



Model EP1A-01

# PRECISE TEMPERATURE CONTROL; COMPACT FOOTPRINT

The Conair EP1 Series Portable Chillers are designed for 1 to 3 ton applications. Available as air-cooled or water-cooled, with pump sizes from 1/4 to 3 Hp {0.2 to 2.2 kW} for air-cooled units, and 1 to 3 Hp {0.7 to 2.2 kW} for water-cooled units, the EP1 Series boasts nonferrous construction (evaporator, pump, reservoir and piping) to resist corrosion, a compact footprint with easy-to-access interior, and a control that provides precise temperature control along with extensive diagnostics.

## QUALITY CONSTRUCTION; RELIABLE OPERATION

With more standard features than the competition, the EP1 Series Portable Chillers are designed for indoor use in industrial manufacturing locations.

Both water-cooled and air-cooled units ship with a full refrigerant charge, eliminating the need for charging before operation. This saves time and money, right out of the box. Units with a remote air-cooled condenser ship with a nitrogen charge.

All EP1 Chillers are manufactured using painted, heavy-gauge steel to form a cabinet with tool-free access.

Conair's innovative microprocessor control system is designed specifically for portable chiller applications. The easy-to-use operator panel utilizes a four-plug wiring design which allows the entire control board to be replaced in minutes.

### ■ Dependable chiller performance

Designed with a comprehensive group of built-in protective features, the EP1 assures dependable performance with minimum downtime. A 2.5 minute anti-cycle timer prevents excessive compressor cycling. A low-load thermostat extends operating time at idle and low-load conditions and a non-cycling low pressure switch specifically designed for portable chillers helps protect the compressor from damage and unnecessary wear.

### ■ More standard features

The EP1 Series Portable Chillers come equipped with standard features that other manufacturers would offer as options. Features which guarantee long life, simple operation, and quality end results are included as standard with this series.

### ■ Energy efficient

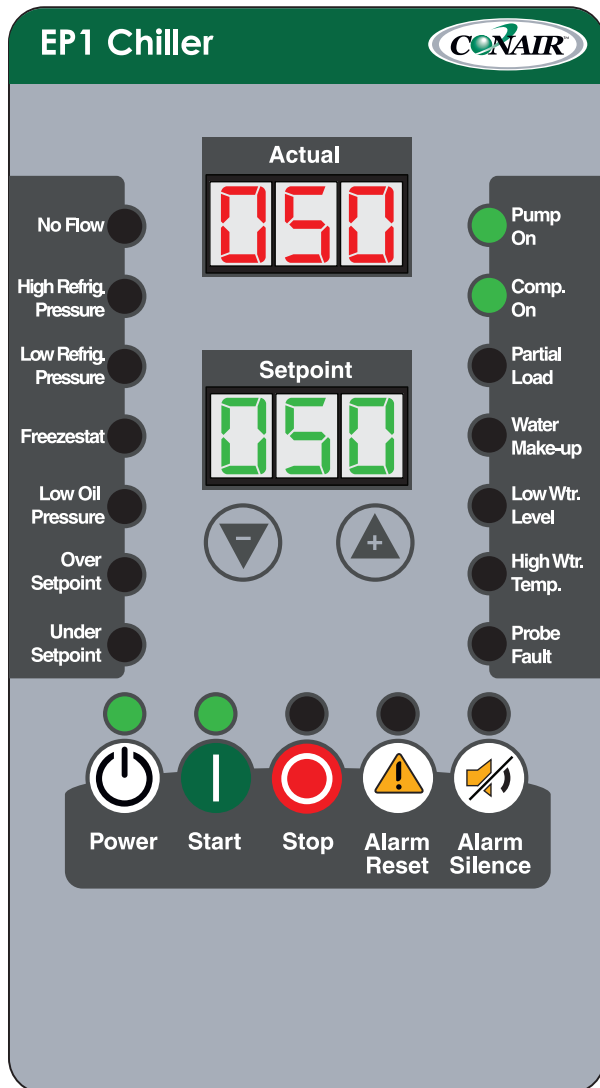
Constructed with the energy efficient and reliable rotary compressor (1 ton unit) and the energy efficient and industrial scroll compressor (2 and 3 ton units), these compact chillers save you money by saving energy.

