

# VOVK miniature solenoid valve



Assembly Instructions

8149389  
2020-11a  
[8149390]

## Miniature solenoid switching valve VOVK..... English

### 1 Other applicable documents



All documents for the product are available at  
→ [www.festo.com/sp](http://www.festo.com/sp)

### 2 Safety

#### 2.1 Safety instructions

- Switch off the power supply before carrying out any assembly work.
- Switch off the media supply before carrying out any assembly work.
- Only mount product on components that are in a safe condition.
- Only use the product in its original condition without unauthorized modifications.
- The product must not be used if the product is dirty or damaged as a result of damaged packaging.
- Assembly and installation by qualified personnel only.

#### 2.2 Intended Use

The valves are solenoid switching valves for air and are intended to release, block or change the flow of air.

#### 2.3 Foreseeable Misuse

- The product may not be used outside the limits of the product defined by the technical data.
- The product must not be used in a potentially explosive atmosphere.
- The product cannot be used for oxygen or aggressive gases
- The product cannot be used for liquids

### 3 Scope of Delivery

Each VOVK valve comes with a set of mounting plates and screws:

- 2 mounting plates for ends
- 2 screws

The VOVK-...-FB type (flange mount) comes with one additional plate:

- 1 mounting plate for intermediate position

For the VOVK valves with cable/connector also the 30cm cable is always included with the valve.

### 4 Assembly

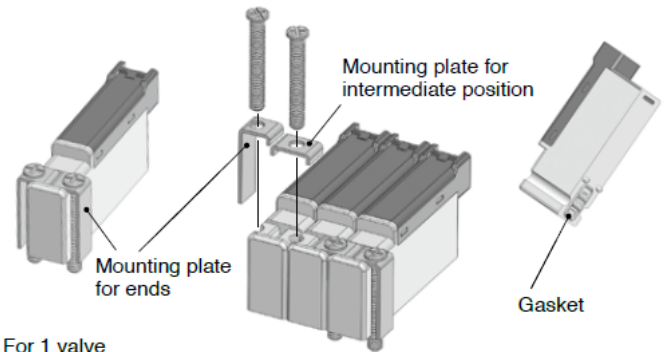
Assembly and installation by qualified personnel only.

- Switch off the power supply before carrying out any assembly work.
- Switch off the media supply before carrying out any assembly work.

#### 4.1 VOVK-...-FB type (flange mount)

This type of VOVK valve has the flange connection at the bottom and fits to the manifold for a single valve or for 10 valves.

Depending on the position of the valve on the 10-valve-manifold you will need the mounting plates for end and/or intermediate position.



For 1 valve

For lined up valves

#### For 1 valve

1. Put the valve on the base, attach mounting plates for ends.
2. Tighten the screws provided to a tightening torque of 17.6 Ncm [1.558 in · lbf].

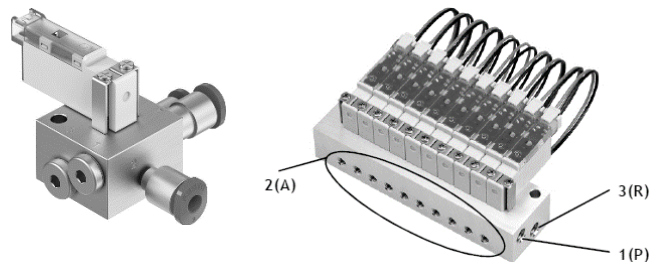
Note: Tighten the screws evenly so the valve does not tilt.

#### For multiple valves that are lined up

1. Line up the valves on the base, attach the mounting plates for intermediate positions and for ends.
2. Tighten the screws provided to a tightening torque of 17.6 Ncm [1.558 in · lbf].

Note: Use the valves in a line at a 6 mm [0.236 in] pitch.

