



ROTAREX
EQUIPMENT



**ULTRA HIGH PURITY VALVES
AND REGULATORS**

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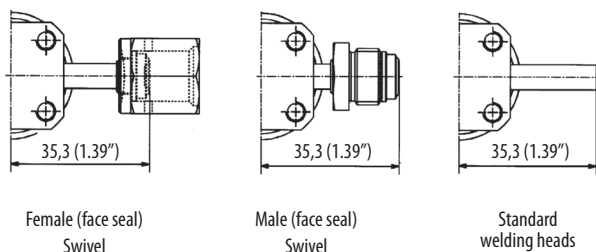
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M4-SI | SPRINGLESS DIAPHRAGM VALVES FOR UHP APPLICATIONS

Feature a unique proven design

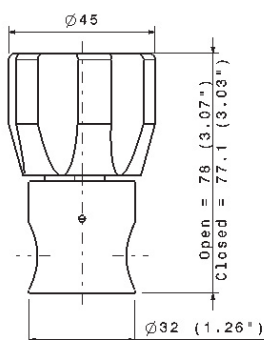
KEY FEATURES

- Spring-less
- Metal/Metal Tightness to the atmosphere
- Ultra High Purity Cleaning
- High cycling
- Individual serial number, for traceability
- Compact size (70,6 mm)
- Electropolishing of all internal surfaces
- Integral He leak testing
- Stainless Steels 316L / VAR / Hastelloy® (on request)
- Assembling, testing & packaging in cleanroom
- Visual Open/Close Indicator on manual valves
- Fully functional from vacuum to rated pressure
- Excellent purgeability
- Multiporting options
- 2 bottoms fixations

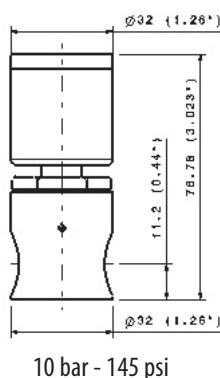


DIMENSIONS

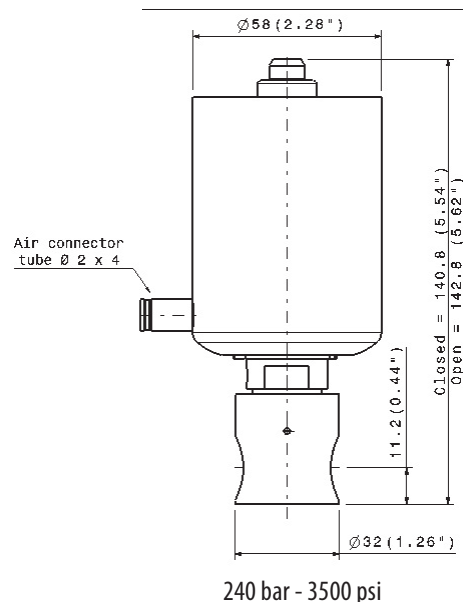
M4-SI MULTITURN VALVE (MT) WITH OPEN/CLOSE WINDOW



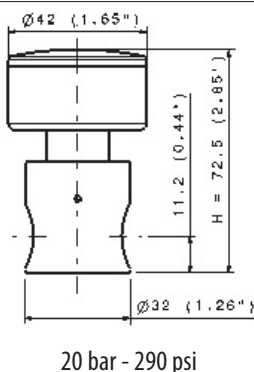
M4-SI PNEUMATIC VALVE LOW PRESSURE (BPNF)



M4-SI PNEUMATIC VALVE HIGH PRESSURE (HPNF, HPNO)



M4-SI PNEUMATIC VALVE MEDIUM PRESSURE (LPNF, LPNO)



SPECIFICATIONS

| | | | | | |
|------------------------------|---|--|---|--|--|
| Fluid Media | Standard, High or ultra high purity corrosive and non-corrosive gases | Pneumatic actuator opening pressure | 5 - 7 bar (75 - 105 psi) | Certified max. Helium outboard leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Max. working pressure | <ul style="list-style-type: none"> • M4-SI manual multitem MT: 3500psi (240 bar) or 290psi (20 bar) • M4-SI ¼ turn QT 290psi (20bar) • M4-SI pneumatic BPNF 145psi (10 bar) • M4-SI pneumatic LPNF-LPNO 290psi (20bar) • M4-SI pneumatic HPNF-HPNO 3500 psi (240bar) | Temperature range | -20°C to + 65°C: PCTFE Vespel® option PVDF option | Certified max. Helium across the seat (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| | | Burst pressure | 12,500 psi (850 bar) | Wetted volume | < 1.2 cm ³ |
| | | Flow Capacity | Cv = 0.2 | Mounting | Back mounting or optional Panel mounting |
| | | Certified max. Helium inboard leak rate | < 1.10 ⁻⁹ mbar.l/sec | Nominal seat Diameter | 4 mm (0,16") |

CONSTRUCTION MATERIAL

| | Parts | Valve Grade & Materials | | |
|-------------------------|-------------------|-------------------------------------|---------------------------|--------------------------|
| | | M4-SI S | M4-SI V | M4-SI U |
| Wetted parts | Body | SS 316L / SS VAR / Hastelloy® | | |
| | Surface Finish | < 0,4 µm non EP (15 µ in Ra) | < 0,25 µm EP (10 µ in Ra) | < 0,18 µm EP (7 µ in Ra) |
| | Diaphragm | Elgiloy® | | |
| | Seat Material | Kel-F® (PVDF or Vespel® on request) | | |
| Non-wetted parts | Backup diaphragms | UNS R30003 (Phynox)® | | |
| | All others | Stainless steel or alloys | | |

MANUAL ACTUATION

| Parts for all valve grades | |
|----------------------------|-----------------|
| Upper spindle | Brass |
| Handle | Aluminium |
| All others | Stainless Steel |

PNEUMATIC ACTUATION

| Parts | |
|----------------------|-----------------|
| Actuator Body | Aluminium / SS |
| Piston | Brass / AL / SS |
| O-ring | NBR - PC 851 |
| All others | Stainless Steel |

PRODUCT CONFIGURATOR

| M4SI | Valve series, Surface Finish & Body material | | Valve Actuation | | Valve Configurations | | Body material | | Seat Material | | End Connection | | Options | | |
|------|--|---|---------------------------------|------|----------------------|-----|---------------|---|----------------|---------|-----------------------------|------|---------|-----------------------|----|
| | S | V | LM | HM | 2V1 | 3V1 | I | A | K | A/B: B¼ | V¼-F | V¼-M | B¼ | FT | CI |
| | Ra 0.25 µm EP (10 µin Ra) | | Multi-Turn Handwheel (20bar) | LM | 2 ports in line | 2V1 | SSVAR | A | PCTFE (Kel-F®) | K | Metal face seal ¼" - Female | | | Panel Mounting | FT |
| | Ra 0.4 µm (15 µin Ra) | S | Multi-Turn Handwheel (240bar) | HM | 3 ports inline | 3V1 | SS 316 L | I | PI (Vespel®) | V | Metal face seal ¼" - Male | | | Electric limit switch | CI |
| | Ra 0,18 µm EP (7 µin Ra) | U | Pneumatically actuated (10bar) | BPNC | 4 ports inline | 4V1 | Hastelloy® | H | PVDF | P | BWO ¼" (Butt Orbital Weld) | | | | |
| | | | Pneumatically actuated (20bar) | LPNC | | | | | | | Others on request | | | | |
| | | | Pneumatically actuated (240bar) | HPNC | | | | | | | | | | | |
| | | | Quarter-Turn Handwheel (20bar) | LQ | | | | | | | | | | | |

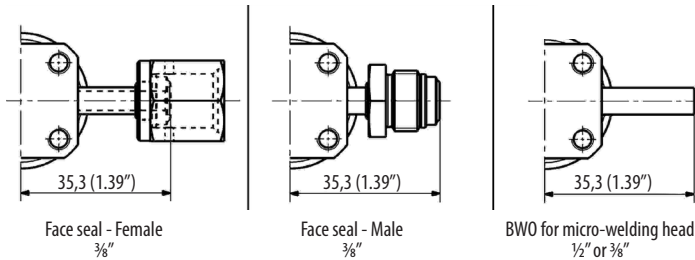
M8.1 | SPRINGLESS DIAPHRAGM VALVES FOR UHP APPLICATIONS

Feature a unique proven design



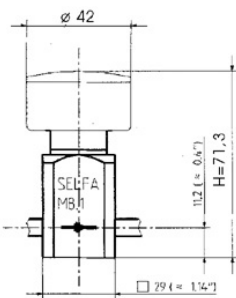
KEY FEATURES

- Spring-less
- Metal/Metal Tightness to the atmosphere
- Ultra High Purity Cleaning
- High cycling
- Individual serial number, for traceability
- Compact size (70,6 mm)
- Electropolishing of all internal surfaces
- Integral He leak testing
- Stainless Steels 316L / VAR / Hastelloy® (on request)
- Assembling, testing & packaging in cleanroom
- Visual Open/Close Indicator on manual valves
- Fully functional from vacuum to rated pressure
- Excellent purgeability
- Multiporting options
- 2 bottoms fixations
- Laser welded diaphragm for maximum reliability
- Replaceable seat

