

WATERCOOLED PACKAGED CHILLERS

UNIC sal is equipped to produce a wide range of **COOLER®** Air conditioning and Refrigeration units, conforming to the international standards and works continually to improve its products and facility. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be described herein. Please contact our customer department for specific information on the current design.

Consultancy & Design Our Engineering Dep't is always available to solve special requirements, investigating the client situation and using the most sophisticated available tools. The knowledge and the precious experience of our Engineers is supported by the most advanced computerized calculations and design programs.

Revision AG 16-07



COOLER® is equipped to produce **Watercooled Packaged Chillers** which conform to standards set by advancing technologies and use the most sophisticated American and European listed components.

APPLICATIONS, perfectly convenient for Apartments, Offices, Small and Large Industries, Hospitals, Hotels, Sport Halls and Mini or Maxi Stores.

Units can be especially patterned to meet modern architectural ambient design and are suitable for any installation requirements.

COOLER® Water-Cooled Packaged Chillers, Standard cooling capacity range:
CWPC Models: from 31 up to 530 Ton (from 90,000 up to 1,600,000 Kcal)
= Any special unit can be tailored on request =



The **COOLER® Watercooled Packaged Chillers**, is a packaged unit completely factory assembled on a stiff steel structure with panels made from heavy gauge zinc galvanized steel sheets primed and finished with backed enamel, making them weather resistant and suitable for outdoor installations. All piping and electrical wiring are ready for external field connections.

ALL UNITS, are factory tested at 28 bar (400 psig), flushed and Refrigerant charged (All refrigerants are available upon client request for special application).

COMPRESSORS. COPELAND semi hermetic compressors are used, refrigerant gas cooled type with built-in thermal protection, crankcase heater and large voltage capacity, suitable for 50 and 60 Hertz application. Each compressor is mounted on isolator pads and connected via flexible-vibration-absorbers to the coil copper tubing to reduce vibration transmission to the rest of the unit. Compressors are designed for high energy efficiency, compact construction, rugged reliability, long-life and are maintenance free. Compressors can be disassembled in the field for service.

Oil level sight glass is standard. Oil electronic pressure control cuts the power to the motor when the pressure drops below acceptable limits. Larger compressors have a built-in relief valve between suction and discharge lines which will open if the maximum permissible pressure differential is reached.

OPERATIONAL TESTS, are performed to verify that all circuits and safety devices are operating properly with large margins of security.

NOISE TEST, with portable tooling, is also performed to verify that body panels are secured and fastened as per design conditions.



CONTROL CABINET, is whether proof and harbors all indicators devices, switches, safety devices, lamps, as well as most of the relays, contactors, circuit breakers, thermal protection, pressure gauges, electric terminals, etc.

Power and controls compartment include the following:

1. Compressor motor contactors.
2. Power terminal blocks 230 & 400 volt @ 50 Hz.
3. Separate 230 V control circuit terminal block (for field wiring).
4. Compressor Staging device.
5. Compressor crankcase heater relays.
6. Control circuit terminals.
7. Control circuit breaker(s).
8. Field auxiliary control terminal.

Safety and Operating controls include the following:

1. System on-off switch.
2. Oil pressure cut-off manual reset.
3. Refrigerant high pressure cut-off manual reset.
4. Refrigerant low pressure cut-off automatic reset.

5. Electronic digital thermostat with Compressor start-up cycling.

6. Freeze stat, low liquid temperature cut-off manual reset.
7. High and low voltage protections.
8. Phase failure protection.
9. Liquid flow control (optional).
10. Micro processor programmable controller (optional).
11. Pressure gauges factory mounted:
 - suction and discharge for each refrigerant circuit.
 - oil pressure gauge for each compressor (optional).
 - each gauge is supplied with its own manual shut-off valve.
12. Compressor circuit breakers or fuse blocks, either companion trip, ambient compensated circuit breaker, with time delay (dual elements) relay, provide additional protection for each compressor (optional).

REFRIGERANT PIPING. All circuits are made of brazed seamless cooper tubes.

Refrigerant circuits include the following:

1. Service valves.
2. Manual liquid shut-off valve.
3. Refrigerant filter drier.
4. Thermal expansion valve.
5. Permanent charging ports.

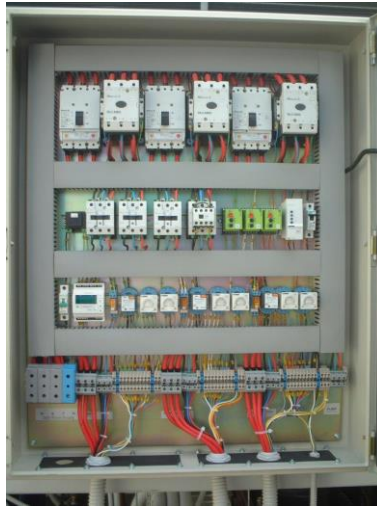
6. Large volume liquid receiver for pump-down operation.
7. Suction accumulator (for heat pump).
8. External liquid line muffler (optional).
9. Anti-vibration flexible connections for suction and discharge lines.



DISCHARGE LINE formed of pre-bent tubing or elbows fittings with long radius bends to eliminate vibrations and minimize pressure drops.

SUCTION LINES designed for minimum friction loss and proper oil return. All suction lines are insulated with flexible closed cell foam hose.

CONDENSERS and **EVAPORATORS** are Shell & Tubes type, made from carbon steel shell water side, and copper tubing gas side, made by ONDA Italy. The construction is in accordance with most American and European Norms and codes (TEMA — RINA — ISPEL — TUV - SDM). Weather and corrosion resistant suitable for outdoor applications. Gas tubes are made of seamless copper tubes and are tested at 28 bar (400 psig). Shell have standard trade water outlets for thermostat, air vent, drain and water main stream. This liquid cooler is also suitable as liquid heater in Heat pump mode.



ECONOMIZER shell and tube type is available on request, it improves the chilling capacity of the unit, by precooling the chiller, and preheating the gas at the compressor suction line.

WATER PUMP, can be included as an accessory according to client specifications.

THERMOMETERS, on the inlet and outlet water, can be provided on request.

24 VAC transformer ready to connect electronic thermostat (optional).

PRESSURE GAUGES, on the inlet and outlet water, can be provided on request.

AIR VENT, are standard in all units

INSTALLATION. The installation of the unit, is very easy, because it need only to connect the external utilities: liquid lines and electric power supply.

ELECTRIC BOARD, with remote control and functional display with duty lamps and alarms, can be supplied on request.

ACCESS to all internal parts for cleaning and maintenance, needs loosening of a few screw only, to remove any panel. All parts can be easily removed and replaced.

COOLER® Service Department is always available to serve our customer and ready to solve any problem.

COOLER® Project Department is ready to study cases and to supply the most economic, yet feasible solutions

QUALITY GUARANTEE

UNIC sal COOLER® guarantees contractual free maintenance, availability of all parts and components, and qualified field technicians to carry out the maintenance requirements.

UNIC sal Company is ISO 9001:2015, DQS-UL, IQNet and CE Certified.

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