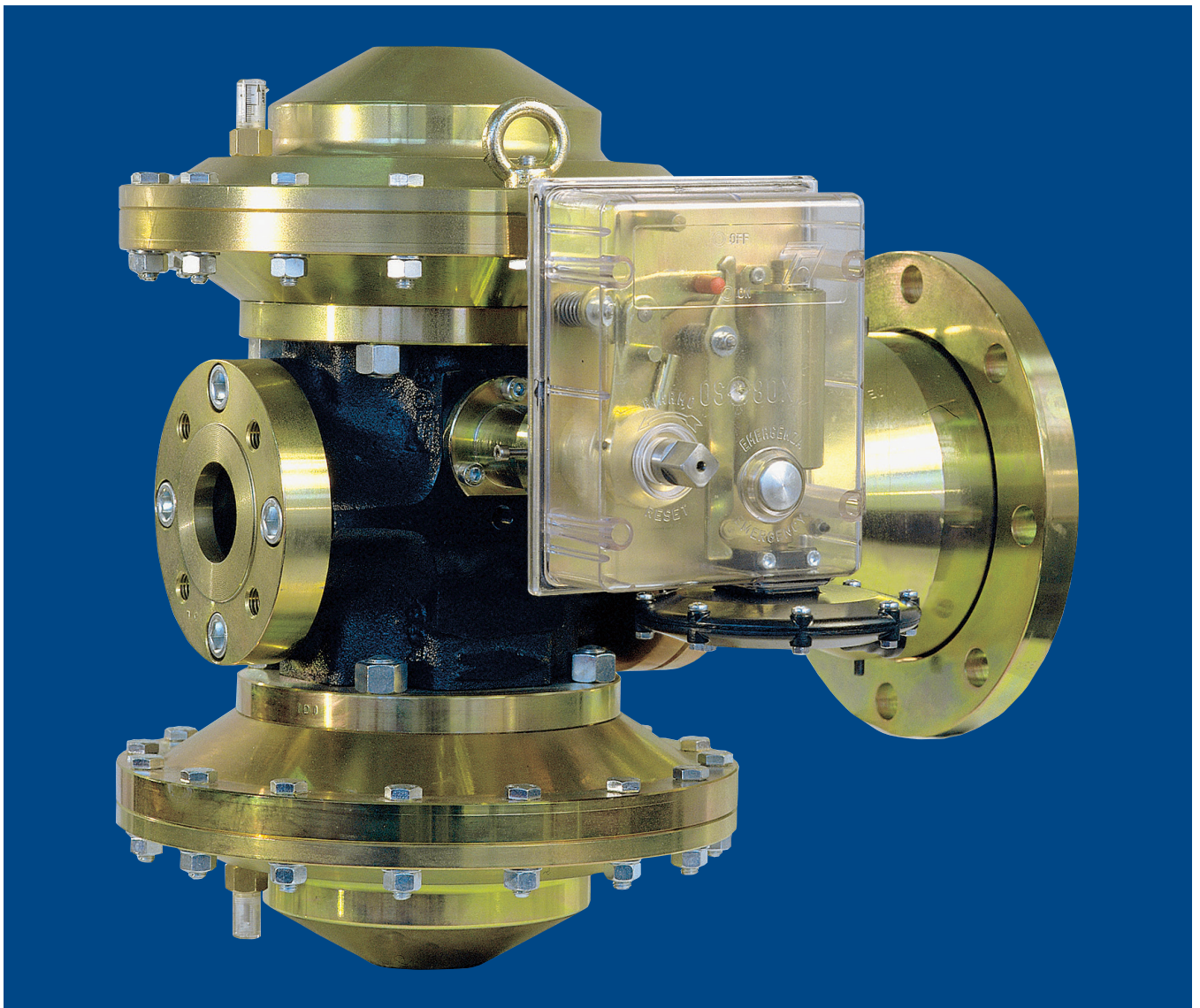


PRESSURE REGULATORS

Type Cronos



Cronos Regulators

Pressure Regulators

This series of “Top-Entry” appliances was designed to meet a wide range of applications, offering easy maintenance combined with compact size.

To achieve this, we introduced a new modularity concept which, combined with our experience and TARTARINI technologies developed in axial flow regulators, has enabled us to build a wide range of versions to the same design philosophy.

These are, in brief, the features of the project:

- **MODULARITY**

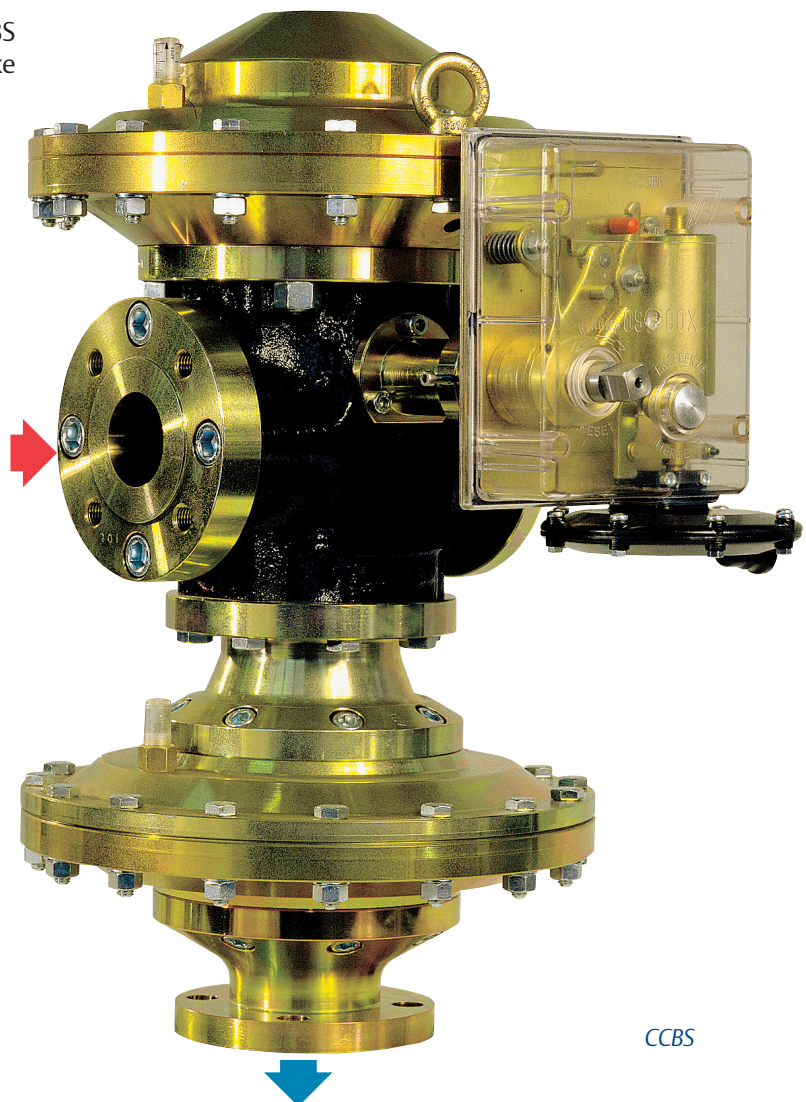
Modularity is ensured by a central cross-shaped body, which is the system’s key component, enabling either horizontal or 90° gas flow.

The other components are assembled to it (flange, regulator head, monitor head, shut-off, and silencers).

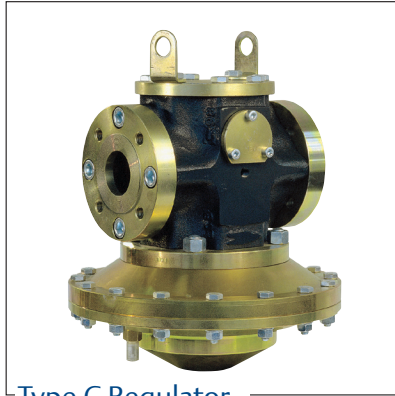
- **COUNTERBALANCED SHUTTER**

Use of a special counter-balanced shutter of very simple design, makes CRONOS highly reliable, easy to maintain, in the more complex configurations too (Shut-off, Monitor, Regulator, Silencer).

Versatile design can clearly be seen in the CCBS right-angled model, which Tartarini uses to make highly compact reduction units.



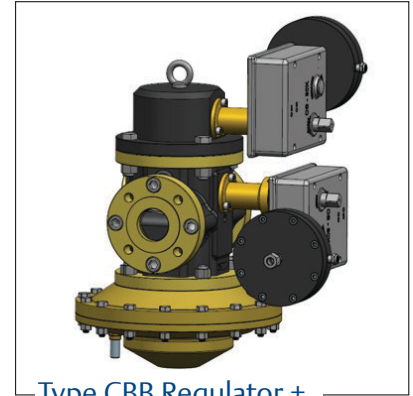
Configurations



Type C Regulator



Type CB Regulator + Shut-off



Type CBB Regulator + Shut-off + Shut-off



Type CC Regulator + Monitor



Type CCB Regulator + Monitor + Shut-off

| Configurations | ID-ABBREVIATIONS | | | | | |
|---------------------------------|------------------|----------|---------|----------|----------|----------|
| | Horizontal flow | | | 90° flow | | |
| | Standard | Silenced | | Standard | Silenced | |
| | | SR | SRS | | SR | SRS |
| Regulator | C | C-SR | C-SRS | - | - | - |
| Regulator + Shut-off | CB | CB-SR | CB-SRS | CBS | CBS-SR | CBS-SRS |
| Regulator + Shut-off + Shut-off | CBB | CBB-SR | CBB-SRS | - | - | - |
| Regulator + Monitor | CC | CC-SR | CC-SRS | CCS | CCS-SR | CCS-SRS |
| Regulator + Monitor + Shut-off | CCB | CCB-SR | CCB-SRS | CCBS | CCBS-SR | CCBS-SRS |

N.B.: SRS silenced solutions have a widened output flange.
Also available: version with widened output, but without a built-in silencer.

