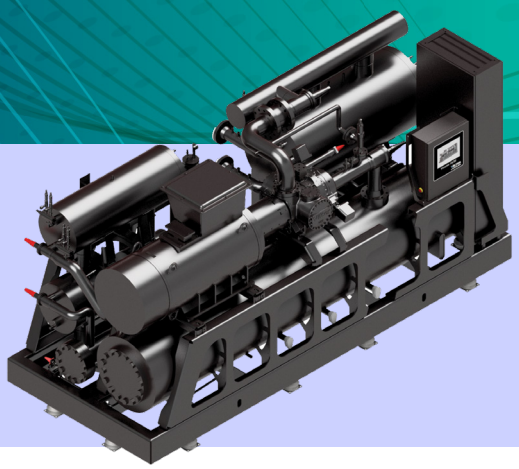
Vilter VQ95 industrial heat pump

Decarbonize heating with a simple, more reliable system.

VILTER
by COPELAND

Energy transition made easy

Decarbonization and electrification of industrial heating have become key priorities in response to growing demand for greater sustainability. Changing regulations and high energy prices make industrial heat pumps increasingly attractive alternatives to fossil fuel boilers. The flexibility of a modular industrial heat pump system can simplify your path forward.



Ambitious climate goals and initiatives to reduce dependency on fossil fuel boilers are underway in many parts of the world. In addition, leading companies worldwide have made sustainability pledges targeting the decarbonization of plants and operations. As a result, demand for industrial-grade heat pumps is forecasted to grow exponentially.

Many industries have the potential to benefit from heat pump technology, especially in food and beverage production and district heating applications. Meeting sustainability targets and integrating heat pump technology into existing facilities will require a simpler solution than the bespoke systems that have typically been built on-site.

A simple, standardized decarbonization solution

The VQ95 from Vilter by Copeland is a new industrial-grade, single-stage heat pump, designed to decarbonize heating. Engineered in Denmark to meet global energy transition initiatives, the system leverages Vilter single screw technology to enable unprecedented simplicity, reliability, and flexibility. The VQ95 balances these characteristics with a compact footprint, while maximizing efficiency (COP) and minimizing total cost of ownership (TCO).

Specifications

- Leverages the full potential of ammonia (NH_3), a natural, non-ozone depleting refrigerant with zero global warming potential (GWP)
- 1–5 MW heating capacity per skid; modularity enables systems to be scaled with parallel or serial pipe connections
- Provides high standard temperature rating up to 95 °C with high lift capability in a single-stage system

Designed and built for standards compliance in Europe, Canada and the U.S.

Ideal applications

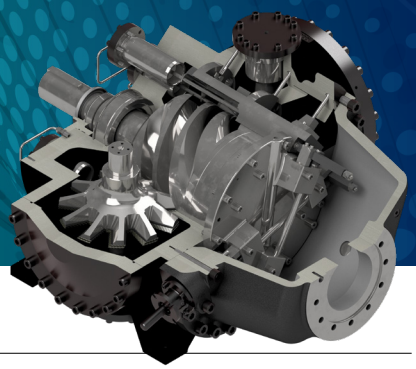
Because the heat delivered far exceeds the energy consumed, industrial heat pumps greatly reduce reliance on fossil fuels and expand opportunities to utilize renewable energy sources. The VQ95 combines these advantages with the benefits of NH_3 — a non-ozone depleting refrigerant with zero global warming impact — plus low annual operating and maintenance costs.

This natural refrigerant solution is ideal for district heating and industrial applications working to comply with regulations or achieve internal sustainability targets as part of their environmental, social and governance (ESG) goals.

Key industries served by the VQ95:

- **District heating**
- **Food and beverage**
- **Industrial manufacturing**
- **Pulp and paper**
- **Pharma**
- **Chemical**

PROVEN FOUNDATION; COUNTLESS POSSIBILITIES



Single screw technology enables an optimized solution.

The balanced-force design of the Vilter single screw compressor easily manages the high pressures required by heat pump systems. For 15 years, Vilter products have been operating in demanding heat pump applications around the world with high uptime and excellent performance.

The Vilter single screw design is not susceptible to damage from liquid droplets. This eliminates the inefficiencies of handling superheat common in other industrial heat pump systems.

Vilter-exclusive Parallex™ slides enable the compressor to modulate capacity from 20 to 100 percent, so no variable frequency drive (VFD) is necessary.

Simplicity

The VQ95 is designed to minimize the usual complexities of quoting, installing, commissioning, operating and servicing industrial heat pumps.

