

R134a 50Hz



Smartwise Innovations...

Towards Green, Quality & Reliability Solutions





INTRODUCTION

This series of Screw Compressor Water Cooled Package Chillers were developed by a group of industry engineers, each of them with over 20 years of experience in the design, manufacturing, installation and service of electric chillers, packaged air-conditioners, split air-conditioners, fancoils, handling units, and related products.

- The Group is fully committed to innovative design, new and advance technology, value engineering and to provide expert personalized service to architects, consulting engineers, developers, building owners and contractors.
- The company's ability and courage to utilize and adopt latest technology, combined with fullest personalized assistance, has enabled the company to provide architects, consultants and developers various customized solutions to their various demanding application requirements.
- The company has the unique expertise and experience to custom design and fabricates equipment for installations in marine and corrosive environment, explosive and hazardous environment, low noise environment and any other special application needs!
- All units meet or exceed ASHRAE 90.1 minimum energy efficiency requirements.
- Units meet UL electrical requirements and ETL listed.
- Only used with ECO-FRIENDLY HFC type refrigerants.

Nomenclature

SSCX	75	T	W	5	R1
SMARTECH Chiller Screw Compressor DX Evaporator	Nominal Cooling Tons	T - Twin Compressor - Single Compressor	Water Cooled Type	50Hz	R134a



GENERAL DESCRIPTION

The water cooled screw chillers are designed and manufactured to ensure efficient and reliable performance and to provide an economical system of air conditioning for residential, commercial and industrial buildings. The Water Cooled Screw Chillers can also be suitably piped and connected to provide chilled water or cold brine solution for process cooling purpose. Each water cooled screw chiller consists of a state of the art one or two screw compressors, shell and tube counter-flow direct expansion type evaporator and condenser, factory packaged and prewired power and control panel; and a microprocessor based controller for capacity modulation and safety protection. Our units are eco-friendly with high efficiencies and utilizing eco-friendly HFC type refrigerants.

APPLICATIONS SERVED

Industrial Process Cooling

Although the term industrial lends one to think tough & rugged, industrial process applications can actually be quite sensitive. Many of these applications need tight temperature control to maintain their quality of product. We, at Smartech understand these needs and realize that your process is your lifeblood. Accurate temperature control and 24/7 reliability are our top priorities. This list show some common process cooling applications:

- Plastics processing
- Injection mold cooling
- Extrusion cooling
- Laser cooling
- Welding machine cooling
- Metal die-casting cooling
- Metal plating / anodizing cooling
- Engine dynamometer testing cooling
- Dry cleaning cooling
- Oil cooling

Food Processing Cooling

Food processing can be some of the most critical cooling applications due to their use of meats & poultry. In dealing with food, in general, temperature control is paramount. If your chiller does not hold temperature, you lose product. We have experience in the various food processing cooling applications and can help you find a solution to yours.

Here are just a few applications we have handled previously:

- Bakery cooling
- Batch cooling
- Brine / Marinade cooling
- Vacuum meat tumbler / massager cooling
- Winery cooling
- Brewery cooling
- Ice cream / Slushy machine cooling

Specialty applications

Have a special or custom application? No problem. Custom chiller applications are where we thrive. We are here to help. Some previous custom projects are:

- Ice Rink cooling
- Explosion proof chillers for all electrical area classifications
- Stainless steel frame, cabinet and control panel construction
- Ultra Low Sound requirement.

MECHANICAL SPECIFICATIONS AND FEATURES

RANGE

This chiller has 16 cooling capacity sizes from 57 to 296 tons and available in R134a refrigerant.

SCREW COMPRESSOR

- Separate refrigerant circuit for each compressor
- Semi-hermetic, horizontal screw type
- Two-pole hermetic motor
- Suction gas cooled motor
- Integral lubrication system using pressure differential
- Cast iron housing
- Infinite variable slide valve unloading
- Integral oil separator
- Compressor oil sump heaters



The adoption of a dedicate, high efficiency exchange tube allows increased cooling capacities by values close to 10%. This performance improvement can be alternatively translated into a raising of the evaporation temperature and then in an optimisation of the COP of the cooling system, not only in combination with R134a but also with the other refrigerants.

- Header tube sheet, shell, refrigerant and water connections are made of carbon steel
- High efficiency exchange tubes are in copper, internally finned.
- Baffles are made of brass or other suitable material (carbon steel)
- The bolt system is made of steel alloys or stainless steel depending on working conditions and temperatures, while gaskets are made of an asbestos free compound.
- China certified pressure vessels are standard with the option of ASME certification.

SHELL AND TUBE CONDENSER

The condenser is an efficient shell and tube heat exchanger that allows high heat exchange between condensing water and refrigerant by use of specially designed internal baffles. This makes condensation temperature 2-3°F lower than conventional condensers. The shell and tube condenser is designed and tested according to BR1 and CE certificate procedures and each vessel is leak and pressure tested before assembly to ensure its optimum performance. The design pressure of evaporator is 1.0MPa. The condensers are China certified pressure vessels with the option of ASME certification.

