



**ROTAREX**  
VALVES - FITTINGS - REGULATORS



**VALVES AND REGULATORS FOR  
ULTRA HIGH PURITY GASES**



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## SELECTING THE RIGHT PRODUCT

To choose the right valve or regulator for your application, and to get the best results, you should identify the following technical parameters:

TECHNICAL PARAMETER	EXAMPLES
Gas	Inert, flammable, oxidizing, corrosive, noble
Operating pressure	Bar or psig
Operating temperature	Range to be given in °C, °F or K
Flow	Volumic or mass flow
Actuation	Manual, pneumatic (normally open), pneumatic (normally closed)
End connection type	BWO, BW, SW, Face seal etc.
End connection size	In or mm
Surface finish	Ra 0.80 µm, Ra 0.40 µm, Ra 0.25 µm or Ra 0.18 µm
Application	Industrial, micro-electronic, research, etc.
Atex requirement	Yes / No
Conformity	2014/68/EU (CE), 2010/35/EU (π)
Options	Limit switches, buttom support, purge ports etc.

Each product page is designed to provide you the essential technical information at a glance :

## 10 BELLOWS VALVES

### HP2000<sup>®</sup> BELLOWS VALVES

Stop globe valve with bellows seating and high tightness. Designed to high pressure at ambient temperature. Can be actuated by a manual handwheel or a pneumatic actuator.

Available with pneumatic actuator

#### APPLICATIONS

Vacuum  
Pure and ultra pure gases  
Combustible gases  
Building gases  
Non-corrosive gases  
Radioactive gases  
Hazardous gases

#### KEY FEATURES

• Superior materials helping providing a high internal external tightness  
• All welded joints are metallic (excepted plug)  
• 0 plug is a round flange  
• Plug and seat valve  
• Helium leak tested

#### DIMENSIONS

##### Manual version

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##### Pneumatic version

## BELLOWS PAGES 11

#### SPECIFICATIONS

<b>Fluid media:</b>	Standard, high and ultra high purity and clean gases and liquids	<b>Temperature range:</b>	23.3/4 to 330.3/4 - 60°C to + 320°C	<b>Certification:</b>	< 1.5" Pa.m <sup>3</sup> /s <sup>1</sup>
<b>Max. working pressure:</b>	24.8 MPa	<b>Flow capacity:</b>	see table below	<b>Helium certified:</b>	yes
<b>Max. operating temperature:</b>	315.2/319.2 °C (500/500 °F)	<b>Drainable seat:</b>	see table below	<b>Isolation from the process:</b>	< 3.5" Pa.m <sup>3</sup> /s <sup>2</sup>
<b>Operating pressure:</b>	0.1 to 2.0 MPa (1.5 to 30 psi)	<b>Material:</b>	see table below	<b>Isolation from the process (see process):</b>	yes

<sup>1</sup> depending on gate and seat design

CONSTRUCTION MATERIAL	Material	SURFACE FINISH			SEAT DIAMETER, FLOW CAPACITY		
		SP4	SP5	SP6	Size	Flow	Flow capacity
Wetted parts:	Body	see table below	see table below	see table below	1/2" to 3/4"	1000	1000
	Seat	see table below	see table below	see table below	1/2" to 3/4"	1000	1000
Non wetted parts:	Actuator Body	see table below	see table below	see table below	1/2" to 3/4"	1000	1000
	Others	see table below	see table below	see table below	1/2" to 3/4"	1000	1000

#### MANUAL DIMENSIONS

inch	SP4/SP5 1/2"	SP5/SP6 3/4"
C	47mm (1.87")	48mm (1.91")
D	38mm (1.5")	41mm (1.61")
EB	100mm (3.94")	20mm (0.79")
EG	25 mm (0.98")	31 mm (1.22")
EH	100mm (3.94")	100mm (3.94")
GI	85 mm (3.35")	75 mm (2.95")
L	100mm (3.94")	20mm (0.79")

#### PNEUMATIC DIMENSIONS

inch	SP4/SP5 1/2"	SP5/SP6 3/4"
C	100mm (3.94")	100mm (3.94")
D	100mm (3.94")	100mm (3.94")
EB	100mm (3.94")	100mm (3.94")
EG	100mm (3.94")	100mm (3.94")
EH	100mm (3.94")	100mm (3.94")
GI	100mm (3.94")	100mm (3.94")
L	100mm (3.94")	100mm (3.94")

#### PRODUCT CONFIGURATOR

SP4	SP5	SP6	SP7	SP8	SP9	SP10	SP11	SP12	SP13	SP14	SP15	SP16	SP17	SP18	SP19	SP20	SP21	SP22	SP23	SP24	SP25	SP26	SP27	SP28	SP29	SP30	SP31	SP32	SP33	SP34	SP35	SP36	SP37	SP38	SP39	SP40	SP41	SP42	SP43	SP44	SP45	SP46	SP47	SP48	SP49	SP50	SP51	SP52	SP53	SP54	SP55	SP56	SP57	SP58	SP59	SP60	SP61	SP62	SP63	SP64	SP65	SP66	SP67	SP68	SP69	SP70	SP71	SP72	SP73	SP74	SP75	SP76	SP77	SP78	SP79	SP80	SP81	SP82	SP83	SP84	SP85	SP86	SP87	SP88	SP89	SP90	SP91	SP92	SP93	SP94	SP95	SP96	SP97	SP98	SP99	SP100
SP4	SP5	SP6	SP7	SP8	SP9	SP10	SP11	SP12	SP13																																																																																							

## NOTES

## DIAPHRAGM VALVES


**M4SI** P. 8

Technology	Diaphragm
Max. Working Pressure	240 bar (3481 psig)
Temperature Range	-20°C to +65°C (-4°F to +149°F)
Flow Capacity (Cv)	0.2
Material	Stainless steel 316L


**M8SI** P. 10

Technology	Diaphragm
Max. Working Pressure	20 bar (290 psig)
Temperature Range	-20°C to +65°C (-4°F to +149°F)
Flow Capacity (Cv)	0.5
Material	Stainless steel 316L


**M8.1** P. 12

Technology	Diaphragm
Max. Working Pressure	240 bar (3481 psig)
Temperature Range	-20°C to +65°C (-4°F to +149°F)
Flow Capacity (Cv)	0.53
Material	Stainless steel 316L


**M12** P. 14

Technology	Diaphragm
Max. Working Pressure	15 bar (218 psig)
Temperature Range	-20°C to +65°C (-4°F to +149°F)
Flow Capacity (Cv)	1.75
Material	Stainless steel 316L


**M20** P. 16

Technology	Diaphragm
Max. Working Pressure	15 bar (218 psig)
Temperature Range	-20°C to +65°C (-4°F to +149°F)
Flow Capacity (Cv)	3.5
Material	Stainless steel 316L

## BELLOWS VALVES


**K300** P. 18

Technology	Bellows
Max. Working Pressure	100 bar (1450 psig)
Temperature Range	-40°C to +120°C (-40°F to +248°F)
Flow Capacity (Cv)	0.78 - 45
Material	Stainless steel


**HP2000** P. 20

Technology	Bellows
Max. Working Pressure	240 bar (3481 psig)
Temperature Range	-40°C to +120°C (-40°F to +248°F)
Flow Capacity (Cv)	0.77 - 2.15
Material	Stainless steel

# CHECK VALVES



## CAR

P. 22

Technology	Spring-type
Max. Working Pressure	200 bar (2901 psig)
Temperature Range	-196°C + 250°C (-320°F to 482°F)
Flow Capacity (Cv)	-
Material	Stainless steel

# REGULATORS



## SIR100

P. 24

Technology	Diaphragm
Inlet Pressure	50 bar (725 psig)
Outlet Pressure	2/4/7/10 bar (29/58/102/145 psig)
Temperature Range	-20°C to +65°C (-4°F to +149°F)
Flow Capacity (Cv)	0.2
Material	Stainless steel 316L



## SIR200

P. 26

Technology	Diaphragm
Inlet Pressure	200 bar (2901 psig)
Outlet Pressure	2/4/7 bar (29/58/102 psig)
Temperature Range	-20°C to +65°C (-4°F to +149°F)
Flow Capacity (Cv)	0.2
Material	Stainless steel 316L



## SI220

P. 28

Technology	Diaphragm
Inlet Pressure	240 bar (3481 psig)
Outlet Pressure	3/8/10/15/25/50 bar (44/116/145/218/363/725 psig)
Temperature Range	-20°C to +65°C (-4°F to +149°F)
Flow Capacity (Cv)	0.2
Material	Stainless steel 316L



## SI240

P. 30

Technology	Diaphragm
Inlet Pressure	240 bar (3481 psig)
Outlet Pressure	2/4/7 bar (29/58/102 psig)
Temperature Range	-20°C to +65°C (-4°F to +149°F)
Flow Capacity (Cv)	0.09
Material	Stainless steel 316L



## SI25

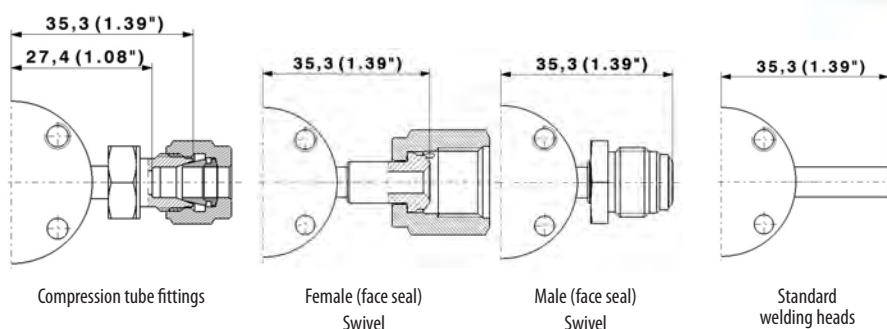
P. 32

Technology	Diaphragm
Inlet Pressure	25 bar (363 psig)
Outlet Pressure	10 bar (145 psig)
Temperature Range	-20°C to +60°C (-4°F to +140°F)
Flow Capacity (Cv)	1.2
Material	Stainless steel 316L

# M4SI | DIAPHRAGM VALVES

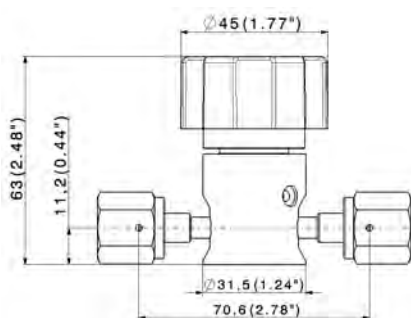
## KEY FEATURES

- Assembling, testing & packaging in cleanroom
- Springless
- Ultra High Purity Cleaning
- Individual serial number, for traceability
- Visual Open/Close Indicator on manual valves
- Excellent purgeability
- Multi-port options available (see page 34)

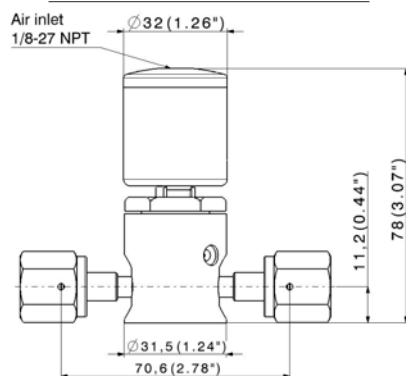


## DIMENSIONS

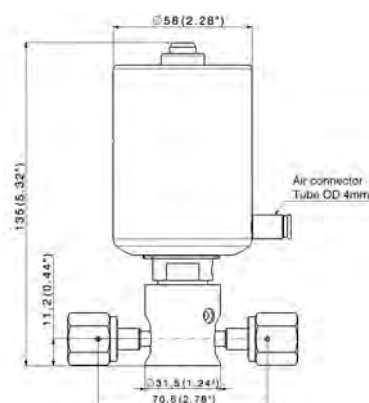
### M4SI - MULTI-TURN VALVE (MT) WITH OPEN/CLOSE WINDOW



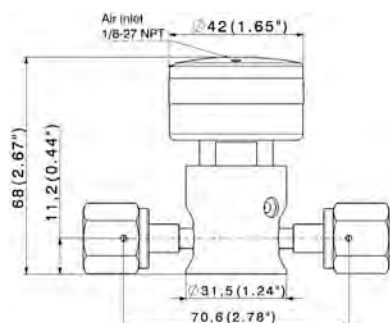
### M4SI - PNEUMATIC VALVE LOW PRESSURE (BPNF)