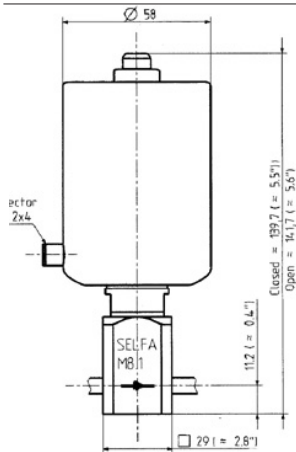


DIMENSIONS

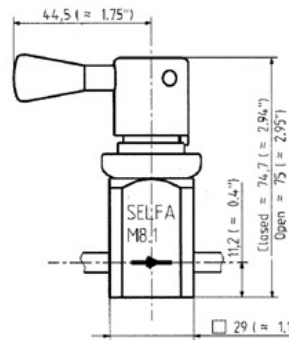
M8.1- PNEUMATIC VALVE LOW PRESSURE



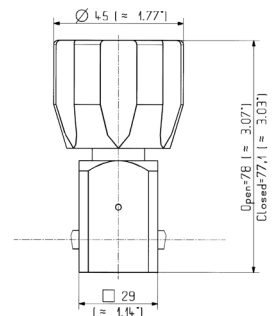
M8.1- HIGH PRESSURE PNEUMATIC VALVE



M8.1 QUARTER TURN (QT) VALVE

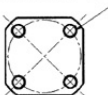


M8.1 MULTI TURN VALVE (MT) WITH ON/OFF WINDOW



M8.1 BOTTOM VIEW

4 holes M5x6 on $\varnothing 29$ (e1).



SPECIFICATIONS

| | | | | | |
|--|--|--|---|---|---------------------------------|
| Fluid Media | Standard, High and Ultra High Purity, corrosive and non-corrosive gases | Temperature range | -20°C to + 65°C (-2°F to 149°F) | Certified max. Helium across the seat leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Max. working pressure | <ul style="list-style-type: none"> M8.1 Manual: vacuum to 240 bar (3500 psi) M8.1 Pneumatic <ul style="list-style-type: none"> - Low Pressure: 17 bar (250 psi) - High Pressure: 240 bar (3500 psi) | Burst Pressure | 850 bar (12,500 PSI) | Wetted volume | < 1.6 cc |
| Pneumatic actuator operating pressure | 5 - 7 bar (75 - 105 psi) | Flow Capacity (Cv) | M8.1 Manual: Cv = 0.53 M8.1 Pneumatic: Cv = 0.53 | Mounting | Front or back mounting |
| | | Certified max. Helium inboard leak rate | < 1.10 ⁻⁹ mbar.l/sec | Nominal seat Diameter | 8 mm (0,32") |
| | | Certified max. Helium outboard leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec | | |

CONSTRUCTION MATERIAL

| | Parts | Valve Grade & Materials | | |
|-------------------------|------------------|--|---------------------------|--------------------------|
| | | M8.1 S | M8.1 V | M8.1 U |
| Wetted parts | Body | SS 316L / SS VAR / Hastelloy® | | |
| | Surface Finish | < 0,4 µm non EP (15 µ in Ra) | < 0,25 µm EP (10 µ in Ra) | < 0,18 µm EP (7 µ in Ra) |
| | Diaphragm | Hastelloy® | | |
| | Seat Material | Kel-F® (Vespel®, PVDF, metal on request) | | |
| Non-wetted parts | Backup diaphragm | Phynox® | | |
| | 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 | |
|----------------------|---------------------------|
| Actuator Body | SS 316L / Aluminum |
| Piston | SS / Aluminum / Brass |
| O-ring | NBR |
| All others | Stainless Steel or Alloys |

PRODUCT CONFIGURATOR

| | Valve series & Surface Finish | Valve Actuation (Standard: Normally closed) | Valve Configurations | Body Material (others on request) | Seat Material | End Connection | Options | | | | | | |
|------|-------------------------------|--|----------------------|-----------------------------------|---------------|-----------------------|---------|----------------|---|------------------------------------|---------------------|---|----|
| M8.1 | S | MT | 2V1 | I | K | A/B: B ^{3/8} | FT | | | | | | |
| | Ra 0,4µm non EP (15 µin Ra) | Manually actuated - Quarter Turn | QT | 2 ports in line | 2V1 | AISI 316L | I | PCTFE (Kel-F®) | K | Metal face seal 3/8 - Female | V ^{3/8} -F | Panel mounting | FT |
| | Ra 0,25µm EP (10 µin Ra) | Manually actuated - Multi Turn | MT | 3 ports inline | 3V1 | Hastelloy® | H | PI (Vespel®) | V | Metal face seal 3/8 - Male | V ^{3/8} -M | Back mounting | FB |
| | Ra 0,18 µm EP (7 µin Ra) | Pneumatically actuated - Low Pressure | LP | 4 ports inline | 4V1 | SS VAR | A | PVDF | P | BWO 3/8" - Standard (Orbital Weld) | B ^{3/8} | Electric limit switch (LP actuators only) | CI |
| | | Pneumatically actuated - High Pressure | HP | | | | | Metal | M | BWO 1/2" - (Orbital Weld) | B ^{1/2} | | |
| | | * Add - NO - for Normally Open version) (Add - NC - for normally close version) | | | | | | | | BWO 10 mm (Orbital Weld) | B ¹⁰ | | |
| | | | | | | | | | | BWO 12 mm (Orbital Weld) | B ¹² | | |
| | | | | | | | | | | Others on request | | | |

M8SI | DN8 DIAPHRAGM VALVE FOR UHP APPLICATIONS

Feature a unique proven design

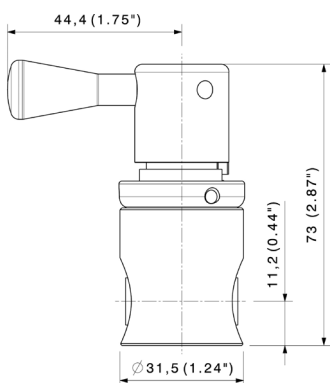
KEY FEATURES

- Spring-less
- Metal/Metal Tightness to the atmosphere
- Ultra High Purity Cleaning
- High cycling
- Individual serial number, for traceability
- Compact size (70,6 mm)
- Electropolishing of all internal surfaces
- Integral He leak testing
- Stainless Steels 316L / VAR / Hastelloy® (on request)
- Assembling, testing & packaging in cleanroom
- Visual Open/Close Indicator on manual valves
- Fully functional from vacuum to rated pressure
- Excellent purgeability
- Multiporting options
- 2 bottoms fixations ns