Examples of Descriptions:

DN 25 ANSI 150 horizontal flow regulator with SRS silencer:

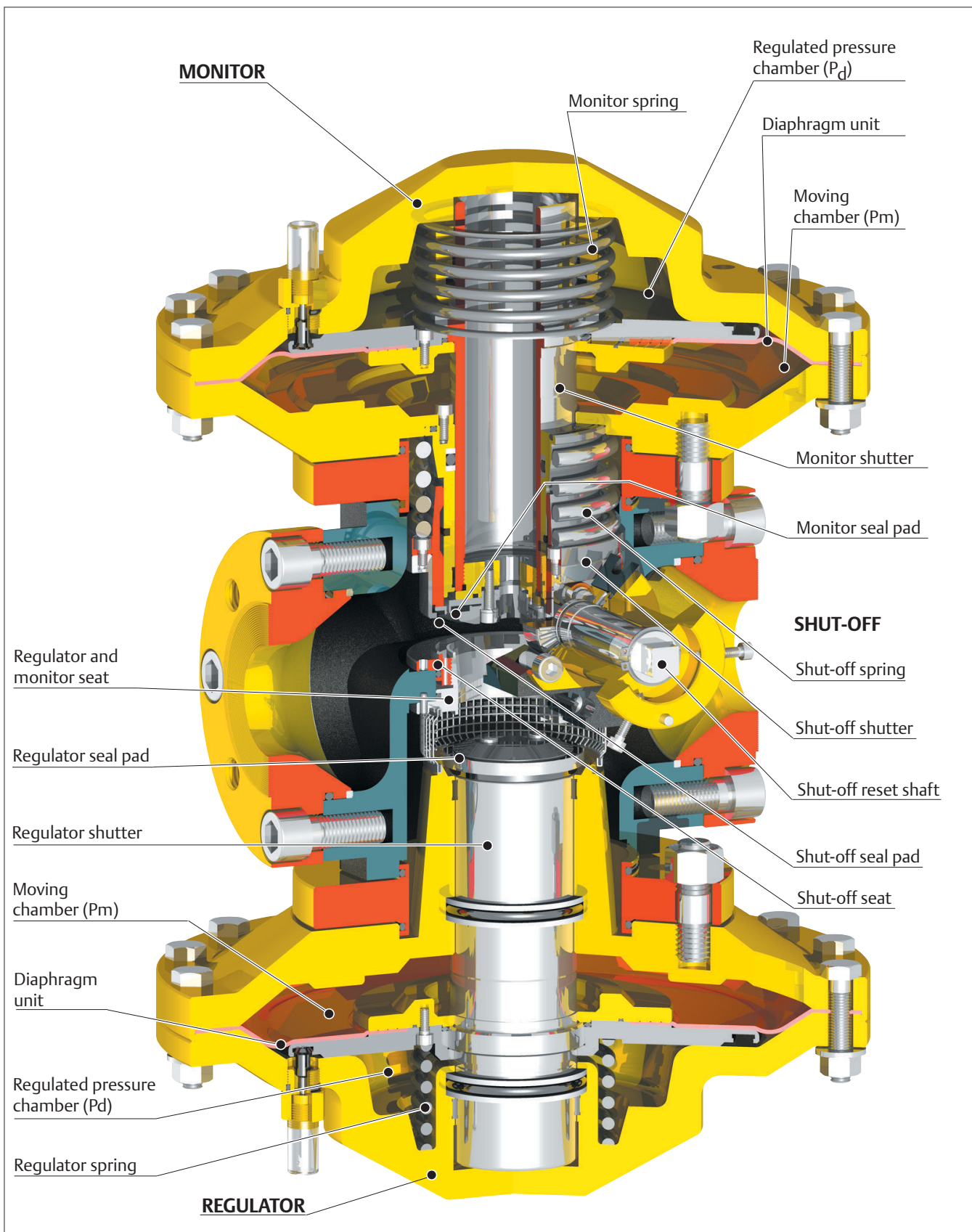
C/025x100 ANSI 150 SRS

DN 25 ANSI 150 horizontal flow regulator with widened output:

C/025x100 ANSI 150

Cronos Regulators

Operation



Operation

HOW THE REGULATOR WORKS

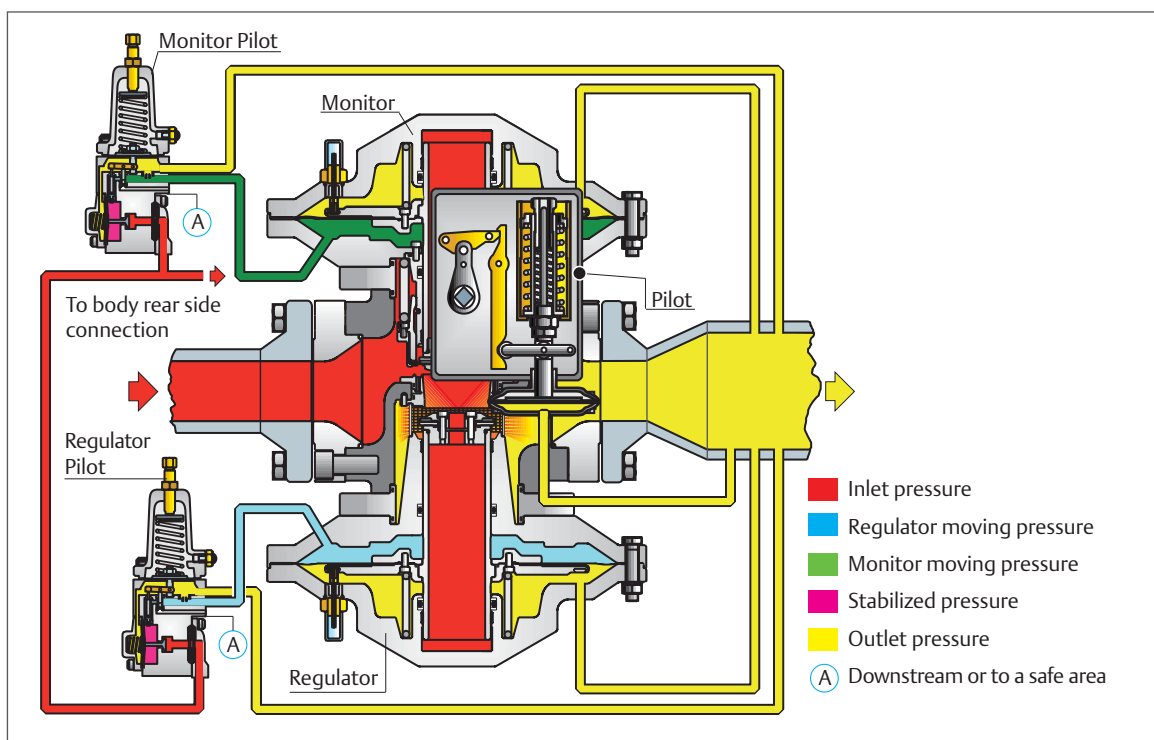
The Diaphragm Unit (permanently connected to the shutter) divides the regulator control head into two chambers.

One of the chambers is connected to regulated pressure (P_d), and the other to moving pressure (P_m) produced by the pilot according to pressure downstream.

Due to lack of pressure, the regulator spring acts on the diaphragm unit and closes the shutter.

The shutter moves to its open position when the force produced by moving pressure acting on the diaphragm unit becomes greater than the force produced by downstream regulated pressure (P_d) added to the load of the regulator spring. The shutter stays idle when the two forces are equal under these conditions, downstream pressure is equal to the system's set value.

Any change in requested flow-rate produces a variation in downstream regulated pressure and the regulator controlled by the pilot opens or closes to deliver the requested flow-rate while keeping downstream pressure uniform.



HOW THE MONITOR WORKS

The Monitor or emergency regulator is used as a safety device in gas pressure reduction systems. The purpose of this device is to protect the system against possible overpressure, while keeping the reduction line in service.

The monitor controls downstream pressure at the same point as the main regulator and is set a little higher than the latter.

Under normal duty, the monitor is fully open as it detects a pressure value lower than its set value. If, due to any regulator fault, downstream pressure increases, when it exceeds the tolerated level, the monitor comes into operation and adjusts pressure to its own set value.

HOW THE SHUT-OFF DEVICE WORKS

The shut-off device has a shutter and its own seat, and is provided with functions independent of the regulator/monitor. The shutter can be opened by hand only, by rotating the shut-off reset shaft anti-clockwise. To keep the shutter open, actuator-pilot series OS/80X or series OS/80X-PN is used both are designed to operate on maximum and minimum pressure, on maximum only, on minimum only.

When the system's downstream pressure is at normal operating value, the actuator-pilot remains set and prevents the shut-off reset shaft from turning by keeping the shut-off shutter open.

When downstream pressure varies beyond its set limits, the actuator-pilot releases the reset shaft and the shutter is closed by the thrust of the spring.

Cronos Regulators

Features

Applications CRONOS Series regulators are used in reduction, distribution and conveying stations of suitably filtered natural gas.

This product has been designed to be used with fuel gases of 1st and 2nd family according to EN 437, and with other non aggressive and non fuel gases. For any other gases, other than natural gas, please contact your local sales agent.

Technical Features

Flange rating PN 16 - ANSI 150

| | | |
|----------------------------------|------------------|------------------|
| Allowable pressure | PS | : up to 20 bar |
| Inlet pressure range | b_{pu} | : 0.2 to 20 bar |
| Set range | W_d | : 0.01 to 16 bar |
| Min.operating differential pres. | Δp_{min} | : 0.2 bar |

Flange rating PN 25/40 - ANSI 300/600

| | | |
|----------------------------------|------------------|-----------------|
| Allowable pressure | PS | : up to 100 bar |
| Inlet pressure range | b_{pu} | : 1 to 100 bar |
| Set range | W_d | : 0.5 to 80 bar |
| Min.operating differential pres. | Δp_{min} | : 0.5 bar |

Functional Features

| | | |
|--------------------------------|----|------------------|
| Accuracy class | AC | : up to \pm 1% |
| Lock-up pressure class | SG | : up to + 5% |
| Class of lock-up pressure zone | SZ | : up to 5% |

Shut-off device

| | | |
|----------------|-------|------------------|
| Accuracy class | AG | : up to \pm 1% |
| Response time | t_a | : \leq 1 s |

Flanged connections

Same Inlet and outlet

| | | |
|-------------------------|---|-----------------|
| Types C, CB, CC and CCB | : | DN 25 - 50 - 80 |
| Type CBB | : | DN 50 |

Different Inlet and outlet

| | | |
|-------------------------|---|-----------------------------------|
| Types C, CB, CC and CCB | : | DN 25 x 100 - 50 x 150 - 80 x 250 |
| Type CBB | : | DN 50 x 150 |

Temperature

Standard version

Working: -10 °C +60 °C

Low temperature version

Working: -20 °C +60 °C

Materials

| | | |
|--------------------|---|---|
| Body | : | Steel |
| Flanges and covers | : | Steel |
| Regulator shutter | : | Steel |
| Shut-off shutter | : | Steel |
| Seat | : | Stainless steel |
| Diaphragms | : | Fabric Nitrile (NBR)+PVC/Nitrile (NBR) rubber |
| Pads | : | Nitrile (NBR) rubber |

Calculation Procedures

Symbols

- Q = Natural gas flow rate in Stm³/h
- P1 = Absolute inlet pressure in bar
- P2 = Absolute outlet pressure in bar
- C_g = Flow rate coefficient
- C1 = Body shape factor
- d = Relative density of the gas

