AIR REGULATOR

Series : V050, V100, V200, V250, V300

FEATURES:

Choice of Secondary Pressure and self relieving type

Balanced piston / diaphragm design for sensitive control

Servicing possible without removal from air line

Low-torque finger tip control

Simple locking arrangement of set pressure

Optional Mounting bracket

Choice of T-Handle / Push Knob for adjusting pressure

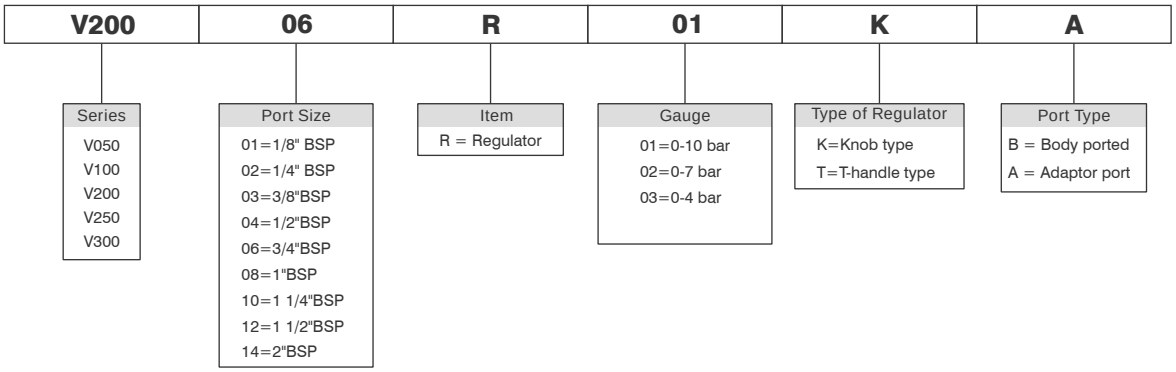
Optional Pressure gauge

High flow capacity with low Pressure drop

* Powder coated in gold / black for superior finish & durability

ORDERING CODE

Example : V200 / 06 / R / 01 / K / A



TECHNICAL SPECIFICATIONS :

Specification	Units	Technical Details				
Model	——	V050-R	V100-R	V200-R	V250-R	V300-R
Port size	Std.	G1/8 , G1/4	G3/8 G1/2	G1/2 , G3/4	G1 , G1¼	G1½ , G2
	Opt.	NPT ports				
Material of Construction	——	Aluminum , Brass , Steel , Plastic , Nitrile.				
Pressure range	Bar	0 - 10 (0 -7 , 0 - 4 , Optional)				
Application	——	To Maintain constant outlet pressure				
Operating medium	——	Compressed filtered air				
Max. Primary Pressure	Bar	17				
Max.Operating Temp.	°C	50				
Pressure Adjustment	——	Manual Knob / 'T' Handle rotation & lock-in position				

*Cost of Gold colour finish product will be 5% higher than the black

AIR REGULATORS:

Pneumatic pressure controls fall in the category of pressure reducing valves and are commonly referred to as air line regulators. It is essential that once a system pressure has been selected, air be supplied at that pressure to the actuator, regardless of variations in flow and upstream pressure.

Thus it is important to add to a pneumatic system a pressure regulator that -

- Helps operate the system more economically by minimising the amount of pressurized air that is consumed and avoid wastage that happens when the system operates at pressure higher than needed for the job.
- Helps promote safety by limiting the maximum supply air pressure to the actuator irrespective of upstream pressure fluctuations.
- Extends component life due to their reduced wear rate when operated at lowest pressure necessary.
- Facilitates easy adjustment of down stream pressure and also insulates it from any abnormal increase in upstream pressure.

OPERATION OF A REGULATOR:

The function of a regulator is to reduce and maintain the desired pressure at the outlet. The regulator consists of a diaphragm(1) which floats between regulating spring(2) and valve stem(3). When the adjusting knob is turned clockwise, the main spring is forced on to the flexible diaphragm which in turn presses the valve stem forcing the valve off its seat and allows air to the downstream system. As flow continues, the pressure begins to build up and the air, via the aspirator fills the diaphragm chamber(6) and forces the diaphragm upwards, and balance the forces above the diaphragm. As forces balance, the valve spring under the valve stem causes the valve to close. The cycle continues in a balanced process of increasing or reducing flow based upon the downstream pressure. As the downstream flow demand varies, the regulator automatically reposition the valve stem in relation to the orifice.

Clockwise rotation of the knob increases and counter clockwise rotation decreases the outlet pressure setting. When the knob is rotated fully counter clockwise to the end, no force is applied on the regulating spring and the valve is held closed by its spring(5) and there will be no air flow from the regulator outlet.

The adjusting knob has locking feature where pulling the knob upwards releases the lock and pushing it downwards engages the lock.

The regulator is of self relieving type, that is, should a downstream event cause the outlet pressure to rise above the set pressure, the valve acts like a pressure relief valve and bleeds the excess air to atmosphere.

SAFETY PRECAUTIONS :

1. Pull up the adjustment knob and release its lock before trying to rotate it to set the pressure. The knob would be damaged if it is rotated without releasing the lock.
2. Do not connect regulator to bottled gas. Do not exceed maximum pressure rating as product rupture can cause serious injury.
3. Set the secondary pressure of the regulator to not more that 80% of the upstream pressure.

4. ADJUSTING KNOB

Controls the outlet pressure. Ensures accurate adjustment of the outlet pressure with minimum effort.