REFRIGERATION SPECIALTIES

- Thermal expansion valve(s)
- Sight glass with moisture indicator(s)
- Liquid line solenoid valve(s)
- Liquid line shut off valve(s)
- Filter/drier(s)
- Charging and gauge connections
- Compressor discharge check valve(s) and stop valve(s)
- Compressor suction stop valve(s)
- High pressure relief valve(s)
- Refrigerant charge
- Oil charge



Shell & Tube Evaporator

POWER AND CONTROL PANEL

Each chiller is packaged with a power and control panel which is ready to accept rated 3 phase 50Hz electrical supply from a remote mounted isolator.

The power panel is furnished with factory pre-wired and mounted S/D starter for compressors, DOL starters for condenser fan motors. MCBs for compressors and fan motors, external overload protectors for compressors and/or fan motors. Power, alarm and compressor run lights to indicate unit operation status.

The heart of the control panel is the highly reliable SMART-Advance **SMT** microprocessor based controller with advance compressor management logic for screw compressors in response to required chilled water outlet set-point temperature. **SMT** controller is designed specifically for the hostile environment of the HVAC/R industry and had customers in mind. **SMT** controller provides flexibility with set points and control options that can be selected prior to commissioning a system or when the unit is live and functioning. Displays, alarms and other interfaces are accomplished in a clear and simple language that informs the user as to the status of the controller.

The **SMT**⁸ controller provides the following safety protections, control functions and features:

- A user friendly back-lit 132 by 64 pixels **SMT-D**¹ display panel with 6 silicon rubber buttons allows carrying out all program operations.
- Staggered starting of compressors to reduce current in-rush.
- To prevent compressors short-cycling (on and off repeatedly) which can cause overheating of compressors and premature failures or burnt-out of compressors.
- Lead-lag control of compressors operation and auto-balancing of compressors run-hours
- Retains up to 99 alarm histories complete with time of failure together with data stamping on critical sensor readings in an alarm history.
- Monitoring of the following readings and status:
 - Leaving and entering chilled water temperature
 - Compressors suction and discharge pressure
 - Compressors discharge temperature
 - Compressor operating current
 - Chilled water flow switch status
 - Compressor oil level status
 - External start/stop status
- Safety protections as below to insure system reliability:
 - Chilled water freeze protection
 - Chilled water flow loss
 - Low suction pressure/high discharge pressure
 - Low oil level
 - Low pressure differential
 - Sensor failure
 - Compressor over-current
- Various optional add-on cards are available for direct interfacing to Building Management System (BMS) through standard communication protocols such as ModBus RTU (RS485/TCPIP), BACnet (RS485/MSTP/TCPIP) and LonWorks (FTT 10).





OPTIONAL ACCESSORIES

HEAT RECOVERY / DESUPERHEATERS

This can be factory supplied and installed to get free hot water up to as high as 55°C.

OTHER OPTIONAL ACCESSORIES

- Coated or uncoated copper fins coils in lieu of pre-coated aluminium fins coils.
- Water flow switch to be shipped loose.
- Spring isolators to be shipped loose.
- Rubber-in-shear isolator to be shipped loose.

INTEGRATED PUMP TANK STATION

Process pump package can be integrated with or without a tank station. These tanks are offered in all 304SS material and fully insulated with high-quality foam insulation. Pumps are available up to 25HP and in other constructions up to 60HP with 304SS material. This section will be integral to the chiller skid and within a framed enclosure with rain shield.

PERFORMANCE TABLE - SINGLE COMPRESSOR MODELS

		GENERAL DATA									
MODEL SSCX	Leaving Chilled		Сог	ndenser Water	Entering Temp	o. °F					
INIODEL 22CX	Water Temp. °F	7	5	8	35	9	95				
		Ton	kWi	Ton	kWi	Ton	kWi				
	42	57.5	34.0	54.2	37.5	50.6	41.9				
	44	60.2	34.1	56.6	37.7	52.9	42.0				
55 W5R1	46	62.9	34.3	59.2	37.9	55.3	42.2				
	48	65.7	34.4	61.9	38.0	57.8	42.4				
	50	68.6	34.6	64.6	38.2	60.5	42.6				
	42	72.0	42.6	67.7	47.1	63.2	52.5				
	44	72.3	42.8	70.8	47.3	66.1	52.8				
70 W5R1	46	78.6	43.0	74.0	47.5	69.1	53.0				
	48	82.2	43.2	77.3	47.7	72.3	53.2				
	50	85.8	43.3	87.8	47.9	75.5	53.4				
	42	90.8	53.4	85.5	58.9	79.8	65.7				
	44	95.0	53.6	89.4	59.2	83.5	66.0				
90 W5R1	46	99.2	53.8	93.5	59.4	87.4	66.3				
	48	103.7	54.1	97.7	59.7	91.3	66.5				
	50	108.3	54.3	102.0	59.9	95.4	66.8				
	42	114.6	67.3	107.8	74.4	100.6	83.0				
	44	119.8	67.6	112.7	74.7	105.2	83.4				
110 W5R1	46	125.2	67.9	117.8	75.0	110.1	83.7				
	48	130.8	68.2	123.1	75.3	115.1	84.1				
	50	136.6	68.5	128.6	75.6	120.2	84.4				
	42	138.5	79.3	130.3	87.6	121.6	97.8				
	44	144.8	79.6	136.2	88.0	127.2	98.2				
135 W5R1	46	151.3	80.0	142.4	88.4	133.0	98.7				
	48	158.1	80.3	148.8	88.7	139.1	99.1				
	50	165.1	80.7	155.5	89.1	145.3	99.4				
	42	150.6	87.5	141.6	96.7	132.2	107.9				
	44	157.4	87.9	148.1	97.1	138.3	108.4				
150 W5R1	46	164.5	88.3	154.8	97.5	144.6	108.9				
	48	171.9	88.6	161.8	97.9	151.2	109.3				
	50	179.5	89.0	169.0	98.3	158.0	109.7				

