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The Gas Education & Training Specialist

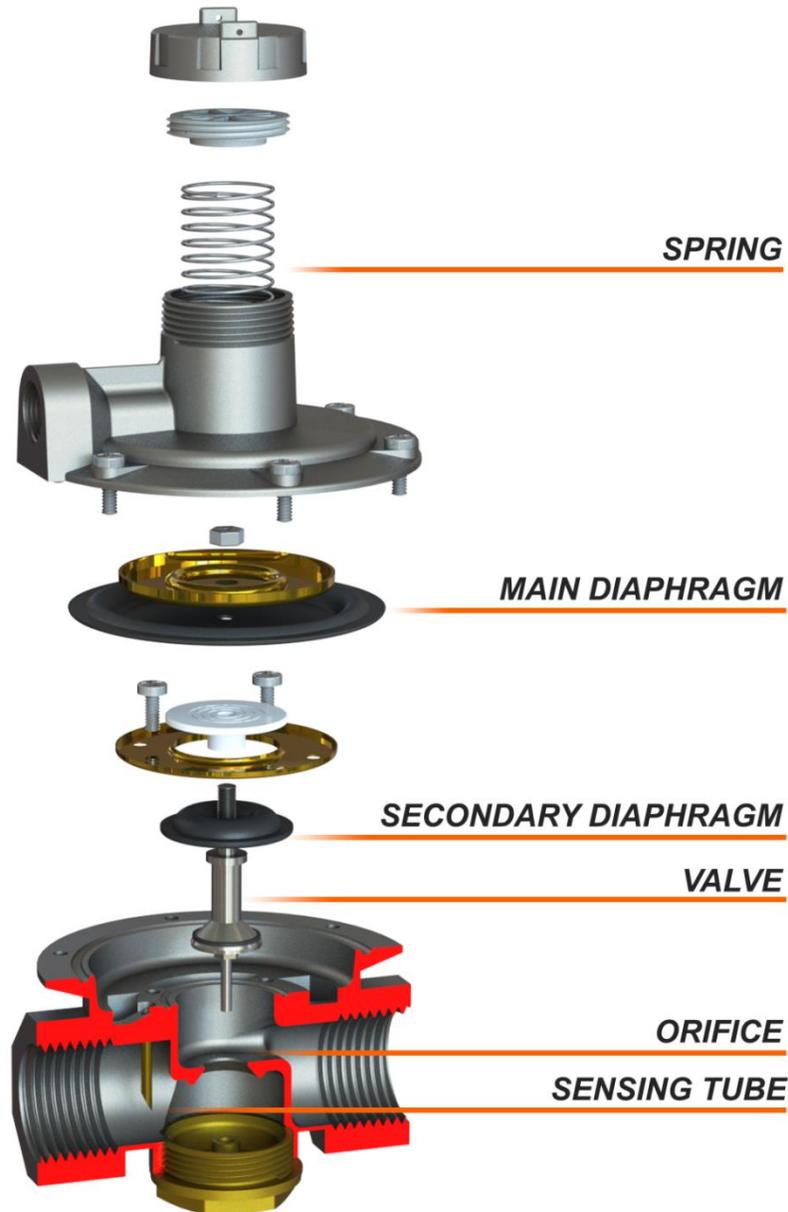
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# Principles of Regulators

## Compensating Regulator

To eliminate 'valve effect' a secondary diaphragm is manufactured into a regulator which creates a 'Compensating Regulator.' As gas forces its way through the orifice and past the valve, it applies a force which tries to open the valve further. The gas applies the same force to the secondary diaphragm in the regulator which is attached to the shaft of the valve, therefore neutralising any effect the gas pressure has on the valve, hence 'Compensating Regulator.' Now via the 'sensing tube' the main diaphragm can regulate gas as normal.