2. REGULATING SPRING

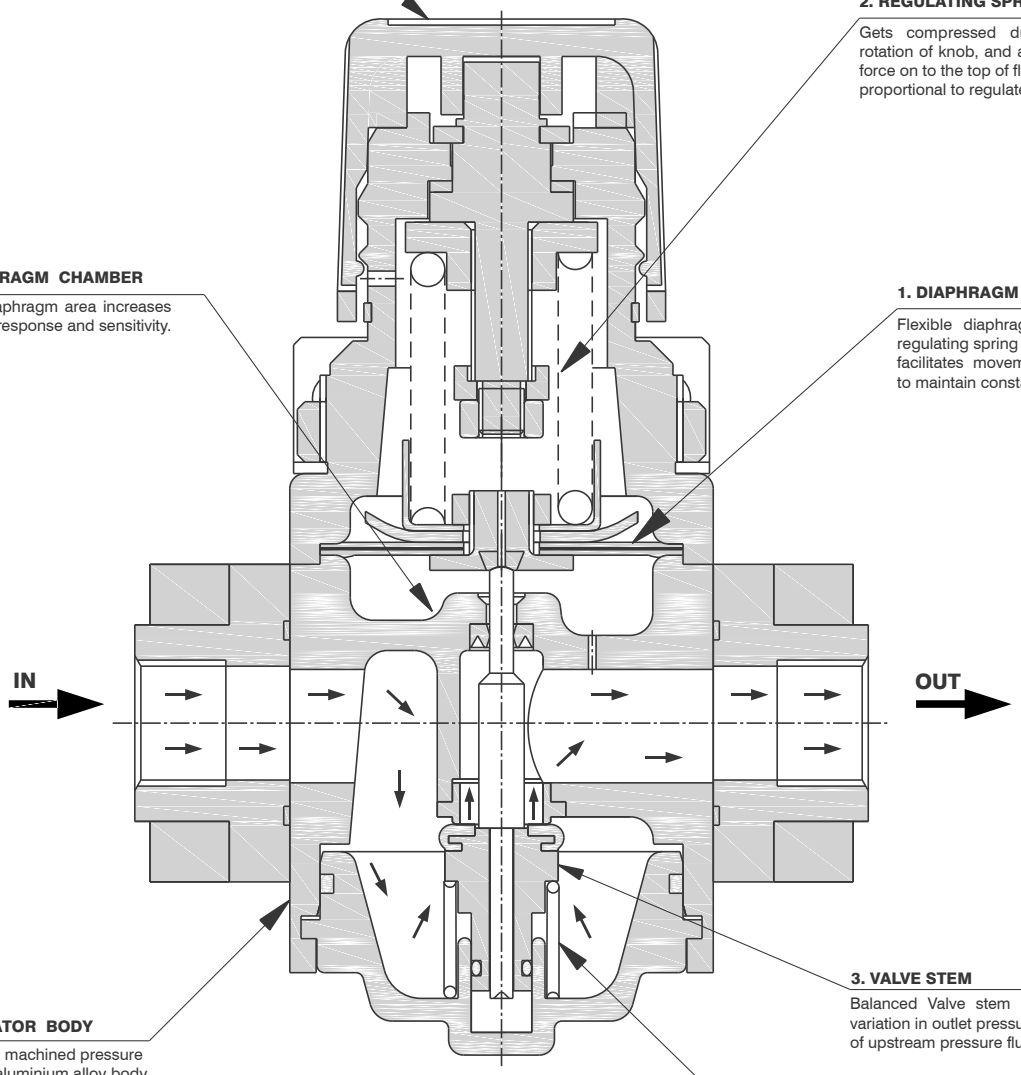
Gets compressed due to clockwise rotation of knob, and applies downward force on to the top of flexible diaphragm, proportional to regulated pressure.

6. DIAPHRAGM CHAMBER

Larger diaphragm area increases regulator response and sensitivity.

1. DIAPHRAGM

Flexible diaphragm floats between regulating spring and Valve stem and facilitates movement of Valve stem to maintain constant outlet pressure.



3. VALVE STEM

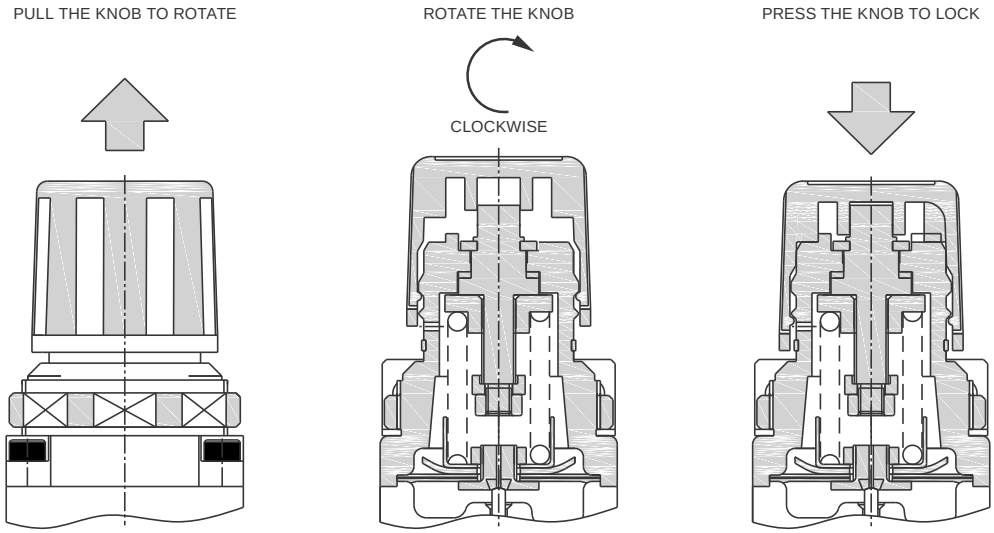
Balanced Valve stem minimises the variation in outlet pressure irrespective of upstream pressure fluctuations.