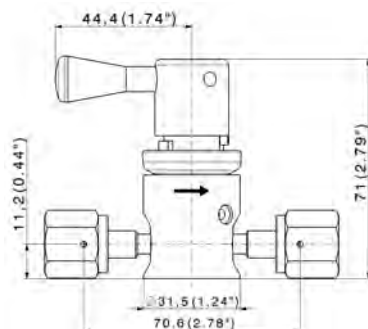
### M4SI - PNEUMATIC VALVE HIGH PRESSURE (HPNF, HPNO)



### M4SI - PNEUMATIC VALVE MEDIUM PRESSURE (LPNF, LPNO)



### M4SI - QUARTER-TURN VALVE (QT)





## SPECIFICATIONS

<b>Fluid media</b>	Standard, high or ultra high purity corrosive and noncorrosive gases	<b>Nominal seat diameter</b>	4 mm (0,16")	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. working pressure</b>	See table below	<b>Wetted volume</b>	$< 1.2 \text{ cm}^3$	<b>Certified max. Helium inboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Pneumatic actuator opening pressure</b>	5 to 7 bar (73 to 102 psig)	<b>Burst pressure</b>	$> 700 \text{ bar (10152 psig)}$		
<b>Temperature range</b>	-20°C to +65°C (-4°F to +149°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s		
<b>Flow capacity (Cv)</b>	0.2				

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE, PVDF, VESPEL®
	Diaphragm	Phynox®
<b>Non-wetted parts</b>	Backup diaphragm	UNS R30003 (Phynox®)
	Handwheel	Aluminium
	Actuator Body	SS 316L or Aluminium
	Others	Stainless Steel and Alloys

## SURFACE FINISH

S	V
Ra 0.4 µm (15 µin)	Ra 0.25 µm EP (10 µin)

## VALVE VERSION / MAX. WORKING PRESSURE

Valve	Max. working pressure
M4SI (LM) Multiturn handwheel	20 bar
M4SI (HM) Multiturn handwheel	240 bar
M4SI (LQ) Quarter turn handwheel	20 bar
M4SI (HQ) Quarter turn handwheel	240 bar
M4SI (BPNF) Pneumatically actuated	10 bar
M4SI (LP*) Pneumatically actuated	20 bar
M4SI (HP*) Pneumatically actuated	240 bar

## MANUAL ACTUATION

Parts for all valve grades	
<b>Upper spindle</b>	Brass
<b>Handle</b>	Aluminium
<b>All others</b>	Stainless Steel

## PNEUMATIC ACTUATION

Parts	
<b>Actuator Body</b>	Aluminium / Stainless Steel
<b>Piston</b>	Brass / Aluminium / Stainless Steel
<b>O-ring</b>	NBR
<b>All others</b>	Stainless Steel

## PRODUCT CONFIGURATOR

	Surface Finish		Actuation		Porting Configuration	Body Material		Seat Material		End Connection		Options	
M4SI	S		LM		2V1	-		K		A/B: B ¼"		FT	
	Ra 0.25 µm EP (10 µin)	V	Multi-Turn Handwheel (20bar)	LM	See page 34	SS 316L	-	PCTFE (Kel-F®)	K	Metal face seal ¼" - Female	V ¼ F	Panel Mounting	FT
	Ra 0.4 µm (15 µin)	S	Multi-Turn Handwheel (240bar)	HM		VAR*	A	PI (Vespel®)	V	Metal face seal ¼" - Male	V ¼ M	Electric limit switch*	CI
			Pneumatically actuated (10bar)	BPNF		Monel*	M	PVDF	P	BWO ¼" (Butt Orbital Weld)	B ¼	*On HP and LP actuators only	
			Pneumatically actuated (20bar)	LP*		Hastelloy®*	H			BWO 6mm	B6		
			Pneumatically actuated (240bar)	HP*						Compression tube fittings	RDB ¼		
			Quarter-Turn Handwheel (20bar)	LQ						Compression tube fittings	RDB 6		
			Quarter-Turn Handwheel (240 bar)	HQ									

\*Add NO for normally open or NF for normally closed

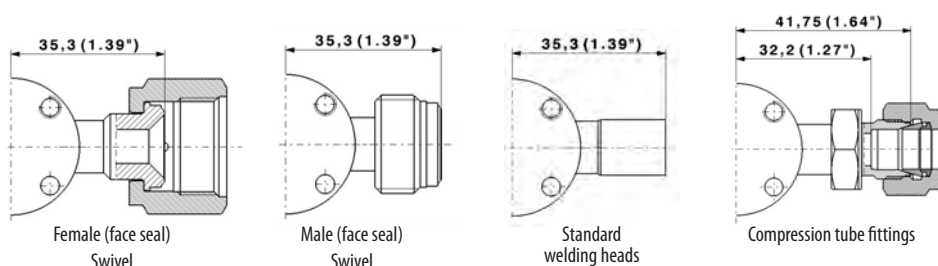


Special configuration on demand

# M8SI | DIAPHRAGM VALVE

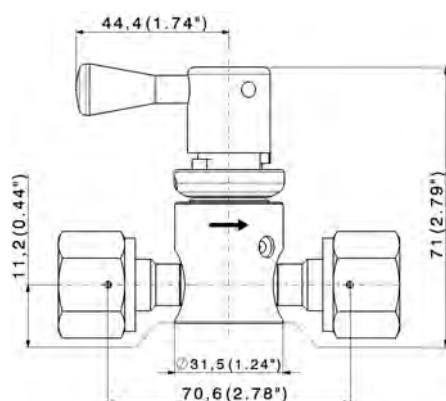
## KEY FEATURES

- Springless
- Ultra High Purity Cleaning
- Individual serial number, for traceability
- Assembling, testing & packaging in cleanroom
- Visual Open/Close Indicator on manual valves
- Multi-port options available (see page 34)

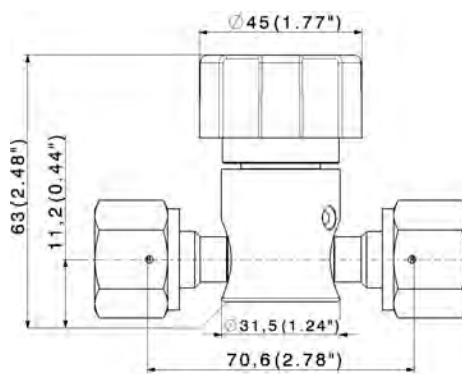


## DIMENSIONS

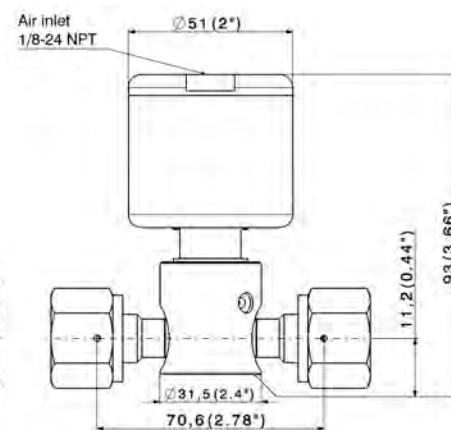
### M8SI - QUARTER TURN VALVE (LQ)



### M8SI - MULTI-TURN VALVE (LM)



### M8SI - PNEUMATIC VALVE (BPNF, BPNO)



## SPECIFICATIONS

<b>Fluid media</b>	Standard, high or ultra high purity corrosive and noncorrosive gases	<b>Nominal seat diameter</b>	8 mm (0.31")	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. working pressure</b>	See table below	<b>Wetted volume</b>	$< 1.6 \text{ cm}^3$	<b>Certified max. Helium inboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Pneumatic actuator opening pressure</b>	5 to 7 bar (73 to 102 psig)	<b>Burst pressure</b>	$> 700 \text{ bar (10152 psig)}$		
<b>Temperature range</b>	-20°C to +65°C (-4°F to +149°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s		
<b>Flow capacity (Cv)</b>	0.5				

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE, PVDF, VESPEL®
	Diaphragm	Phynox®
<b>Non-wetted parts</b>	Backup diaphragm	UNS R30003 (Phynox®)
	Handwheel	Aluminium
	Actuator Body	SS 316L or Aluminium
	Others	Stainless Steel and Alloys

## SURFACE FINISH

S	V
Ra 0.4 µm (15 µin)	Ra 0.25 µm EP (10 µin)

## VALVE VERSION / MAX. WORKING PRESSURE

Valve	Max. working pressure
M8SI (LM) Multiturn handwheel	20 bar
M8SI (LQ) Quarter turn handwheel	20 bar
M8SI (BP*) Pneumatically actuated	10 bar

## MANUAL ACTUATION

Parts for all valve grades	
<b>Upper spindle</b>	Brass
<b>Handle</b>	Aluminium
<b>All others</b>	Stainless Steel

## PNEUMATIC ACTUATION

Parts	
<b>Actuator Body</b>	Aluminium / Stainless Steel
<b>Piston</b>	Brass / Aluminium / Stainless Steel
<b>O-ring</b>	NBR
<b>All others</b>	Stainless Steel

## PRODUCT CONFIGURATOR

	Surface Finish	Actuation	Porting Configuration	Body Material	Seat Material	End Connection	Options
<b>M8SI</b>	<b>S</b>	<b>BP NF</b>	<b>2V1</b>	<b>I</b>	<b>K</b>	<b>A/B: B 3/8"</b>	<b>FT</b>
	Ra 0.25 µm EP (10 µin) <b>V</b>	Multi-Turn Handwheel (20bar) <b>LM</b>	See page 34	SS 316L <b>I</b>	PCTFE (Kel-F®) <b>K</b>	Metal face seal 3/8" - Female <b>V 3/8 F</b>	Panel Mounting <b>FT</b>
	Ra 0.4 µm (15 µin)* <b>S</b>	Pneumatically actuated (10bar) <b>BP*</b>		Hastelloy®* <b>H</b>		Metal face seal 3/8" - Male non swiel <b>V 3/8 M</b>	
	*Only for compression fittings	Quarter-Turn Handwheel (20bar) <b>LQ</b>		*On demand		BW0 3/8" (Orbital Weld) <b>B 3/8</b>	
						BW0 1/2" (Orbital Weld) <b>B 1/2</b>	
						BW0 10 mm (Orbital Weld) <b>B 10</b>	
						BW0 12 mm (Orbital Weld) <b>B 12</b>	
						Compression tube fittings <b>RDB10</b>	
						Compression tube fittings <b>RDB12</b>	
						Compression tube fittings <b>RDB3/8</b>	
						Compression tube fittings <b>RDB1/2</b>	

\*Add NO for normally open or NF for normally closed

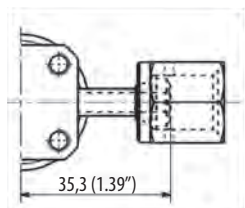


Special configuration on demand

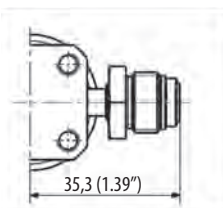
## M8.1 | DIAPHRAGM VALVES

### KEY FEATURES

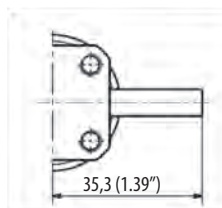
- Replaceable seat
- Springless
- Ultra High Purity Cleaning
- Individual serial number, for traceability
- Electropolishing of all internal surfaces
- Assembling, testing & packaging in cleanroom
- Visual Open/Close Indicator on manual valves
- Laser welded diaphragm for maximum reliability



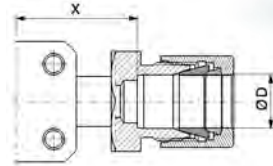
Face seal - Female  
3/8"



Face seal - Male  
3/8"



BW for micro-welding head  
1/2" or 3/8"

