



SINGLE-STAGE CENTRIFUGAL LIQUID CHILLERS



- Single-stage compressor
- Industry-leading Efficiency with VFD
- Standard or high-tier VFD on choice
- Wide Application
- Stable Operation
- Low Sound Level
- Modular Construction

19XR/XRV Single-stage



Nominal cooling capacity 1000-5300 kW

The Carrier 19XR/19XRV centrifugal chillers provide exceptional value by achieving energy efficiency levels as high as 6.8 (COPr) utilising proven technology designed specifically for chlorine-free refrigerants:

- Unique concept of the hermetic compressor:
 - Single-stage aerodynamic impeller
 - Tunnel diffusers, based on aircraft engine technology
 - Motor cooled by refrigerant gas injection
- Possibility to control the compressors using a variable frequency drive (19XRV) to maximise machine energy efficiency.
- Use of high-efficiency evaporator and condenser tubes
- Expansion sub-cooler integrated into the condenser
- Patented float valve technology for optimised sub-cooling and refrigerant level in the evaporator
- Refrigerant R-134a or R-513A

These advantages, together with the modularity of the units and their efficiency, economical operation and dimensional constraints allow the use of the Carrier 19XR/19XRV centrifugal chillers in any high-capacity water cooling applications.

PHYSICAL DATA

heat exchanger frame size	Compressor frame size	Dimensions (mm)					
		Length		Width		Height	
		Min	Max	Min	Max	Min	Max
3	XR3	4230	4820	1670	1800	2055	2465
4	XR3	4365	4950	1880	1880	2140	2550
5	XR3	4390	4980	1995	1995	2150	2720
5	XR4	4390	4980	2055	2301	2250	2915
6	XR4	4415	5005	2145	2480	2365	2970
7	XR4	5050	5210	2430	2935	2850	3283
7	XR5	5160	5210	2470	2935	3015	3283
8	XR5	5200	5845	2710	3165	3040	3335

heat exchanger frame size	Compressor frame size	Weight (kg)					
		net (chiller + R134a)		operating (net + water)		R134a	
		Min	Max	Min	Max	Min	Max
3	XR3	6780	8100	7200	8700	277	390
4	XR3	7180	9180	7985	10200	381	508
5	XR3	8090	10890	9145	12160	493	674
5	XR4	8950	12680	10000	13950	493	674
6	XR4	9500	13430	10785	14995	546	740
7	XR4	13045	16835	14950	18700	836	1168
7	XR5	15500	20420	17400	22760	836	1168
8	XR5	18035	23800	20725	26870	984	1309

Data for unit with two-pass nozzle-in-head water boxes being at the same end (compressor end / DS code)

