

## VACUUM REGULATORS



Vacuum regulators are used to adjust the pre-set vacuum level, keeping it constant (secondary vacuum), regardless of the capacity and the oscillations of the network vacuum level (primary vacuum).

Their operation is with a membrane-piston and they exploit the pressure differential between the secondary vacuum and the atmospheric pressure. Unlike the vacuum adjusting valves, regulators do not introduce air into the circuit, thus producing more gripping points with different vacuum values, from only one vacuum source.

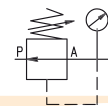
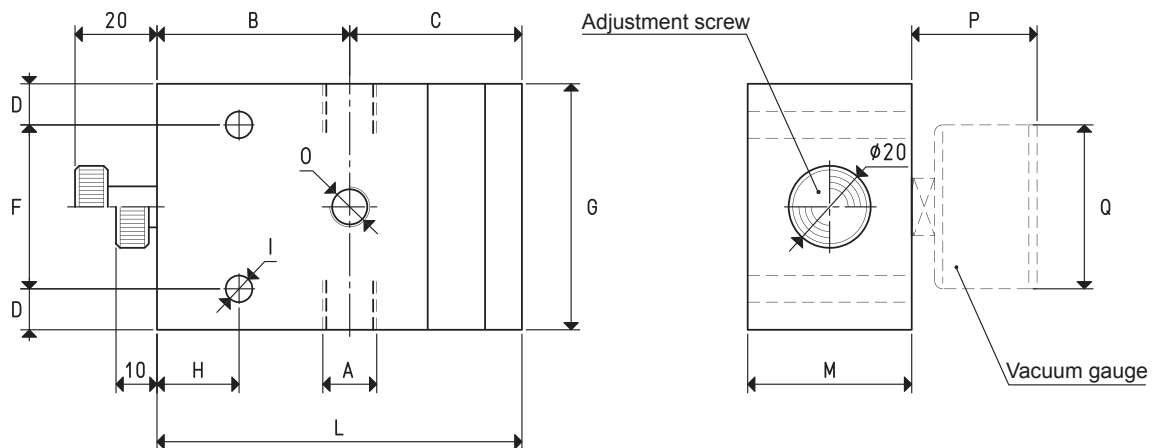
The vacuum level is adjusted by rotating the special reeded screw clockwise to increase it, and anti-clockwise to reduce it.

### Technical features

- Operation: membrane-piston regulator.
- Adjustable operating pressure: from 800 to 1 mbar abs.
- Capacity: from 2 to 160 cum/h.
- Room temperature: from -10 to +80 °C.
- Installation position: any.

### Use

Vacuum regulators are mainly used on centralised plants where, regardless of the plant vacuum level, each grip can be adjusted within that value. Moreover, they are necessary whenever the working vacuum must be lower than the primary vacuum.



Art.	A Ø	Max. capacity cum/h	B	C	D	F	G	H	I Ø	L	M	O Ø	P	Q Ø	Art. pressure gauge	Weight Kg
11 01 10	G1/4"	6	47	42.0	10	40	60	20	6.5	89.0	40	G1/8"	30	40	09 03 15	0.60
11 02 10	G3/8"	10	47	42.0	10	40	60	20	6.5	89.0	40	G1/8"	30	40	09 03 15	0.58
11 03 10	G1/2"	20	53	52.0	15	55	85	25	8.5	105.0	50	G1/4"	36	63	09 03 10	1.15
11 04 10	G3/4"	40	55	55.5	15	70	100	30	8.5	110.5	50	G1/4"	36	63	09 03 10	1.39
11 05 10	G1"	80	60	58.0	15	90	120	30	8.5	118.0	60	G1/4"	36	63	09 03 10	2.08
11 06 10	G1" 1/2	160	54	77.5	15	130	160	20	8.5	131.5	99	G1/4"	36	63	09 03 10	5.49

**Note:** Pressure gauges are not integral part of the regulators, therefore, they must be ordered separately.

$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4}; \text{ pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

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## REGULATORS FOR LOW VACUUM LEVELS