The system leverages Vilter's intuitive and user-friendly Vission 20/20 PLC-based controls, which make the VQ95 easy to operate and maintain. The unit's single-stage system is inherently less complicated and has fewer moving parts than multi-stage units and can be serviced without removing the compressor from the system. Maintenance is further simplified by an easy-to-reach service access panel on each side of the compressor.

Selection and configuration are streamlined by Vilter's web-based software tool, which enables you to get a preliminary rating and footprint based on your unique specifications.

Performance

The VQ95, powered by the innovative Vilter single screw, harnesses the exceptional properties of NH_3, offering exceptional heating capacity and world-class efficiency. Its distinctive non-metal-to-metal compression design unlocks reliable performance throughout the product's lifespan, ensuring peace of mind for management and operations teams.

Our selection software is crafted to seamlessly integrate the best component combinations, optimizing the coefficient of performance (COP) and reducing total ownership costs for each application.

With its high COP and impressive high lift capabilities, the VQ95 often eliminates the need for multi-stage systems, significantly reducing overall costs.

Continuing a legacy of expertise in sustainability

Vilter by Copeland has been an early pioneer in industrial heat pump technology and continues to lead the field with groundbreaking innovations developed at their R&D centers in Denmark and the U.S. Leveraging their extensive experience and proven expertise, Vilter is well-positioned to accelerate the decarbonization of the industrial sector through advanced heat pump technology.

Reliability

The VQ95 is a complete single-stage, closed-loop NH_3 system that offers lower maintenance costs and longer mean times between service (MTBS) intervals while ensuring the longevity of your operations.

The single screw compressor delivers industrial-grade performance and reliability, and experiences little or no degradation of performance over time. Compared to some other compressor designs used in heat pumps, the VQ95 has fewer moving parts and delivers longer bearing life. In addition, the VQ95 does not use an oil pump, eliminating one of the most common causes of failure.

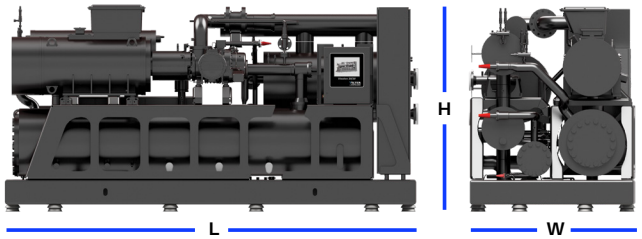
- Oil pump eliminated
- Superheat not required
- VFD not required

Flexibility

VQ95 heat pumps feature a flexible, modular and scalable design engineered for trouble-free production, fast installation and commissioning, and easy maintenance. A complete, optimized turnkey system is provided in a single-skid design — without compromising serviceability.

The VQ95 is available in two compact footprints that support more than 2,000 standard configurations while providing higher capacity per skid — potentially meeting application requirements with fewer units.

- High and low Delta T (ΔT) sink options available
- System design allows flexible source and sink temperatures



240 Series: 5,600 x 2,000 x 2,700 mm
310 Series: 6,200 x 2,300 x 2,900 mm

Standard performance tables

240 Series

50 HZ, 2950 RPM						
MODEL	SOURCE	SINK	PERFORMANCE*			FOOTPRINT
	Inlet/ Outlet °C	Inlet/ Outlet °C	Cooling Capacity kW	Heating Capacity kW	COPh	L x W x H
VQ95-291	18 / 12	45 / 95	365	569	2.68	5600 mm 2000 mm 2700 mm
	18 / 12	70 / 80	314	518	2.44	
	50 / 45	45 / 95	1176	1451	5.06	
	50 / 45	70 / 80	1037	1292	4.86	
VQ95-341	18 / 12	45 / 95	428	666	2.69	
	18 / 12	70 / 80	369	605	2.46	
	50 / 45	45 / 95	1382	1703	5.09	
	50 / 45	70 / 80	1216	1513	4.89	
VQ95-451	18 / 12	45 / 95	603	933	2.72	
	18 / 12	70 / 80	523	854	2.48	
	50 / 45	45 / 95	1945	2403	5.04	
	50 / 45	70 / 80	1726	2153	4.84	
VQ95-601	18 / 12	45 / 95	706	1084	2.76	
	18 / 12	70 / 80	608	983	2.52	
	50 / 45	45 / 95	2223	2742	5.07	
	50 / 45	70 / 80	1994	2478	4.92	