### ■ Extensive warranty

In addition to Conair's standard one year parts and labor warranty, the EP1 comes with a five year parts warranty for the microprocessor, and a lifetime \$175 exchange policy after the initial five year warranty period.



## CONTROL FEATURES



### Standard control features:

- Two easy-to-read LED digital displays show “Actual” and “Setpoint” temperatures
- Manual reset of safeties from front panel eliminates need to open chiller cabinet
- Thirty minute deviation delay stops nuisance alarms during start-up and setpoint changes
- Compressor cycling delay prevents short cycling
- PID control program algorithm provides  $\pm 1^\circ\text{F} / ^\circ\text{C}$  accuracy
- High/low temperature deviation alarm
- Power failure indicator signals brown out
- Easily switches between  $^\circ\text{F}$  and  $^\circ\text{C}$  readouts
- Low-flow protection
- Diagnostic lights that indicate: no flow, high and low refrigerant pressure, freezestat, over and under setpoint, pump on, compressor on, partial load, probe fault and optional low water level and water make-up

### Optional control features:

- Hand-held, remote control operator panel
- SPI communications
- Audible alarm
- “From Process” temperature readout
- Remote alarm contacts
- Remote on/off contacts

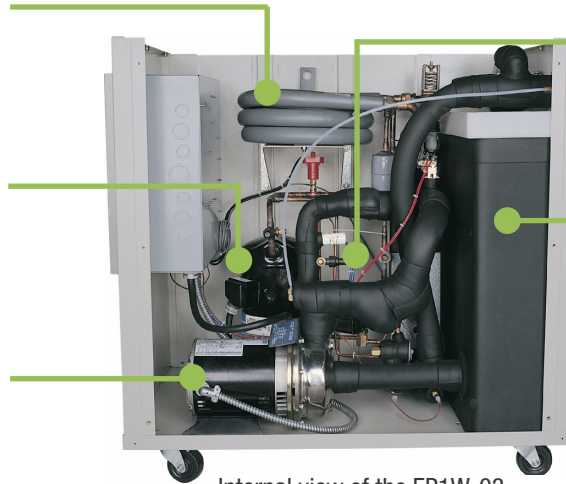
## HIGH QUALITY ELECTRICAL COMPONENTS

All Conair EP1 Series Portable Chillers come standard with a NEMA 1 electrical enclosure to protect the microprocessor and chiller wiring. High quality electrical components meet IEC electrical standards and are fully tested before shipping. Disconnect switches, UL certification and NFPA-79 are affordable options.



## FEATURES

- Water-cooled units have cleanable shell-and-tube condensers and a water regulating valve for head pressure control
- Efficient and reliable one ton rotary compressor or two and three ton scroll compressors
- Process pump with pressure gauge



- Stainless steel brazed plate evaporator provides high efficiency heat transfer
- Insulated polyethylene reservoir with removable cover

Internal view of the EP1W-03

### Mechanical features

- Electronic hot gas bypass for stable capacity control
- Air-cooled units have copper tube / aluminum finned condensers and includes air inlet filter (optional on one-ton unit)
- Remote condenser units include a galvanized steel remote condenser with fans and copper tube / aluminum fin coils with a nitrogen holding charge

