DOMUS

Servo Dome Pressure Regulators

GASCAT

APPLICATIONS

DOMUS Regulator main used are: in natural gas decompression stations (from bottle up to 210bar), chemical processing such as hydrogen stations, capacitors purges, high Pressure injection machines, high pressure testing, gas turbine engine starter, other applications not listed.

MAIN FEATURES

- Designed for high flow, high pressure gas and liquid applications (1)
- Internal filter (2)
- Internal security relief valve (3)
- Gas loaded dome provides accurate set point regulations
- Compact and light body and cover design
- Self contained Dome Loading Regulators (don't need external pilots)
- Internal sensing line

SPECIFICATIONS

- Inlet pressure: up to 260 bar
- Outlet pressure: 4 - 110 bar
- Temperature range: -30°C to 80°C
- Internal and external leakage: bubble tight
- Gauge ranges:
  - Inlet 0 - 315 bar ¼"NPT
  - Outlet 0 - 60 bar ¼"NPT
- Inlet Body diameter: ¾"NPT-F
- Outlet Body diameter: 1"NPT-F
- Materials:
  - Body: SAE 1045 (forged) or AISI *316* (forged)
  - Dome Cover: SAE 1045 (forged) or AISI *316* (forged)
  - Relief valve: AISI *316* (only)
- Gauges: Carbon Steel housing with Brass Trim or total built in AISI 316 (in case of Stainless Steel Body and Cover).
- Internal Filters: Stainless Steel AISI *316* 300 mesh (50μ)

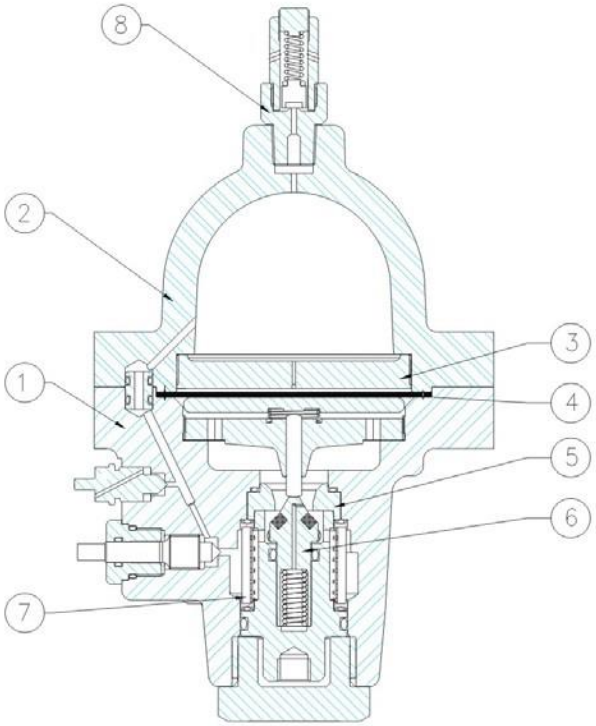
Notes:

1. For liquid application the dome must be pressurized by gas only.
2. The internal filter does not replace the pipe filter, its purpose is only to protect the seat and shutter against particles that can damage these parts.
3. The safety relief valve does not replace the pipe plain relief valve; its purpose is just relief in case of excess of dome pressure or against leaks caused by problems between seat and shutter.

Internal Filter
(incorporated)

Relief Valve
(incorporated)

MATERIALS:



POS.	DESCRIPTION	MATERIAL
1	BODY	SAE 1045 / AISI 316
2	DOME COVER	SAE 1045 / AISI 316
3	PLATES	AISI 316
4	DIAPHRAGM	BUNA - N
5	SEAT	AISI - 420
6	SHUTTER	AISI - 316 / POLYET.
7	FILTER	AISI 316
8	RELIEF VALVE	AISI 316

OPERATION PRINCIPLE

Dome-loading is accomplished by the load and bleed valve combination.

