



AQUAEDGE™

19XR Centrifugal Liquid Chiller

Cooling Capacity: 300~3400RT
1000~6800RT (series counter flow system)





Carrier is a leading global provider of innovative HVAC, refrigeration, fire, security and building automation technologies. Supported by the iconic Carrier name, the company's portfolio includes industry-leading brands such as Carrier, Kidde, Edwards, LenelS2 and Automated Logic. Carrier's businesses enable modern life, delivering efficiency, safety, security, comfort, productivity and sustainability across a wide

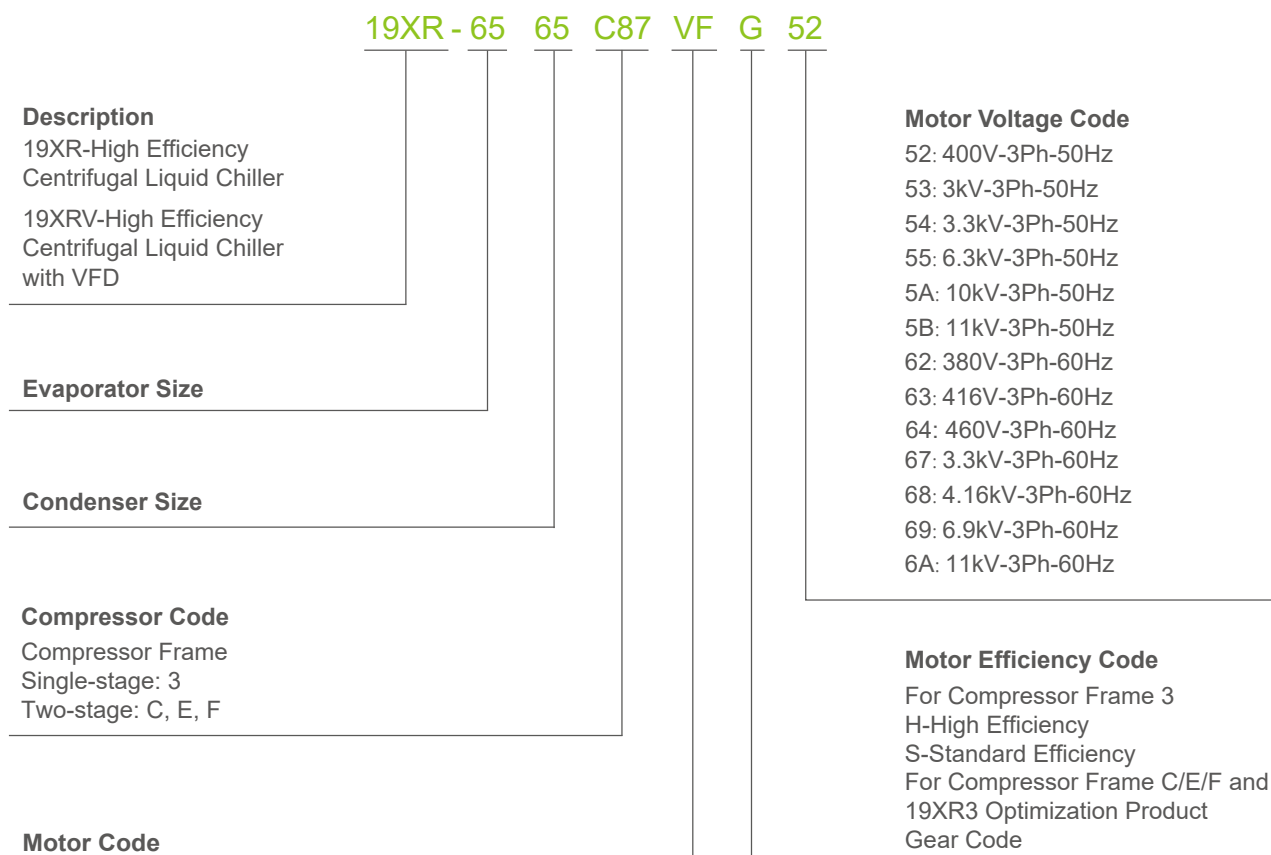
range of residential, commercial and industrial applications.

In 1998, Time magazine named Dr. Carrier one of its 20 most influential builders and titans of the 20th century.

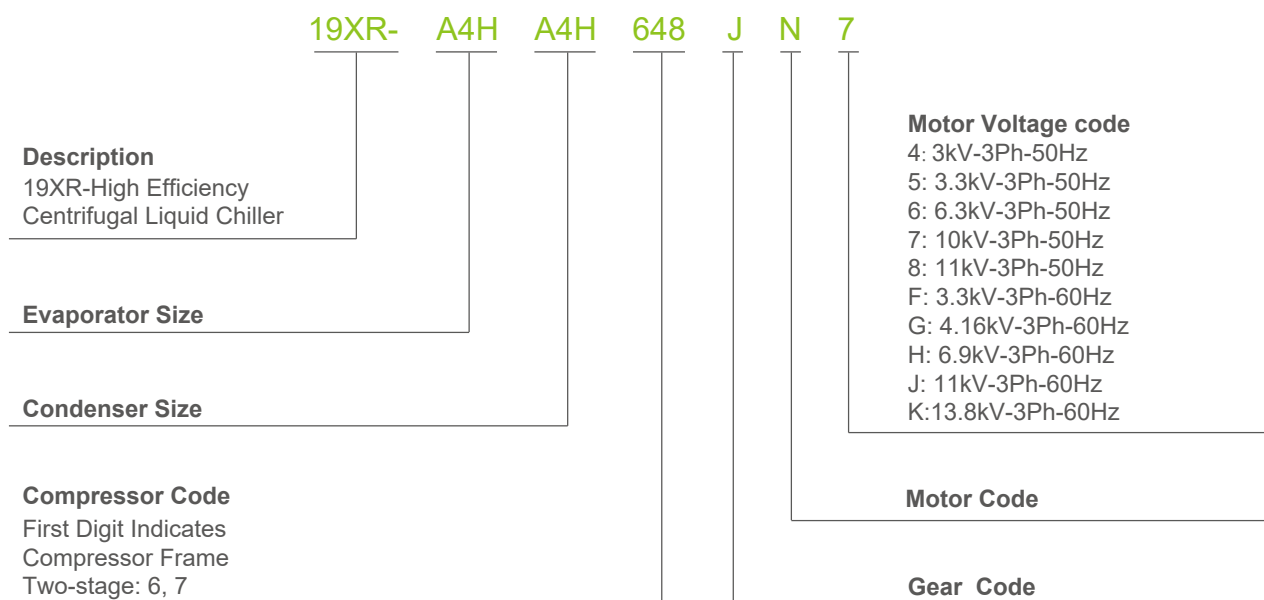


Model Number Nomenclature

19XR/XR-C/E/F

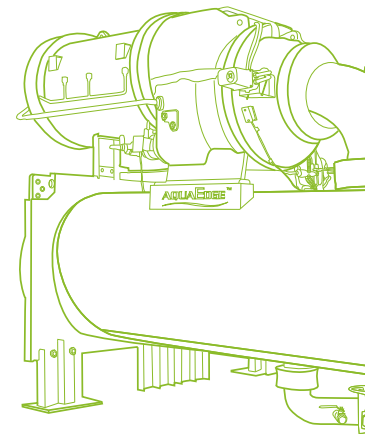
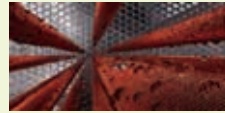


19XR-6/7



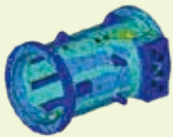
High Efficiency

- Designed with high-efficiency two-stage centrifugal compressor and integrated economizer, the AquaEdge 19XR/V two-stage centrifugal chiller can deliver outstanding performance under both full load and partial load conditions.
 - The impeller is optimized for HFC-134a refrigerant by CFD to ensure high efficiency operation under various conditions. The impeller undergoes dynamic balance correction and Carrier's rigorous overspeed testing, ensuring smooth operation with low radial and axial thrust loads.
 - The economizer provides air supply to cool the interstage gas of two-stage compressor, improving compressor efficiency and providing more cooling capacity.
 - The blunt leading-edge IGV further reduces intake resistance loss, optimizing compressor efficiency under partial load conditions.
- High performance tubing - Tubing with internally and externally enhanced fins improves chiller performance by reducing overall resistance to heat transfer. The optimized design of heat exchanger reduces refrigerant charge and subsequent maintenance cost.
- Greenspeed™ variable speed control detects and automatically adjusts the unit's cooling capacity to adapt to external load changes, ensuring high-efficiency operation under both full load and partial load conditions.
- 19XR/V chiller achieves up to 6.6 full load COP_R and 11.0 IPLV.IP (with VFD) at AHRI conditions so that the chiller's life cycle operation cost can be significantly reduced.