Flow Coefficients

Horizontal Flow

| DN | Standard Model | | | | Model with SR | | | | Model with SRS | | | | Model with Widened Outlet | | | | |
|----|----------------|------|------|------------------------|---------------|------|------|------|----------------|------|------|------------------------|---------------------------|------|------|------------------------|------|
| | C | CB | CC | CCB/CBB ⁽¹⁾ | C | CB | CC | CCB | C | CB | CC | CCB/CBB ⁽¹⁾ | C | CB | CC | CCB/CBB ⁽¹⁾ | |
| 25 | C _g | 550 | 510 | 510 | 500 | 540 | 500 | 500 | 490 | 500 | 460 | 460 | 450 | 580 | 550 | 550 | 540 |
| | C1 | 30 | 30.5 | 30.5 | 31 | 30 | 30.5 | 30.5 | 31 | 33 | 33.5 | 33.5 | 34 | 30 | 31 | 31 | 31 |
| 50 | C _g | 2250 | 2080 | 2080 | 2050 | 2200 | 2030 | 2030 | 2000 | 1900 | 1780 | 1780 | 1750 | 2300 | 2100 | 2100 | 2050 |
| | C1 | 29 | 30 | 30 | 30.5 | 29 | 30 | 30 | 31 | 32 | 33 | 33 | 33.5 | 29 | 30 | 30 | 30.5 |
| 80 | C _g | 5100 | 4800 | 4800 | 4700 | 5000 | 4700 | 4700 | 4600 | 4200 | 4000 | 4000 | 3900 | 5200 | 4850 | 4850 | 4800 |
| | C1 | 29 | 30 | 30 | 31 | 29 | 30 | 30 | 31 | 32 | 33 | 33 | 34 | 29 | 30 | 30 | 31 |

1. DN 50 only.

90° flow

| DN | Standard Model | | | Model with SR | | | Model with SRS | | | Model with Widened Outlet | | | |
|----|----------------|------|------|---------------|------|------|----------------|------|------|---------------------------|------|------|------|
| | CBS | CCS | CCBS | CBS | CCS | CCBS | CBS | CCS | CCBS | CBS | CCS | CCBS | |
| 25 | C _g | 450 | 450 | 440 | 440 | 440 | 430 | 400 | 400 | 390 | 475 | 475 | 470 |
| | C1 | 30 | 30 | 31 | 30 | 30 | 31 | 33 | 33 | 34 | 30 | 30 | 31 |
| 50 | C _g | 1850 | 1850 | 1800 | 1800 | 1800 | 1750 | 1650 | 1650 | 1600 | 1900 | 1900 | 1850 |
| | C1 | 30 | 30 | 31 | 30 | 30 | 31 | 32 | 32 | 33 | 30 | 30 | 31 |
| 80 | C _g | 4300 | 4300 | 4200 | 4200 | 4200 | 4100 | 3500 | 3500 | 3400 | 4400 | 4400 | 4300 |
| | C1 | 30 | 30 | 31 | 30 | 30 | 31 | 33 | 33 | 34 | 30 | 30 | 31 |

Flow rate Q Sub-critical state with: $P_2 > \frac{P_1}{2}$

$$Q = 0.525 \cdot C_g \cdot P_1 \cdot \sin \left(\frac{3417}{C_1} \cdot \sqrt{\frac{P_1 - P_2}{P_1}} \right)^{\text{Deg}}$$

Critical state with: $P_2 \leq \frac{P_1}{2}$

$$Q = 0.525 \cdot C_g \cdot P_1$$

For other gases with different densities, the flow rate calculated with the above formulas must be multiplied by the correction factor:

$$F = \sqrt{\frac{0.6}{d}}$$

| Gas | Relative Density d | Factor F |
|----------|--------------------|----------|
| Air | 1 | 0.78 |
| Butane | 2.01 | 0.55 |
| Propane | 1.53 | 0.63 |
| Nitrogen | 0.97 | 0.79 |

Cronos Regulators

DN Size

Calculate the required C_g with the following formula:

Sub-critical state with $P_2 > \frac{P_1}{2}$

$$C_g = \frac{Q}{0.525 \cdot P_1 \cdot \sin \left(\frac{3417}{C_1} \cdot \sqrt{\frac{P_1 - P_2}{P_1}} \right)^{Deg}}$$

Critical state with $P_2 \leq \frac{P_1}{2}$

$$C_g = \frac{Q}{0.525 \cdot P_1}$$

N.B. The above formulas apply to natural gas flow rate only. If the flow rate value (Q) refers to other gasses, divide it by the correction factor F (see table).

Select the diameter of the regulator with C_g higher than calculated value (see table).
After finding the DN of the regulator, check that gas speed on the seat does not exceed 120 m/sec, using the following formula:

$$V = 345.92 \cdot \frac{Q}{DN^2} \cdot \frac{1 - 0.002 \cdot P_u}{1 + P_u}$$

- V = Velocity (m/s)
- 345.92 = Numerical constant
- Q = Flow rate under standard conditions (Stm³/h)
- DN = Regulator nominal diameter (mm)
- P_u = Inlet pressure in relative value (bar)



Detail of reducing unit with CB-SRS. Right to left gas flow

Pilots

The following pilots are used with CRONOS Series regulator with built-in shut-off device:

- **OS/80X** series: Spring loaded pneumatic device
- **OS/80X-PN** series: Pneumatic device controlled by PRX-PN series pilots

OS/80X

The OS/80X series pilot is supplied in different models according to set ranges required.

Technical Features

| Model | Servomotor Body Resistance (bar) | Overpressure Set Range W_{do} (bar) | | Underpressure Set Range W_{du} (bar) | |
|--------------|----------------------------------|---------------------------------------|------|--|------|
| | | Min. | Max. | Min. | Max. |
| OS/80X-BP | 5 | 0.03 | 2 | 0.01 | 0.60 |
| OS/80X-BPA-D | 20 | | | | |
| OS/80X-MPA-D | 100 | 0.50 | 5 | 0.25 | 4 |
| OS/80X-APA-D | | 2 | 10 | 0.30 | 7 |
| OS/84X | | 5 | 41 | 4 | 16 |
| OS/88X | | 18 | 80 | 8 | 70 |

Materials

OS/80X

Servomotor body: OS/80X-BP, OS/80X-BPA-D Aluminium
OS/80X-MPA-D, OS/80X-APA-D Steel
Diaphragm: Fabric Nitrile (NBR)+PVC/Nitrile (NBR) rubber
O-ring: Nitrile (NBR) rubber

OS/84X, OS/88X

Servomotor body: Brass
Lip seal: Teflon (PTFE)
O-ring: Nitrile (NBR) Rubber



OS/80X-BP

OS/80X-PN

The OS/80X-PN series pilot is supplied in two models:

OS/80X-PN: Pressure range 0.5 to 40 bar

Appliance made of an OS/80X-APA-D set at about 0.4 bar and a variable number of PRX/182-PN pilots for overpressure and PRX/181-PN for underpressure, as many as necessary to control different points of the installation.

OS/84X-PN (Safety Accessory): Pressure range 30 to 80 bar

Appliance made of an OS/84X set at about 20 bar and a variable number of PRX-AP/182-PN pilots for overpressure and PRX-AP/181-PN for underpressure, as many as necessary to control different points of the installation.

Technical Features

| Model | Servomotor Body Resistance (bar) | Overpressure Set Range W_{do} (bar) | | Underpressure Set Range W_{du} (bar) | |
|-----------|----------------------------------|---------------------------------------|------|--|------|
| | | Min. | Max. | Min. | Max. |
| OS/80X-PN | 100 | 0.5 | 40 | 0.5 | 40 |
| OS/84X-PN | 100 | 30 | 80 | 30 | 80 |

Materials

PRX/181/182-PN , PRX-AP/181/182-PN

Body: Steel
Diaphragm: Fabric-finished Nitrile (NBR)
O-ring: Nitrile (NBR) Rubber

Cronos Regulators

Pilots

PS/ Series

Cronos series regulators are equipped with the PS/ or PRX/ series pilots.



| Application | Allowable Pressure PS (bar) | Set Range W _d (bar) | Body and Covers Material |
|----------------------|-----------------------------|--------------------------------|--------------------------|
| Regulator or Monitor | | | |
| PS/79-1 | 20 | 0.01 - 0.5 | Aluminium |
| PS/79-2 | | 0.5 - 3 | |

1/4" NPT female threaded connections



| Application | | | Allowable Pressure PS (bar) | Set Range W _d (bar) | Body and Covers Material |
|----------------------|-------------------|-----------|-----------------------------|--------------------------------|--------------------------|
| Regulator or Monitor | Operating Monitor | | | | |
| | | Regulator | Monitor | | |
| PS/79 | PSO/79 | REO/79 | 100 | 0.5 - 40 | Steel |
| PS/80 | PSO/80 | REO/80 | | 1.5 - 40 | |

1/4" NPT female threaded connections

All PS/ series pilots are supplied with a filter (5 μ filtering degree) and built-in pressure stabilizer, with the exception of pilots PSO/79 and PSO/80.

PRX/ Series



| Application | | | Allowable Pressure PS (bar) | Set Range W _d (bar) | Body and Covers Material |
|----------------------|-------------------|------------|-----------------------------|--------------------------------|--------------------------|
| Regulator or Monitor | Operating Monitor | | | | |
| | | Regulator | Monitor | | |
| PRX/120 | PRX/120 | PRX/125 | 100 | 1 - 40 | Steel |
| PRX-AP/120 | PRX-AP/120 | PRX-AP/125 | | 30 - 80 | |

1/4" NPT female threaded connections

The SA/2 pressure pre-reducer must be used with PRX/ series pilots.