**Figure 7: Low Pressure Compensating Regulator**

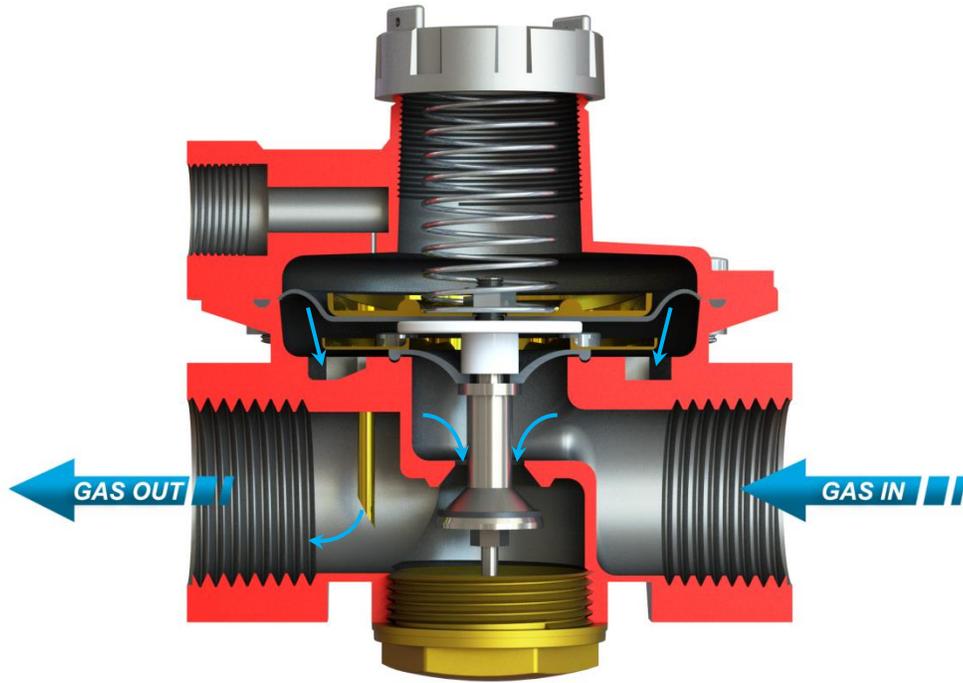


Figure 7: Low Pressure Compensating Regulator during an increase in demand

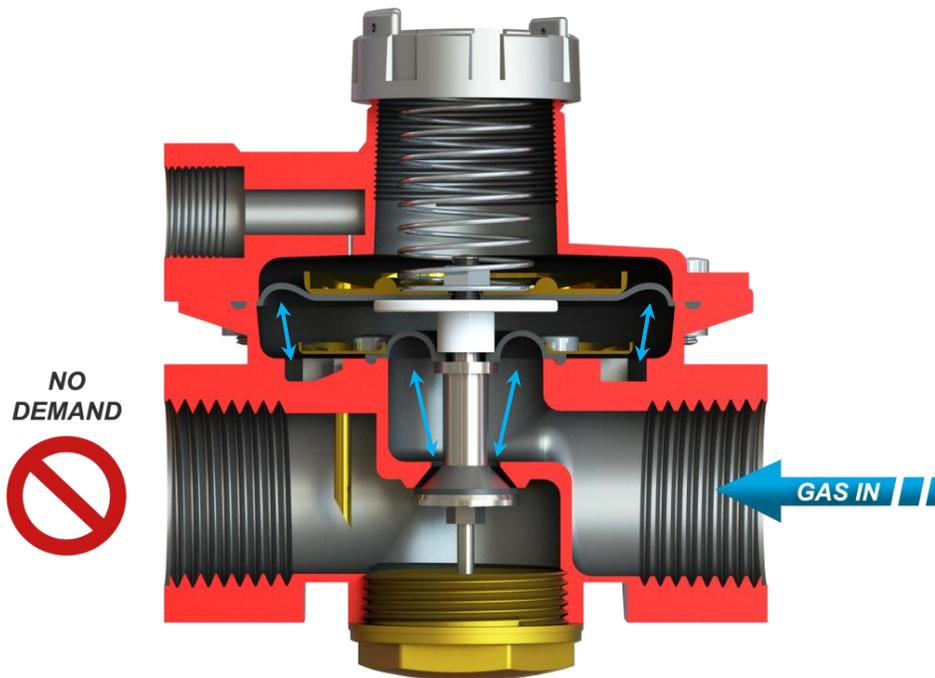
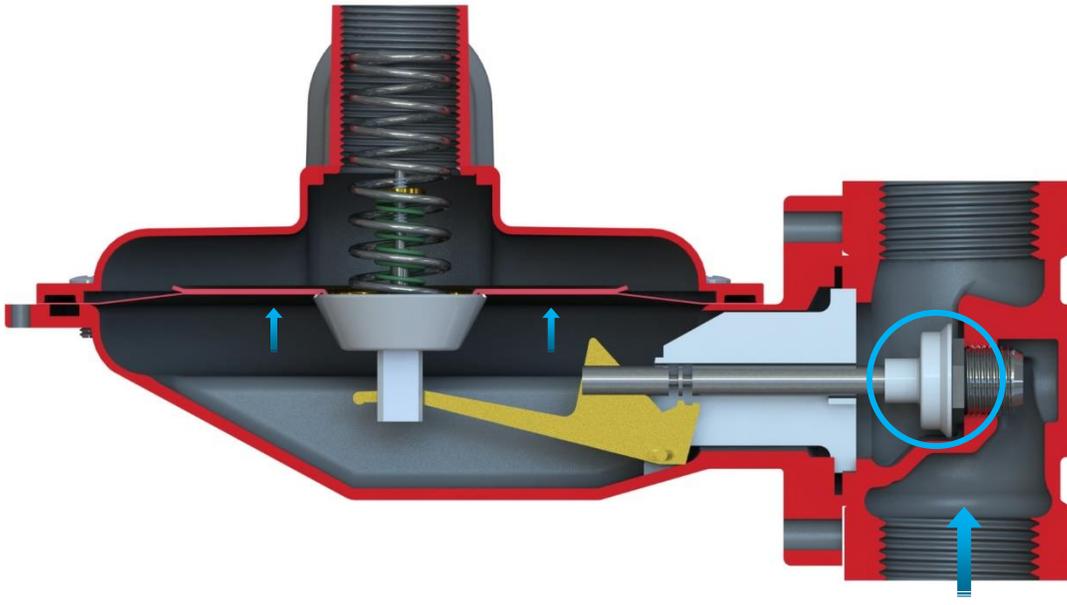