Stable Operation

- The two-stage compressor has fewer moving parts and excellent load adjustment capability, achieving high efficiency and stability under various conditions, and can operate stably down to 10% load.
- The compressor design adopts a vanless diffuser, providing a wider range of efficient and stable operation. Its high lift application capability is also significantly improved.
- Semi-hermetic motors - Cooling is accomplished by spraying liquid refrigerant on the motor windings. This highly efficient motor cooling method also eliminates the potential for shaft seal leaks and refrigerant/oil loss.
- Double-grooved tube sheet effectively improves the tightness between the copper tube and the tube sheet, greatly reducing the risk of leakage.
- The chiller supports swift restart, enhancing system reliability when applied to data center projects.



Low Noise

- The two-stage centrifugal compressor operates at low speed, ensuring quiet operation.
- Refrigerant-cooled scroll compressor, all these features significantly reduce compressor sound level.
- Greenspeed™ variable speed control (variable down impeller speed at night) for better acoustical performance.

Environmental Sustainability

- Designed for chlorine-free R-134a refrigerant, A1 class in ASHRAE 34 safety standard and R-113A or R-515B refrigerant with low global warming potential can be offered as option.
- The outstanding energy efficiency of 19XR/V chiller leads to lower power consumption and significant reduction of CO₂ emissions.



- 19XR/V two-stage centrifugal chiller provides a complete line of compressors, motors and heat exchangers, ensuring good combination of chiller components regardless of tonnage, lift and efficiency specifications.
- Positive pressure design can save valuable mechanical room space with reduced chiller size compared with low pressure design. In addition, it eliminates the need for purge system to save the cost for customer.
- Lubricating oil is directly cooled by refrigerant, eliminating the need for cooling water piping, reducing installation costs.
- The main components such as the compressor, evaporator and condenser are connected by bolts, facilitating split transportation, suitable for retrofit projects.
- Soft shutdown function - When the chiller receives a shutdown command, the guide vane is firstly closed, then the motor stops running after the operating current drops to the pre-set value, effectively extending the contactor's service life.



Startup Method

- The default offering of 19XR low-voltage starter is free-standing wye-delta starter (with shunt trip main circuit breaker), and there are also unit-mounted wye-delta starter, unit-mounted or free-standing solid-state starter and variable frequency starter available.
- The solid-state starter has a shunt trip main circuit breaker, three-phase current phase-to-phase/phase-to-ground imbalance protection, and built-in bypass contactor. After the motor accelerates, the starter is bypassed without considering the harmonic interference issues.
- The offerings of variable frequency starter include both standard tier and high tier, unit-mounted type or free-standing type. The high tier offerings are available with different technical solutions such as active rectifier or active harmonic filter to control total harmonic distortion $THD \leq 5\%$, meeting IEEE519-2022 standard. It has automatic power factor correction, with a power factor of up to 0.96, fully utilizing electrical energy and significantly reducing electrical equipment capacity. During the chiller startup, the starting current is always below 100% RLA, reducing impact on the electrical system. The 19XR/V variable speed centrifugal chiller has excellent partial load efficiency, significantly reducing user's operating costs.



Free-standing
VFD starter



Unit-mounted
VFD starter

- The 19XR/V chiller can also be equipped with medium/high voltage starters. The standard offering of medium/high voltage starter includes a high-voltage load switch with shunt trip, high-breaking capacity fuses, overvoltage absorbers and modules with multiple protection functions, ensuring safe startup and operation of motors. The high-voltage load switch with shunt trip provides protection in case of motor short circuit or overload. During maintenance, there is a clear break point, and the grounding switch is closed. It protects personal safety and prevents equipment damage.



Centrifugal compressor optimizes impeller operation.
Semi-hermetic motor, optimized flow features contribute to the overall production.
Variable speed control adaptively turns on at partial load (such as operation) to ensure best performance.

Carrier® SmartVu™ Intelligent Control System

User-friendly Interface

Carrier centrifugal chiller equips the latest Carrier® SmartVu™ control system with strong control and detecting function during chiller operation. The control system applies a 10 inch colorful touch screen, which can support up to ten language choices for customer, real time display of operation parameters with pictures makes it more human friendly and comfortable interface for operation. Carrier® SmartVu™ intelligent control system simulates and detects chiller operation, adjusts cooling or heating capacity according to load change and provides various protection during operation.

Smart Operation

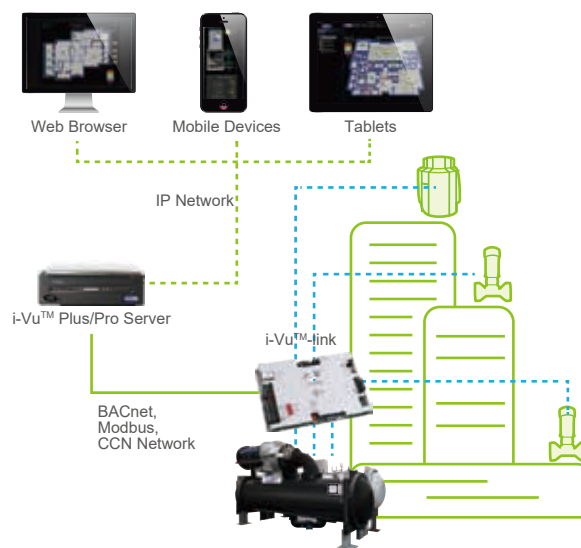
- Carrier® SmartVu™ control system provides smart password function to avoid any setting change without authorization.
- When chiller receives start-up order, controller will conduct following pre-start safety checking, to ensure parameters like oil sump temperature, condensing pressure, bearing temperature, motor winding temperature, discharge temperature, evaporator saturated temperature and average line voltage etc. are normal.
- During chiller operation, except for the function of detecting main operation parameters control system also has capability to record and display trend curve, which is real time trend of key components during operation. It ensures effective and reliable operation of chiller by optimized intelligent and dynamic control algorithm.
- Carrier® SmartVu™ control system has comprehensive protection during operation, such as oil sump temperature control, surge protection, overvoltage and overcurrent protection, discharge temperature overheat protection, bearing temperature overheat protection, evaporator and condenser anti-freeze protection, low discharge superheat protection etc. in order to ensure chiller long time reliable operation.
- The optional Envelope Stability Control is an advanced solution to balance the chiller efficiency and reliability at very low load. The controller optimizes compressor speed, inlet guide vane position and stabilizer valve position to find the most efficient operating point throughout the operating range without compromising the chiller stability in real time.

Intelligent Diagnosis

- Carrier® SmartVu™ control system has failure diagnostic function and can be easily accessed via touch screen for detail chiller operation parameters. If control system detects failure the alarm will be initiated and related code will be recorded in alarm menu. The alarm records can be automatically saved by control system. Carrier service technician can read and delete alarm records by Carrier service tools.
- The control system has additional pre-diagnostic function. Different with diagnostic function, information displayed from this function is mainly for maintenance purpose. For an example, to inform customer periodically replace lubricant and filter from this function.
- Carrier® SmartVu™ control system has email alarm function. If the controller has been connected to internet, the control system can automatically send out an email with one or more alarm information to customer or service people through effective email address when alarm occurs.