FEATURES AND ADVANTAGES

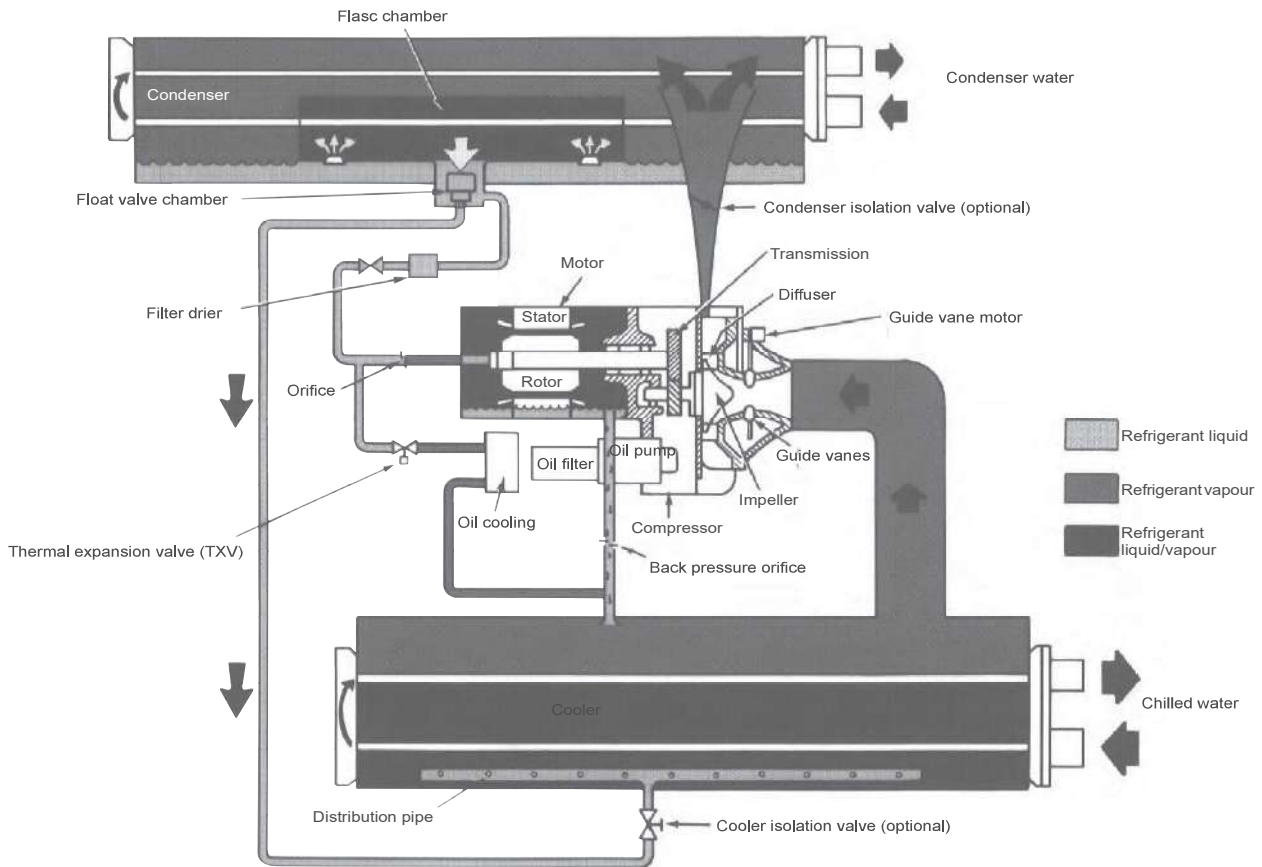
- Nominal cooling capacities from 1000 to 5300 kW.
- Mix-match capabilities – a complete line of compressors and heat exchangers to ensure the optimal combination of machine components regardless of capacity, lift and efficiency specifications.
- Hermetic compressor – elimination of leak risks from the compressor/motor shaft sealing in an open compressor.
- Single-stage compressor with special features – aerodynamically contoured impellers, variable inlet guide vanes and movable diffusers for better compressor part and full-load operating efficiency.
- Variable speed compressor capability – improvement of part load efficiency and electrical performance.
- Heat exchangers certified by the European pressure vessels code (PED), and all marine code certifications.
- International Chiller Visual Control (ICVC) -a large english LCD (liquid crystal display) features 4 menu-specific soft keys. The default display offers all in one glance review of key chiller operation data, simplifying the interaction between chiller and user.

OPTIONS/ACCESSORIES

- Two types of unit-mounted variable frequency drives (VFDs): standard and high tier, to match different customer requirements in terms of cost and electrical performances
- Refrigerant isolation valves allow the refrigerant to be stored inside the chiller during service
- Hot gas by-pass for surge prevention during operation at high condensing temperature or for optimized operation at low load conditions
- Spring isolators adapted for all chiller configurations
- Unit-mounted starter reduces machine installation time and expense
- High-voltage motors available: 3000 V, 3300V, 5500V, 6300V, 10 kV, 11 kV, 50 Hz or 60 Hz
- CCN/JBus or CCN/BACnet: remote connection
- 21 bar water heat exchanger
- Waterbox with flanges and counterflanges
- Delivered in multiple sections to facilitate the installation
- Refrigerant leak detector module : unit-mounted sensor (not compatible with 19XRV VFD)
- Tailor maid request Marine, Oil & Gas, Chemical, other customization

OPTIONS/ACCESSORIES

19XR refrigeration cycle



CONTROLS

Touch Pilot control system with strong control and monitoring function during chiller operation. The Touch Pilot control system applies a 10.5 inch high resolution touch screen, which can support more than ten language choices for customer, real time display of operation parameters with pictures makes it more human friendly and comfortable interface for operation.





TWO-STAGE CENTRIFUGAL LIQUID CHILLERS



- Interstage economizer
- Two-stage compressor
- Industry-leading Efficiency with VFD
- Wide Application
- Stable Operation
- Low Sound Level
- Modular Construction

19XR/XRV Two-stage



Nominal cooling capacity 2800 - 10500 kW

The Carrier 19XR/19XRV with a COP up to 6.5 (AHRI conditions) and an IPLV up to 7.4 or up to 10.5 with VFD centrifugal chillers provide exceptional value by achieving energy efficiency levels as high as 6.8 (COPr) utilising proven technology designed specifically for chlorine-free refrigerants:

- Interstage economizer to improve efficiency and increase capacity.
- Unique concept of the hermetic compressor:
 - Dual-stage aerodynamic impeller
 - Vane-less diffuser to meet high lift application requirement with stable operation
 - Motor cooled by spraying liquid refrigerant on the motor windings.
- Possibility to control the compressors using a variable frequency drive (19XRV) to maximise machine energy efficiency.
- Use of high-efficiency evaporator and condenser tubes
- Expansion sub-cooler integrated into the condenser
- Patented float valve technology for optimised sub-cooling and refrigerant level in the evaporator
- Refrigerant R-134a or R-513A

These advantages, together with the modularity of the units and their efficiency, economical operation and dimensional constraints allow the use of the Carrier 19XR/19XRV two-stage centrifugal chillers in any high-capacity water cooling applications such as air-conditioning, heat-pump, energy recovery, ice thermal storage, marine, VFD and high-voltage applications.

