



OUR HERITAGE

ORIGINAL VALVE PARTNER

In 1980, the first patent for In-Home Oxygen Concentrators was designed with Humphrey's valves inside. We were approached by a biomedical manufacturer, who learned about our experience with diaphragm valves used in the first artificial heart. Our engineering team designed a custom diaphragm valve that delivered high flow, precise control and reliability.



TRUSTED VALVE PARTNER

Since then, Humphrey has built a heritage of supplying valve solutions for portable, transportable and stationary oxygen concentrators. We have been a valued partner, collaborating on many designs, as the size, space and performance challenges have evolved over the years for the oxygen concentrator market. We are dedicated towards continuous improvement in order to meet the industry demands of this market.



ENGINEERED SOLUTIONS

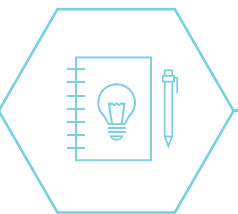
Humphrey's Engineered Solutions team partners directly with the manufacturer's engineering team when designing a custom valve solution. Through trusted collaboration, combination of core skills, and aligned purpose we can integrate our products and other elements to meet design requirements, easily integrate into production processes, and offer low costs to our customers.

- Select from a variety of proven and unique valve designs and proprietary sealing technologies.
- 25 years experience of collaborating with client engineers, acting as their fluid system control partner.
- Regulatory experience and process control systems in place for medical devices.



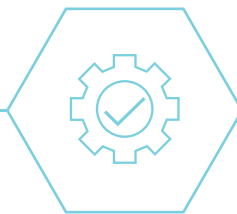
CHALLENGE

We begin working closely on a peer-to-peer basis with your engineers early in the design process to understand your needs.



CONCEPT

Often we present multiple concepts and will recommend a design that provides maximum benefits to you.



SOLUTION

We finalize the design using proven Humphrey valve technology and assist you in moving quickly from prototype to production.



RESULT

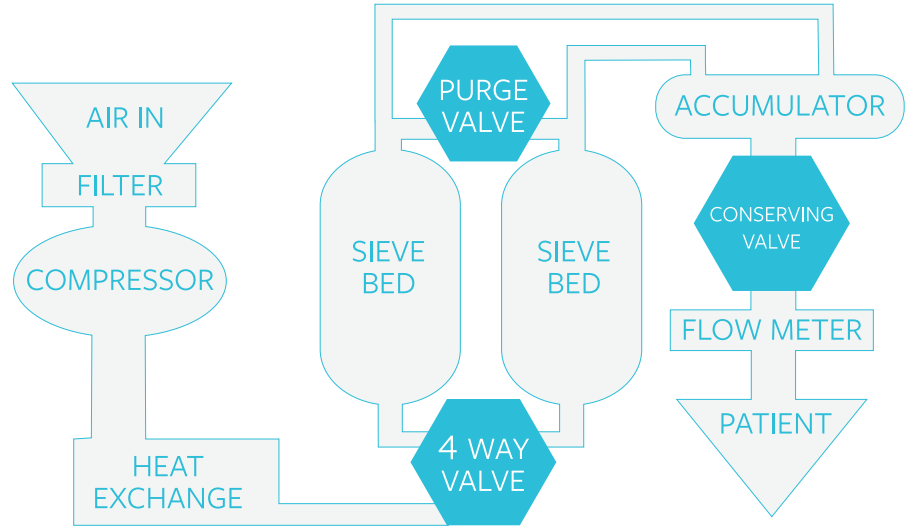
We implement your solution, measuring actual results to the original technical, commercial and schedule expectations. We continually explore ways to reduce costs.

Engineering **Oxygen Solutions** for Life



OXYGEN SCHEMATIC

Humphrey's product portfolio offers customizable flow rates, spatial limitations, low current consumptions and long life cycles for portable and stationary oxygen concentrators. Our Life Science Group can be your single source provider for all pneumatic flow control solutions in your next oxygen innovation.



PROVEN SOLUTIONS



Sieve Tank Fill & Exhaust Valves

- **High Flow** in very compact construction.
- **Adjustable** to Customer's exact requirements.
- **Low leak rate** improves oxygen purity levels.



Balance / Purge Valve

- **High Flow** in very compact construction.
- **Adjustable** to Customer's exact requirements.
- **Low leak rate** when in OFF condition.



Pulse Dose / Continuous Flow

- **Low mass.** Very sensitive to changes in applied current.
- **Adjustable** to Customer's exact requirements.
- **Low leak rate** eliminates wasted oxygen.

Engineering **Oxygen** Solutions for Life