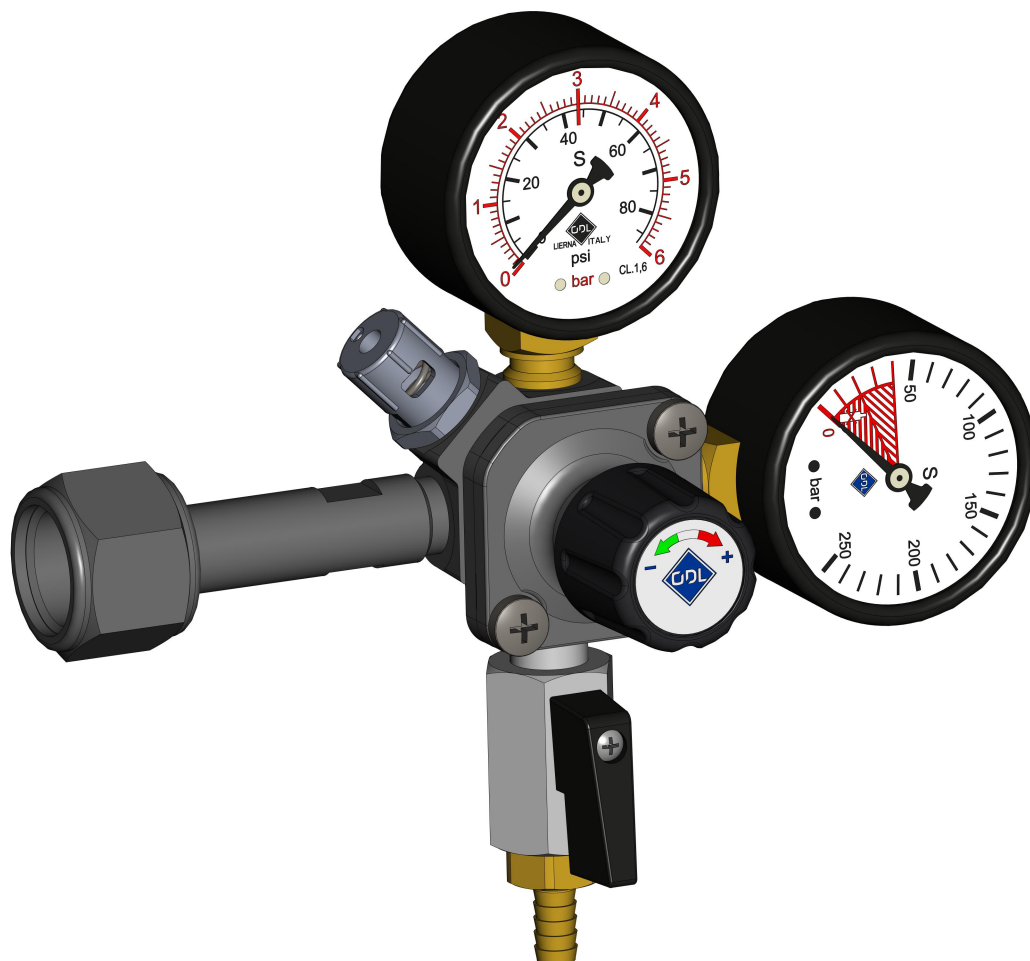


Pressure reducer SM-51 Datasheet



General information



Technical description

The new reducer is among the most compact on the market, with four G 1/4" connections and a pressure relief valve. Despite its size, it offers performance equal to, if not superior to, our SM model, positioning itself between it and the SC model.

The pressure relief valve is the same adopted on the SC allowing it to operate safely even in more demanding environments, such as under-sink spaces, and with large cylinders (4 kg or more).

The G 1/4" connections allow the use of almost all accessories currently coded for the SC models.

Materials

Body, bottle connections and high pressure valve are made in CW614N nickel plated. Cover is made in Zama nickel plated, fixing supports are made in steel.

Features

The maximum deliverable volumetric flow rate is 20NL/min. The reducer body has multiple configurations: rear inlet, double pressure relief valve, multi-body and secondary reducer.