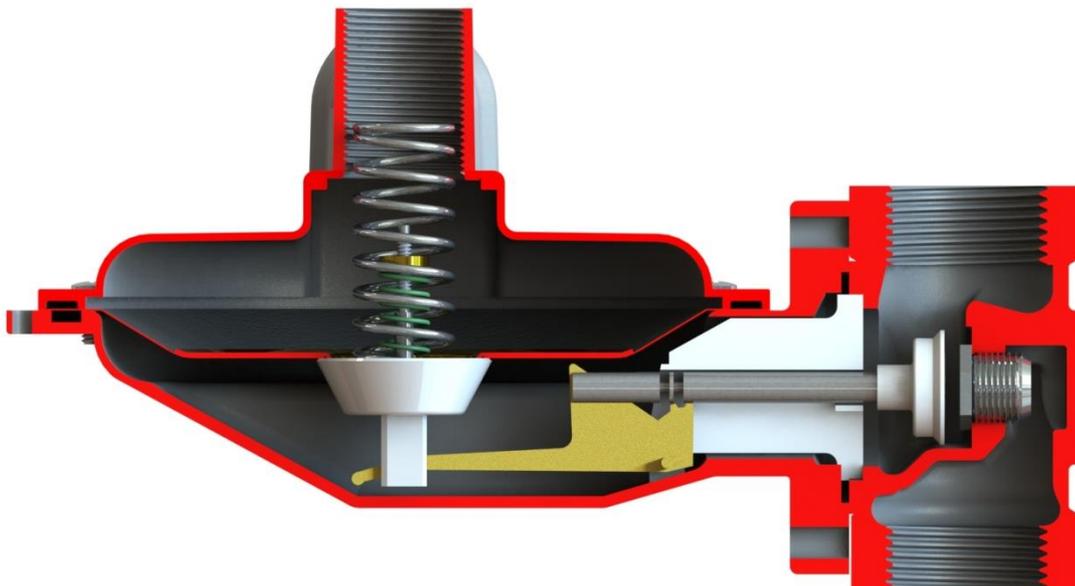
Figure 7: Low Pressure Compensating Regulator during a decrease in demand