SA/2



The pressure pre-reducer is equipped with a 5 μ filtering degree filter and is suitable for heating.

| Model | Allowable Pressure PS (bar) | Supplied Pressure | Body and Covers Material |
|-------|-----------------------------|-----------------------------|--------------------------|
| SA/2 | 100 | 3 bar + Downstream pressure | Steel |

1/4" NPT female threaded connections

FU



When the pressure difference between upstream and downstream is below 10 bar, SA/2 can be used with the following FU filter.

| Model | Allowable Pressure PS (bar) | Filtering Degree | Body and Covers Material |
|-------|-----------------------------|------------------|--------------------------|
| FU | 100 | 5 μ | Steel |

1/4" NPT female threaded connections

Booster Valves



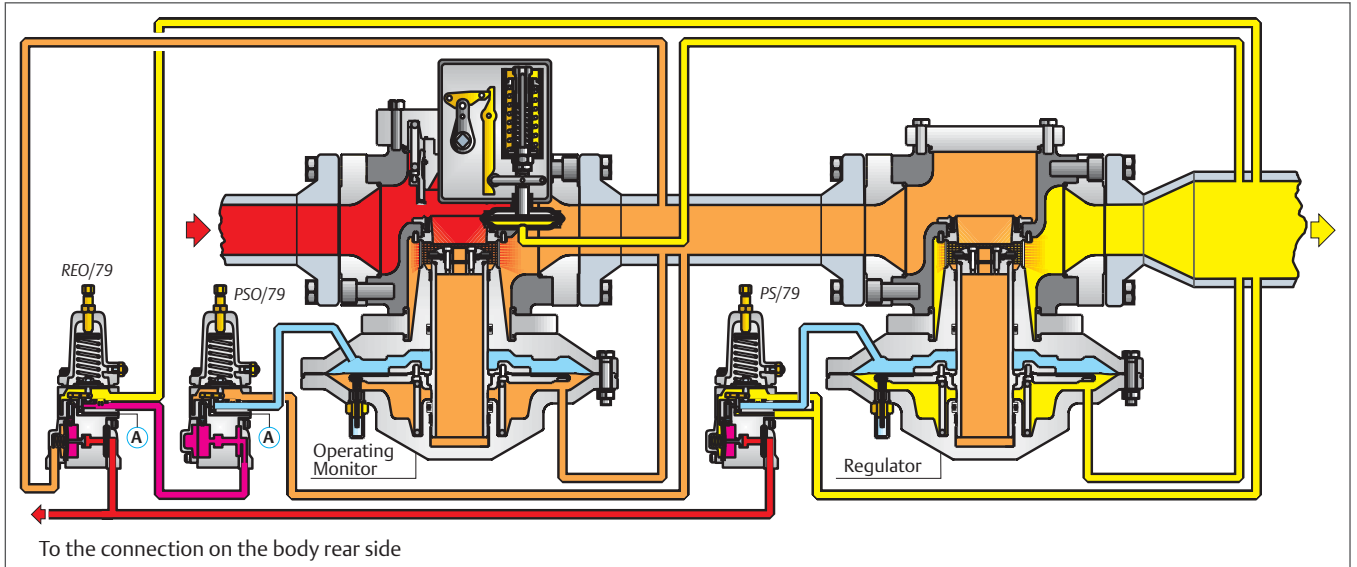
| Model | Allowable Pressure PS (bar) | Set Range W _d (bar) | Body and Covers Material |
|------------|-----------------------------|--------------------------------|--------------------------|
| V/31-1 | 19 | 0.025 - 0.55 | Aluminium |
| PRX/131 | 100 | 0.5 - 40 | Steel |
| PRX-AP/131 | | 30 - 80 | |

1/4" NPT female threaded connections

Operating Monitor and Booster Valve

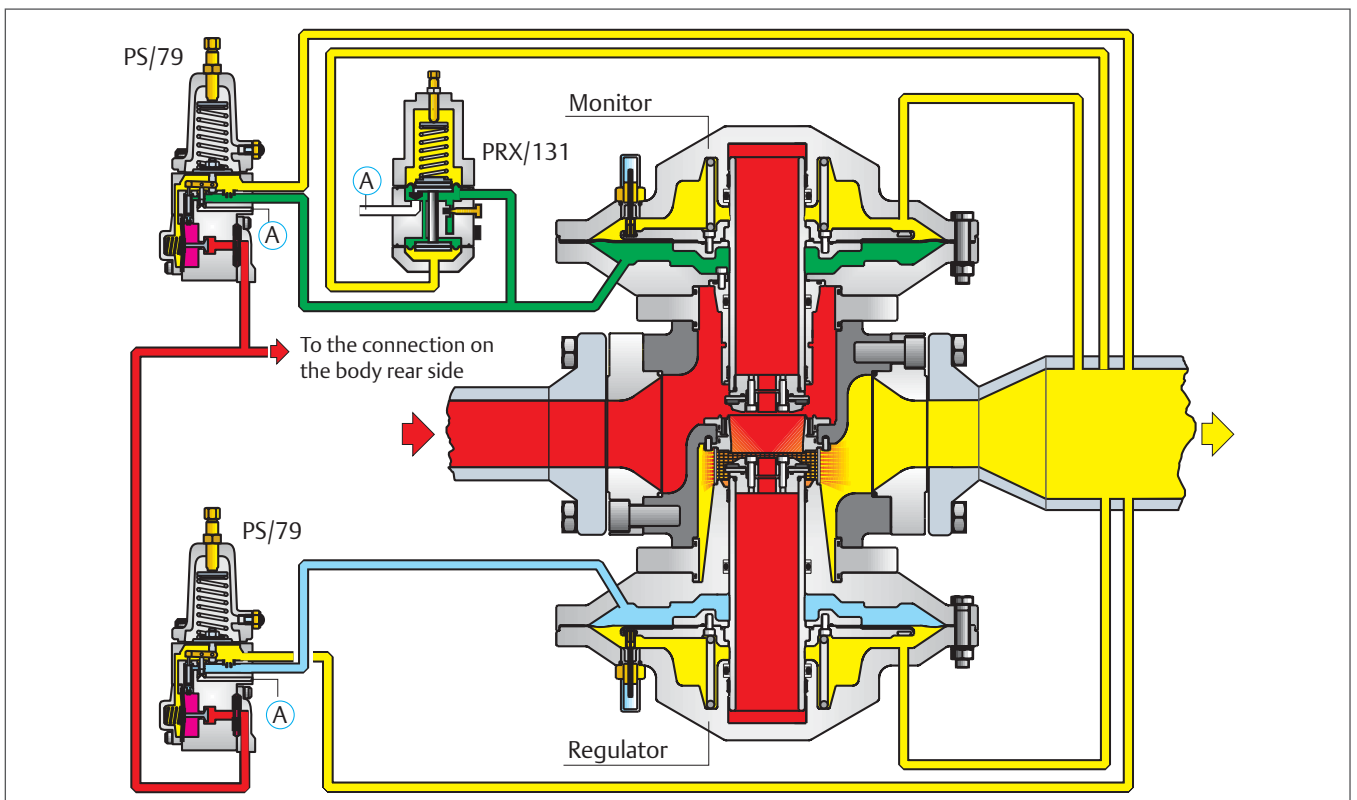
OPERATING MONITOR

The “operating monitor” has two functions: under normal duty, it reduces pressure in the intermediate section between the two regulators, but, if the main regulator fails, it comes into operation as an emergency regulator.



BOOSTER VALVE

The booster valve is fitted on the monitor-regulator system which branches off from the monitor drive pressure circuit, so that the monitor operates more quickly.



- Inlet pressure
- Intermediate pressure
- Regulator moving pressure
- Monitor moving pressure
- Stabilized pressure
- Outlet pressure
- A Downstream or to a safe area

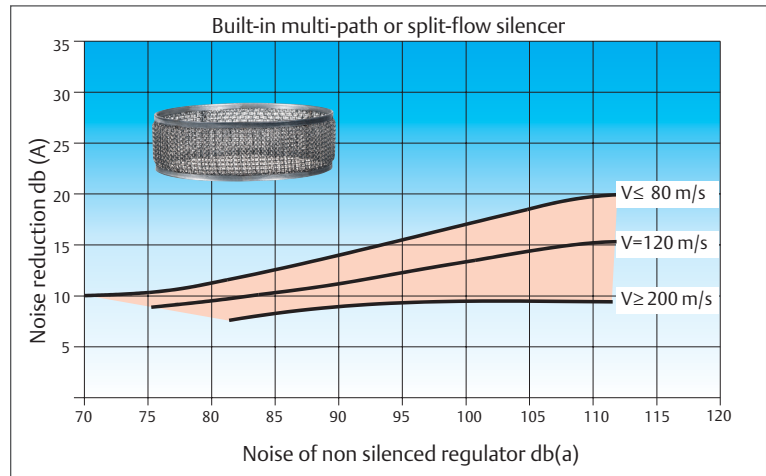
Cronos Regulators

Silencers

SR

This silencer is fitted near the regulator shutter and is highly efficient up to a theoretical speed of 80 m/s calculated at the outlet flange.

Beyond this speed could be necessary to act on the noise generated by the expansion cone usually installed downstream of the regulator.

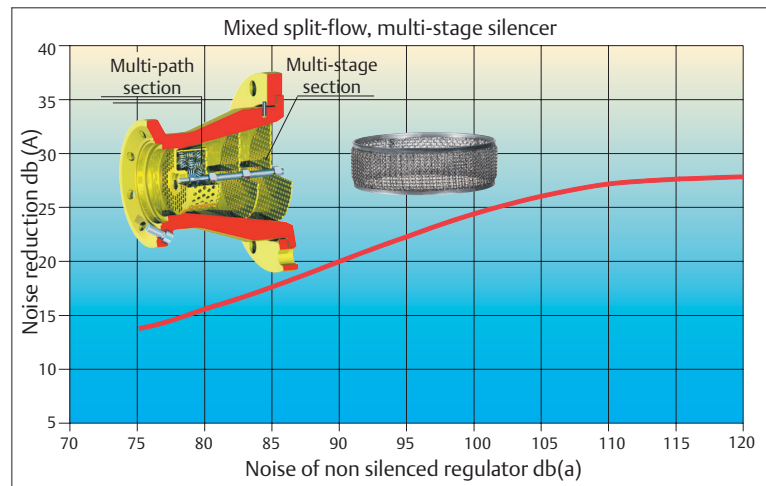


SRS

The SRS silencer consists of an SR silencer plus a widened outlet flange in which a second silencer is fitted.

The second silencer has an initial multi-path section and a second multi-stage section.

This silencer is highly efficient under all operating conditions, is not limited by the theoretical speed on the regulator outlet flange.



STP

Habitually used down-stream of SRS silencers but can also be combined with the SR silencer.

Overall reduction in noise level is the sum of the reduction produced by SR or SRS plus the STP induced reduction.

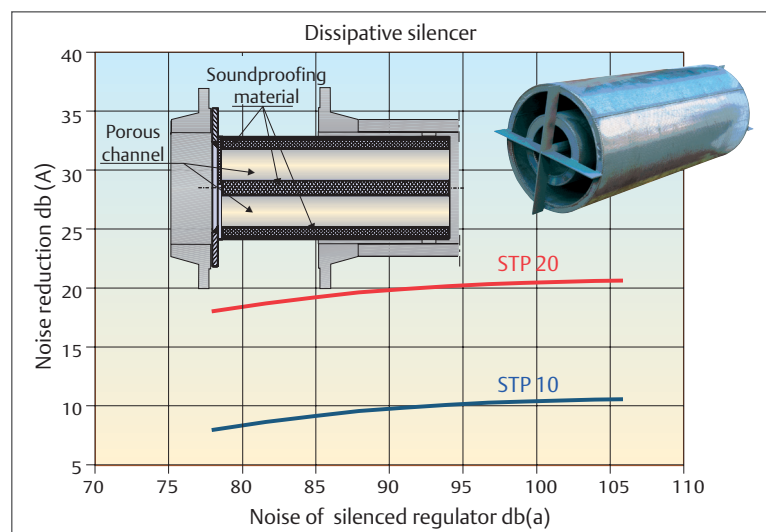
The STP silencer consists of one or more porous channels clad with soundproofing material.

