PURESTREAM

BY FRIULAIR

CWE CHILLERS

2 Year Complete Unit Warranty

Rugged Dependability For The Canadian Climate

www.cagpurification.com

The CWE Series: Overview

The CWE range is specifically designed to meet the application requirements of industry by offering efficient precise control of refrigerated water temperature.

This chiller is designed to operate with variable load demand.

The model range includes models from 4 tons up to 40 tons.

Frame and cabinet covering

All frame and cabinet cover material is made from powder coated galvanized steel, making the CWE suited for outdoor installation and for protection in harsh environments.
All fasteners are either stainless steel or electro galvanized.

The CWE was designed so that all parts, particularly those requiring maintenance and cleaning, are easy to access without interfering with operations, or creating a safety hazard for the operator.

The compressor cabinet is accessible on three sides to make control and maintenance easy. It is separate from the fan cabinet and allows operators to work on the machine while it is operating. Hydronic systems when supplied are also easily accessible.

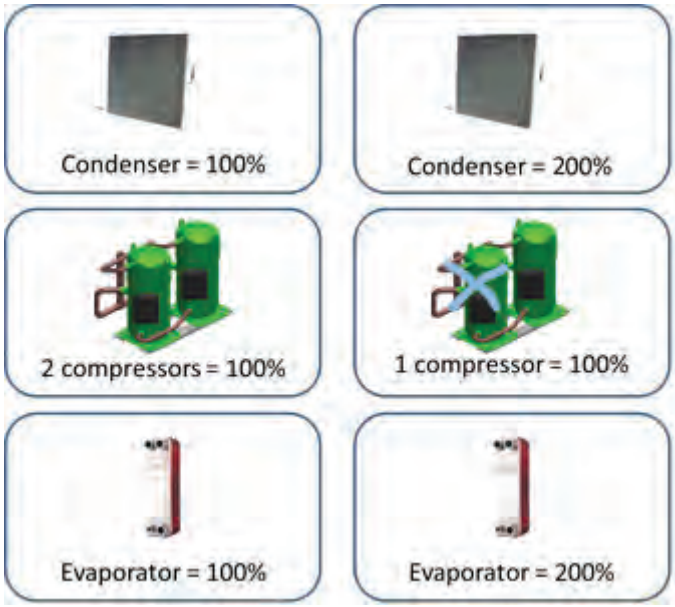
All units are equipped with:

- *scroll hermetic compressors*
- *chlorine free refrigerant gas R410A*
- *stainless steel brazed plate evaporator*
- *CU/AL Condenser construction*
- *optional ECM condenser fan motors designed for Canadian conditions, CD fan on stock models 575V*
- *microprocessor controller BACnet capable (optional)*
- *galvanized steel condenser filters*
- *Return water filter and ball valves standard (Supplied Loose)*

The twin compressor choice *(CWE 100-140)*

The dual compressor configuration for each refrigerant circuit, allows the chiller to realize important advantages in comparison with a single compressor- per circuit unit.

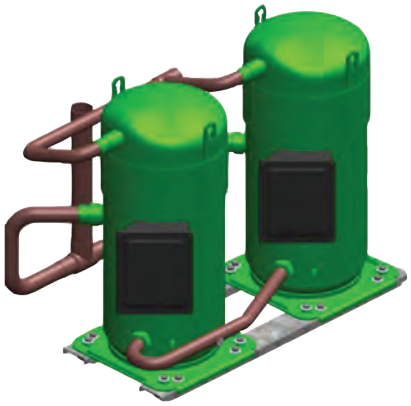
***Higher efficiency during partial loads**: the chiller is generally sized for the maximum output required, but this condition rarely occurs and only for limited periods; during split operations (that is only a part of the compressors working) chiller efficiency (EER) can increase by over 25% compared to full power; this means that at an expense of 1 electric kW, you have for example 3,7kW chilling instead of 3 kW and considerable energy cost savings*



Compressors

The CWE chillers use scroll hermetic compressors.
These are the highest technological level on this product range.
They are noted for reliability and efficiency through their widespread use in the air conditioning sector. The scroll compressor has the additional benefits of quiet operations, no vibration, and the ability to absorb liquid returns.

