



**AIR - CONDITIONING &
REFRIGERATION L.L.C.**



StandardPack

WINTER StandardPack

Introduction

WINTER Air Conditioning & Refrigeration L.L.C. is known to provide smart and sophisticated solutions for industrial refrigeration applications. We, as a packager for refrigeration units with more than 30 years of experience, have the customer always in our focus. The satisfaction of the customer is our daily aim. A flexible and dynamic principle of operation is for WINTER a self-evidence and we always guarantee a high quality product out of our facility.

The WINTER StandardPack is one of our basic product and the main components for this compressor package are from well-established international brands of the refrigeration industry. The utilized twin screw compressors are the markets leading equipment providing secure performances. We are able to offer a wide range of compressor models with comprehensive cooling capacities. A certain range of compressors can also be supplied according to API 619. In combination with our engineering, design and manufacturing we are ensuring to hold the entire process in our hand. Even the oil cooler is our own design and can be executed with both, water or thermosiphon cooled. Our StandardPack can serve a wide range of capacities, starting from 45 kW up to 2500 kW.

WINTER stands for reliability

The highly efficient WINTER StandardPack is designed for reliable and long lasting operation while considering an easy installation, less service and a convenient handling for transport and shipping. An unelaborate installation can be done directly on the floor without any anchoring. Furthermore, the unit is made ready to be positioned in the plant room with only the piping and power cabling remaining. All the international codes (ASME, PED etc.) have also been applied for designing these units. The motors are generally from the established supplier WEG and guarantee a safe and efficient operation. The low noise screw compressor ensures the required employment protection.

Ammonia Specialist

The WINTER StandardPack is commonly working with the natural refrigerant Ammonia (R-717) and WINTER has an excellent competence in handling Ammonia. While specializing with Ammonia (R-717) and due to the zero GWP and ODP of it, WINTER contributes to save a small piece of our planet earth with each unit which have been built. An important component for our modus operandi is the environmental sustainability – that is one of the reason why we prefer ammonia. However, we disclose also our experience with other HFC-refrigerants such as R404A, R407A, R410A, R507A, R134A or as well as CO2 etc. No matter which refrigerant, WINTER is capable to deliver the StandardPack with any common refrigerant.

Saving Energy means saving money!

The high efficiency compressors and motors dedicate less electric energy consumption. As per customer request a VFD can also be provided. The WINTER StandardPack scores with its high COP, therefore our customers start saving money from the first running hour.

Slide Valve Capacity Control

The capacity control is executed via a slide valve to achieve an efficient running compressor unit at a well-balanced operation mode. The slide valve is able to cover a range from 100% to 10% of the full compressor duty.

The compressors can either be equipped with a manual or an automatic adjustable variable volume ratio.

Commissioning and After Sales Service

As per customer request, WINTER will also do the commissioning and we will fully accompany our customers during the whole lifetime of the WINTER StandardPack.

WINTER StandardPack

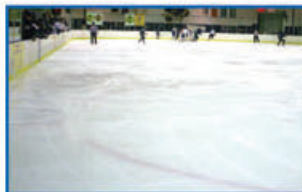


Versatile Applications

The WINTER StandardPack is eligible for all processes where reliable low temperatures are requested.

The main applications are:

- Cold Storages
- Freezer
- Air-Conditioning
- Food Processing
- Ice Processing
- Marine Refrigeration
- Dairy
- Meat Factory
- Vegetables
- Process Cooling
- Ice Rink
- etc.



