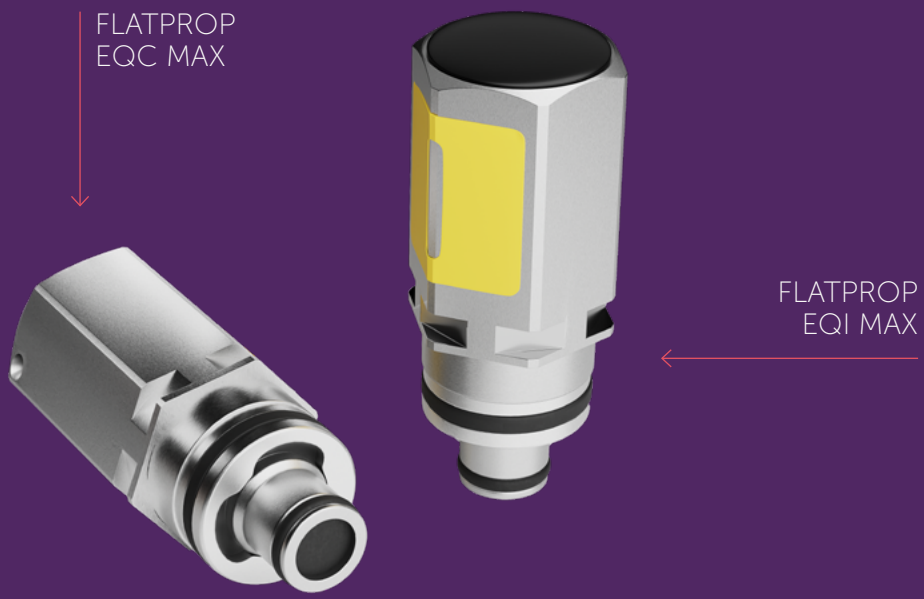


Case study:

FLATPROP MAX Series – Enabling Ventilation Versatility



Life Science

Our product brands:
IMI Adaptas
IMI FAS

How we helped a ventilator manufacturer adapt to fluctuating pressures and diverse clinical needs



Customer Challenge

A leading ventilator manufacturer faced a serious challenge in hospitals operating under critical conditions—such as during the COVID-19 crisis or in emerging countries with unreliable pressure lines:

- Ventilators could not maintain proper function when oxygen or air supply pressure dropped, putting patients at risk of inadequate ventilation and severe health complications.

On top of that, they needed to design a ventilator capable of serving a wide range of clinical needs under any condition—from fragile neonates to adults—while ensuring reliable performance and patient safety.

Our Solution

We worked hand-in-hand with the customer's R&D team to co-design and validate a solution tailored to their ventilator platform. By integrating our FLATPROP EQCMAX proportional valve, we delivered:

- High flow capability on a compact 16 mm valve, even under low pressure conditions, ensuring robust performance in demanding environments.
- Fast response and consistent performance across wide temperature ranges, enabling advanced ventilation modes and reliable operation under all conditions.
- Precise control of both very high and very low flows, critical for delicate neonatal ventilation as well as adult requirements.

Benefits to the Customer

✓ Better patient comfort & safety under all conditions

Ventilators maintain stable performance even with fluctuating or alternative pressure sources.

Advanced ventilation modes are enabled thanks to the valve's fast response and consistent performance.

✓ Same ventilator for all patients

From neonates to adults, reducing equipment complexity and cost.

For neonates:

- Accurate control of very low flows for fragile patients
- Handles high backpressure, for nebulization and expectoration creating downstream resistance

✓ Increased ventilator portability

Smaller, lighter design improves mobility for emergency and transport scenarios without sacrificing performance.

Find out more
lifescience.imiplc.com