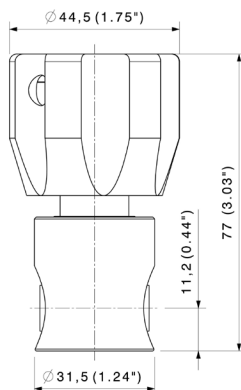


DIMENSIONS

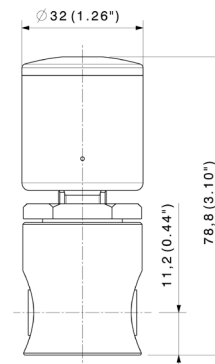
QUARTERTURN LQ



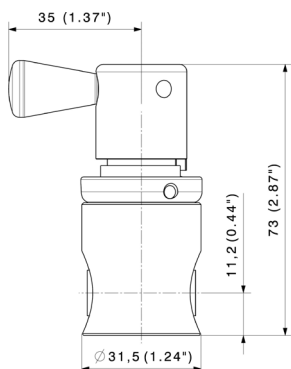
MULTITURN LM



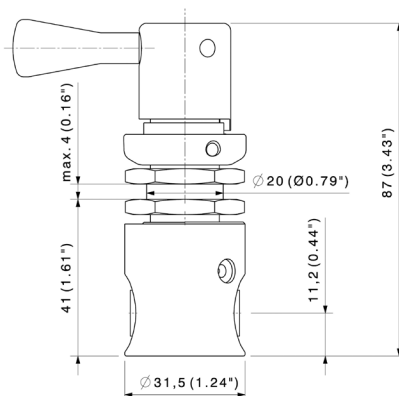
PNEUMATIC BP



QUARTERTURN LQS



QUARTERTURN LQ, OPTION FT



SPECIFICATIONS

| | | | | | |
|--|--|--|--|--|--|
| Fluid Media | Standard, UHP, corrosive and non-corrosive gases | Temperature range | -20°C to + 65°C PCTFE (-4°F to 149°F) standard | Certified max. Helium outboard leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Max. working pressure | • M8-SI manual multiturn LM: 290psi (20 bar) | Burst pressure | 6.500 psi (450 bar) | Certified max. Helium across the seat (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| | • M8-SI manual quarter turn LQ: 290psi (20 bar) | Flow Capacity | Cv = 0,5 | Wetted volume | < 1.6 cm ³ |
| | • M8-SI BPNF - BPNO: 140psi (10 bar) | Certified max. Helium inboard leak rate | < 1.10 ⁻⁹ mbar.l/sec | Mounting | Back mounting or optional Panel mounting |
| Pneumatic actuator opening pressure | 5 - 7 bar (75 - 105 psi) | | | Nominal seat Diameter | 8 mm (0,32") |

CONSTRUCTION MATERIAL

| | Parts | Valve Grade & Materials | | |
|-------------------------|-------------------|------------------------------|---------------------------|--------------------------|
| | | M8-SI S | M8-SI V | M8-SI U |
| Wetted parts | Body | SS 316L / SS VAR / Hatelloy® | | |
| | Surface Finish | < 0,4 µm non EP (15 µ in Ra) | < 0,25 µm EP (10 µ in Ra) | < 0,18 µm EP (7 µ in Ra) |
| | Diaphragm | Phynox® | | |
| | Seat Material | Kel-F® | | |
| Non-wetted parts | Backup diaphragms | UNS R30003 (Phynox)® | | |
| | All others | Stainless steel or alloys | | |

MANUAL ACTUATION

| Parts for all valve grades | |
|----------------------------|----------------------|
| Upper spindle | Brass |
| Handle | Aluminium |
| All others | Stainless Steel 316L |

PNEUMATIC ACTUATION

| Parts | |
|----------------------|-------------------------------------|
| Actuator Body | Aluminium / SS |
| Piston | Brass / Aluminium / Stianless steel |
| O-ring | NBR |
| All others | Stainless Steel 316 L |

PRODUCT CONFIGURATOR

| | Valve series, Surface Finish | Valve Actuation | Valve Configurations | Body Material (others on request) | Seat Material | End Connection | Options |
|------|---------------------------------------|--------------------------------|-------------------------|-----------------------------------|----------------|---------------------------------------|-----------------------------|
| M8SI | S | BPNF | 2V1 | I | K | A/B: B ^{3/8} | |
| | Ra 0.25 µm EP (10 µin Ra)-316 L VAR | Multi-Turn Handwheel (20bar) | 2 ports in line | AISI 316L | PCTFE (Kel-F®) | Metal face seal 3/8" - Female | Panel Mounting (LQ only) FT |
| | Ra 0.4 µm (15 µin Ra)-316 L low sulf. | Pneumatically actuated (10bar) | 3 ports T configuration | Hastelloy® On request | | Metal face seal 3/8" - Male non swiel | |
| | Ra 0,18 µm EP (7 µin Ra) | Quarter-Turn Handwheel (20bar) | | SS VAR On request | | BWO 3/8" (Orbital Weld) | |
| | | | | | | BWO 1/2" (Orbital Weld) | |
| | | | | | | BWO 10 mm (Orbital Weld) | |
| | | | | | | BWO 12 mm (Orbital Weld) | |
| | | | | | | Others on request | |

M12 | DIAPHRAGM VALVE FOR UHP APPLICATIONS

Feature a unique proven design

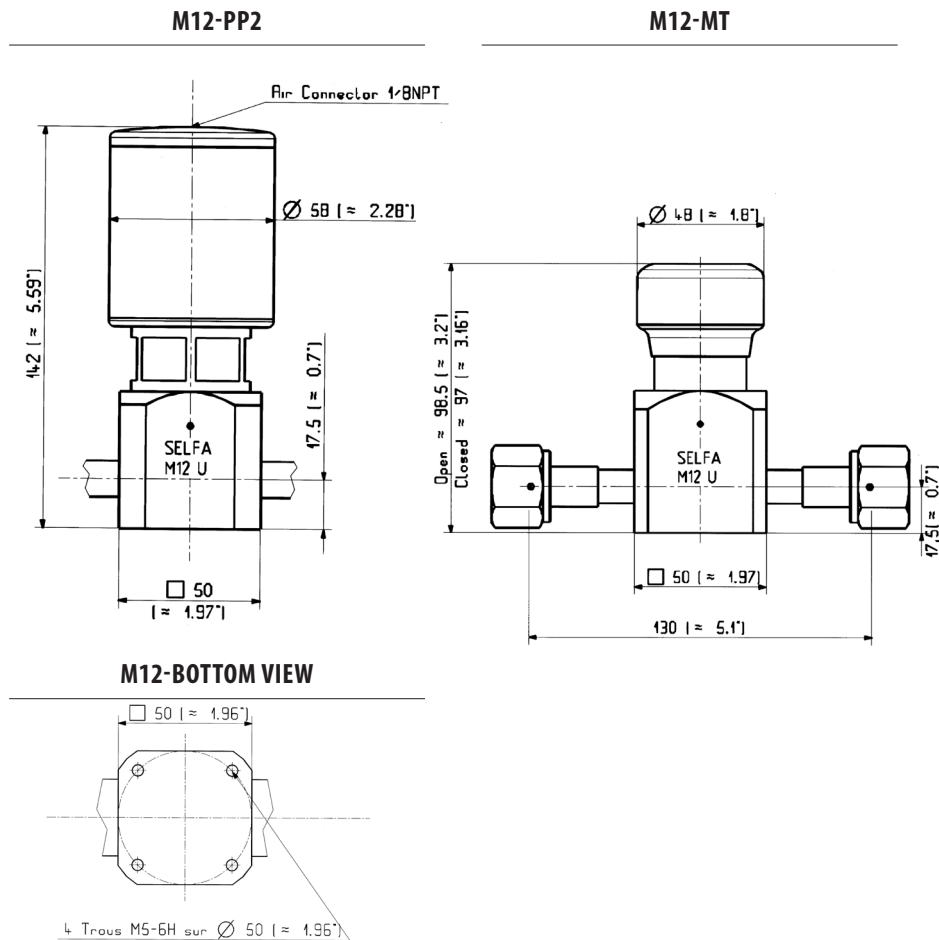


KEY FEATURES

- Tied diaphragm design for positive seat opening and closing
- Individual serial number for full traceability
- Assembly, testing and packaging in cleanroom class 10
- Easy purgeability (optional purge ports, up/down stream)
- Excellent flow coefficient
- Metal to Metal sealing to atmosphere
- 3 ports option



DIMENSIONS



SPECIFICATIONS

| | | | | | |
|------------------------------------|--|--|--|---|---------------------------------|
| Fluid Media | High purity and UHP, corrosive and non-corrosive gases | Temperature range | -20°C to + 65°C (-4°F to 176°F) standard | Certified max. Helium across the seat (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Max. working pressure | • M12 MT manual: 15 bar (215psi) • M12 PP2 pneumatic: 15 bar (215psi) | Flow coefficient | CV = 1,75 | Nominal seat Diameter | 12 mm (0,47") |
| Actuator operating pressure | 5 to 7 bar (75 to 105 psi) | Certified max. Helium inboard leak rate (at max. pressure) | < 10 ⁻⁹ mbar.l/sec | | |
| | | Certified max. Helium outboard leak rate (at max. pressure) | < 10 ⁻⁹ mbar.l/sec | | |

