



## VVK

*Poppet Valves*

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# VVK Series

## Poppet Valves for Vacuum

**AKME**  
SOLUÇÕES EM AUTOMAÇÃO

## VVK

### Poppet valves for vacuum G1/8 ÷ G1 1/2

- A complete range: G1/8 - G1/4 - G3/8 - G1/2 - G3/4 - G1 - G1 1/2
- Original poppet system appreciated for decades
- Servoassisted version
- A complete range of solenoid valves and pneumatic valves for vacuum with connection from G1/8 ÷ G1 1/2 to satisfy all requirements
- The internal system ensures high reliability and long life

### TECHNICAL CHARACTERISTICS

|                     |                                                          |       |       |       |       |     |         |
|---------------------|----------------------------------------------------------|-------|-------|-------|-------|-----|---------|
| Ambient temperature | +50 °C                                                   |       |       |       |       |     |         |
| Fluid temperature   | -5 ÷ +60 °C                                              |       |       |       |       |     |         |
| Fluid               | 50 µm filtered air, with or without lubrication - vacuum |       |       |       |       |     |         |
| Commutation system  | poppet                                                   |       |       |       |       |     |         |
| Ways/Positions      | 2/2 NC (upon request), 3/2 NC, 3/2 NO, 3/2 NC-NO         |       |       |       |       |     |         |
| Control             | indirect vacuum                                          |       |       |       |       |     |         |
| Return              | automatic by vacuum                                      |       |       |       |       |     |         |
| Connections         | G 1/8                                                    | G 1/4 | G 3/8 | G 1/2 | G 3/4 | G 1 | G 1 1/2 |
| Nominal Ø (mm)      | 5,5                                                      | 8     | 10    | 15    | 19    | 25  | 39      |

### CONSTRUCTIVE CHARACTERISTICS

|            |                                                                                                                                                                                   |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Valve body | G1/8 ÷ G1 = zamak<br>G1 1/2 = aluminium                                                                                                                                           |
| Seals      | valve for vacuum with external air operation<br>polyurethane conical poppets and Vulkollan diaphragm<br>valve for direct vacuum with external vacuum operation<br>silicon poppets |
| Actuators  | G1/8 ÷ G1 = zamak<br>G1 1/2 = aluminium                                                                                                                                           |
| Spool      | G1/8 ÷ G3/8 = aluminium<br>G1/2 ÷ G1 1/2 = steel + plastic                                                                                                                        |

### ELECTRIC CHARACTERISTICS

|                   | G1/8                                              | G1/4 ÷ G1 1/2          |
|-------------------|---------------------------------------------------|------------------------|
| Electropilot      | U1                                                | U2                     |
| Coil              | DA                                                | DB                     |
| Power consumption | 3,5 W (DC) - 5 VA (AC)                            | 11 W (DC) - 10 VA (AC) |
| Connector         | AM 5110                                           | AM 5111                |
| Voltage           | 12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC |                        |
| Manual override   | Impulse screw - 2 positions                       |                        |

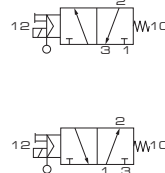
### VVK Series



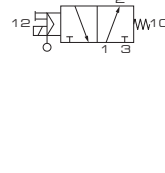
■ 3/2 Solenoid valve for vacuum with external pilot air supply