Flexible Interface and Easy Connection with Building Automation System

- Carrier® SmartVu™ control panel supports BACnet or Modbus protocol, with which chiller can seamlessly connect with the Building Automation System or the i-Vu™/WebCTRL™ control network.
- With the powerful i-Vu™ Link (optional), user can integrate all plant equipment into i-Vu™ Building Automation System. The i-Vu™ Building Automation System provides everything user needs to access, manage, and control your building, including the powerful i-Vu™ user interface, plug-and-play BACnet or Modbus controllers and state-of-the-art Carrier equipment.
- Carrier provides WebCTRL™ as an additional option to provide similar function like i-Vu™ Link. If you have any questions, please contact with Carrier local agents.



The i-Vu™ Building Automation System

Smart Chiller

Using wireless cellular communications technologies, Carrier SMART Service continuously streams operating data to the cloud in real time directly from your chiller's controller. The data is then captured within our IoT platform for ongoing insight into your chiller's health.

Features:

- ✔ Integrated equipment sensors that capture key operating data
- ✔ Secure wireless connectivity to Carrier's cloud-based IoT platform
- ✔ Persistent and reliable data transmission



Smart Cloud

Carrier SMART Service continuously stores and assesses equipment operating data and service history, comparing it to established values for analytics and data validation. It compares this data to design specifications and matches it against allowable ranges, allowing Carrier to deliver pre-emptive service solutions as needed.



Features:

- ✔ Complete visibility into your system's performance, energy usage and service history
- ✔ Advanced diagnostics and analytics providing actionable insights

Smart Technician



Carrier SMART Service changes how equipment is serviced and maintained. Carrier service technicians now utilize mobile devices with access to put real-time chiller data and service history in the palm of their hands. With advance notification of problems, technicians arrive at the jobsite more informed, which leads to faster problem resolution and reduced mean time to repair.

Features:

- ✔ Advance notification
- ✔ Remote detection and diagnosis

HCP Application

- ✦ In the high efficiency chiller plant of modern buildings, Carrier centrifugal chillers have become the core refrigeration equipment for many projects due to their excellent performance and advanced technology. They play a key role in achieving high-efficient energy utilization and ensuring a comfortable environment.
- ✦ Designed with advanced two-stage centrifugal compressor, Carrier centrifugal chillers provide efficient and stable cooling capacity. The optimized design of impeller and motor system can precisely match the cooling needs under different conditions, ensuring high-efficient operation at both full load and partial load, greatly improving the efficiency of energy utilization. Compared to traditional chillers, they can help reduce the lifecycle operating cost of chiller plants by their significant energy-saving effects.
- ✦ The intelligent control system is a major highlight of the chiller. By application of an advanced sensor network, it detects and precisely controls the operating parameters of the chiller, such as temperature, pressure and flow in real-time, achieving automated operation management. This system can quickly adjust the cooling output according to actual load changes and avoid energy waste. It also has comprehensive fault diagnosis and warning functions to ensure reliable and stable operation, reducing maintenance downtime and improving the overall operational efficiency and reliability of the chiller plant.
- ✦ In the integration of HCP, the compact footprint of Carrier centrifugal chillers saves valuable machine room space, facilitating coordinated layout with other equipment such as cooling towers, water pumps and water treatment devices. This optimizes the overall architecture and pipeline connections of chiller plant, reduces water system resistance and installation costs, and makes daily maintenance easier. Whether in commercial complexes, data centers or industrial plants, they can demonstrate excellent cooling performance and energy-saving advantages, helping to create green, efficient and comfortable indoor environments and operational spaces.



Series Counter Flow Application

Carrier 19XR centrifugal chillers fully support system application of Series Counter Flow with cooling capacity of each system up to 6800 Tons.

Better System Efficiency

- ✦ Improved full load efficiency by reducing the lift of each circuit cycle.
- ✦ Optimized part load operation to achieve better system efficiency at duties less than 50%.

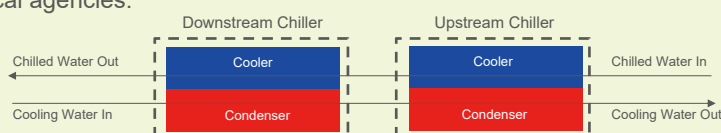
Better Reliability and Redundancy

- ✦ Two independent refrigeration circuits and either compressor can be configured as lead.
- ✦ Two compressors start-up orderly to reduce system inrush current.
- ✦ Two compressors operate in turn to balance operation time and enlarge service interval.

Advanced System Control (Standard in Carrier® SmartVu™)

- ✦ Optimized load balance by recalculating upstream chiller control point.
- ✦ Optimized surge control by synchronizing surge condition of both lead and lag chiller.
- ✦ Optimized lead/lag communications.

Two chiller modules of SCF system may be arranged in side-by-side or series depending on chiller plant layout. Details please contact Carrier local agencies.



Heat Pump Application

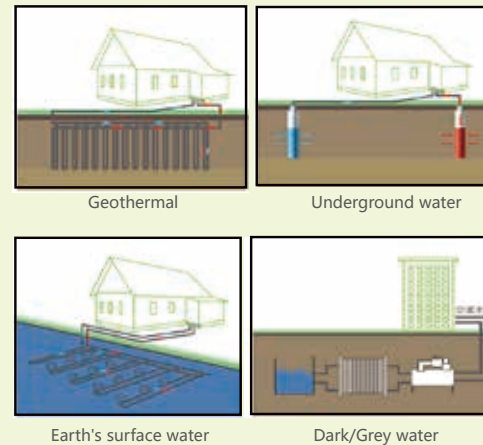
The heat pump system utilizes natural energy storage in soil, bedrock, groundwater, surface water, wastewater and air to satisfy demand for building cooling, heating and hot water.

Heat Pump System Benefits

- ✓ Cooling/heating
- ✓ Improved system efficiency
- ✓ Use of low-grade energy

19XR Benefits

- ✓ Wide range of applications with high efficiency
- ✓ Hot water temperature (LWT) up to 65°C



Energy Recovery Application

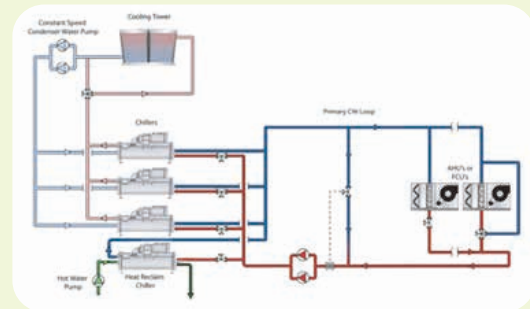
Discharging condenser heat via a cooling tower not only causes thermal pollution but also brings tremendous energy waste to the applications such as hotel, factory and hospital.

Energy Recovery System Benefits

- ✓ Reduced boiler size and operating time
- ✓ Reduced cooling tower size and waste heat discharge
- ✓ Improved system efficiency by 15-25%

19XR Benefits

- ✓ High efficiency operation
- ✓ Energy saving up to 70% versus boiler



Ice Thermal Storage Application

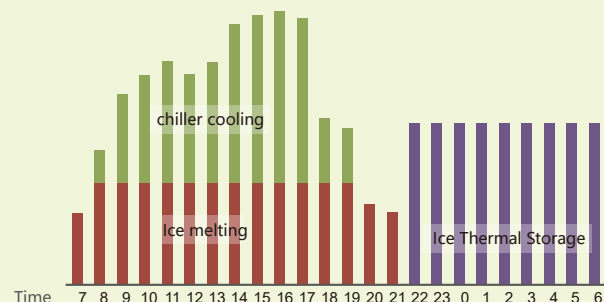
The chiller stores energy as ice during night, when electricity costs and utilization are low. The energy is discharged to meet cooling loads during day time when the electricity price is high, greatly reducing building operating costs.

