

APE COMPRESSOR UNITS

These compressor units are employed as a part of refrigeration systems for technological processes and air conditioning at industrial and cold storage plants, in warehouses and freezers, in food manufacturing and wholesale or retail companies.

Refrigerant: R22, R404A, R407C, R507A.

Total amount of unit variants: 62 with refrigerant R22,
62 with refrigerant R404A/R507A,
42 with refrigerant R407C.

Cooling capacity range: from 2 to 126 kW.

Refrigerant evaporating temperature range: from -45 to +12 °C.

Refrigerant condensing temperature range: from +35 to +50 °C.



Unit description

These units 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 unit'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 unit are assembled and tested.

The unit is certified for compliance with national standards.

Having installed the unit in its new location, connect it with the refrigeration system circuit and then wire to the electrical network.

Basic components

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. A charging connection and an oil drain plug are built in the housing. The compressor crankcase is equipped with an oil heater; the electric motor has a protective relay against winding superheat. Starting from the 4J13(Y), 4J22(Y) model the compressors have a built-in oil pump with an oil pressure switch. The compressor is also equipped with suction and discharge shut-off valves and pressure switches.

Discharge line: pipeline, vibration absorber.

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

Frame: The frame is the supporting structure of the unit. 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 unit on its base and an easy access to its maintenance.

Options

Liquid refrigerant separation in suction line

Option A1: thermal insulated liquid separator.

Air cooled condenser fan control

Option B1: one pressure switch for condenser fan control;

Option B2: two pressure switches for condenser fan control;

Discharge line pressure sensors

Option B4: discharge line pressure sensor for options C9;

Suction line pressure sensors

Option B14: suction line pressure sensor for options C9;

Unit control

Option C3: terminal box for connecting the unit to electrical network and control cabinet;

Option C4: control cabinet for connecting the unit to electrical network, for optimization of unit operating mode and protection of components against inadmissible values of operating parameters.

Option C9: control cabinet with EWCM 4180 controller, combined with unit (for options J1 or J2).

Condensing pressure regulation

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 D2: regulator or differential pressure valve in refrigerant by-pass line into receiver, pressure regulator in refrigerant drain line into receiver;

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

Compressor air cooling

Option F1: additional fan.

Compressor capacity control

Option J1: (from 4FC3) one compressor capacity regulator;

Option J2: (from 6J22) two compressor capacity regulators.

Liquid refrigerant line

Option H1: pipeline, filter-drier, sight glass, shut-off valve.

Refrigerant injection cooling (only for R22)

Option I1: starting from compressor model 4VCS6: liquid refrigerant injector, pulse solenoid valve, injection controller, refrigerant temperature sensor, filter-drier, sight glass.

Additional compressor crankcase heating

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

Oil separation and oil return to compressor

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

Pressure monitoring

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

Suction line

Option Y1: thermal insulated pipeline, vibration absorber (up to 4FC3(Y) model), cleaning filter.

Technical documentation

Operating manual, product passport, receiver passport.

Label structure

APE - M - 4DC7 Y - H - XX...X R407C
 1 2 3 4 5 6 7

1 – Product type:

APE – compressor unit with semi-hermetic piston compressors;

2 – Temperature level:

H – high temperature;

M – medium temperature;

L – low temperature;

3 – Compressor model;

4 - Oil type

No letter – mineral;

Y – synthetic;

5 – Version;

6 – Additional options;

7 – Refrigerant.