

**PROJECT MANUAL GUIDE SPECIFICATIONS FOR:  
PFANNENBERG SERIES CC COMPACT PACKAGED CHILLERS**



**PART 1 – GENERAL**

**1.1 SUMMARY**

A. Packaged Chillers offer a self-contained means of producing cooling liquid primarily comprised of water, a mixture water and glycol, or low-viscosity oil. The cooling liquid (coolant) may then be pumped to heat exchangers or cold plates for a variety of applications including: 1) Cooling control panels containing sensitive electronic devices. 2) Cooling variable frequency drives that are contained within an enclosure, box, or console; 3) Cooling machine tool spindle motors; 4) Cooling reaction vessels (reactors) where process temperatures must be maintained or heat removed.

**1.2 SECTION INCLUDES**

A. Chillers, Packaged Chillers, Heat Exchangers, Cold Plates, and Cooling Devices as scheduled in this section and as indicated on the drawings.

**1.3 SUBMITTALS**

- A. Product Data: Submit the following manufacturer's documentation for each product specified.
1. Catalog specifications and outline drawings.
  2. Installation and operating instructions.
  3. Certifications to substantiate necessary agency approvals.
- B. Manufacturer Warranty
1. Manufacturer's warranty for Packaged Chillers and Air-to-Water Heat Exchangers.  
Manufacturer's standard 1-year warranty for Packaged Chillers and Air-to-Water Heat Exchangers.

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## PART 2 – PRODUCTS

### 2.1 MANUFACTURERS

A. Basis of Design and Support: The packaged chiller is ideal for applications with cooling requirements of less than a half a ton up to 50 tons. It is a fully, self-contained, continuous source of chilled coolant – requiring only power and piping to provide recirculated chilled coolant for virtually any process. To ensure uniformity of operation, quality of construction, standard 1-year warranty term, and worldwide localized support, specifications are solely based, wherever practical, on the products of Pfannenber Inc. [www.pfannenberusa.com](http://www.pfannenberusa.com).

B. Substitution: Products of a similar nature from other manufacturers may be considered only when performance capabilities, component capabilities, installation capabilities, service capabilities, and warranty terms are fully met or exceeded.

### 2.2 PERFORMANCE / DESIGN CRITERIA

A. Packaged Compact Chiller Description. Series CC – Pfannenber Compact Chiller. Available in two frame sizes to support a wide range of capacities from 4056 to 23,100 BTU (1190 to 6768 W) [0.34 to 1.9 TR], the compact chiller utilizes compressor-based refrigeration technology to cool water or a water/glycol mixture (coolant) and includes an integral pump to facilitate coolant circulation through remotely located heat exchangers or cold plates. The compact chiller shall contain a compressor-based refrigeration system, coolant reservoir tank, coolant pump, finned-tube condenser, axial type compressor fan, stainless-steel brazed plate evaporator, electronic parametric controller, high & low refrigerant pressure switches, freeze protection, and an indoor/outdoor IP 54, NEMA 12/4 rated housing with polyester powder-coated galvanized steel panel construction.

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B. Packaged Compact Chiller Specifications. Pfannenber Series CC Compact Chillers.

**Model: CC 6101** (specifications at 64 °F chilled water setting, 90 °F ambient temperature, and 60 Hz power)

- Cooling Capacity: 4056 BTU/hr; 1190 watts; 0.34 TR.
- Power Required (pick one): 115 VAC 50-60 Hz single phase or 230 VAC 50-60 Hz single phase.
- Nominal Power Consumption: 1.38 kW.
- Coolant Connections: 1/2 inch NPTF.
- Coolant Tank Volume: 2.5 gal (9.5 l)
- Nominal Coolant Flow Rate: 0.89 gpm (202 l/hr).
- Available Coolant Pressure: 40 psig (2.81 kg/cm<sup>2</sup>).
- Dimensions (w x l x h): 23.6 x 18.9 x 24.6 in (59.9 x 48.0 x 62.5 cm).
- Dry Weight: 140 lb (63.5 kg).
- Enclosure Rating: IP 54; NEMA Type 12/4.
- Housing Construction: powder-coated galvanized steel.
- Noise Level (@ 1 m): <62 dB(A).
- Duty Cycle: 100%.

