

A total component solution, from source to process

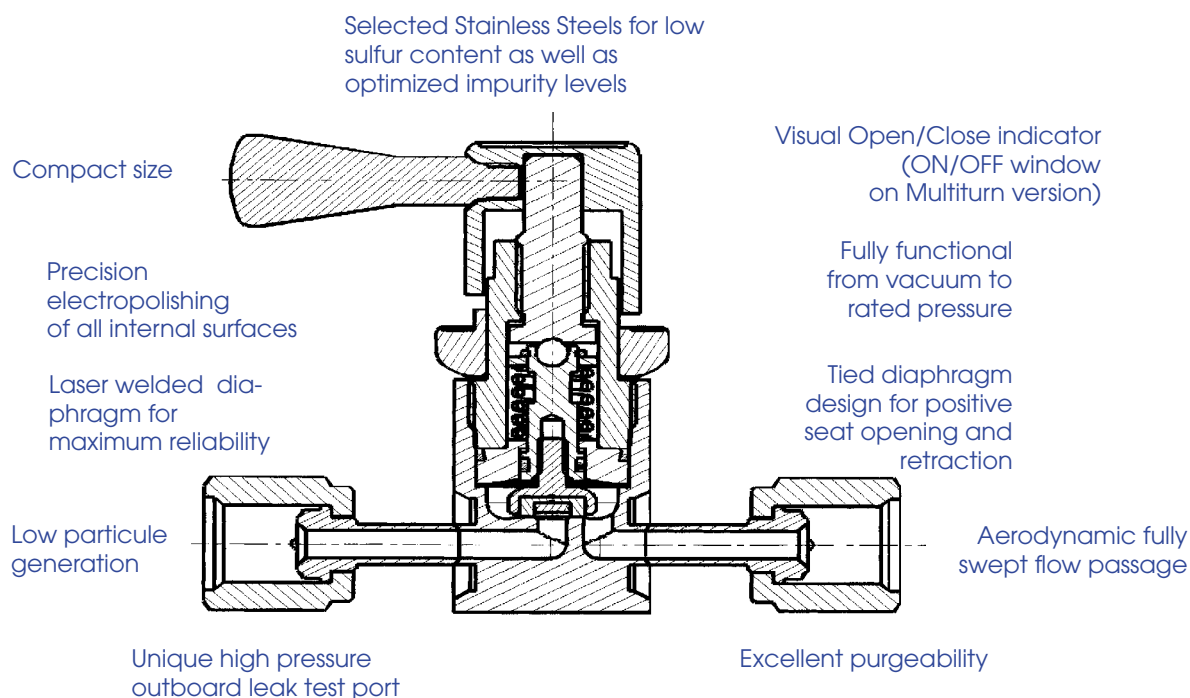
M4 -1 SPRINGLESS DIAPHRAGM VALVES FOR HP AND UHP APPLICATIONS (STANDARD AND GAS SPECIFIC)

4-1



FEATURE a unique proven design

M4-1



Manufactured to the **THREE STAR PROCESS** ®

CONSTRUCTION MATERIALS

		Valve Grade & Materials		
	Parts	M4-1S	M4-1V	M4-1U
Wetted parts	Body	SS 316L	SS 316L	SS 316L/AOD-VAR
	Surface Finish	< 0,4 µm non EP (15 Ra)	< 0,4 µm EP (15 Ra)	< 0,15 µm EP (6 Ra)
	Diaphragm	Hastelloy®		
	Seat Material	Kel-F® (Vespel®, PVDF, metal on request)		
Non-wetted parts	Backup diaphragms	Elgiloy		
	all others	Stainless Steel or alloys		

Manual Actuation

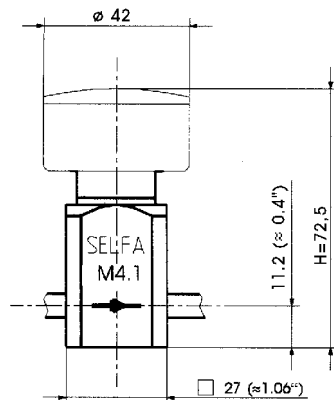
Parts for all valve grades	
Upper spindle	Stainless Steel
Handle	Aluminum or Extruded Plastic
All others	Stainless Steel or Alloys

