

# Micro Needle Valves

## High Performance On/Off Valves and Flow Control Valves



### MOV T Valves

MOV T valves provide a quick and positive on/off response under high vacuum or pressure. This is suitable for solvent dumping. 1/16" OD flow lines or fused silica lines can be used.

Configuration / Material	Length / Connection	Temp Rating	Vacuum Rating	Pressure Rating	Flow Rating	Valve Code	Part No.
T Dual Outlet, Stainless Steel	50 mm, 1/16"	300 °C	Yes	500 psi	n/a	MOV T	1236071



### Flow Control Valves

Flow control valves have a fine tapered needle to give precision control through a wide flow range, to complete shut off. Ten turns provides control from fully open to fully closed.

Configuration / Material	Length / Connection	Temp Rating	Vacuum Rating	Pressure Rating	Flow Rating	Valve Code	Part No.
L Single Outlet, Stainless Steel	50 mm, 1/16"	300 °C	Yes	500 psi	0-2000 mL/min	MCF	1236012
L Single Outlet, Stainless Steel	100 mm, 1/16"	300 °C	Yes	500 psi	0-2000 mL/min	MCF	1236020
T Dual Outlet, Stainless Steel	50 mm, 1/16"	300 °C	Yes	500 psi	0-2000 mL/min	MCF T	1236032

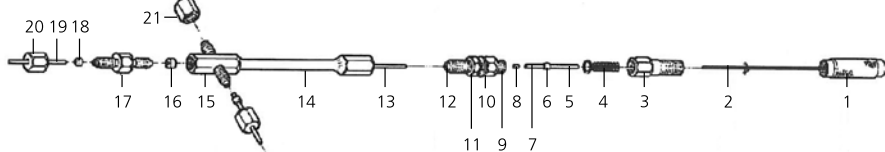
## PACKING LIST AND REPLACEMENT PARTS

Valve Part No.	Valve Included	2 x PTFE Seals	1 Seal Seat Remover Tool	1 x VSV-6	5 x 1/16" Graphite Ferrules
1236071	MOV T-1-50	123687	1236101	123681	072603
1236012	MCF-1-50	123688	1236101	123681	072603
1236020	MCF-1-100	123687	1236101	123681	072603
1236032	MCF T-1-50	-	1236101	123681	072603

## ABOUT YOUR VALVE

- 1) Your valve will provide you with accurate online control of critical flow paths for vacuums up to 10<sup>-9</sup> torr.
- 2) Each valve is fitted with a torque limiting control knob which prevents overtightening of the needle and subsequent damage to the seat.
- 3) All components (13-21 see over page) can be heated to 300 °C. However, the control assembly (items 1-12) should be located outside the hot zone and not heated over 100 °C.
- 4) Standard stem lengths are 50 mm and 100 mm which is the distance from the sidearm to the bulkhead locknut (11).

## Exploded figure of valve



## INSTALLATION

- i. Turn off all flows before installing the valve or when replacing parts.
- ii. Loosen control knob (1) and unscrew (12) from (14).
- iii. Remove locknut (11) and washer (10).
- iv. The exposed thread (12) can then be placed through a 4 mm hole in an instrument or bracket and held in position with the locknut and washer.
- v. Reassemble.

## FINE CONTROL

To obtain finer control at low flows (10-15 mL/min) the following procedure is necessary:

- i. Connect a test gas at approximately 2 atmospheres (30 psi) to sidearm.
- ii. Screw down control knob to shut-off point then open one half of one turn. If a flow is detected further, tighten the union between 12 and 13 until flow stops.

## REPLACING PARTS

### 1) Vespel® Seat (16) Replacement

Remove 1/16" line (19) and disconnect double ended union (17), then fully tighten control knob (1) onto assembly (3). This action pushes the Vespel® seat from a support shoulder inside the valve body (15). To protect needle, unwind the control knob (1) to the extremity of thread on assembly (3). The valve seat (16) should then dislodge from the valve body (15). If not, unscrew (12) from (14) and dislodge seat using seal-seat remover (wire). Insert wire through (13) to dislodge seat. To fit seat reconnect (12) on (14) and wind control knob (1) down so that needle (2) protrudes beyond the end of valve body. Then place seat (16) on needle (2). Invert valve

and again unwind control knob about five turns to allow seat to fall into position. Reconnect double ended union (17) and firmly tighten. Connect 1/16" line (19) and screw on nut (20).

### 2) PTFE Seal (8) Replacement

Two spare seals are provided in the unlikely event replacement is required. The seal is simply a small PTFE tube 2 mm long and is located inside fitting 9-12. The method for replacement is as follows: Unwind the control knob (1) to the extremity of thread on assembly (3). Unscrew assembly (3) and withdraw thrust tube (5) and compression spring (4). Remove seal (8) with wire tool provided. Place new seal into top of male thread (9) and push into place with thrust tube (7). The shorter length beneath the stop (6) on the thrust tube should be pushed into the valve body and when the thrust tube touches the seal the stop should be a nominal 2 mm above the face of the male thread. Place compression spring (4) onto the longer exposed end (5) of the thrust tube. Thread needle (2) into thrust tube and tighten assembly (3). Reset control knob.

## CAPILLARY COLUMN CONNECTION

An inexpensive kit (order code VAK P/N 1034606) is available to adapt SGE micro valves to accept fused silica capillary columns or tubing. The kit consists of inserts to reduce the bores of the connecting arm plus special nuts and ferrules.

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