PERFORMANCE TABLE - TWIN COMPRESSOR MODELS

			GENERAL	DATA			
	Leaving Chilled		Conc	denser Water	Entering Tem	p. °F	
MODEL SSCX		7	5	8	5	9	5
	Water Temp. °F	Ton	kWi	Ton	kWi	Ton	kWi
	42	74.4	45.6	70.0	50.4	65.4	56.2
	44	77.7	45.8	73.0	50.6	68.4	56.4
75T W5R1	46	81.2	46.0	76.5	50.8	71.5	56.8
	48	84.9	46.2	79.9	51.0	74.8	57.0
	50	88.6	46.4	83.5	51.2	78.1	57.2
	42	93.6	56.2	88.1	62.0	82.3	69.2
	44	97.9	56.4	92.1	62.4	86.1	69.6
95T W5R1	46	102.3	56.8	96.3	62.6	90.0	69.8
	48	106.8	57.0	100.6	62.8	94.1	70.2
	50	111.6	57.2	105.1	63.2	98.3	70.4
	42	115.1	68.0	108.3	75.0	101.2	83.8
	44	120.3	68.2	113.3	75.4	105.8	84.0
115T W5R1	46	125.7	68.6	118.4	75.8	110.7	84.4
	48	131.4	68.8	123.7	76.0	115.7	84.8
	50	137.2	69.2	129.2	76.4	120.9	85.2
	42	144.0	85.2	135.4	94.2	126.4	105.0
	44	150.5	85.6	141.6	94.6	132.2	105.6
140T W5R1	46	157.3	86.0	148.0	95.0	138.3	106.0
	48	164.3	86.4	154.7	95.4	144.5	106.4
	50	171.6	86.6	161.6	95.8	151.0	106.8
	42	159.4	95.2	150.0	105.2	140.1	117.4
	44	166.6	95.8	156.9	105.6	146.6	117.8
160T W5R1	46	174.1	96.2	164.0	106.2	153.3	118.4
	48	181.9	96.6	171.4	106.6	160.2	118.8
	50	190.0	97.0	179.0	107.0	162.7	119.2
	42	181.7	106.8	171.0	117.8	159.7	131.4
400714/504	44	189.9	107.2	178.8	118.4	167.6	132.0
180T W5R1	46	198.5	107.6	186.9	118.8	174.7	132.6
	48	207.3	108.2	195.3	119.4	182.6	133.0
	50	216.5	108.6	204.0	119.8	190.9	133.6
	42	199.5	116.2	187.8	128.2	175.4	143.2
200T M/ED1	44	208.6	116.8	196.4	128.8	183.5	143.8
200T W5R1	46	218.0	117.2	205.3	129.4	191.9	144.4
	48	227.7	117.8 118.2	214.5	130.0 130.4	200.6	145.0
	50 42	237.8 229.2	118.2	224.1 215.6	130.4	209.6 201.2	145.6 166.0
	42	239.6	134.6	215.6	148.8	210.5	166.8
225T W5R1	46	250.4	135.2	225.5	150.0	210.5	167.4
ZZJI VVJIVI	48	261.6	136.4	235.7	150.6	230.1	168.2
	50	273.2	130.4	257.3	150.6	240.5	168.8
	42	273.2	157.0	260.6	175.2	240.5	195.6
	44	289.6	159.2	272.5	175.2	254.4	196.4
270T W5R1	46	302.7	160.0	284.8	176.8	266.0	197.4
ZIOI VVOINI	48	316.2	160.6	297.6	170.6	278.1	198.2
	50	330.2	161.4	310.9	177.4	290.7	198.8
	42	301.2	175.0	283.3	193.4	264.3	215.8
	44	314.8	175.8	296.2	194.2	276.5	216.8
300T W5R1	46	329.0	176.6	309.6	195.0	289.2	217.8
300. 110101	48	343.7	177.2	323.5	195.8	302.3	218.6
	50	359.0	177.2	338.0	196.6	315.9	219.4