3/2 NC G1/8  
VVK-3001

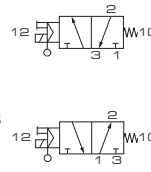


3/2 NO G1/8  
VVK-3002



3/2 NC G1/4 - G3/8  
VVK-3009  
VVK-3011

3/2 NO G1/4 - G3/8  
VVK-3010  
VVK-3012



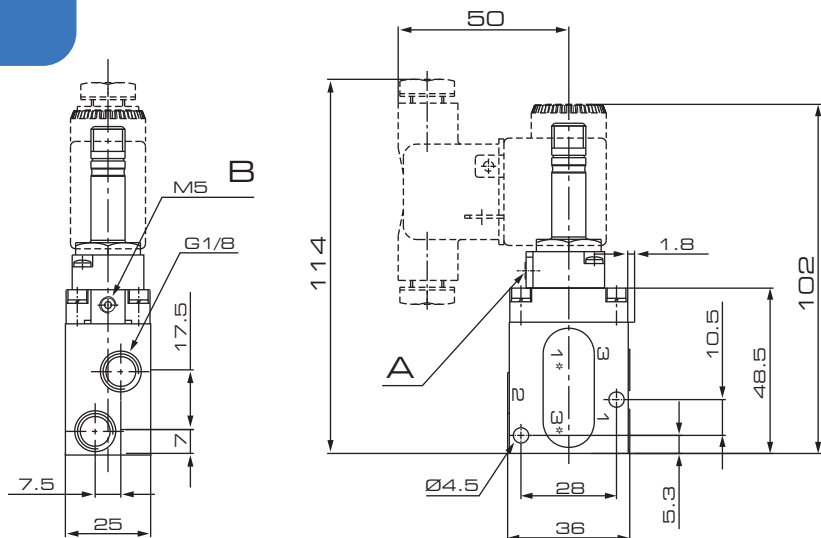
| Model  | Connect. | Control            | Return            | Ø   | Resp. Time (ms) |        | Minimum control | Pump     | Max vacuum |      | Weight | Coil | Part no. |
|--------|----------|--------------------|-------------------|-----|-----------------|--------|-----------------|----------|------------|------|--------|------|----------|
|        |          | 12                 | 10                | mm  | En.             | De-en. | pressure bar    | max m³/h | mm Hg      | Torr | Kg     |      |          |
| 3/2 NC | G1/8     | electric amplified | mechanical spring | 5,5 | 14              | 25     | 1,5             | 1,5      | 759,5      | 0,5  | 0,25   | U1   | VVK-3001 |
|        | G1/4     |                    |                   | 8   | 16              | 27     | 2,5             | 4        | 759,5      | 0,5  | 0,58   | U2   | VVK-3009 |
|        | G3/8     |                    |                   | 10  | 16              | 27     | 2,5             | 10       | 759,5      | 0,5  | 0,56   | U2   | VVK-3011 |
| 3/2 NO | G1/8     | electric amplified | mechanical spring | 5,5 | 14              | 25     | 1,5             | 1,5      | 759,5      | 0,5  | 0,25   | U1   | VVK-3002 |
|        | G1/4     |                    |                   | 8   | 16              | 27     | 2,5             | 4        | 759,5      | 0,5  | 0,58   | U2   | VVK-3010 |
|        | G3/8     |                    |                   | 10  | 16              | 27     | 2,5             | 10       | 759,5      | 0,5  | 0,56   | U2   | VVK-3012 |

# VVK Series

## Poppet Valves for Vacuum

VVK Poppet valves for vacuum

### G1/8



NC

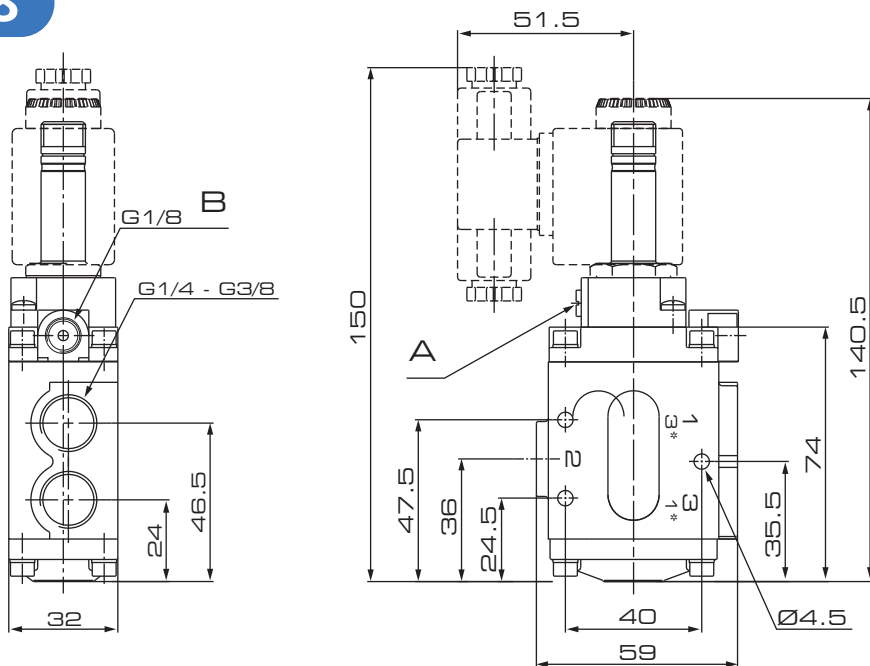
1 = Supply port (vacuum)  
2 = Use  
3 = Exhaust

NO

1\* = Supply port (vacuum)  
2 = Use  
3\* = Exhaust

A - Manual override  
B - Supply port for external  
servoassistance of the pilot

### G1/4 - G3/8



NC

1 = Supply port (vacuum)  
2 = Use  
3 = Exhaust

NO

1\* = Supply port (vacuum)  
2 = Use  
3\* = Exhaust

A - Manual override  
B - Supply port for external  
servoassistance of the pilot

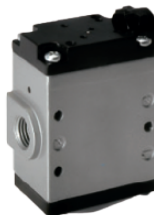
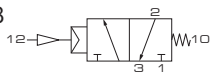
# VVK Series