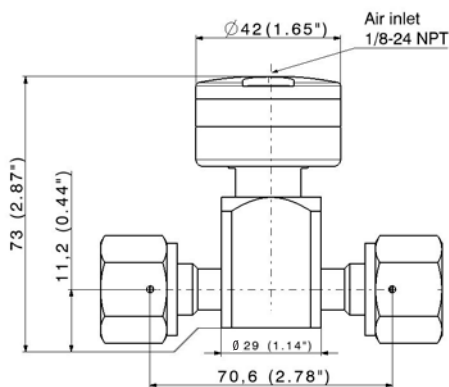


Compression tube fittings

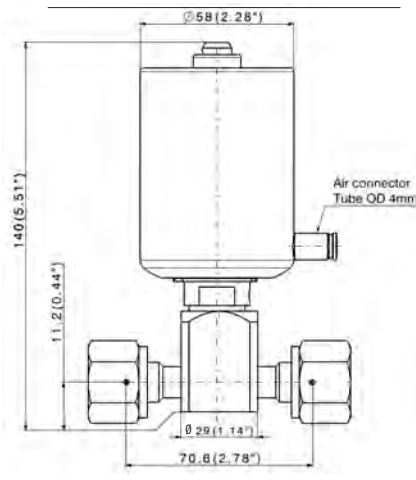
Ø D	X
10mm	32
12mm	29
3/8"	32
1/2"	29

### DIMENSIONS

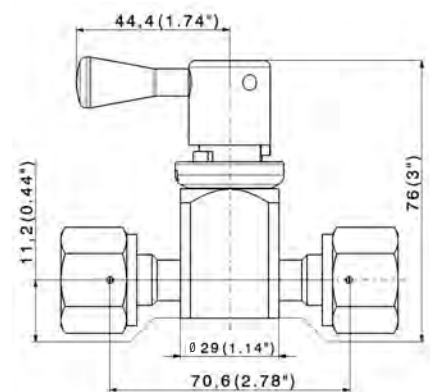
#### M8.1 - PNEUMATIC VALVE LOW PRESSURE (LPNF, LPNO)



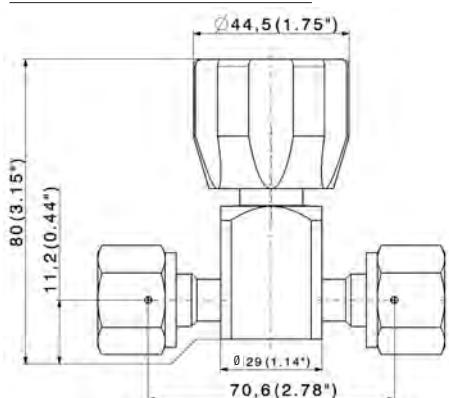
#### M8.1 - PNEUMATIC VALVE HIGH PRESSURE (HPNF, HPNO)



#### M8.1 QUARTER-TURN VALVE (QT)



#### M8.1 MULTI-TURN VALVE (MT) WITH OPEN/CLOSE WINDOW



## SPECIFICATIONS

<b>Fluid media</b>	Standard, high or ultra high purity corrosive and noncorrosive gases	<b>Nominal seat diameter</b>	8 mm (0,32")	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. working pressure</b>	See table below	<b>Wetted volume</b>	$< 1.2 \text{ cm}^3$	<b>Certified max. Helium inboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Pneumatic actuator opening pressure</b>	5 to 7 bar (73 to 102 psig)	<b>Burst pressure</b>	$> 700 \text{ bar (10152 psig)}$		
<b>Temperature range</b>	-20°C to +65°C (-4°F to +149°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s		
<b>Flow capacity (Cv)</b>	0.52				

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE, PVDF, VESPEL®
	Diaphragm	Hastelloy®
<b>Non-wetted parts</b>	Backup diaphragm	Phynox®
	Handwheel	Aluminium
	Actuator Body	SS 316L or Aluminium
	Others	Stainless Steel and Alloys

## SURFACE FINISH

S	V	U
Ra 0.4 µm (15 µin)	Ra 0.25 µm EP (10 µin)	Ra 0.18 µm EP (7 µin)

## VALVE VERSION / MAX. WORKING PRESSURE

Valve	Max. working pressure
M8.1 (MT) Multiturn handwheel	240 bar
M8.1 (QT) Quarter turn handwheel	240 bar
M8.1 (LP*) Pneumatically actuated	17 bar
M8.1 (HP*) Pneumatically actuated	240 bar
M8.1 (HP*) Pneumatically actuated (seat material : metal)	50 bar

## MANUAL ACTUATION

Parts for all valve grades	
<b>Upper spindle</b>	Brass
<b>Handle</b>	Aluminium or Extruded Plastic
<b>All others</b>	Stainless Steel or Alloys

## PNEUMATIC ACTUATION

Parts	
<b>Actuator Body</b>	Stainless Steel / Aluminium
<b>Piston</b>	Brass / Aluminium / Stainless Steel
<b>O-ring</b>	NBR
<b>All others</b>	Stainless Steel or Alloys

## PRODUCT CONFIGURATOR

	Surface Finish		Actuation		Porting Configuration	Body Material		Seat Material		End Connection		Options	
M8.1	S		MT		2V1	I		K		A/B: B $\frac{3}{8}$		FT	
	Ra 0,4µm (15 µin)	S	Quarter-Turn Handwheel (240 bar)	QT	See page 34	SS 316L	I	PCTFE (Kel-F®)	K	Metal face seal $\frac{3}{8}$ - Female	V $\frac{3}{8}$ F	Panel mounting	FT
	Ra 0,25µm EP (10 µin)	V	Multi-Turn Handwheel (240 bar)	MT		Hastelloy® *	H	PI (Vespel®)	V	Metal face seal $\frac{3}{8}$ - Male	V $\frac{3}{8}$ M	Electric limit switch*	CI
	Ra 0,18 µm EP (7 µin)*	U	Pneumatically actuated (17 bar)	LP*		SS VAR*	A	PVDF	P	BWO $\frac{3}{8}$ " - Standard (Orbital Weld)	B $\frac{3}{8}$	*On HP and LP actuators only	
	*On demand		Pneumatically actuated (240 bar)	HP*		*On demand		Metal	M	BWO $\frac{1}{2}$ " - (Orbital Weld)	B $\frac{1}{2}$		
										BWO 10 mm (Orbital Weld)	B 10		
										BWO 12 mm (Orbital Weld)	B 12		
										Compression tube fittings	RDB10		
										Compression tube fittings	RDB12		
										Compression tube fittings	RDB $\frac{3}{8}$		
										Compression tube fittings	RDB $\frac{1}{2}$		

\*Add NO for normally open or NF for normally closed

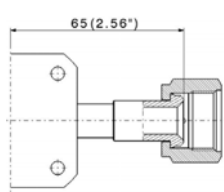


Special configuration on demand

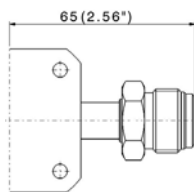
## M12 | DIAPHRAGM VALVE

### KEY FEATURES

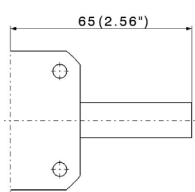
- Tied diaphragm design for positive seat opening and closing
- Individual serial number for full traceability
- Assembly, testing and packaging in cleanroom class 10
- Excellent purgeability due to optional purge ports
- Flow capacity 1.75 Cv
- 3-port option available



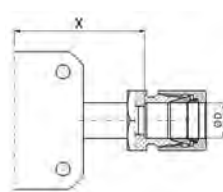
Face seal - Female  
3/8"



Face seal - Male  
3/8"



BWO for micro-welding head  
1/2" or 3/8"

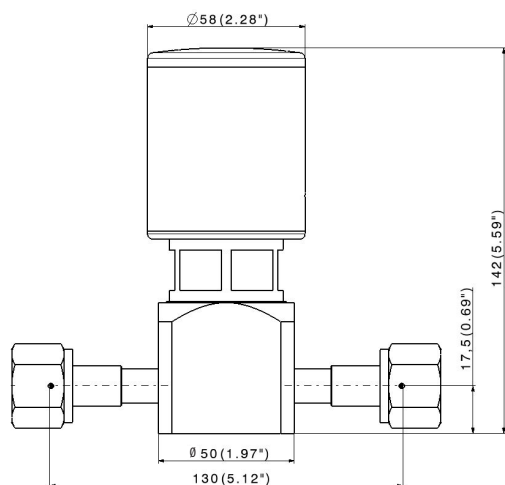


Compression tube fittings

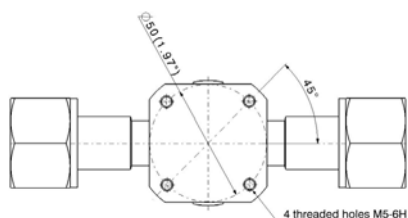
ØD	X
12mm	47,5
18mm	50
1/2"	47,5
3/4"	50

### DIMENSIONS

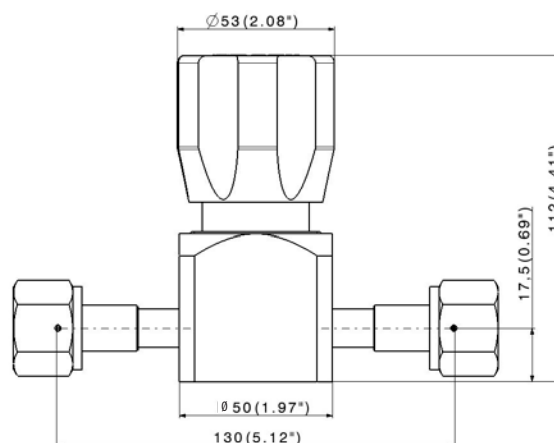
#### M12 - PNEUMATIC VALVE (PP2NF, PP2N0)



#### M12-BOTTOM VIEW



#### M12 - MULTI-TURN VALVE (MT)



## SPECIFICATIONS

<b>Fluid media</b>	Standard, high or ultra high purity corrosive and noncorrosive gases	<b>Nominal seat diameter</b>	12 mm (0,47")	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. working pressure</b>	See table below	<b>Wetted volume</b>	$< 7 \text{ cm}^3$	<b>Certified max. Helium inboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Pneumatic actuator opening pressure</b>	5 to 7 bar (73 to 102 psig)	<b>Burst pressure</b>	$> 700 \text{ bar (10152 psig)}$		
<b>Temperature range</b>	-20°C to +65°C (-4°F to +149°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s		
<b>Flow capacity (Cv)</b>	1.75				

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE, PVDF, VESPEL®
	Diaphragm	Phynox®
<b>Non-wetted parts</b>	Backup diaphragm	Phynox®
	Handwheel	Aluminium
	Actuator Body	Aluminium
	Others	Stainless Steel and Alloys

## SURFACE FINISH

S	V	U
Ra 0.4 µm (15 µin)	Ra 0.25 µm EP (10 µin)	Ra 0.18 µm EP (7 µin)

## VALVE VERSION / MAX. WORKING PRESSURE

Valve	Max. working pressure
M12 (MT) Multiturn handwheel	15 bar
M8SI (PP2*) Pneumatically actuated	15 bar

## MANUAL ACTUATION

Parts for all valve grades	
<b>Handle</b>	Aluminum
<b>All others</b>	Stainless Steel or Alloys

## PNEUMATIC ACTUATION

Parts	
<b>Actuator Body</b>	Aluminium
<b>O-ring</b>	NBR

## PRODUCT CONFIGURATOR

	Surface Finish	Actuation	Porting Configuration	Body Material	Seat Material	End Connection	Options
<b>M12</b>	<b>S</b>	<b>MT</b>	<b>2V1</b>	<b>I</b>	<b>K</b>	<b>A/B: B½</b>	<b>CI</b>
	Ra 0.18 µm EP (7 µin)*	<b>U</b> Multi-Turn Handwheel (15 bar)	<b>MT</b> 2 ports in line	<b>2V1</b> SS 316 L	<b>I</b> PCTFE (Kel-F®)	<b>K</b> Metal face seal ½" - Female	<b>V½F</b> Electric Limit Switch*
	Ra 0.25 µm EP (10 µin)	<b>V</b> Pneumatically actuated (15 bar)	<b>PP2*</b> 2 Ports in line, upstream purge port - left side	<b>2VPEG</b> Hastelloy® *	<b>H</b> PI (Vespe®)	<b>V</b> Metal face seal ½" - Male	<b>V½M</b> *Only for pneumatic actuators
	Ra 0.4 µm (15 µin Ra)	<b>S</b>	2 Ports in line, downstream purge port - left side	<b>2VPSG</b> *On demand	<b>P</b> PVDF	<b>P</b> Metal face seal ¾" - Female	<b>V¾F</b>
	*On demand		2 Ports in line, 2 purge ports upstream/Downstream - left side	<b>2VIP2</b>		Metal face seal ¾" - Male	<b>V¾M</b>
			2 ports in line, full passage, downstream branch	<b>3VT</b>		BWO ½" - (Butt Orbital Weld)	<b>B ½</b>
			2 ports in line, full passage, downstream branch, downstream purge port	<b>3VTPS</b>		BWO ¾" (Butt Orbital Weld)	<b>B ¾</b>
						Compression tube fittings	<b>RDB12</b>
						Compression tube fittings	<b>RDB¾</b>
						Compression tube fittings	<b>RDB½</b>

