TEESING
SUBMICRON TECHNOLOGIES

SELFA
Valves & Fittings

A total component solution, from source to process

M8.1
SPRINGLESS DIAPHRAGM VALVES FOR HP AND UHP APPLICATIONS (STANDARD AND GAS SPECIFIC)

M

8.1

ROTAREX Group

FEATURE a unique proven design — M8.1

The M8-1 was designed in response to the industry's needs for a compact HIGH FLOW high/low pressure valve dedicated to gas distribution techniques that require high flow rates. This valve is ideal for handling high flow gases such as HCl, N_2O, etc. upstream and downstream of the source regulator. Its compact size and standard panel mount holes enable it to be integrated into gas supply systems where previously only standard valves with low Cv's could be used.

Individual Serial number, for full traceability

Selected Stainless Steels for low sulfur content as well as optimized impurity levels

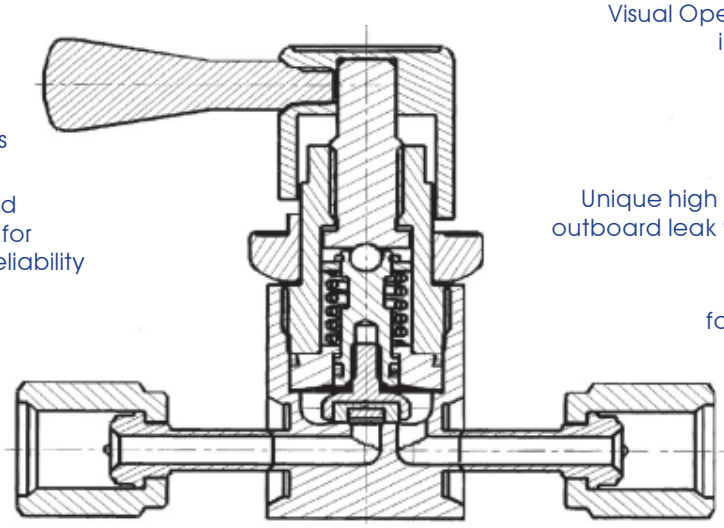
Assembling, testing & Packaging in cleanroom Cl. 10

Compact size

Visual Open/Close indicator

Precision electropolishing of all internal surfaces

Fully functional from vacuum to rated pressure



Laser welded diaphragm for maximum reliability

Unique high pressure outboard leak test port

Tied diaphragm design for positive seat opening and retractation

Low particule generation

Excellent purgeability

Aerodynamic fully swept flow passage

Manufactured to the THREE STAR PROCESS ®

CONSTRUCTION MATERIALS

		Valve Grade & Materials		
	Parts	M8.1S	M8.1V	M8.1U
Wetted parts	Body	SS 316L	SS 316L	SS 316L VAR
	Surface Finish	< 0,4 µm non EP (15µin Ra)	< 0,25 µm EP (10µin Ra)	< 0,15 µm EP (6µin 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	Brass
Handle	Aluminum or Extruded Plastic
All others	Stainless Steel or Alloys

Pneumatic Actuation

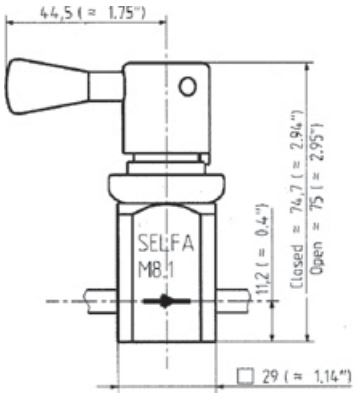
Parts	Low Pressure	High Pressure
Actuator Body	SS 316 L	Aluminum
Piston	Aluminum	
O-rings	NBR - PC 851	
All others	Stainless Steel or Alloys	