## Poppet Valves for Vacuum

### VVK Poppet valves for vacuum



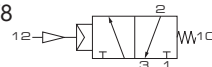
3/2 NC G1/8  
VVK-3071



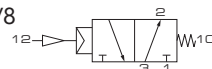
3/2 NO G1/8  
VVK-3072



3/2 NC G1/4 - G3/8  
VVK-3073  
VVK-3075

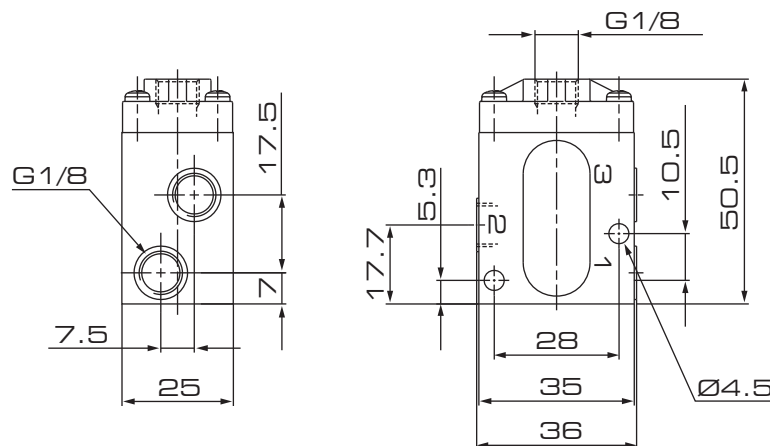


3/2 NO G1/4 - G3/8  
VVK-3074  
VVK-3076

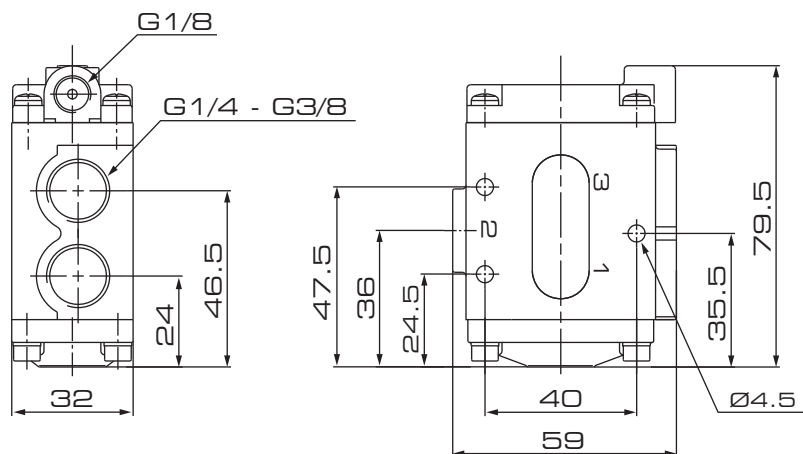


| Model  | Connect. | Control   | Return     | Ø   | Resp. Time (ms) |        | Minimum control | Pump     | Max vacuum |      | Weight | Part no. |
|--------|----------|-----------|------------|-----|-----------------|--------|-----------------|----------|------------|------|--------|----------|
|        |          | 12        | 10         | mm  | En.             | De-en. | pressure bar    | max m³/h | mm Hg      | Torr | Kg     |          |
| 3/2 NC | G1/8     | pneumatic | mechanical | 5,5 | 3               | 6      | 1,5             | 1,5      | 759,5      | 0,5  | 0,21   | VVK-3071 |
|        | G1/4     | amplified | spring     | 8   | 4               | 8      | 2,5             | 4        | 759,5      | 0,5  | 0,54   | VVK-3073 |
|        | G3/8     |           |            | 10  | 4               | 8      | 2,5             | 10       | 759,5      | 0,5  | 0,52   | VVK-3075 |
| 3/2 NO | G1/8     | pneumatic | mechanical | 5,5 | 3               | 6      | 1,5             | 1,5      | 759,5      | 0,5  | 0,21   | VVK-3072 |
|        | G1/4     | amplified | spring     | 8   | 4               | 8      | 2,5             | 4        | 759,5      | 0,5  | 0,54   | VVK-3074 |
|        | G3/8     |           |            | 10  | 4               | 8      | 2,5             | 10       | 759,5      | 0,5  | 0,52   | VVK-3076 |

### G1/8 - G1/4 G1 - G3/8 Servo valves



- 1 = Supply port (vacuum)
- 2 = Use
- 3 = Exhaust



- 1 = Supply port (vacuum)
- 2 = Use
- 3 = Exhaust

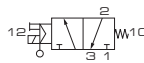
# VVK Series

## Poppet Valves for Vacuum

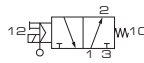
### VVK Poppet valves for vacuum



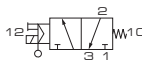
3/2 NC G1/2 - G3/4 - G1  
VVK-3020  
VVK-3040  
VVK-3050