CONSTRUCTION MATERIAL

| | Parts | Valve Grade & Materials | | |
|-------------------------|-------------------|---|---------------------------|--------------------------|
| | | S | V | U |
| Wetted parts | Body | Stainless Steel 316L | | |
| | Surface Finish | < 0,4 µm non EP (15 µ in Ra) | < 0,25 µm EP (10 µ in Ra) | < 0,18 µm EP (7 µ in Ra) |
| | Diaphragm | Phynox | | |
| | Seat Material | PCTFE (Kel-F®) / PVDF or Vespel® (on request) | | |
| Non-wetted parts | Backup diaphragms | Phynox | | |
| | All others | Stainless steel or alloys | | |

MANUAL ACTUATION

| Parts for all valve grades | |
|----------------------------|---------------------------|
| Handle | Aluminium |
| All others | Stainless Steel or Alloys |

PNEUMATIC ACTUATION

| Parts | |
|----------------------|-----------|
| O-ring | NBR |
| Actuator Body | Aluminium |

PRODUCT CONFIGURATOR

| | Valve series | Valve Actuation | Valve Configurations | Body Material (others on request) | Seat Material | End connections (IN/OUT) | Options |
|-----|---|--|---|-----------------------------------|----------------|------------------------------|---------------------------------------|
| M12 | S | MT | 2V1 | I | K | A/B: B½ | FP |
| | UHP - Ra 0.18 µm Ep. (7 µin Ra) | U Multi-Turn Handwheel | 2 ports in line | 316 L | PCTFE (Kel-F®) | Metal face seal ½" - Female | Back Mounting |
| | HP/UHP - Ra 0.25 µm Ep. (10 µin Ra) | V Pneumatically actuated (Normally closed version) | 2 Ports in line, upstream purge port - left side | Hastelloy® (on request) | PI (Vespel®) | Metal face seal ½" - Male | Electric Limit Switch (PP2 actuators) |
| | HP Version - Ra 0.4 µm non EP (15 µin Ra) | S PP2 Normally open version | 2 Ports in line, downstream purge port - left side | | PVDF | BWO ½" - (Butt Orbital Weld) | |
| | | PP2 Normally closed version | 2 Ports in line, 2 purge ports upstream/downstream/left side | | | BWO ¾" (Butt Orbital Weld) | |
| | | | 2 ports in line, full passage, downstream branch ("Tee" Valve) | | | | |
| | | | 2 ports in line, full passage, downstream branch, downstream purge port | | | | |

M20 | DIAPHRAGM VALVES FOR UHP APPLICATIONS

Feature a unique proven design

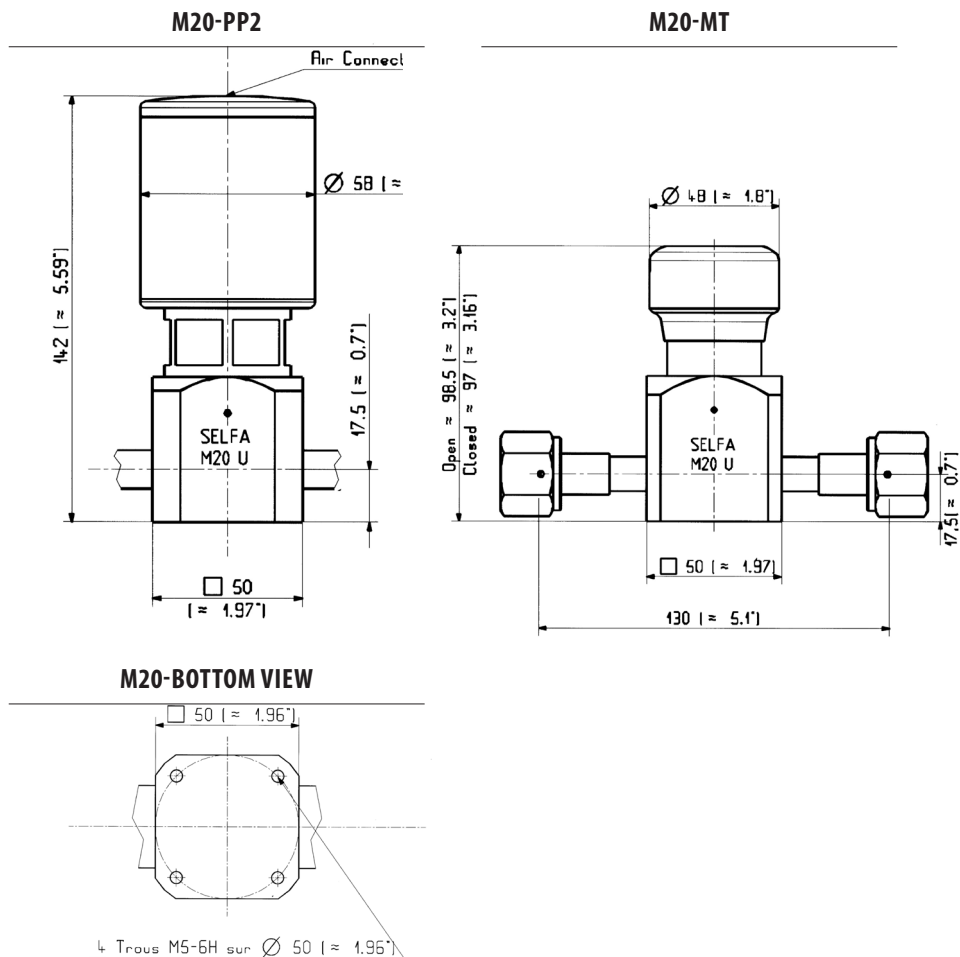


KEY FEATURES

- Tied diaphragm design for positive seat opening and closing
- Individual serial number for full traceability
- Assembling, testing and packaging in cleanroom class 10
- Easy purgeability (optional purge ports, up/down stream)
- Excellent flow coefficient
- Metal to Metal sealing to atmosphere
- 3 ports option



DIMENSIONS



SPECIFICATIONS

| | | | | | |
|----------------------------------|--|--|---|---|---------------------------------|
| Fluid Media | High purity and UHP, corrosive and non-corrosive gases | Temperature range | -20°C to + 65°C (-4°F to 176°F) standard | Certified max. Helium across the seat (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Max. working pressure | • M20 MT manual: 15 bar (215psi) • M20 PP2 pneumatic: 15 bar (215psi) | Flow coefficient | CV = 3,5 | Nominal seat Diameter | 20 mm (0,79") |
| Min. operating pressure | Vacuum (for manual only) | Certified max. Helium inboard leak rate (at max. pressure) | < 10 ⁻⁹ mbar.l/sec | | |
| Actuator opening pressure | 5 to 7 bar (75 to 105 psi) | Certified max. Helium outboard leak rate (at max. pressure) | < 10 ⁻⁹ mbar.l/sec | | |

CONSTRUCTION MATERIAL

| | Parts | Valve Grade & Materials | | |
|-------------------------|-------------------|---|---------------------------|--------------------------|
| | | S | V | U |
| Wetted parts | Body | Stainless Steel 316L | | |
| | Surface Finish | < 0,4 µm non EP (15 µ in Ra) | < 0,25 µm EP (10 µ in Ra) | < 0,18 µm EP (7 µ in Ra) |
| | Diaphragm | Elgiloy® | | |
| | Seat Material | PCTFE (Kel-F®) / PVDF or Vespel® (on request) | | |
| Non-wetted parts | Backup diaphragms | Phynox® | | |
| | All others | Stainless steel or alloys | | |

MANUAL ACTUATION

| Parts for all valve grades | |
|----------------------------|---------------------------|
| Handle | Aluminium |
| All others | Stainless Steel or Alloys |

PNEUMATIC ACTUATION

| Parts | |
|----------------------|-----------|
| O-ring | NBR |
| Actuator Body | Aluminium |

PRODUCT CONFIGURATOR

| | Valve series | Valve Actuation | Valve Configurations | Body Material (others on request) | Seat Material | End connections (IN/OUT) | Options |
|-----|---|--|--|-----------------------------------|------------------|----------------------------------|--|
| M20 | S | MT | 2V1 | I | K | A/B: B¾ | FT |
| | UHP - Ra 0.18 µm Ep. (7 µin Ra) | U Multi-Turn Handwheel | 2V1 2 ports in line | I 316L | K PCTFE (Kel-F®) | V¾-F Metal face seal ¾" - Female | FP Back Mounting |
| | HP/UHP - Ra 0.25 µm Ep. (10 µin Ra) | V Pneumatically actuated (Normally closed version) | 2VPEG 2 Ports in line, upstream purge port - left side | H Hastelloy® (on request) | H PI (Vespel®) | V¾-M Metal face seal ¾" - Male | CI Electric Limit Switch (PP2 actuators) |
| | HP Version - Ra 0.4 µm non EP (15 µin Ra) | S PP2 Normally open version | 2VPSG 2 Ports in line, downstream purge port - left side | | PVDF | P BWO ¾" (Butt Orbital Weld) | B¾ |
| | | PP2 Normally closed version | 2V1P2 2 Ports in line, 2 purge ports upstream/downstream/left side For "Tee" configurations please refer to M12 | | | BWO 1" (Butt Orbital Weld) | B 1 |
| | | | | | | Metal face seal 1" - Male | V1-M |

