WIN Equipments

INDUSTRIAL CHILLER

WCP Series

- Compact design
- Built in closed stainless steel tank
- High pressure pump
- Air Cooled/ Water Cooled
- Microprocessor control (Optional)
- Closed cooling system
- More heat transfer area

Capacity	:	0.5 - 20 TR
Inlet Water Pressure	:	2 - 4 bar g
Inlet Water Temperature	:	5^0 - 30^0C
Temperature Difference	:	5^0C

Working Principle

The Heat Exchanger is of BPHE type, BPHE sizes are carefully chosen so that fluid velocities are maintained through the tubes. This promotes turbulence break up boundary and maximizes the heat transfer rate with minimum pressure drop. To further increase heat transfer efficiency, a Counter Flow pattern is used that achieves the maximum temperature difference. Industrial Chilling Plant is build to maintain the temperature of the water at a prescribed set temperature by the use of Refrigeration principle. The Chilling plant consists of refrigeration system and water circulating system. The water circulating system consists of the motor, pump, tubing etc. The refrigeration system consists of refrigerant compressor, condenser either water or air cooled, cooling fan, expansion device, water cooling heat exchanger (evaporator) etc

The Process Water is sent into the Chilling Plant through the Water Inlet. The water gets into the Heat Exchanger also called Evaporator. In the Heat Exchanger, the water is cooled by the refrigerant. The cool water is pumped out of Chiller through a pump provided at the Outlet.

Product Features

Heat Exchanger

- Stainless Steel plate finned cross flow Heat exchanger Optimized fin density considering Heat transfer and fan power
- Spigot construction to reduce pressure across condenser and hence reduced compressor power

Refrigeration Compressor

- Rugged & Reliable hermetically sealed Reciprocating / Scroll compressor
- Suitable for eco friendly gases
- Low noise level
- Low power consumption
- Better COP

Temperature Controller

- Dedicated Programmed micro controller, integrated with temperature controllers and sensors to indicate the temperature inlet & condensing temperature with following alarms
- On delay time to protect the compressor due to sudden failure

Hot Gas Bypass Valve

- It is fitted in between the compressor discharge and the evaporator.
- Evaporator temperature drops below 5°C
- HGV feeds the hot gas from the compressor outlet to the evaporator
- Optional to be provided manually and automatically

Thermostatic Expensive Device

- Customized selection according to cooling load and operation condition
- Ensures constant dew point on varying load conditions
- Ensures constant dew point on varying load conditions
- Sensible to suction pressure
- Sensible to both suction pressure and temperature

Circulating Pump

- High pressure stainless steel impeller
- Mechanical seal for long life, no leakage
- The pump is capable of working 24 hours a day
- No need of stand-by pump
- Pump motor has an overload protection

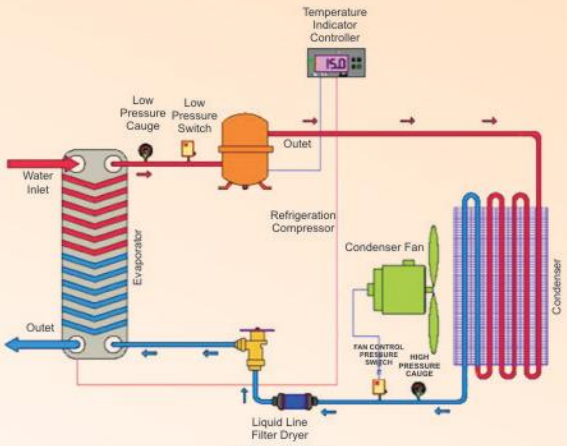
Gauges & Switches

- Standard high pressure and low pressure refrigeration gauges.
- Adjustable low pressure and fan pressure switches for flexibility in operation.
- Unit is self contained of environmental and energy saving design.
- All equipment are factory tested prior to delivery.