TECHNICAL DATA

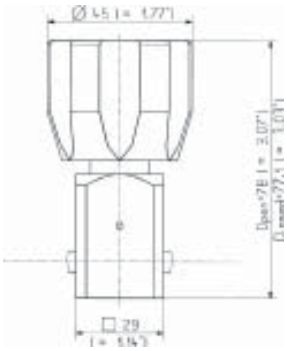
M8.1

TECHNICAL DATA		
Fluid Media		Standard, High and Ultra High Purity, corrosive and non-corrosive gases
Max working pressure	M8.1 Manual	vacuum to 240 bar (3500 PSI)
	M8.1 Pneumatic - Low Pressure	17 bar (250 PSI)
	M8.1 Pneumatic - High Pressure	200 bar (2900 PSI)
Pneumatic actuator operating pressure		5 - 7 bar (75 - 105 PSI)
Temperature range		-20°C to + 80°C (-2°F to 176°F)
Burst Pressure		850 bar (12500 PSI)
Flow Capacity (C_v)	M8.1 Manual	C_v = 0.53
	M8.1 Pneumatic	C_v = 0.53
Certified max. Helium inboard leak rate		< 1.10^{-9} mbar.l/sec
Certified max. Helium outboard leak rate (at max. pressure)		< 1.10^{-9} mbar.l/sec
Certified max. Helium across the seat leak rate (at max. pressure)		< 1.10^{-9} mbar.l/sec
Wetted volume		< 1.6 cc
Mounting		Front or back mounting
Nominal seat Diameter		8 mm (0,32")

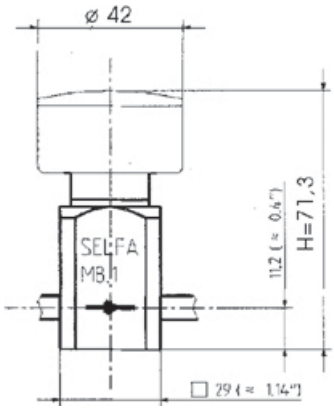
DIMENSIONS



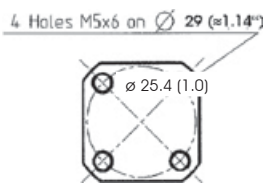
M8.1 Quarter turn (QT) valve



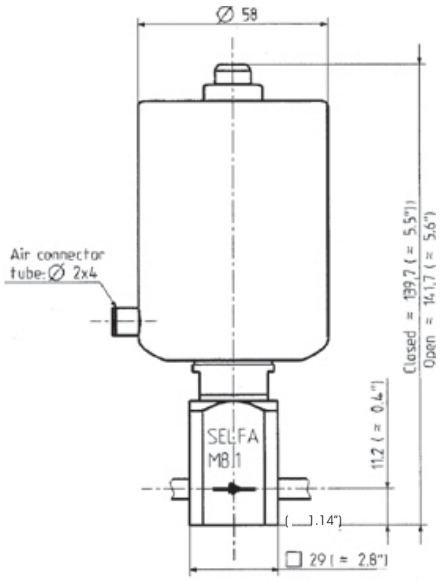
M8.1 Multi turn valve (MT) with on/off window



M8.1- Pneumatic valve Low Pressure



M8.1 Bottom view



M8.1- High Pressure Pneumatic valve

HOW TO ORDER

PART NUMBER

Example :	M8.1S	MT	2V1	I	/	K	A/B:B3/8	MS
	1	2	3	4		5	6	7

1 - Valve Series and Surface Finish

M8.1U	Ra 0,15µm EP (6 µin Ra)
M8.1V	Ra 0,25µm EP (10 µin Ra)
M8.1S	Ra 0,4µm nonEP (15 µin Ra)

2 - Valve Actuation (Standard: Normally closed)

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)
	(Add - NF - for normally close version)

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

3 - Valve Configurations

2V1	2 ports in line

See below for other configurations

4 - Body Material (others on request)

A	AISI 316L, VAR
I	AISI 316L
H	Hastelloy® (on request)