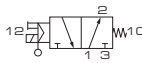
3/2 NO G1/2 - G3/4 - G1  
VVK-3021  
VVK-3041  
VVK-3051




3/2 NC G1 1/2  
VVK-3062

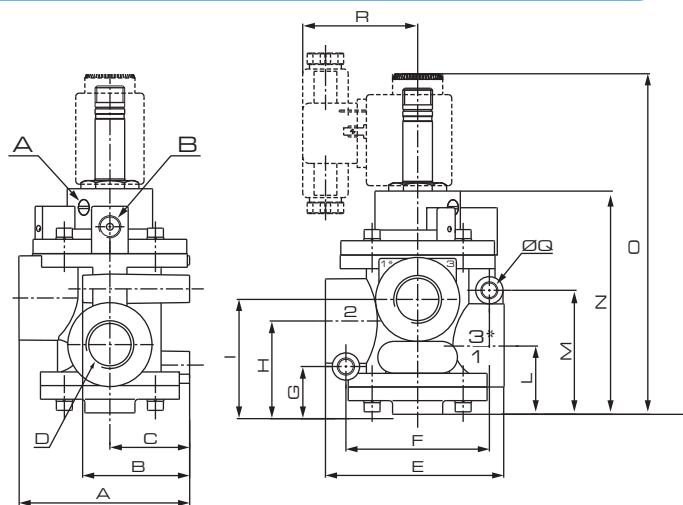


3/2 NO G1 1/2  
VVK-3063



| Model  | Connect. | Control               | Return               | Ø  | Resp. Time (ms) |        | Minimum control | Pump     | Max vacuum |      | Weight | Coil | Part.no |
|--------|----------|-----------------------|----------------------|----|-----------------|--------|-----------------|----------|------------|------|--------|------|---------|
|        |          | 12                    | 10                   | mm | En.             | De-en. | pressure bar    | max m³/h | mm Hg      | Torr | Kg     |      |         |
| 3/2 NC | G1/2     | electric<br>amplified | mechanical<br>spring | 15 | 16              | 40     | 3               | 20       | 759,5      | 0,5  | 1,19   | U2   | AG-3020 |
|        | G3/4     |                       |                      | 19 | 16              | 40     | 3               | 35       | 759,5      | 0,5  | 1,13   | U2   | AG-3040 |
|        | G1       |                       |                      | 25 | 18              | 42     | 3               | 90       | 759,5      | 0,5  | 1,62   | U2   | AG-3050 |
|        | G1 1/2   |                       |                      | 39 | 60              | 38     | 4               | 180      | 759,5      | 0,5  | 2,25   | U2   | AG-3062 |
| 3/2 NO | G1/2     | electric<br>amplified | mechanical<br>spring | 15 | 16              | 40     | 3               | 20       | 759,5      | 0,5  | 1,19   | U2   | AG-3021 |
|        | G3/4     |                       |                      | 19 | 16              | 40     | 3               | 35       | 759,5      | 0,5  | 1,13   | U2   | AG-3041 |
|        | G1       |                       |                      | 25 | 18              | 42     | 3               | 90       | 759,5      | 0,5  | 1,62   | U2   | AG-3051 |
|        | G1 1/2   |                       |                      | 39 | 60              | 38     | 4               | 180      | 759,5      | 0,5  | 2,25   | U2   | AG-3063 |

### G1/2 - G3/4 - G1 - G1/2 Electrovalves



NC

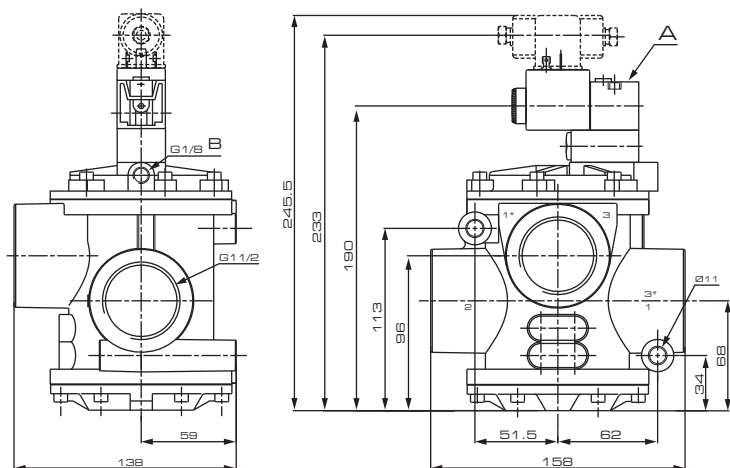
1 = Supply port (vacuum)  
2 = Use  
3 = Exhaust