SIR 100 | DIAPHRAGM PRESSURE REGULATOR FOR UHP APPLICATIONS

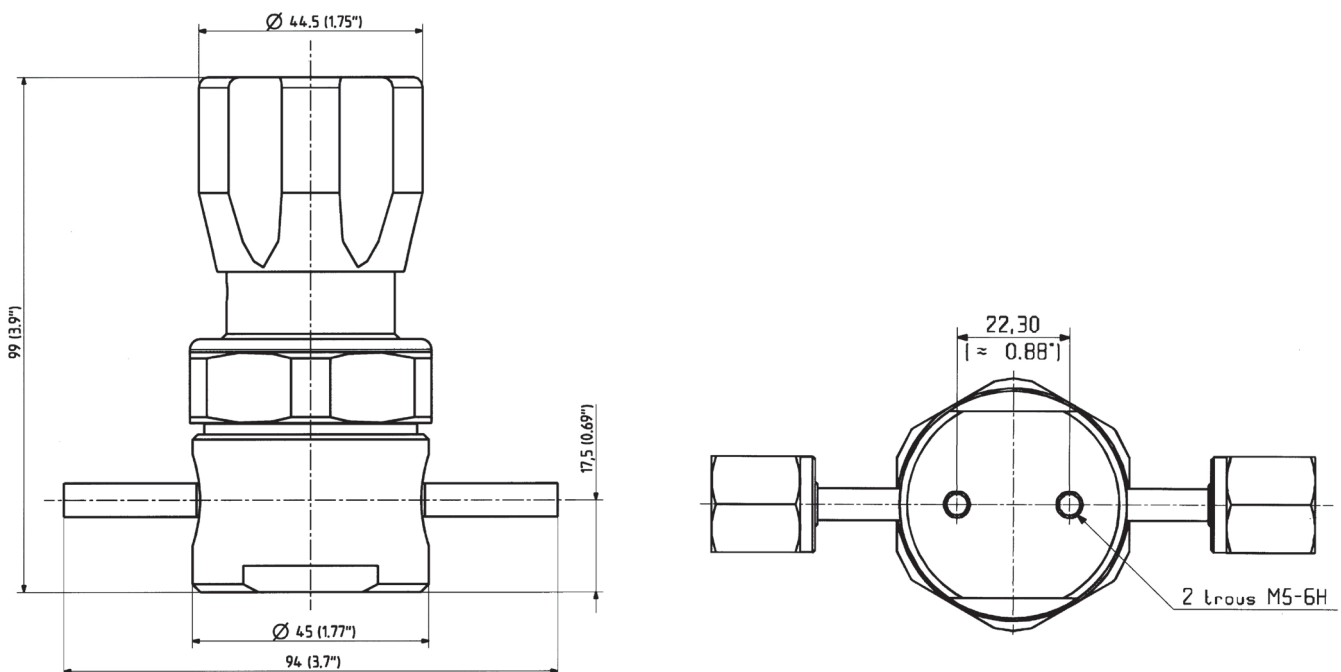
The SIR 100 Regulator was created in response to the industry's needs for a low pressure non tied diaphragm regulator for specialty source gas service, i.e. gas cabinets. The design and material of construction, plus some unique features make it an ideal choice for gas source applications with the reactive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

- KEY FEATURES

- Individual Serial number, for full traceability
- Ergonomic Design
- Spherical ball for ultra smooth control
- Metal to metal seal to atmosphere
- Minimal wetted surfaces for optimal purging
- Gas specific solutions (Body and seat materials)
- Assembling, testing & Packaging in cleanroom Cl. 10
- Controlled (PC) electropolishing for better corrosion resistance
- 2,3,4,5, or 6 ports options available
- Diaphragm counter balance springs
- Excellent response at low pressures (droop, hysteresis, creep)



DIMENSIONS



SPECIFICATIONS

| | | | | | |
|------------------------|--|--|----------------------------------|---|----------------------------------|
| Fluid Media | Standard, HP, UHP, corrosive and non-corrosive gases | Temperature range | -20°C to + 65°C (-4°F to 150°F) | Certified max. Helium outboard leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l./sec |
| Inlet pressure | 50 bar (725 PSI) | Flow coefficient | CV = 0.2 | Certified max. Helium across the seat leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l./sec |
| Outlet pressure | 2 - 4 - 7 bar (30 - 60 - 100 PSI) | Certified max. Helium inboard leak rate | < 1.10 ⁻⁹ mbar.l./sec | Number of ports | 2, 3, 4, 5 or 6 |

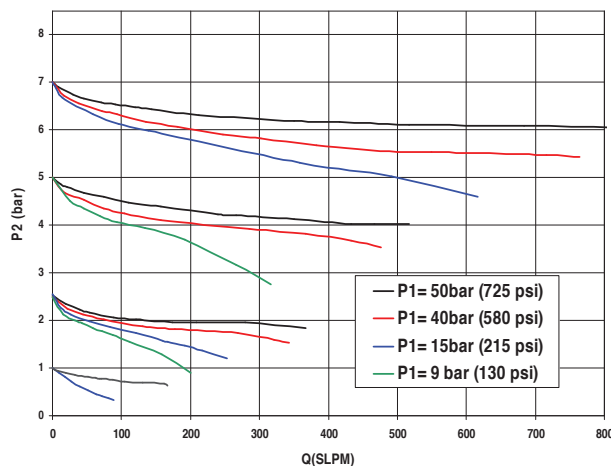
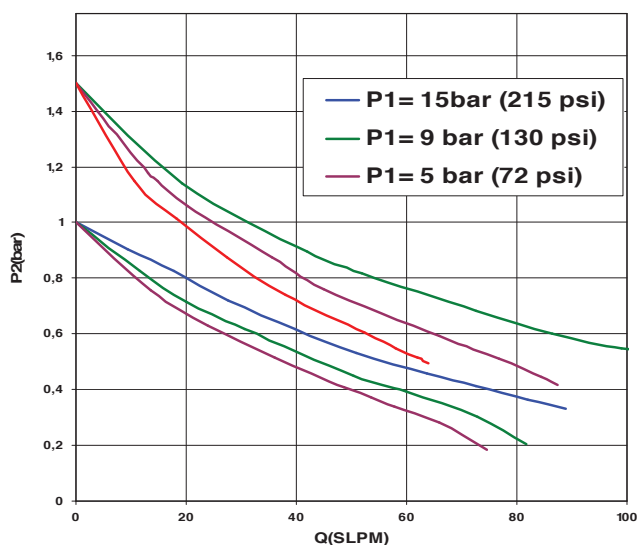
CONSTRUCTION MATERIAL

| | Parts | Material |
|-------------------------|-----------|--------------------------------------|
| Wetted parts | Body | AISI 316L, VAR |
| | Diaphragm | Hastelloy® |
| | Seat | PCTFE (Kel-F®) / PI (VespeI®) / PVDF |
| | Poppet | AISI 316L, VAR |
| Non-wetted parts | Bonnet | Nickel Plated Brass |
| | Handle | Extruded Plastic |
| | Others | Stainless Steel or alloys |

SURFACE FINISH

| U | V | S |
|---------------------------|----------------------------|----------------------------|
| < Ra 0.18µm Ep. (7µin Ra) | < Ra 0,25µm Ep. (10µin Ra) | < Ra 0,4µm nonEP(15µin Ra) |

FLOW CURVES



PRODUCT CONFIGURATOR

| SIR | | 100 | | Series & Surface Finish | Port Configurations | Body material (others on request) | Seat Material | Outlet regulated Pressure | End Connection | |
|-----|--|-----|--|-----------------------------|---------------------|-----------------------------------|------------------|---------------------------|----------------------------------|-------|
| | | | | U | 2V1 | A | K | 7b | A/B: V¼M | |
| | | | | Ra 0.18µm EP (7µin Ra) | 2 ports in line 2V1 | AISI 316L, VAR | A PCTFE (Kel-F®) | 2 bar - 30 psig | 2b Metal face seal ¼" - Female | V¼-F |
| | | | | Ra 0.25µm EP (10µin Ra) | | AISI 316L | I PI (VespeI®) | 4 bar - 60 psig | 4b Metal face seal ¼" - Male | V¼-M |
| | | | | Ra 0.4µm non Ep. (15µin Ra) | | Hastelloy® | H PVDF | 7 bar - 100 psig | 7b Metal face seal ¼" - Internal | V¼-FI |
| | | | | | | | | | BWO ¼" - Standard (Orbital Weld) | B¼ |
| | | | | | | | | | BWO 6 mm (Orbital Weld) | B6 |
| | | | | | | | | | ¼ NPT - Inlet threads | NPTFI |

SIR 200 | DIAPHRAGM PRESSURE REGULATOR FOR UHP APPLICATIONS

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.

