

TruClimate 700 Variable Speed Screw Chiller

Large Commercial / 90-140 Ton
Water Source/Geothermal Heat Pump



TRUCLIMATE 700 VARIABLE SPEED SCREW CHILLER

The TruClimate 700 Variable Speed Screw Chiller is the perfect fit for commercial and industrial applications. Its high efficiency compact R-513A screw compressor offers the best in efficiency, reliability, and capacity control so the building can operate at the levels it actually needs. This innovative chiller provides simultaneous performance for heat recovery, remote accessibility for timely product assistance, and trending information for diagnostic simplicity. The 90-140 ton variable speed screw chiller eliminates the slide valve for better control and high efficiency, operating at 44°F - 140°F conditions with COP of 7-8 to deliver payback on buildings with simultaneous cooling and heating loads. The HydroLink Aurora controls offer communicating compressor management, control among the chiller bank, and an 18" touch-screen tablet built into the cabinet provides external troubleshooting and setup options. The variable speed compressor and drive allow for a capacity range of 12.5% - 100%, allowing the system to ramp itself up and down based on the needs of the building, rather than on the capacity of the system.

KEY FEATURES AND BENEFITS

VARIABLE SPEED COMPRESSOR: High efficiency R-513A compressor offers variable speed control, allowing the system to ramp itself up and down as needed. Permanent magnet motors with integrated drives provide superior efficiency. The chiller is capable of turning down to 25% capacity for the ultimate in building comfort.

INSULATED & EFFICIENT WATER-TO-REFRIGERANT HEAT EXCHANGER: Large oversized stainless steel interlaced copper-brazed plate water-to-refrigerant heat exchangers provide unparalleled efficiency. All heat exchangers, water lines, and suction lines are insulated to prevent condensation during low temperature inlet water operation.

HYDROLINK AURORA CONTROLS: A NiagaraN4-based system controller, the HydroLink Aurora controls platform is an advanced field-proven communicating compressor management control with staging options for application flexibility providing energy, performance, and refrigeration monitoring. Oil level monitoring and envelope control provide enhanced reliability. An 18" touch-screen tablet allows for external troubleshooting and setup.

REFRIGERATION MONITORING: Monitoring provides understanding into the performance of the refrigeration system from the BAS as well as insight into the system, eliminating the service call to determine failure mode. Maintenance staff can work with the service contractor to determine a faulty part, reducing unit downtime.

PERFORMANCE MONITORING: Monitoring verifies equipment performance and monitors the flow and change in temperature for each heat pump. Performance on all units connected to the BAS can be viewed on the front end.

ENERGY MONITORING: Monitoring provides energy consumption data of the heat pumps for the building owner, and allows the owner to compare units in a building. WaterFurnace's factory-installed solutions provide the same accuracy as others at a lower cost.

ADDED CONTROL WITH ELECTRONIC EXPANSION VALVE: Electronic expansion valves in the chiller provide great superheat control along with a wider range of operation. Superheat values are reported back to the system controller, which allows more diagnostic information to the technician without requiring the use of refrigerant manifold gauges.

ELECTRICAL DISCONNECT: A factory-mounted, internally wired disconnect is available to provide electrical isolation from high voltage supply at the chiller. The 65kA short-circuit current rating allows for reduced PPG.

LOAD MATCHING: The chiller provides exceptional savings at high load conditions and provides premium value for new and existing buildings with varying load conditions without the danger of going into a surge. It can be installed as a stand-alone chiller for schools, offices, and medical buildings.

RELIABILITY: The chiller is designed for a long service life of continuous operation while boasting low maintenance requirements. Its high compression ratio and few moving parts provide quieter, vibration free operation and is the ideal choice for environments with sustained mission critical operations. Each chiller is factory run tested with available performance test results as well as optional witness testing.

TRUCLIMATE 700 VARIABLE SPEED SCREW CHILLER 90-140 TON

Dimensional Data

Model	Width	Length	Height
Unit Only	34"	74"	78"
Header Rack Only	34"	31"	74"
Unit with Header Rack	34"	105"	78"



Physical Data

Model	Variable Speed Screw		
	090	115	140
Refrigerant	R-513A		
Number of Circuits	1	1	1
Factory Charge, lbs [kg]	109 [49]	140 [63.5]	170 [77]
Compressor	Variable Speed Screw		
Compressor Quantity [tons]	1 [87]	1 [112]	1 [137]
Compressor Weight, lbs [kg]	1621 [735]	1632 [740]	1648 [747]
Oil Charge, fl oz [L]	634 [18.75]	634 [18.75]	634 [18.75]
Evaporator	Braze Plate		
Quantity	1	1	1
Weight, lbs [kg]	562 [255]	703 [319]	844 [382]
Water Volume, gal [L]	51.1 [193.3]	60.2 [227.8]	69.2 [261.8]
Circuit Configuration	Stainless Steel Single Circuit		
Condenser	Braze Plate		
Quantity	1	1	1
Weight, lbs [kg]	423 [192]	529 [240]	635 [288]
Water Volume, gal [L]	44.9 [170.0]	52.6 [198.9]	60.2 [227.8]
Circuit Configuration	Stainless Steel Single Circuit		
Chiller			
Shipping Weight, lbs [kg]	3892 [1765]	4407 [1999]	4,933 [2238]

03/20/2023

Electrical Data

Model	Rated Voltage	Voltage Min/Max	Compressor ¹			Total Unit FLA	Min Circ Amp	Max Fuse/HACR
			MOA	RLA	LRA ²			
090	460/60/3	414/506	190.0	156.0	20.0	156.0	195.0	350
115	460/60/3	414/506	225.0	185.0	20.0	185.0	231.1	400
140	460/60/3	414/506	290.0	240.0	20.0	240.0	300.0	500

05/31/23

HACR circuit breaker in USA only
1 - LRA is compressor motor starting current

Operating Limits

	Condenser		Evaporator	
	°F	°C	°F	°C
Fluid Limit				
Min Entering Water	40	4.4	45	7.2
Min Entering Brine	50	10.0	25	-3.9
Min Leaving Brine	68	20.0	15	-9.4
Min Leaving Water	68	20.0	40	4.4
Max Entering Water/Brine	133	56.1	80	26.7
Max Leaving Water/Brine	140	60.0	60	15.6
Min Differential Temperature	7	3.9	5	2.8
Max Differential Temperature	30	16.7	20	11.1
Flow Rate Limit	gpm/ton	L/min-kW	gpm/ton	L/s-kW
Minimum flow rate	1	3.8	1	3.8
Maximum flow rate	4.5	17.0	4.5	17.0
Ambient Temperature	°F		°C	
Minimum Ambient	55.0		12.8	
Maximum Ambient	95.0		35.0	

2/19/17



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