NO

1\* = Supply port (vacuum)  
2 = Use  
3\* = Exhaust

A - Manual override  
B - Supply port for external  
servoassistance of the pilot

|      | A  | B  | C  | D    | E    | F  | G    | H  | I    | L  | M    | N   | O   | Q   | R    |
|------|----|----|----|------|------|----|------|----|------|----|------|-----|-----|-----|------|
| G1/2 | 75 | 47 | 35 | G1/2 | 78,5 | 63 | 21   | 41 | 50,5 | 30 | 54,5 | 100 | 150 | 6,4 | 50,5 |
| G3/4 | 75 | 47 | 35 | G3/4 | 78,5 | 63 | 21   | 41 | 50,5 | 30 | 54,5 | 100 | 150 | 6,4 | 50,5 |
| G1   | 89 | 55 | 40 | G1   | 101  | 76 | 25,5 | 51 | 64   | 38 | 62,5 | 115 | 167 | 8,4 | 50   |



NC

1 = Supply port  
2 = Use  
3 = Exhaust

NO

1\* = Supply port  
2 = Use  
3\* = Exhaust

A - Manual override  
B - Supply port for external  
servoassistance of the pilot

Electrovalves are supplied without coil, connector and locking ring

# VVK Series

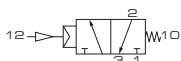
## Poppet Valves for Vacuum

### VVK Poppet valves for vacuum



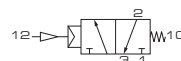
3/2 NC G1/2 - G3/4 - G1

VVK-3081  
VVK-3091  
VVK-3100



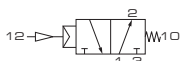
3/2 NC G1 1/2

VVK-3110



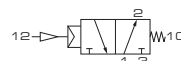
3/2 NO G1/2 - G3/4 - G1

VVK-3082  
VVK-3092  
VVK-3101



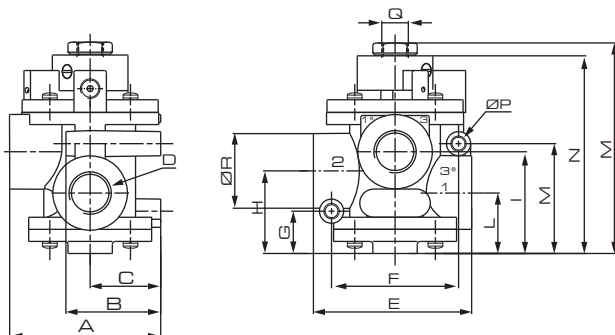
3/2 NO G1 1/2

VVK-3111



| Model  | Connect. | Control             | Return            | Ø  | Times (ms) |        | Minimum control | Pump     | Max vacuum |      | Weight | Part no. |
|--------|----------|---------------------|-------------------|----|------------|--------|-----------------|----------|------------|------|--------|----------|
|        |          | 12                  | 10                | mm | En.        | De-en. | pressure bar    | max m³/h | mm Hg      | Torr | Kg     |          |
| 3/2 NC | G1/2     | pneumatic amplified | mechanical spring | 15 | 6          | 15     | 3               | 20       | 759,5      | 0,5  | 1,16   | VVK-3081 |
|        | G3/4     |                     |                   | 19 | 6          | 15     | 3               | 35       | 759,5      | 0,5  | 1,10   | VVK-3091 |
|        | G1       |                     |                   | 25 | 7          | 16     | 3               | 90       | 759,5      | 0,5  | 1,59   | VVK-3100 |
|        | G1 1/2   |                     |                   | 39 | 65         | 25     | 4               | 180      | 759,5      | 0,5  | 2,19   | VVK-3110 |
| 3/2 NO | G1/2     | pneumatic amplified | mechanical spring | 15 | 6          | 15     | 3               | 20       | 759,5      | 0,5  | 1,16   | VVK-3082 |
|        | G3/4     |                     |                   | 19 | 6          | 15     | 3               | 35       | 759,5      | 0,5  | 1,10   | VVK-3092 |
|        | G1       |                     |                   | 25 | 7          | 16     | 3               | 90       | 759,5      | 0,5  | 1,59   | VVK-3101 |
|        | G1 1/2   |                     |                   | 39 | 65         | 25     | 4               | 180      | 759,5      | 0,5  | 2,19   | VVK-3111 |