PHYSICAL DATA

Heat exchanger frame size	Compressor frame size	Dimensions (mm)					
		Length		Width		Height	
		Min	Max	Min	Max	Min	Max
7	XRE	5160	5210	2470	2935	3015	3283
8	XRE	5200	5845	2710	3165	3040	3335

Heat exchanger frame size	Compressor frame size	Weight (kg)					
		net		operating		R134a	
		Min	Max	Min	Max	Min	Max
7	XRE	16015	20815	17920	23155	836	1168
8	XRE	18505	24270	21195	27340	984	1309

heat exchanger frame size			Dimensions (mm)		
cooler frame size	condenser frame size	Compressor frame size	Length	Width	Height
A4	A4	XR6	5175	3130	3485
A6	A6	XR6	5785	3130	3485
A4	B4	XR6	5195	3255	3485
A6	B6	XR6	5805	3255	3485
B6	C6	XR7	5925	3670	3745
C6	C6	XR7	5975	3800	3815
C6	D6	XR7	5975	4015	3815

heat exchanger frame size			Weight (kg)		
cooler frame size	condenser frame size	Compressor frame size	net Max	operating Max	R134a Max
A4	A4	XR6	30830	35466	1277
A6	A6	XR6	32330	37580	1465
A4	B4	XR6	33080	38432	1416
A6	B6	XR6	34900	40813	1623
B6	C6	XR7	44270	52132	1709
C6	C6	XR7	49110	58055	1997
C6	D6	XR7	54190	64647	2218

Data for unit with two-pass nozzle-in-head water boxes being at the same end (compressor end / DS code)

FEATURES AND ADVANTAGES

- Nominal cooling capacities from 2800-10500 kW.
- Mix-match capabilities – a complete line of compressors and heat exchangers to ensure the optimal combination of machine components regardless of capacity, lift and efficiency specifications.
- Hermetic compressor – elimination of leak risks from the compressor/motor shaft sealing in an open compressor.
- Dual stage compressor with non-blade diffuser designed, combined with inner-stage economizer for chiller performance improvement and high lift application. The innovative two-stage compressor provides a dramatic range of capabilities. With a maximum LWT of 65°C and a minimum LCWT of -6°C, the 19XR two-stage centrifugal chiller is ideal wherever energy conservation and environmental protection are required.
- Variable speed compressor capability on 19XRV-E AquaEdge chiller - Improvement of part load efficiency and electrical performance.
- 19XRV/XR(V)-E equipped with a LF2 VFD that designs with total harmonic distortion (THD)<5% and fully meets IEEE519-1992 requirement. The 19XRV/XR(V)-E becomes a more cost-effective choice for installations with a high percentage of time operating at part load.
- Heat exchangers certified by the European pressure vessels code (PED), and all marine code certifications.
- Touch Pilot control system with strong control and monitoring function during chiller operation. The Touch Pilot control system applies a 10.5 inch high resolution touch screen, which can support more than ten language choices for customer, real time display of operation parameters with pictures makes it more human friendly and comfortable interface for operation.



OPTIONS/ACCESSORIES

- Two types of unit-mounted variable frequency drives (VFDs): standard and high tier, to match different customer requirements in terms of cost and electrical performances (VFD available on 19XRE only)
- Refrigerant isolation valves allow the refrigerant to be stored inside the chiller during service
- Hot gas by-pass for surge prevention during operation at high condensing temperature or for optimized operation at low load conditions
- Spring isolators adapted for all chiller configurations
- Unit-mounted starter reduces machine installation time and expense (VFD available on 19XRE only)
- High-voltage motors available: 400V (19XRE only), 3kV, 3.3kV, 6.3kV, 10kV, 11kV
- CCN/JBus or CCN/BACnet: remote connection
- 21 bar water heat exchanger
- Waterbox with flanges and counterflanges
- Nozzle with flanges (water inlet/outlet with flanges)
- Delivered in multiple sections sections to facilitate the installation
- Refrigerant leak detector module : unit-mounted sensor (not compatible with 19XRE with unit-mounted VFD)