AMV MULTICOMPRESSOR UNITS

These multicompressor 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, R507A.
Total amount of unit variants: 132 with refrigerant R22,
132 with refrigerant R404A/R507A.
Unit cooling capacity range: from 30 to1435 kW.
Refrigerant evaporating temperature range: from -45 to +5 °C.
Refrigerant condensing temperature range: from +30 to +55 °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 number of compressors may vary from two to five.
The Bitzer semi-hermetic screw compressor is equipped with a motor protection device controlling winding temperature, direction of rotation, as well as phase symmetry and failure, restart delay to prevent from short-cycling mode. The compressor is also equipped with a sensor for protection against high discharge temperature, a built-in bypass valve, a built-in check valve, two solenoid valves for capacity control and start unloading, shut-off valves in the suction and discharge lines, suction and discharge pressure switches, an oil supply line including an electronic oil flow switch, an oil fine filter, a sight glass, a solenoid valve and a shut-off valve.
Discharge line: discharge header, oil separator with safety valve and shut-off valves in discharge and oil supply lines, check valve, pressure regulator in oil separator, sleeve for installing a temperature sensor.
Oil supply line for each compressor: electronic oil flow switch, oil fine filter, sight glass, solenoid valve, shut-off valve.
Suction line: suction header, pipeline, cleaning filter (for each compressor), thermal insulation, shut-off valve at unit's inlet.
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 of each compressor
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;
Option ***B3:*** three pressure switches for condenser fan control.
Discharge line pressure sensors
Option ***B4:*** discharge line pressure sensor for options C4, C7 or C8;
Option ***B6:*** discharge line pressure sensor for options C4, C5 or C16.
Suction line pressure sensors
Option ***B14:*** suction line pressure sensor for options C4, C7 or C8;
Option ***B16:*** suction line pressure sensor for options C4, C5 or C16.
Unit control
Option ***C4:*** terminal box for connecting the unit to electrical network and control cabinet;
Option ***C5:*** control cabinet with pCO (Carel) controller and text information display combined with unit;
Option ***C7:*** control cabinet with EWCM 9100 controller combined with unit;
Option ***C8:*** control cabinet with EWCM 9100 controller, including power controls (part-winding start), combined with unit;
Option ***C16:*** control cabinet with pCO (Carel) controller and text information display, including power controls (part-winding start), combined with unit.
Condensing pressure regulation
Option ***D3:*** check valve in refrigerant drain line into receiver;
Option ***D4:*** check valve in refrigerant drain line into receiver, pressure regulator, shut-off valve, receiver pressure regulator in refrigerant by-pass line.
Liquid refrigerant subcooling (economizer) of each compressor
Option ***E1:*** copper-brazed plate heat exchanger, thermostatic expansion valve, solenoid valve, sight glass, filter at inlet of economizer port, pressure switch, thermal insulation.
Voltage control of three-phase network for options C8 and C16
Option ***G1:*** voltage relay, circuit breaker.
Control cabinet LED indications for options C5, C7, C8, C16
Option ***G2:*** indication: oil heating, low oil level, high discharge temperature, refrigerant pressure outside of limits, low oil consumption, compressor motor failure, compressor operation, economizer operation, start delay.
Refrigerant receiver
Option ***P1:*** refrigerant receiver with safety valve and shut-off valves at inlet and outlet, filter-drier, sight glass, shut-off valve in liquid refrigerant line.
Oil temperature regulation
Option ***T1:*** three-way valve in oil supply line;
Option ***T2:*** solenoid valve in oil supply line.
Pressure monitoring
Option ***V1:*** pressure gauges for suction and discharge lines.
Oil cooling with air
Option ***W1:*** check valve, differential pressure valve in oil supply line, temperature sensor NTC.
Oil cooling with refrigerant
Options ***W2, W3:*** heat exchanger, ejector.

Technical documentation

Operating manual, product passport, receiver passport (with option P1).

Label structure

AMV - M – 3 x HSK7471 – H – XX...X R22
1 2 3 4 5 6 7

1 – Product type:
AMV - multicompressor unit with semi-hermetic screw compressor;
2 – Temperature application:
M – medium temperature;
L – low temperature;
3 – Number of compressors in the unit;
4 – Compressor model;
5 – Version;
6 – Additional options;
7 – Refrigerant.