### Electrical features

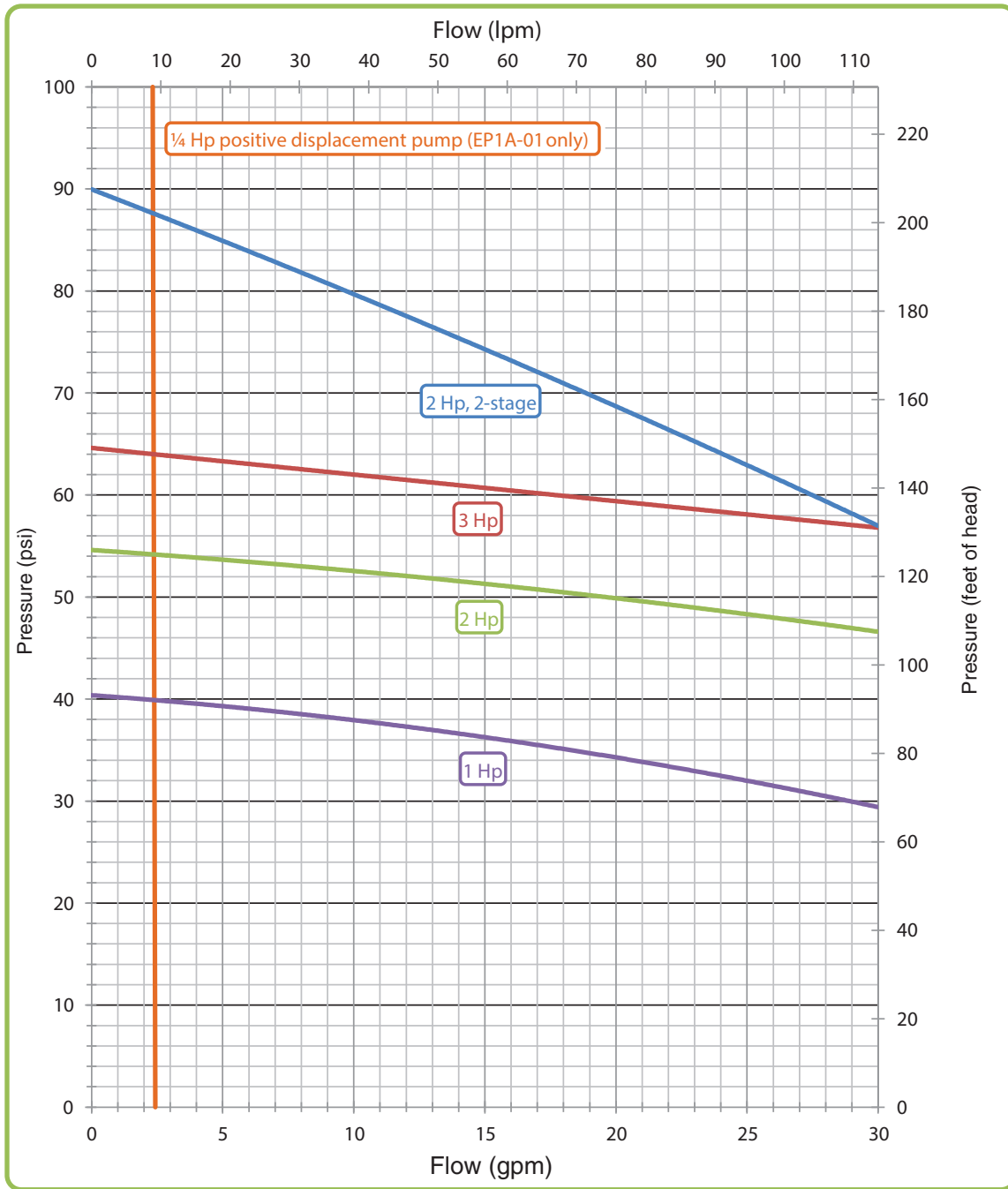
- Compressor, pump and condenser fan starters mounted and wired to motors
- Single-point main power block for simple wiring connection
- Freezestat safety switch with solid state sensor
- Encapsulated high and low refrigerant pressure safeties
- Pressure or flow switch interlocked with compressor

### Other features

- Nonferrous construction of evaporator, pump, reservoir and piping to resist corrosion
- Microprocessor controller to provide diagnostic and accurate temperature control
- Air-cooled condenser is generously sized for ambient temperatures up to 115°F {46°C}
- Internal insulated polyethylene reservoir comes with large capacity and a removable top
- Condenser fan discharges air quietly through the top of the unit
- Hot gas bypass provides accurate capacity control and extends compressor life
- Process Y-strainer protects the evaporator from contaminants in the water
- External sight glass, fill connection and drain connection
- Smaller footprint that takes up less floor space
- Easily removable side panels allow quick access to interior components

# PUMP CURVES

Water temperature at 50°F {10°C}



**SPECIFICATION NOTES**

**Pump availability:** 0.25 Hp standard for 1.0 ton; 1 Hp standard for 2 and 3 ton; 2 Hp, 2 Hp 2-stage and 3 Hp optional for 2 and 3 ton.

Pump curves do not reflect pressure drops due to internal piping.