\*Add NO for normally open or NF for normally closed



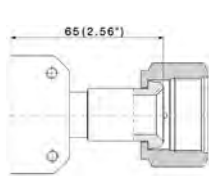
Special configuration on demand



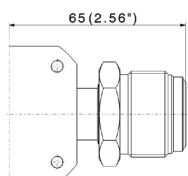
## M20 | DIAPHRAGM VALVES

### KEY FEATURES

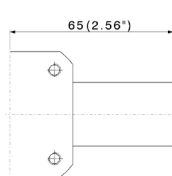
- Tied diaphragm design for positive seat opening and closing
- Individual serial number for full traceability
- Assembling, testing and packaging in cleanroom class 10
- Excellent purgeability due to optional purge ports
- Flow capacity 3.5 Cv
- 3-port option available



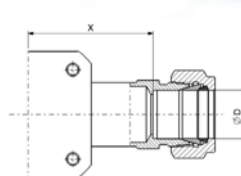
Face seal - Female  
3/8"



Face seal - Male  
3/8"



BW0 for micro-welding head  
1/2" or 3/8"

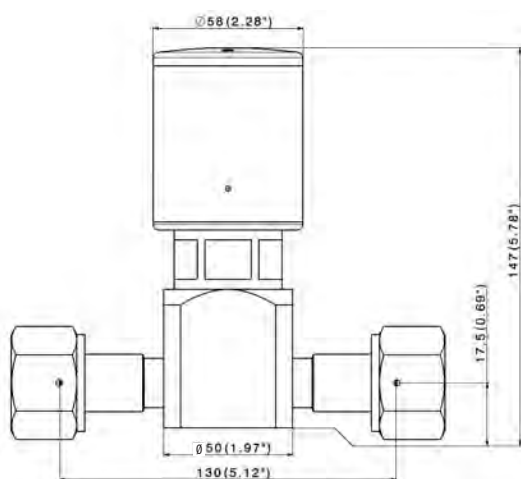


Compression tube fittings

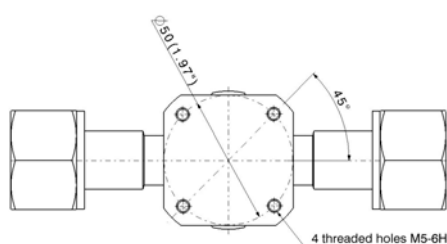
OD	X
3/4"	49,3
1"	46

### DIMENSIONS

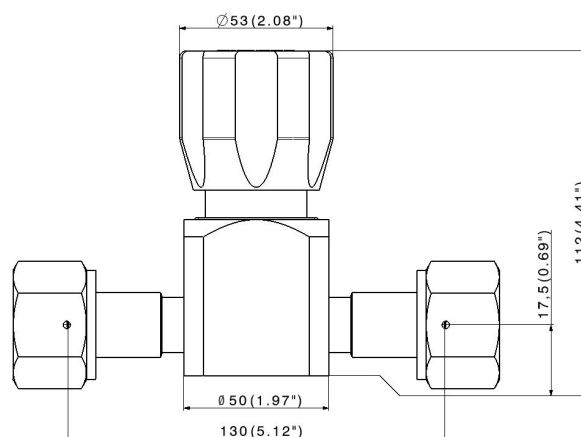
#### M20 - PNEUMATIC VALVE (PP2NF, PP2NO)



#### M20-BOTTOM VIEW



#### M20 - MULTI-TURN VALVE (MT)





## SPECIFICATIONS

<b>Fluid media</b>	Standard, high or ultra high purity corrosive and noncorrosive gases	<b>Flow capacity (Cv)</b>	3.5	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. working pressure</b>	See table below	<b>Nominal seat diameter</b>	20 mm (0.79")	<b>Certified max. Helium inboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Pneumatic actuator opening pressure</b>	5 to 7 bar (73 to 102 psig)	<b>Burst pressure</b>	> 700 bar (10152 psig)		
<b>Temperature range</b>	-20°C to +65°C (-4°F to +149°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s		

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE, PVDF, VESPEL®
	Diaphragm	Phynox®
<b>Non-wetted parts</b>	Backup diaphragm	Phynox®
	Handwheel	Aluminium
	Actuator Body	Aluminium
	Others	Stainless Steel and Alloys

## SURFACE FINISH

S	V	U
Ra 0.4 µm (15 µin)	Ra 0.25 µm EP (10 µin)	Ra 0.18 µm EP (7 µin)

## VALVE VERSION / MAX. WORKING PRESSURE

Valve	Max. working pressure
M20 (MT) Multiturn handwheel	15 bar
M20 (PP2*) Pneumatically actuated	15 bar

## MANUAL ACTUATION

Parts for all valve grades	
<b>Handle</b>	Aluminum
<b>All others</b>	Stainless Steel or Alloys

## PNEUMATIC ACTUATION

Parts	
<b>Actuator Body</b>	Aluminium
<b>O-ring</b>	NBR

## PRODUCT CONFIGURATOR

	Surface Finish	Actuation	Porting Configuration	Body Material	Seat Material	End Connection	Options
<b>M20</b>	<b>S</b>	<b>MT</b>	<b>2V1</b>	<b>I</b>	<b>K</b>	<b>A/B: B¾</b>	<b>FP</b>
	Ra 0.18 µm EP (7 µin)* <b>U</b>	Multi-Turn Handwheel (15 bar) <b>MT</b>	2 ports in line <b>2V1</b>	SS 316L <b>I</b>	PCTFE (Kel-F®) <b>K</b>	Metal face seal ¾" - Female <b>V¾F</b>	Back Mounting <b>FP</b>
	Ra 0.25 µm EP (10 µin) <b>V</b>	Pneumatically actuated (15 bar) <b>PP2*</b>	2 Ports in line, upstream purge port - left side <b>2VPEG</b>	Hastelloy®* <b>H</b>	PI (Vespe®) <b>V</b>	Metal face seal ¾" - Male <b>V¾M</b>	Electric Limit Switch* <b>CI</b>
	Ra 0.4 µm (15 µin) <b>S</b>		2 Ports in line, downstream purge port - left side <b>2VPSG</b>	*On demand	PVDF <b>P</b>	BWO ¾" (Butt Orbital Weld) <b>B¾</b>	*Only for pneumatic actuators
	*On demand		2 Ports in line, 2 purge ports upstream/downstream-left side <b>2VIP2</b>			BWO 1" (Butt Orbital Weld) <b>B1</b>	
						Metal face seal 1" - Male <b>V1M</b>	
						Metal face seal 1" - Female <b>V1F</b>	
						Compression tube fittings <b>RDB¾</b>	
						Compression tube fittings <b>RDB1"</b>	

\*Add NO for normally open or NF for normally closed



Special configuration on demand

## K300 | BELLOWS VALVES

Stop globe valve with bellows sealing and high tightness. Dedicated to low pressure at ambient temperature. Can be actuated by a manual handwheel or a pneumatic actuator.

Also available with pneumatic actuator



### APPLICATIONS

- Vacuum
- Pure and ultra pure gases
- Combustible gases
- Oxidizing gases
- Toxic and corrosive gases
- Radioactive gases
- Noble gases

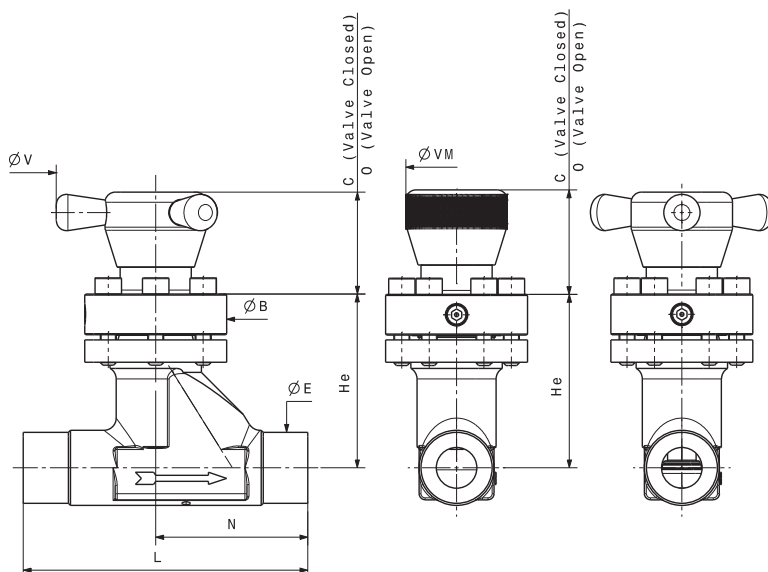
### KEY FEATURES

- Sustainable metallic bellows providing a high internal/external tightness
- All wetted parts are metallic (excepted plug)
- O-ring as a second barrier
- Plug and seat valve
- Helium leak tested
- Oil free standard

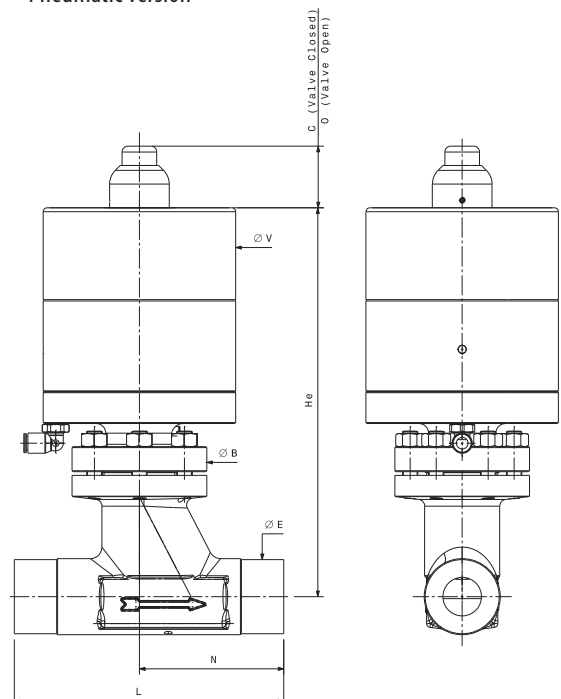


### DIMENSIONS

#### Manual version



#### Pneumatic version



## SPECIFICATIONS

<b>Fluid media</b>	Standard, high and ultra high purity and corrosive gases or liquids	<b>Temperature range</b>	-40°C to +120°C (-40°F to +248°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. working pressure</b>	100 bar (1450 psig)*	<b>Flow capacity (Cv)</b>	see table below	<b>Certified max. Helium across the seat leak Rate (at max. pressure)</b>	$\leq 3 \times 10^{-9}$ mbar.l/s
<b>Pneumatic actuator operating pressure</b>	5 to 7 bar (73 to 102 psig)	<b>Nominal seat Diameter</b>	see table below		

\* depending on valve size, actuation type, gas type and seat material

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE or Vespel®
	Bellows	SS 316L
	Head/body seal gasket	UNS N02201 (Nickel)
<b>Non-wetted parts</b>	Handwheel	Anodized aluminium
	Actuator Body	SS 316L and Painted anodized aluminium
	Others	SS 430F and C38500

## SURFACE FINISH

-	EP4	EP2
Ra 0.8 µm	Ra 0.4 µm EP	Ra 0.25 µm EP

## SEAT DIAMETER / FLOW CAPACITY

Valve	Seat diameter	Flow capacity (Cv)
K308	8mm	0.78
K312	12mm	3
K320	20mm	7
K332	32mm	18
K350	50mm	45

