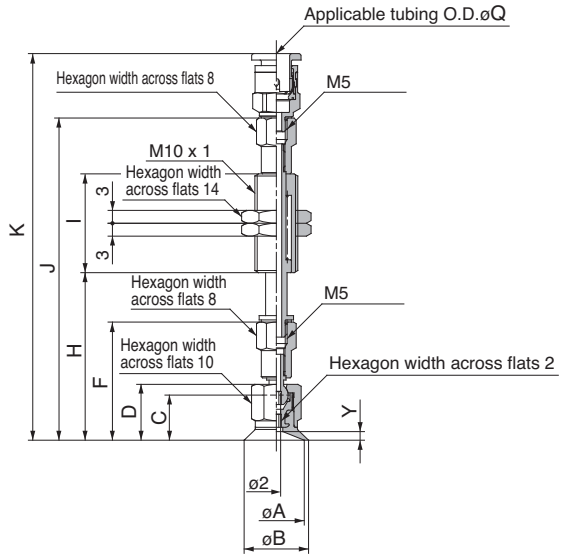

Dimensions: 10 mm Stroke [mm]

| Model | A | B | C | D | F | H | I | J | Y |
|---|---|---|---|---|---|---|---|---|---|
| ZPT40F□□□10-B01-A14 | 40 | 43 | 12.5 | 18.5 | 39 | 51.5 | 50 | 118 | 5 |
| ZPT50F□□□10-B01-A14 | 50 | 53 | 13.5 | 19.5 | 40 | 52.5 | | 119 | 6 |

Additional Dimensions by Stroke [mm]

| Stroke | H | I | J |
|---|---|---|---|
| 20 | +10 | 0 | +5.5 |
| 30 | +20 | | +15.5 |
| 50 | +40 | +25 | +60.5 |

### ZPT$^{10}_{13}_{16}$F□□$^{J}_{K}$ $^{10}_{20}_{30}_{40}_{50}$-0□-A10 (With buffer/One-touch fitting)




Dimensions: 10 mm Stroke [mm]

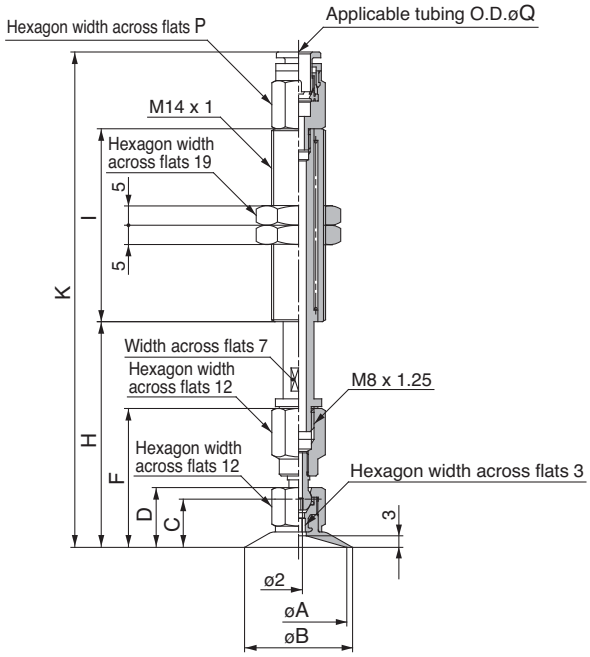
| Model | A | B | C | D | F | H | I | J | Q: 4 K | Q: 6 K | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ZPT10F□□□10-0□-A10 | 10 | 12 | 10 | 12.5 | 27 | 38.5 | 23 | 74.5 | 88.5 | 89.5 | 1.5 |
| ZPT13F□□□10-0□-A10 | 13 | 15 | 10.5 | 13 | 27.5 | 39 | | 75 | 89 | 90 | 2 |
| ZPT16F□□□10-0□-A10 | 16 | 18 | | | | | | | | | |

Additional Dimensions by Stroke [mm]

| Stroke | H | I | J | K |
|---|---|---|---|---|
| 20 | +10 | +28 | +38 | |
| 30 | +20 | | +48 | |
| 40 | +30 | +54 | +84 | |
| 50 | +40 | | +94 | |