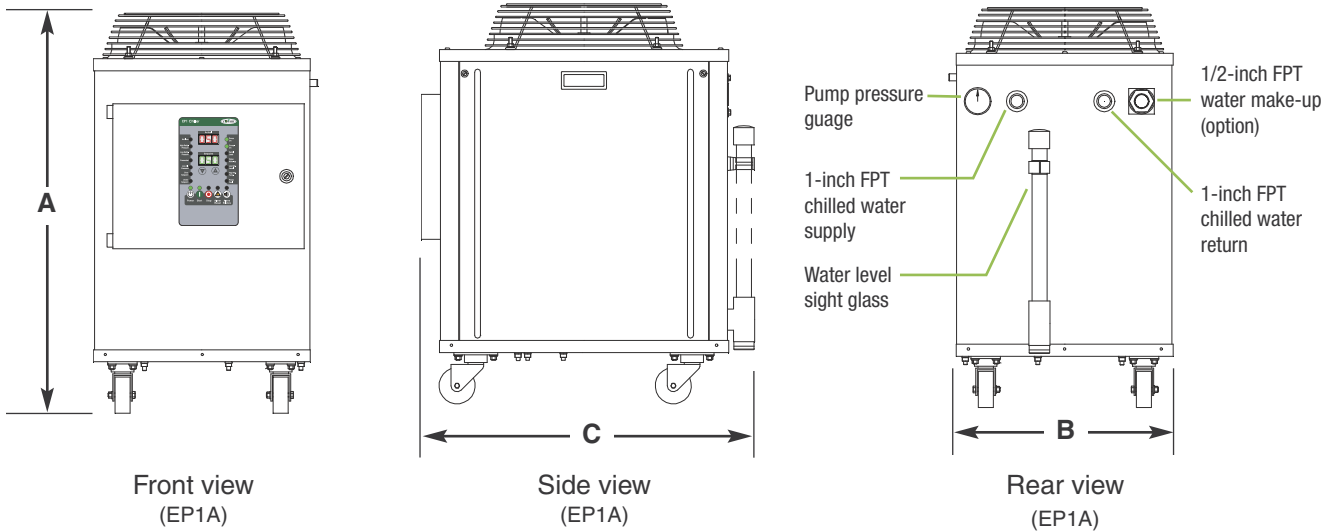
These pump curves are non-overloading using the service factor of the motors.

Specifications may change without notice. Check with your Conair representative for the most current information.

