



Introduction

This valve has an on/off function which is actuated pneumatically by a remote toggle switch or solenoid valve (not supplied). A 50-55 psi compressed gas supply with a 1/16" tubing outlet is required.

Your valve will provide you with ON/OFF control for vacuums to 10^{-9} torr or pressures up to 35 atmospheres.

The stem (15) and body (18) of the valve can be heated to 300°C. However, the pneumatic control assembly (items 1-7) should be located outside the hot zone and not heated over 100°C.

Stem length is 100 mm which is the distance from the lower side arm connection (16) to the bulkhead lock nut (14).

Packing list

MPPVT-MDS 2000, PK1
 Seal/seat removal tool, PK1
 VSV-6 seat, PK1
 1/16" graphite ferrules GFF/16, PK5
 PTFE seals PVS, PK2
 3 x O-ring, PK1
 Seal washer, PK1

Itemized parts listing

This listing details the individual parts for the illustrated valve and should be used for ordering replacement parts.

Item	Code	Description
1	-	Pneumatic head cap
2	-	Seal washer
2a	-	Upper o-ring seal, small
3	-	Piston plunger shaft - 50 mm
or	-	Piston plunger shaft - 100 mm
4	-	Skirt seal
4a	-	Upper o-ring seal, large
5	BN/16	1/16" brass nut
6	GFF/16	1/16" graphite ferrule
7	-	Pneumatic body
8	-	Lower o-ring seal
8a	-	Flat MOVV washer
9	-	MVTL seal spring
10	-	Thrust tube
11	-	PTFE shaft seal
12	MVTL-BU	Brass union (modified) star washer
14	-	Lock nut
15	-	Lower stem
16	SSN/16	1/16" stainless steel nut
17	GFF/16	1/16" graphite ferrule
18	-	Stem body
19	VSV-6	VespeI® valve seat
20	SSU/16/16	Stainless steel union
21	GFF/16	1/16" graphite ferrule
22	SSN/16	1/16" stainless steel nut

Instructions

- i. Turn off all flows before installing the valve or when replacing parts.
 - ii. Unscrew stem assembly (15) from union (12)
 - iii. Remove lock nut (14) and star washer (13).
 - 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 stem onto union.
 - vi. Connect 1/16" OD lines to the union sidearms on the pneumatic head body (7) using nut (5) and ferrule (6). This should then be attached to a 3 way toggle switch or solenoid valve and a 50 - 55 psi air supply (not supplied).
 - vii. When air is supplied to the upper port the valve is held closed. When this pressure is relieved and at the same time gas is introduced into the lower port, the valve is open.
- i. Unscrew pneumatic head assembly (7) from union (12).
 - ii. Unscrew union (12) from stem (15).
 - iii. Insert wire removal tool through union to dislodge the PTFE seal (11).
 - iv. Place a new seal onto the needle shaft.
 - v. Reconnect stem (15) onto union (12) and partly insert needle shaft into union.
 - vi. Pull thrust tube (10) down needle shaft and insert the shorter length beneath the stop on the thrust tube, into the union. This will locate seal (11) into union (12). When the thrust tube seats the seal, the stop should be a nominal 2 mm above the face of the male thread of the union.
 - vii. Reconnect pneumatic head.

Replacement

Vespe!® seat (19) replacement

- i. Remove tubing, nut (22) and ferrule (21) from double ended union (20). Then remove union (20) from stem body (18).
- ii. Unscrew stem assembly (15) from union (12).
- iii. Gently tap stem body (18) to dislodge seat. If unsuccessful, insert wire removal tool (supplied) through stem (15) and push out the seat.
- iv. Insert new seat.
- v. Replace and tighten union (20) in stem body (18).
- vi. Reconnect stem assembly.
- vii. Reconnect tubing with nut (22) and ferrule (21).

PTFE seal (11) replacement

Two spare seals are provided in the unlikely event replacement is required. The seal is simply a small PTFE tube 1.6 mm OD x 1 mm ID x 2 mm long and is located inside fitting 12-14. The method for replacement is as follows:

Lower o-ring (8) replacement

A spare o-ring is supplied which can be fitted as follows:

- i. Unscrew pneumatic head assembly (7) from union (12).
- ii. Remove thrust tube (10) and spring (9).
- iii. Unscrew cap (1).
- iv. Withdraw piston/needle shaft (3) from body (7).
- v. Remove o-ring (8) and washer (8a) with wire removal tool and fit the replacement o-ring into position followed by the washer (8a).
- vi. Reassemble in reverse order taking care that the thrust tube (10) is the correct way around.

Information and support

Visit www.trajanscimed.com or contact techsupport@trajanscimed.com

Specifications are subject to change without notice.