## Dimensions

### ZPT$^{20}_{25}_{32}$F□□$^{J}_{K}$$^{10}_{20}_{30}_{50}$-0□-A14 (With buffer/One-touch fitting)



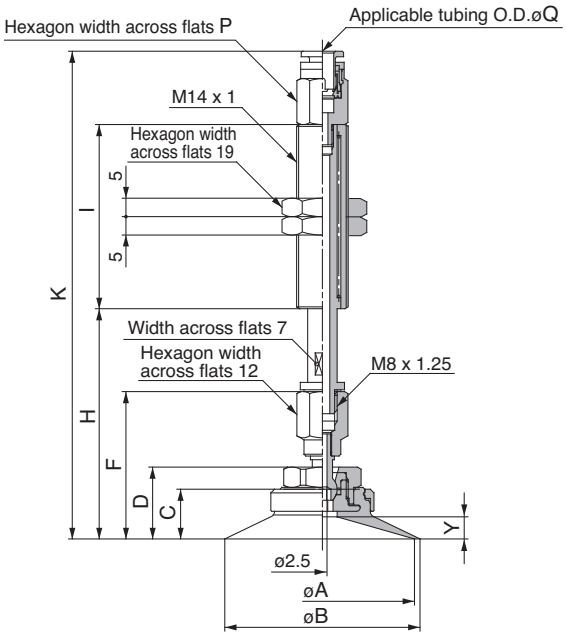

Dimensions: 10 mm Stroke [mm]

| Model | A | B | C | D | F | H | I | J | Q: 6 K | Q: 6 P | Q: 8 K | Q: 8 P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZPT20F□□□10-0□-A14 | 20 | 22 | 12.5 | 15.5 | 36 | 48.5 | 50 | 115 | 133.5 | 13 | 137 | 13 |
| ZPT25F□□□10-0□-A14 | 25 | 28 | | | | | | | | | | |
| ZPT32F□□□10-0□-A14 | 32 | 35 | 13 | 16 | 36.5 | 49 | | 115.5 | 134 | | 135.5 | |

Additional Dimensions by Stroke [mm]

| Stroke | H | I | Q: 6 K | Q: 6 P | Q: 8 K | Q: 8 P |
|---|---|---|---|---|---|---|
| 20 | +10 | 0 | □–5.1 | □–1 | –5.6 | +1 |
| 30 | +20 | | +4.9 | | +4.4 | |
| 50 | +40 | +25 | +49.9 | | +49.4 | |

### ZPT$^{40}_{50}$F□□$^{J}_{K}$$^{10}_{20}_{30}_{50}$-0□-A14 (With buffer/One-touch fitting)




Dimensions: 10 mm Stroke [mm]

| Model | A | B | C | D | F | H | I | J | Q: 6 K | Q: 6 P | Q: 8 K | Q: 8 P | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZPT40F□□□10-0□-A14 | 40 | 43 | 12.5 | 18.5 | 39 | 51.5 | 50 | 118 | 136.5 | 13 | 140 | 13 | 5 |
| ZPT50F□□□10-0□-A14 | 50 | 53 | 13.5 | 19.5 | 40 | 52.5 | | 119 | 137.5 | | 141 | | 6 |

Additional Dimensions by Stroke [mm]

| Stroke | H | I | Q: 6 K | Q: 6 P | Q: 8 K | Q: 8 P |
|---|---|---|---|---|---|---|
| 20 | +10 | 0 | –5.1 | □–1 | –5.6 | +1 |
| 30 | +20 | | +4.9 | | +4.4 | |
| 50 | +40 | +25 | + 9.9 | | +49.4 | |

# Vacuum Saving Valve
# Series ZP2V

## Features

- Non-return valve that closes the suction line if there is air leakage from the pad which is not on or fully onto the workpiece.
- Energy Saving:
  Big reduction of the vacuum pressure loss when there is no workpiece.
- No need of switching operation when changing workpieces
  The control circuit can be simplified when the worpieces have different shapes.
  Optional air release (blow off) valve.