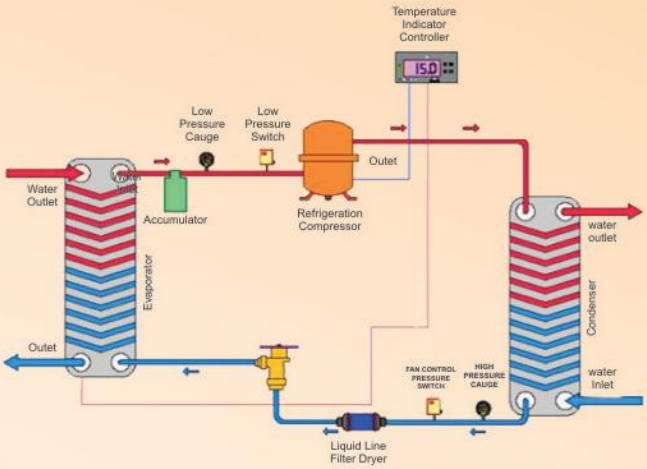
Tank

- Non Corrosive Stainless steel well insulated tank to save power
- No heat transfer from closed tank
- Rigid steel frame construction covered with easy removable steel covering
- Free accessible maintenance of all internal components

Schematic Diagram



AIR COOLED CHILLER



WATER COOLED CHILLER

Technical Specifications

Base Model	Capacity		Ref Comp	Electrical Connection			Cooling Fan	Condensor	Water Flow	Water Pump	Water Tank		Shipping Weight	End Conn.
	TR	M3/hr	Power/ Kw	v	ph	hz	Qty	Air/ Water	lpm	hp	Cap/Lit	Material	Kgs	BSP/ NB
WCP 005	0.5	0.3	0.9	230	1	50	1	A / W	6	0.5	15	SS	125	3/4"
WCP 007	0.75	0.45	1.2	230	1	50	1	A / W	8	0.5	20	SS	135	3/4"
WCP 010	1	0.6	1.5	230	1	50	1	A / W	10	0.5	25	SS	150	3/4"
WCP 020	2	1.2	2.5	230	1	50	1	A / W	21	0.75	40	SS	200	1"
WCP 030	3	1.8	3.4	440	3	50	1	A / W	32	1	60	SS	240	1"
WCP 050	5	3.0	6.0	440	3	50	2	A / W	52	1.5	80	SS	350	11/2"
WCP 075	7.5	4.5	9.2	440	3	50	3	A / W	80	2	140	SS	475	11/2"
WCP 100	10	6.0	11.5	440	3	50	4	A / W	100	2	180	SS/ MS	550	2'
WCP 150	15	9.0	18.0	440	3	50	6	A / W	155	2	250	SS/ MS	700	2"
WCP 200	20	12.0	22.5	440	3	50	8	A / W	202	2	320	SS/ MS	1000	2"

Model Nomenclature XXX XXX

Product Series, Win Make, Chilling Plant, Refrigeration

Capacity in TR

Working Pressure 2-4 bar g max.

- Voltage range 180 to 260V for 1 Ph & 380 to 420V for 3 ph
- Pressure drop with in 0.2 bar g max
- Rated power is the max power consumed at conditions

Function of BPHE

Selection Chart of Chiller

Method :

One should know only 2 data's of select the right re-circulating Industrial Chiller.

Step 1 :

Outlet temperature (cold temp.) of water in ˚C / ˚F

Step 2 :

Heat load (Q) to be removed in BTU/Kcal/Watt

Heat load, Q = m x ΔT

where

m = mass flow rate at lpm

ΔT = Inlet Temperature - Outlet Temperature

Q = _____ Kcal/min

= Kcal/min x 60

= _____ Kcal/hr

Operating Conditions	Ideal	Maximum
Water Outlet Temperature	15°C	
Ambient Temprature	40°C	
Water Thermal Difference	5°C	
Refrigerant Used	R22	
Water Inlet Pressure	1 bar g	2-4 bar g

Water Outlet Temp, °C	5	10	1.5	20	25
Conversion factor	0.6	0.75	1	1.16	1.3

Ambient Temparature°C	30	35	40	45	50
Conversion factor	1.2	1.1	1	0.9	0.8

Advantages

- Efficient heat transfer between Refrigerant & water
- Ease of Installation
- Safety devices Provided (as per Custom)
- Low weight
- Less Maintenance

Typical Installation

Application

- Automobile Industry
- Injection Moulding & Plastic Industry
- Hydraulic Presses & Drives
- Compressor Cooling
- Milk & Dairy/ Pasteurizing, Food Products
- Lubricants/ Oil Cooling & Dew axing of Oils
- Pulp & Paper Processing
- Printing Ink/ Paper Waxing Cooling
- Sugar Industry
- Foot Wear Industry

Cooling Towers | C.A.Filters | Auto Drain Valves | AC with MS | Receiver –V&H | Air Dryer

*Specifications are subject to change due to up gradation in all industries

Authorized Channel Partner :

Manufacturers :

WIN EQUIPMENTS

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