TECHNICAL SPECIFICATION - SINGLE COMPRESSOR

city* 55 70 90 110 ar Input* KWI 37.7 47.3 89 113 ction Type Compressor Semi-Hermatic Screw duction Type Lti 160 35-100% Semi-Hermatic Screw duction Type Coloper Semi-Hermatic Screw stop 1500% 35-100% 35-100% 35-100% 35-100% duction Titon Sizes NPS inch [mm] 4 [102] 4 [102] 4 [102] 4 [102] 4 [102] 4 [102] 5 [127] 5 [127] Trion Sizes Semi-Hermatic Screw Type Coloper 5 [122] <th col<="" th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></th>	<th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>								
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Compressor Com	Nominal Capacity*	Ton	57	71	89	113	136	148	
Compressor Single [1] Sin	Nominal Power Input*	kWi	37.7	47.3	59.2	74.7	88.0	97.1	
Single [1] Sin				Compresso	or				
tion Type Single [1] Single [1] Single [1] Single [1]	Туре				5	emi-Hermatic Screw	,		
ctrion Type 16 16 16 18 20 duction 25 - 100% 35 - 100% 35 - 100% 35 - 100% tion Sizes NPS inch [mm] 4 [102] 4 [102] 4 [102] 4 [102] 4 [102] 4 [102] 6 [152] tion Sizes NPS inch [mm] 4 [102] 4 [102] 4 [102] 4 [102] 6 [152] tion Sizes NPS inch [mm] 4 [102] 4 [102] 215 [49] 270 [61] ar Flow GPM [m³/h] 162 [37] 202 [46] 255 [58] 274 tion Sizes NPS inch [mm] 4 [102] 4 [102] 5 [127] 5 [127] r Flow GPM [m³/h] 162 [37] 202 [46] 255 [58] 37 [41] r Flow GPM [m³/h] 162 [37] 202 [46] 255 [58] 37 [173] n Flow GPM [m³/h] 162 [37] 202 [46] 255 [58] 37 [48] n Flow MCA 78 96 117 146 MCA 78 96 117	Quantity per unit		Single [1]	Single [1]	Single [1]	Single [1]	Single [1]	Single [1]	
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riow GPM [m³/h] 136 [31] 170 [39] 215 [49] 270 [61] stion Sizes NPS inch [mm] 4 [102] 4 [102] 5 [127] 5 [127] 5 [127] rion Sizes NPS inch [mm] 4 [102] 4 [102] 5 [127] 5 [127] 5 [127] rer Flow GPM [m³/h] 162 [37] 202 [46] 255 [58] 321 [73] rer Flow GPM [m³/h] 162 [37] 202 [46] 255 [58] 321 [73] rer Flow GPM [m³/h] 162 [37] 202 [46] 255 [58] 321 [73] rer Flow GPM [m³/h] 162 [37] 202 [46] 255 [58] 321 [73] rer Flow GPM [m²/h] 540 655 77 94 117 146 MAX. ALLOW 125.0 160 200 250 250 250 minch [mm] 513/4 [1314] 513/4 [1314] 513/4 [1314] 513/4 [1314] 513/4 [1314] 513/4 [1318] 513/4 [1318] 491/8 [1248] 531/2 [1511] weight lbs [kg]									
Condenser Condenser Condenser Condenser Condenser	Nominal Water Flow	GPM [m³/h]	136 [31]	170 [39]	215 [49]	270 [61]	327 [74]	356 [81]	
Condenser Condenser Condenser Condenser Condenser	Pressure Drop	Pci	5.6	63	8.7	7.4	7.6	9 6	
tion Sizes NPS inch [mm] 4 [102] 4 [102] 5 [127] 5 [1				Condense					
See Flow GPM [m³/h] 162 [37] 202 [46] 255 [58] 321 [73]	Water Connection Sizes	NPS inch [mm]	4 [102]	4 [102]	5 [127]	5 [127]	5 [127]	6 [152]	
Flow GPM [m³/h] 162 [37] 202 [46] 255 [58] 321 [73] 2.6 3.4 2.6 3.5									
RLA (EACH)	Nominal Water Flow	GPM [m³/h]	162 [37]	202 [46]	255 [58]	321 [73]	387 [88]	422 [96]	
RLA (EACH)	Pressure Drop	Psi	2.6	3.4	2.6	3.5	3.4	3.4	
RLA (EACH)				Electrical					
LRA (EACH)	Compressor	RLA	62	77	94	117	140	155	
MAX. ALLOW. 125.0 160 200 250		LRA (EACH)	540	655	795	850	1295	1370	