Ice Thermal Storage System Benefits

- ✓ Reduced chiller and cooling tower size
- ✓ Reduced chiller operating time
- ✓ Operational cost savings by using off-peak electricity
- ✓ Backup cooling in emergency situations

19XR Benefits

- ✓ Stable 24-hour operation
- ✓ Suitable for various voltage and VFD applications
- ✓ Minimum leaving water temp (LCWT): -6°C
- ✓ Suitable for low temperature air distribution and district cooling systems



Performance Data

Air-conditioning (Fixed speed chillers)

Model	Chiller				Main Power	Motor		Evaporator			Condenser			Unit Dimensions			Weight		
	Cooling Capacity		Input Power	Full load COP _R		RLA	LRYA	Flow Rate	Pressure Drop	Water Connection	Flow Rate	Pressure Drop	Water Connection	Length	Width	Height	Operating	Rigging (w/o Refrigerant)	Refrigerant Charge
	kW	Tons	kW	ikW/kW		A	A	l/s	kPa	mm	l/s	kPa	mm	mm	mm	mm	kg	kg	kg
19XR-414137HUGT52	1758	500	306.9	0.1745	380V-3Ph-50Hz	520.5	1176	84.0	84.9	DN200	99.5	69.8	DN200	4359	1880	2129	8383	7001	508
19XR-505138HUGT52	1934	550	336.3	0.1739		567.4	1176	92.4	76.4		109.4	46.6	DN250	4388	1994	2137	9485	7785	609
19XR-5051C33VCE52	2110	600	352.6	0.1671		603.9	1143	100.8	90.6		118.4	53.9		4400	2078	2421	11224	9429	704
19XR-5151C45LDE52	2286	650	384.1	0.1680		672.2	1382	109.2	87.1		128.4	62.4		4400	2078	2421	11543	9671	739
19XR-5251C49LDE52	2462	700	413.4	0.1679		720.4	1382	117.6	90.3		138.2	71.4		4400	2078	2421	11659	9741	761
19XR-5252C69LEE52	2638	750	442.7	0.1678		774.7	1521	126.0	103	148.0	71.4	4400		2078	2421	11813	9861	761	
19XR-6X65C69LFE52	2813	800	464.3	0.1650		803.1	1637	134.4	82.9	157.6	79.1	4940		2148	2637	12912	10779	714	
19XR-6Z67C89LGE52	3165	900	518.1	0.1637		904.4	1794	151.2	86.2	177.1	79.8	4940		2148	2637	13438	11139	752	
19XR-6Z69C05LHG52	3517	1000	588.4	0.1673		1000.9	1837	168.1	106	197.3	90.2	4940		2148	2637	13558	11225	752	
19XR-7Q72C09VHG52	3869	1100	638.2	0.1650		1070.6	2083	184.9	85.5	DN300	216.6	76.0	DN300	5051	2480	2743	17237	14117	987
19XR-8P80E51MDB52	4220	1200	697.8	0.1653	1174.0	2362	201.7	68.5	DN350	236.2	78.7	DN350	5131	2712	2936	20790	16999	1156	
19XR-8Q81E61MEB52	4572	1300	761.2	0.1665	1291.2	2729	218.5	68.5		256.2	80.2		5131	2712	2936	21369	17383	1200	
19XR-8284E63MFB52	4924	1400	816.3	0.1658	1386.3	3276	235.3	108	DN400	276.0	66.9	DN400	5131	2712	2936	22902	18457	1426	
19XR-8QV4F40WFT5A	5275	1500	869.0	0.1647	56.9	382	252.1	82.3		295.5	66.0		5121	2926	3081	24384	20058	1098	
19XR-8QV4F40WHT5A	5627	1600	927.8	0.1649	60.0	409	268.9	93.2		315.1	74.3		5121	2926	3081	24428	20102	1098	
19XR-8RV4F40WJT5A	5979	1700	985.4	0.1648	64.3	479	285.7	90.7		334.7	83.0		5121	2926	3081	24801	20358	1141	
19XR-8ZV9F50WJT5A	6330	1800	1042	0.1646	67.9	479	302.5	112		354.4	102		5733	2926	3081	26624	21723	1280	
19XR-A4FA47630EN7	6682	1900	1100	0.1646	72.2	366	319.3	89.3		373.9	81.3		5229	3153	3484	32579	26902	1321	
19XR-A4FA47640EP7	7034	2000	1173	0.1668	77.1	374	336.1	98.6		394.2	89.5		5229	3153	3484	32579	26902	1321	
19XR-A6FB65640EP7	7385	2100	1197	0.1621	10kV-3Ph-50Hz	78.7	374	352.9	126	DN450	412.7	91.8	DN450	5839	3288	3484	35744	29001	1650
19XR-A6GB66640EQ7	7737	2200	1244	0.1608		81.9	430	369.7	120		431.9	83.6		5839	3288	3484	36702	29547	1706
19XR-B6FB6665GEQ7	8089	2300	1303	0.1611		85.5	430	386.5	95.8	DN450	451.3	90.6	DN450	5938	3460	3731	36101	29259	1683
19XR-B6FB6665GER7	8440	2400	1371	0.1624		90.1	430	403.3	104		471.4	98.0		5938	3460	3731	36207	29365	1683
19XR-B6GB6765GES7	8792	2500	1410	0.1604		92.7	491	420.1	93.1		490.3	90.0		5938	3460	3731	37328	30119	1714
19XR-B6GC66720RU7	9144	2600	1438	0.1573		94.9	550	436.9	100		509.1	75.4	DN500	5969	3668	3742	49653	40287	2047
19XR-C6FC66730QU7	9495	2700	1493	0.1572		98.4	550	453.7	81.3		528.3	80.7		6019	3808	3813	52760	42820	2189
19XR-C6FC66730RU7	9847	2800	1563	0.1587		102.8	550	470.5	87.2		548.8	86.5		6019	3808	3813	52760	42820	2189
19XR-C6FC67730RU7	10199	2900	1597	0.1566		105.0	550	487.3	93.3		567.5	78.7		6019	3808	3813	53616	43344	2197
19XR-C6FC67730RU7	10551	3000	1671	0.1584		109.6	550	504.2	99.6		587.3	83.8		6019	3808	3813	53616	43344	2197

Heating application (Fixed speed chillers)

Model	Chiller				Main Power	Motor		Evaporator			Condenser			Unit Dimensions			Weight		
	Heating Capacity	Input Power	Full Load Efficiency	RLA		LRYA	Flow Rate	Pressure Drop	Water Connection	Flow Rate	Pressure Drop	Water Connection	Length	Width	Height	Operating	Rigging(w/o Refrigerant)	Refrigerant Charge	
	kW	Tons	kW	ikW/kW		A	A	l/s	kPa	mm	l/s	kPa	mm	mm	mm	mm	kg	kg	kg
19XR-7071E35MDD5A	3517	1000	696.6	0.1981	10kV-3Ph-50Hz	46.4	221	134.6	78.0	DN300	170.0	54.5	DN300	5051	2442	2923	19040	15854	1192
19XR-7072E35MFD5A	3869	1100	758.6	0.1961		50.1	235	148.4	94.5		187.0	56.6		5051	2442	2923	19203	15946	1192
19XR-7172E37MFD5A	4220	1200	871.7	0.2066		57.8	235	159.8	88.4		203.6	66.2		5051	2442	2923	19523	16136	1251
19XR-7274E45MFD5A	4572	1300	888.5	0.1943		59.0	235	175.8	92.1		221.0	72.7		5051	2442	2923	19888	16362	1300
19XR-8284E45MHD5A	4924	1400	951.4	0.1932		63.1	294	189.6	70.7	DN350	237.5	49.6	DN350	5131	2712	2970	23334	18890	1426

- Note:** 1. The above selections are based on entering/leaving chilled water temperature 12/7°C, entering/leaving cooling water temperature 32/37°C, cooler fouling factor 0.0176m°C/kW and condenser fouling factor 0.044m°C/kW.
2. The above heating application selections are based on entering/leaving chilled water temperature 10/5°C, entering/leaving hot water temperature 40/45°C, cooler fouling factor 0.0176m°C/kW and condenser fouling factor 0.044m°C/kW.
3. Carrier will select specific models using computer on different requests for tonnage, lift and efficiency. For details, please contact local agencies.
4. Standard water box pressure is 1.0MPa, and can provide 1.6MPa, 2.0MPa as option. For more requirements, please contact local agencies.
5. The above selections are made based on the voltage being 380V/10kV. For details or customized selections, please contact local agencies.
6. 60Hz selections are also available. Please contact local agencies to get more support.