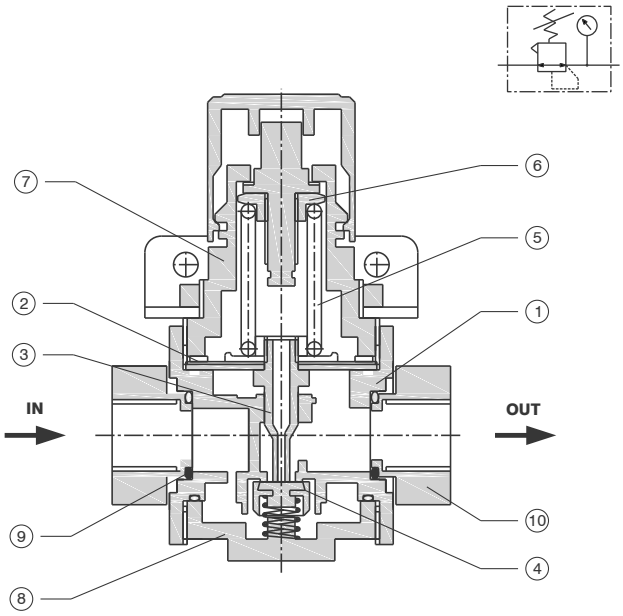
REGULATOR BODY

Precision machined pressure die cast aluminium alloy body.