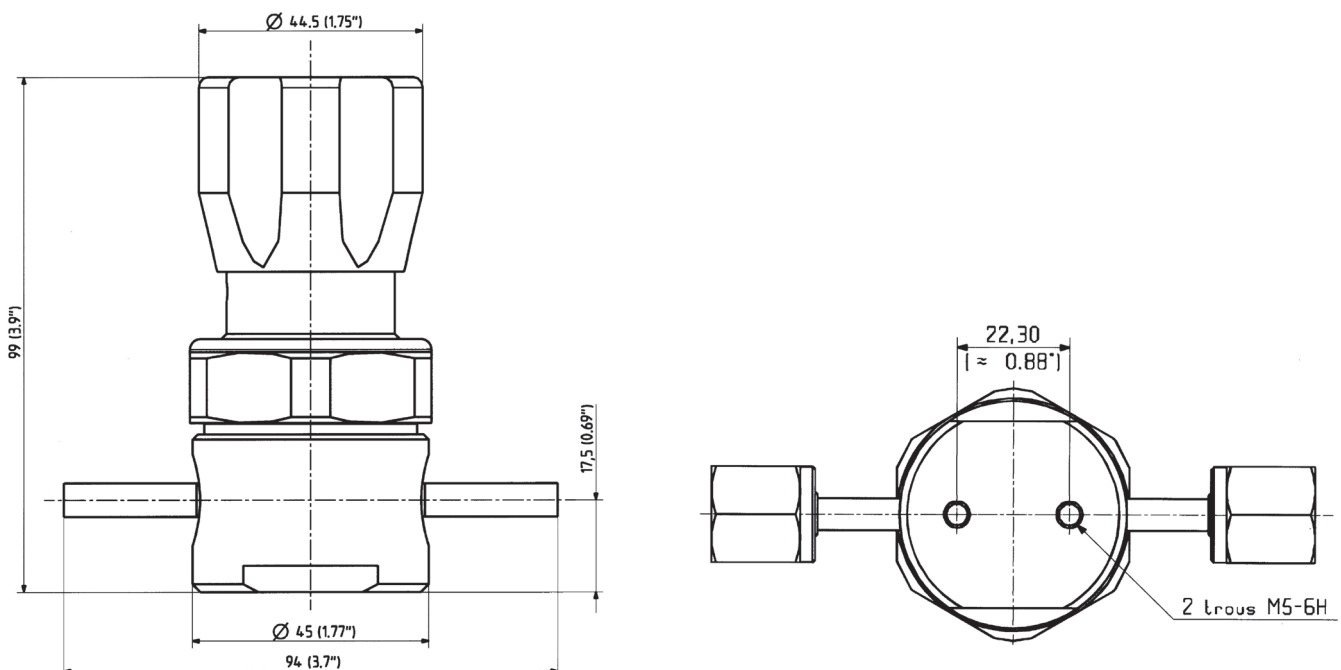
KEY FEATURES

- Individual Serial number, for full traceability
- Ergonomic Design
- Spherical ball for ultra smooth control
- Metal to metal seal to atmosphere
- Minimal wetted surfaces for optimal purging
- Gas specific solutions (Body and seat materials)
- Assembling, testing & Packaging in cleanroom Cl. 10
- Controlled (PC) electropolishing for better corrosion resistance
- 2,3,4,5, or 6 ports options available
- Diaphragm counter balance springs
- Excellent response at low pressures (droop, hysteresis, creep)



*RIGHTS OF CHANGE RESERVED FOR PICTURE

DIMENSIONS



SPECIFICATIONS

| | | | | | |
|------------------------|--|--|---------------------------------|---|---------------------------------|
| Fluid Media | Standard, HP, UHP, corrosive and non-corrosive gases | Temperature range | -20°C to + 65°C (-4°F to 150°F) | Certified max. Helium outboard leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Inlet pressure | 200 bar (2900 PSI) | Flow coefficient | CV = 0.2 | Certified max. Helium across the seat leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Outlet pressure | 2 - 4 - 7 bar (30 - 60 - 100 PSI) | Certified max. Helium inboard leak rate | < 1.10 ⁻⁹ mbar.l/sec | Number of ports | 2, 3, 4, 5 or 6 |

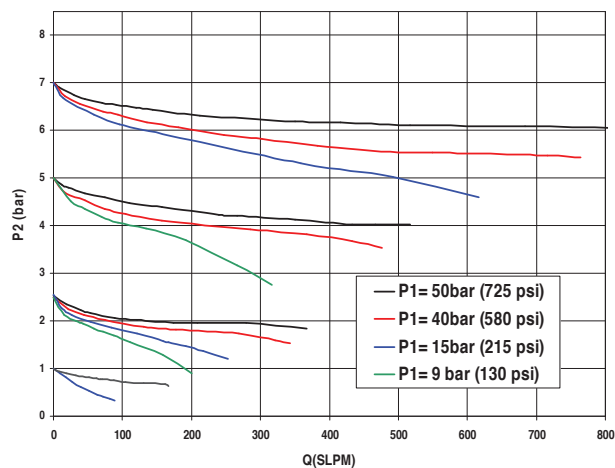
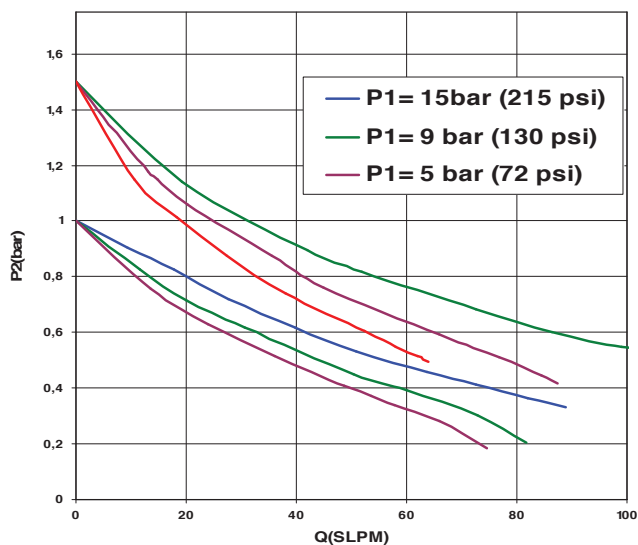
CONSTRUCTION MATERIAL

| | Parts | Material |
|-------------------------|-----------|--------------------------------------|
| Wetted parts | Body | AISI 316L, VAR |
| | Diaphragm | Hastelloy® |
| | Seat | PCTFE (Kel-F®) / PI (Vespel®) / PVDF |
| | Poppet | AISI 316L, VAR |
| Non-wetted parts | Bonnet | Nickel Plated Brass |
| | Handle | Extruded Plastic |
| | Others | Stainless Steel or alloys |

SURFACE FINISH

| U | V | S |
|---------------------------|----------------------------|----------------------------|
| < Ra 0.18µm Ep. (7µin Ra) | < Ra 0,25µm Ep. (10µin Ra) | < Ra 0,4µm nonEP(15µin Ra) |

FLOW CURVES



PRODUCT CONFIGURATOR

| | | Series & Surface Finish | Port Configurations | Body material (others on request) | Seat Material | Outlet regulated Pressure | End Connection |
|-----|-----|-----------------------------|---------------------|-----------------------------------|----------------|---|----------------------------------|
| SIR | 200 | S | 2V1 | A | K | 7b | A/B: V¼M |
| | | Ra 0.18µm Ep. (7µin Ra) | U | AISI 316L, VAR | PCTFE (Kel-F®) | 2 bar - 30 psig | 2b Metal face seal ¼" - Female |
| | | Ra 0.25µm Ep. (10µin Ra) | V | AISI 316L | PI (Vespel®) | 4 bar - 60 psig | 4b Metal face seal ¼" - Male |
| | | Ra 0.4µm non Ep. (15µin Ra) | S | Hastelloy® | PVDF | 7 bar - 100 psig Inlet: >240 bar >3500 psig | 7b Metal face seal ¼" - Internal |
| | | | | | | | BWO ¼" - Standard (Orbital Weld) |
| | | | | | | | BWO 6 mm (Orbital Weld) |
| | | | | | | | ¼" NPT - Inlet threads |
| | | | | | | | V¼-F |
| | | | | | | | V¼M |
| | | | | | | | V¼-FI |
| | | | | | | | B¼ |
| | | | | | | | B6 |
| | | | | | | | NPTFI |

SI 220 | DIAPHRAGM PRESSURE REGULATOR FOR HP & UHP APPLICATIONS

The SI 220 Regulator was created in response to the industry's need for a Highflow, 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.