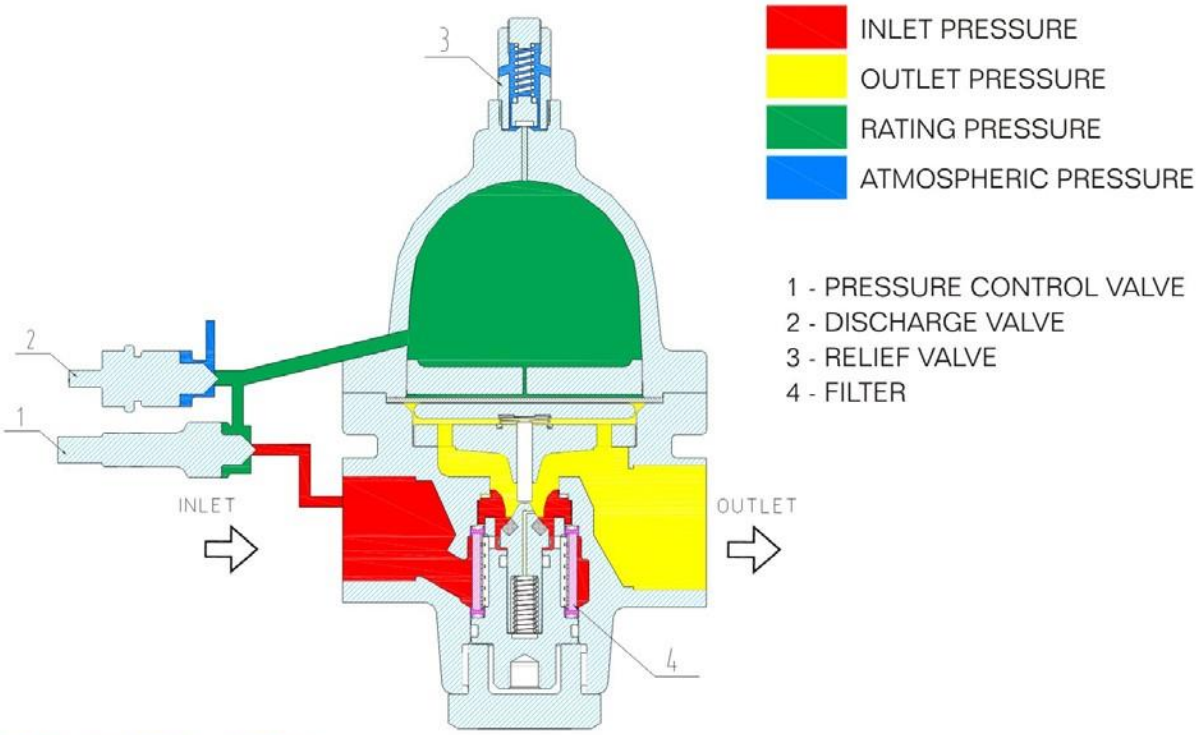
The described action permits flow to start and the pressure under the piston to gradually increase until balance in achieved between dome pressure forces and opposing downstream pressure forces.

As the downstream process demands flow, the decreasing pressure (acting on the outlet side of the diaphragm) allows the dome pressure force to push the diaphragm and lower plate down which, in turn, unseats the poppet.

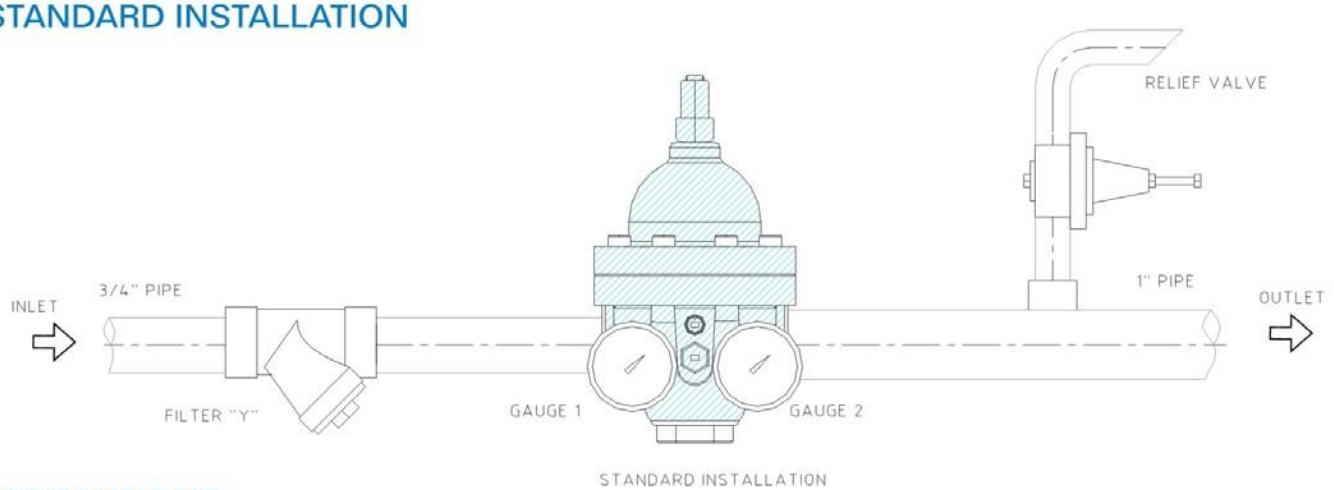
The modulation of the poppet position continues in this manner until process flow demand ceases. The diaphragm is then moved in an upward direction, thus allowing the spring-loaded poppet to close off flow from the upstream side of the regulator.