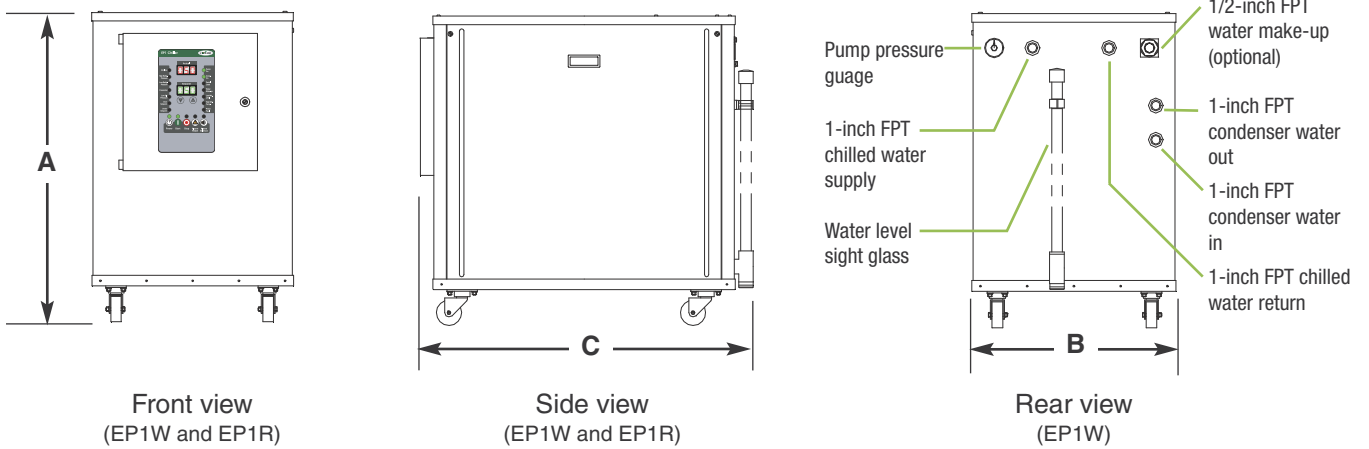


# SPECIFICATIONS

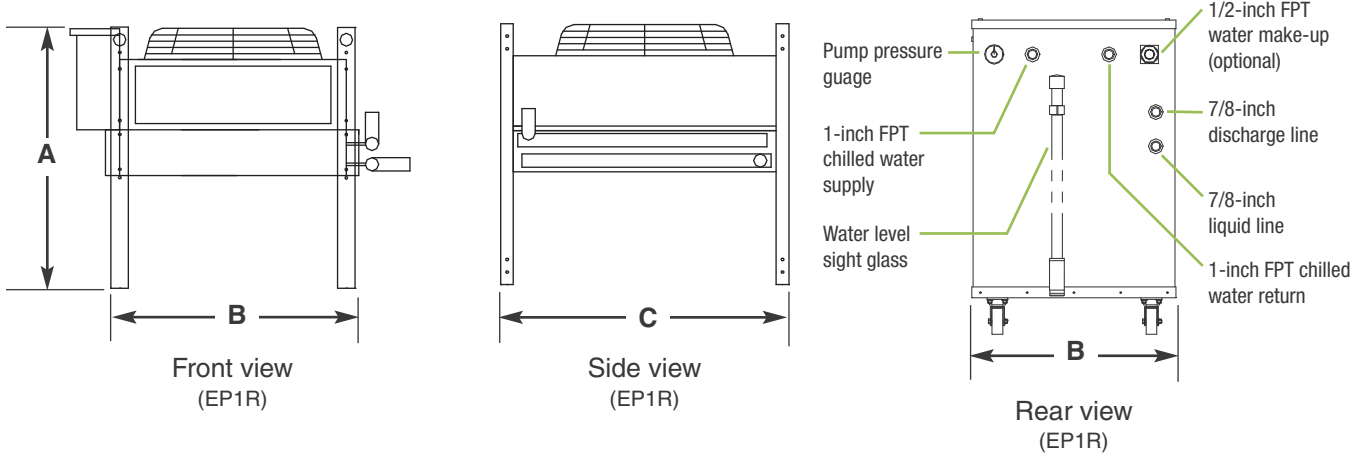
## Air cooled



## Water cooled / remote condenser indoor unit



## Remote condenser outdoor unit



# SPECIFICATIONS

MODELS	EP1A-01	EP1A-02	EP1A-03	EP1W-02	EP1W-03
Condenser	Air cooled			Water cooled	
<b>Performance characteristics</b>					
Cooling capacity tons *	1.0	2.0	3.0	2.2	3.3
Setpoint range °F {°C} †	20 to 65 {-7 to 18}	20 to 65 {-7 to 18}	20 to 65 {-7 to 18}	20 to 65 {-7 to 18}	20 to 65 {-7 to 18}
Refrigerant	R407C	R407C	R407C	R407C	R407C
Air flow ft³/min	1110	1585	2470	N/A	N/A
Condensed water flow gpm {l/min}	N/A	N/A	N/A	7 {27}	10 {38}
<b>Pump performance</b>					
Pump motor size Hp {kW}	0.25 {0.18}	1 {0.75}	1 {0.75}	1 {0.75}	1 {0.75}
Pump flow gpm {l/min}	2 {7.5}	5 {18.9}	7 {26.4}	5 {18.9}	8 {30.2}
Pump pressure psi {bar}	80 {5.5}	39 {2.68}	38 {2.62}	39 {2.68}	37 {2.55}
<b>Dimensions inches (mm)</b>					
A - Height	33.125 {841}	41.50 {1054}	41.50 {1054}	36.625 {930}	36.625 {930}
B - Width	18.625 {473}	24.00 {610}	24.00 {610}	24.00 {610}	24.00 {610}
C - Depth	27.625 {702}	39.625 {1006}	39.625 {1006}	39.625 {1006}	39.625 {1006}
<b>Voltages MCA</b>					
230/1 phase/60 Hz	11.8	N/A	N/A	N/A	N/A
230/3 phase/60 Hz	N/A	17.0	21.5	15.4	18.9
460/3 phase/60 Hz	N/A	9.0	11.9	8.2	10.6
575/3 phase/60 Hz	N/A	7.2	9.6	6.6	8.5
<b>Weight lb (kg)</b>					
Shipping	255 {116}	420 {191}	430 {195}	420 {191}	430 {195}

