

**PROCESS FLUID CHILLER – EXPORT - INDIA**

**1.0 INTRODUCTION**

This unit was provided to a leading Steel and Coil company with manufacturing facilities in Orissa, India for the cooling of process fluids.

This model was selected to comply with the company specification which required very low pressure losses on the process water circuit to meet the specific site demands.

The unit was comprehensively tested prior to export under a range of climatic conditions up to and including 45°C.

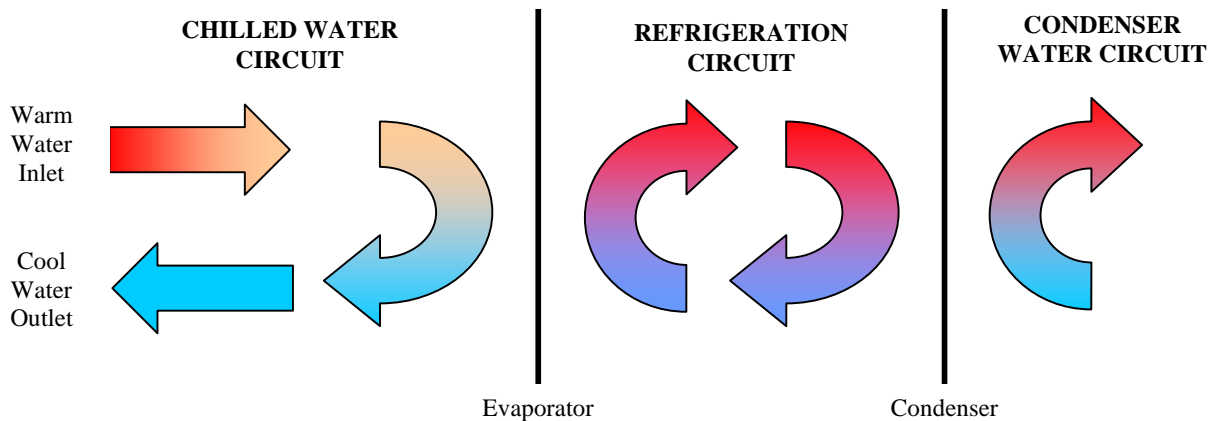
Heuch Technicians attended the site in the Bhubaneswar to provide commissioning and training services.



**2.0 PROCESS DESCRIPTION**

*The Heuch V14435-78/1 Water Chiller* cools process water to the desired temperature and rejects the waste heat to a condenser water system operating at a higher temperature.

The cooling effect is produced by a vapour compression cycle using a non-ozone depleting, Freon-based refrigerant, ideal for medium temperature refrigeration applications.



Water Cooled Chiller System – Circuit Heat Flow

### 3.0 PLANT FEATURES

The unit is designed as a stand-alone, self-contained refrigeration plant and incorporates all components, instruments and ancillary equipment to make it functional.

The unit is specifically fabricated for operation in the harsh industrial application. Materials of construction and surface protection systems are selected to mitigate the effects of the demanding environment. All non-stainless steel, external surfaces are either galvanized or painted using *Heuch* proprietary paint systems. All stainless steel surfaces remain untreated.

Pressure components are selected and manufactured to comply with **AS 1200**. The refrigeration system is designed, constructed and tested to **AS 1677** and is fabricated from refrigeration copper to **AS 1571**.

The electrical system is assembled to **AS 3000**. Instrumentation is housed within the unit framework and the control circuitry is supplied in an IP 66 rated enclosure.

The cooling effect in the evaporator is achieved by evaporation of liquid refrigerant in the tubes. Low temperature liquid refrigerant is metered directly into the heat exchanger and completely vapourised. This maximizes the utilization of the latent properties of the refrigerant.

A six (6) cylinder, semi hermetic, reciprocating type compressor provides positive pressure displacement for the refrigeration system.

The Refrigeration Condenser is a water-cooled shell and tube heat exchanger, which is fabricated from carbon steel with copper tubes. Removable endplates provide access for the mechanical cleaning of the inside surface of the tubes.

All basic operator control functions are mounted on the front of the local Control Panel where observation of control functions and performance information are available via the manual interface on the controller.

The plant control system is designed to automate all operations of the plant equipment and minimal operator input is necessary for continuous and correct function.

A Digital Controller performs all control and monitoring functions for the refrigeration system. It also provides a control interface between the refrigeration system, the plant operator and the Plant Surveillance System (PSS).

This compact universal controller incorporates an LCD text display and an operator interface for operation and performance monitoring and diagnosis. It also provides an extensive logging facility to continuously gather a detailed operating history for service and maintenance purposes.



Unit Maintenance Access



Open Drive Compressor



Unit Controller

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