60 HZ, 3550 RPM						
MODEL	SOURCE	SINK	PERFORMANCE*			FOOTPRINT
	Inlet/ Outlet °C	Inlet/ Outlet °C	Cooling Capacity kW	Heating Capacity kW	COPh	L x W x H
VQ95-291	18 / 12	45 / 95	438	678	2.71	5600 mm 2000 mm 2700 mm
	18 / 12	70 / 80	377	616	2.47	
	50 / 45	45 / 95	1414	1741	5.11	
	50 / 45	70 / 80	1243	1546	4.90	
VQ95-341	18 / 12	45 / 95	515	794	2.73	
	18 / 12	70 / 80	443	721	2.49	
	50 / 45	45 / 95	1662	2044	5.14	
	50 / 45	70 / 80	1463	1817	4.92	
VQ95-451	18 / 12	45 / 95	720	1118	2.69	
	18 / 12	70 / 80	630	1021	2.51	
	50 / 45	45 / 95	2299	2846	5.00	
	50 / 45	70 / 80	2062	2576	4.81	
VQ95-601	18 / 12	45 / 95	851	1297	2.79	
	18 / 12	70 / 80	730	1175	2.54	
	50 / 45	45 / 95	2595	3218	4.96	
	50 / 45	70 / 80	2383	2966	4.89	

310 Series

50 HZ, 2950 RPM						
MODEL	SOURCE	SINK	PERFORMANCE*			FOOTPRINT
	Inlet/ Outlet °C	Inlet/ Outlet °C	Cooling Capacity kW	Heating Capacity kW	COPh	L x W x H
VQ95-791	18 / 12	45 / 95	1005	1536	2.78	6200 mm 2300 mm 2900 mm
	18 / 12	70 / 80	868	1396	2.54	
	50 / 45	45 / 95	3420	4150	5.46	
	50 / 45	70 / 80	3110	3756	5.58	
VQ95-891	18 / 12	45 / 95	1121	1705	2.81	
	18 / 12	70 / 80	969	1548	2.56	
	50 / 45	45 / 95	3878	4692	5.53	
	50 / 45	70 / 80	3461	4179	5.59	
VQ95-1051	18 / 12	45 / 95	1570	2321	2.97	
	18 / 12	70 / 80	1366	2105	2.74	
	50 / 45	45 / 95	4420	5460	5.04	
	50 / 45	70 / 80	4198	5093	5.46	
VQ95-1201	18 / 12	45 / 95	1730	2537	3.02	
	18 / 12	70 / 80	1500	2293	2.78	
	50 / 45	45 / 95	4792	5919	5.04	
	50 / 45	70 / 80	4602	5566	5.54	

60 HZ, 3550 RPM						
MODEL	SOURCE	SINK	PERFORMANCE*			FOOTPRINT
	Inlet/Outlet °C	Inlet/Outlet °C	Cooling Capacity kW	Heating Capacity kW	COPh	L x W x H
VQ95-791	18 / 12	45 / 95	1206	1833	2.81	6200 mm 2300 mm 2900 mm
	18 / 12	70 / 80	1042	1665	2.56	
	50 / 45	45 / 95	4123	5008	5.43	
	50 / 45	70 / 80	3722	4498	5.57	
VQ95-891	18 / 12	45 / 95	1346	2011	2.90	
	18 / 12	70 / 80	1162	1849	2.59	
	50 / 45	45 / 95	4853	5848	5.64	
	50 / 45	70 / 80	4138	5003	5.55	
VQ95-1051	18 / 12	45 / 95	1871	2756	2.99	
	18 / 12	70 / 80	1613	2482	2.74	
	50 / 45	45 / 95	5303	6573	4.97	
	50 / 45	70 / 80	4928	6017	5.31	
VQ95-1201	18 / 12	45 / 95	2078	3037	3.04	
	18 / 12	70 / 80	1801	2743	2.80	
	50 / 45	45 / 95	5637	7014	4.89	
	50 / 45	70 / 80	5305	6486	5.27	

** Projected performance is based on the assumption that units are properly sized, installed and maintained.*

About Copeland

Copeland is a global leader in sustainable heating, cooling, refrigeration and industrial solutions. We help commercial, industrial, refrigeration and residential customers reduce their carbon emissions and improve energy efficiency. We address issues like climate change, growing populations, electricity demands and complex global supply chains with innovations that advance the energy transition, accelerate the adoption of climate friendly low GWP (Global Warming Potential) and natural refrigerants, and safeguard the world's most critical goods through an efficient and sustainable cold chain. We have over 18,000 employees, with feet on the ground in 50 countries - a global presence that makes it possible to serve customers wherever they are in the world and meet challenges with scale and speed. Our industry-leading brands and diversified portfolio deliver innovation and technology proven in over 200 million installations worldwide. Together, we create sustainable solutions that improve lives and protect the planet today and for future generations.

Interested to learn more about our industrial heat pump solutions? Connect with our sales team at vilter.com/contact.

To learn more, visit **copeland.com**

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