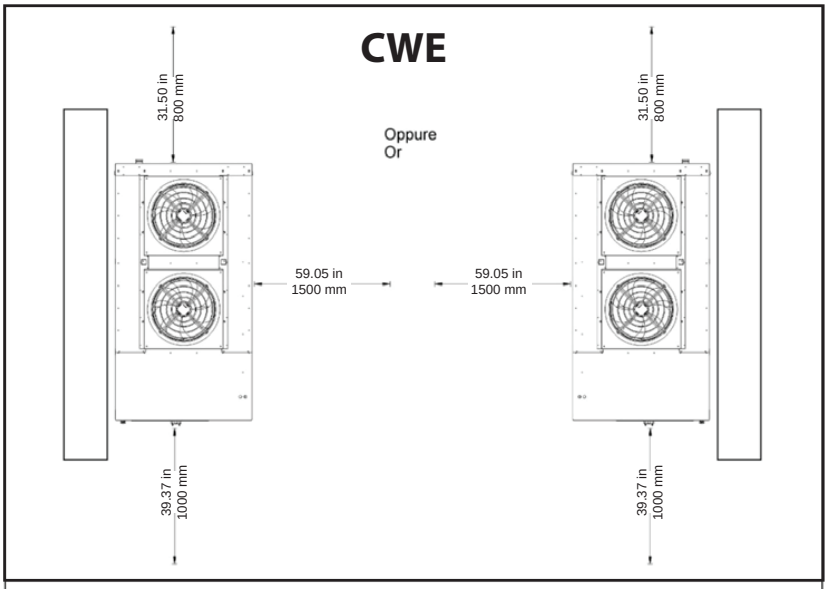
Compressors are all equipped with crankcase heaters to allow oil warming during off cycle.
Compressors are mounted on rubber anti vibration blocks to reduce noise and vibration
Compressors are supplied with phase protection.



Condenser coil

Manufactured with copper tubes and aluminium fins.
Galvanized steel condenser filters are provided on all units.
They can be easily removed for service and cleaning.
All condensing coils can be supplied with protective coatings to suit the operating environment.

The unique design of the condenser coils allow the chiller to be installed with one side flush to the wall. See diagram below.



Refrigerant gas

Due to its thermodynamic performance, the R410A refrigerant gas allows the refrigeration system to operate at highest efficiency.
The higher operating pressure of R410A allows for development of a more compact line.

Fans

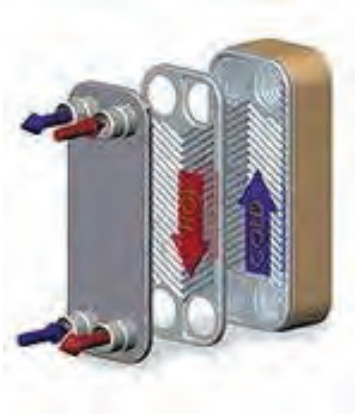
All fans have a protection grid, internal heat protection with automatic resetting, class F insulation. Chiller can be supplied for colder environments with variable ECM motors. (Optional)

The exceptional efficiency and regularity of these fans, allow the chiller to work in a very wide field of temperatures and with reduced energy consumption.
Furthermore, this option reduces noise when speed is lower.
Rotation speed is regulated as a function of the condensing pressure by means of a pressure transducer.

FOR CANADIAN APPLICATIONS WIND BAFFLES ARE REQUIRED FOR WINTER OPERATION.

Evaporator

Constructed with stainless steel brazed plates, compact in size and efficient.
The evaporator is separated and independent of the storage tank.
The electronic control's anti-freeze function protects the evaporator to prevent freeze-up.
A differential pressure switch protects the evaporator against a lack of water.
A mechanical inlet water filter (standard for CWE/HWE-R 013÷068) protects the entire hydraulic circuit against any foreign material coming from the plant.