Control Panel - HMI

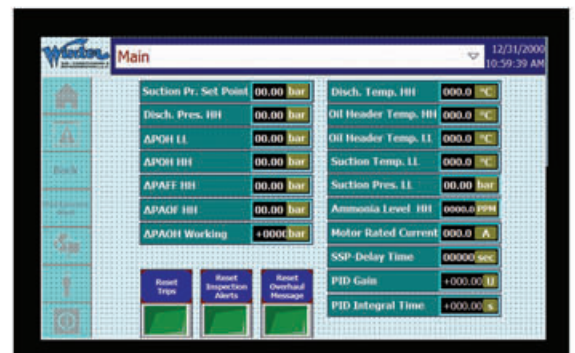
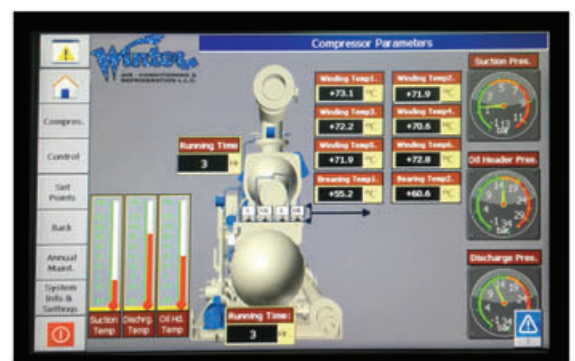
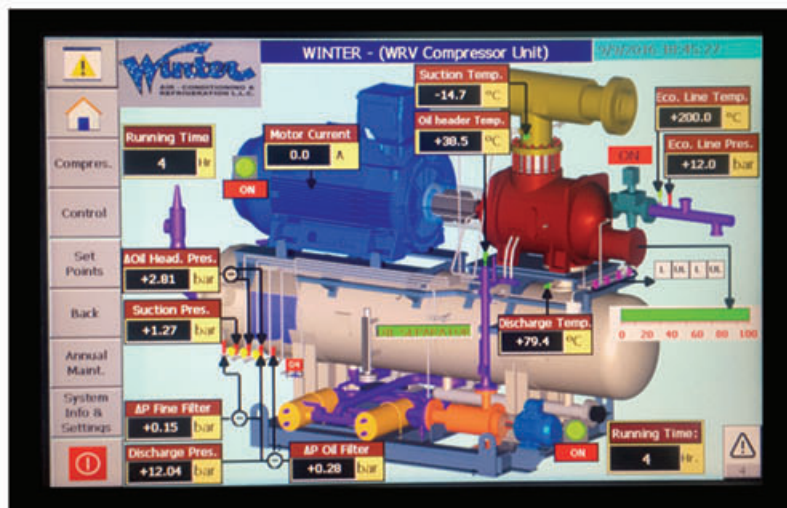
Each of our control panel contains a 7" or 9" Siemens high resolution touch display. While using the touch buttons the user is able to switch within the different levels and HMI-views to control and observe the plant from A to Z.

WINTER HMI Facts:

- High Resolution Touch Display
- Real-time troubleshooting on the HMI screen
- Automatic maintenance advice
- Display of the motor control values for protection purposes
- Alarm history
- Set point adjustment via HMI screen
- Parameter trend graph

Clearly arranged process values:

- Temperatures
- Pressure
- Capacity control
- Motor current & RPM



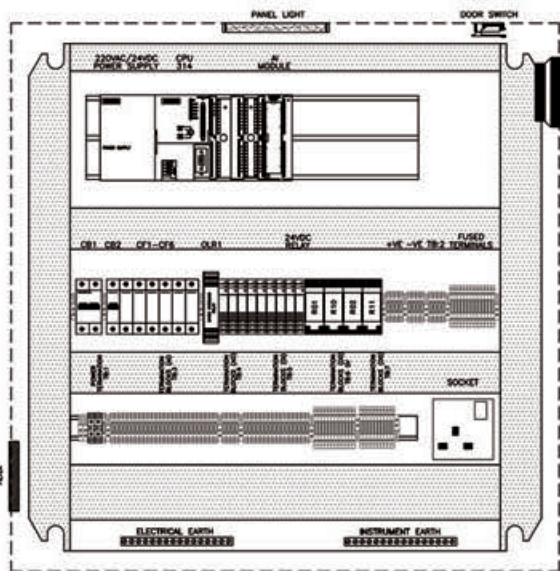
Package Control

The WINTER StandardPack is equipped with a SIEMENS Simatic Logic Controller for automation and the corresponding control panel to complete the package with high class international brands.