Sound penetrates inside the soundproofing layer and is transformed into heat by friction.

The silencer is fitted in the pipe and is secured with two flanges.

Two types of silencers are supplied:

- STP10 10 dB(A) attenuation, with length of approximately 1m
- STP10 20 dB(A) attenuation, with length of approximately 2m



Accessories

PROPORTIONAL TRAVEL TRANSMITTER

In order to communicate the valve position, a potentiometer-type straightaway position transmitter is used connected to the regulator travel indicator. Thanks to this transducer, it is possible to know accurately the valve position and thus have correct information on the regulator operating condition.

It is supplied in two models:

- PA1/25 suitable for Cronos DN 25-50
- PA1/50 suitable for Cronos DN 80

This transducer features a single element as foreseen by EN 50020 standards and can thus be used in hazardous areas.

Single element transducers, if fitted in intrinsic safety circuits, should be protected through suitable safety barriers anyway.



| Model | | PA1/25 | PA1/50 |
|--------------------------|----|----------------|--------|
| Useful electrical travel | mm | 26 | 51 |
| Resistance | kΩ | 1 | 5 |
| Resolution | mm | infinite | |
| Suggested current | μA | <1 | |
| Max. current | mA | ≤10 | |
| Max. voltage | V | 25 | 60 |
| Working temperature | °C | -30 °C +100 °C | |

PROXIMITY SWITCH

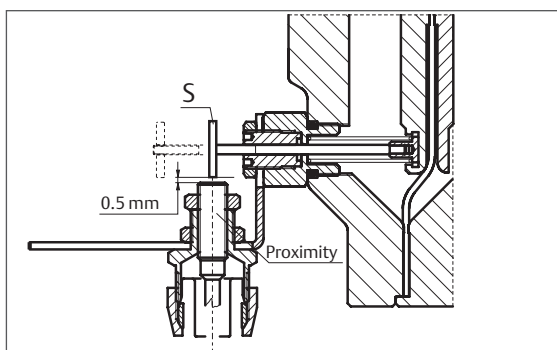
In order to send the shut-off or the regulator/monitor opening/closing signal, a proximity switch suitable for installation in hazardous area is used.

The use of this switch foresees the application of an intrinsic safety separation barrier which should be installed in safe area.

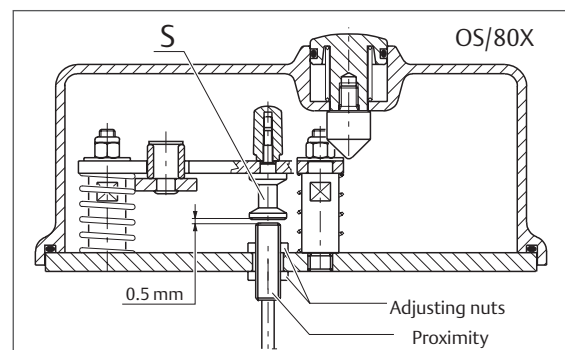
The distance between the proximity switch and the barrier should be calculated according to the type of gas and installation electrical specifications.

The proximity switch should be positioned at about 0.5 mm from the stem (S). The adjustment is made by means of adjusting nuts.

On request it is possible to supply the pilot in the version with two proximity switches in order to indicate extreme positions of valve opening/closing.



Regulator/Monitor installation



Pilot installation

Cronos Regulators

Accessories

ELECTROVALVE FOR REMOTE CONTROLLED CLOSURE

The OS/80X and the OS/80X-PN equipped with a shut-off device for minimum pressure, can be equipped with a 3-way valve with explosion-proof construction to permit remote-controlled closure.

IT/3V THREE-WAY VALVE FOR SETTING CONTROL (P_U max 50 bar)

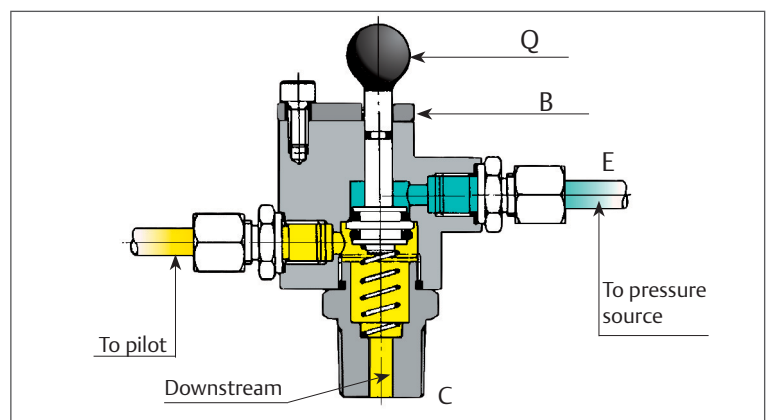
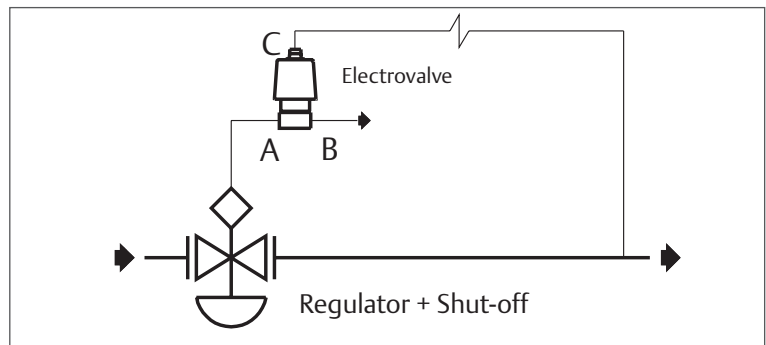
It allows the OS/80X operation and setting control, without having to change the regulator setting.

The valve is installed on the OS/80X control line and it must be connected to a suitable pressure source that is capable of reaching the settings of the OS/80X.

The IT/3V three-way valve is of the spring-return type and it is equipped with a safety lock plate (B) on the control knob (Q).

When the plate (B) is pivoted, pressure on the knob (Q) makes it possible to put the sensitive member into communication with a pressure source, thus making it possible to perform operation and setting tests.

Upon completion of the procedures, releasing the knob will reset normal running conditions. The safety lock plate on the knob prevents accidental maneuvers.



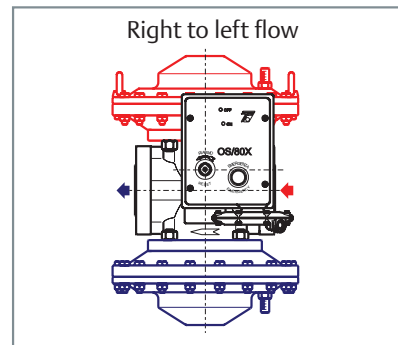
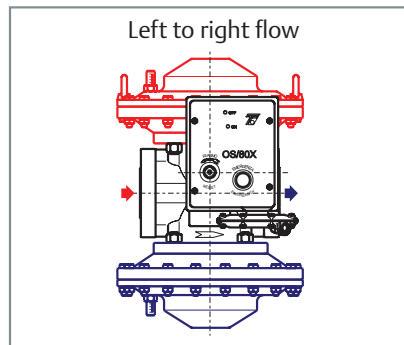
MIC/25 Underground Module

Installation

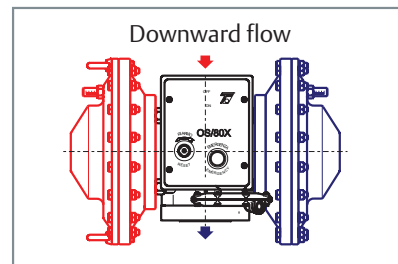
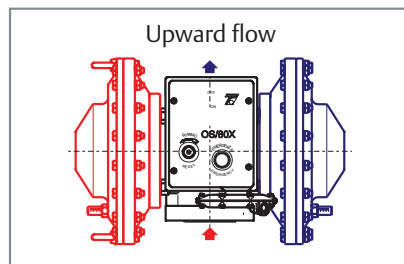
The central cross-shaped body is designed so that the actuator-pilot can be installed both at front and rear. This facility combined with body rotation enables all types of orientation.

For orientations different from those shown below, please contact our Technical Department.

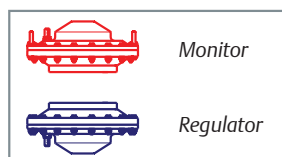
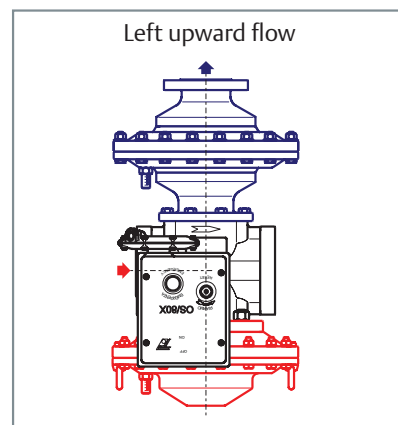
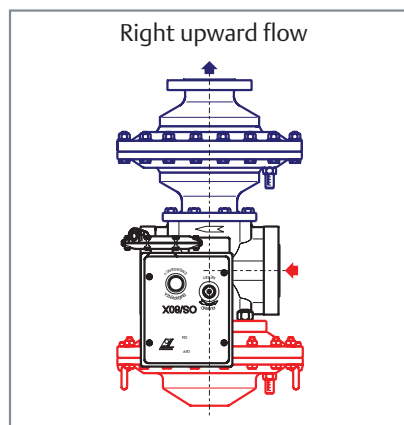
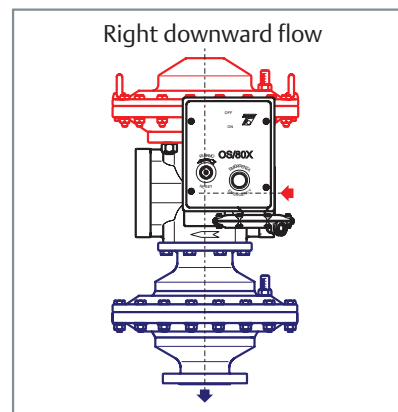
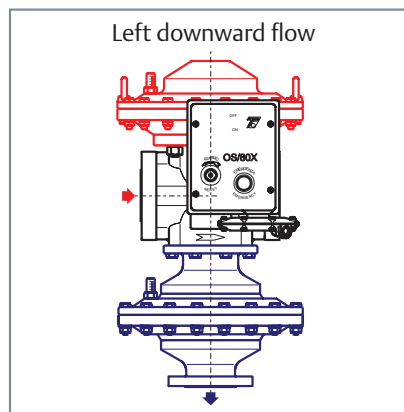
Horizontal Flow