MAX. ALLOW. 125.0 160 200 250 General inch [mm] 103 3/8 [2626] 103 3/8 [2626] 112 3/8 [2854] 113 3/8 [2880] nium (kg) inch [mm] 51 3/4 [1314] 51 3/4 [1314] 57 3/8 [1457] 59 1/2 [1511] Neight lbs [kg] 3098 [1405] 3215 [1458] 4355 [1966] 4873 [2210] g Weight lbs [kg] 3378 [1532] 3493 [1584] 4756 [2157] 5477 [2484] lbs [kg] 121 [54] 150 [68] 187 [68] 238 [108]	Unit Data	MCA	78	96	117	146	175	194	
General inch [mm] 103 3/8 [2626] 103 3/8 [2854] 113 3/8 [2880] inch [mm] 46 3/8 [1178] 47 1/8 [1197] 49 1/8 [1248] 53 3/8 [1356] nium (kg) 51 3/4 [1314] 51 3/4 [1314] 57 3/8 [1457] 59 1/2 [1511] weight lbs [kg] 3098 [1405] 3215 [1458] 4335 [1966] 4873 [2210] g Weight lbs [kg] 3378 [1532] 3493 [1584] 4756 [2157] 5477 [2484] ins [ka] 121 [54] 150 [68] 187 [65] 238 [108]		MAX. ALLOW.	125.0	160	200	250	320	320	
inch [mm] 103 3/8 [2626] 112 3/8 [2854] 113 3/8 [2880] inch [mm] 46 3/8 [1178] 47 1/8 [1197] 49 1/8 [1248] 53 3/8 [1356] nium (kg) inch [mm] 51 3/4 [1314] 51 3/4 [1314] 57 3/8 [1457] 59 1/2 [1511] weight lbs [kg] 3098 [1405] 3215 [1458] 4335 [1966] 4873 [2210] g Weight lbs [kg] 3378 [1532] 3493 [1584] 4756 [2157] 5477 [2484] lbs [ka] 121 [54] 150 [68] 187 [68] 238 [108]				General					
inch [mm] 46 3/8 [1178] 47 1/8 [1197] 49 1/8 [1248] 53 3/8 [1356] nium (kg) inch [mm] 51 3/4 [1314] 51 3/4 [1314] 57 3/8 [1457] 59 1/2 [1511] 6 nium (lb) mium (lb)	Unit Length	inch [mm]	103 3/8 [2626]	103 3/8 [2626]	112 3/8 [2854]	113 3/8 [2880]	113 3/8 [2880]	113 3/8 [2880]	
nium (kg) 51 3/4 [1314] 51 3/4 [1314] 57 3/8 [1457] 59 1/2 [1511] nium (lb) nium (lb) 51 3/4 [1314] 51 3/4 [1314] 57 3/8 [1457] 59 1/2 [1511] Weight lbs [kg] 3098 [1405] 3215 [1458] 4335 [1966] 4873 [2210] g Weight lbs [kg] 3378 [1532] 3493 [1584] 4756 [2157] 5477 [2484] lbs [kg] 121 [54] 150 [68] 187 [85] 238 [108]	Unit Width	inch [mm]	46 3/8 [1178]	47 1/8 [1197]	49 1/8 [1248]	53 3/8 [1356]	54 3/4[1391]	54 3/4[1391]	
nium (lb) lbs [kg] 3098 [1405] 3215 [1458] 4335 [1966] 4873 [2210] Weight lbs [kg] 3378 [1532] 3493 [1584] 4756 [2157] 5477 [2484] g Weight lbs [kg] 121 [54] 150 [68] 187 [85] 238 [108]	Unit Height	inch [mm]	51 3/4 [1314]	51 3/4 [1314]	57 3/8 [1457]	59 1/2 [1511]	62 3/4 [1594]	66 3/4 [1695]	
Weight lbs [kg] 3098 [1405] 3215 [1458] 4335 [1966] 4873 [2210] Weight lbs [kg] 3378 [1532] 3493 [1584] 4756 [2157] 5477 [2484] Residunt lbs [kg] 121 [54] 150 [68] 187 [85] 238 [108]	add wt fr premium (kg)								
Weight lbs [kg] 3098 [1405] 3215 [1458] 4335 [1966] 4873 [2210] g Weight lbs [kg] 3378 [1532] 3493 [1584] 4756 [2157] 5477 [2484] model lbs [kg] 171 [54] 150 [68] 187 [85] 238 [108]	add wt fr premium (lb)								
g Weight lbs [kg] 3378 [1532] 3493 [1584] 4756 [2157] 5477 [2484] Ins [kg] 121 [54] 150 [68] 187 [85] 238 [108]	Unit Shipping Weight	lbs [kg]	3098 [1405]	3215 [1458]	4335 [1966]	4873 [2210]	5732 [2600]	6359 [2884]	
	Unit Operating Weight	lbs [kg]	3378 [1532]	3493 [1584]	4756 [2157]	5477 [2484]	6339 [2875]	6998 [3174]	
lhs [kø] 121 [55] 150 [68] 187 [85] 238 [108]									
[20] 121 [20] 121 [20] 121 [20] 121 [20]	Charge R134a	lbs [kg]	121 [55]	150 [68]	187 [85]	238 [108]	286 [130]	310 [141]	