The outlet pressure can be adjusted manually using the knob. When vertical clearance is limited or a fixed setting is required, a version with a grub screw on the lid is available.

Applications

Domestic



Ho.Re.Ca.



Professional



Soft drink



Beer



Sparkling water

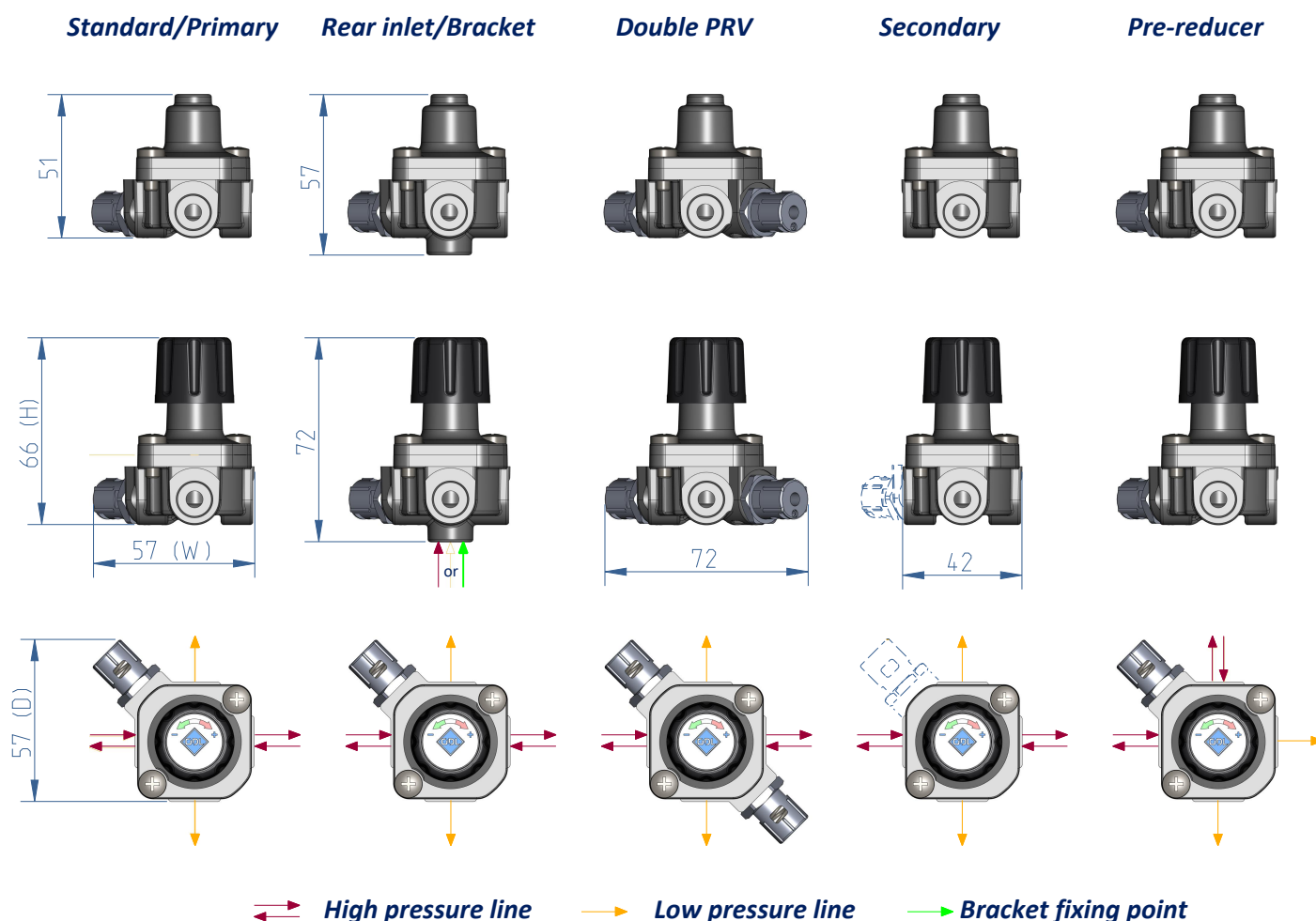


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Main-body features

For information on dimensional tolerances, please contact ODL.