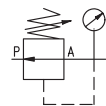
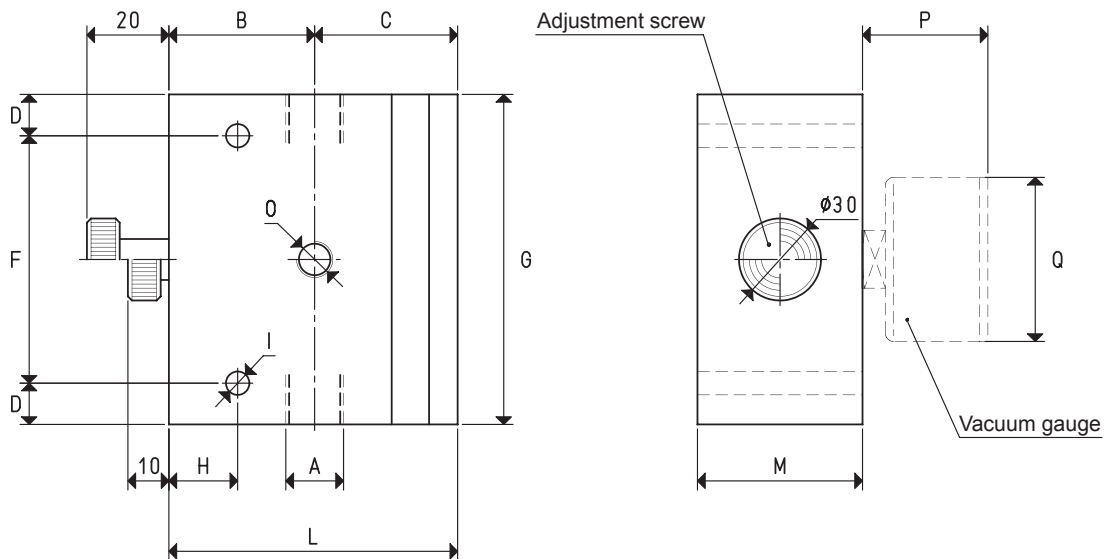
The regulators described in this page are based on the same operation principle as the ones described in the previous page and have the same function. The only difference is that in these ones the minimum adjustable vacuum level is close to the atmospheric pressure value. The vacuum level is adjusted by rotating the special reeded screw clockwise to increase it, and anti-clockwise to reduce it.

### Technical features

- Operation: membrane-piston regulator.
- Adjustable operating pressure: from 980 to 1 mbar abs.
- Capacity: from 20 to 160 cum/h.
- Room temperature: from -10 to +80 °C.
- Installation position: any.

### Use

These regulators are used as the previously described ones, but they offer the additional advantage of regulating even vacuum levels close to the atmospheric pressure.



Art.	A Ø	Max. capacity cum/h	B	C	D	F	G	H	I Ø	L	M	O Ø	P	Q Ø	Art. pressure gauge	Weight Kg
11 03 50	G1/2"	20	53	52.0	15	90	120	25	8.5	105.0	60	G1/4"	36	63	09 03 10	2.07
11 05 50	G1"	80	60	58.0	15	90	120	30	8.5	118.0	100	G1/4"	36	63	09 03 10	3.74
11 06 50	G1" 1/2	160	54	77.5	15	130	160	20	8.5	131.5	99	G1/4"	36	63	09 03 10	5.54

**Note:** Pressure gauges are not integral part of the regulators, therefore, they must be ordered separately

# VACUUM REGULATORS WITH PNEUMATIC ADJUSTMENT

Vacuum regulators with pneumatic adjustment differ from the previous ones for the way they adjust the vacuum level; in fact, instead of acting manually on the adjustment screw, it is necessary to act on the pneumatic cylinder compressed air supply: the higher the pressure, and the higher the vacuum level and viceversa.

Vacuum regulators are used to adjust the pre-set vacuum level and keep it constant (secondary vacuum), regardless of the pump vacuum level (primary vacuum). Unlike the vacuum adjusting valves, regulators do not introduce air into the circuit, thus producing more gripping points with different vacuum values, from only one vacuum source.

Their operating principle is based on the contrasting action between a pneumatic cylinder with short stroke and a fluctuating piston driven by the pressure differential existing between the secondary vacuum and the atmospheric pressure