Performance Data

Air-conditioning (Variable speed chillers)

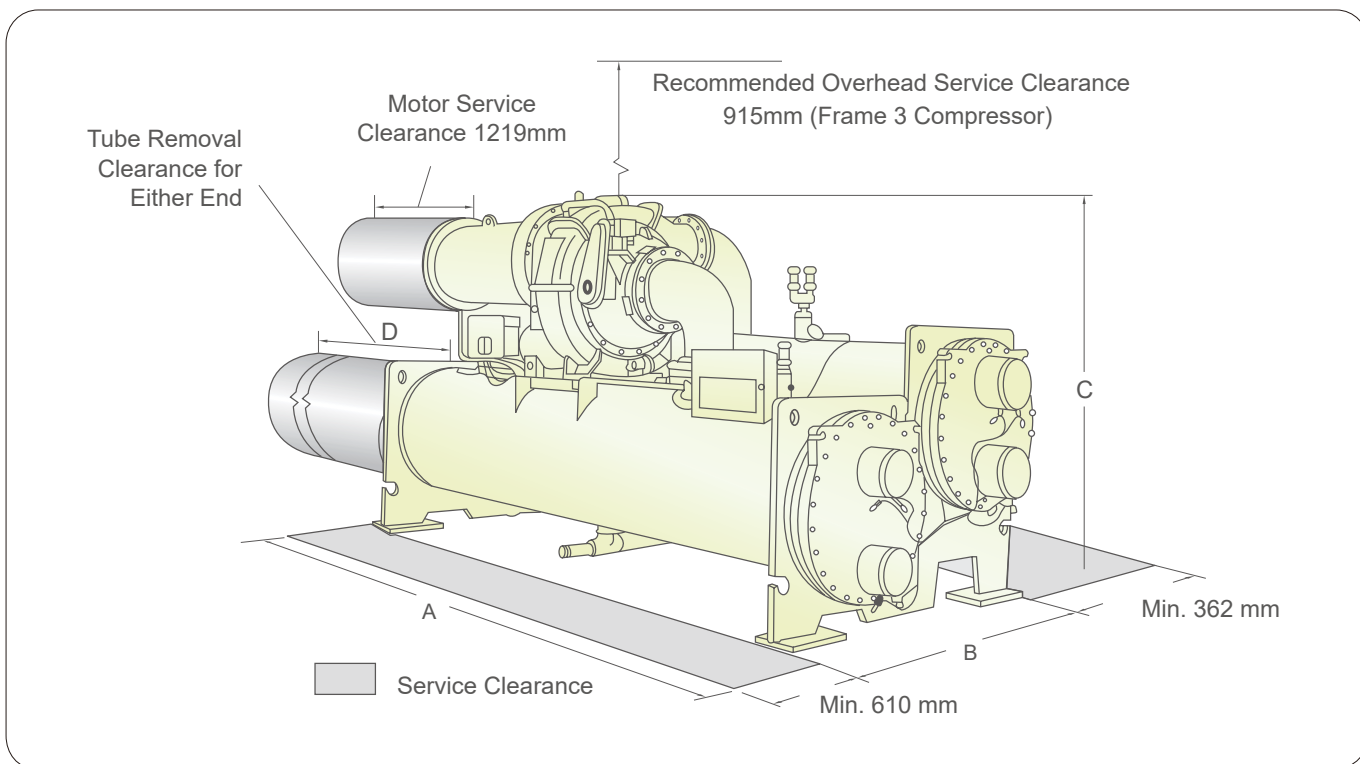
Model	Chiller				Main Power	Chiller Line Amps	Evaporator			Condenser			Unit Dimensions			Weight		
	Cooling Capacity		Input Power	Full load COP _R			Flow Rate	Pressure Drop	Water Connection	Flow Rate	Pressure Drop	Water Connection	Length	Width	Height	Operating	Rigging (w/o Refrigerant)	Refrigerant Charge
	kW	Tons	kW	ikW/kW			A	l/s	kPa	mm	l/s	kPa	mm	mm	mm	kg	kg	kg
19XRV414138HUGU52	1758	500	307.6	0.1749	380V-3Ph-50Hz	518	84.0	84.9	DN200	99.0	69.1	DN200	4359	1880	2398	9040	7659	508
19XRV474738HUGU52	1934	550	346.7	0.1792		584	92.4	96.7		109.3	77.3		4880	1879	2399	9971	8340	604
19XRV5152C29VCE52	2110	600	360.5	0.1708		608	100.8	74.4		118.4	58.4		4400	2549	2787	12589	10683	739
19XRV5152C39VDE52	2286	650	391.2	0.1711		659	109.2	87.1		128.3	55.0		4400	2549	2787	12602	10697	739
19XRV5252C49VDE52	2462	700	413.4	0.1679		696	117.6	90.3		137.8	62.6		4400	2549	2787	12719	10767	761
19XRV5452C69VEE52	2638	750	448.1	0.1699		755	126.0	94.1		147.8	71.3	DN250	4400	2549	2787	12804	10842	745
19XRV6X65C69VFE52	2813	800	473.6	0.1683		797	134.4	82.9	DN250	157.5	79.0		4940	2665	3003	13896	11763	714
19XRV6Z67C89LGG52	3165	900	534.8	0.1690		904	151.2	86.2		177.3	80.0		4940	2804	2779	14787	12487	752
19XRV6Z69C09VHG52	3517	1000	594.1	0.1689		1000	168.1	106		197.0	90.0		4940	2804	2779	14807	12474	752
19XRV7Q71C09VHJ52	3869	1100	663.3	0.1715		1116	184.9	85.5	DN300	217.2	87.6	DN300	5051	2974	2885	18351	15302	987
19XRV7R72E63MEB52	4220	1200	729.3	0.1728		1222	201.7	86.7		237.2	89.8		5051	3042	2889	20151	16874	1082
19XRV8P81E63MEB52	4572	1300	788.4	0.1724		1338	218.5	80.0	DN350	256.9	80.6	DN350	5131	3409	3149	22790	18924	1156
19XRV8Q84E63MFB52	4924	1400	840.4	0.1707		1423	235.3	79.1		276.3	67.1		5131	3409	3149	23875	19659	1200
19XRV8RV4F40MFT52	5275	1500	905.8	0.1717		1517	252.1	71.3	DN400	296.4	82.3	DN400	5123	3497	3086	25212	20768	1141

ITS application (Variable speed chillers)

Model	Chiller				Main Power	Chiller Line Amps	Evaporator			Condenser			Unit Dimensions			Weight		
	Cooling Capacity		Input Power	Full Load Efficiency			Flow Rate	Pressure Drop	Water Connection	Flow Rate	Pressure Drop	Water Connection	Length	Width	Height	Operating	Rigging (w/o Refrigerant)	Refrigerant Charge
	kW	Tons	kW	ikW/kW			A	l/s	kPa	mm	l/s	kPa	mm	mm	mm	kg	kg	kg
19XRV7072C49LHL52	2110	600	517.6	0.2453	380V-3Ph-50Hz	904	136.3	87.0	DN300	179.4	54.2	DN300	5051	2901	2839	18854	15656	1134
19XRV7R74E45MEE52	2462	700	619.3	0.2516		1079	158.0	75.2		210.3	68.4		5051	3042	2889	20240	16927	1082
19XRV8P82E53MFE52	2813	800	692.5	0.2461		1219	180.6	77.3	DN350	239.3	63.5	DN350	5131	3327	2936	23092	19151	1156
19XRV8484E63MFE52	3165	900	751.7	0.2375		1321	204.5	81.1		267.4	63.6		5131	3327	2936	24725	20277	1386
19XRV8989E65MHE52	3517	1000	831.9	0.2365		1450	227.2	113		296.9	84.6		5740	3409	3149	26587	21684	1553

Note: 1. The above selections are based on entering/leaving chilled water temperature 12/7°C, entering/leaving cooling water temperature 32/37°C, cooler fouling factor 0.0176m²/kW and condenser fouling factor 0.044m²/kW.
2. The above ITS application selections are based on entering/leaving chilled water temperature -2/-6°C, entering/leaving cooling water temperature 30/33.5°C, cooler fouling factor 0.0176m²/kW and condenser fouling factor 0.044m²/kW, 25% ethylene glycol.
3. Carrier will select specific models using computer on different requests for tonnage, lift and efficiency. For details, please contact local agencies.
4. Standard water box pressure is 1.0MPa, and can provide 1.6MPa, 2.0MPa as option. For more requirements, please contact local agencies.
5. The above selections are made based on the voltage being 380V/10kV. For details or customized selections, please contact local agencies.
6. 60Hz selections are also available. Please contact local agencies to get more support.