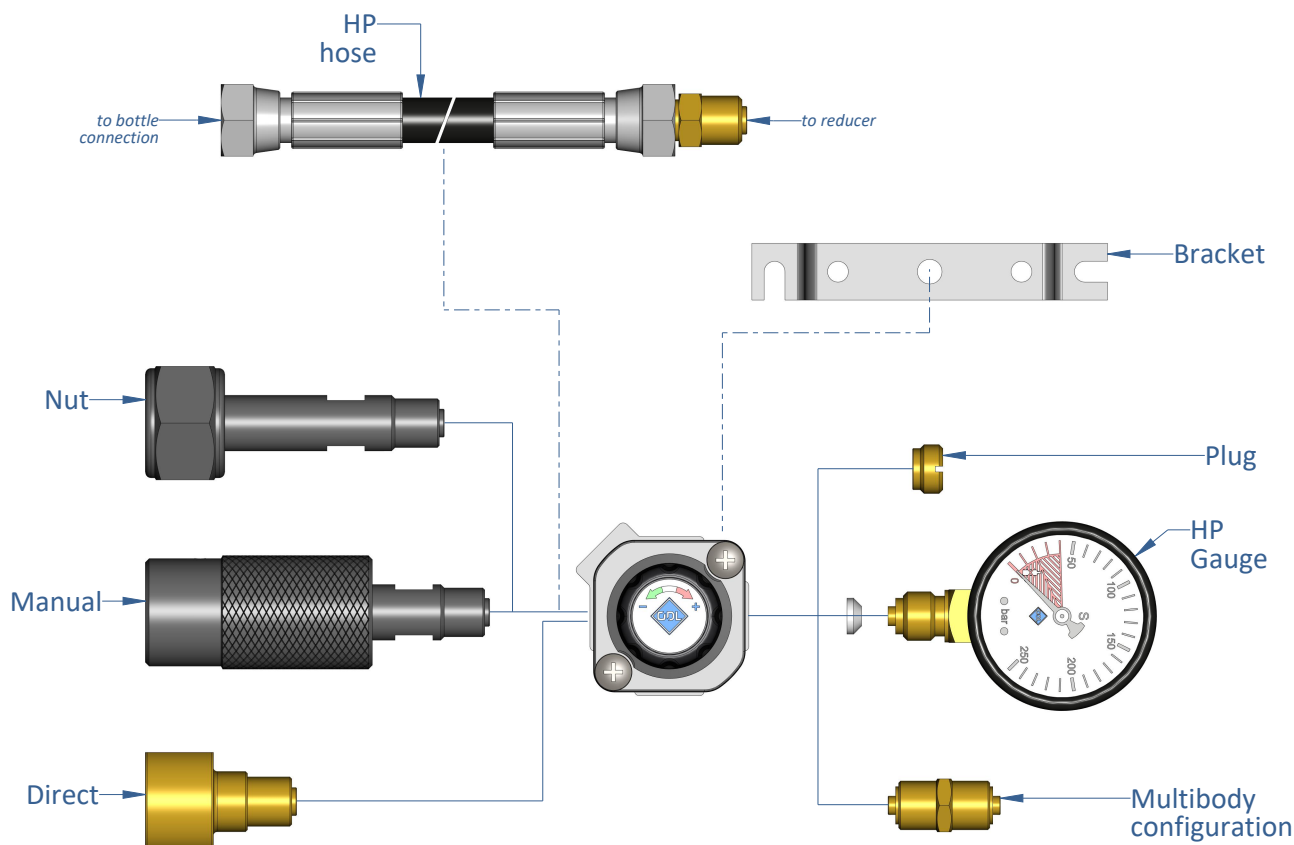
	Standard	Rear inlet	Double PRV	Secondary	Pre-reducer
Screw version dimensions "H"- "W"- "D" mm	51x57x57	57x57x57	51x72x72	51x42x42	51x57x57
Knob version dimensions "H"- "W"- "D" mm	66x57x57	72x57x57	66x72x72	66x42x42	66x57x57
Body threads -	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"
Diaphragm diameter mm	35	35	35	35	35
Pressure relief valve -	1	1	2	0 or 1	1
Pressure relief valve orifice Ø mm	6	6	6	6	6
Relief valve initial opening pressure bar	Up to 8	Up to 8	Up to 8	Up to 8	Up to 8
Maximum overpressure %	20	20	20	20	20
Working fluids -	CO ₂	CO ₂	CO ₂	CO ₂	CO ₂
Maximum inlet pressure bar	120	120	120	120	120
Maximum outlet pressure bar	7	7	7	7	7
Type of regulation -	Limited, fixed or free				
High pressure line burst pressure bar	600	600	600	600	600
Low pressure chamber burst pressure bar	40	40	40	40	40
Optimal ambient operation temperature range °C	15 - 25	15 - 25	15 - 25	15 - 25	15 - 25
Maximum storage temperature °C	50	50	50	50	50

