



Vesper™ Overview

Vesper™ Series of PVDF/PFA heat exchangers offer a variety of solutions for heating, cooling, and temperature trimming of fluids used in ultra-pure manufacturing processes. They are ideal for heating and cooling deionized water, solvents, and Piranha/SC1, among other high-purity fluids. Vesper™ products are available as standalone heat exchangers, or as integrated heaters and heat exchangers. Vesper™ housings are PP, PVDF, or PFA, and the heat exchanger tube bundles are PFA to ensure chemical compatibility. All models are available in various sizes.

VH Series All-in-One Heaters & Heat Exchangers

Vesper™ VH Series are compact all-in-one heater and heat exchangers. They are ideal for heating and cooling. They offer large surface areas for heat exchange and fast temperature response with low watt densities. VH Series are ideal for exothermic reactions and applications that require precise temperature stability. They also feature the efficient Heateflex® heating coil. Controls and other options available upon request.

VH Features & Benefits

- Ultra-pure PFA or PVDF/PFA wetted surfaces
- Heater and exchanger in a compact housing that needs less space and smaller footprint
- Patented heating element technology maximizes power in an all-in-one design
- Great temperature stability with low watt density and fast temperature response
- 2 - 5 kW (*depends on voltage and model)
- 200 - 480VAC, 1-ph (* depends on wattage)
- 180°C (365°F) processes, 95°C (203°F) shell
- 490 - 1,000 in² surface area

VH Safety Interlocks

- Thermocouples
- Ground Wire
- Liquid Level Sensor

Model	Shell Material	Process Material	Heater Material	Surface Area
VHB6	PVDF Pipe	PFA Tube	PVDF Pipe	1,000 in ²
VHH1	PVDF Pipe	PFA Tube	PFA Pipe	1,000 in ²



Heateflex® heating element



VH Series heat exchanger



VE Series Heat Exchangers

Vesper™ VE Series heat exchangers provide solutions for indirect heating or cooling of fluids in ultrapure manufacturing processes. They provide easy installation and integration into your system. Their compact designs allow for maximum surface area in small footprints to enhance heat transfer. Models are available with PVDF/PFA or PFA materials. PFA flow paths are compatible with strict process requirements for temperature and purity.

VE Features & Benefits

- Ultra-pure PFA flow path in PVDF/PFA or PFA shell
- 650 - 1,850 in² surface area in compact footprints, 10-30" in heights and 2-6" diameter
- Heats or cools fluids indirectly to meet temperature and purity requirements
- 180°C (365°F) processes, 95°C (203°F) shell
- Easy installation and fast start-up
- Retrofits into current system
- PFA tubing exchangers

Model	Shell Material	Process Material	Surface Area
VEH2	PVDF, FEP, PFA	PFA Tube	930 in ²
VEH6	PVDF Pipe	PFA Tube	930 in ²
VEB4	PVDF Pipe	PFA Tube	1,000 in ²
VEF3*	PTFE/PFA	PFA Tube	1,850 in ²

*VEF3 is a fully automated system



Available controls provide complete turnkey systems.

