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GENERALITIES

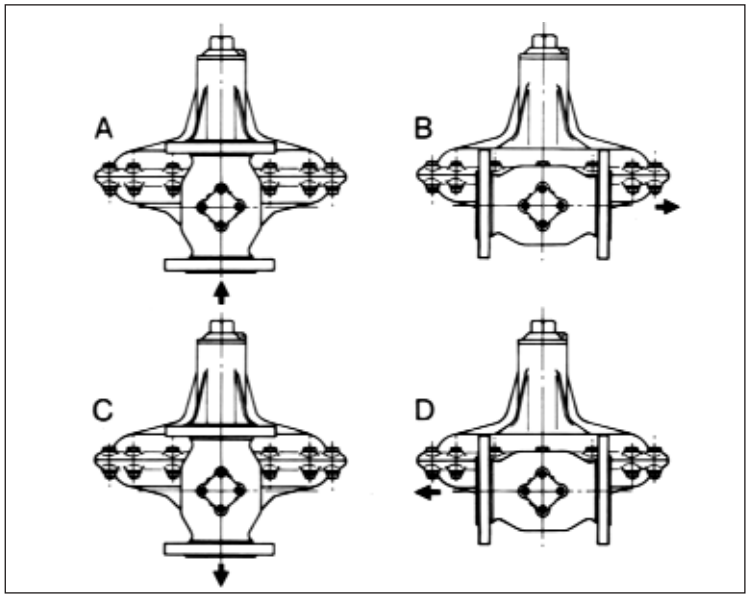
By virtue of its high versatility and performance, the SERIES A/100 regulators are ideally suited for installation in those plants where pressure/delivery conditions are within the ranges of this equipment.
The Series A/100 regulators ensure precise stable operation even when the requirements of the plant cause exceptionally unfavourable condition such as rapid fluctuations in demand.
Typical cases ere the installations of industrial burners, with starting controlled by solenoid valves (on-off).

TECHNICAL SPECIFICATIONS

Body		**Cast-iron**
Servomotor body		**Die-cast Aluminium**
Valve seat		**Brass**
Diaphragm		**Clothed NBR rubber**
Inlet pressure		**Max. = 8 bar**
Outlet pressure	**Standard**	**Max. = 0,06 bar** **Min. = 0,01 bar**
	H.P.	**Max. = 0,3 bar** **Min. = 0,06 bar**
Capacity up to max. 600 St.cu.m./h		

Installation on the pipeline:
Servomotor body in horizontal or vertical position Capability of 90 degree rotations of the body in relation to the servomotor body.

INSTALLATION EXAMPLES



N.B. - A/108-A/109 variants are supplied in standard version as shown in fig. B.
Other solutions are possible upon specific order.

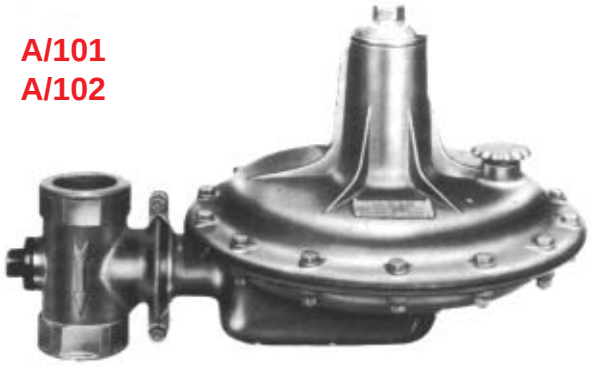
SERIES

A-100

Spring controlled regulators

Bullettin GB-I-0068-01/98

A/101
A/102



in the variants:
SERIE A-100 threaded connections 2" gas f.

In the types:
A/101 - without safety devices

A/102 - with relief valve for outlet overpressure

A/108 - with safety shut-off valve for minimum and/or maximum outlet pressure with independent pneumatic control

A/109 - The seme as A/108 but with safety valve for outlet overpressure.

A/100 SERIES

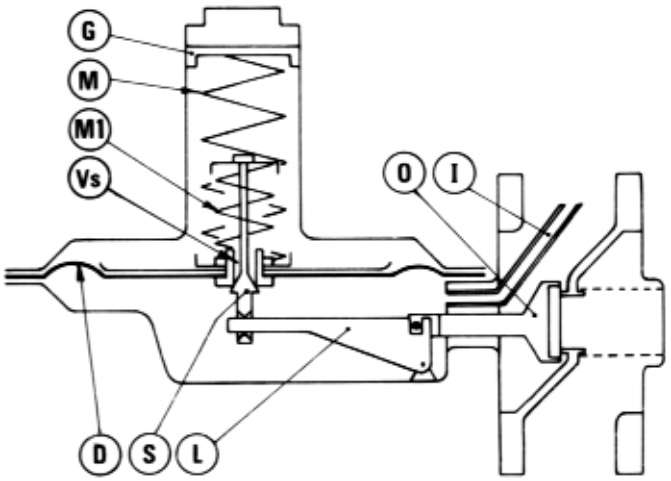


Fig. 1

The regulators of the A/100 series due to their operating specifications are mainly used in those system where sudden capacity variations are required, or else, where the cut-off of the gas distribution is controlled by solenoid valve, such as for the feeding of burners.
They can be used with natural gas, manufactured gas, air, propane and other gases, as long as they do not contain a high percentage of benzole.