### G1/2 - G3/4 - G1 - G1 1/2



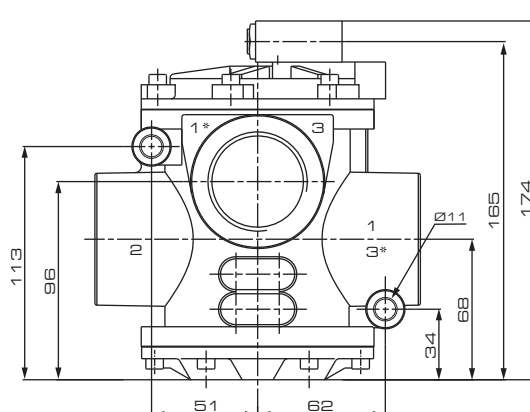
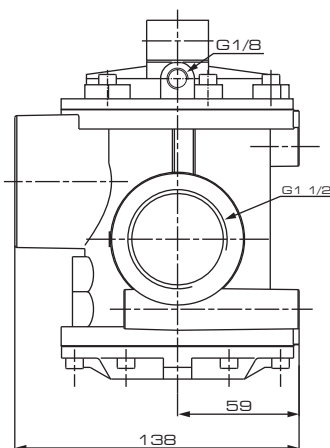
NC

1 = Supply port (vacuum)  
2 = Use  
3 = Exhaust

NO

1\* = Supply port (vacuum)  
2 = Use  
3\* = Exhaust

|      | A    | B  | C  | D    | E    | F  | G    | H  | I    | L  | M    | N   | O     | P   | Q    | R  |
|------|------|----|----|------|------|----|------|----|------|----|------|-----|-------|-----|------|----|
| G1/2 | 75   | 47 | 35 | G1/2 | 78,5 | 63 | 21   | 41 | 50,5 | 30 | 54,5 | 100 | 105   | 6,4 | G1/4 | 37 |
| G3/4 | 75   | 47 | 35 | G3/4 | 78,5 | 63 | 21   | 41 | 50,5 | 30 | 54,5 | 100 | 105   | 6,4 | G1/4 | 37 |
| G1   | 88,5 | 55 | 40 | G1   | 101  | 76 | 25,5 | 51 | 64   | 38 | 62,5 | 115 | 120,5 | 8,4 | G1/4 | 45 |



NC

1 = Supply port (vacuum)  
2 = Use  
3 = Exhaust

NO

1\* = Supply port (vacuum)  
2 = Use  
3\* = Exhaust

# VVK Series

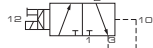
## Poppet Valves for Vacuum

### VVK Poppet valves for vacuum



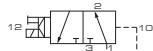
3/2 NC G1/4 - G3/8

VVK-3210  
VVK-3214



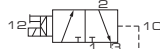
3/2 NO G1/4 - G3/8

VVK-3211  
VVK-3215



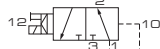
3/2 NC G1/2 - G3/4 - G1

VVK-3222  
VVK-3232  
VVK-3242



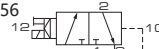
3/2 NO G1/2 - G3/4 - G1

VVK-3223  
VVK-3233  
VVK-3243



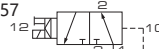
3/2 NC G1 1/2

VVK-3256



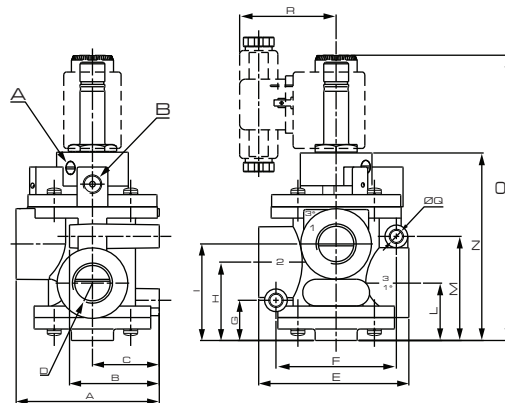
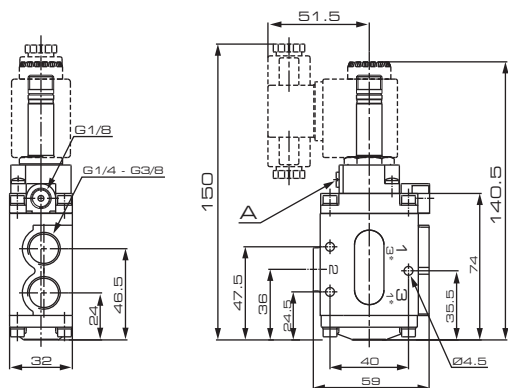
3/2 NO G1 1/2