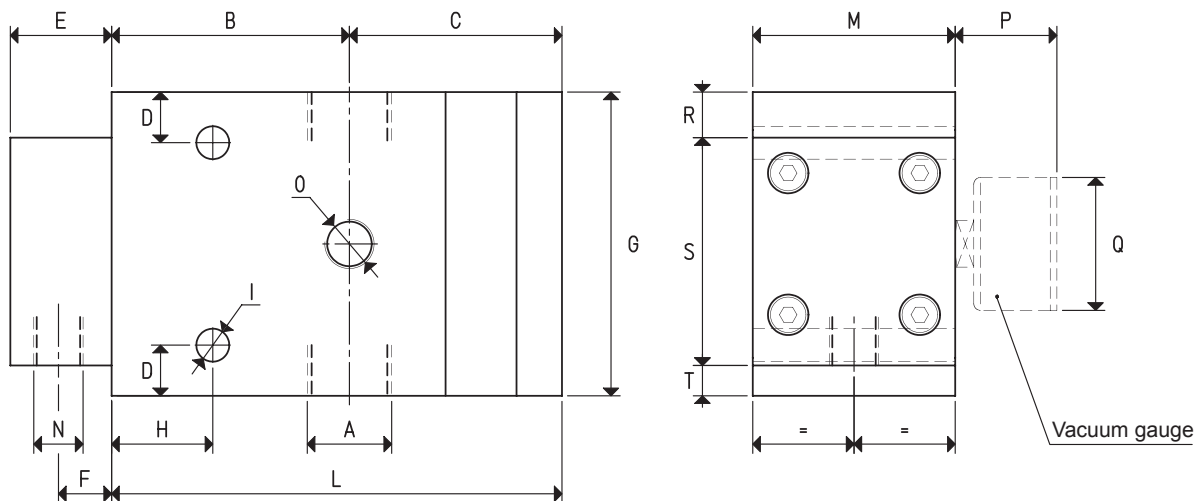
### Technical features

- Operation: membrane-piston regulator.
- Supply pressure: from 0 to 3 bar (g) for regulators art. 11 .. 30;  
from 0 to 5 bar (g) for regulators art. 11 .. 80.
- Adjustable working pressure: from 800 to 1 mbar abs. for regulators art. 11 .. 30;  
from 980 to 1 mbar abs. for regulators art. 11 .. 80.
- Capacity: from 2 to 160 cum/h.
- Room temperature: from -10 to +80 °C.
- Installation position: any.

### Use

Vacuum regulators are mainly used on centralised plants where, regardless of the plant vacuum level, each grip can be adjusted within that value. Moreover, they are necessary whenever the working vacuum must be lower than the primary vacuum and kept constant.

Vacuum regulators with pneumatic adjustment can be installed away from the control point, since it is sufficient to have a pressure regulator on the control panel to act on them.



