

Furon Downstream Pressure Regulators: UPRM vs UPRP

The Furon UPRM and UPRP Pressure Regulators are both specially designed to control and maintain downstream output flow pressures of liquid lines. This type of component is generally positioned upstream from sensitive equipment in order to prevent any alteration or damage to an operation caused by pressure fluctuations.

Manual vs Pneumatic

Pressure regulators can be controlled in two ways:
Pneumatically or Manually

The Manual Version: Contains a spring which can adjust the load manually and is the element that drives the opening or closing of the diaphragm. Using a spring with a wide range will reduce the accuracy of its effect.

Pro:

- Once your system is set it will not need to be adjusted
- No additional airline or air pressure regulator is needed

Con:

- Needs to be set each time that you want to change the pressure value
- The window of operation can be limited by the spring

The Pneumatic Version: The air pressure that feeds the regulator is the element that drives the opening or closing of the diaphragm. The UPRP has a feature that provides a 1 to 1 ratio, which means the pressure that is used to feed the regulator should be equal to the pressure required as the controlled output value.

Pro:

- Can be adjusted quickly based on the intake value

Con:

- Need to settle an additional air line

How do they work?

The regulators oscillate continuously between an open and closed position, to control fluctuating liquid pressure.

Low Pressure in System

Set the pressure for control (Air actuation) greater than the spring force + outlet downstream force.

The shaft moves down, opening the sealing points, enabling the liquid to flow through.

High Pressure in System

As the liquid flows through, the outlet downstream force increases up to the point that the set pressure for control (Air actuation) is less than the spring force + outlet downstream force.

The shaft moves up, closing the sealing points, gradually reducing the liquid to flow through, reducing the outlet downstream force, allowing it to build up.

Continued on following page...

UPRM



Manual
0.25/0.5 in Orifice



Pneumatic
0.25/0.5 in Orifice

UPRP



Manual
0.25 in Orifice



Pneumatic
0.25 in Orifice



Pneumatic
1 in Orifice

UPRM vs UPRP Pressure Regulators

The UPRP is an improved solution based on the UPRM design. The critical difference between the two regulators is the surface area of contact that controls the liquid pressure. See the **Red diaphragm** in the UPRM in Figure 1 vs the **Green diaphragm** on the UPRP in Figure 2. The greater the surface area of contact, the better response a system will have. This increases the pressure regulation range of coverage and has a more rapid and stable response.

See the curves in Graph 2, the Flow vs Outlet Pressure for UPRP & UPRM: the long horizontal portion on the UPRP vs slightly steeper portion on the UPRM.

An anti-shattering design on the UPRP (**Blue Sealing Point**) vs the standard sealing solution on the UPRM (**Orange Sealing Point**) enables a better response of the system, even at low flow. In Graph 2, see the curve at a lower flow rate, the UPRP remains stable while the UPRM does not respond.

Recommendation on Using One vs the Other

It all depends on the flow fluctuation of your system. The UPRP Precision Pressure Regulator is a more stable product for a high flow fluctuating system that provides a longer array of steady behavior, delivering a higher level of safety and piece of mind. The UPRM Pressure Regulator has a tighter window of operation which is optimal for a low flow fluctuating system that operates within its pressure regulation range.

Figure 1
UPRM Pressure Regulator - Pneumatic

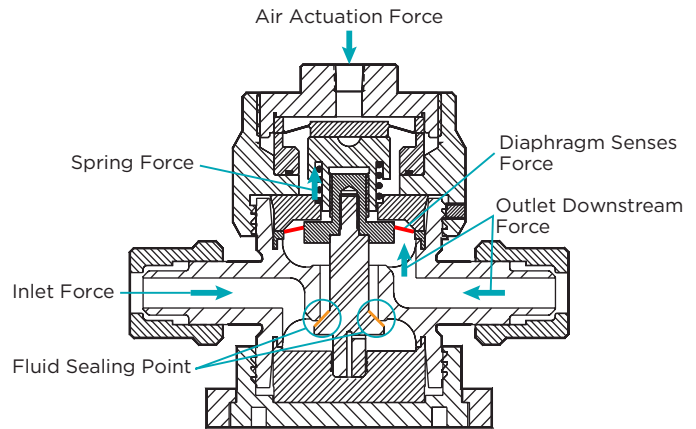
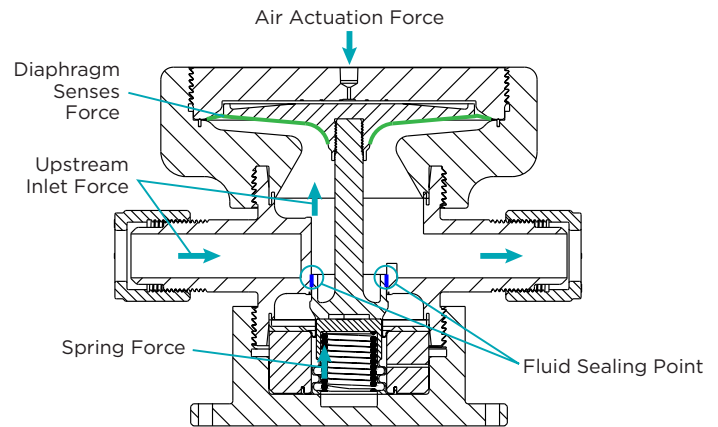
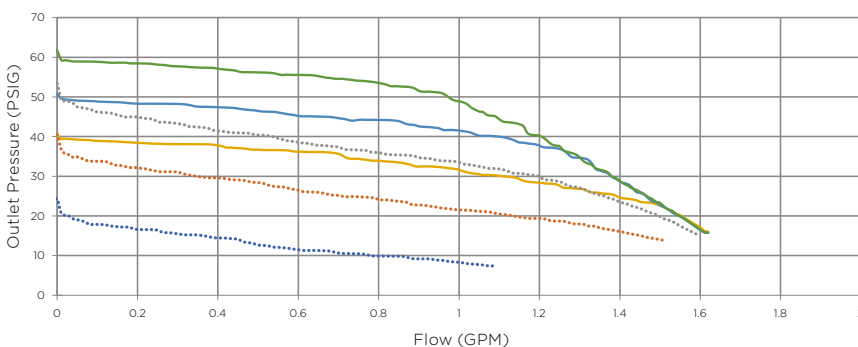


Figure 2
UPRP Precise Pressure Regulator - Pneumatic



Graph 2
Flow vs Outlet Pressure for UPRP & UPRM



- UPRP - Pilot Pressure 60 psig, Static Inlet Pressure 75 psig
- UPRP - Pilot Pressure 50 psig, Static Inlet Pressure 75 psig
- UPRP - Pilot Pressure 40 psig, Static Inlet Pressure 75 psig
- UPRM - Pilot Pressure 60 psig, Static Inlet Pressure 75 psig
- UPRM - Pilot Pressure 50 psig, Static Inlet Pressure 75 psig
- UPRM - Pilot Pressure 40 psig, Static Inlet Pressure 75 psig

See Our [Product Selector Page](#) on www.furon.com to assist in selecting the **Pressure Regulator** needed for your system, or [Contact Us](#) for more information.



CLICK HERE TO SEE THE NEW VIDEO FURON® UPRP PRECISION PRESSURE REGULATOR