MODELS	EP1R-03 (Indoor unit)†
Condenser	Remote
<b>Performance characteristics</b>	
Cooling capacity tons	3.0
Setpoint range °F {°C}	20 to 65 {-7 to 18}
Refrigerant	R407C
Condensed water flow gpm	N/A
<b>Pump performance</b>	
Pump motor size Hp {kW}	1 {0.7}
Pump flow gpm {l/min}	7 {26.5}
Pump pressure psi {bar}	38 {2.6}
<b>Dimensions inches (mm)</b>	
A - Height	36.625 {930}
B - Width	24.00 {610}
C - Depth	39.625 {1006}
<b>Voltages MCA</b>	
230/3 phase/60 Hz	18.9
460/3 phase/60 Hz	10.6
575/3 phase/60 Hz	N/A
<b>Weight lb (kg)</b>	
Shipping	430 {195}

MODELS	EP1R-03 (Outdoor unit)†
Condenser	Remote
<b>Performance characteristics</b>	
Refrigerant	R407C
Air flow ft³/min	6750
Condenser fan Hp {kW}	0.50 {0.40}
<b>Dimensions inches (mm)</b>	
A - Height	41.44 {1053}
B - Width	38.75 {984}
C - Depth	45.75 {1162}
<b>Voltages MCA</b>	
230/1 phase/60 Hz	3.0
<b>Weight lb (kg)</b>	
Shipping	565 {256}

**SPECIFICATION NOTES:**

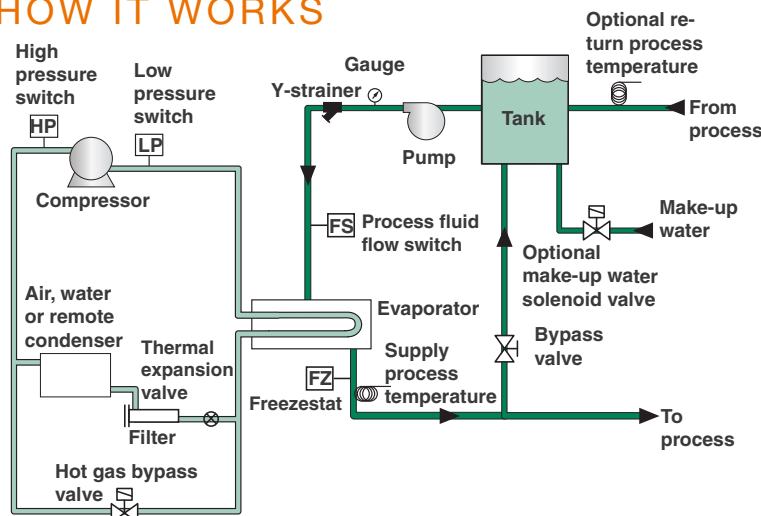
\* Based on the 50°F {10°C} water to the process, single pump selections, a maximum of 95°F {35°C} ambient air and 60 Hz. Adjust capacities up 2% per degree above 50°F {10°C} to a maximum of 65°F {18°C}. Adjust capacities down 2% per degree below 50°F {10°C} to a minimum of 20°F {-7°C}. Capacities are ± 5% based on the compressor manufacturer's ratings and are subject to change without notice. Consult with a Conair representative for other conditions. Capacities change depending on selected options.

† Standard set point range is 20°F to 65°F {-7 to 18°C}. To extend range to 20°F to 80°F {-7 to 27°C} the CPR valve option is required.

‡ Remote condenser operation requires both indoor and outdoor unit.

Specifications may change without notice. Consult a Conair representative for the most current information.

## HOW IT WORKS



### Process circulation:

Process fluid enters through the "From process" connection to the reservoir tank. The pump draws water from the tank and moves it through the evaporator. Fluid is chilled and exits through the "To process" connection.

### Refrigerant circulation:

The evaporator extracts heat from the process fluid. Vaporized refrigerant travels from the evaporator to the compressor, where it is compressed. The high-pressure vapor travels to the condenser. Air or water removes heat from the vapor, condensing it to liquid. This liquid is metered back to the evaporator by the expansion valve (TXV).