APPLICATIONS

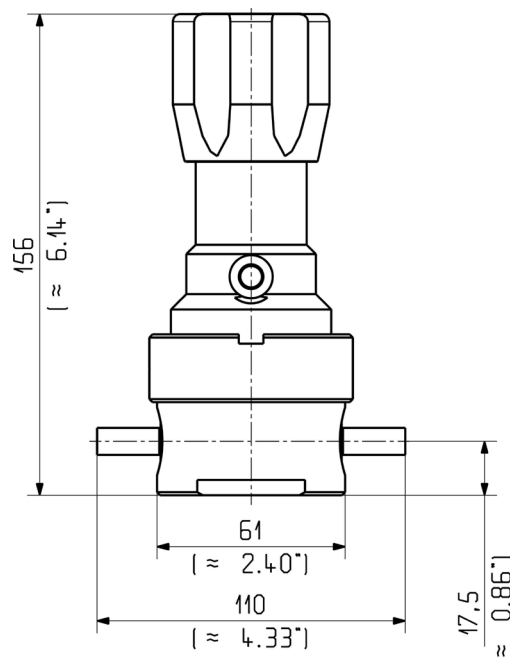
- Tied diaphragm design
- Springless design
- Unique features include a special leak test port that enables the diaphragm seal to be outboard leak tested 10^{-9} mbar.l/sec range at high pressure.
- Precise control of the gas discharge with minimum deviation caused by the supply pressure effect.
- Counter balance springs outside the gas stream to ensure the unit functions correctly with downstream vacuum and upstream high pressure
- A unique spherical ball pressure pad to give ultra smooth delivery pressure adjustment
- Choice of delivery pressure: 3, 8, 10, 15, 25 or 50 bar / 45, 116, 145, 217, 365 or 725 psi

KEY FEATURES

- Individual Serial number, for full traceability
- Ergonomic Design
- 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 (Body and Seat Materials)
- Assembling, testing & Packaging in cleanroom Cl. 10
- Controlled (PC) electropolishing for better corrosion resistance
- No spring in the wetted area for zero particle emission
- 2,3,4 or 6 ports options available
- Diaphragm counter balance springs
- Excellent response at high and low pressures (droop, hysteresis, creep)



DIMENSIONS



SPECIFICATIONS

| | | | | | |
|------------------------|---|--|---------------------------------|---|---------------------------------|
| Fluid Media | Standard, High and Ultra High Purity, corrosive and non-corrosive gases | Temperature range | -20°C to + 60°C (-2F to 140F) | Certified max. Helium outboard leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Inlet pressure | 240 bar (3500 PSI) | Nomnal flow | 170 slpm (N ₂) | Certified max. Helium across the seat leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Outlet pressure | 3 - 8 - 10 - 15 - 25 - 50 bar (45-116-145-217-365-725 PSI) | Flow Coefficient (Cv) | CV = 0,2 | Number of ports | 2, 3, 4, 5 or 6 |
| | | Certified max. Helium inboard leak rate | < 1.10 ⁻⁹ mbar.l/sec | | |

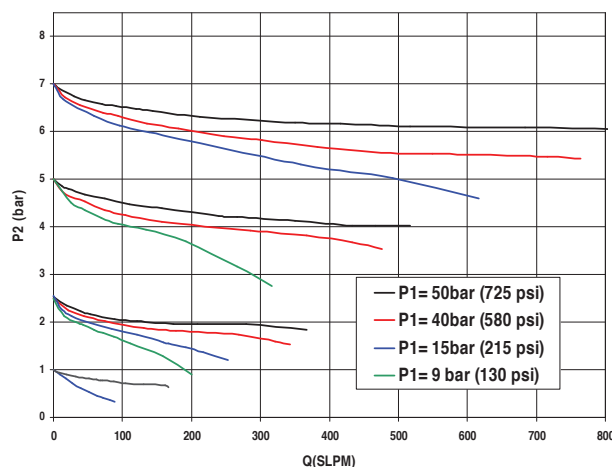
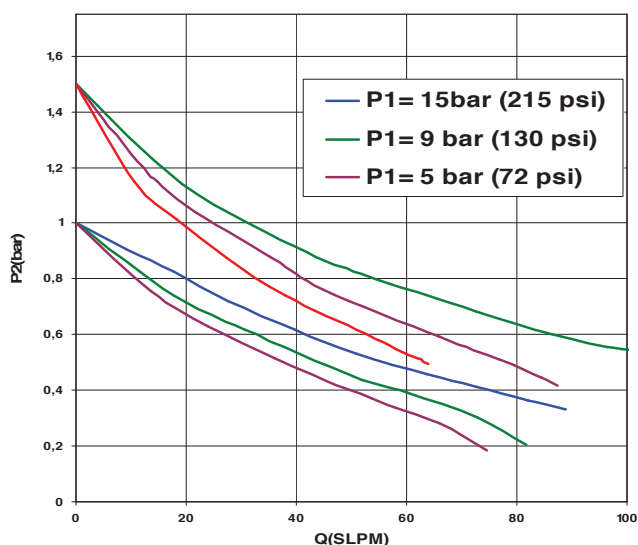
CONSTRUCTION MATERIAL

| | Parts | Material |
|-------------------------|-----------|----------------------------|
| Wetted parts | Body | AISI 316L, VAR, Hastelloy® |
| | Diaphragm | Hastelloy® |
| | Seat | PCTFE (Kel-F®) |
| | Poppet | AISI 316L, VAR, Hastelloy® |
| Non-wetted parts | Bonnet | Nickel Plated Brass |
| | Handle | Extruded Plastic |
| | Others | Stainless Steel or others |

SURFACE FINISH

| U | V | S |
|---------------------------|----------------------------|----------------------------|
| < Ra 0,18µm Ep. (7µin Ra) | < Ra 0,25µm Ep. (10µin Ra) | < Ra 0,4µm nonEP(15µin Ra) |

FLOW CURVES



| SI | 220 | Series & Surface Finish | | Port Configurations | | Body material (other son request) | | Seat Material | | Outlet regulated Pressure | | End Connection | |
|----|-----|--------------------------|---|---------------------|-----|-----------------------------------|---|----------------|--|---------------------------|--|---------------------|--|
| | | | S | | 2V1 | A | A | K | 10b | A/B: V ^{3/8} F | | | |
| | | Ra 0,18µm Ep. (7µin Ra) | U | 2 ports in line | 2V1 | AISI 316L, VAR | A | PCTFE (Kel-F®) | 3 bar 45 psi | 3b | Metal face seal 1/4" - Female | V ^{1/4} -F | |
| | | Ra 0,25µm Ep. (10µin Ra) | V | | 3V1 | AISI 316L | I | | 8 bar 116 psi | 8b | Metal face seal 3/8" - Female | V ^{3/8} -F | |
| | | Ra 0,4µm nonEP(15µin Ra) | S | | 3V4 | Hastelloy® | H | | 10 bar 145 psi | 10b | Metal face seal 1/4" - Male | V ^{1/4} -M | |
| | | | | | | | | | 15 bar 217 psi | 15b | Metal face seal 3/8" - Male | V ^{3/8} -M | |
| | | | | | | | | | 25 bar 365 psi | 25b | Metal face seal 1/4" - Internal Female | V-FI | |
| | | | | | | | | | 50 bar 725 psi Inlet: 240 bar 3500psi | 50b | | | |

SI 240 | DIAPHRAGM PRESSURE REGULATOR FOR HP & UHP APPLICATIONS

The SI 240 Regulator was created in response to the industry's need for a Highflow, 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.