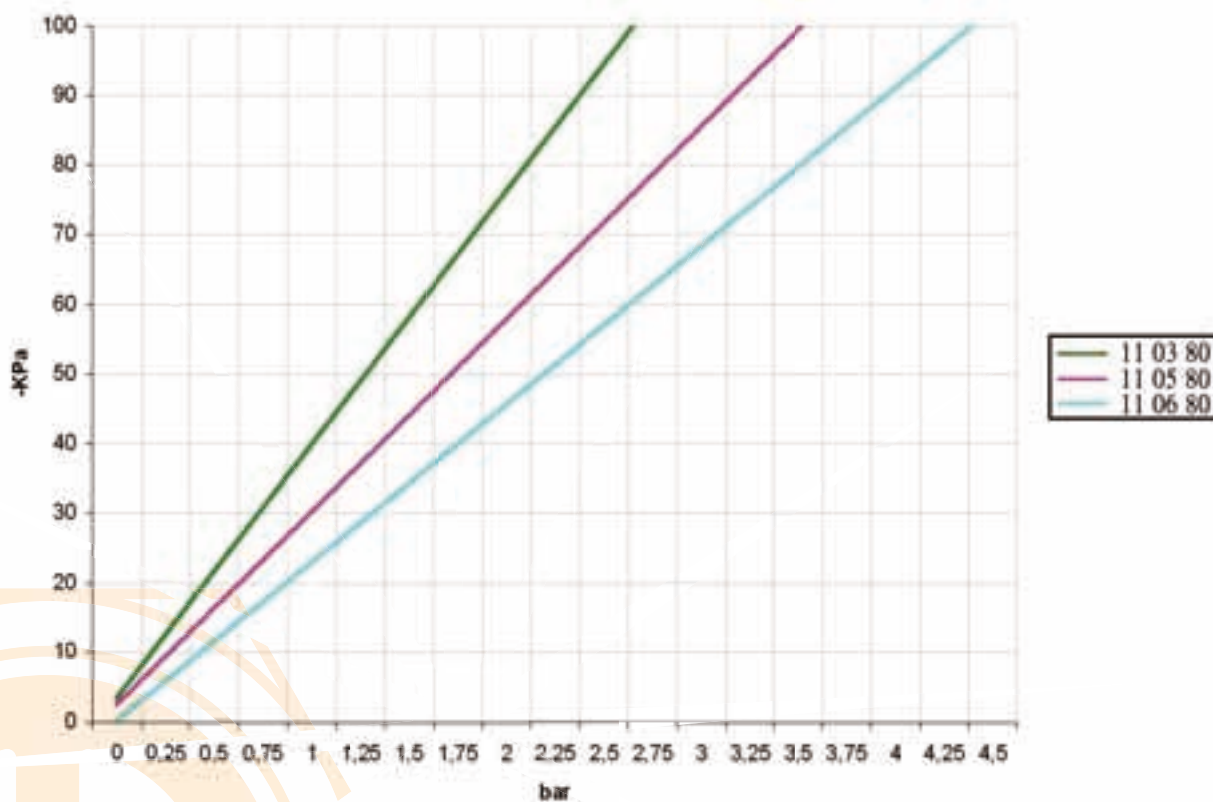
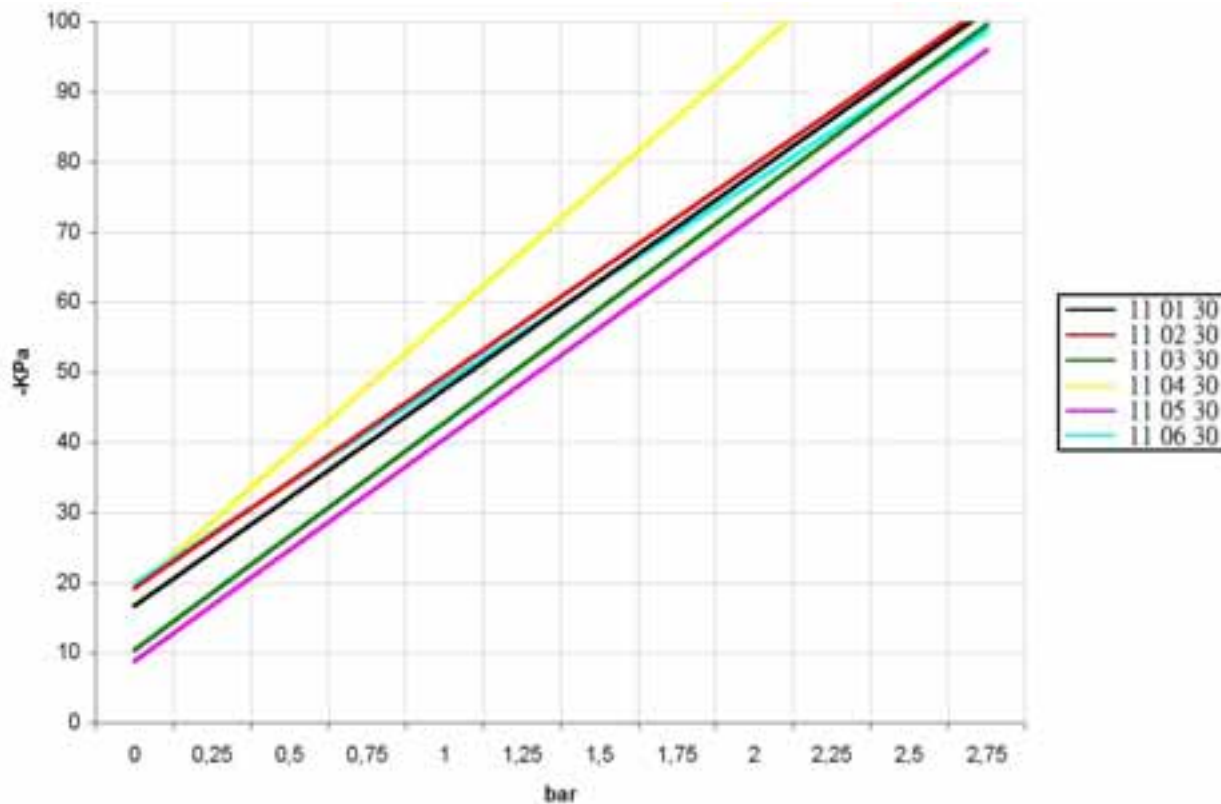
Art.	A Ø	Max. capacity. cum/h	B	C	D	E	F	G	H	I Ø	L	M	N Ø	O Ø	P	Q Ø	R	S	T	Art.	Weight Kg
11 01 30	G1/4"	6	47	42.0	10	20	10.5	60	20	6.5	89.0	40	G1/8"	G1/8"	30	40	9.0	45	6.0	09 03 15	0.71
11 02 30	G3/8"	10	47	42.0	10	20	10.5	60	20	6.5	89.0	40	G1/8"	G1/8"	30	40	9.0	45	6.0	09 03 15	0.69
11 03 30	G1/2"	20	53	52.0	15	26	16.5	85	25	8.5	105.0	50	G1/8"	G1/4"	36	63	16.5	58	10.5	09 03 10	1.32
11 04 30	G3/4"	40	55	55.5	15	26	16.5	100	30	8.5	110.5	50	G1/8"	G1/4"	36	63	24.0	58	18.0	09 03 10	1.94
11 05 30	G1"	80	60	58.0	15	26	16.5	120	30	8.5	118.0	60	G1/8"	G1/4"	36	63	34.0	58	28.0	09 03 10	2.35
11 06 30	G1 1/2"	160	54	77.5	15	30	19.5	160	20	8.5	131.5	99	G1/4"	G1/4"	36	63	37.5	80	42.5	09 03 10	5.56
11 03 80	G1/2"	20	53	52.0	15	26	16.5	120	25	8.5	105.0	60	G1/8"	G1/4"	36	63	34.0	58	28.0	09 03 10	2.28
11 05 80	G1"	80	60	58.0	15	26	16.5	120	30	8.5	118.0	100	G1/8"	G1/4"	36	63	34.0	58	28.0	09 03 10	3.96
11 06 80	G1 1/2"	160	54	77.5	15	30	19.5	160	20	8.5	131.5	99	G1/4"	G1/4"	36	63	37.5	80	42.5	09 03 10	5.60