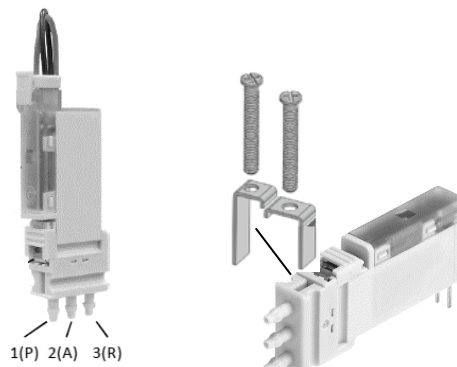
The mounting plates provided (intermediate) are for a 6 mm [0.236 in] pitch.



#### 4.2 VOVK-...-B3F/B3.2F (single valves)

This type of VOVK valve has the direct barb connections.

You will need the two mounting plates for the ends and the screws to mount them in a similar way as the VOVK-...-FB type above.

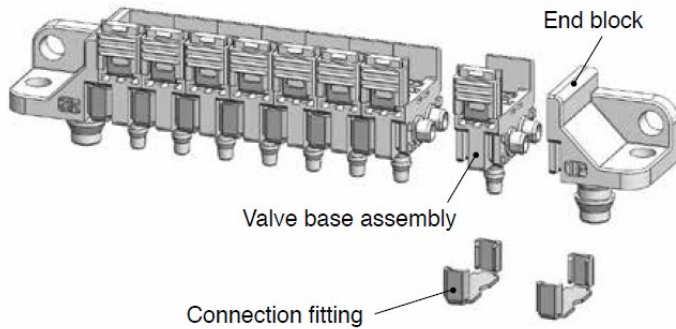


### 4.3 VOVK-...-FF type (stackable manifold)

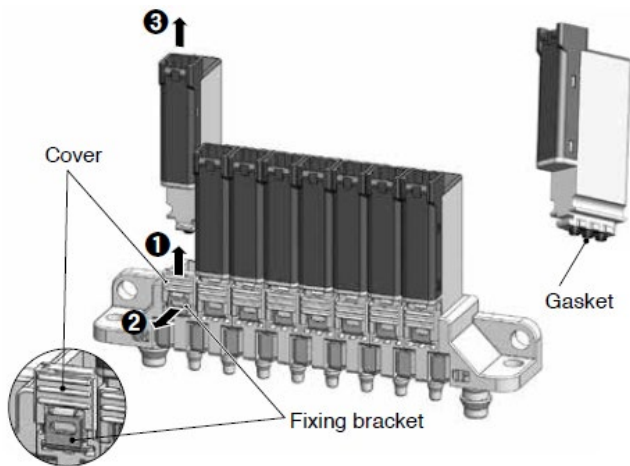
The VOVK-...-FF type has the flange connection at the front side for stackable mounting of 1 .. 20 valves. The manifold can be assembled by using the set of end blocks together with a manifold set with the valve bases.

8122790	VABS-C12-6-S	1x set End blocks for one manifold, for 6mm OD tubing
8122792	VABS-C12-6-S-B3	Manifold bl. set with 1 valve base, type 3.2mm – for 3mm OD tubing
8122791	VABS-C12-6-S-B4	Manifold bl. set with 1 valve base, type 4mm – for 4mm OD tubing

A clip is used as connection fitting to clamp the valve bases and end blocks together.



After assembling the manifold, you can mount the valves:



#### Attaching valves

1. Confirm that the cover ① is in upper position, and the fixing bracket ② is pulled out.
2. Confirm that the gasket is on the valve and insert the valve in the base.
3. Push in the fixing bracket ②.
4. Slide the cover ① down until it clicks to lock the fixing bracket.

Check to make sure that the fixing bracket is firmly holding the valve before supplying air to the manifold.

#### Removing valves

1. Slide the cover ① in the direction of the arrow (up).
2. Use a miniature flathead screwdriver or other thin object to pull out the fixing bracket ②.
3. Pull the valve ③ upward.

