

MARK 708HP SERIES High Pressure Control Valves

Background on Application/Technology

Supercritical carbon dioxide extraction is a commonly used method to separate various components from the plant due to it producing a pure, clean, and safe product.

Carbon dioxide reaches a supercritical state at 1071 psi and 31.1°C. When a molecule is in a supercritical state, it has properties of both liquid and gas. This is advantageous because CO2 can reach into small spaces like a gas but can also dissolve and act like a liquid solvent. The physical properties of supercritical CO2 are easily manipulated, which allows it to bond to any molecule the producer chooses.

The Challenge

To maintain precise control of Supercritical CO2 at over 400bar while being able to meet extremely low flows, down to a CV of 0.025. It's vital the CO2 is controlled accurately to produce the most pure product possible.

How did LowFlow/Gilson Engineering help solve your problem?

This took years to develop. The reason Lowflow won the business was due to price, delivery and service. Due to the high pressure system, components of the system tend to not hold up.

QUICK SPECIFICATIONS

Seat Type	Globe - Class III or IV
Sizes	1/2" (DN15)
End Connections	Threaded (FNPT), Autoclave, Socket Weld, Integral Tube, Welded Flange
Body Materials	Carbon Steel, Stainless Steel, Hastelloy C, Monel, Alloy 20, others
Cv (Kv)	0.05 to 1.25 (0,04 to 1,1)
Ranges	3-15 or 6-30 psi; split ranges are available with optional top-mounted positioner



How was working with LowFlow from an Engineering/Service perspective? Did these aspects deliver additional value?

The most critical aspect of this story was the value add that Gilson Engineering and LowFlow Valve brought to the table with their support. Support being anything from getting valves quickly to addressing any issues within days. The customer also had the direct number of the LowFlow Valve engineer, which made this process seamless.

KEY FEATURES

- Union style body/bonnet connection - provides solid construction and secure connection
- Mechanically loaded PTFE Chevron heavy duty V ring packing
- Rolling diaphragm
- Guided trim
- Standard with side mount positioner
- Optional top mounted positioner