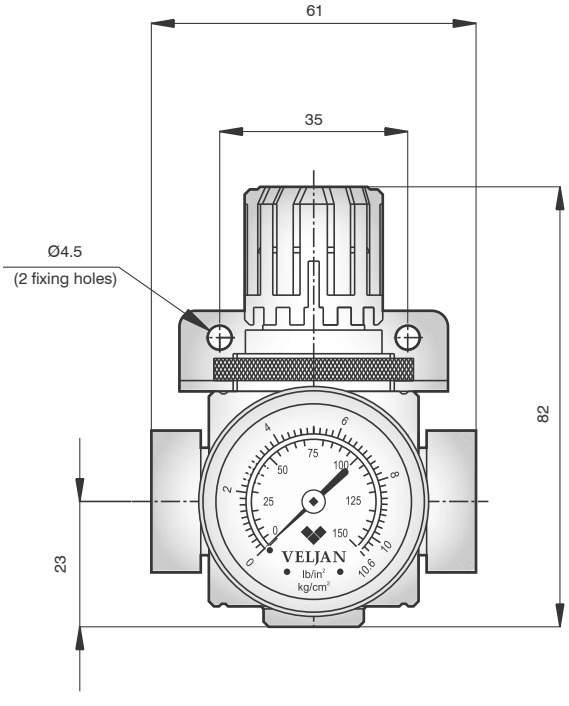
5. VALVE STEM SPRING

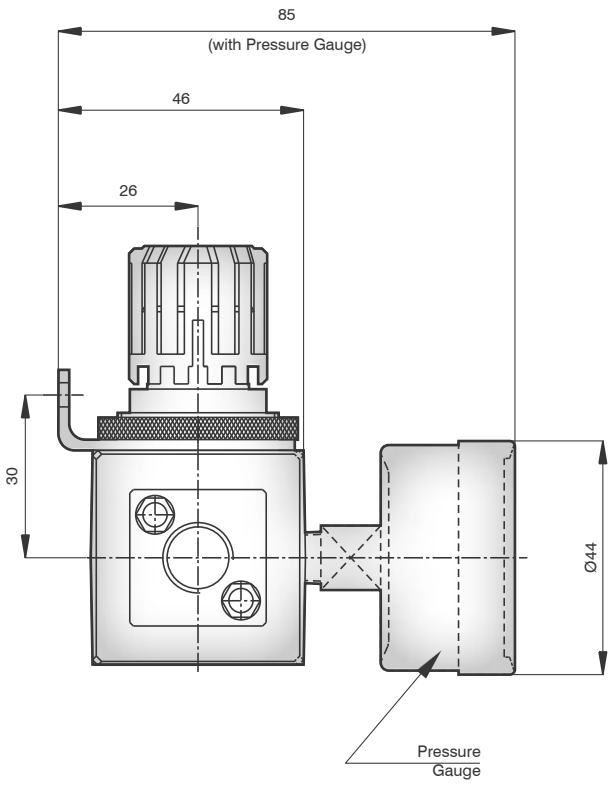
REGULATING KNOB ADJUSTMENT

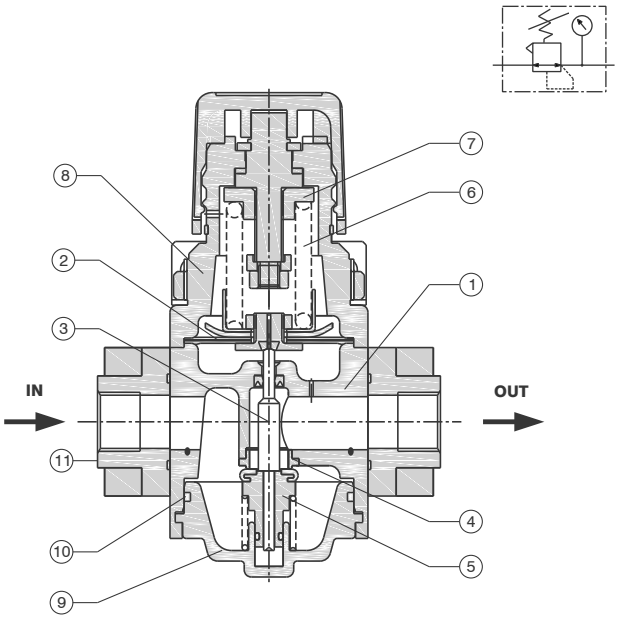




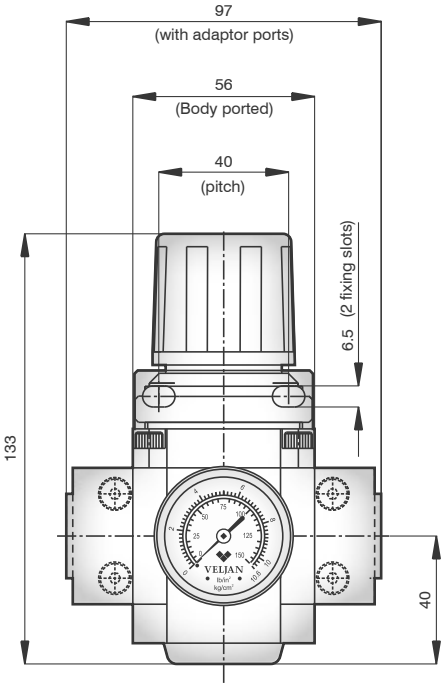
S.no.	Description	Material
1	Regulator body	Zinc
2	Diaphragm	Nytrile
3	Adjusting pin	Brass
4	Valve stem	Brass
5	Spring	Spring steel
6	Spring cap	Brass
7	Bonnet	G.F.Nylon
8	Retainer	G.F.Nylon
9	`O' Ring	Nytrile
10	Adaptor	Aluminum

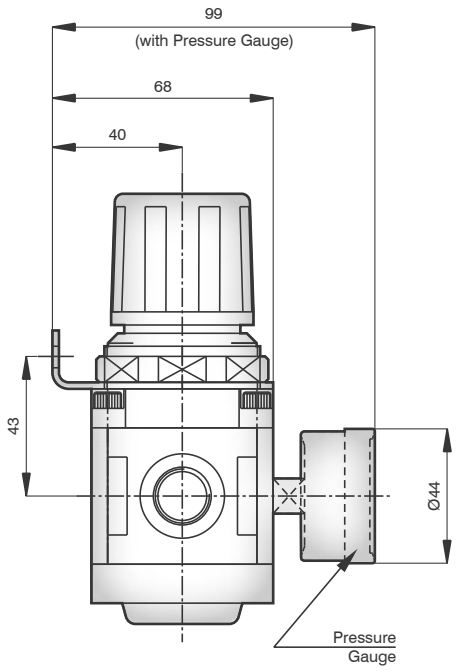


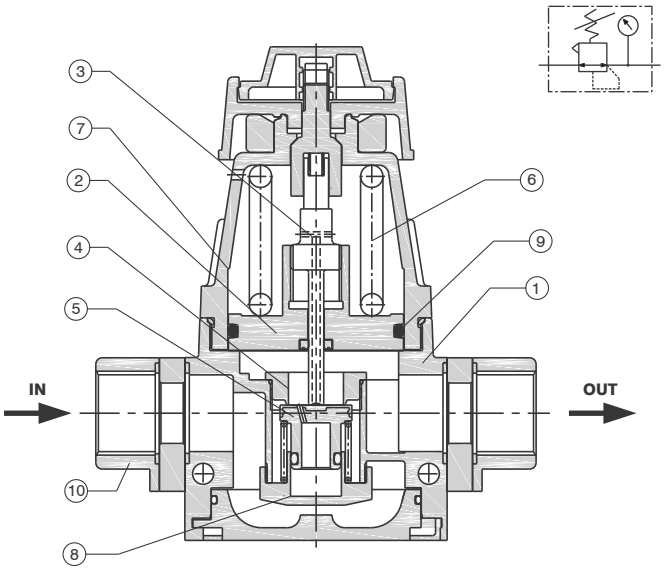




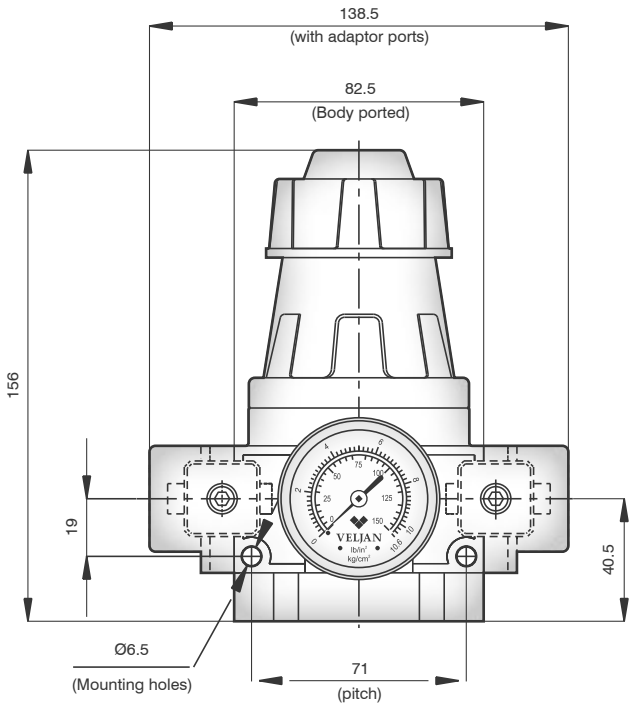
S.no.	Description	Material
1	Regulator body	Aluminum
2	Diaphragm	Nytrile
3	Adjusting pin	Brass
4	Valve seat	S.S.
5	Valve stem	Brass
6	Spring	Spring steel
7	Spring cap	S.S.
8	Bonnet	P.P.S.
9	Retainer	G.F.Nylon
10	`O' Ring	Nytrile
11	Adaptor	Aluminum