## MANUAL DIMENSIONS

MAN.	K308 LPMI	K312 LPMI	K312 HPMI	K320 LPMI	K320 HPMI	K332 LPMI	K350 LPMI
C	37mm/(1.46")	51.5mm/(2.03")	51.5mm/(2.03")	51.5mm/(2.03")	51.5mm/(2.03")	62mm/(2.44")	63mm/(2.48")
O	38.5mm/(1.52")	55.5mm/(2.19")	55.5mm/(2.19")	56.5mm/(2.22")	56.5mm/(2.22")	70mm/(2.76")	75mm/(2.95")
ØB	48mm/(1.89")	70mm/(2.76")	70mm/(2.76")	70mm/(2.76")	70mm/(2.76")	108mm/(4.25")	135mm/(5.31")
ØE (up to)	22.5mm/(0.89")	31.5mm/(1.24")	31.5mm/(1.24")	38.5mm/(1.52")	38.5mm/(1.52")	52mm/(2.05")	77mm/(3.03")
ØV	-	-	100mm/(3.94")	-	100mm/(3.94")	-	-
ØVM	35mm/(1.38")	50mm/(1.97")	-	50mm/(1.97")	-	125mm/(4.92")	125mm/(4.92")
He	41mm/(1.61")	76.5mm/(3.01")	76.5mm/(3.01")	85.5mm/(3.37")	85.5mm/(3.37")	102mm/(4.02")	125.5mm/(4.94")
L	90mm/(3.54")	140mm/(5.51")	140mm/(5.51")	140mm/(5.51")	140mm/(5.51")	180mm/(7.09")	250mm/(9.84")
N	45mm/(1.77")	70mm/(2.76")	70mm/(2.76")	75mm/(2.95")	75mm/(2.95")	110mm/(4.33")	150mm/(5.90")

## PNEUMATIC DIMENSIONS

PNEU.	K308 LPNC/LPNO	K312 LPNC/LPNO	K312 HPNC/HPNO	K320 LPNC/LPNO	K320 HPNC/HPNO	K332 LPNC/LPNO	K350 LPNC/LPNO
C	11mm/(0.43")	32mm/(1.26")	32mm/(1.26")	32mm/(1.26")	32mm/(1.26")	32mm/(1.26")	27mm/(1.06")
O	12.5mm/(0.49")	36mm/(1.42")	36mm/(1.42")	37mm/(1.46")	37mm/(1.46")	40mm/(1.57")	39mm/(1.53")
ØB	48mm/(1.89")	70mm/(2.76")	70mm/(2.76")	70mm/(2.76")	70mm/(2.76")	108mm/(4.25")	135mm/(5.31")
ØE (up to)	22.5mm/(0.89")	31.5mm/(1.24")	31.5mm/(1.24")	38.5mm/(1.52")	38.5mm/(1.52")	52mm/(2.05")	77mm/(3.03")
ØV	58mm/(2.28")	100mm/(3.94")	100mm/(3.94")	100mm/(3.94")	100mm/(3.94")	185mm/(7.28")	255mm/(10.04")
He	87mm/(3.42")	138mm/(5.43")	166.5mm/(6.56")	176mm/(6.93")	202mm/(7.95")	267mm/(10.51")	347mm/(13.66")
L	90mm/(3.54")	140mm/(5.51")	140mm/(5.51")	140mm/(5.51")	140mm/(5.51")	180mm/(7.09")	250mm/(9.84")
N	45mm/(1.77")	70mm/(2.76")	70mm/(2.76")	75mm/(2.95")	75mm/(2.95")	110mm/(4.33")	150mm/(5.90")

## PRODUCT CONFIGURATOR

	Size	Pressure Range <sup>1</sup>	Actuation	Body Material	Seat Material	End Connection <sup>2</sup>	Surface Finish	Options <sup>3</sup>
<b>K3</b>	<b>12</b>	<b>LP</b>	<b>MI</b>	<b>I</b>	<b>/K</b>	<b>BWO 19.05X1.65mm</b>	<b>EP4</b>	<b>-</b>
	Seat Ø8mm	<b>08</b> Low-pressure (30 bar version)	<b>LP</b> Manual	<b>MI</b> SS316L	<b>I</b> PCTFE	<b>/K</b> Butt welded orbital	<b>BWO</b> Ra 0.8µm	No option
	Seat Ø12mm	<b>12</b> High-pressure (100 bar version)	<b>HP</b> Pneumatic normally closed	<b>NC</b>	<b>PI (Vespel®)</b>	<b>/V</b> Butt welded	<b>BW</b> Ra 0.4µm (electropolished)	<b>EP4</b> Bottom support
	Seat Ø20mm	<b>20</b>	Pneumatic normally open	<b>NO</b>		Socket welded	<b>SW</b> Ra 0.25µm (electropolished)	<b>EP2</b> Actuator vent for H <sub>2</sub>
	Seat Ø32mm	<b>32</b>				Metal face seal - Male	<b>MV</b>	Solenoid valve
	Seat Ø50mm	<b>50</b>				Metal face seal - Female	<b>FV</b>	Double limit switches
						NPT female	<b>FNPT</b>	Proximity sensors (ATEX)
						NPT male	<b>MNPT</b>	Purge port <sup>2</sup>
						BSPP female	<b>FG</b>	
						BSPP male	<b>MG</b>	

<sup>1</sup>High-pressure version available for K312 and K320<sup>2</sup>Size to be defined by customer and ROTAREX<sup>3</sup>Combinable

Please check with your Rotarex contact the consistency of your selected configuration



Special configuration on demand

## HP2000 | BELLOWS VALVES

Stop globe valve with bellows sealing and high tightness. Dedicated to high pressure at ambient temperature. Can be actuated by a manual handwheel or a pneumatic actuator.

### APPLICATIONS

- Vacuum
- Pure and ultra pure gases
- Combustible gases
- Oxidizing gases
- Toxic and corrosive gases
- Radioactive gases
- Noble gases

### KEY FEATURES

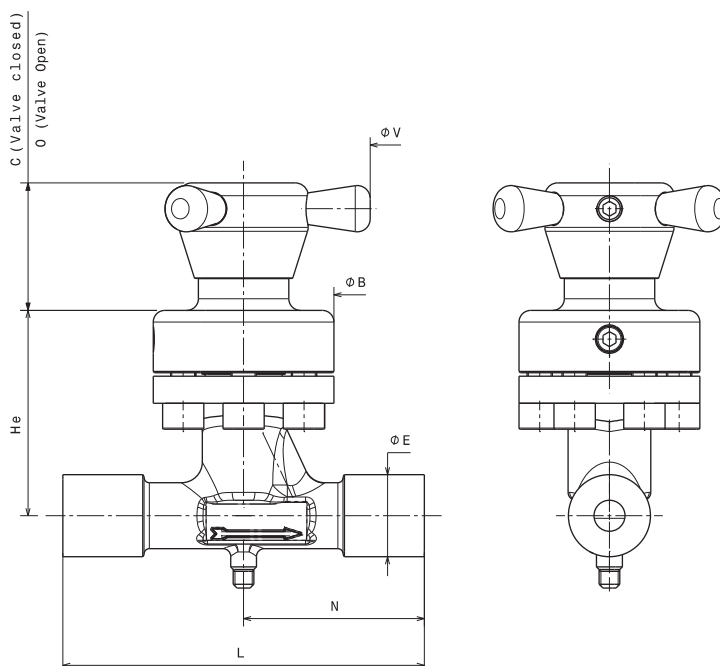
- Sustainable metallic bellows providing a high internal/external tightness
- All wetted parts are metallic (excepted plug)
- O-ring as a second barrier
- Plug and seat valve
- Helium leak tested
- Oil free standard

Available with pneumatic actuator

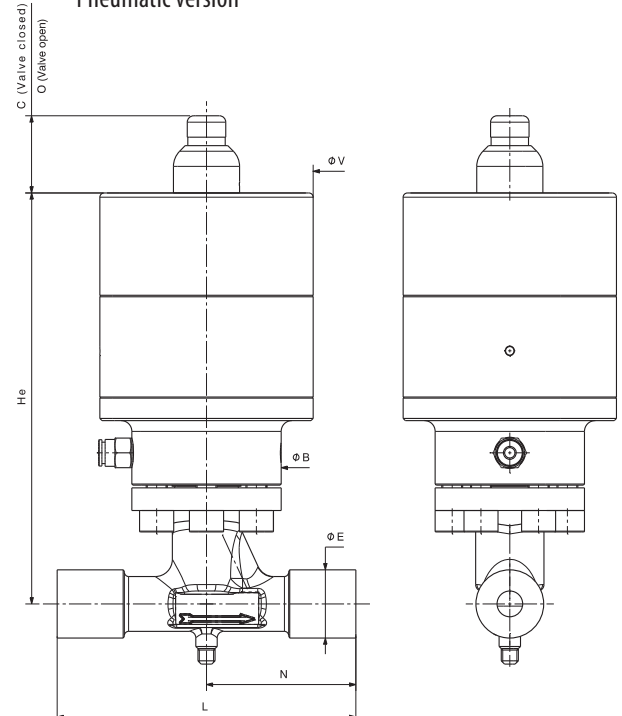


### DIMENSIONS

#### Manual version



#### Pneumatic version



## SPECIFICATIONS

<b>Fluid media</b>	Standard, high and ultra high purity and corrosive gases or liquids	<b>Temperature range</b>	-40°C to +120°C (-40°F to +248°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. working pressure</b>	240 bar (3481 psig)*	<b>Flow capacity (Cv)</b>	see table below	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	$\leq 3 \times 10^{-9}$ mbar.l/s
<b>Pneumatic actuator operating pressure</b>	5 to 7 bar (73 to 102 psig)	<b>Nominal seat Diameter</b>	see table below		

\* depending on gas type and seat material

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE or Vespel®
	Bellows	SS 316L
	Head/body seal gasket	UNS N02201 (Nickel)
<b>Non-wetted parts</b>	Handwheel	Anodized aluminium
	Actuator Body	SS 316L and Painted anodized aluminium
	Others	SS 430F and C38500

## SURFACE FINISH

-	EP4	EP2
Ra 0.8 µm	Ra 0.4 µm EP	Ra 0.25 µm EP

## SEAT DIAMETER / FLOW CAPACITY

Valve	Seat diameter	Flow capacity (Cv)
HP2008-N	8mm	1,2
HP2012-N	12mm	2,15
HP2008-C	8mm	0.77
HP2012-C	12mm	1.91

## MANUAL DIMENSIONS

MAN.	HP2008 MI	HP2012 MI
C	47mm/(1.85")	49mm/(1.93")
O	50mm/(1.97")	53mm/(2.09")
ØB	48mm/(1.89")	70mm/(2.76")
ØE (up to)	22.5mm/(0.89")	31.5mm/(1.24")
ØV	100mm/(3.94")	100mm/(3.94")
He	84.5mm/(3.33")	79.5mm/(3.13")
L	90mm/(3.54")	140mm/(5.51")
N	45mm/(1.77")	70mm/(2.76")

## PNEUMATIC DIMENSIONS

PNEU.	HP2008 NC/NO	HP2012 NC/NO
C	32mm/(1.26")	32mm/(1.26")
O	35mm/(1.38")	36mm/(1.42")
ØB	100mm/(3.94")	100mm/(3.94")
ØE (up to)	22.5mm/(0.89")	31.5mm/(1.24")
He	169mm/(6.65")	191mm/(7.52")
L	90mm/(3.54")	140mm/(5.51")
N	45mm/(1.77")	70mm/(2.76")

## PRODUCT CONFIGURATOR

	Size	Type	Actuation	Body Material	Seat Material	End Connection <sup>1</sup>	Surface Finish	Options <sup>2</sup>
HP 20	12	-C	NC	I	/K	BWO 19.05X1.65mm	EP4	-
	Seat Ø8mm	08 For oxidizing gases <sup>3</sup>	-C Manual	MI SS316L I	PCTFE /K	Butt welded orbital	BWO Ra 0.8µm	No option -
	Seat Ø12mm	12 For non oxidizing gases	-N Pneumatic normally closed	NC	PI (Vespel®) /V	Butt welded	BW Ra 0.4µm (electropolished)	EP4 Bottom support FP
			Pneumatic normally open	NO		Metal face seal - Male	MV Ra 0.25µm (electropolished)	EP2 Actuator vent for H <sub>2</sub> H2
						Metal face seal - Female	FV	Solenoid valve EV
						NPT female	FNPT	Double limit switches MRE2
						NPT male	MNPT	Proximity sensors (ATEX) DPI2
						BSPP female	FG	Purge port <sup>1</sup> PGP
						BSPP male	MG	

<sup>1</sup>Size to be defined by customer and ROTAREX<sup>2</sup>Combinable<sup>3</sup>Max. working pressure for O<sub>2</sub> 200 bar

Special configuration on demand

## CAR | CHECK VALVES

Check valve with replaceable spring and plug.