**Model: CC 6201** (specifications at 64 °F chilled water setting, 90 °F ambient temperature, and 60 Hz power)

- Cooling Capacity: 6551 BTU/hr; 1920 watts; 0.55 TR.
- Power Required (pick one): 115 VAC 50-60 Hz single phase or 230 VAC 50-60 Hz single phase.
- Nominal Power Consumption: 1.59 kW.
- Coolant Connections: 1/2 inch NPTF.
- Coolant Tank Volume: 2.5 gal (9.5 l)
- Nominal Coolant Flow Rate: 1.3 gpm (295 l/hr).
- Available Coolant Pressure: 40 psig (2.81 kg/cm<sup>2</sup>).
- Dimensions (w x l x h): 23.6 x 18.9 x 24.6 in (59.9 x 48.0 x 62.5 cm).
- Dry Weight: 147 lb (66.7 kg).
- Enclosure Rating: IP 54; NEMA Type 12/4.
- Housing Construction: powder-coated galvanized steel.
- Noise Level (@ 1 m): <62 dB(A).
- Duty Cycle: 100%.

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**Model: CC 6301** (specifications at 64 °F chilled water setting, 90 °F ambient temperature, and 60 Hz power)

- Cooling Capacity: 9144 BTU/hr; 2676 watts; 0.76 TR.
- Power Required (pick one): 115 VAC 50-60 Hz single phase or 230 VAC 50-60 Hz single phase.
- Nominal Power Consumption: 3.51 kW.
- Coolant Connections: 1/2 inch NPTF.
- Coolant Tank Volume: 2.5 gal (9.5 l)
- Nominal Coolant Flow Rate: 2.0 gpm (454 l/hr).
- Available Coolant Pressure: 40 psig (2.81 kg/cm<sup>2</sup>).
- Dimensions (w x l x h): 23.6 x 18.9 x 24.6 in (59.9 x 48.0 x 62.5 cm).
- Dry Weight: 158 lb (71.7 kg).
- Enclosure Rating: IP 54; NEMA Type 12/4.
- Housing Construction: powder-coated galvanized steel.
- Noise Level (@ 1 m): <62 dB(A).
- Duty Cycle: 100%.

**Model: CC 6401** (specifications at 64 °F chilled water setting, 90 °F ambient temperature, and 60 Hz power)

- Cooling Capacity: 13,268 BTU/hr; 3883 watts; 1.1 TR.
- Power Required: 380-460 VAC 50-60 Hz three phase.
- Nominal Power Consumption: 2.4 kW.
- Coolant Connections: 3/4 inch NPTF.
- Coolant Tank Volume: 8 gal (30.3 l)
- Nominal Coolant Flow Rate: 2.7 gpm (613 l/hr).
- Available Coolant Pressure: 40 psig (2.81 kg/cm<sup>2</sup>).
- Dimensions (w x l x h): 23.6 x 26.4 x 38.7 in (59.9 x 67.1 x 98.3 cm).
- Dry Weight: 240 lb (108.9 kg).
- Enclosure Rating: IP 54; NEMA Type 12/4.
- Housing Construction: powder-coated galvanized steel.
- Noise Level (@ 1 m): <62 dB(A).
- Duty Cycle: 100%.

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**Model: CC 6501** (specifications at 64 °F chilled water setting, 90 °F ambient temperature, and 60 Hz power)

- Cooling Capacity: 19,960 BTU/hr; 5841 watts; 1.7 TR.
- Power Required: 380-460 VAC 50-60 Hz three phase.
- Nominal Power Consumption: 3.3 kW.
- Coolant Connections: 3/4 inch NPTF.
- Coolant Tank Volume: 8 gal (30.3 l)
- Nominal Coolant Flow Rate: 3.8 gpm (863 l/hr).
- Available Coolant Pressure: 40 psig (2.81 kg/cm<sup>2</sup>).
- Dimensions (w x l x h): 23.6 x 26.4 x 38.7 in (59.9 x 67.1 x 98.3 cm).
- Dry Weight: 250 lb (113.4 kg).
- Enclosure Rating: IP 54; NEMA Type 12/4.
- Housing Construction: powder-coated galvanized steel.
- Noise Level (@ 1 m): <62 dB(A).
- Duty Cycle: 100%.

**Model: CC 6601** (specifications at 64 °F chilled water setting, 90 °F ambient temperature, and 60 Hz power)

- Cooling Capacity: 23,100 BTU/hr; 6768 watts; 1.9 TR.
- Power Required: 380-460 VAC 50-60 Hz three phase.
- Nominal Power Consumption: 3.7 kW.
- Coolant Connections: 3/4 inch NPTF.
- Coolant Tank Volume: 8 gal (30.3 l)
- Nominal Coolant Flow Rate: 4.9 gpm (1113 l/hr).
- Available Coolant Pressure: 40 psig (2.81 kg/cm<sup>2</sup>).
- Dimensions (w x l x h): 23.6 x 26.4 x 38.7 in (59.9 x 67.1 x 98.3 cm).
- Dry Weight: 260 lb (117.9 kg).
- Enclosure Rating: IP 54; NEMA Type 12/4.
- Housing Construction: powder-coated galvanized steel.
- Noise Level (@ 1 m): <62 dB(A).
- Duty Cycle: 100%.