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High Pressure line features

The drawing below summarizes the possible configurations that can be adopted on the high pressure line using a standard version of the reducing body.



Bottle connctetions features

CO2 thread	W 21.8 1/14", M10x1, M11x1, Stub ACME 21.6 2G, G 3/4" other on request
Bottle nut wrench	28mm, 30mm, 32mm other on request
Length	From 20mm to 76mm
Sealing element	Flat gasket or OR
Hose	Length from 1m to 1.5m, burst pressure up to 860bar

High pressure gauge

Diameter	50mm
Scale range	0-250bar
Configurations	Empty bottle marker, double scale (bar and MPa)

Other featurers

Multibody	Up to 5 bodies could be connected, connection fitting are available in different dimensions
Bracket	The bracket can be mounted with the rear mount body.

Notes

It's not possible to assemble fittings with a diameter greater than 18mm on the threads next to the pressure relief valve.

The high pressure lines present in the different configurations of the reducer are equivalent, therefore the inlet fittings and pressure gauges can be positioned as desired.

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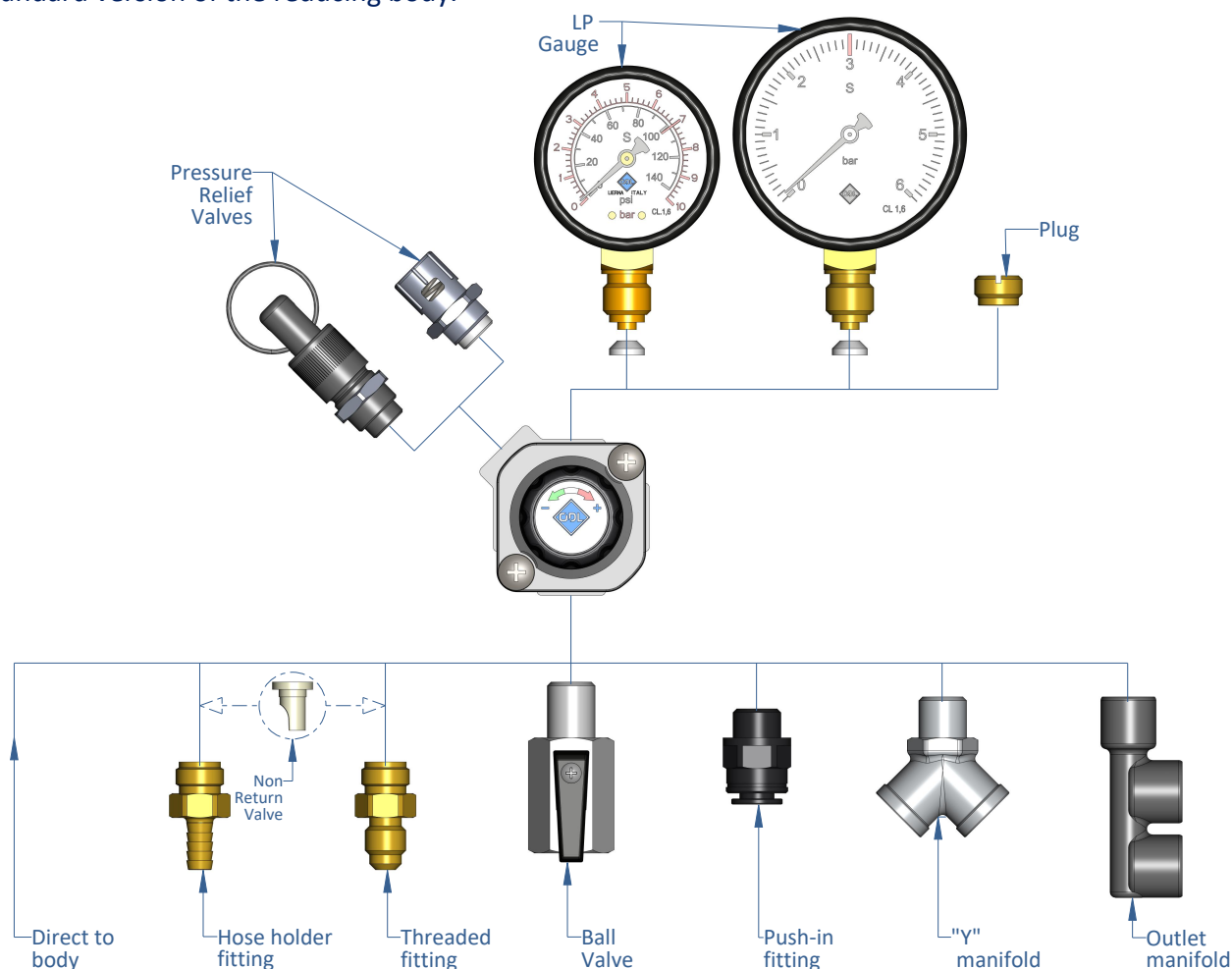
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Low Pressure lines features