Vertical Flow



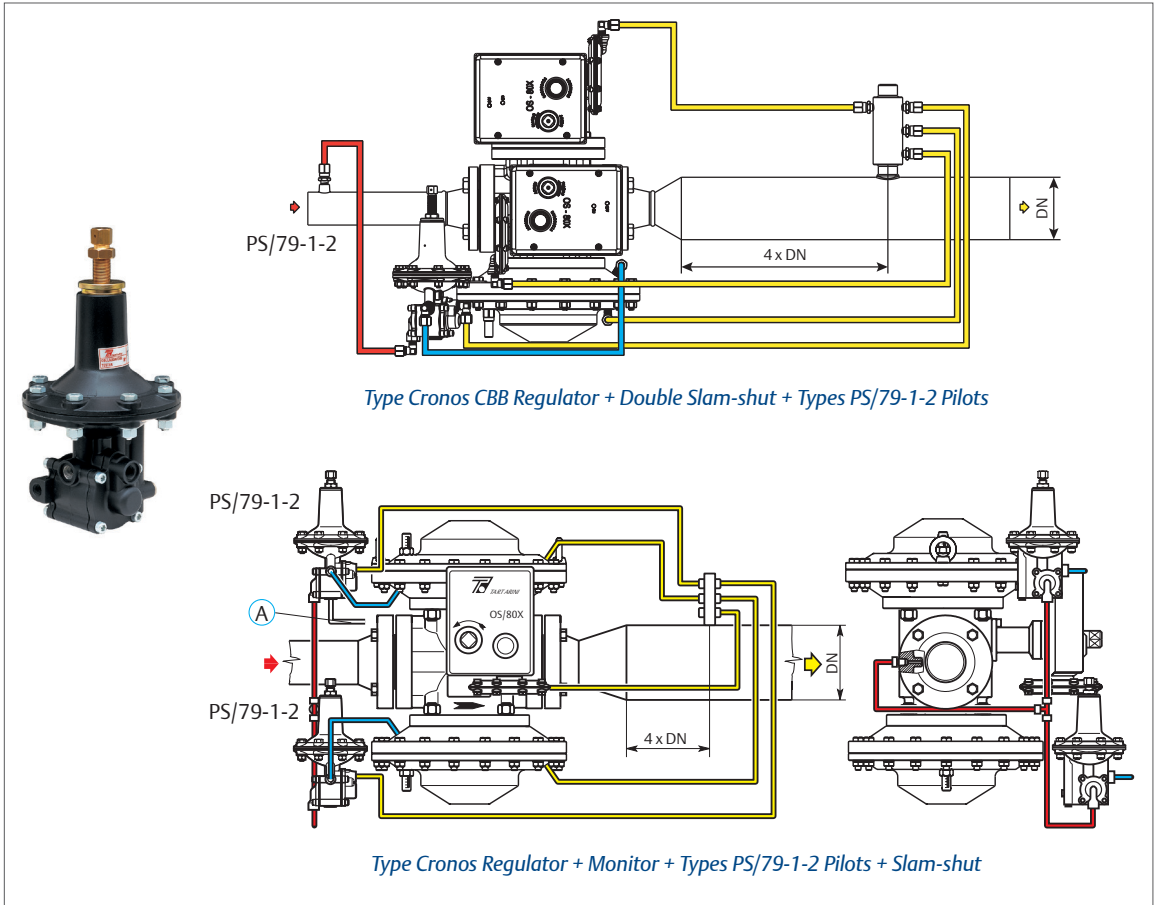
90° Flow



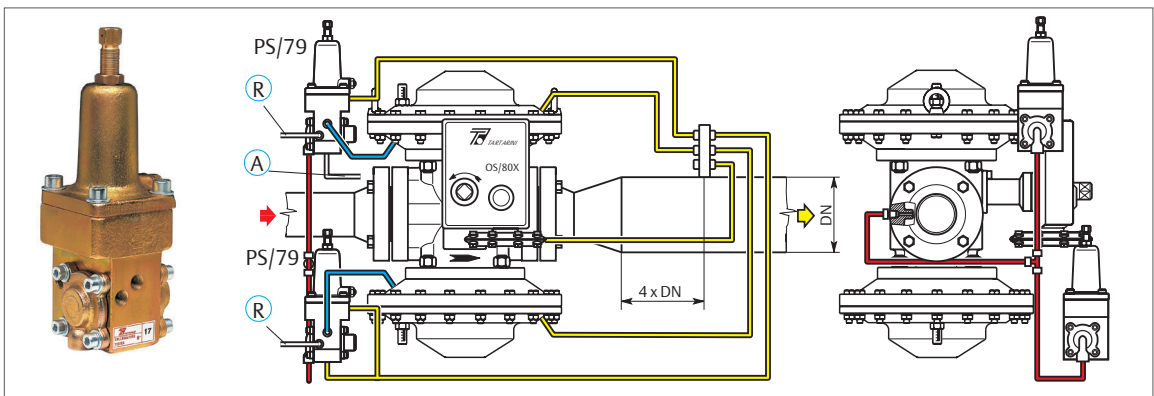
Cronos Regulators

Examples of Connections

PS/79-1
PS/79-2
Series



PS/79 Series



■ Inlet pressure

■ Moving pressure

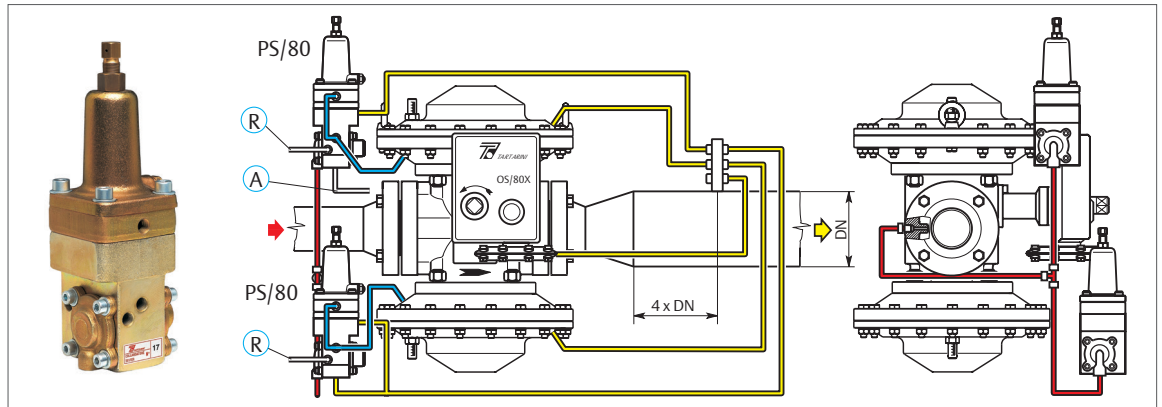
■ Outlet pressure

Ⓐ Downstream or to a safe area

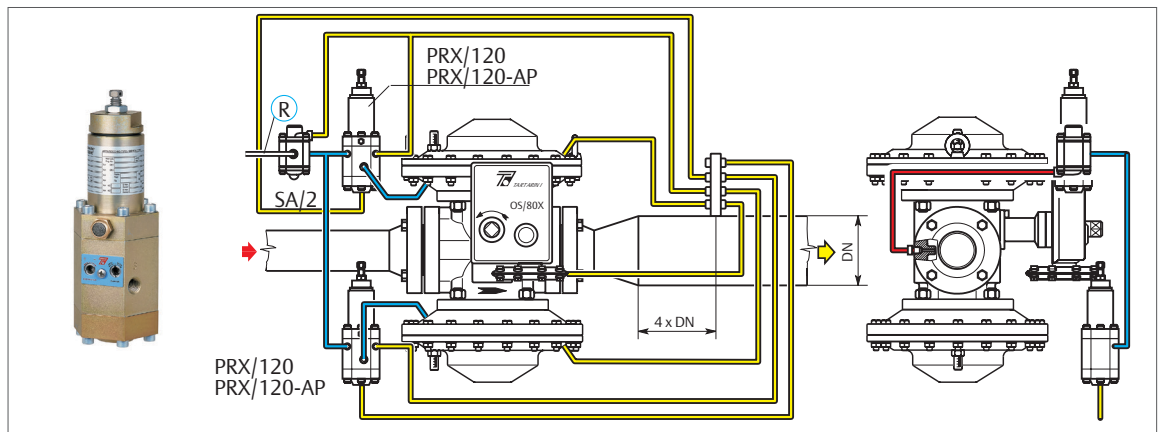
Ⓘ To the heating system

Examples of Connections

PS/80 Series