Microprocessor controller

The electronic control micro-processor controls and optimizes all CWE/HWE-R chiller components and functions. In particular:

- *regulates evaporator water outlet temperature;*
- *turns pump (optional) on and off;*
- *manages fans;*
- *compressors' on and off cycles based on water temperature required;*
- *division of pump operating times (double pump models - optional);*
- *measurement and display of evaporator inlet and outlet water temperature;*
- *check and verify when test run CWE 068*
- *alarm message management:*
  - *high refrigerant pressure switch*
  - *low refrigerant pressure switch*
  - *differential water pressure switch*
  - *wrong phase sequence*
  - *compressor circuit breaker*
  - *pump circuit breaker*
  - *temperature probe failure*
  - *pressure probe failure*
  - *high water temperature*
  - *anti-freeze.*

Remote control panel

Safety and control devices

- *Temperature probes: to control and display evaporator inlet and outlet water temperatures, for the anti-freeze function;*
- *High pressure switch: stops the machine if it reaches anomalous pressures on the refrigerant circuit's high pressure side; manual reset;*
- *Low pressure transducer: stops the machine if refrigerant pressures are too low; reset is semi-automatic;*
- *Pressure transducer: registers high refrigeration system pressure allowing step fan regulation;*
- *Water differential pressure switch: stops machine if water flow is too low ;*
- *Crank case heater: avoids refrigerant gas in compressor migrating when the machine is off, resulting in oil being dragged out of them when it starts up again;*
- *Phase sequence control: stops the machine starting if the electric power phase sequence is wrong to avoid compressor rotating in the opposite direction to the one set.*

OPTION: WHERE REQUIRED, SINGLE COMPRESSOR UNITS CAN BE SUPPLIED WITH ELECTRONIC HOT GAS/BY PASS VALVE, TO INSURE STABLE OPERATION.

Control panel

Control panel complying with EN 60204 EC, with door lock disconnector (blocks access to the control panel when it is live) and watertight door to access electronic control.

Includes circuit breaker protectors for compressors and pump, contactors, autotransformers, compressor rotation direction control devices; panel wires are numbered; to make use easier there is an ON/OFF switch on the panel door.

Technical Data *For Metric Data, See Technical Manual*

Model CWE-R			013	021	026
Cooling capacity (1)		[Tons]	4,16	6,23	7,14
Compressors power input (1)		[kW]	2,89	4,95	5,92
Total power input (1) (2)		[kW]	3,63	5,69	6,66
Total absorbed current (1) (2)		[A]	5,67	8,88	10,33
EER (pump excluded) (1) BTU/W		---	13.6	13.1	12.9
Water flow (1)		[gal/min]	11,07	16,59	19,01
Pressure drop (1)		[psig]	8	11	9
Maximum power input (total) (2) (3)		[kW]	5,4	7,9	8,9
Maximum absorbed current (total) (2) (3)		[A]	8,0	11,8	13,6
Starting current (2) (3)		[A]	40,3	71,3	91,3
Fan power		[kW]	0,74	0,74	0,74
Fan current		[A]	1,35	1,35	1,35
Number of fans		[#]	1	1	1
Power supply	575/3/60 Also Available with Transformer	[V/Ph/Hz]		460/3/60	
IP protection degree		---		IP54	
Refrigerant		---		R410A	
Compressor type		---		Scroll	
Evaporator type		---		Brazed plates	
Condenser type		---		Tube&fins	
N° of compressors		[#]	1	1	1
N° of refrigerant circuits		[#]	1	1	1
Air flow		[cfm]	3.002	2.825	4.120
Sound pressure level (4)		[dbA]	48,5	48,5	49,5
Water connections diameter		[inch]	1"	1"	1"
Width		[inch]	26,8	26,8	26,8
Depth		[inch]	61,0	61,0	61,0
Height		[inch]	55,3	55,3	55,3
Weight		[lb]	551,2	595,2	650,4
Tank capacity - Option		[gal]	29,1	29,1	29,1
Expansion vessel capacity - Option		[gal]	2,1	2,1	2,1
P2 Pump power input - Option		[kW]	0,43	0,43	0,43
P2 Pump absorbed current - Option		[A]	0,80	0,80	0,80
P3 Pump power input - Option		[kW]	0,74	0,74	0,74
P3 Pump absorbed current - Option		[A]	1,80	1,80	1,80
P5 Pump power input - Option		[kW]	0,74	0,74	0,74
P5 Pump absorbed current - Option		[A]	1,80	1,80	1,80

(1) Data referred to: water temp. in/out: 68/59°F
(2) Data referred to unit without pump
(3) Data related to most heavy condition allowed by safety devices
(4) Referred at 10 m and at an height of 1,5 m in free field

Technical Data

*Models 41 and 68 Available in true 575.