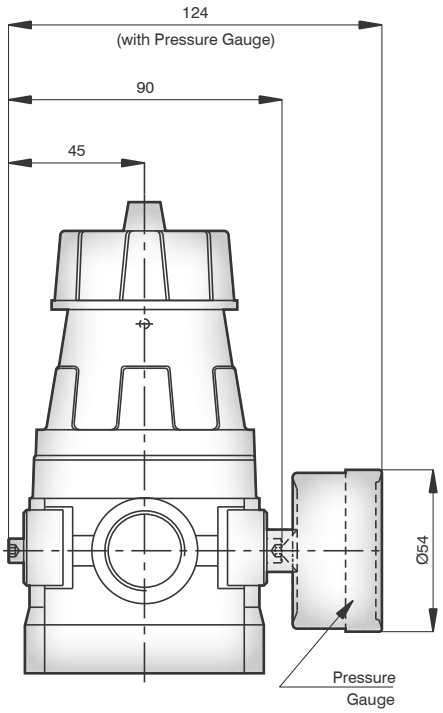


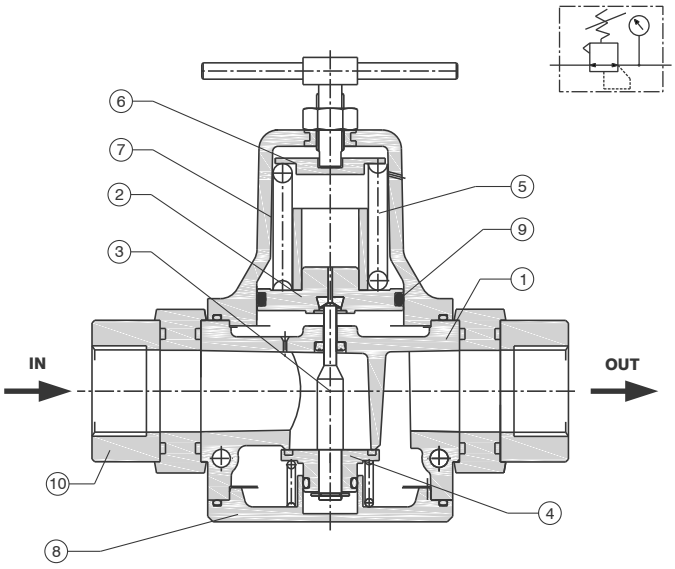




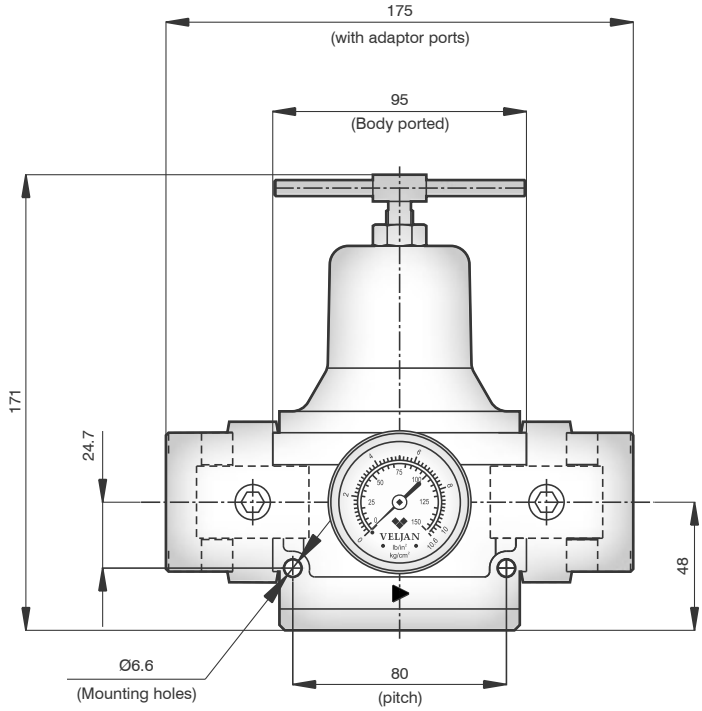
S.no.	Description	Material
1	Regulator body	Aluminum
2	Piston	Aluminum
3	Adjusting pin	Brass
4	Valve seat	Aluminum
5	Valve stem	Aluminum
6	Spring	Spring steel
7	Bonnet	Aluminum
8	Retainer	Aluminum
9	`O' Ring	Nytrile
10	Adaptor	Aluminum