PRX Series



■ Inlet pressure

■ Moving pressure

■ Outlet pressure

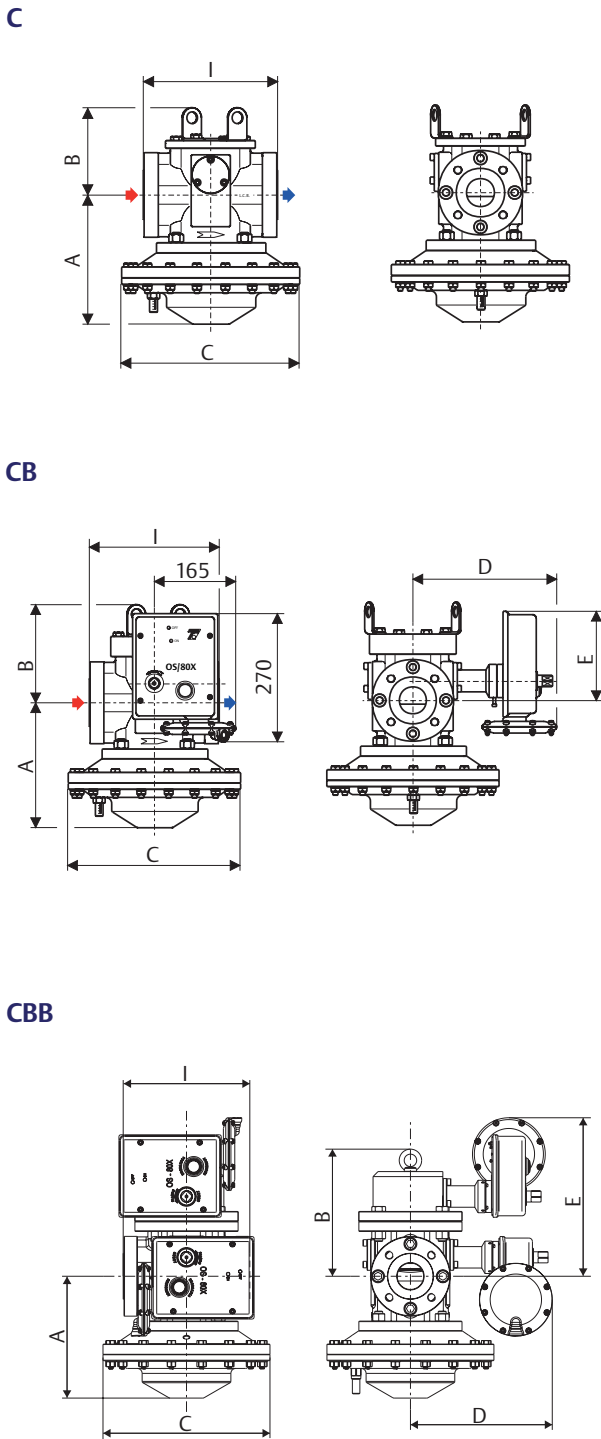
Ⓐ Downstream or to a safe area

Ⓘ To the heating system

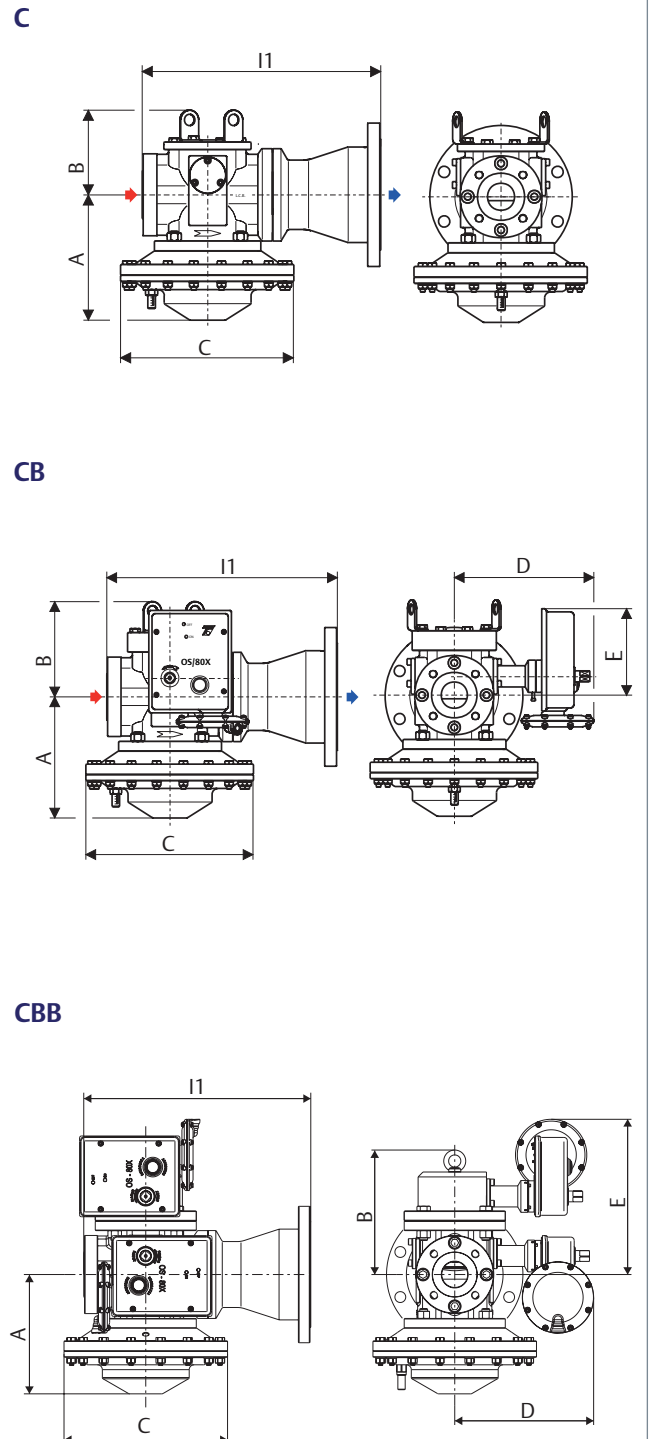
Cronos Regulators

Horizontal Flow Dimensions (mm)

Standard and SR

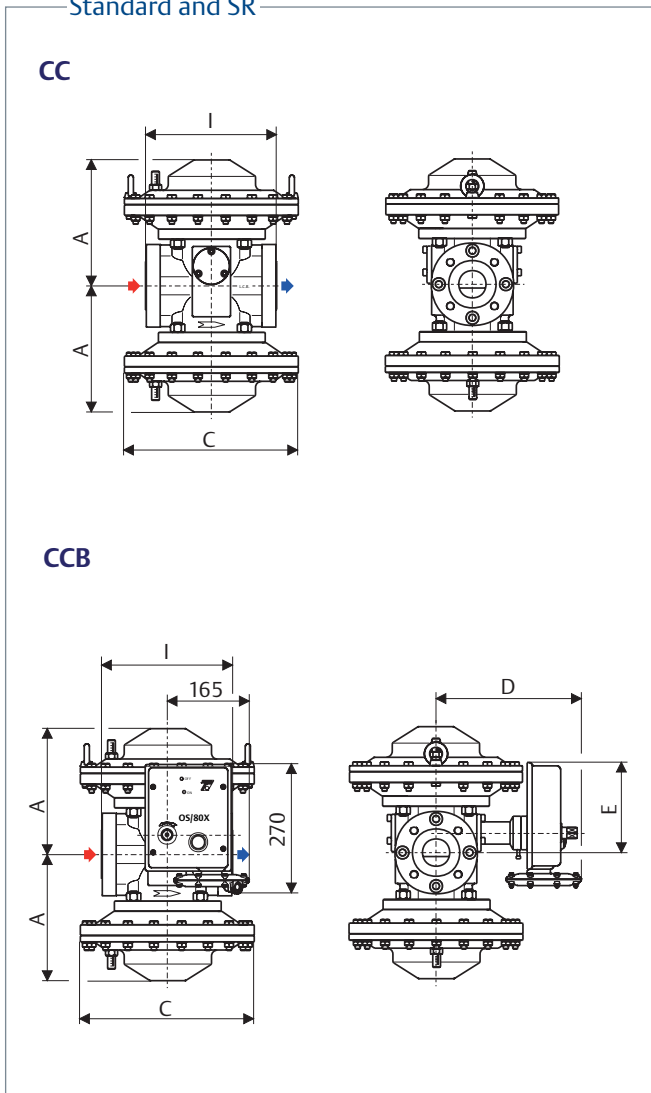


Widened outlet and SRS

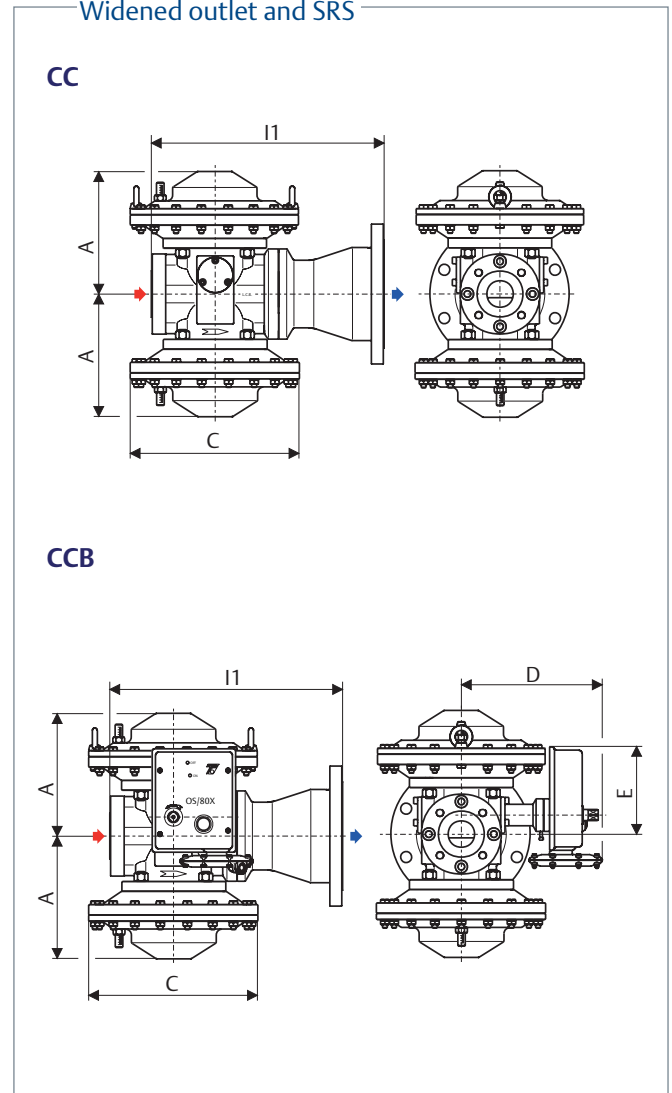


Horizontal Flow Dimensions (mm)