Model CWE-R			036	041*	046	053	068*
Cooling capacity (1)		[Tons]	9,57	11,73	12,60	15,16	18,00
Compressors power input (1)		[kW]	7,83	10,91	12,74	13,19	15,35
Total power input (1) (2)		[kW]	9,83	12,91	14,74	15,19	17,35
Total absorbed current (1) (2)		[A]	15,80	18,43	21,00	21,69	25,05
EER (pump excluded) (1) BTU/KW		---	11.7	10.9	10.25	12.0	12.45
Water flow (1)		[gal/min]	25,49	31,25	33,56	40,37	47,93
Pressure drop (1)		[psig]	10	10	11	11	11
Maximum power input (total) (2) (3)		[kW]	12,8	15,6	17,2	19,0	22,1
Maximum absorbed current (total) (2) (3)		[A]	19,3	21,9	24,2	26,7	31,4
Starting current (2) (3)		[A]	101,4	127,4	144,4	148,4	179,4
Fan power		[kW]	1,00	1,00	1,00	1,00	1,00
Fan current		[A]	1,70	1,70	1,70	1,70	1,70
Number of fans		[#]	2	2	2	2	2
Power supply	575/3/60 Also Available with Transformer	[V/Ph/Hz]			460/3/60		
IP protection degree		---			IP54		
Refrigerant		---			R410A		
Compressor type		---			Scroll		
Evaporator type		---			Brazed plates		
Condenser type		---			Tube&fins		
N° of compressors		[#]	1	1	1	1	1
N° of refrigerant circuits		[#]	1	1	1	1	1
Air flow		[cfm]	8.240	10.182	10.182	9.358	8.711
Sound pressure level (4)		[dbA]	50,5	53,5	53,5	54,0	54,0
Water connections diameter		[inch]	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Width		[inch]	36,4	36,4	36,4	36,4	36,4
Depth		[inch]	74,4	74,4	74,4	74,4	74,4
Height		[inch]	62,2	62,2	62,2	62,2	62,2
Weight		[lb]	837,8	837,8	881,8	925,9	981,1
Tank capacity - Option		[gal]	52,8	52,8	52,8	52,8	52,8
Expansion vessel capacity - Option		[gal]	3,2	3,2	3,2	3,2	3,2
P2 Pump power input - Option		[kW]	0,74	0,74	1,28	1,28	1,28
P2 Pump absorbed current - Option		[A]	1,80	1,80	2,45	2,45	2,45
P3 Pump power input - Option		[kW]	1,04	1,04	2,50	2,50	2,50
P3 Pump absorbed current - Option		[A]	2,10	2,10	4,30	4,30	4,30
P5 Pump power input - Option		[kW]	1,70	1,70	4,00	4,00	4,00
P5 Pump absorbed current - Option		[A]	2,98	2,98	7,50	7,50	7,50

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(2) Data referred to unit without pump
(3) Data related to most heavy condition allowed by safety devices
(4) Referred at 10 m and at an height of 1,5 m in free field