### APPLICATIONS

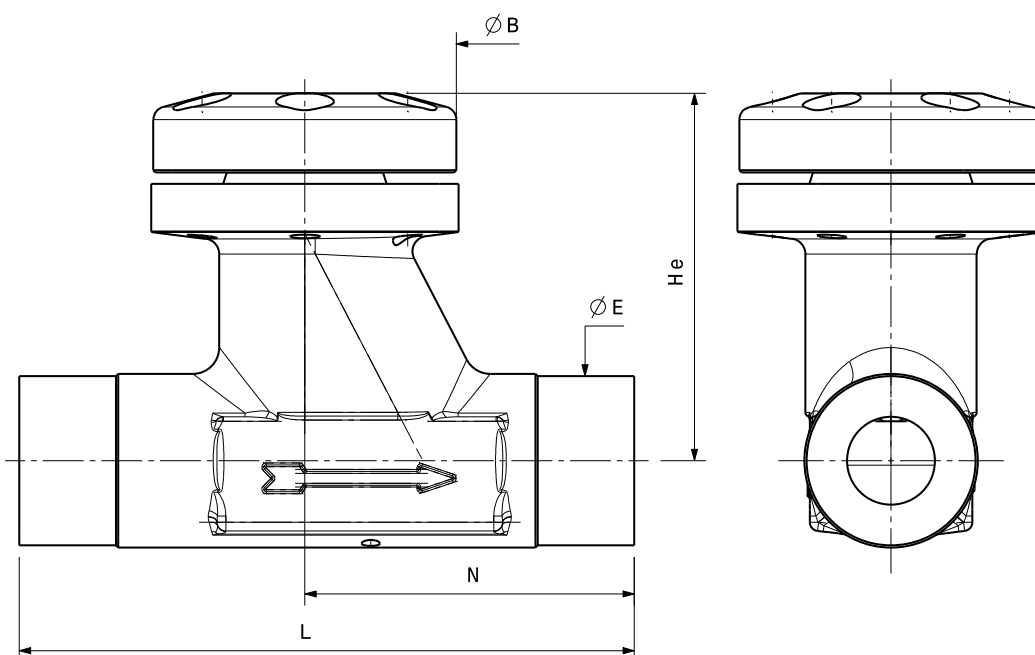
- Pure and ultra pure gases
- Combustible gases
- Oxidizing gases
- Toxic and corrosive gases
- Radioactive gases
- Noble gases

### KEY FEATURES

- Plug and seat valve
- Helium leak tested
- Spring type
- Oil free standard



### DIMENSIONS



## SPECIFICATIONS

<b>Fluid media</b>	Standard, high and ultra high purity and corrosive gases or liquids	<b>Temperature range</b>	-196°C + 250°C (-320°F to 482°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. working pressure</b>	200 bar (2901 psig)*	<b>Flow capacity (Cv)</b>	-	<b>Certified max. Helium across the seat leak Rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Pneumatic actuator operating pressure</b>	-	<b>Nominal seat Diameter</b>	see table below		

\* depending on valve size, gas type and seat material

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE or Vespel
	Head/body seal gasket	UNS N02201 (Nickel)
<b>Non-wetted parts</b>	Head	SS 316L

## SURFACE FINISH

-	EP4	EP2
Ra 0.8 µm	Ra 0.4 µm EP	Ra 0.25 µm EP

## SEAT DIAMETER / MAX. WORKING PRESSURE / CRACKING PRESSURE

Valve	Seat diameter	Max. working pressure	Cracking pressure $\Delta p$
CAR 8	8mm	200 bar*	1.00 bar
CAR 12	12mm	200 bar*	0.70 bar
CAR 20	20mm	100 bar*	0.70 bar
CAR 32	32mm	100 bar*	0.35 bar
CAR 50	50mm	45 bar*	0.50 bar

\* for combustible gases (for example O<sub>2</sub>, NF<sub>3</sub> etc.) Max. working pressure 30 bar

## MANUAL DIMENSIONS

MAN.	CAR8	CAR12	CAR20	CAR32	CAR50
ØB	48mm/(1.89")	70mm/(2.76")	70mm/(2.76")	108mm/(4.25")	135mm/(5.31")
ØE (up to)	22.5mm/(0.89")	31.5mm/(1.24")	38.5mm/(1.52")	52mm/(2.05")	77mm/(3.03")
He	45mm/(1.77")	75mm/(2.95")	83.5mm/(3.29")	104mm/(4.09")	128mm/(5.04")
L	90mm/(3.54")	140mm/(5.51")	140mm/(5.51")	180mm/(7.09")	250mm/(9.84")
N	45mm/(1.77")	70mm/(2.76")	75mm/(2.95")	110mm/(4.33")	150mm/(5.90")

## PRODUCT CONFIGURATOR

	Size		Body Material		Seat Material		End Connection <sup>1</sup>		Surface Finish		Options	
CAR	12		I		/K		BWO 19.05X1.65mm		EP4		-	
	Seat Ø8mm	08	SS316L	I	PCTFE	/K	Butt welded orbital	BWO	Ra 0.8µm	-	No option	-
	Seat Ø12mm	12			PI (Vespel®)	/V	Butt welded	BW	Ra 0.4µm (electropolished)	EP4	Bottom support	FP
	Seat Ø20mm	20					Socket welded	SW	Ra 0.25µm (electropolished)	EP2		
	Seat Ø32mm	32					Metal face seal - Male	MV				
	Seat Ø50mm	50					Metal face seal - Female	FV				
					NPT female	NPT						
					BSPP female	G						

<sup>1</sup>Size to be defined by customer and ROTAREX

Special configuration on demand



## SIR 100 | DIAPHRAGM PRESSURE REGULATOR

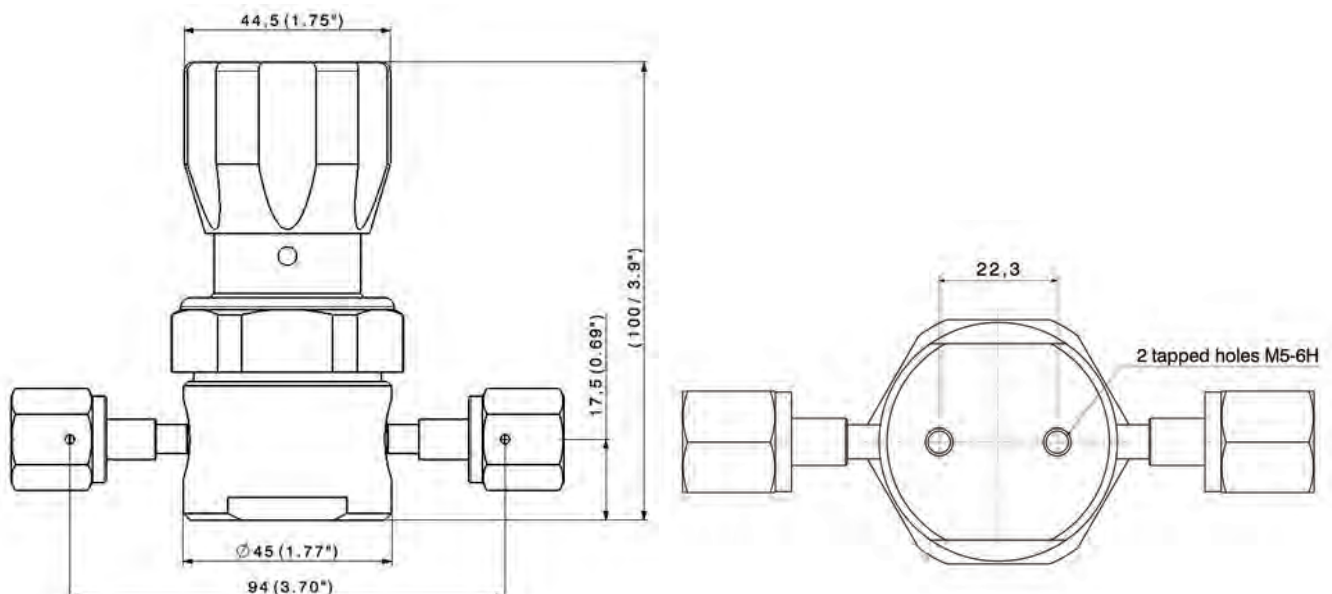
The SIR 100 Regulator was created in response to the industry's needs for a low pressure non tied diaphragm regulator for specialty source gas service, i.e. gas cabinets. The design and material of construction, plus some unique features make it an ideal choice for gas source applications with the reactive and hazardous gases the Semiconductor and Allied Industries use.

### KEY FEATURES

- Individual Serial number, for full traceability
- Spherical ball for ultra smooth control
- Metal to metal seal to atmosphere
- Minimal wetted surfaces for optimal purging
- Gas specific solutions
- Assembling, testing & Packaging in cleanroom Cl. 10
- Controlled (PC) electropolishing for better corrosion resistance
- Multi-port options available (see page 34)
- Excellent response at low pressures (droop, hysteresis, creep)



### DIMENSIONS





## SPECIFICATIONS

<b>Fluid media</b>	Standard, high or ultra high purity corrosive and noncorrosive gases	<b>Flow capacity (Cv)</b>	0.2	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. inlet pressure</b>	50 bar (725 psig)	<b>Number of ports</b>	2,3,4,5 or 6	<b>Certified max. Helium inboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Outlet pressure</b>	2/4/7/10 bar (29/58/102/145 psig)	<b>Burst pressure</b>	400 bar (5800 psig)		
<b>Temperature range</b>	-20°C to +65°C (-4°F to +149°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s		

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE, PVDF, VESPEL®
	Diaphragm	Hastelloy®
	Poppet	SS 316L
<b>Non-wetted parts</b>	Bonnet	Brass
	Handwheel	Aluminium
	Others	Stainless Steel and Alloys

## SURFACE FINISH

S	V	U
Ra 0.4 µm (15 µin)	Ra 0.25 µm EP (10 µin)	Ra 0.18 µm EP (7 µin)

## PRODUCT CONFIGURATOR

		Surface Finish		Porting Configuration	Body Material		Seat Material	Outlet Regulated Pressure		End Connection		
SIR	100	U		2V1	A		K	7b		A/B: V¼M		
		Ra 0.18µm EP (7µin)*	U	See page 34	SS 316L	I	PCTFE (Kel-F®)	K	2 bar (30 psig)	2b	Metal face seal ¼" - Female	V¼F
		Ra 0.25µm EP (10µin)	V		Hastelloy®*	H	PI (VespeL®)	V	4 bar (60 psig)	4b	Metal face seal ¼" - Male	V¼M
		Ra 0.4µm (15µin)	S		*On demand		PVDF	P	7 bar (100 psig)	7b	Metal face seal ¼" - Internal	V¼FI
		*On demand							10 bar (145 psig)	10b	¼ NPT - Inlet threads	NPTFI



Special configuration on demand

## SIR 200 | DIAPHRAGM PRESSURE REGULATOR

The SIR 200 Regulator was created in response to the industry's needs for a high pressure non tied diaphragm regulator for specialty source gas service, i.e. gas cabinets. The design and material of construction, plus some unique features make it an ideal choice for gas source applications with the reactive and hazardous gases the Semiconductor and Allied Industries use.