19XR Chiller Dimensions



Evaporator Size	Condenser Size	A-Length for NIH Waterbox (2 Passes)	B-Width	C-Height		D-Tube Removal Space for Either End
				without Unit-mounted Starter	with Unit-mounted Y-Δ/Solid State Starter	
					19XR-3	
		mm	mm	mm	mm	mm
3P~34	30~34	4181	1670	2051	2051	3848
3X~39	35~39	4702	1670	2051	2051	4369
4P~44	40~44	4359	1880	2130	2403	3848
4X~49	45~49	4880	1880	2130	2403	4369
5P~54	50~54	4394	1994	2137	2829	3848
5X~59	55~59	4915	1994	2137	2829	4369

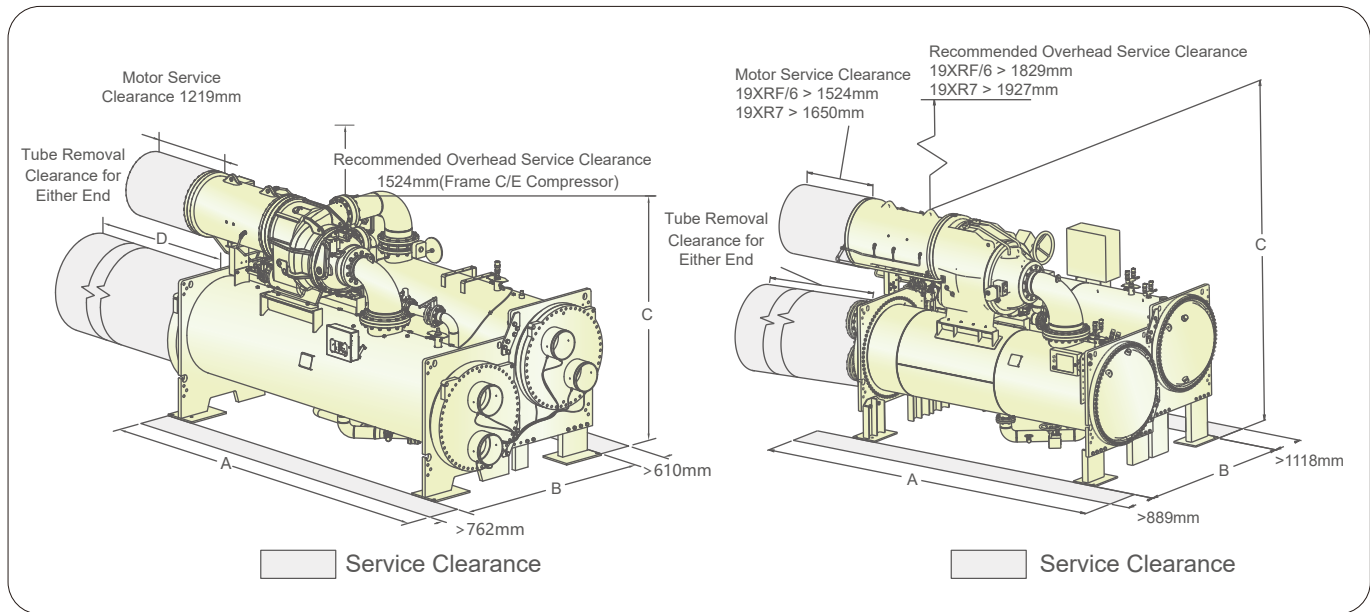
Notes: 1. A-length includes flanges with both cooler and condenser having two passes and nozzles being at the same end (drive end for standard units)
2. The above dimensions are based on the waterside pressure being 1.0Mpa. A-length will vary while the waterside pressure increases.

19XR/XR-C/E/F/6/7 Starter Dimensions (Free standing)

Voltage	Starter Type	Frame/Rated Current (A)	Width (mm)	Depth (mm)	Height (mm)
380V	Y-Δ	19XR-3/C≤710A	800	600	2300
		19XR-3/C>710A	1000	600	2300
		19XR-E	1200	800	2200
10kV	Across the Line	19XR-C/E/F/6/7	1000	1650	2400
	Primary Reactor	19XR-C/E/F/6/7	2000	1650	2400
	Auto-transformer	19XR-C/E/F/6/7	2400	1650	2400

Notes: The wiring of 380V starter enters from the top and exits from the bottom.
The wiring of 10/11kV starter enters from the top and exits from the top.

19XR-C/E/F/6/7 Chiller Dimensions



19XR-C Unit Dimensions

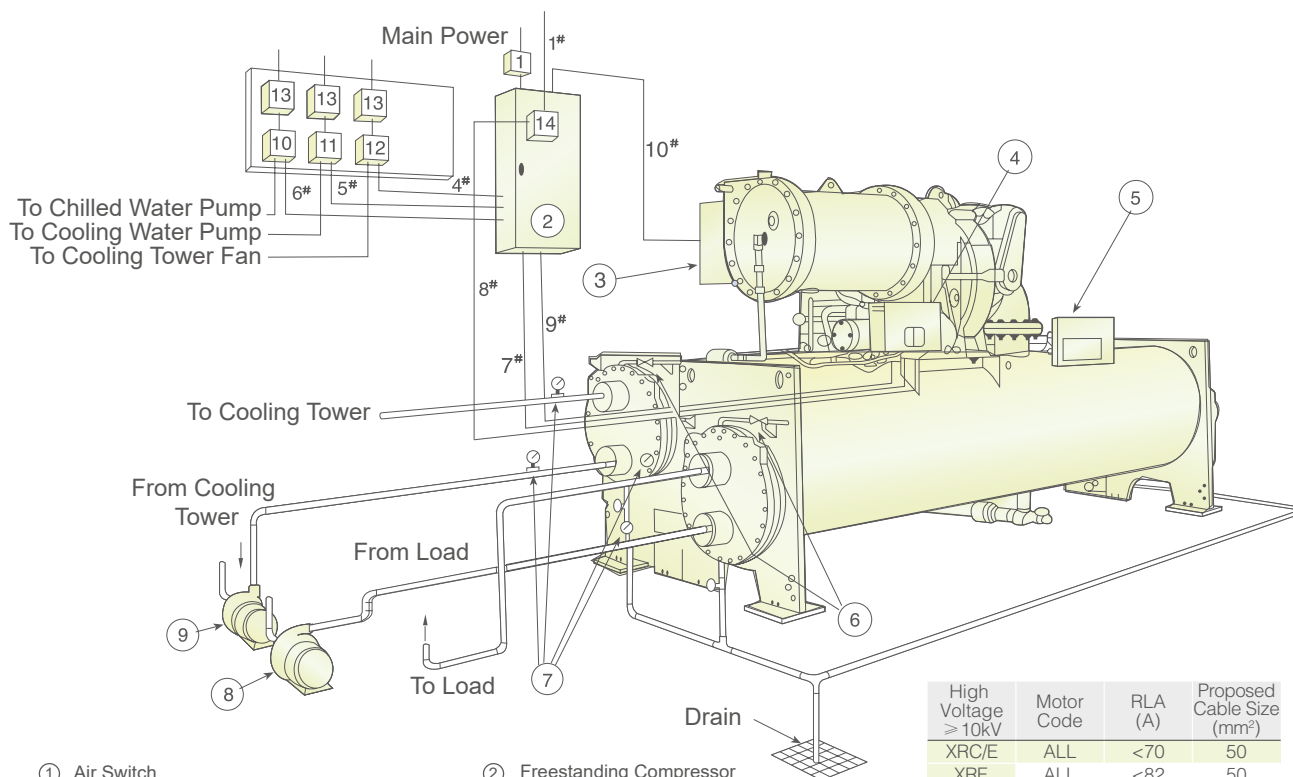
Evaporator Size	Condenser Size	A-Length for NIH Waterbox (2 Passes)	B-Width	C-Height		D-Tube Removal Space for Either End
				without Unit-mounted Starter	with Unit-mounted Y-Δ/Solid State Starter	
		mm	mm	mm	mm	mm
5P~54	50~54	4393	2098	2421	2850	3747
5X~59	55~59	4921	2078	2421	2850	4343
6P~64	60~64	4419	2163	2637	3071	3747
6X~69	65~69	4940	2148	2637	3071	4343
7P~74	70~74	5051	2472	2743	3155	4267
7X~79	75~79	5660	2472	2743	3155	4877

