

CPE LIQUID CHILLERS

These chillers are used for cooling of water and brines such as glycol solutions and other liquids that do not cause corrosion of copper alloys.

Refrigerant: R22, R404A, R507A.

Total amount of chiller variants: 74 with refrigerant R22
74 with refrigerant R404A/R507A.

Chiller cooling capacity range: from 7 to 516 kW.

Brine temperature range: from -15 to +16 °C.

Refrigerant condensing temperature range: from +30 to +55 °C.



Chiller description

These chillers are completely manufactured at the factory and mounted on a single frame. All components of the refrigerant circuit are connected with piping; the circuit has passed strength and leakage tests. During delivery the chiller's refrigerant circuit is filled with high purity nitrogen up to excess conservation pressure; with all inlets and outlets plugged. The electrical components of each chiller are assembled and tested.

The chiller is certified for compliance with national standards.

Having installed the chiller in its new location, connect the brine piping to evaporator, the refrigerant piping to condenser and then wire the chiller to electrical network.

Basic components

Number of refrigerant circuits: one or two

Each refrigerant circuit includes (one or two compressors):

Compressor: the Bitzer semi-hermetic piston compressor has a common housing with an electric motor and is charged with oil; the oil level can be monitored through a sight glass. The compressor crankcase is equipped with an oil heater, a built-in oil pump and an oil pressure switch (from 4J22). The compressor is also equipped with a shut-off valve in the discharge line and suction and discharge pressure switches.

Discharge line: vibration absorber (for chillers with one compressor) or discharge header (for chillers with two compressors).

Refrigerant receiver: equipped with shut-off valve at outlet and safety valve.

Liquid refrigerant line: filter-drier, sight glass, shut-off valve, solenoid valve, thermostatic expansion valve.

Suction line: vibration absorber (for chillers with one compressor) or suction header (for chillers with two compressors), thermal insulation.

Each chiller includes:

Evaporator: shell and tube or copper-brazed plate heat exchanger, thermal insulation.

Frame: The frame is the supporting structure of the chiller. It is made of steel and has sufficient rigidity. The frame is painted with a high quality anti-corrosion composition, resisting environmental climatic factors. It provides a possibility of mounting the chiller on its base and an easy access to its maintenance.

Options

Liquid refrigerant separation in suction line

Option A1: thermal insulated liquid separator for each compressor.

Air cooled condenser fan control

Option B1: one pressure switch for condenser fan control;

Option B2: two pressure switches for condenser fan control;

Option B3: three pressure switches for condenser fan control.

Discharge line pressure sensors

Option B4: discharge line pressure sensor for option C3;

Option B6: discharge line pressure sensor for options C5.

Chiller control

Option C3: control cabinet with ST 544 controller for chillers with one or two compressors and with ECH 420 controller for chillers with 4 compressors,

including temperature sensors at evaporator brine inlet/outlet and power controls switching on/off compressor(s) and condenser fan(s); control cabinet is combined with chiller;

Option C5: control cabinet with mC2SE controller, including temperature sensors at evaporator brine inlet/outlet and power controls switching on/off compressor(s) and condenser fan(s); control cabinet is combined with chiller.

Condensing pressure regulation of each circuit

Option D1: discharge line pressure regulator, regulator or differential pressure valve in refrigerant by-pass line into receiver, check valve in refrigerant drain line into receiver;

Option D3: check valve in refrigerant drain line into receiver.

Air cooling of each compressor

Option F1: additional fan.

Capacity control of each compressor

Option J1: one compressor capacity regulator.

Additional crankcase heating of each compressor

Option K1: additional crankcase heater, thermostat, compressor crankcase thermal insulation.

Maintenance facilities of each circuit

Option L2: shut-off valves in discharge line to condenser and on refrigerant drain line into receiver.

Oil separation and oil return to compressor of each circuit

Option M1: oil separator, oil separator heater, sight glass in oil return line to compressor.

Oil level regulation in compressor crankcases

Option Q1: (from 4J22(Y)) oil and gas equalization line in compressor crankcases (for each circuit);

Option Q2: oil receiver with shut-off valves at inlet and outlet (for each circuit), oil differential check valve, shut-off valve, oil filter, oil level float regulator (for each compressor);

Option Q3: oil receiver with shut-off valves at inlet and outlet (for each circuit), oil differential check valve, shut-off valve, oil filter, oil level digital regulator (for each compressor).

Oil receiver oil charge of each circuit

Option R1: oil charge.

Evaporator type

Option U1: shell and tube heat exchanger;

Option U2: copper-brazed plate heat exchanger.

Pressure monitoring of each circuit

Option V1: pressure gauges with glycerin pointer vibration damper for suction and discharge lines.

Brine flow control

Option Z1: flow switch.

Technical documentation

Operating manual, product passport, receiver passport.

Label structure

CPE-M – 2 x 4VCS10 Y – H – XX...X R404A/R507A
 1 2 3 4 5 6 7 8

1 – Product type:

CPE – liquid chiller with semi-hermetic piston compressors;

2 – Temperature application:

H – High temperature;

M – Medium temperature;

L – Low temperature;

3 – Number of compressors in the chiller (if more than one);

4 – Compressor model;

5 – Oil type:

No letter – Mineral;

Y – Synthetic;

6 – Version;

7 – Additional options;

8 – Refrigerant.