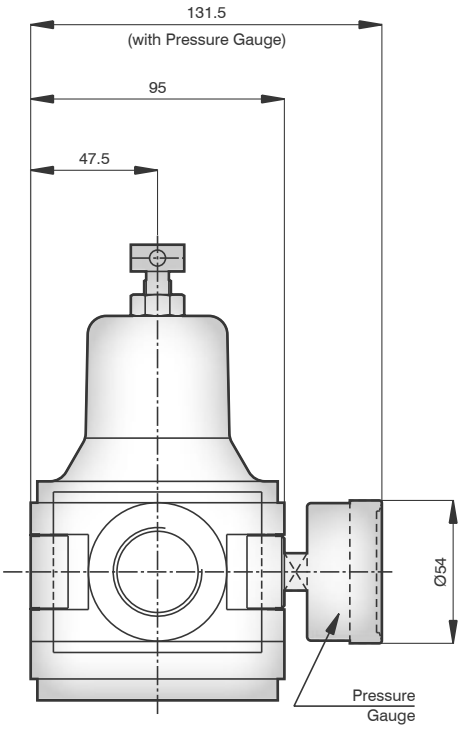


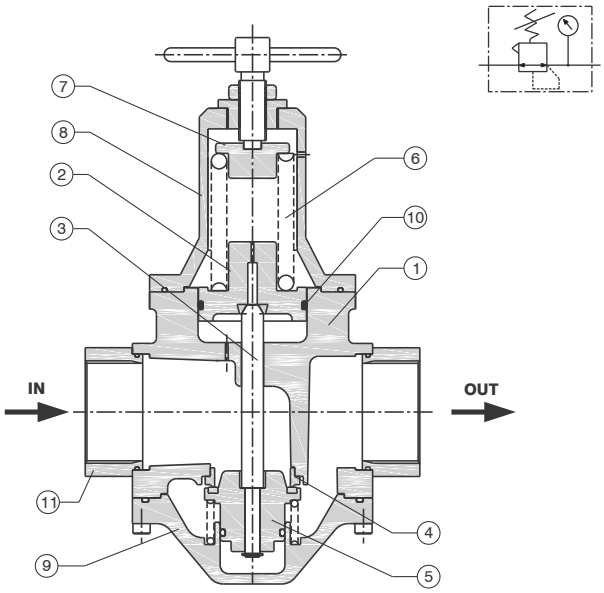




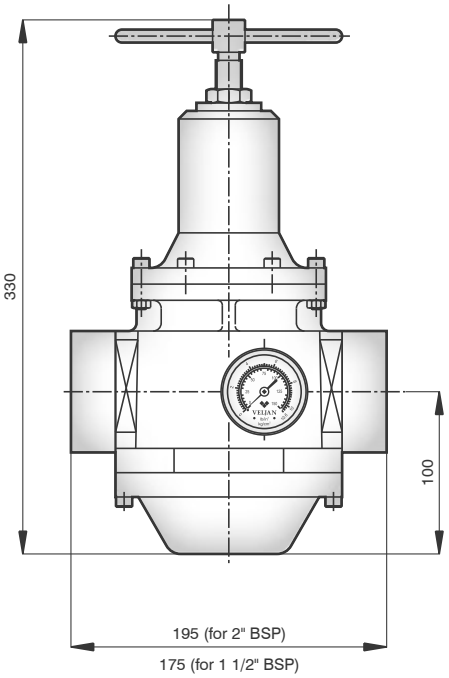
S.no.	Description	Material
1	Regulator body	Aluminum
2	Piston	Aluminum
3	Adjusting pin	Brass
4	Valve stem	Brass
5	Spring	Spring steel
6	Spring cap	S.S.
7	Bonnet	Aluminum
8	Retainer	Aluminum
9	`O' Ring	Nytrile
10	Adaptor	Aluminum

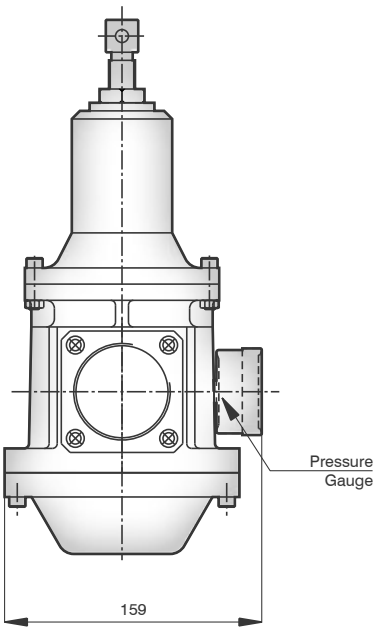






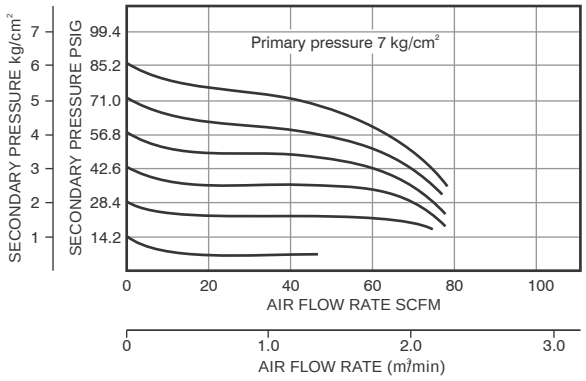
S.no.	Description	Material
1	Regulator body	Aluminum
2	Piston	Aluminum
3	Adjusting pin	Steel
4	Valve seat	Aluminum
5	Valve stem	Aluminum
6	Spring	Spring steel
7	Spring cap	S.S.
8	Bonnet	Aluminum
9	Retainer	Aluminum
10	`O' Ring	Nytrile
11	Adaptor	Aluminum