The drawing below summarizes the possible configurations that can be adopted on the low pressure line using a standard version of the reducing body.



Pressure Relief Valve features

PRV standard setting	3bar, 4bar, 4.8bar or 7bar
PRV configurations	With or without discharge function

Low Pressure Gauge

Diameter	50mm or 63mm
Scale range	0-6bar, 0-10bar, 0-0.1MPa
Other configurations	Set point marker, double scale (bar and MPa)

Available outlet configurations

Hose holder diameter	Ø4.5, Ø6.5, Ø7.2, Ø8.1, Ø9.6, Ø10.5 and Ø11.5mm other on request
Threaded fitting	7/16" - 20 UNF, 1/2" - 16 UN, other on request
Ball valve	Outlet connection G 1/4", can be used in combination with other fittings
Push-in plastic fitting	Available dimensions are Ø4mm, Ø6mm, Ø8mm, Ø3/8" and Ø1/4"
"Y" brass outlet	Outlet connection G 1/4", can be used in combination with other fittings
Manifold brass outlet	Outlet connection G 1/4", up to 4 lines and can be used in combination with other fittings
Swivel configuration	Hose holder and threaded fitting could be also supplied with swivel fitting

Notes

It's not possible to assemble fittings with a diameter greater than 18mm on the threads next to the pressure relief valve.

Normally, only one of the two outlets is used for the outlet fittings. The second outlet is intended for the pressure gauge; if not used, it may be plugged or left open.