APPLICATIONS

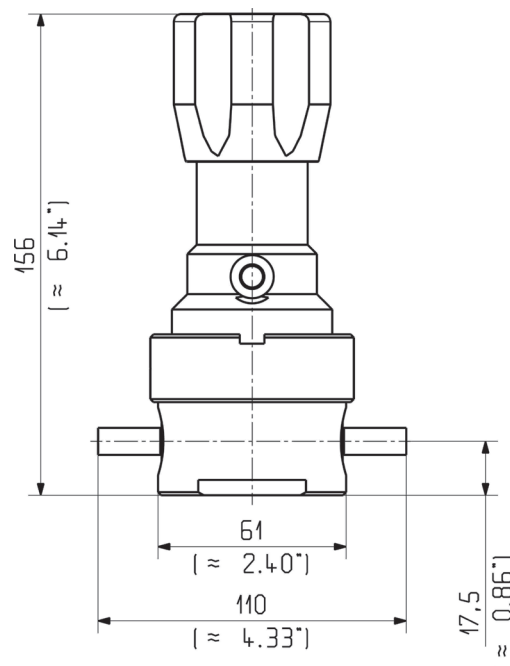
- Tied diaphragm design
- Springless design
- Unique features include a special leak test port that enables the diaphragm seal to be outboard leak tested 10^{-9} mbar.l./sec range at high pressure.
- Precise control of the gas discharge with minimum deviation caused by the supply pressure effect.
- Counter balance springs outside the gas stream to ensure the unit functions correctly with downstream vacuum and upstream high pressure
- A unique spherical ball pressure pad to give ultra smooth delivery pressure adjustment
- Choice of delivery pressure: 3, 8, 10, 15, 25 or 50 bar / 45, 116, 145, 217, 365 or 725 psi

KEY FEATURES

- Individual Serial number, for full traceability
- Ergonomic Design
- 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 (Body and Seat Materials)
- Assembling, testing & Packaging in cleanroom Cl. 10
- Controlled (PC) electropolishing for better corrosion resistance
- No spring in the wetted area for zero particle emission
- 2,3,4 or 6 ports options available
- Diaphragm counter balance springs
- Excellent response at high and low pressures (droop, hysteresis, creep)



DIMENSIONS



SPECIFICATIONS

| | | | | | |
|------------------------|---|--|---------------------------------|---|---------------------------------|
| Fluid Media | Standard, High and Ultra High Purity, corrosive and non-corrosive gases | Temperature range | -20°C to + 60°C (-2F to 140F) | Certified max. Helium outboard leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Inlet pressure | 240 bar (3500 PSI) | Nomnal flow | 150 slpm (N ₂) | Certified max. Helium across the seat leak rate (at max. pressure) | < 1.10 ⁻⁹ mbar.l/sec |
| Outlet pressure | 2 - 4 - 7 bar (29 - 58 - 101 PSI) | Flow Coefficient (Cv) | CV = 0,09 | Number of ports | 2, 3, 4, 5 or 6 |
| | | Certified max. Helium inboard leak rate | < 1.10 ⁻⁹ mbar.l/sec | | |

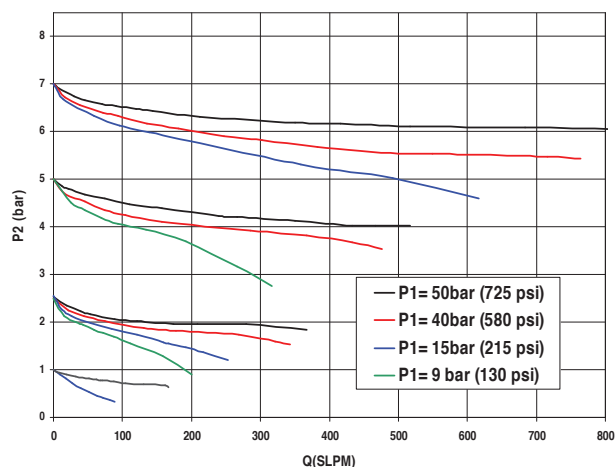
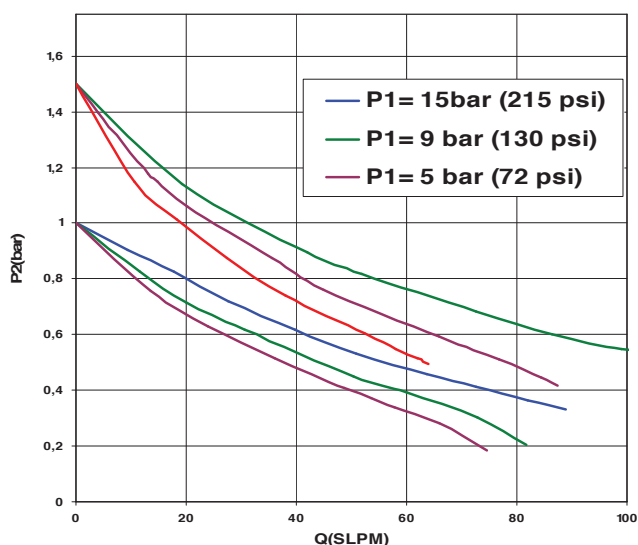
CONSTRUCTION MATERIAL

| | Parts | Material |
|-------------------------|-----------|----------------------------|
| Wetted parts | Body | AISI 316L, VAR, Hastelloy® |
| | Diaphragm | Hastelloy® |
| | Seat | PCTFE (Kel-F®) |
| | Poppet | AISI 316L, VAR, Hastelloy® |
| Non-wetted parts | Bonnet | Nickel Plated Brass |
| | Handle | Extruded Plastic |
| | Others | Stainless Steel or others |

SURFACE FINISH

| U | V | S |
|---------------------------|----------------------------|----------------------------|
| < Ra 0,18µm Ep. (7µin Ra) | < Ra 0,25µm Ep. (10µin Ra) | < Ra 0,4µm nonEP(15µin Ra) |

FLOW CURVES



PRODUCT CONFIGURATOR

| SI | 240 | Series & Surface Finish | Port Configurations | Body material (other son request) | Seat Material | Outlet regulated Pressure | End Connection |
|----|-----|--------------------------|---------------------|-----------------------------------|------------------|---------------------------|--|
| | | S | 2V1 | A | K | 4b | A/B: V ^{3/8} F |
| | | Ra 0,18µm Ep. (7µin Ra) | U 2 ports in line | 2V1 AISI 316L, VAR | A PCTFE (Kel-F®) | 1 bar 29 psi | 2b Metal face seal 1/4" - Female |
| | | Ra 0,25µm Ep. (10µin Ra) | V | 3V1 AISI 316L | I | 4 bar 58 psi | 4b Metal face seal 3/8" - Female |
| | | Ra 0,4µm nonEP(15µin Ra) | S | 3V4 Hastelloy® | H | 7 bar 101 psi | 7b Metal face seal 1/4" - Male |
| | | | | | | | Metal face seal 3/8" - Male |
| | | | | | | | Metal face seal 1/4" - Internal Female |

VALVES | OTHERS PRODUCTS ON REQUEST



M4.1



M4.1 VB



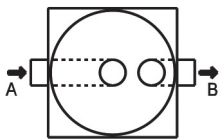
M8.1 VB



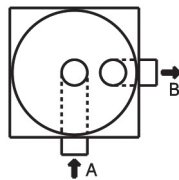
SUPPRA VALVES / HP9000 / K900

VALVES CONFIGURATIONS ON REQUEST

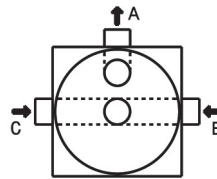
2V1



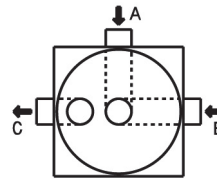
2V2



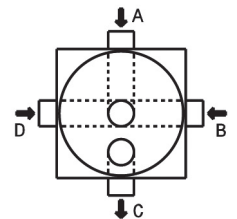
3V4



3V5



4V10



*Other configuration on request

REGULATORS | OTHERS PRODUCTS ON REQUEST



SI 260

A WORLD OF GAS CONTROL SOLUTIONS



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