19XR-E/F/6/7 Unit Dimensions

Cooler Size	Condenser Size	A-Length for NIH Waterbox (2 Passes)	B-Width	C-Height		D-Tube Removal Space for Either End
				Without Unit-mounted Starter	With Unit-mounted Y-Δ/Solid State Starter 19XR-E	
		mm	mm	mm	mm	mm
7P~74	70~74	5045	2426	2889	3266	4369
7X~79	75~79	5642	2426	2889	3266	4978
8P~84	80~84	5121	2711	2937	3381	4369
8X~89	85~89	5731	2711	2937	3381	4978
8P~84	V0~V4	5195	2926	3082		4267
8X~89	V5~V9	5805	2926	3082		4877
A4A~A47	A4A~A47	5229	3051	3484		4572
A6A~A67	A6A~A67	5839	3051	3484		5182
A4A~A47	B4A~B47	5229	3186	3484		4572
A6A~A67	B6A~B67	5839	3186	3484		5182
B6A~B67	B6A~B67	5938	3460	3731		5182
B6A~B67	C6A~C67	5969	3658	3742		5182
C6A~C67	C6A~C67	6019	3798	3813		5182
C6A~C67	D6A~D67	6019	4014	3813		5182
C8A~C87	D8A~D87	6629	4014	3813		5792

Notes: 1. A-length includes flanges with both cooler and condenser having two passes and nozzles being at the same end (drive end for standard units).
2. The above dimensions are based on the waterside pressure being 1.0Mpa. A-length will vary while the waterside pressure increases.

Typical Piping and Wiring (with Free-standing Starter)



① Air Switch

③ Compressor Motor Terminal Box

⑤ Control Panel

⑦ Pressure Gauges

⑨ Cooling Water Pump

⑪ Cooling Water Pump Starter

⑬ Air Switch

② Freestanding Compressor Motor Starter

④ Oil Pump Controller

⑥ Vents

⑧ Chilled Water Pump

⑩ Chilled Water Pump Starter

⑫ Cooling Tower Fan Starter

⑭ Oil Pump Switch

High Voltage ≥ 10kV	Motor Code	RLA (A)	Proposed Cable Size (mm ²)
XRC/E	ALL	<70	50
XRF	ALL	<82	50
XR6	N	75	50
	P	82	50
	Q	88	50
	R	94	50
	S	100	70
	T	105	70
XR7	U	113	70
	V	119	70
	W	125	95
	X	131	95
	Y	138	95
	Z	145	95

Line Purpose

1# Main power to Starter:

4# To Cooling Tower Fan Starter:

5# To Cooling Tower Water Pump Starter:

6# To Chilled Water Pump Starter:

7# To Oil Heater Contactor:

8# To Oil Pump Contactor:

9# To Lubrication System Power Panel:

10# To Motor:

Specification

380V AC: 3 phases, and 1 grounding
6.3kV/10kV/11kV AC: 3 phases, 1 grounding (medium/high voltage); 380V AC, 3 phases, 10A (19XR-6/7: 380V AC, 3 phases with grounding, 16A)

4 control lines (optional)

2 control lines (optional)

2 control lines (optional)

115V AC: 2 power lines(20A), 1 grounding (Not apply to 19XR-6/7; 19XRF: connect between starter and control panel)

19XR-6/7: connect between starter and control panel, 380V AC, 3 phases with grounding, 16A; 19XR-F: connect between starter and control panel, 380V AC, 3 phases, 5A; Other products: 380V AC, 3 phases, 5A

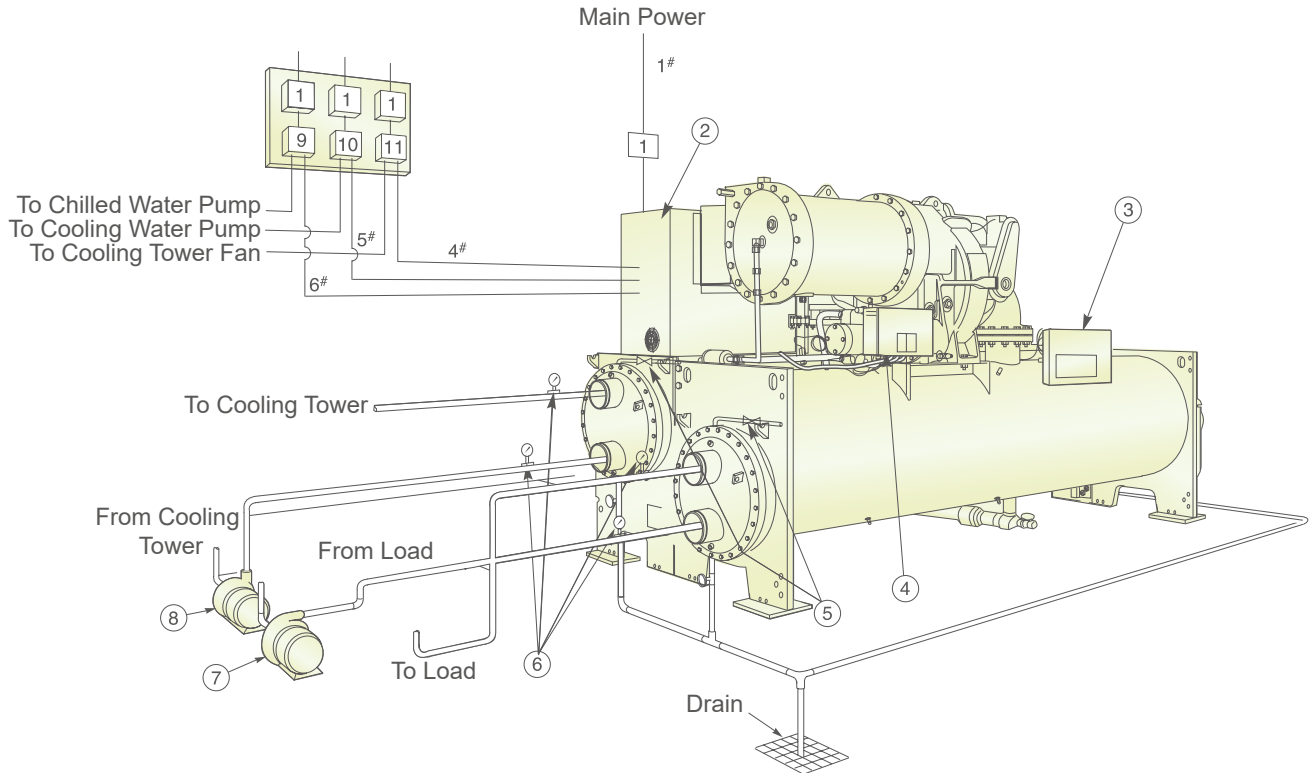
8 control shielding lines, 600V, 80°C, grounding in starter (19XR-F/6/7: connect between starter and control panel)