Pneumatic Actuation

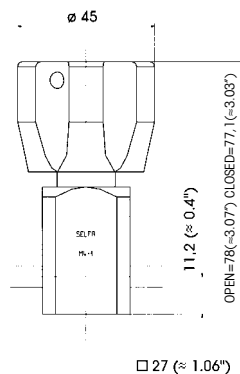
Parts	Low Pressure	High Pressure
Actuator Body	SS 316	Aluminum
Piston	Aluminum	
O-rings	NBR - PC 851	
All others	Stainless Steel or Alloys	

TECHNICAL DATA		
Fluid Media		Standard, High and Ultra High Purity, corrosive and non-corrosive gases
Max working pressure	M4-1 Manual	240 bar (3500PSI)
	M4-1 Pneumatic - Low Pressure	17 bar (250PSI)
	M4-1 Pneumatic - High Pressure	200 bar (3000 PSI)
Operating pressure (Pneumatic)		5 - 7 bar (75 - 105 PSI)
Temperature range		-20°C to + 80°C (-2F to 176F)
Burst Pressure		850 bar (12500 PSI)
Flow Capacity (C_v)	M4-1 Manual	$C_v = 0.24$ (QT) 0.28 (MT)
	M4-1 Pneumatic	$C_v = 0.24$
	M4-1 High-Flow	$C_v = 0.31$ (QT) 0.36 (MT)
	M4-1 High-Flow - Pneumatic	$C_v = 0.31$
Certified max. Helium inboard leak rate		$< 2.10^{-10}$ sccs
Certified max. Helium outboard leak rate (at max. pressure)		$< 2.10^{-11}$ sccs
Certified max. Helium across the seat leak rate (at max. pressure)		$< 2.10^{-10}$ sccs
Wetted volume		< 1.2 cc
Mounting		Panel or back mounting

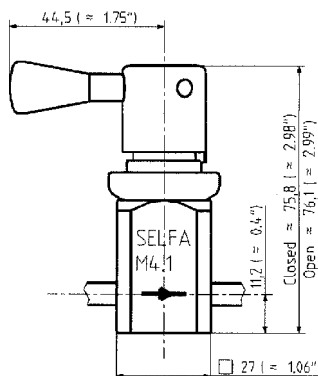
DIMENSIONS



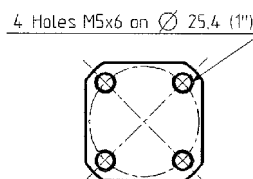
M4-1 - Pneumatic Valve Low Pressure



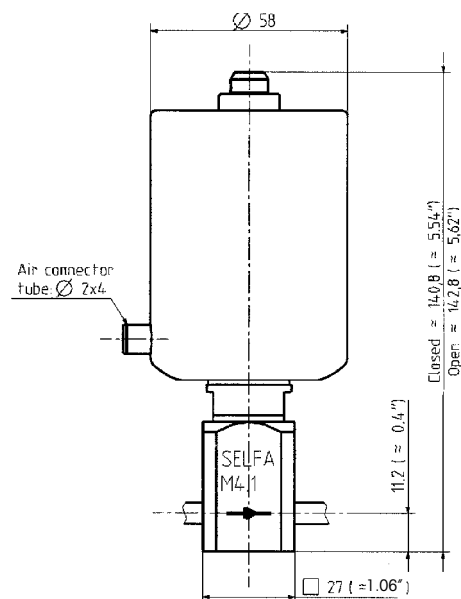
**M4-1
1/4 or 3/4 turn
valve (MT) with
open/close
window**



M4-1 - Quarter turn (QT) valve



**M4-1
bottom view**



M4-1 - Pneumatic valve High Pressure

PART NUMBER							
Example :	M4-1V	QT	2V1	I	/	K	A/B : B1/4
	1	2	3	4		5	6
							7

1 - Valve Series and Surface Finish

M4-1U	Ra 0,15µm EP (6 Ra)
M4-1V	Ra 0,4µm EP (15 Ra)
M4-1S	Ra 0,4µm nonEP (15Ra) (Add HF for High - Flow version)

3 - Valve Configuration

2V1	2 ports in line
See below for other configurations	

5 - Seat Material

K	PCTFE (Kel-F®)
V	PI (Vespel®)
P	PVDF
M	Metal

7 - Options

MS	Valve fitted with locking service
FT	Panel mounting
FP	Back mounting

2 - Valve Actuation (Standard: Normally Closed=NC)