## Improving Performance with a Lever

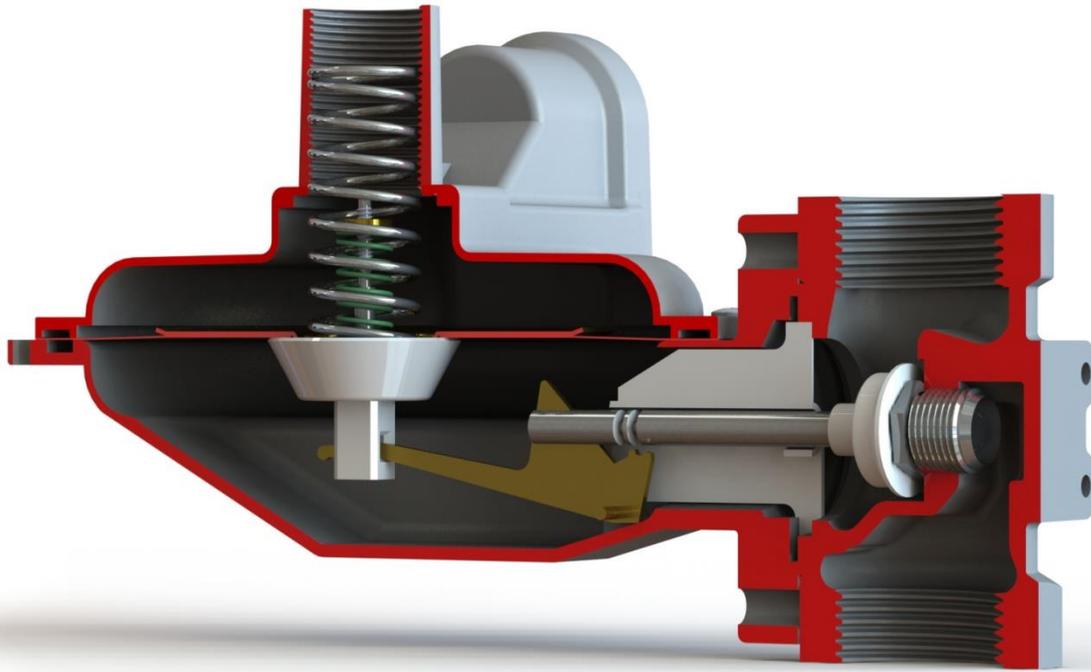
The lever style regulator is a variation of the simple direct-operated regulator. It operates in the same manner, except that it uses a lever to gain mechanical advantage and provide a high shutoff force.



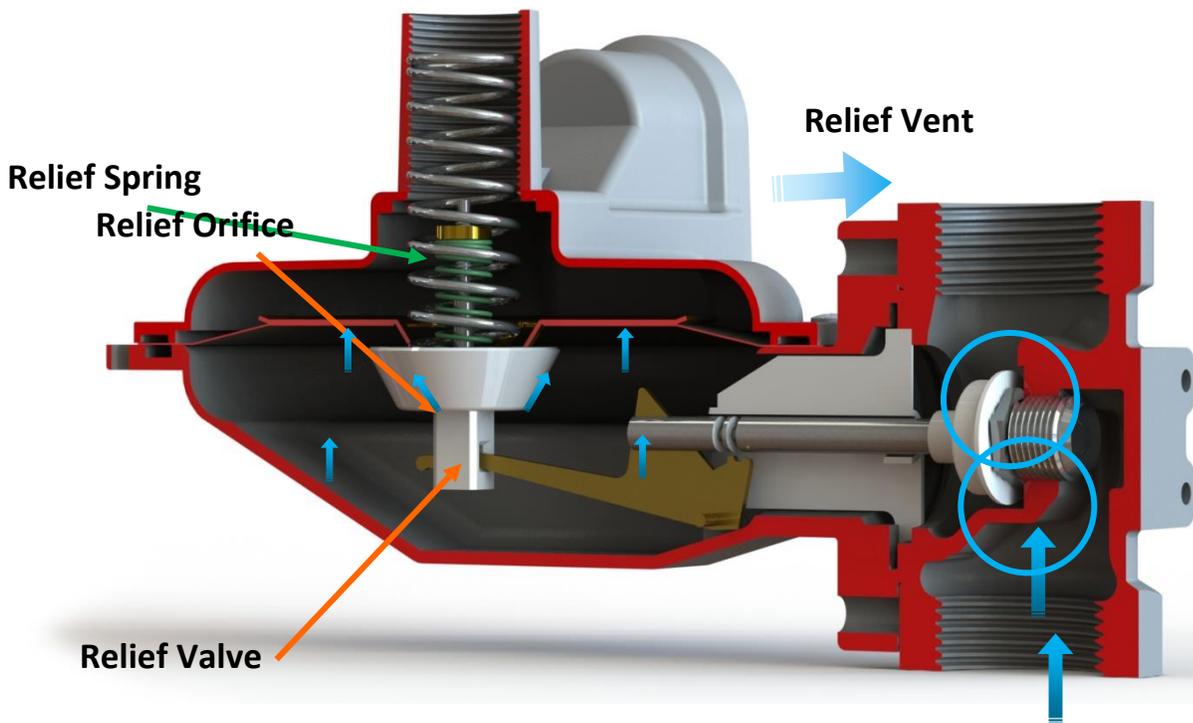
**Figure 8: A regulator that incorporates a lever during an increase in demand**



**Figure 9: A regulator that incorporates a lever during a decrease in demand**



**Figure 12: A regulator with over pressure relief valve before it senses set limit**



**Figure 13: A regulator with over pressure relief valve sensing set limit and relieving pressure**