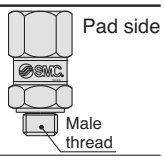
## How to Order

ZP2V – A5 – 03

Connection thread symbol for the pad

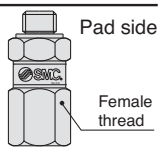
Male thread connection

| Symbol | Thread size | Applicable fixed orifice size | | | |
|---|---|---|---|---|---|
| | | 0.3 | 0.5 | 0.7 | 1.0 |
| A5 | M5 | ○ | ○ | ○ | – |
| A8 | M8 | – | ○ | ○ | ○ |
| AG1 | G1/8 | – | ○ | ○ | ○ |




Female thread connection

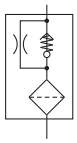
| Symbol | Thread size | Applicable fixed orifice size | | | |
|---|---|---|---|---|---|
| | | 0.3 | 0.5 | 0.7 | 1.0 |
| B5 | M5 | ○ | ○ | ○ | – |
| B6 | M6 | ○ | ○ | ○ | – |
| BG1 | G1/8 | – | ○ | ○ | ○ |




Fixed orifice size

| Symbol | Fixed orifice size [mm] |
|---|---|
| 03 | 0.3 |
| 05 | 0.5 |
| 07 | 0.7 |
| 10 | 1.0 |

## Symbol



## Product Recommendation

### Stocked items for fast delivery

| | | | | | |
|---|---|---|---|---|---|
| ZP2V-A5-03 | ZP2V-A8-05 | ZP2V-AG1-05 | ZP2V-B5-03 | ZP2V-B6-03 | ZP2V-BG1-07 |
| ZP2V-A5-05 | ZP2V-A8-07 | ZP2V-AG1-07 | ZP2V-B5-05 | ZP2V-B6-05 | ZP2V-BG1-10 |
| ZP2V-A5-07 | ZP2V-A8-10 | ZP2V-AG1-10 | ZP2V-B5-07 | ZP2V-B6-07 | |

### Related Products

**Series V100** - 3 Port Valve - page 353
**Series ZL** - One-stage Ejector - page 1360
**Series ZB** - Modular Ejector - page 1380
**Series IRV** - Vacuum Regulator - www.smc.eu
**Series ITV209** - Electronic Vacuum Regulator - page 1119
**Series ZFZ** - Air Suction Filter - www.smc.eu
**Series ZP2** - Vacuum Pad - page 1414
**Series GZ** - Pressure Gauge for Vacuum - www.smc.eu
**Series PFM** - Flow Switch - page 1298
**Series ZSE40A(F)/ISE40A** - Vacuum Switch - page 1283
**Series AC** - Air Preparation - page 1076
**Series TU** - Tubing - page 1223
**Series KQB2** - Fitting - page 1212

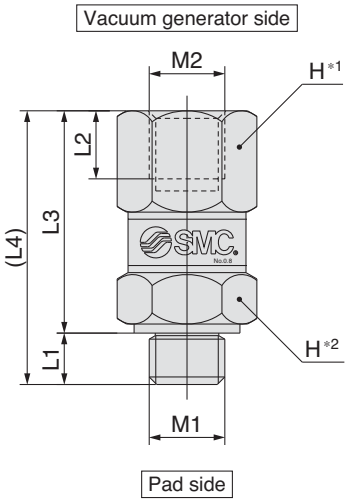


## Specifications

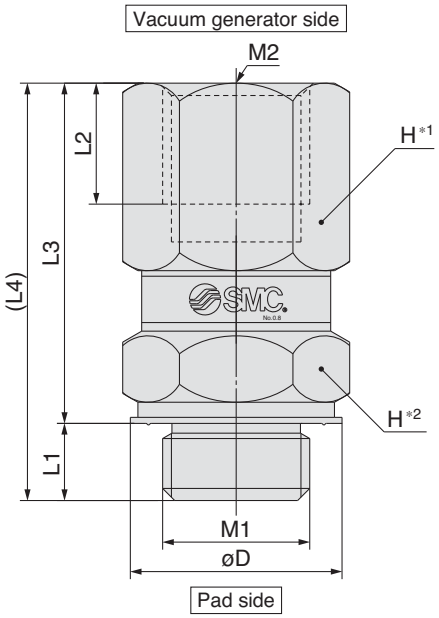
| Connection thread size for the pad | M5, M6 | | | M8, G1/8 | | |
|---|---|---|---|---|---|---|
| Fixed orifice size [mm] | 0.3 | 0.5 | 0.7 | 0.5 | 0.7 | 1.0 |
| Fluid | Air | | | | | |
| Max. operating pressure range [MPa] | 0 to 0.7 | | | | | |
| Max. operating vacuum pressure range [kPa] | 0 to –100 | | | | | |
| Ambient and fluid temperature [°C] | 5 to 60 (No freezing) | | | | | |
| Element nominal filtration rating [μm] | 40 | | | | | |
| Minimum operating flow [l/min (ANR)] | 3 | 5 | 8 | 5 | 8 | 16 |