QT	Manually actuated - Quarter Turn
MT	Manually actuated - Multi Turn
LP	Pneumatically actuated - Low Pressure
HP	Pneumatically actuated - High Pressure (Add - NO- for Normally Open version)

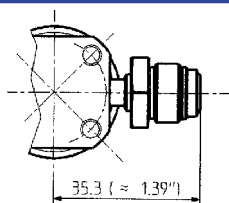
Standard colour for handles: white
for HP/LP actuators: NO=green NC=blue
(other colours on request)

4 - Body Material (others on request)

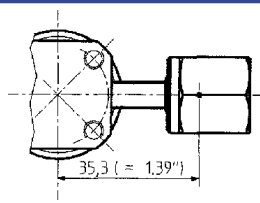
A	AISI 316L AOD/VAR
I	AISI 316L
H	Hastelloy®

6 - End Connections

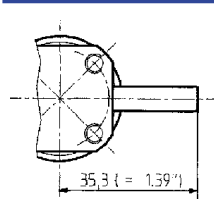
V1/4-F	VAC-U-FAST® 1/4" - Female (Face Seal)*
V1/4-M	VAC-U-FAST® 1/4" - Male (Face Seal)*
B1/4	BWO 1/4" - Standard (Orbital Weld)
B1/4-S	BWO 1/4" - Short (Orbital Weld)
B6	BWO 6mm (Orbital Weld)



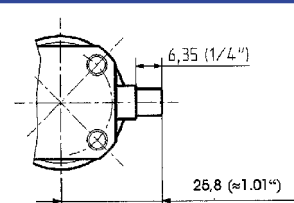
**VAC-U-FAST®-Male
(face seal)***



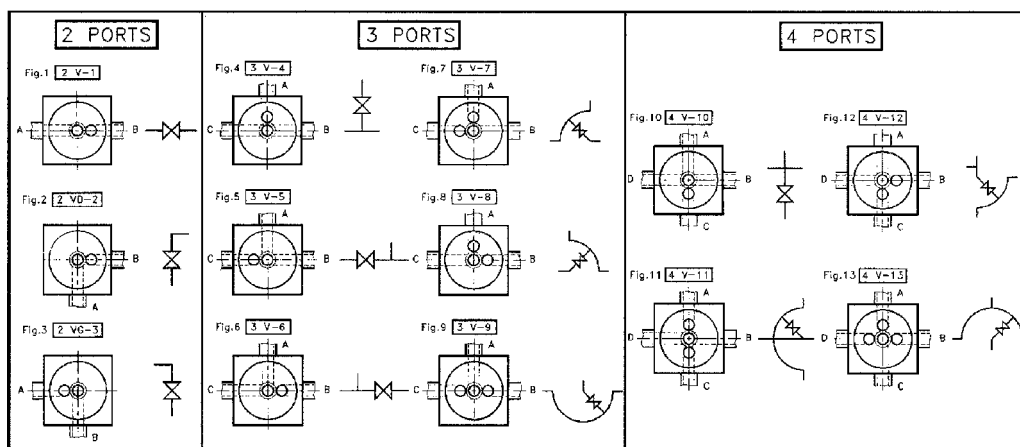
**VAC-U-FAST®-Female
(face seal)***



**BWO for standard
welding heads**



**BWO for micro-
welding heads**



SELFA Valves & Fittings (part of the **ROTAREX Group**), incorporates the manufacturing capabilities of **SELFA**, **SELFA-PURETEC** and **CEODEUX-PURETEC**. These companies have supplied components to the Semiconductor and Allied Industries for many years. **CEODEUX-PURETEC** is one of the world-wide leaders in the supply of HP & UHP cylinder valves and cylinder connections. **SELFA-PURETEC** products line includes HP & UHP line valves, regulators and fittings. Therefore they are one of the only companies that can truly supply a total component solution, from source to process.

* All VAC-U-FAST® Face Seals are VCR® compatible. VCR® is a registered trade mark of CAJON CO., HASTELLOY® is a registered trade mark of DUPONT HAYNES Corp., Kel-F® is a registered trade mark of 3M company, Vespel® is a registered trade mark of DUPONT