**Note:** Pressure gauges are not integral part of the regulators, therefore, they must be ordered separately.

Conversion ratio: inch =  $\frac{\text{mm}}{25.4}$ ; pounds =  $\frac{\text{g}}{453.6}$  =  $\frac{\text{Kg}}{0.4536}$

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## DIAGRAMS REFERRING TO THE VACUUM LEVEL ACCORDING TO THE SERVO-CONTROL SUPPLY PRESSURE



**Note:** The values shown in these tables are purely indicative, since they depend on the atmospheric pressure, on the capacity of the vacuum source and on the quality of the compressed air supply.

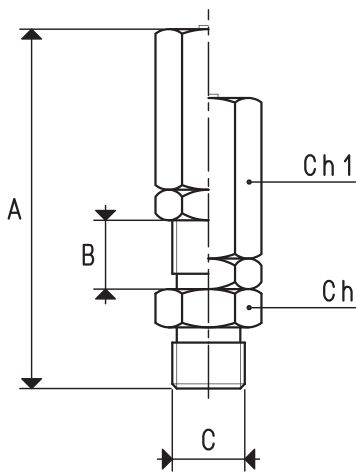
## VACUUM ADJUSTMENT VALVES

When these valves reach a certain precalibrated vacuum degree, they introduce atmospheric air into the circuit to prevent the increase of the set value and to keep it constant.

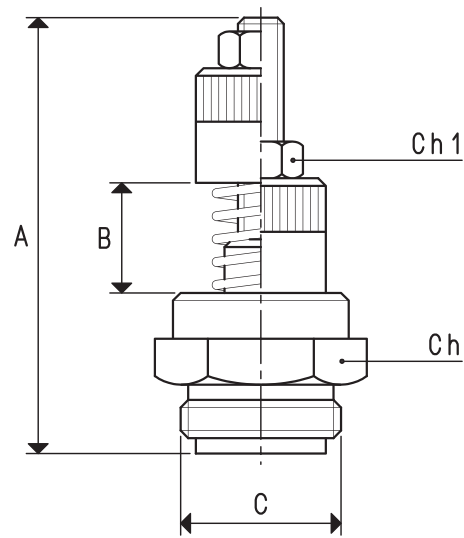
They can be used as regulators only on circuits having only one vacuum pump and only one use (or more uses but all working at the same vacuum degree)

In most cases they are used as safety valves on non-commissioned tanks or containers at high vacuum levels and on vacuum cup lifting systems.

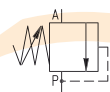
The vacuum level is adjusted by rotating the knurled bush in both directions. The fine thread with which the valve is provided ensures a very accurate calibration.



Art. 04 01 10



Art. 04 02 10  
04 03 10  
04 04 10



Art.	Vacuum adj. mbar abs.	A	B	C Ø	Ch	Ch1	Max. capacity cum/h	Weight g
04 01 10	670 ÷ 1	45	6.5	G1/8"	12	12	4	30
04 02 10	670 ÷ 1	57	15.0	G1/2"	24	10	20	78
04 03 10	670 ÷ 1	60	12.0	G3/4"	30	17	40	150
04 04 10	670 ÷ 1	65	12.0	G1"	35	17	70	210

Conversion ratio: inch =  $\frac{\text{mm}}{25.4}$ ; pounds =  $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

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