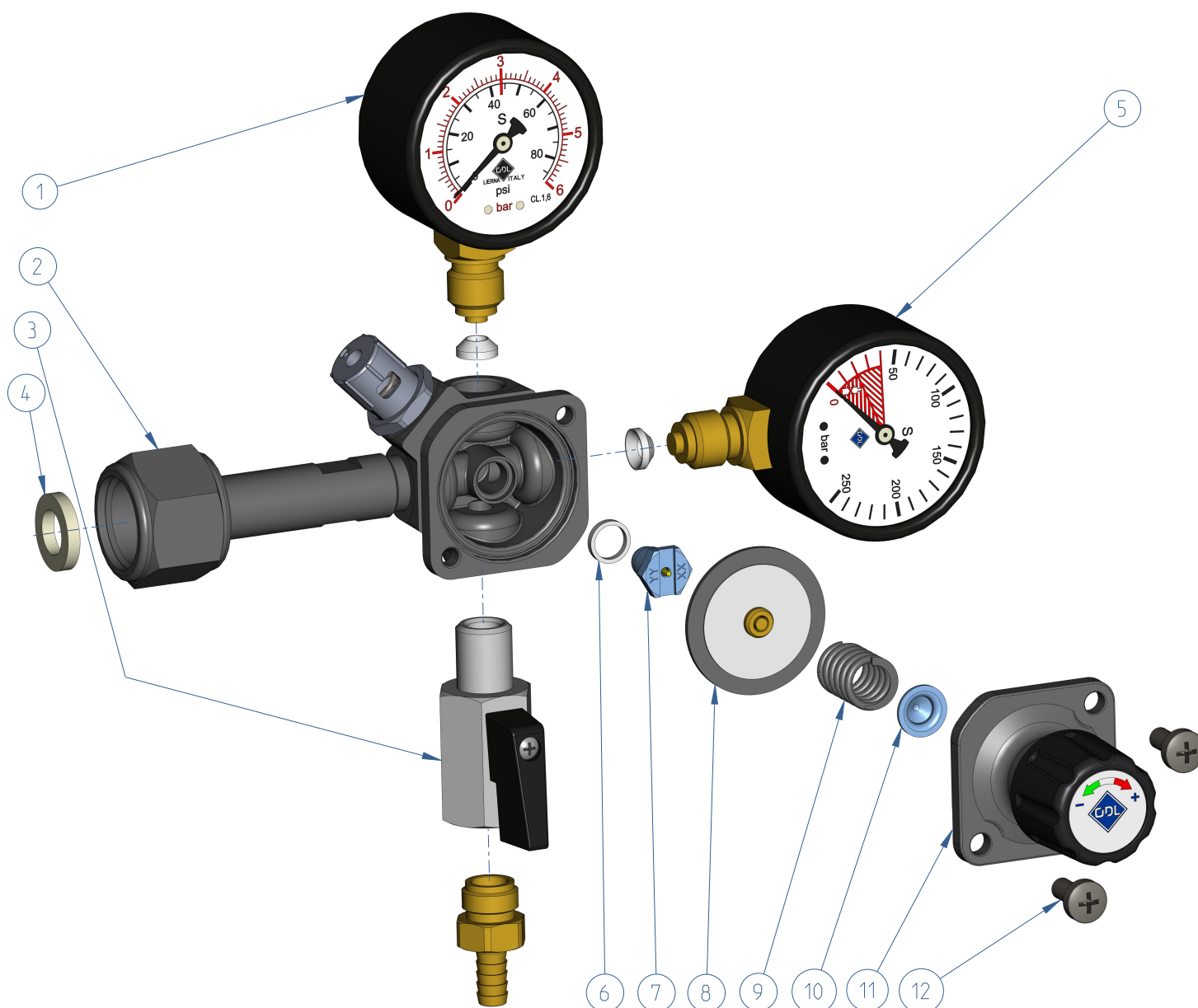
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Spare parts

All spare parts available are reported in the table, for other contact ODL.