Standard and SR



Widened outlet and SRS



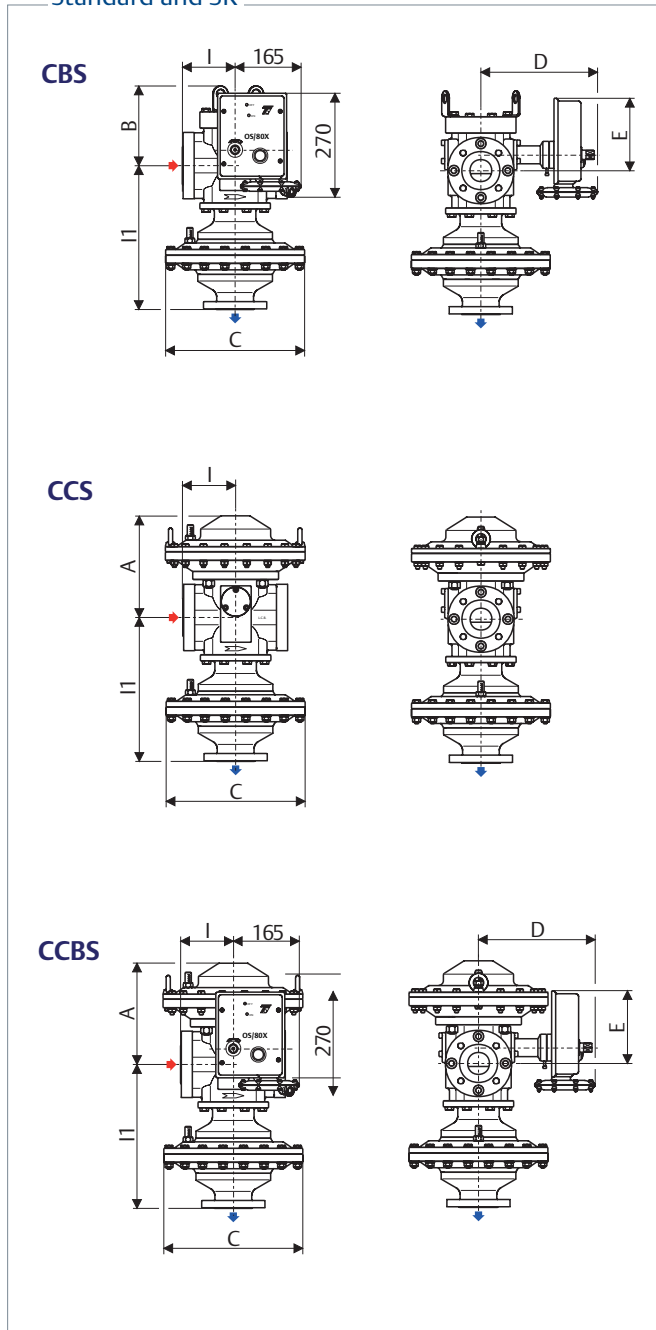
| DN | Overall Dimensions (mm) | | | | | | | | | | Face-to-Face (mm) | | | | | |
|-----------------|-------------------------|-----|-----|-----|-----|--------------------------|-----|-----|-----|-----|-------------------|-----|----------------------|-------|----------|-----|
| | PN 16 ANSI 150 | | | | | PN 25/40 ANSI 300/600 | | | | | PN 16 ANSI 150 | | PN 25/40 ANSI 300 | | ANSI 600 | |
| | A | B | C | D | E | A | B | C | D | E | I | I1 | I | I1 | I | I1 |
| 25 | 215 | 180 | 285 | 260 | 170 | 220 | 180 | 225 | 260 | 170 | 184 | 350 | 197 | 353.5 | 210 | 360 |
| 50 | 245 | 195 | 335 | 285 | 175 | 260 | 195 | 287 | 285 | 175 | 254 | 465 | 267 | 471.5 | 286 | 482 |
| 50, CBB only | 245 | 255 | 335 | 285 | 318 | 260 | 255 | 287 | 285 | 318 | 254 | 465 | 267 | 471.5 | 286 | 482 |
| 80 | 330 | 260 | 400 | 325 | 185 | 350 | 260 | 400 | 325 | 185 | 298 | 570 | 317 | 590 | 337 | 600 |

Threaded 1/4" NPT female impulse connections

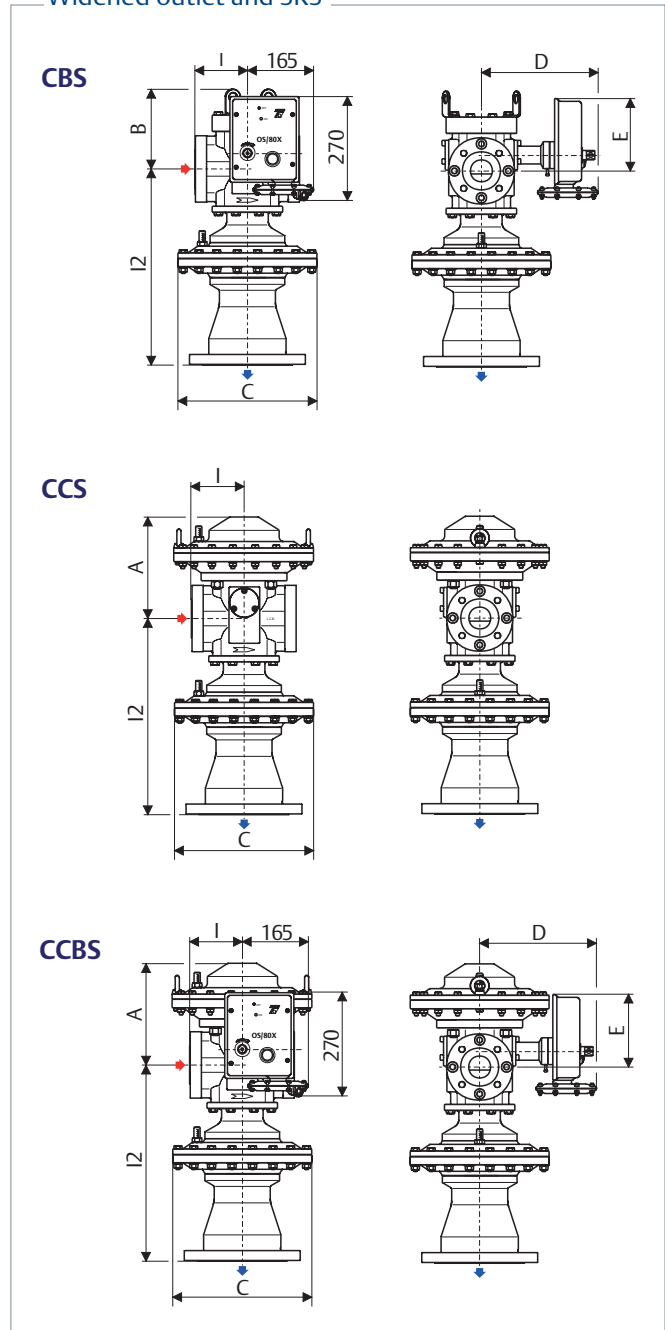
Cronos Regulators

90° Flow Dimensions (mm)

Standard and SR



Widened outlet and SRS



| DN | Overall Dimensions (mm) | | | | | | | | | | Face-to-Face (mm) | | | | | | | | |
|----|-------------------------|-----|-----|-----|-----|--------------------------|-----|-----|-----|-----|-------------------|-----|-----|----------------------|-----|-------|----------|-----|-------|
| | PN 16 ANSI 150 | | | | | PN 25/40 ANSI 300/600 | | | | | PN 16 ANSI 150 | | | PN 25/40 ANSI 300 | | | ANSI 600 | | |
| | A | B | C | D | E | A | B | C | D | E | I | I1 | | I | I1 | I2 | I | I1 | I2 |
| 25 | 215 | 180 | 285 | 260 | 170 | 220 | 180 | 225 | 260 | 170 | 92 | 280 | 386 | 98.5 | 295 | 385 | 105 | 295 | 385 |
| 50 | 245 | 195 | 335 | 285 | 175 | 260 | 195 | 287 | 285 | 175 | 127 | 347 | 473 | 133.5 | 370 | 484 | 143 | 370 | 484 |
| 80 | 330 | 260 | 400 | 325 | 185 | 350 | 260 | 400 | 325 | 185 | 149 | 450 | 622 | 158.5 | 485 | 648.5 | 168.5 | 485 | 648.5 |

Threaded 1/4" NPT female impulse connections

Weights

Horizontal Flow

| DN | Standard and SR (kg) | | | | | | | | | | Widened Outlet and SRS (kg) | | | | | | | | | |
|----|----------------------|-----|-----|-----|-----|-----------------------|-----|-----|-----|-----|-----------------------------|-----|-----|-----|-----|-----------------------|-----|-----|-----|-----|
| | PN 16 ANSI 150 | | | | | PN 25/40 ANSI 300/600 | | | | | PN 16 ANSI 150 | | | | | PN 25/40 ANSI 300/600 | | | | |
| | C | CB | CBB | CC | CCB | C | CB | CBB | CC | CCB | C | CB | CBB | CC | CCB | C | CB | CBB | CC | CCB |
| 25 | 36 | 38 | - | 56 | 58 | 37 | 39 | - | 61 | 63 | 49 | 51 | - | 69 | 71 | 56 | 58 | - | 78 | 80 |
| 50 | 62 | 66 | 105 | 96 | 100 | 74 | 78 | 127 | 118 | 122 | 87 | 91 | 130 | 121 | 125 | 109 | 113 | 162 | 153 | 157 |
| 80 | 128 | 142 | - | 191 | 197 | 171 | 185 | - | 271 | 277 | 190 | 204 | - | 253 | 259 | 273 | 279 | - | 373 | 379 |

90° Flow

| DN | Standard and SR (kg) | | | | | | Widened Outlet and SRS (kg) | | | | | |
|----|----------------------|-----|------|-----------------------|-----|------|-----------------------------|-----|------|-----------------------|-----|------|
| | PN 16 ANSI 150 | | | PN 25/40 ANSI 300/600 | | | PN 16 ANSI 150 | | | PN 25/40 ANSI 300/600 | | |
| | CBS | CCS | CCBS | CBS | CCS | CCBS | CBS | CCS | CCBS | CBS | CCS | CCBS |
| 25 | 40 | 56 | 58 | 43 | 63 | 65 | 53 | 69 | 71 | 60 | 80 | 82 |
| 50 | 72 | 102 | 106 | 92 | 132 | 136 | 97 | 127 | 131 | 127 | 167 | 171 |
| 80 | 159 | 208 | 214 | 225 | 319 | 325 | 221 | 270 | 286 | 327 | 421 | 427 |



CCB

✉ Webadmin.Regulators@emerson.com

🔍 Tartarini-NaturalGas.com

📘 Facebook.com/EmersonAutomationSolutions

🌐 LinkedIn.com/company/emerson-automation-solutions

🐦 Twitter.com/emr_automation

Emerson Automation Solutions

Americas

McKinney, Texas 75070 USA
T +1 800 558 5853
+1 972 548 3574

Europe

Bologna 40013, Italy
T +39 051 419 0611

Asia Pacific

Singapore 128461, Singapore
T +65 6777 8211

Middle East and Africa

Dubai, United Arab Emirates
T +971 4 811 8100

D104046X012 © 2017, 2022 Emerson Process Management Regulator Technologies, Inc. All rights reserved. 03/22.

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their prospective owners. Tartarini™ is a mark owned by one of the companies in the Emerson Automation Solutions business unit of Emerson Electric Co.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

Emerson Process Management Regulator Technologies, Inc does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any Emerson Process Management Regulator Technologies, Inc. product remains solely with the purchaser.

Emerson Process Management s.r.l

Emerson Automation Solutions - Stabilimento di/Site of: Castel Maggiore - Bologna
Sede Legale/Legal Entity: Piazza Meda 5, 20121 Milano, Italy
Sede Amministrativa/Administrative Headquarters: OMT Tartarini, Via Clodoveo Bonazzi 43,
40013 Castel Maggiore (Bologna), Italy
C.F. - P.I. e R.I. di MI 13186130152 - REA di MI/n.1622916
Direz. e Coord. (art. 2497 bis CC): EMERSON ELECTRIC CO. St. Louis (USA) Socio Unico