5 - Seat Material

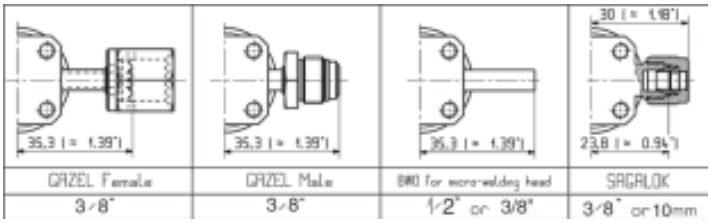
K	PCTFE (Kel-F®)
V	PI (Vespel®)
P	PVDF
M	Metal (on request)

6 - End Connections

V3/8-F	GAZEL® 3/8 - Female (Face Seal)*
V3/8-M	GAZEL® 3/8 - Male (Face Seal)*
B3/8	BWO 3/8" - Standard (Orbital Weld)
B1/2	BWO 1/2" - (Orbital Weld)
B10	BWO 10 mm (Orbital Weld)
B12	BWO 12 mm (Orbital Weld)
RDB 10	**SAGALOK** Double ring fitting: 10 mm
RDB 12	**SAGALOK** Double ring fitting: 12 mm
RDB 1/2	**SAGALOK** Double ring fitting: 1/2"
RDB 3/8	**SAGALOK** Double ring fitting: 3/8"

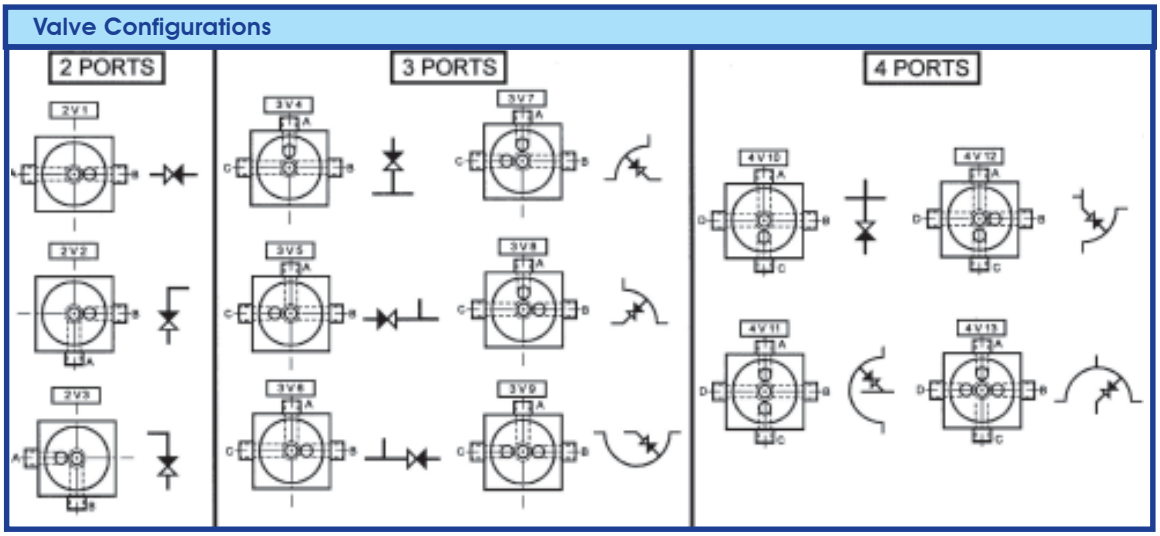
7 - Options

MS	Valve fitted with locking device (manual)
FT	Panel mounting
—	Back mounting
CI	Electric limit switch (LP actuators only)



GAZEL® -Female (face seal)* **GAZEL® -Male (face seal)*** **BWO for standard welding heads** **SAGALOK Double ring fitting**

Valve Configurations



*All GAZEL® Face Seals are VCR® compatible. VCR® is a registered trade mark of CAJON CO., HASTELLOY® is a registered trade mark of CABOT Corp., Kel-F® is a registered trade mark of 3M company. Vespel® is a registered trade mark of DUPONT, ELGILOY® is a registered trade mark of ELGILOY Company.

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