The implemented series in our packages are:

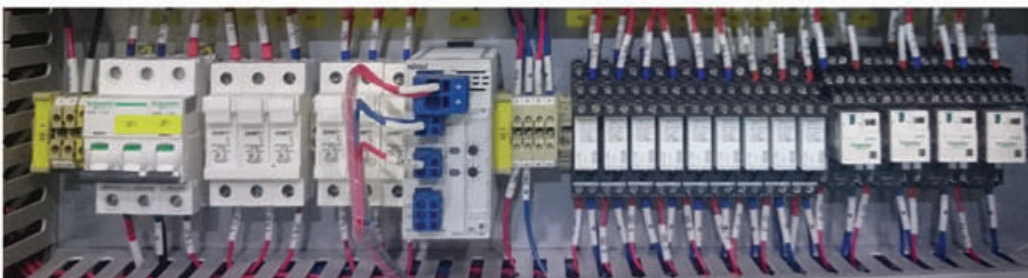
- Simatic S7-300
- Simatic S7-1200

Other Series can be provided upon customer request.



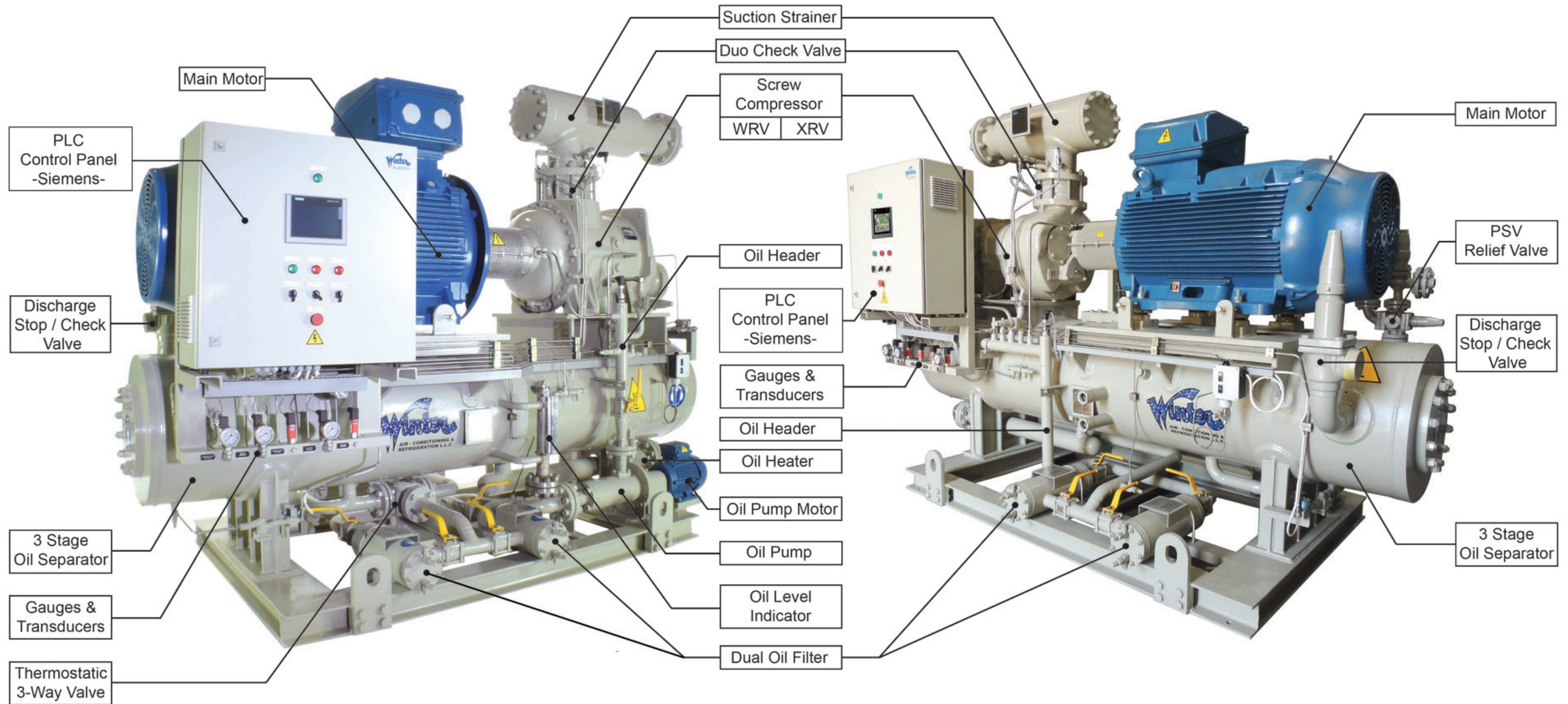
Our CE marked control panel with the Simatic control has a compact design with a high reliability showing the following facts:

- Dimension: 800 x 800mm
- Remote access for maintenance purposes
- IP55 rating
- Communication: Profibus, Profinet, MOD BUS, OPC.
- Reliability
- Robustness
- Expandability
- Optional Data and event logging
- GPRS, SMS based alarms and logs



WINTER StandardPack - WRV-Series

WINTER StandardPack - XRV-Series



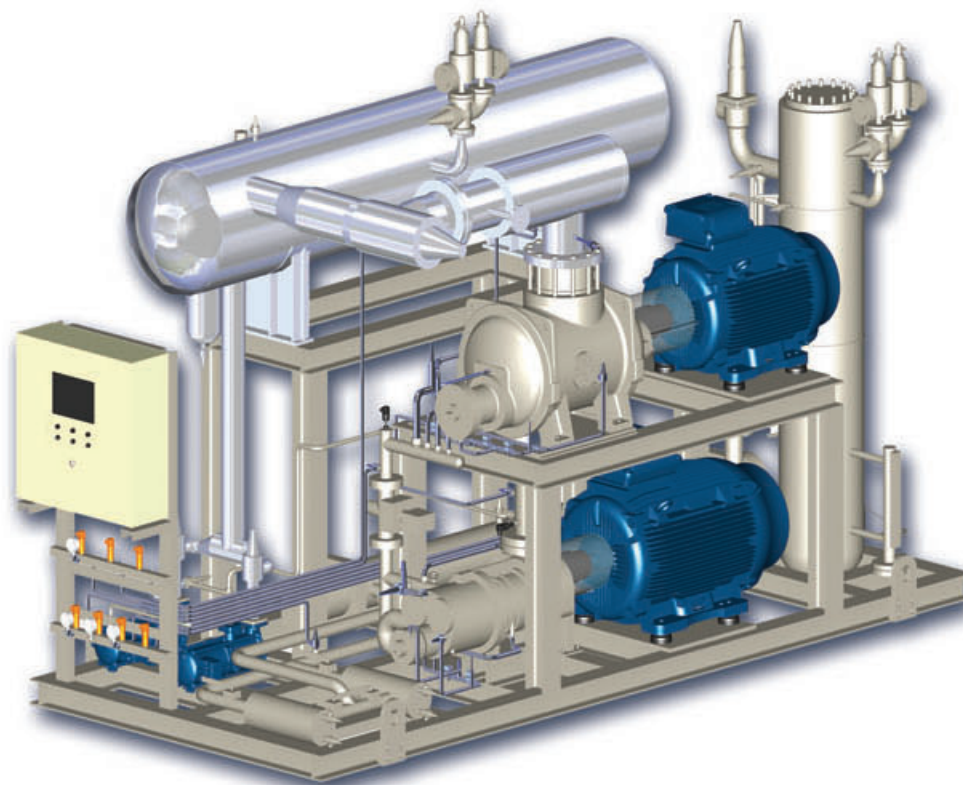
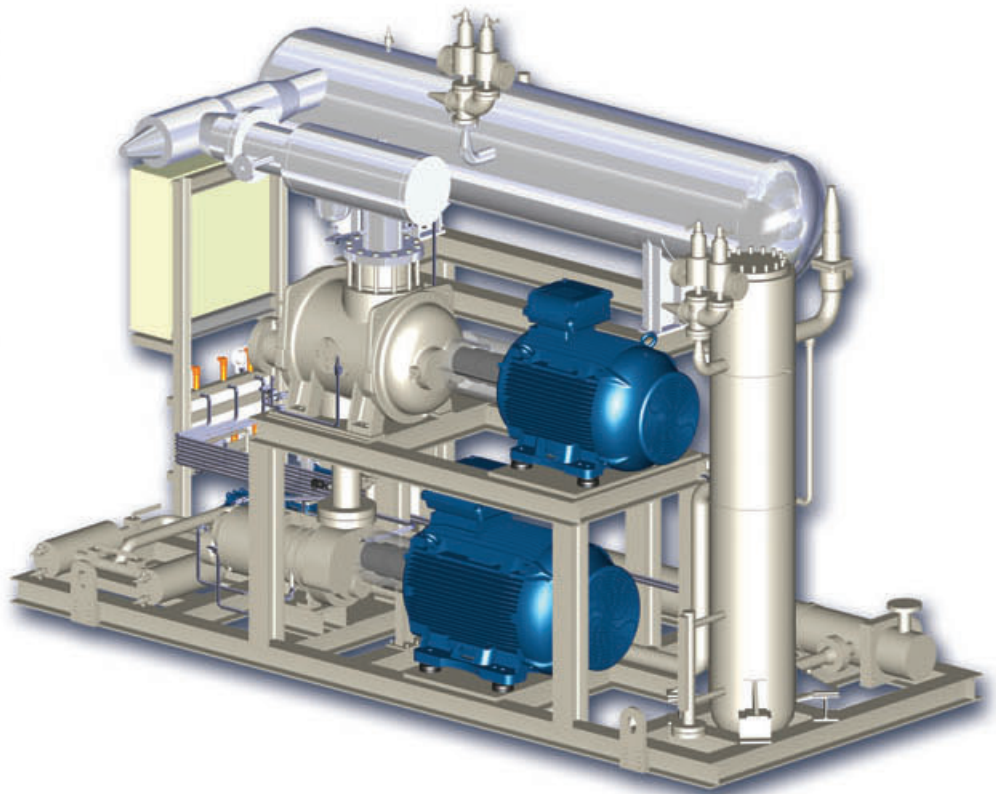
Compound Compressor

WINTER also proudly presents its newest product - the compound compressor system.

Advantages:

- Small footprint at maximum output
- Increased COP
- Low installation costs due to the compact arrangement of the machinery

All our machines are factory tested and ready to commission. The compound system matches perfectly for example for marine applications.



Oil Separator Variations - Vertical and Horizontal Arrangement

The vertical or horizontal arranged oil separator, which is designed and built by WINTER itself, guarantees a very little oil carry-over of less than 5 ppm within the refrigerant flow through the refrigeration cycle.

WINTER is able to provide both oil separator arrangements ensuring the maximum flexibility to fulfill the customer requirements such as a small footprint of the cooling plant.