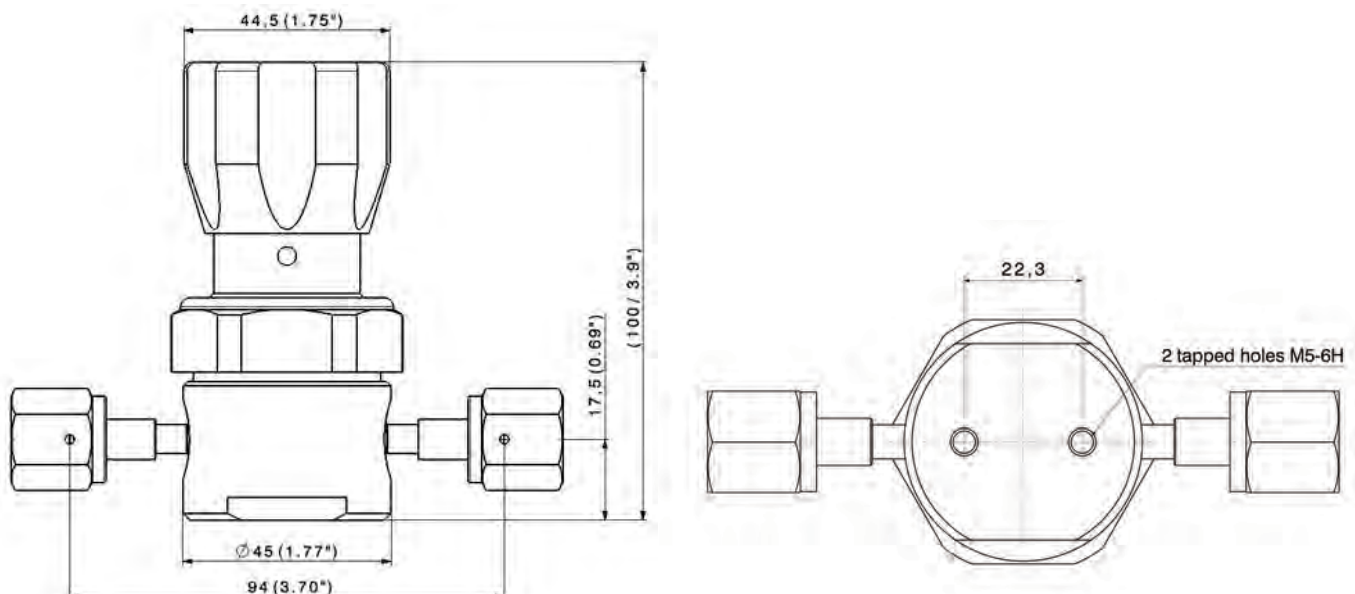
### KEY FEATURES

- Individual Serial number, for full traceability
- Spherical ball for ultra smooth control
- Metal to metal seal to atmosphere
- Minimal wetted surfaces for optimal purging
- Gas specific solutions
- Assembling, testing & Packaging in cleanroom Cl. 10
- Controlled (PC) electropolishing for better corrosion resistance
- Multi-port options available (see page 34)
- Excellent response at low pressures (droop, hysteresis, creep)



\*RIGHTS OF CHANGE RESERVED FOR PICTURE

### DIMENSIONS



## SPECIFICATIONS

<b>Fluid media</b>	Standard, high or ultra high purity corrosive and noncorrosive gases	<b>Flow capacity (Cv)</b>	0.2	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. inlet pressure</b>	200 bar (2900 psig)	<b>Number of ports</b>	2,3,4,5 or 6	<b>Certified max. Helium inboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Outlet pressure</b>	2/4/7 bar (29/58/102 psig)	<b>Burst pressure</b>	400 bar (5800 psig)		
<b>Temperature range</b>	-20°C to +65°C (-4°F to +149°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s		

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE, PVDF, VESPEL®
	Diaphragm	Hastelloy®
	Poppet	SS 316L
<b>Non-wetted parts</b>	Bonnet	Brass
	Handwheel	Aluminium
	Others	Stainless Steel and Alloys

## SURFACE FINISH

S	V	U
Ra 0.4 µm (15 µin)	Ra 0.25 µm EP (10 µin)	Ra 0.18 µm EP (7 µin)

## PRODUCT CONFIGURATOR

		Surface Finish	Porting Configuration	Body Material	Seat Material	Outlet Regulated Pressure	End Connection
<b>SIR</b>	<b>200</b>	<b>S</b>	<b>2V1</b>	<b>I</b>	<b>K</b>	<b>7b</b>	<b>A/B: V¼M</b>
		Ra 0.18µm EP (7µin)*	See page 34	SS 316L	I PCTFE (Kel-F®)	2 bar (30 psig)	2b Metal face seal ¼" - Female
		Ra 0.25µm EP (10µin)		Hastelloy®*	H PI (VespeL®)	4 bar (60 psig)	4b Metal face seal ¼" - Male
		Ra 0.4µm (15µin)		*On demand	P PVDF	7 bar (100 psig)	7b Metal face seal ¼" - Internal
		*On demand				10 bar (145 psig)	10b ¼" NPT - Inlet threads



Special configuration on demand

## SI 220 | DIAPHRAGM PRESSURE REGULATOR

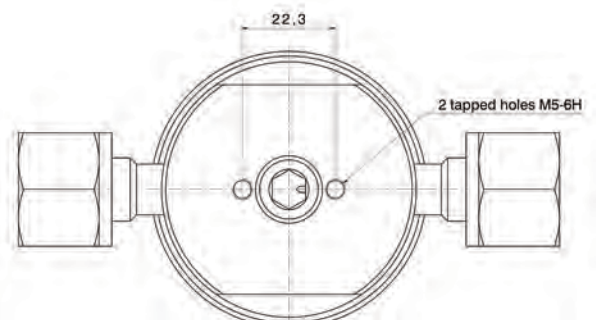
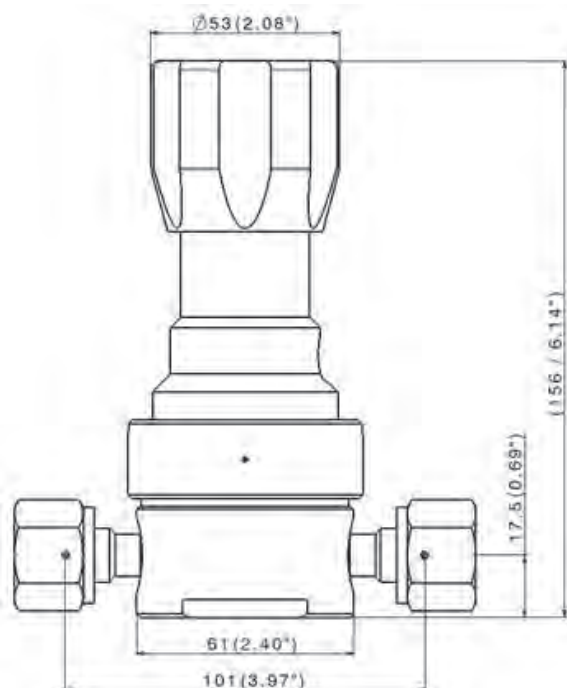
The SI 220 Regulator was created in response to the industry's need for a, High Pressure, Springless, Tied Diaphragm Regulator for specialty source gas service, i.e. gas cabinets. The design and materials of construction, plus some unique features make it an ideal choice for gas source applications with reactive and hazardous gases the Semiconductor and Allied Industries use.

### KEY FEATURES

- Individual Serial number, for full traceability
- Spherical ball for ultra smooth control
- Metal to metal seal to Atmosphere
- Sealed bonnet for extra protection
- Minimal wetted surfaces for optimal purging
- Gas specific solutions
- Assembling, testing & Packaging in cleanroom Cl. 10
- Controlled (PC) electropolishing for better corrosion resistance
- No spring in the wetted area for zero particle emission
- Multi-port options available (see page 34)
- Excellent response at high and low pressures (droop, hysteresis, creep)



### DIMENSIONS



## SPECIFICATIONS

<b>Fluid media</b>	Standard, high or ultra high purity corrosive and noncorrosive gases	<b>Flow capacity (Cv)</b>	0.2	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. inlet pressure</b>	240 bar (3481 psig)	<b>Number of ports</b>	2,3,4,5 or 6	<b>Certified max. Helium inboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Outlet pressure</b>	3/8/10/15/25/50 bar (44/116/145/218/363/725 psig)	<b>Burst pressure</b>	400 bar (5800 psig)		
<b>Temperature range</b>	-20°C to +65°C (-4°F to +149°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s		

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE
	Diaphragm	Hastelloy®
	Poppet	SS 316L
	Joint	Nickel
<b>Non-wetted parts</b>	Bonnet	Brass
	Handwheel	Aluminium
	Others	Stainless Steel and Alloys

## SURFACE FINISH

S	V	U
Ra 0.4 µm (15 µin)	Ra 0.25 µm EP (10 µin)	Ra 0.18 µm EP (7 µin)

## PRODUCT CONFIGURATOR

		Surface Finish		Porting Configuration	Body Material		Seat Material		Outlet Regulated Pressure		End Connection		
SI	220	S		2V1	I		K		10b		A/B: V⅜ F		
		Ra 0,18µm EP (7µin)*	U	see page 34	SS 316L	I	PCTFE (Kel-F®)	K	3 bar (45 psig)	3b	Metal face seal ¼" - Female	V⅜ F	
		Ra 0,25µm EP (10µin)	V			Hastelloy®*			H	8 bar (116 psig)	8b	Metal face seal ⅜" - Female	V⅜ F
		Ra 0,4µm non EP(15µin)	S			*On demand				10 bar (145 psig)	10b	Metal face seal ¼" - Male	V⅜ M
		*On demand							15 bar (217 psig)	15b	Metal face seal ⅜" - Male	V⅜ M	
									25 bar (365 psig)	25b	Metal face seal ¼" - Internal Female	V⅜ FI	
									50 bar (725 psig)	50b			



Special configuration on demand

## SI 240 | DIAPHRAGM PRESSURE REGULATOR

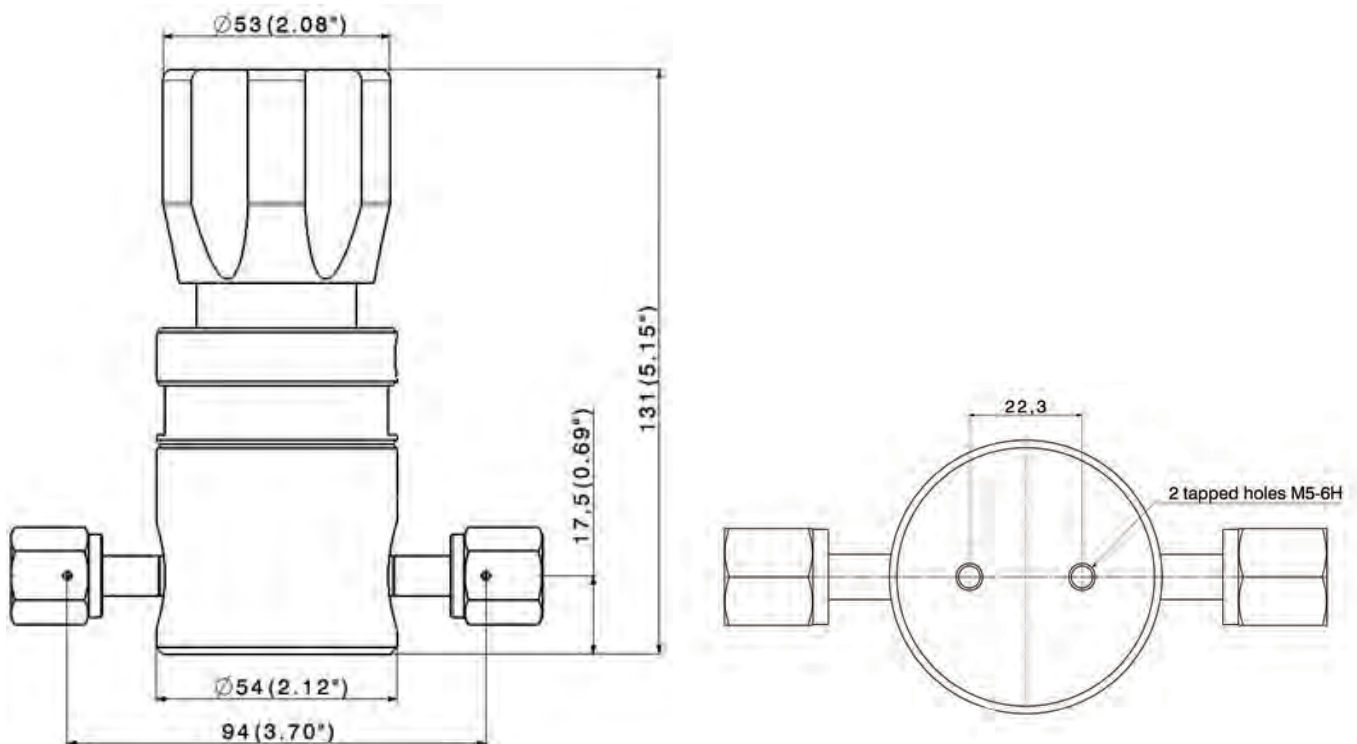
The SI 240 Regulator was created in response to the industry's need for a High Pressure, Springless, Tied Diaphragm Regulator for specialty source gas service, i.e. gas cabinets. The design and materials of construction, plus some unique features make it an ideal choice for gas source applications with reactive and hazardous gases the Semiconductor and Allied Industries use.