 * Conditions are based on Evaporator water temperature inlet/outlet: 54 $^{\rm 2}\rm{F}/44$ $^{\rm 9}\rm{F}$ Condenser water temperature inlet/outlet: 85 $^{\rm 2}\rm{F}/95$ $^{\rm 9}\rm{F}$

TECHNICAL SPECIFICATION - TWIN COMPRESSORS

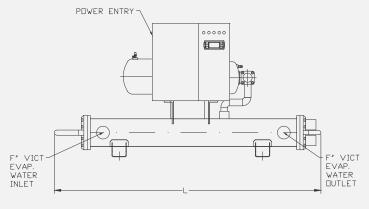
Model		757	95T	115T	140T	160T	180T	200T	225T	270T	300T
Nominal Capacity*	Ton	73	92	113	142	157	179	196	225	272	296
Nominal Power Input*	kWi	51	62	75.4	95	106	118.4	128.8	149.4	176.0	194.2
					Compressor						
Type						Semi-Hern	Semi-Hermatic Screw				
Quantity per unit		Dual [2]	Dual [2]	Dual [2]	Dual [2]	Dual [2]					
Oil Charge	Ltr	16	28	32	32	30	36	40	40	26	56
Capacity Reduction Type						Continuous Ca	Continuous Capacity Control				
% Capacity Reduction		12.5 - 100%	12.5 - 100%	12.5 - 100%	12.5 - 100%	12.5 - 100%	12.5 - 100%	12.5 - 100%	12.5 - 100%	12.5 - 100%	12.5 - 100%
					Cooler						
Water Connection Sizes	inch [mm]	5 [127]	5 [127]	6 [152]	6 [152]	6 [152]	6 [152]	8 [203]	8 [203]	8 [203]	8 [203]
Nominal Water Flow	GPM [m³/h]	175 [40]	221 [50]	272 [62]	340 [77]	377 [86]	430 [98]	471 [107]	540 [123]	654 [149]	711 [162]
Pressure Drop	Psi	9.8	8.5	6.9	7.4	9.7	9.2	5.8	7.1	6.7	8.4
					Condenser						
Qty per unit		1	1	1	1	2*	2*	2*	2*	2*	2*
Water Connection Sizes	inch [mm]	4 [102]	4 [102]	4 [102]	5 [127]	4 [102]	4 [102]	4 [102]	4 [102]	4 [102]	5 [127]
Nominal Water Flow	GPM [m³/h]	210 [48]	255 [58]	324 [74]	407 [93]	225 [51]	255 [58]	280 [64]	321 [73]	387 [88]	422 [96]
Pressure Drop	Psi	8.5	8.7	8.7	9.7	9.1	9.2	8.8	6.6	11.9	11.5
					Electrical						
Compressor	RLA	42	51	62	77	83	94	101	117	140	155
	LRA (EACH)	295	465	540	655	069	795	795	850	1295	1370
Unit Data	MCA	94	116	140	172	186	211	228	262	315	348
	MAX.										
	ALLOW.	125	160	200	250	250	320	320	350	400	200
	FUSE SIZE										
					General						
Unit Length	inch [mm]	135 7/8 [3451]	135 7/8 [3451]	137 5/8 [3496]	139 5/8 [3546]	139 5/8 [3546]	139 5/8 [3546]	140 [3556]	161 [4089]	140 1/2 [1924]	140 1/2 [1924]
Unit Width	inch [mm]	45 [1143]	48 [1219]	50 [1270]	54 [1372]	44 [1118]	44 [1118]	45 [1143]	46 [1168]	76 1/2 [1943]	80 3/4 [2051]
Unit Height	inch [mm]	61 3/4 [1568]	61 3/4 [1568]	63 3/4 [1619]	68 1/2 [1740]	79 1/4 [2013]	79 1/4 [2013]	84 1/4 [2140]	86 1/4 [2191]	75 3/4 [1924]	75 3/4 [1924]
Unit Shipping Weight	lbs [kg]	4056 [1840]	4868 [2208]	5403 [2451]	6517 [2956]	7427 [3369]	7897 [3582]	8097 [3673]	8741 [3965]	10631 [4822]	11885 [5391]
Unit Operating Weight	lbs [kg]	4356 [1976]	5223 [2369]	5895 [2674]	7295 [3309]	8197 [3718]	8671 [3933]	9101 [4137]	9993 [4533]	11865 [5382]	13142 [5961]
Charge R134a	lbs [kg]	152 [69]	191 [87]	235 [107]	297 [135]	328 [149]	374 [170]	409 [186]	471 [214]	572 [260]	623 [283]

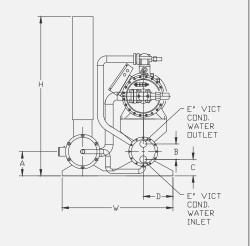
 $^{^{*}}$ Conditions are based on Evaporator water temperature inlet/outlet: 54 $^{\mathrm{e}\mathrm{F}}/44$ $^{\mathrm{e}\mathrm{F}}$

Condenser water temperature inlet/outlet: 85 $^{\rm 9}F/95$ $^{\rm 2}F$ * For 2 condenser units, the nominal water flow and pressure drop shown are per 1 condenser.