XRV Series

M127

Model M127	Unit	TE = -5°C		TE = -35°C	
		CMSC-127165M01	CMSC-127165M01	CMSC-127165M01	CMSC-127165M01
Frequency	Hz	50	60	50	60
Cooling Capacity, nominal	kW	204.0	250.0	45.8	56.9
	TR	57.9	71.0	13.0	16.2
Absorbed Power	kW	47.9	58.1	35.4	43.0
	BHP	64.2	77.9	47.5	57.6
Coefficient of Performance	COP	4.26	4.3	1.3	1.3
Installed Electric Motor	kW	55	75	45	55

XRV-163

Model XRV-163	Unit	TE = -5°C				TE = -35°C			
		CMSC-163165X01	CMSC-163193X01	CMSC-163165X01	CMSC-163193X01	CMSC-163165X01	CMSC-163193X01	CMSC-163165X01	CMSC-163193X01
Frequency	Hz	50	60	50	60	50	60	50	60
Cooling Capacity, nominal	kW	408.7	506.9	493.8	611.5	91.2	114.3	110.6	138.2
	TR	116.1	144.0	140.2	173.7	25.9	32.5	31.4	39.2
Absorbed Power	kW	97.4	118.9	116.6	142.4	72.9	89.0	87.3	106.6
	BHP	130.4	159.3	156.2	190.7	97.7	119.3	117.0	142.9
Coefficient of Performance	COP	4.2	4.26	4.24	4.3	1.3	1.3	1.3	1.3
Installed Electric Motor	kW	110	132	132	160	90	110	110	132

XRV-204

Model XRV-204	Unit	TE = -5°C							
		CMSC-204110X01	CMSC-204145X01	CMSC-204165X01	CMSC-204193X01	CMSC-204110X01	CMSC-204145X01	CMSC-204165X01	CMSC-204193X01
Frequency	Hz	50	60	50	60	50	60	50	60
Cooling Capacity, nominal	kW	585.6	713.4	813.9	989.2	898.4	1091.9	994.5	1208.7
	TR	166.3	202.6	231.2	280.9	255.2	310.1	282.4	343.3
Absorbed Power	kW	140.8	171.9	179.6	219.2	204.0	249.1	222.3	271.4
	BHP	188.7	230.3	240.6	293.8	273.4	333.8	297.9	363.7
Coefficient of Performance	COP	4.16	4.15	4.53	4.51	4.4	4.38	4.47	4.45
Installed Electric Motor	kW	160	200	200	250	250	280	250	315

Model XRV-204	Unit	TE = -35°C							
		CMSC-204110X01	CMSC-204145X01	CMSC-204165X01	CMSC-204193X01	CMSC-204110X01	CMSC-204145X01	CMSC-204165X01	CMSC-204193X01
Frequency	Hz	50	60	50	60	50	60	50	60
Cooling Capacity, nominal	kW	133.4	163.1	185.5	226.2	204.8	249.7	226.7	276.4
	TR	37.9	46.3	52.7	64.2	58.2	70.9	64.4	78.5
Absorbed Power	kW	105.5	128.8	134.5	164.2	152.9	186.6	170.6	208.3
	BHP	141.3	172.6	180.2	220.1	204.8	250.1	228.6	279.2
Coefficient of Performance	COP	1.3	1.3	1.4	1.4	1.3	1.3	1.3	1.3
Installed Electric Motor	kW	132	150	150	185	185	220	200	260

Notes:

Tables based on Ammonia (R717); Other refrigerant on request; Oil cooling applicable with water or thermosyphon

Condensing temperature = 35°C; TE = Evaporation Temperature

Capacities without considering an economizer; Superheat 2K; Subcooling 5K



WRV Series

WRV-163

Model WRV-163	Unit	TE = -5°C				TE = -35°C			
		CMSC-163145W01	CMSC-163180W01	CMSC-163145W01	CMSC-163180W01	CMSC-163145W01	CMSC-163180W01	CMSC-163145W01	CMSC-163180W01
Frequency	Hz	50	60	50	60	50	60	50	60
Cooling Capacity, nominal	kW	394.5	482.6	489.7	599.1	83.2	102.7	104.2	128.5
	TR	112.0	137.1	139.1	170.2	23.6	29.2	29.6	36.5
Absorbed Power	kW	91.5	110.4	111.3	134.3	65.1	78.5	79.9	96.4
	BHP	122.6	147.9	149.2	180.0	87.2	105.2	107.0	129.1
Coefficient of Performance	COP	4.31	4.37	4.4	4.46	1.28	1.31	1.3	1.33
Installed Electric Motor	kW	110	132	132	150	75	90	90	110