### KEY FEATURES

- Individual Serial number, for full traceability
- Ergonomic Design
- Spherical ball for ultra smooth control
- Sealed bonnet for extra protection
- Minimal wetted surfaces for optimal purging
- Gas specific solutions
- Assembling, testing & Packaging in cleanroom Cl. 10
- Controlled (PC) electropolishing for better corrosion resistance
- No spring in the wetted area for zero particle emission
- Excellent response at high and low pressures (droop, hysteresis, creep)



### DIMENSIONS



## SPECIFICATIONS

<b>Fluid media</b>	Standard, high or ultra high purity corrosive and noncorrosive gases	<b>Flow capacity (Cv)</b>	0.1	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Max. inlet pressure</b>	240 bar (3481 psig)	<b>Number of ports</b>	2,3,4,5 or 6	<b>Certified max. Helium inboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s
<b>Outlet pressure</b>	2/4/7 bar (29/58/101 psig)	<b>Burst pressure</b>	400 bar (5800 psig)		
<b>Temperature range</b>	-20°C to +65°C (-4°F to +149°F)	<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	$\leq 1 \times 10^{-9}$ mbar.l/s		

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PCTFE, PVDF, VESPEL®
	Diaphragm	Hastelloy®
	Poppet	SS 316L
<b>Non-wetted parts</b>	Bonnet	Brass
	Handwheel	Aluminium
	Others	Stainless Steel and Others

## SURFACE FINISH

S	V	U
Ra 0.4 µm (15 µin)	Ra 0.25 µm EP (10 µin)	Ra 0.18 µm EP (7 µin)

## PRODUCT CONFIGURATOR

		Surface Finish	Porting Configuration	Body Material	Seat Material	Outlet Regulated Pressure	End Connection
SI	240	S	2V1	I	K	4b	A/B: V¼ F
		Ra 0,18µm EP (7µin)*	See page 34	SS 316L	I	1 bar (29 psig)	2b Metal face seal ¼" - Female
		Ra 0,25µm EP (10µin)		Hastelloy® *	H	4 bar (58 psig)	4b Metal face seal ¼" - Male
		Ra 0,4µm (15µin)		*On demand		7 bar (101 psig)	7b Metal face seal ¼" - Internal Female

\*On demand



Special configuration on demand

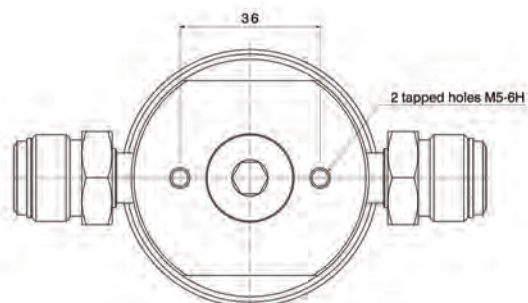
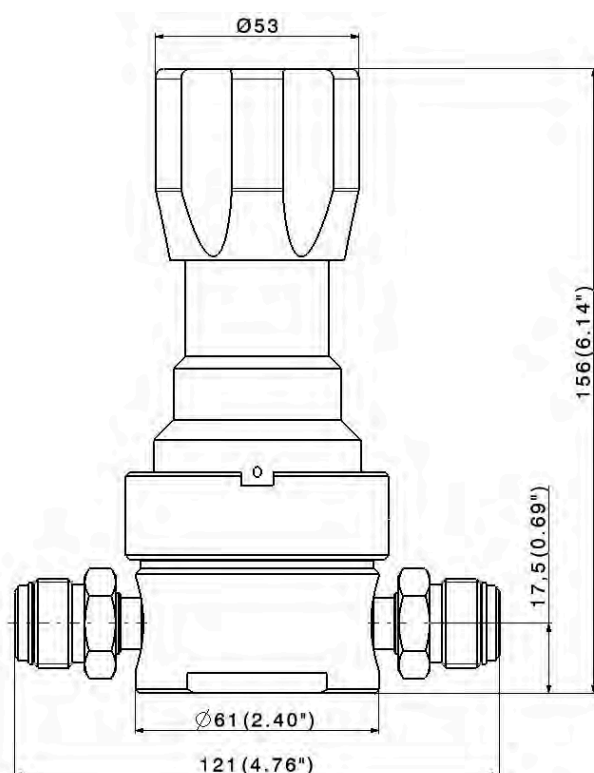
## SI 25 | DIAPHRAGM PRESSURE REGULATOR

### KEY FEATURES

- Gas specific solutions
- Assembling, testing & Packaging in cleanroom Cl. 10
- Controlled (PC) electropolishing for better corrosion resistance
- No spring in the wetted area for zero particle emission



### DIMENSIONS





## SPECIFICATIONS

<b>Fluid media</b>	Standard, high or ultra high purity corrosive and noncorrosive gases	<b>Temperature range</b>	-20°C to +60°C (-4°F to +140°F)	<b>Certified max. Helium across the seat leak rate (at max. pressure)</b>	≤ 1 x 10 <sup>-9</sup> mbar.l/s
<b>Max. inlet pressure</b>	25 bar (363 psig)	<b>Flow capacity (Cv)</b>	1.2		
<b>Outlet pressure</b>	10 bar (145 psig)	<b>Number of ports</b>	2,3,4,5 or 6	<b>Certified max. Helium inboard leak rate (at max. pressure)</b>	≤ 1 x 10 <sup>-9</sup> mbar.l/s
		<b>Certified max. Helium outboard leak rate (at max. pressure)</b>	≤ 1 x 10 <sup>-9</sup> mbar.l/s		

## CONSTRUCTION MATERIAL

	Parts	Material
<b>Wetted parts</b>	Body	SS 316L
	Seat	PFA
	Diaphragm	Hastelloy®
	Poppet	SS 316L
<b>Non-wetted parts</b>	Bonnet	Chrome Plated Brass
	Handwheel	Aluminium
	Others	Stainless Steel and Others

## SURFACE FINISH

S	V	U
Ra 0.4 µm (15 µin)	Ra 0.25 µm EP (10 µin)	Ra 0.15 µm EP (6 µin)

## PRODUCT CONFIGURATOR

		Surface Finish		Porting Configuration	Body Material		Seat Material		Outlet Regulated Pressure		End Connection	
SI	25	S		2V1	I		T		10b		A/B: V½ F	
		Ra 0,18µm EP (7µin)*	U	See page 34	SS 316L	I	PFA	T	10 bar (145 psig)	10b	Metal face seal ½" - Female	V½F
		Ra 0,25µm EP (10µin)	V		Hastelloy® *	H					Metal face seal ½" - Male	V½M
		Ra 0,4µm (15µin)	S		*On demand							

\*On demand

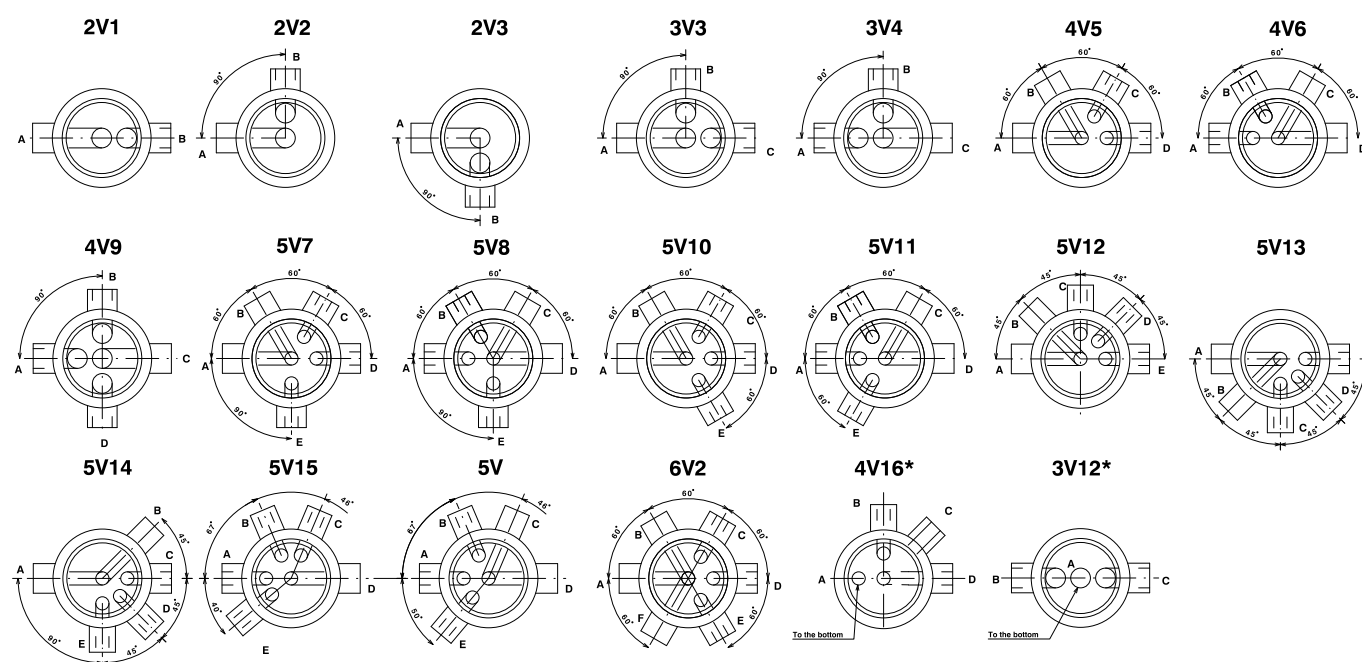


Special configuration on demand

## VALVES

TOP VIEW				
2 PORTS	3 PORTS		4 PORTS	BACK PORTS
<b>2V1</b> 	<b>3V4</b> 	<b>3V5</b> 	<b>4V10</b> 	<b>2V7</b> 
<b>2V2</b> 	<b>3V6</b> 	<b>3V7</b> 	<b>4V11</b> 	<b>2V14</b> 
<b>2V3</b> 	<b>3V8</b> 	<b>3V9</b> 	<b>4V12</b> 	<b>3V15</b> 
<p>  Fixing holes   Sniffing holes (M4SI, M8SI)         </p>				
			<b>4V13</b> 	

## REGULATORS



## TO COMPLETE THE RANGE

In addition to valves and regulators for ultra-high purity gases, Rotarex can propose for your activity a full range of products.

From source to process you can find a full range of precise equipment for your gas supply system and manipulation.

**For more information concerning one or more of those products please contact us directly.**

Tel.: +352 32 78 32-208  
E-mail: [salesequipment@rotarex.com](mailto:salesequipment@rotarex.com)

### INSTRUMENTATION



### UHP FITTINGS



## NOTES

[illegible]

## NOTES

# A FULL LINE OF GAS CONTROL SOLUTIONS



## COMPLETE SOLUTIONS FROM SOURCE TO PROCESS.

ROTAREX is helping engineers worldwide to get better gas results: from ultra high purity production and medical care facilities to industrial and LPG applications, as well as alternative energy vehicles, fire suppression, diving, aerospace, cryogenics, laboratory, petro-chemical and welding. ROTAREX applies over 90 years of know-how and experience to custom design, develop and manufacture the high performance valves, regulators and fittings to suit your needs, all in one hand. Discover the difference ROTAREX can make in your world.

**CYLINDER VALVES**

**EQUIPMENT**

**FIRETEC**

**AUTOMOTIVE**

**LPG/SRG**

**MEDITEC**



**ULTRA HIGH PURITY VALVES**



**MEDICAL VALVES & EQUIPMENT**



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**REFRIGERANT CYLINDER VALVES**



**PRESSURE REGULATORS**



**SUPPLY & SWITCH OVER BOARDS**



**LINE VALVES**



**FITTINGS & ADAPTORS**



**FIXED INSTALLATION  
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**OBJECT FIRE SUPPRESSION  
SYSTEMS**



**AUTOMOTIVE VALVES  
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**WATER CARBONATION**



**LPG TANK VALVES  
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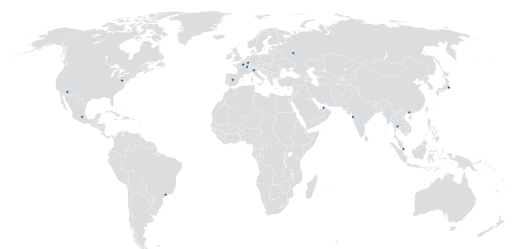
**LPG CYLINDER VALVES  
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**PLASTIC INJECTION MOULDING**





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