For more product options and details see our specific catalogues or on-line information.

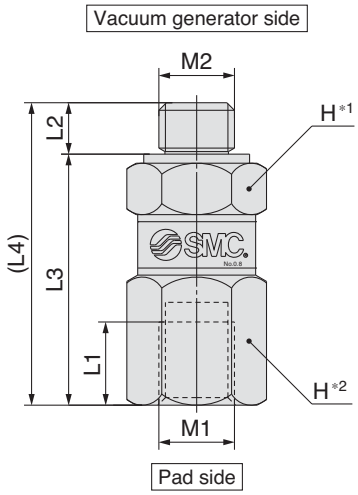
## Dimensions



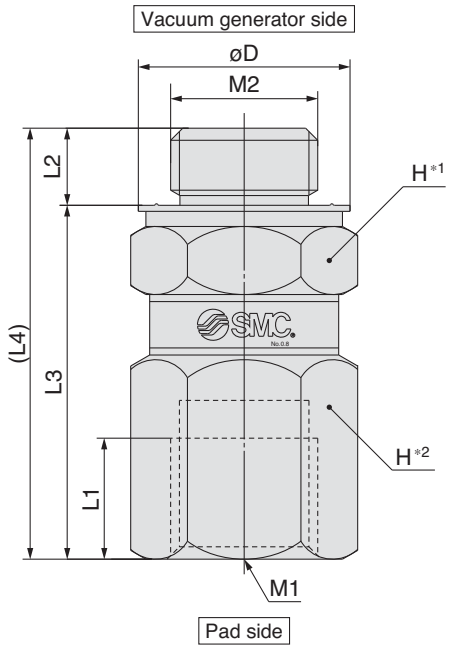

ZP2V-A5-□
ZP2V-A8-□




ZP2V-AG1-□




ZP2V-B5-□
ZP2V-B6-□




ZP2V-BG1-□

*1 The place at the vacuum generator side where the tool is applied.
*2 The place at the pad side where the tool is applied.

[mm]

| Model | M1 | M2 | L1 | L2 | L3 | L4 | H (Width across flats) | øD | W [g] | Tightening torque [N·m] Note) |
|---|---|---|---|---|---|---|---|---|---|---|
| ZP2V-A5-□ | M5 x 0.8 | M5 x 0.8 | 3.4 | 4.5 | 14.7 | 18.1 | 8 | — | 6 | 1.0 to 1.5 |
| ZP2V-A8-□ | M8 x 1.25 | M8 x 1.25 | 5.9 | 8 | 20.1 | 26 | 12 | — | 18 | 5.5 to 6.0 |
| ZP2V-AG1-□ | G1/8 | G1/8 | 5.1 | 8 | 22.5 | 27.6 | 13 | 14 | 23 | 5.5 to 6.0 |
| ZP2V-B5-□ | M5 x 0.8 | M5 x 0.8 | 5.5 | 3.4 | 16.6 | 20 | 8 | — | 7 | 1.0 to 1.5 |
| ZP2V-B6-□ | M6 x 1 | M6 x 1 | 5 | 4.5 | 16.2 | 20.7 | 8 | — | 7 | 2.0 to 2.5 |
| ZP2V-BG1-□ | G1/8 | G1/8 | 8 | 5.1 | 23.4 | 28.5 | 13 | 14 | 24 | 5.5 to 6.0 |

Note) When mounting and removing the product, apply a wrench or torque wrench to the place shown in the Figure.
When mounting, tighten to the torque specified in the table.