WRV-204

Model WRV-204	Unit	TE = -5°C							
		CMSC-204110W01	CMSC-204145W01	CMSC-204165W01	CMSC-204193W01	CMSC-204110W01	CMSC-204145W01	CMSC-204165W01	CMSC-204193W01
Frequency	Hz	50	60	50	60	50	60	50	60
Cooling Capacity, nominal	kW	605.7	735.8	823.1	999.9	908.5	1103.7	1022.1	1241.8
	TR	172.0	209.0	233.7	284.0	258.0	313.5	290.3	352.7
Absorbed Power	kW	143.6	175.1	193.8	236.1	206.8	252.0	232.6	283.4
	BHP	192.5	234.6	259.6	316.4	277.1	337.6	311.7	379.7
Coefficient of Performance	COP	4.22	4.2	4.25	4.23	4.39	4.38	4.39	4.38
Installed Electric Motor	kW	160	200	220	260	250	280	280	315

Model WRV-204	Unit	TE = -35°C							
		CMSC-204110W01	CMSC-204145W01	CMSC-204165W01	CMSC-204193W01	CMSC-204110W01	CMSC-204145W01	CMSC-204165W01	CMSC-204193W01
Frequency	Hz	50	60	50	60	50	60	50	60
Cooling Capacity, nominal	kW	127.3	155.6	175.4	214.4	194.6	237.9	227.2	277.7
	TR	36.2	44.2	49.8	60.9	55.3	67.6	64.5	78.9
Absorbed Power	kW	99.2	120.9	135.7	165.3	145.5	177.2	167.2	203.6
	BHP	133.0	162.0	181.8	221.5	194.9	237.4	224.1	272.9
Coefficient of Performance	COP	1.28	1.29	1.29	1.3	1.34	1.34	1.36	1.36
Installed Electric Motor	kW	110	150	150	185	160	200	185	250

WRV 255

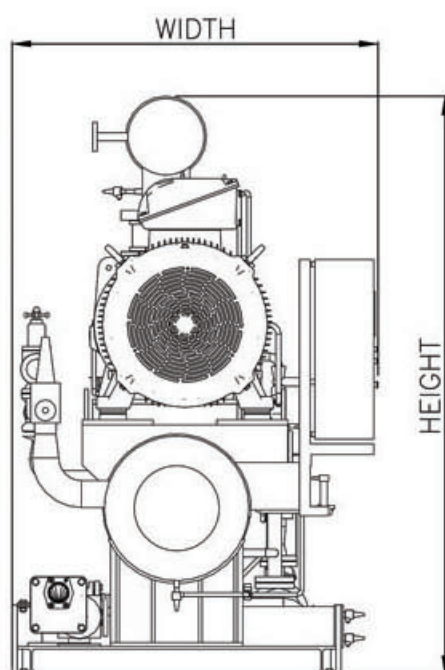
Model WRV-255	Unit	TE = -5°C									
		CMSC-255110W01	CMSC-255130W01	CMSC-255145W01	CMSC-255165W01	CMSC-255193W01	CMSC-255110W01	CMSC-255130W01	CMSC-255145W01	CMSC-255165W01	CMSC-255193W01
Frequency	Hz	50	60	50	60	50	60	50	60	50	60
Cooling Capacity, nominal	kW	1202.8	1456.6	1352.7	1638.2	1634.6	1979.5	1804.2	2184.9	2030.0	2458.4
	TR	341.6	413.7	384.2	465.2	464.2	562.2	512.4	620.5	576.5	698.2
Absorbed Power	kW	270.1	333.8	303.0	374.3	378.7	467.9	403.2	497.7	453.6	559.9
	BHP	361.9	447.2	406.0	501.6	507.5	626.9	540.2	666.9	607.9	750.2
Coefficient of Performance	COP	4.45	4.36	4.46	4.38	4.32	4.23	4.48	4.39	4.48	4.39
Installed Electric Motor	kW	300	370	355	440	450	515	450	560	500	630