VVK-3257

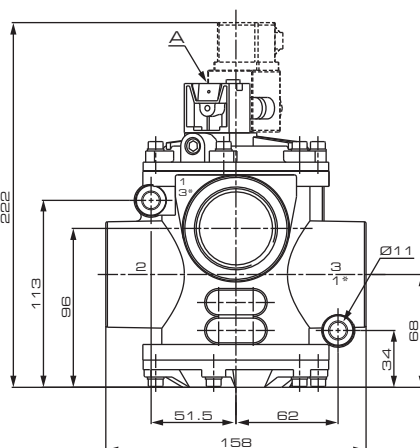
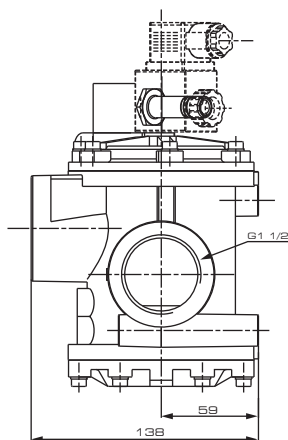


| Model  | Connect. | Control            | Return | Ø  | Resp. Time (ms) | Pump   | Min. vacuum | Max vacuum | Weight     | Coil | Part no. |
|--------|----------|--------------------|--------|----|-----------------|--------|-------------|------------|------------|------|----------|
|        |          | 12                 | 10     | mm | En.             | De-en. | max m³/h    | mm Hg Torr | mm Hg Torr | Kg   |          |
| 3/2 NC | G1/4     | electric amplified | vacuum | 8  | 25              | 16     | 4           | 150 610    | 759,5 0,5  | 0,52 | VVK-3210 |
|        | G3/8     |                    |        | 10 | 25              | 16     | 10          | 150 610    | 759,5 0,5  | 0,56 | VVK-3214 |
|        | G1/2     |                    |        | 15 | 30              | 15     | 20          | 150 610    | 759,5 0,5  | 1,19 | VVK-3222 |
|        | G3/4     |                    |        | 19 | 30              | 15     | 35          | 150 610    | 759,5 0,5  | 1,13 | VVK-3232 |
|        | G1       |                    |        | 25 | 38              | 18     | 90          | 150 610    | 759,5 0,5  | 1,62 | VVK-3242 |
|        | G1 1/2   |                    |        | 39 | 75              | 50     | 100         | 150 610    | 759,5 0,5  | 2    | VVK-3256 |
| 3/2 NO | G1/4     | electric amplified | vacuum | 8  | 20              | 14     | 4           | 150 610    | 759,5 0,5  | 0,58 | VVK-3211 |
|        | G3/8     |                    |        | 10 | 20              | 14     | 10          | 150 610    | 759,5 0,5  | 0,56 | VVK-3215 |
|        | G1/2     |                    |        | 15 | 20              | 18     | 20          | 150 610    | 759,5 0,5  | 1,19 | VVK-3223 |
|        | G3/4     |                    |        | 19 | 20              | 18     | 35          | 150 610    | 759,5 0,5  | 1,13 | VVK-3233 |
|        | G1       |                    |        | 25 | 25              | 20     | 90          | 150 610    | 759,5 0,5  | 1,62 | VVK-3243 |
|        | G1 1/2   |                    |        | 39 | 70              | 60     | 100         | 150 610    | 759,5 0,5  | 2    | VVK-3257 |

### G1/4 - G3/8 - G1/2 - G3/4 - G1 - G1 /12



|      | A  | B  | C  | D    | E    | F  | G    | H  | I    | L  | M    | N   | O   | Q   | R    |
|------|----|----|----|------|------|----|------|----|------|----|------|-----|-----|-----|------|
| G1/2 | 75 | 47 | 35 | G1/2 | 78,5 | 63 | 21   | 41 | 50,5 | 30 | 54,5 | 100 | 150 | 6,4 | 50,5 |
| G3/4 | 75 | 47 | 35 | G3/4 | 78,5 | 63 | 21   | 41 | 50,5 | 30 | 54,5 | 100 | 150 | 6,4 | 50,5 |
| G1   | 89 | 55 | 40 | G1   | 101  | 76 | 25,5 | 51 | 64   | 38 | 62,5 | 115 | 167 | 8,4 | 50   |



NC

- 1 = Supply port (vacuum)
- 2 = Use
- 3 = Exhaust

NO

- 1\* = Supply port (vacuum)
- 2 = Use
- 3\* = Exhaust

A - Manual override

B - For G1/8 plug

For 2/2 version put a plug on the exhaust (3)  
Electrovalves are supplied without coil, connector and locking ring

# VVK Series

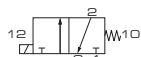
## Poppet Valves for Vacuum

### VVK Poppet valves for vacuum



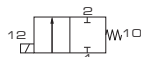
3/2 NC G1/4

VVK-3310  
VVK-3311  
VVK-3312  
VVK-3313



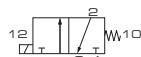
2/2 NC G1/4

VVK-3300  
VVK-3301  
VVK-3302  
VVK-3303



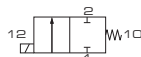
3/2 NC G1/2

VVK-3330  
VVK-3331  
VVK-3332



2/2 NC G1/2

VVK-3320  
VVK-3321  
VVK-3322



Material:  
valve body

tube/sleeve  
nucleus and spring  
seals(a)