DIMENSION DATA (SSCX 55 - 150 WR1)

MODEL	A	В	С	D	E	F	G	L	Н	W
55 W5R1	9 3/8	6	6 3/8	11 1/2	4	4	75 1/4	103 3/8	51 3/4	46 3/8
	(238)	(152)	(162)	(292)	(102)	(102)	(1911)	(2626)	(1314)	(1178)
70 W5R1	9 3/8	6	6 3/8	12 1/4	4	4	75 1/4	103 3/8	51 3/4	47 1/8
	(238)	(152)	(162)	(311)	(102)	(102)	(1911)	(2626)	(1314)	(1197)
90 W5R1	10 3/8	8	7	12 1/2	5	4	74 7/8	112 3/8	57 3/8	49 1/8
	(264)	(203)	(178)	(318)	(127)	(102)	(1901)	(2854)	(1457)	(1248)
110 W5R1	12	8	7	13	5	6	72 3/8	113 3/8	59 1/2	53 3/8
	(305)	(203)	(178)	(330)	(127)	(152)	(1837)	(2280)	(1511)	(1356)
135 W5R1	12	8	7	13 7/8	5	6	72 3/8	113 3/8	62 3/4	54 3/4
	(305)	(203)	(178)	(352)	(127)	(152)	(1837)	(2280)	(1594)	(1391)
150 W5R1	12	10 1/4	8	13 7/8	6	6	72 3/8	113 3/8	66 3/4	54 3/4
	(305)	(260)	(203)	(352)	(152)	(152)	(1837)	(2280)	(1659)	(1391)



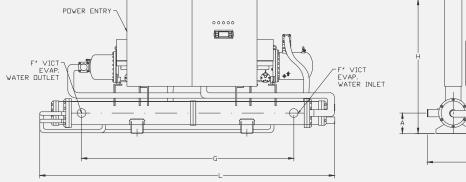


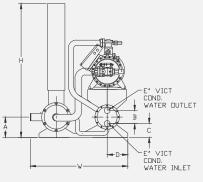
NOTES:

- 1. WATER PIPING TO BE SUPPORTED TO MINIMIZE LOAD.
- 2. SUFFICIENT ROOM MUST BE ALLOWED FOR EVAPORATOR & CONDENSER WATER CONNECTIONS
- 3. DIMENSIONS DO NOT INCLUDE EVAPORATOR INSULATION. DIMENSIONS IN IN(MM).
- 4. SPRING ISOLATORS ARE OPTIONAL. IF SPRING ISOLATORS ARE INSTALLED, FLEXIBLE CONNECTIONS SHALL BE USED TO PROVIDE ISOLATION IN EVAPORATOR & CONDENSER WATER PIPES.
- 5. SMARTECH RESERVES THE RIGHT TO CHANGE SPECIFICATION OR DESIGN AT ANY TIME WITHOUT PRIOR NOTICE.

DIMENSION DATA (SSCX 75T - 140T WR1)

MODEL	A	В	С	D	E	F	G	L	Н	W
75T W5R1	9 3/8	6	6 3/8	9 1/2	4	4	97 7/8	135 7/8	61 3/4	45
	(238)	(152)	(162)	(241)	(102)	(102)	(2486)	(3451)	(1568)	(1143)
95T W5R1	9 3/8	6	6 3/8	11 1/2	4	4	97 7/8	135 7/8	61 3/4	48
	(238)	(152)	(162)	(292)	(102)	(102)	(2486)	(3451)	(1568)	(1219)
115T W5R1	10 3/8	6	6 3/8	11 1/2	4	6	96 1/2	137 5/8	63 3/4	50
	(264)	(152)	(162)	(292)	(102)	(152)	(2451)	(3496)	(1619)	(1270)
140T W5R1	12 1/2	7 7/8	8 9/16	12 1/4	5	6	95	139 5/8	68 1/2	54
	(318)	(200)	(217)	(311)	(127)	(152)	(2413)	(3546)	(1740)	(1372)



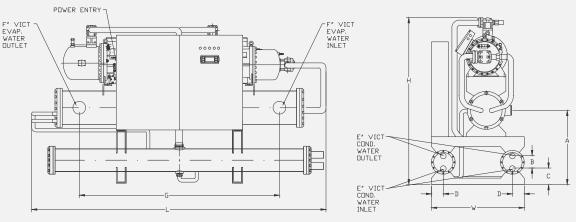


NOTES:

- 1. WATER PIPING TO BE SUPPORTED TO MINIMIZE LOAD.
- 2. SUFFICIENT ROOM MUST BE ALLOWED FOR EVAPORATOR & CONDENSER WATER CONNECTIONS
- 3. DIMENSIONS DO NOT INCLUDE EVAPORATOR INSULATION. DIMENSIONS IN IN(MM).
- 4. SPRING ISOLATORS ARE OPTIONAL. IF SPRING ISOLATORS ARE INSTALLED, FLEXIBLE CONNECTIONS SHALL BE USED TO PROVIDE ISOLATION IN EVAPORATOR & CONDENSER WATER PIPES.
- 5. SMARTECH RESERVES THE RIGHT TO CHANGE SPECIFICATION OR DESIGN AT ANY TIME WITHOUT PRIOR NOTICE.

DIMENSION DATA (SSCX 160T - 225T WR1)

MODEL	A	В	С	D	E	F	G	L	Н	W
160T W5R1	35 1/4	6	7 7/8	5 5/8	4	6	95	139 5/8	79 1/4	44
	(895)	(152)	(200)	(143)	(102)	(152)	(2413)	(3546)	(3359)	(1118)
180T W5R1	35 1/4	6	7 7/8	5 5/8	4	6	95	139 5/8	79 1/4	44
	(895)	(152)	(200)	(143)	(102)	(152)	(2413)	(3546)	(3359)	(1118)
200T W5R1	36 3/4	6	7 7/8	5 5/8	4	8	77 1/2	140	84 1/4	45
	(933)	(152)	(200)	(143)	(102)	(203)	(1969)	(3356)	(2140)	(1143)
225T W5R1	38 3/4	6	7 7/8	5 5/8	4	8	77 1/2	161	86 1/4	46
	(984)	(152)	(200)	(143)	(102)	(203)	(1969)	(4089)	(2191)	(1168)

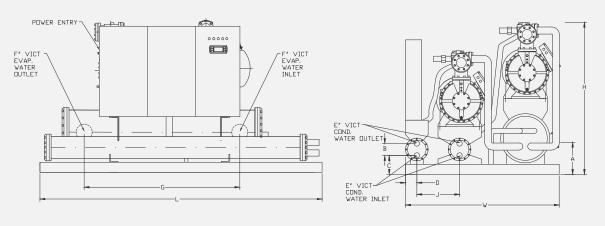


NOTES:

- 1. WATER PIPING TO BE SUPPORTED TO MINIMIZE LOAD.
- 2. SUFFICIENT ROOM MUST BE ALLOWED FOR EVAPORATOR & CONDENSER WATER CONNECTIONS
- 3. DIMENSIONS DO NOT INCLUDE EVAPORATOR INSULATION. DIMENSIONS IN IN(MM).
- 4. SPRING ISOLATORS ARE OPTIONAL. IF SPRING ISOLATORS ARE INSTALLED, FLEXIBLE CONNECTIONS SHALL BE USED TO PROVIDE ISOLATION IN EVAPORATOR & CONDENSER WATER PIPES.
- 5. SMARTECH RESERVES THE RIGHT TO CHANGE SPECIFICATION OR DESIGN AT ANY TIME WITHOUT PRIOR NOTICE.

DIMENSION DATA (SSCX 270T - 300T WR1)

MODEL	A	В	С	D	Е	F	G	J	L	Н	W
270T W5R1	16 (406)	6 (152)	9 3/8 (238)	5 5/8 (143)	4 (102)	8 (203)	77 1/2 (1969)	21 1/4 (540)	140 1/2 (3569)	75 3/4 (1924)	76 1/2 (1943)
300T W5R1	16 (406)	7 7/8 (260)	10 (254)	8 1/4 (210)	5 (127)	8 (203)	77 1/2 (1969)	31 1/8 (791)	140 1/2 (3569)	75 3/4 (1924)	80 3/4 (2051)



NOTES :

- 1. WATER PIPING TO BE SUPPORTED TO MINIMIZE LOAD.
- 2. SUFFICIENT ROOM MUST BE ALLOWED FOR EVAPORATOR & CONDENSER WATER CONNECTIONS
- 3. DIMENSIONS DO NOT INCLUDE EVAPORATOR INSULATION. DIMENSIONS IN IN(MM).
- 4. SPRING ISOLATORS ARE OPTIONAL. IF SPRING ISOLATORS ARE INSTALLED, FLEXIBLE CONNECTIONS SHALL BE USED TO PROVIDE ISOLATION IN EVAPORATOR & CONDENSER WATER PIPES.
- 5. SMARTECH RESERVES THE RIGHT TO CHANGE SPECIFICATION OR DESIGN AT ANY TIME WITHOUT PRIOR NOTICE.



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