380V AC: 6 leads (Minimum ampacity per conductor = $0.721 \times \text{RLA}$), 1 grounding
Or 6.3kV/10kV/11kV AC: 3 leads, 1 grounding (medium/high voltage)

Piping and Wiring Requirements:

- The installer must get all pipes and wires in place and mark the ends.
- Filters must be installed in cooling water and chilled water pipes.
- Thermometer (0-50°C) and pressure gauge (0-1MPa or 2MPa) must be installed at inlet and outlet of the pipes.
- The installer must install the relief valve vent to outdoors with a steel pipe(outer diameter 42mm, thickness 4mm).
- It is suggested that an oxygen content monitor be installed in the machine room for safety, which will give an alarm when the oxygen content is less than 19.5%.
- Selected cable size range is from 50-120 square millimeter. If the customer select cable size is less than 50 square millimeter or more than 120 square millimeter, please contact YLC factory.
- Communication cable between starter (ISM module) and control box (IOB module) shall apply Carrier specified one pair and half shielded twisted cable. The cable shall be installed as far away from high voltage cables and other strong jamming equipments as possible and keep the communication cable as shorter as possible to avoid noise. The communication cable must go through a metal conduit independently.

Typical Piping and Wiring (with VFD)



- | | | | |
|------------------------------|------------------------------|----------------------|-----------------------|
| ① Air Switch | ② Unit-mounted Starter | ③ Control Panel | ④ Oil Pump Controller |
| ⑤ Vents | ⑥ Pressure Gauges | ⑦ Chilled Water Pump | ⑧ Cooling Water Pump |
| ⑨ Chilled Water Pump Starter | ⑩ Cooling Water Pump Starter | | |

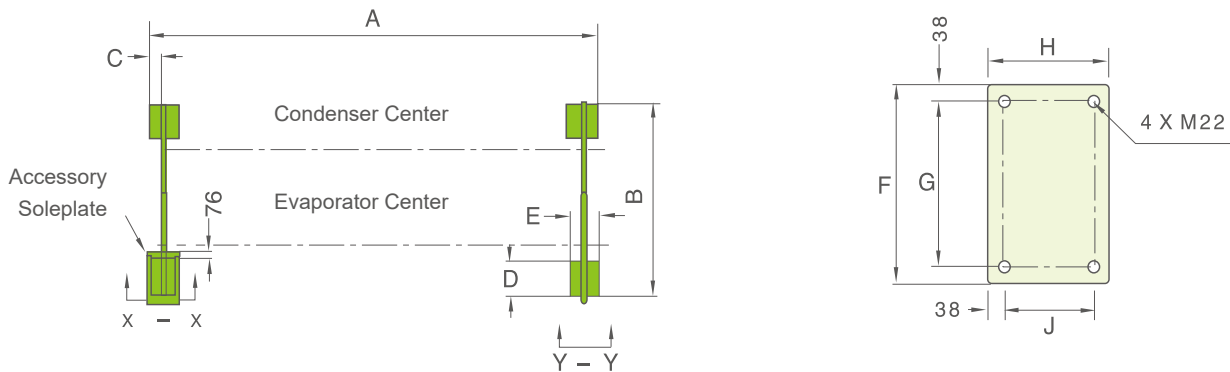
Line	Purpose	Specification
1#	Main power to Starter:	380V AC: 3 phases and 1 grounding
4#	To Cooling Tower Fan Starter:	4 control lines (Please contact local agencies if need this option)
5#	To Cooling Tower Water Pump Starter:	2 control lines (Please contact local agencies if need this option)
6#	To Chilled Water Pump Starter:	2 control lines (Please contact local agencies if need this option)

Piping and Wiring Requirements:

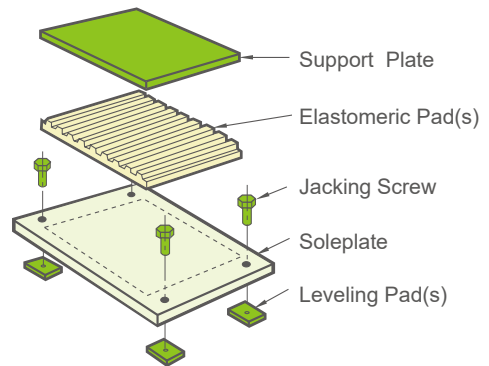
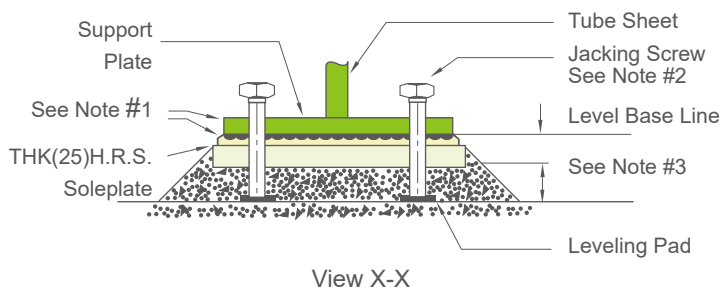
- The installer must get all pipes and wires in place and mark the ends.
- Filters must be installed in cooling water and chilled water pipes.
- Thermometer (0-50°C) and pressure gauge (0~1MPa or 2MPa) must be installed at inlet and outlet of the pipes.
- The installer must install the relief valve vent to outdoors with a steel pipe(outer diameter 42mm, thickness 4mm).
- It is suggested that an oxygen content monitor be installed in the machine room for safety, which will give an alarm when the oxygen content is less than 19.5%.

Types of Base Isolation

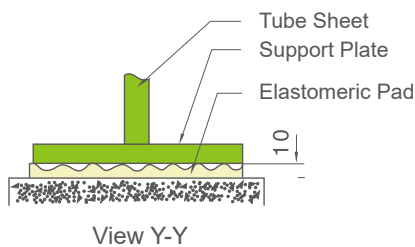
Location Of Isolator



Standard Isolation



Simplified Isolation



Notes:

1. Accessory soleplate package includes 4 soleplates, 16 jacking screws, and 16 leveling pads.
2. Jacking Screws should be removed after the grout has set.
3. Thickness of grout varies, depending on the amount necessary to level chiller.

Evaporator/ Condenser model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm
3P-34/30-34	3931	1632	92	387	229	540	464	254	178
3X-39/35-39	4451	1632	92	387	229	540	464	254	178
4P-44/40-44	3931	1829	92	387	229	540	464	254	178
4X-49/45-49	4451	1829	92	387	229	540	464	254	178
5P-54/50-54	3931	1969	92	387	229	540	464	254	178
5X-59/55-59	4451	1969	92	387	229	540	464	254	178
6P-64/60-64	3931	2070	92	387	229	540	464	254	178
6X-69/65-69	4451	2070	92	387	229	540	464	254	178
7P-74/70-74	4620	2400	176	559	406	711	635	432	356
7X-79/75-79	5320	2400	176	559	406	711	635	432	356
8P-84/80-84	4620	2686	176	559	406	711	635	432	356
8X-89/85-89	5320	2686	176	559	406	711	635	432	356
8P-84/V0-V4	4620	2686	176	559	406	711	635	432	356
8X-89/V5-V9	5320	2686	176	559	406	711	635	432	356
A4A-A47/A4A-A47	4492	3051	164	559	406	711	635	432	356
A6A-A67/A6A-A67	5102	3051	164	559	406	711	635	432	356
A4A-A47/B4A-B47	4492	3185	164	559	406	711	635	432	356
A6A-A67/B6A-B67	5102	3185	164	559	406	711	635	432	356
B6A-B67/B6A-B67	5099	3460	112	559	406	711	635	432	356
B6A-B67/C6A-C67	5082	3632	164	559	406	711	635	432	356
C6A-C67/C6A-C67	5080	3772	164	559	406	711	635	432	356
C6A-C67/D6A-D67	5082	4013	168	559	406	711	635	432	356
C8A-C87/D8A-D87	5691	4013	168	559	406	711	635	432	356



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