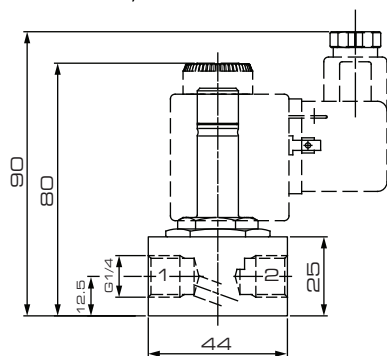
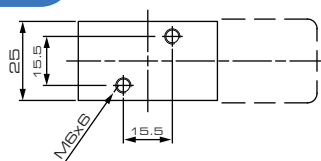
G1/4 = brass  
G1/2 = aluminium  
stainless steel  
stainless steel  
G1/4 = NBR  
G1/2 = vulkollan

(a) = vulkollan + NBR for valves 3/2 version

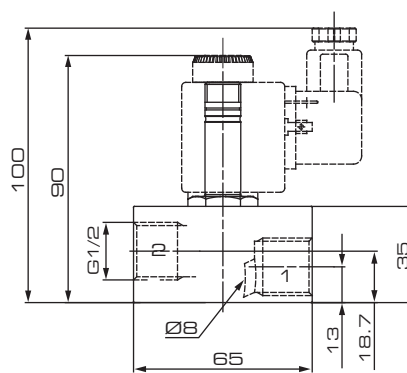
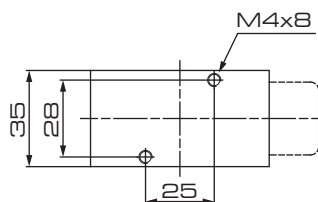
| Model  | Connect. | Control  | Return            | Ø     | Resp. Time (ms) |        | Pump<br>max m³/h | Max vacuum |      | Weight<br>Kg | Part no. |
|--------|----------|----------|-------------------|-------|-----------------|--------|------------------|------------|------|--------------|----------|
|        |          |          |                   |       | En.             | De-en. |                  | mm Hg      | Torr |              |          |
| 3/2 NC | G1/4     | electric | mechanical spring | 3-3*  | 10              | 10     | 1,8              | 759,5      | 0,5  | 0,22         | VVK-3310 |
|        | G1/4     |          |                   | 4-3*  | 12              | 8      | 2,5              | 759,5      | 0,5  | 0,22         | VVK-3311 |
|        | G1/4     |          |                   | 5-3*  | 13              | 8      | 4                | 759,5      | 0,5  | 0,22         | VVK-3312 |
|        | G1/4     |          |                   | 6-3*  | 15              | 8      | 5                | 759,5      | 0,5  | 0,22         | VVK-3313 |
|        | G1/2     |          |                   | 8-3*  | 17              | 8      | 6                | 759,5      | 0,5  | 0,25         | VVK-3330 |
|        | G1/2     |          |                   | 10-3* | 20              | 10     | 7,5              | 759,5      | 0,5  | 0,25         | VVK-3331 |
|        | G1/2     |          |                   | 11-3* | 28              | 10     | 10               | 759,5      | 0,5  | 0,25         | VVK-3332 |
| 2/2 NC | G1/4     | electric | mechanical spring | 3     | 10              | -      | 1,8              | 759,5      | 0,5  | 0,22         | VVK-3300 |
|        | G1/4     |          |                   | 4     | 12              | -      | 2,5              | 759,5      | 0,5  | 0,22         | VVK-3301 |
|        | G1/4     |          |                   | 5     | 13              | -      | 4                | 759,5      | 0,5  | 0,22         | VVK-3302 |
|        | G1/4     |          |                   | 6     | 15              | -      | 5                | 759,5      | 0,5  | 0,22         | VVK-3303 |
|        | G1/2     |          |                   | 8     | 17              | -      | 6                | 759,5      | 0,5  | 0,25         | VVK-3320 |
|        | G1/2     |          |                   | 10    | 20              | -      | 7,5              | 759,5      | 0,5  | 0,25         | VVK-3321 |
|        | G1/2     |          |                   | 11    | 28              | -      | 10               | 759,5      | 0,5  | 0,25         | VVK-3322 |

\* = solenoid valves with 3 mm fixed exhausts

### G1/4 - G1/2



1 = Supply port (vacuum)  
2 = Use  
3 = Exhaust



1 = Supply port (vacuum)  
2 = Use  
3 = Exhaust



Coil U2 - 17 VA

### Voltage

24 V CA - 50/60 Hz DB-0607  
110 V CA - 50/60 Hz DB-0608  
220 V CA - 50/60 Hz DB-0610

Electrovalves are supplied without coil, connector and locking ring