Pharmaceutical : Point-of-Use Vial Filling

The Objective

To provide a reliable, sterile, and efficient method of heating and dispensing Water-for-Injection (WFI) at the point of use for a vial filling process. The system needed to ensure precise temperature control, minimal hold-up volume, and full compliance with pharmaceutical sanitary requirements.

The Challenge

The customer required a system that could support a vial filling process with strict sterility and precision. Challenges included minimizing downtime, reducing WFI waste, preventing contamination, and maintaining accurate temperature at the point of dispense. Space constraints at the filling line added complexity, demanding a compact, sanitary solution.

The Solution

Exergy engineered a Point-of-Use (POU) heat exchanger and dispensing system, fabricated entirely from 316L stainless steel with electropolished sanitary surfaces. The design featured low hold-up volume, rapid heat-up, and precise temperature regulation for WFI delivery. Its compact footprint allowed seamless integration at the filling line while meeting GMP and regulatory requirements.

The Results / Benefits

The POU vial filling solution provided consistent, sterile WFI at the correct temperature directly where needed. It minimized downtime and WFI waste, while enhancing productivity and compliance. The compact system was easy to operate and required minimal maintenance, ensuring efficiency and reliability for vial filling.

Conclusion

By implementing Exergy's Point-of-Use vial filling heat exchanger system, the customer achieved enhanced manufacturing flexibility, greater sterility assurance, and improved productivity. This case highlights Exergy's expertise in delivering compact, hygienic, and efficient thermal solutions for critical pharmaceutical applications.