Model WRV-255	Unit	TE = -35°C									
		CMSC-255110W01	CMSC-255130W01	CMSC-255145W01	CMSC-255165W01	CMSC-255193W01	CMSC-255110W01	CMSC-255130W01	CMSC-255145W01	CMSC-255165W01	CMSC-255193W01
Frequency	Hz	50	60	50	60	50	60	50	60	50	60
Cooling Capacity, nominal	kW	253.8	308.8	301.9	367.3	349.8	425.6	388.1	472.2	453.1	551.2
	TR	72.1	87.7	85.7	104.3	99.3	120.9	110.2	134.1	128.7	156.6
Absorbed Power	kW	194.9	241.1	217.9	269.4	276.8	342.3	295.2	364.4	324.8	400.9
	BHP	261.1	323.1	292.0	361.0	370.9	458.6	395.6	488.3	435.2	537.2
Coefficient of Performance	COP	1.3	1.28	1.39	1.36	1.26	1.24	1.31	1.3	1.39	1.38
Installed Electric Motor	kW	220	280	250	300	315	400	330	440	370	480

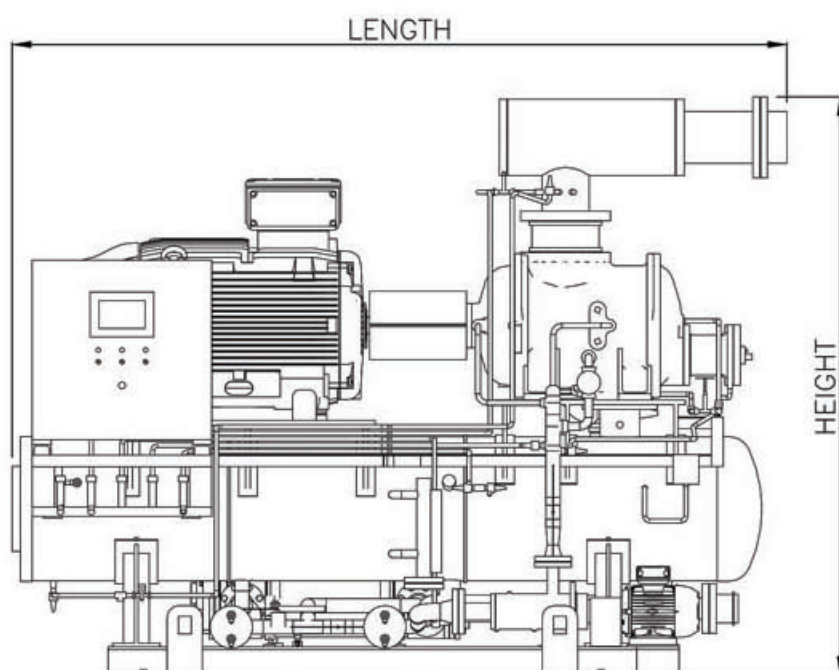
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 Condensing temperature = 35°C; TE = Evaporation Temperature
 Capacities without considering an economizer; Superheat 2K; Subcooling 5K

Layout / Dimension



LEFT SIDE VIEW



FRONT VIEW

Dimension:

Model / Package		M127	XRV-163	XRV-204	WRV-163	WRV-204	WRV-255
Length	mm	2850	2950	3250	3150	3265	4753
Width	mm	1500	1500	1550	1550	1550	2026
Height	mm	2100	2100	2200	2225	2450	3000



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**Your trustful partner for
Industrial Refrigeration Applications**

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