Manufacturing specifications

The A/100 series regulators are springcontrolled single seated, whit not counterbalanced valve disc.
They are usually supplied with safety valve and builtin filter and can be also provided with shut-off device for minimum pressure, maximum pressure or minimum and maximum downstream pressure.
The regulators of the series A/100 have been devised keeping in consideration the functionality of maintenance. In fact is possible to replace the seat or the seals without removing the body from the fine.

Operation
(ref. fig.1)

The movements of the diaphragm (D) are transmitted to the valve disc (O) by the stem (S) and the lever (L).
The downstream pressure through the pulse pipe (I) exerts a force under diaphragm (D) and this force is counteracted by the adjusting spring (M).
The gas pressure on the diaphragm tends to close the valve disc; the antagonist action of the adjustment spring tends to open it.
Under normal conditions the balance between these antagonist actions positions the valve disc in such a way as to ensure a constant pressure and therefore the downstream capacity.
Upon any capacity variation tending to cause an increase or decrease of pressure in relation to the pre-set pressure, the moving unit reacts and finds a new balance, so re-establishing the pressure.

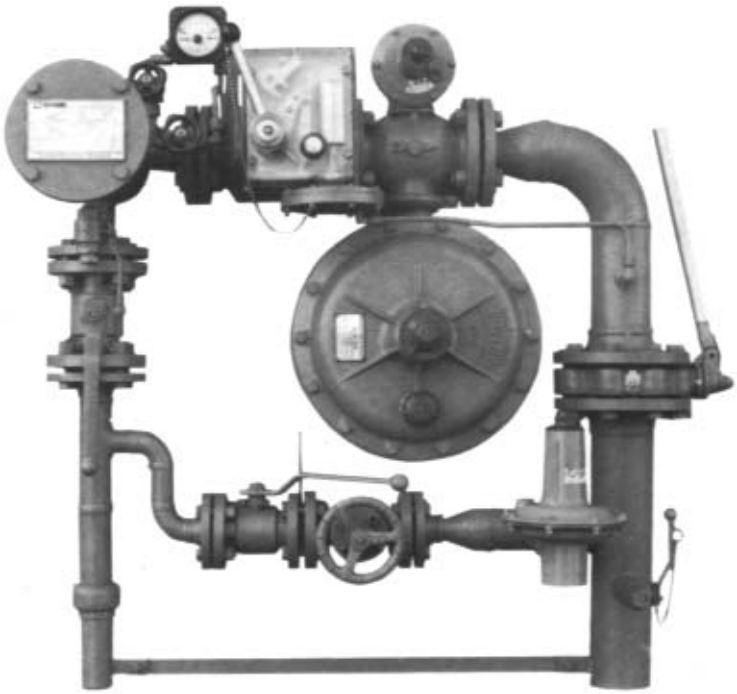
Upon request the regulator is also provided with safety valve (Vs) incorporated in the diaphragm (D); the adjustment at the pre-set value is performed by means of spring (M1).

Setting into operation

In order to carry out the setting into operation of the regulator, open slightly the shut-off valve located downstream, then open very slowly the upstream shut-off valve, wait for the stabilization of the regulator and thereafter complete the opening of the downstream shut-off valve, always extremely slowly.

Adjustment
(ref. fig. 1)

In order to increase the outlet pressure, rotate clockwise the adjusting screw (G) until the desired set-point is reached. Control this value by means of a sample manometer with a proper scale or a water column.
In order to decrease the outlet pressure, rotate the adjusting screw (G) anti-clockwise.
At any rate we wish to stress that the regulators are tested at our plant with the values reported on the label, which correspond to the ones stated by the Customer upon its specific request.
In case an adjustment variation is needed, we advise you very strongly to apply always to our Technical Office before carrying it out since it might be necessary for the distribution at the new pressure to effect the replacement both of the spring, as each spring has its very specific range of use, and of the tops with more proper or stronger ones.
In the latter cases it is preferable that the regulator is sent to our plant or to our agents, and then redelivered in conformity with the new requirements.