Technical Data

*Models 100 and 140 Available in true 575

Model CWE-R		075	085	100*	110	125	140 *
Cooling capacity (1)	[Tons]	19,17	23,27	27,13	30,62	34,53	38,11
Compressors power input (1)	[kW]	14,75	20,29	22,57	24,82	26,68	32,54
Total power input (1) (2)	[kW]	17,25	22,79	25,07	26,44	28,30	34,16
Total absorbed current (1) (2)	[A]	27,01	31,25	34,63	36,74	39,74	47,47
EER (pump excluded) (1)BTU/KW	---	13.3	12.3	13.0	13.9	14.6	13.38
Water flow (1)	[gal/min]	51,06	61,97	72,25	81,55	91,98	101,49
Pressure drop (1)	[psig]	7	10	8	10	6	7
Maximum power input (total) (2) (3)	[kW]	24,1	29,6	33,0	35,7	38,7	44,9
Maximum absorbed current (total) (2) (3)	[A]	35,0	40,2	44,9	48,8	53,5	61,5
Starting current (2) (3)	[A]	117,1	145,7	165,0	170,5	203,8	243,9
Fan power	[kW]	1,25	1,25	1,25	0,81	0,81	0,81
Fan current	[A]	1,60	1,60	1,60	1,10	1,10	1,10
Number of fans	[#]	2	2	2	2	2	2
Power supply 575/3/60 Also Available with Transformer	[V/Ph/Hz]			460/3/60			
IP protection degree	---			IP54			
Refrigerant	---			R410A			
Compressor type	---			Scroll			
Evaporator type	---			Brazed plates			
Condenser type	---			Tube&fins			
N° of compressors	[#]	2	2	2	2	2	2
N° of refrigerant circuits	[#]	1	1	1	1	1	1
Air flow	[cfm]	11.477	11.477	11.154	13.537	15.892	15.892
Sound pressure level (4)	[dbA]	51,0	55,0	55,0	55,0	55,0	55,0
Water connections diameter	[inch]	2" VIC	2" VIC	2" VIC	2" VIC	2" VIC	2" VIC
Width	[inch]	54,3	54,3	54,3	54,3	54,3	54,3
Depth	[inch]	102,0	102,0	102,0	102,0	121,7	121,7
Height	[inch]	77,2	77,2	77,2	77,2	77,2	77,2
Weight	[lb]	1433,0	1477,1	1543,2	1609,4	1807,8	1873,9
Tank capacity - Option	[gal]	105,7	105,7	105,7	105,7	105,7	105,7
Expansion vessel capacity - Option	[gal]	4,8	4,8	4,8	4,8	4,8	4,8
P2 Pump power input - Option	[kW]	1,28	1,28	1,28	2,50	2,50	2,50
P2 Pump absorbed current - Option	[A]	2,45	2,45	2,45	4,30	4,00	4,00
P3 Pump power input - Option	[kW]	2,50	2,50	2,50	4,00	4,00	4,00
P3 Pump absorbed current - Option	[A]	4,30	4,30	4,30	7,50	7,30	7,30
P5 Pump power input - Option	[kW]	4,00	4,00	4,00	6,20		
P5 Pump absorbed current - Option	[A]	7,50	7,50	7,50	10,20		

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PURESTREAM CHILLERS BY FRIULAIR

PURESTREAM CHILLER QUOTE REQUEST	
Contact Name	
Company Name	
Phone Number	
Email Address	
Address	
Province	
CHILLER REQUIREMENTS	**(Please provide as much information as possible)**
Application	
Indoor/Outdoor use	
Capacity Btuh's (Ton or KW)	
Entering chiller temperature	
Leaving chiller temperature	
Ambient Temperature	
Flow USGPM	
Power Requirements	
Pump PSI	
Fluid to be cooled	
Water %	
Glycol %	
Other %	

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info: chillers@cagcooling.com, web: www.cagcooling.com

Other Chiller Models Available From PURESTREAM

QBE

CWB

0.4 tons → 180 tons

CWE

CWT

PURESTREAM

BY FRIULAIR

CWE CHILLERS

CWE Model	CWE13 - CWE 140
P2 pump	Optional
P3 pump	Optional
P5 pump	Optional
Double P2 pump	Optional
Double P3 pump	Optional
Double P5 pump	Optional
Tank pressure (max 6 bar)	Optional
Tank atmospheric (open tank)	Optional
Stainless steel water tank pressure (max 6bar)	Optional
PVC water tank atmospheric (single pump)	Optional
Water strainer	Optional
Automatic water filling kit (pressurized piping)	Optional
Kit water by pass manual regulated	Optional
Kit threaded connections NPT	Optional
Evaporator antifreeze heater	Optional
Evaporator & pump antifreeze heater	Optional
Evaporator & pump & tank antifreeze heater	Optional
Anti-condensation heater for electric panel	Optional
Solenoid valve on liquid refrigerant line	Optional
Double water set point -single expansion valve	Optional
Wind Baffles	Optional
Combined condensing control (EC fans+WB)	Optional
Cataphoresis condenser treatment	Optional
CU-CU condensers	Optional
Remote control panel	Optional
Anti vibration rubber	Optional
Wheels kit	Optional
Wooden base	Standard
Wooden crate	Optional

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