Acronyms

HP and LP: High and Low Pressure
PRV: Pressure Relief Valve
HPV: High Pressure Valve
SP: Spare Part

ID	Description	Q.ty	SP
1	LP gauge with gasket	1	X
2	Body with bottle connection and PRV	1	
3	Outlets	1	X
4	Bottle sealing element	1	X
5	HP gauge with gasket	1	X
6	HPV gasket	1	X
7	High Pressure Valve	1	X
8	Diaphragm assembly	1	X
9	Regulation spring	1	
10	Spring pusher	1	
11	Cover assembly	1	
12	Cover screw	1	

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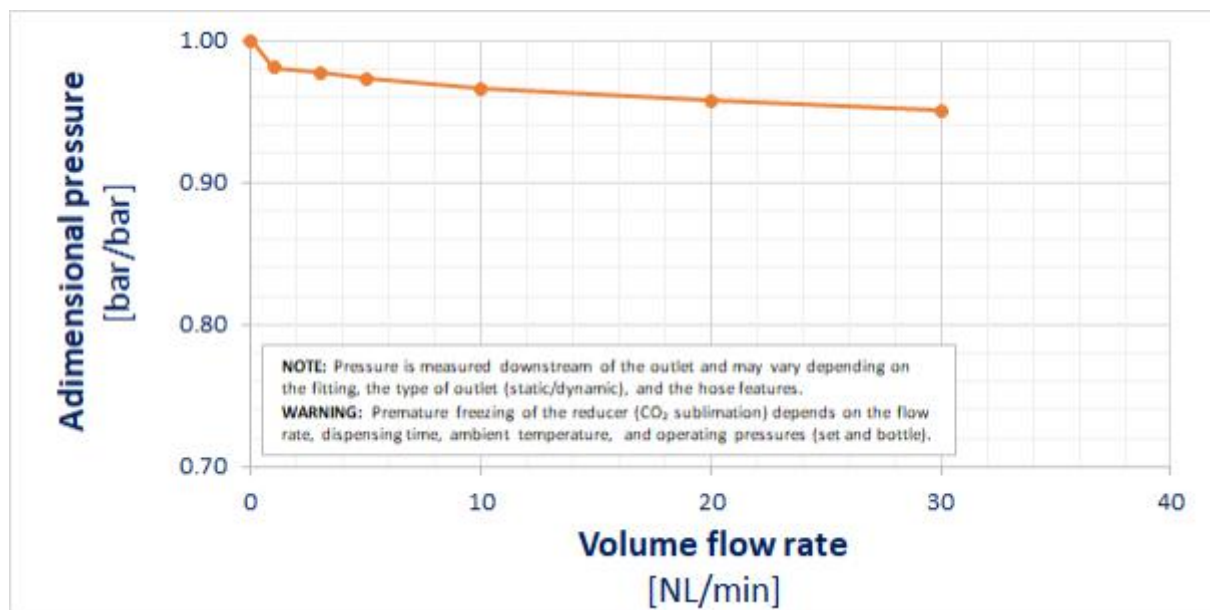


Performance

The plot below presents the pressure reducer's flow characteristic curves, obtained with carbon dioxide.

The value on the vertical axis is the ratio between the measured outlet pressure at a specific flow rate and the corresponding under no-flow condition (set-up pressure).

For example, with a set pressure of 4.8bar and a required flow rate of 5NL/min, the corresponding coefficient from the graph is equal to 0.97. The downstream pressure under operating conditions is obtained by multiplying this coefficient by the set pressure: 4.66 bar = $0.97 \times 4.8\text{bar}$.



Maintenance, cleaning and sanitization

The information provided below is for guidance only. For complete details, please consult the product's Warnings and Instructions Manual.

The pressure regulator is designed to ensure reliable operation with minimal maintenance. The time interval between two maintenance operations can be influenced by numerous factors, including the working environment, the location, the type of gas used, and the load spectrum. It is recommended to replace the diaphragm, cylinder gasket, and high-pressure valve every 2 years.

If necessary, the external cleaning of the regulator can be done using a cloth and water.

For internal sanitization, ODL recommends verifying the chemical compatibility of the chosen sanitizing fluid with the materials present in the regulator; for guidance on the maximum temperatures and pressures to be used during sanitization, please contact ODL.

Food standards and certifications

This family of pressure reducer is compliant with these community and Italian legislation and their subsequent updates and changes and other international standards:

- Regulation (EC) No. 1935/2004,
- Regulation (EC) No. 2023/2006,
- EU Regulation 10/2011,
- D. M. 21/03/1973,
- Presidential Decree 777/82,
- Directive 2014/68/EU.