SPRING CONTROLLED REGULATORS

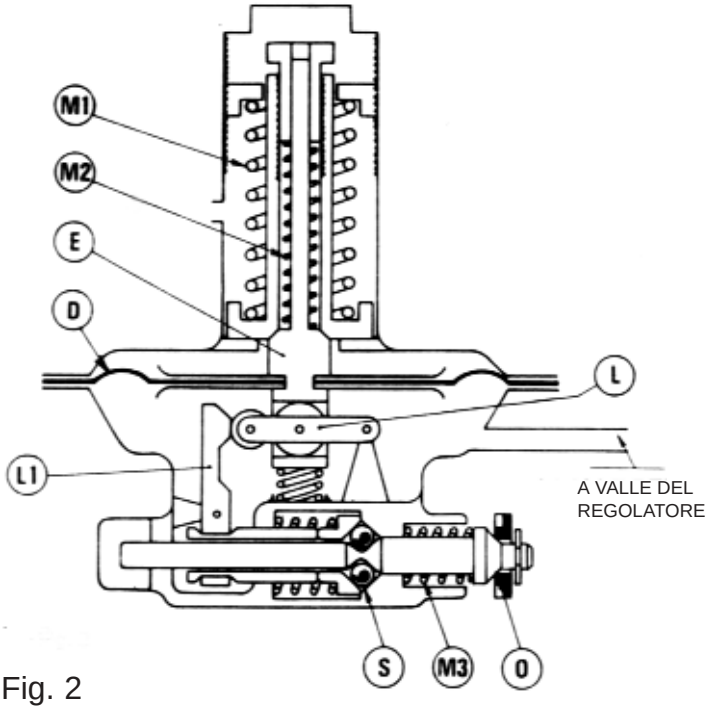


Fig. 2

Safety device

The A/100 Series regulators can be supplied with the OS/66 shut-off valve. This device, while being as reliable and accurate in response as the previous version, also features an internal by-pass which makes resetting possible also in the presence of high inlet pressures. The valve operates independetly of the regulation unite; it can be set for tripping in at maximum an minimum pressures, or at either maximum or minimum pressure, according to customer's specifications.

Operation
(ref fig.2)

Downstream pressure acts on the diaphragm (D) and is counteracted by the spring load (M1) and (M2).
Under such conditions the moving unit (E) is in balance and therefore the lever (L) is in fine with the lever (L1); the spheres (S) are held in their positions, and in turn keep the valve disc (O) in the open position.
Any downstream pressure variation over the pre-set value disturbs the existing balance.
In fact if the downstream pressure increases, the pressure load wins the spring load (M1), if it decreases the spring load (M2) is the overcoming one.
The levers (L) and (L1) are no longer in line; the lever (L1) releases the spheres (S) allowing the valve disc (O) to move to the closed position under the thrust of the spring (M3).

Adjuatment

The adjustment values for maximum and minimum pressure are regulated independely by acting respectively on the spring (M1) and (M2).

Pressure range

MAX. bar	MIN. bar
0,03 ÷ 0,5	0,008 ÷ 0,3

Causes which determine an irregular operation

If downstream of the regulator there is no gas flow, it might depend on the following causes:

a) Lack of inlet gas

b) Disactivated shut-off device (only in the case of regulator with built-in shut-off device).

If the outlet pressure fo the regulator decreases, it might depend on the following:

a) Insufficient upstream feeding.

b) Capacity demand higher than the one which can be supplied by the regulator.

c) Clogging of upstream filter.

If the outlet pressure of the regulator increases it might depend on the following:

a) Worn-out sealing gaskets.

b) Deposit of dirt on the gaskets, that prevents a regular positioning of the valve.