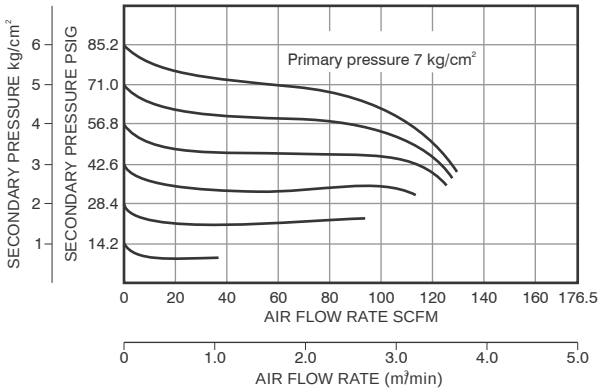


FLOW CHARACTERISTICS :

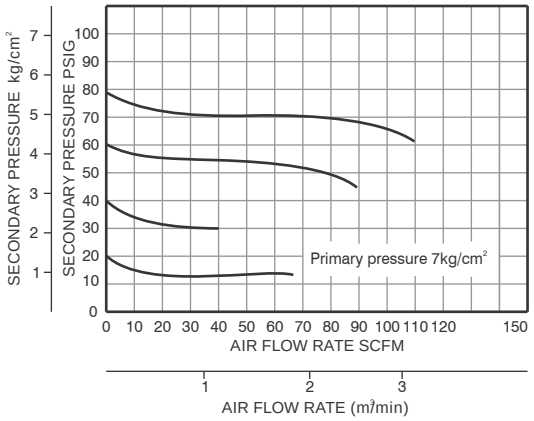
V050 (1/4" BSP PORT)



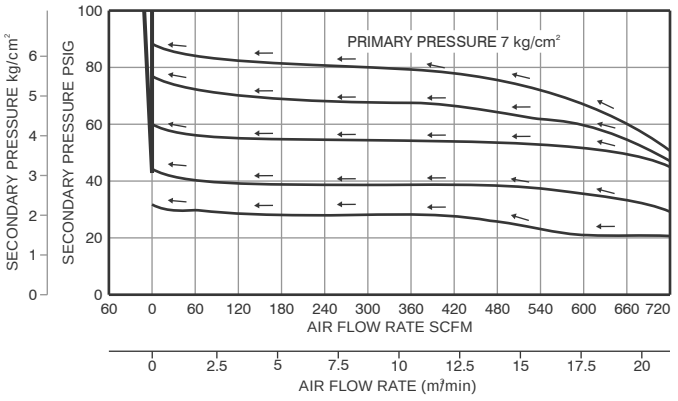
V100 (3/8" BSP PORT)



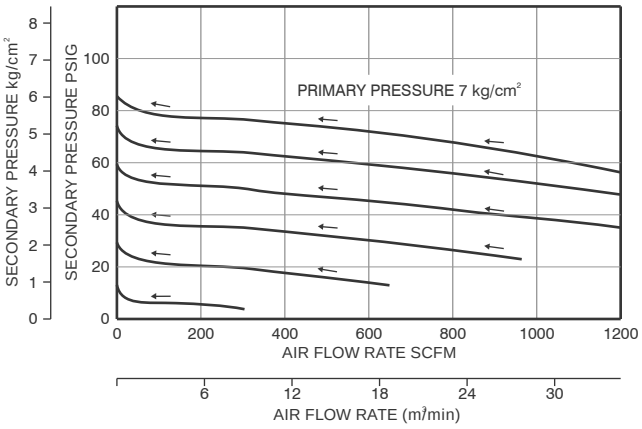
V200 (3/4" BSP PORT)



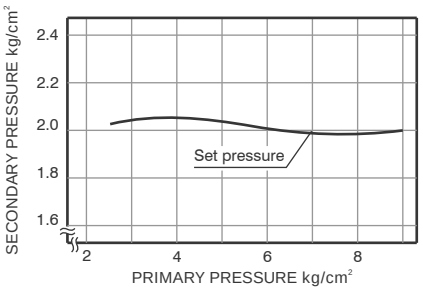
V250 (1¼" BSP PORT)



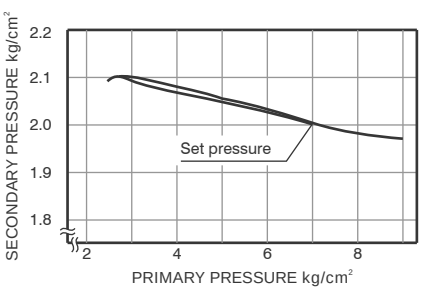
V300 (2" BSP PORT)



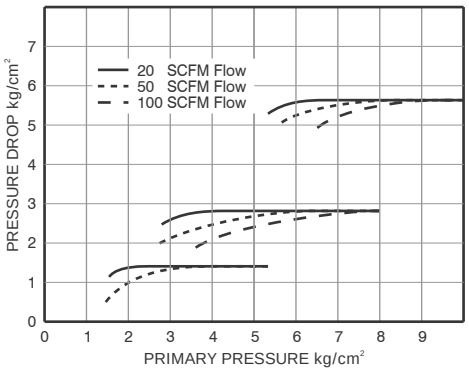
PRESSURE CHARACTERISTICS :