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C. Packaged Compact Chiller Component Details.

1. Cabinet and frame construction: The cabinet shall be constructed of galvanized-steel panels with light grey (RAL 7035) polyester powder coat finish. A removable channel base shall be included to facilitate lift-truck handling and mounting.
2. Compressor shall be a hermetic, reciprocating-type compressor with R134a refrigerant.
3. Thermal expansion valve shall be an externally equalized thermal expansion valve to continuously manage refrigerant flow based on load.
4. Evaporator shall be a stainless-steel plate, copper brazed evaporator to offer efficient operation in a small size and to keep the chiller footprint minimized.
5. Condenser shall be a large, copper tube, aluminum fin condenser to provide high energy efficiency and operation in higher ambient temperature conditions.
6. Fan shall be an axial type fan to offer high airflow in order to reduce condensing temperatures and increase refrigeration efficiency. Fan cycling control is included for condensing pressure control and energy savings.
7. Reservoir Tank shall be a vented poly tank of sufficient size to support efficient cycling-based capacity control.
8. Pump shall be a non-ferrous, peripheral type (regenerative) pump to ensure sufficient flow and pressure capabilities.
9. Controller shall be a parametric controller with digital display in a NEMA 4 rated enclosure. The controller shall provide operating information as well as warning and alarm indication. I/O includes a remote start/stop input and general alarm output.

D. Packaged Compact Chiller Options.

1. Coolant bypass kit to maintain minimum chiller flow when process flow is externally controlled.
2. Casters (minimum 2 locking) for use in portable applications.

2.3 PACKAGED CHILLER SCHEDULE

- A. Pfannenber **Model CC 6101 Packaged Compact Chiller** (4056 BTU/hr; 1.2 kW; 0.34 TR).
- B. Pfannenber **Model CC 6201 Packaged Compact Chiller** (6551 BTU/hr; 1.9 kW; 0.55 TR).
- C. Pfannenber **Model CC 6301 Packaged Compact Chiller** (9144 BTU/hr; 2.7 kW; 0.76 TR).
- D. Pfannenber **Model CC 6401 Packaged Compact Chiller** (13,268 BTU/hr; 3.9 kW; 1.11 TR).
- E. Pfannenber **Model CC 6501 Packaged Compact Chiller** (19,960 BTU/hr; 5.8 kW; 1.66 TR).
- F. Pfannenber **Model CC 6601 Packaged Compact Chiller** (23,100 BTU/hr; 6.8 kW; 1.93 TR).

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## PART 3 – EXECUTION

### 3.1 INSTALLATION

A. Install products in strict compliance with manufacturer's written instructions and recommendations.

END OF SECTION

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**CSI Master Format Sections for which this product may be applicable include the following:**

- 23 06 60 Schedules for HVAC
  - 23 06 60.16 Packaged Water Chiller Schedule
- 23 64 00 Packaged Water Chillers
  - 23 64 19 Reciprocating Water Chillers
  - 23 64 23 Scroll Water Chillers
- 26 06 00 Schedules for Electrical
  - 26 06 20.13 Electrical Switchboard Schedule
  - 26 06 20.16 Electrical Panelboard Schedule
  - 26 06 20.19 Electrical Motor-Control Center Schedule
- 26 24 00 Switchboards and Panelboards
  - 26 24 13 Switchboards
  - 26 24 16 Panelboards
  - 26 24 19 Motor-Control Centers
- 26 27 00 Low-Voltage Distribution Equipment
  - 26 27 16 Electrical Cabinets and Enclosures
- 26 29 00 Low-Voltage Controllers
  - 26 29 13 Enclosed Controllers
    - 26 29 13.13 Across-the-Line Motor Controllers
    - 26 29 13.16 Reduced-Voltage Motor Controllers
  - 26 29 23 Variable-Frequency Motor Controllers
  - 26 29 33 Controllers for Fire Pump Drivers
    - 26 29 33.13 Full-Service Controllers for Fire Pump Electric-Motor Drivers
    - 26 29 33.16 Limited-Service Controllers for Fire Pump Electric-Motor Drivers
    - 26 29 33.19 Controllers for Fire Pump Diesel Engine Drivers
- 42 22 00 Process Chillers and Coolers
  - 42 22 16 Reciprocating Process Chillers and Coolers
  - 42 22 23 Rotary Process Chillers and Coolers

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