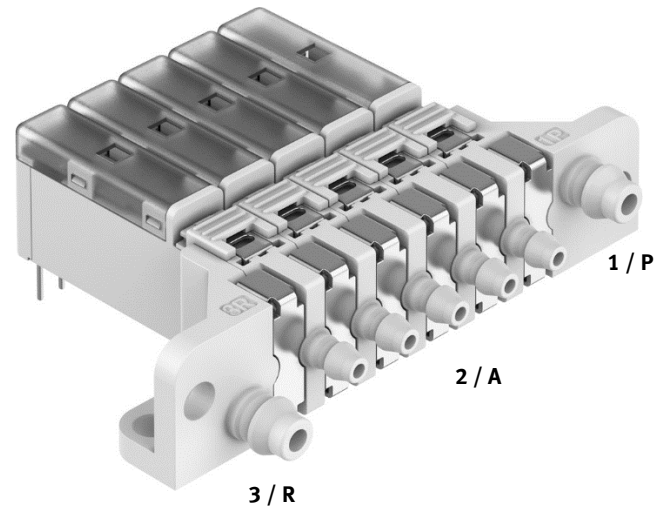
Note: If you cannot pull the valve out, the fixing bracket was not pulled out completely in step two.

Do not pull the valve out by force, pull the fixing bracket out again.

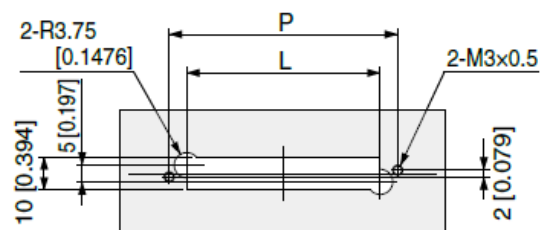
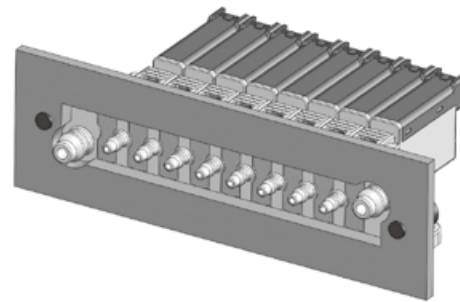
#### Adding manifolds

1. Use the manifold only for up to 20 valves (within one end block set).
2. Remove the connection fitting from between the stations where you want to add manifolds.  
For example, if you want to add a manifold to the end station, remove the connection fitting from between the end station and the end block.  
Note: When removing the fitting, move it forward and backward little by little to remove it.

3. If you pull it off in one pull, you may bend the fitting or damage the base.
4. Attach the valve base assembly in the position you want to add.  
Note: Before assembly, confirm there are no foreign debris in the assembly. If dirt or foreign debris are present, it may result in air leakage.
5. Lightly press on both sides so there is no gap at the base, then align the connection fitting with the groove in the base and insert it. Press the connection fitting in until it is even with, or below, the surface of the base.



#### Cutout dimensions in mounting surface for base piping



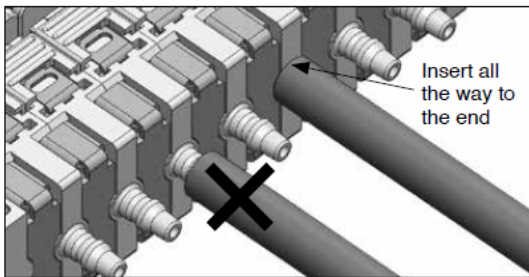
- Drill and tap M3 threads on mounting surface for base piping.
- If you drill a through hole and use a nut, it may interfere with the tubes.
- When you are using washers on the mounting screws, use only ISO small round washers (outer diameter  $\phi 6$  [0.236]).
- Tighten the manifold mounting screws to a tightening torque of 49.0 N·cm [4.337 in·lbf].
- The 10 mm [0.394 in] dimension in the diagram below is the maximum dimension. If the user wants to set smaller dimensions for the cutout, refer to the outside diameter of the tube connectors below and set the dimensions so there is no interference with the piping.
- \*There is no problem if the corners shown in the cutout dimensions are rounded during the cutting work.
- Air supply/exhaust port tube connector outer diameter:  $\phi 7$  [0.276] (for tube 6)
- Output port tube connector outer diameter:  $\phi 5$  [0.197] (for tube 4)