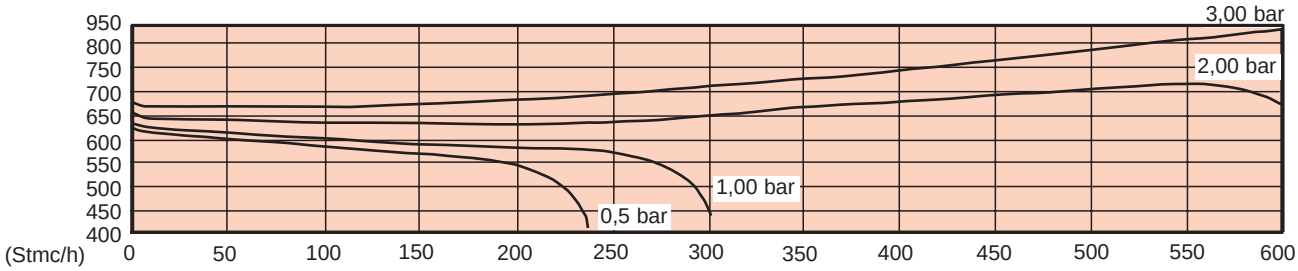
Periodical checking and maintenance

We suggest to check periodically the usage state of the regulator by proceeding as follows: close slowly the shut-off valve located downstream and verify the pressure in the tract between the regulator and the valve.
You should notice a slight increase of the outlet pressure due to the lock-up pressure, after which the pressure will become stable.
If, on the contrary, you notice a continuous increasing of the outlet pressure, this is the evident proof that the valve does not effect a perfect seal.
In such case it is necessary to shut-off the valve located upstream of the regulator and then carry out the normal maintenance. For optimum performance of the regulators, the filter should be periodically cleaned.
To remove the filter, shut-off gas upstream and downstream of the regulator, then remove the bottom cap in the body and exctract the filter.
Clean the filter and reassemble the parts in the reverse sequence paying attention not to "pinch" the cap grommet.
At the end of this operation check the tightness with soapy water. After a long period of operation it might be required to replace the valve tightness pad or the diaphram.
These operations must be carried out by skilled staff or at our plant.

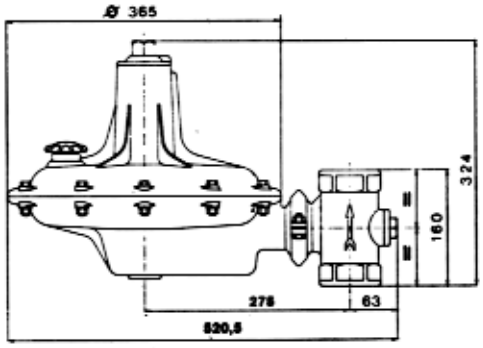
OTULET PRESSURE mbar	INLET PRESSURE bar										SEAT DIAMETER	
	0,03	0,07	0,30	0,50	1,00	1,50	2,00	3,00	4,00	8,00	mm	inches
10 spring 12294	-	45	65	100	110	120	130	140	140	-	12,7	1/2”
	-	-	90	110	120	130	140	140	140	-	15,8	5/8”
	50	85	125	150	170	180	180	-	-	-	19,5	3/4”
	70	100	150	180	190	210	230	-	-	-	25,4	1”
20 spring 12787	-	40	90	100	140	140	150	160	160	160	12,7	1/2”
	-	50	80	110	150	200	230	230	230	-	15,8	5/8”
	35	80	120	180	200	210	210	-	-	-	19,5	3/4”
	55	80	160	200	210	220	250	-	-	-	25,4	1”
50 spring 12807	-	40	80	100	180	200	260	350	420	480	12,7	1/2”
	-	-	90	130	220	300	350	400	480	540	15,8	5/8”
	-	90	170	200	250	300	380	440	-	-	19,5	3/4”
	-	80	150	250	270	350	400	-	-	-	25,4	1”
100 spring 130327	-	-	40	80	120	190	230	370	500	600	12,7	1/2”
	-	-	90	150	200	260	350	540	600	600	15,8	5/8”
	-	-	90	170	260	320	520	600	600	-	19,5	3/4”
	-	-	120	200	300	340	360	-	600	-	25,4	1”
200 spring 13615	-	-	50	70	110	170	190	330	470	600	12,7	1/2”
	-	-	90	120	200	240	300	480	600	600	15,8	5/8”
	-	-	100	160	250	350	440	600	-	-	19,5	3/4”
	-	-	120	210	320	540	600	-	-	-	25,4	1”
300 spring 18407	-	-	-	50	120	150	180	230	300	350	12,7	1/2”
	-	-	-	65	150	200	250	300	350	400	15,8	5/8
	-	-	-	80	175	250	300	-	-	-	19,5	3/4”
	-	-	-	100	200	300	400	-	-	-	25,4	1”

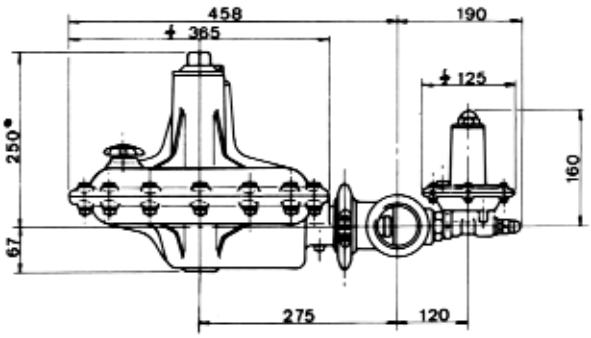
CAPACITY in St.cu.m./h. is referred to natural gas with specific weight of 0,702 - For other gases muitiply the value by: 0,595 propane - 0,518 butane - 0,755 nitrogen - 0,744 air.

CHARACTERISTIC CURVES - Rating 60 mbar Seat 25,4 mm



A/101
A/102





A/108
A/109

*For outlet pressure superior to 70 mbar = 420.
N.B. - The rating of the OS is performed in each single case in function of the outlet pressure of the regulator.