V050

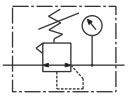


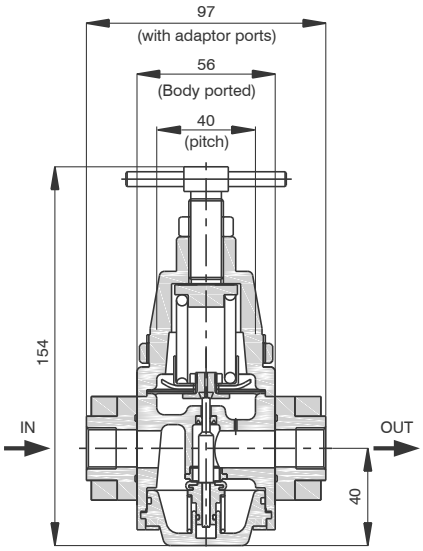
V100

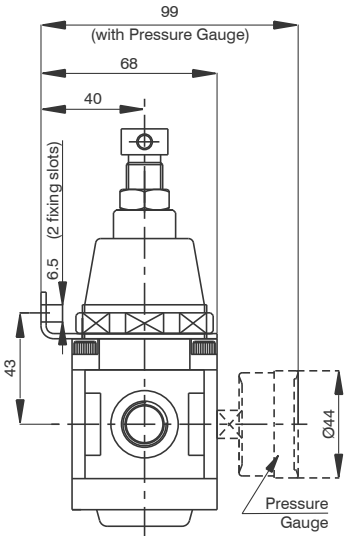


V200

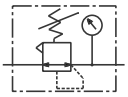
T -Handle Regulator (V100)

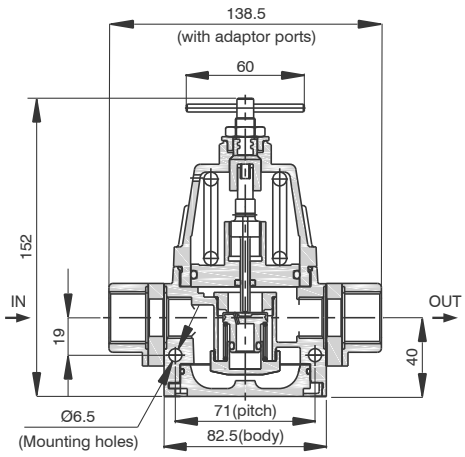


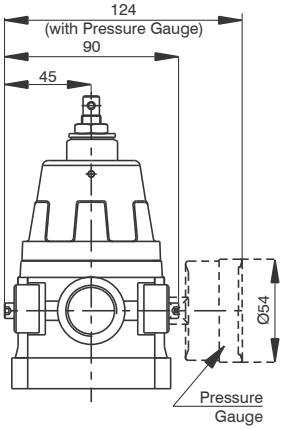




T -Handle Regulator (V200)

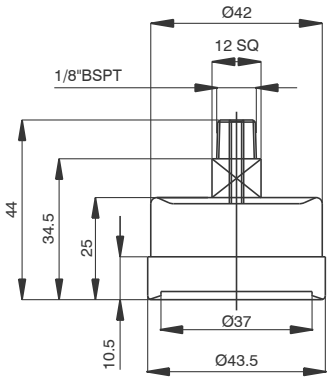




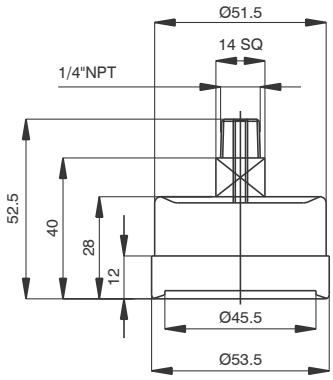


0-10 bar	0-7 bar	0-4 bar	0-2 bar

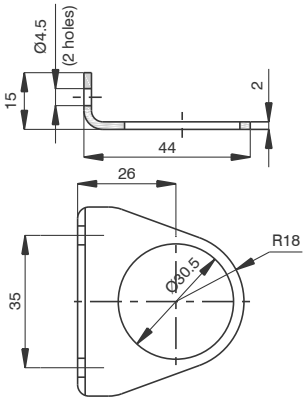
FOR V050 & V100



FOR V200, V250 & V300

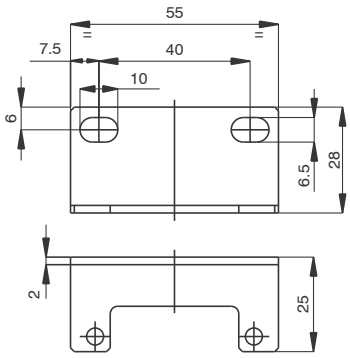


V050 MOUNTING BRACKET

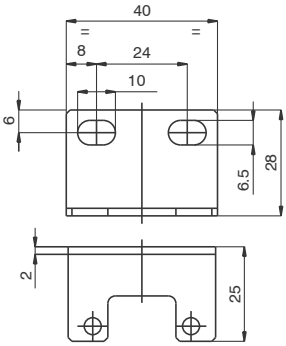


V100 MOUNTING BRACKET (Spl)

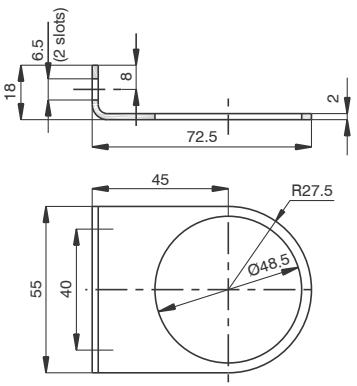
FOR FILTER & LUBRICATOR



FOR F+L & F+R



V100 MOUNTING BRACKET



V250 MOUNTING BRACKET