## Unit dimensions

Number of units	L	P
1	16 [0.630]	26.5 [1.043]
2	22 [0.866]	32.5 [1.280]
3	28 [1.102]	38.5 [1.516]
4	34 [1.339]	44.5 [1.752]
5	40 [1.575]	50.5 [1.988]
6	46 [1.811]	56.5 [2.224]
7	52 [2.047]	62.5 [2.461]
8	58 [2.283]	68.5 [2.697]
9	64 [2.520]	74.5 [2.933]
10	70 [2.756]	80.5 [3.169]
11	76 [2.992]	86.5 [3.406]
12	82 [3.228]	92.5 [3.642]
13	88 [3.465]	98.5 [3.878]
14	94 [3.701]	104.5 [4.114]
15	100 [3.937]	110.5 [4.350]
16	106 [4.173]	116.5 [4.587]
17	112 [4.409]	122.5 [4.823]
18	118 [4.646]	128.5 [5.059]
19	124 [4.882]	134.5 [5.295]
20	130 [5.118]	140.5 [5.531]

### 4.4 How to connect tubing to the barbed manifolds

When using a stackable manifold, hold the valve body and the manifold if external force is applied when connecting or disconnecting connectors or tubes. Otherwise, the manifold may be bent.



Note: Hold the main body and the manifold when connecting or disconnecting tubes.

1. Cut the tube straight across, perpendicular to the axis of the tube. Allow some leeway in the length.
2. Slide the tube onto the barb fitting. If it is slid on only part way, air may leak out or the tube may fall off.
3. When connecting the tube, be careful not to apply excessive lateral force to the barb fitting.
4. When disconnecting the tube, be careful not to apply excessive lateral force to the barb fitting. If you are using a razor knife, be careful not to damage the barb fitting.
5. If you are using urethane tubes in high temperatures, the tubes lose elasticity as they age, which may lead to air leakage or the tube falling off. We recommend using soft nylon tubes in high temperatures. Avoid using nylon tubes because they require too much force to connect.

Recommended tubing PUN:

6 mm → 6 mm OD / 4 mm ID

4 mm → 4 mm OD / 2.5 mm ID

3.2 mm → 3 mm OD / 2 mm ID

3 mm → 1.5mm ID, does not fit to PUN-3

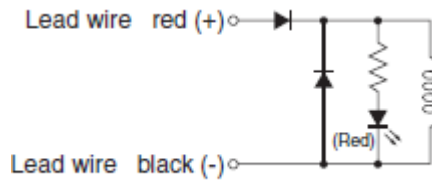
OD = Outer diameter

ID = Inner diameter

### 4.5 Electrical Installation

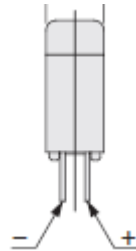
The VOVK valves are available as either 12VDC or 24V DC version. Please check the correct valve type for the supply voltage.

The VOVK valve has the following internal circuit:



Also each valve type is available either

- with a connector and cable (30cm cable included with valve, with open ends on one side and the valve connector on the other side)
- with 2 Pins (right pin is +, left pin is minus)



The pin type connectors are at a pin pitch of 2.54 mm [0.1000 in]. Before using the pin type connectors, carefully check the connection conditions and select connectors that match the pitch of the pins.

When connecting a lead wire connector, hold the connector in your fingers and insert the pin, until the hook on the lever catches on the protrusion on the housing. To remove a lead wire connector, pinch the lever and the connector together, and when the hook on the lever disengages from the protrusion on the housing, and then pull it out.

### 5 Technical Data

Please see the catalogue documentation and datasheet for the technical data.