REGULATION

1 - In order to operate valves 1 and 2 it is necessary a **Socket Key 3/16".**
2 - Open the control valve(1) slowly until obtain the outlet pressure desired (gauge 2)
3 - In case of pressure excess in the dome camera, turn the valve 2 counter clock to purge the excess.



STANDARD INSTALLATION



STANDARD INSTALLATION

PRECAUTIONS

In order to have a better operation performance we strongly recommend a very good filtration pipe and a plain relief pipe installation since the internal one is partial relief.

We also recommend heat the gas before the pressure reduction in order to avoid hydrates formation that can damage mainly shooter and seat.

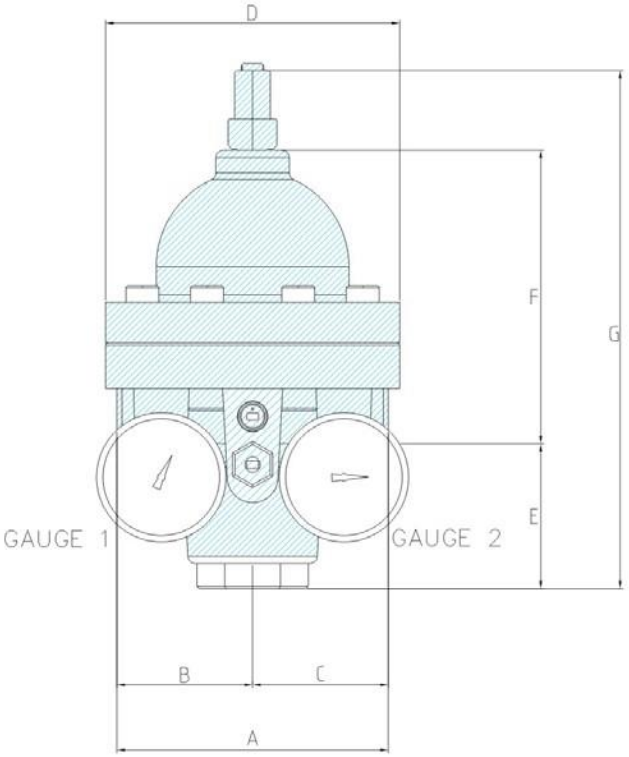
GASCAT
Indústria e Comércio Ltda.

CAPACITIES Nm³/h Natural Gas - Specific Weight = 0,79

Outlet Pressure (bar)	Inlet Pressure (bar)														
	5	10	15	20	30	40	50	75	100	125	150	170	190	220
4	140	360	490	490	490	490	490	490	490	490	490	490	490	490
5	-	350	540	490	490	490	490	490	490	490	490	490	490	490
6	-	330	540	560	560	670	670	670	670	670	670	670	670	670
8	-	290	540	760	740	840	840	840	840	840	840	840	840	840
10	-	-	500	730	930	1140	1140	1140	1140	1140	1140	1140	1140	1140
12	-	-	400	690	1100	1200	1200	1200	1200	1200	1200	1200	1200	1200
15	-	-	-	690	1090	1480	1400	1400	1400	1400	1400	1400	1400	1400
20	-	-	-	-	1060	1445	1760	1760	1760	1760	1760	1760	1760	1760
25	-	-	-	-	1000	1450	1800	1800	1800	1800	1800	1800	1800	1800
30	-	-	-	-	-	1210	1730	2000	2000	2000	2000	2000	2000	2000
40	-	-	-	-	-	-	1310	1800	2000	2000	2000	2000	2000	2000
50	-	-	-	-	-	-	-	1700	1870	2000	2000	2000	2000	2000

Cg = 72 C1 = 32

DIMENSIONS



INLET CONNECTIONS	OULET CONNECTIONS	Dimensions (mm) and Weight (kg)							
		A	B	C	D	E	F	G	Weight (kg)
3/4" NPT	1" NPT	105	52.5	52.5	116	56	118.5	225	5.5

CERTIFICATIONS

ISO 9001 ASME - U-STAMP NATIONAL BOARD

01/2023

GASCAT
Indústria e Comércio Ltda.

Factory

Rodovia SP 73, nº 1141 - Bairro Pimenta

Indaiatuba - SP - Brazil - Zip Code 13.347-390

Phone: (55 19) 3936-9300 - Fax: (55 19) 3935-6009

http://www.gascat.com.br

e-mail: sales@gascat.com.br

Representative/Distributor