

JC Equipments Pvt. Ltd

(A Group of Coimbatore Cooling Towers (p) Ltd)

World Class Cooling Solution



Corporate Member Of CTI, USA



An ISO 9001 : 2008 Certified Company



- » FRP Cooling Tower (Bottle, Square Shape)
- » Timber Cooling Towers
- » Dry Cooling Towers
- » Natural Draft Cooling Towers
- » Shell and Tube Heat Exchangers
- » Finned Tube Coolers
- » Oil Coolers
- » Inter / After Coolers
- » Air Cooled Heat Exchangers
- » Marine Heat Exchanger
- » Double Pipe Heat Exchanger
- » Plate type Heat Exchanger

Profile

JC Equipments PVT Ltd., an ISO 9001:2008 certified leading Corporate Member of CTI-USA. Manufactures & Exporters of all types of Cooling Towers & Heat Exchangers. Also we are our company made its entry in to the Indian Industry, in the year of 1989. Commencing with the production of Cooling Towers it is located at the hub of modern India's most buoyant industrial centers, with over 21 years experience in Cooling Tower and Heat Exchanger Industry. We constantly provide new solutions and applications in recalculating Heat Transfer systems to meet the requirement of rapidly advancing technology. Manpower with vast specialized experience in Cooling Tower manufacturing is backbone of the organization. We have with us persons who have been entirely responsible from concept to final product manufacturing. We have major time tested development that has been incorporate in standards, with a strong and dedicated workforce led by a team of qualified managerial and technical professionals.

FRP Counter Flow Bottle / Square Type Cooling Towers



FRP cooling towers are withstand corrosion, resist water borne bacteria's and organisms and it is light in weight. Vertical induced draft counter-flow design permits installation in any direction with freedom. Begin round the air flow through the tower is move evenly distributed. It consumes less power (energy) overall because of less air resistance to water, saving in operational costs.

Casing

Made of selected grade materials of Fibre Glass Reinforced Plastic & Resins. Additional embossing is done for extra strength, FRP casings and basins are designed to withstand severe gh wind load and to resist corrosion. Water basin is completely leak proof, which avoids spillage & seepage of water. It is sump to ensure maximum water level at all times & made of FRP with additional stiffening take care of extra water weight.

Fill

Honeycomb P.V.C fills are used for extended contact area having high transfer efficiency. The crossing of air & water streams in close proximity, which creates a diffused turbulence conducive to evaporation & efficient heat transfer. A pre-eminet quality & long life fill consists of modular block of PVC honey combs construction to create prolonged contact time of hot air with water for maximum heat transfer.

Nozzles

General fill consists of Honey PVC film type splash deck is modules with high resistant to corrosion & highly efficient for heat transfer Water Distribution System: The hot water is raised by hot water riser & taken inside by a P.V.C. hot water header inside

Motor

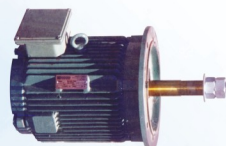
Special low RPM totally enclosed motors of Vertical, Flange type with enlarged & Threaded shaft and sealed top is supplied with cooling Tower. The motor is also weather proof and in IP-55 construction.

Fan

The Fan consists of axial propeller Fan blades of special alloy aluminum blade s of aero dynamic designed axial flow type to achieve high efficiency. Adjustable pitch blades are used for maximum utilization of applied horsepower and connected to a common Aluminum Allow Hub. The fan is dynamically balanced. FRP fan set can also be supplied on request at extra cost.

Supports & Hardware

All components like tower supports, motor supports, leg supports, etc. are either hot dip galvanized or epoxy coated.



TIMBER COOLING TOWER

DESIGN CONCEPT

Economy In Operation

CCT TOWERS are designed for the highest efficiency at the lowest operating cost. Fans, gear boxes, fill and drift eliminators are optimized to deliver maximum cooling with minimum applied horsepower for lower operating cost.

TECHNICAL SPECIFICATIONS

Structure

Main structural components & other light sections machined with selected preservative timber. And it is designed for operational load and wind pressure of 250 kg/m² of projected area in any horizontal direction. The structural timbers are made out of pine or chirr wood after properly seasoned and chemically treated to withstand its life against biting, fungus and termite etc.

FILLS

Different types of preservative treated wooden splash bars, PVC bars are used depending on applications. Different types of fill materials with different shapes are available according to suited design of applications. Fill bars are designed to offer maximum splash surface and wetted surface resulting in a high heat transfer rate.

WATER DISTRIBUTION

Boiler waterproof plywood [Marine grade]/ treated timber are used for hot water chamber. For uniform distribution of water, hot water basin is equipped with distribution box through which the water is equally distributed in the hot water basin. Basins are provided with combination metering orifices/diffusers which distribute water uniformly

FAN CYLINDER

Fan cylinders designed in aero-dynamically the design allows close tolerance on fan blade tip clearance plus less interference of air passing through the tower. Fan cylinder made by HDG Steel/ Fiberglass reinforced polyester.

DRIFT ELIMINATORS

Specially designed eliminators from single pass pattern to 4 pass pattern of various materials are provided according to applications to minimize bleed of losses. Two pass herringbone drift eliminators trap entrained moisture causing it to drain into the cooling tower basin.

MECHANICAL EQUIPMENT

The mechanical equipments are used in our cooling towers are specially designed for long lasting life. Multiblade fans are cast aluminium for smooth quiet operation, Low Noise, high volumes of air. High efficiency, and low power consumption Adjustable pitch blades are used for maximum utilization of applied horsepower. Fans are driven by an electric motor coupled to a spiral bevel gear box through a dynamically balanced tubular drive shaft. We are using special enclosed motors with weather proof and in IP-55 construction to withstand moist air stream.

The EXTERNAL CASING

The external casing is corrugated cement sheets fitted vertically and joints are lapped and sealed for water tightness. Corners are covered by asbestos sheets. Also using FRP sheets.

DIRECT DRIVE SYSTEM

These are lower & medium capacity cooling towers & up to 10' feet dia fan are supplied with multiblade cast aluminium adjustable pitch fan with M.S. fabricated H.D.G. hub and S.S. hardware. Motor provided with the system is special low R.P.M. totally enclosed vertical Flange type is supplied with the cooling tower. The motor is totally weather proof in IP-55 construction suitable for heated & humid atmosphere. In the above model Fan is directly coupled with the slow RPM motors (vertical Flange mounted with sealed top & enlarged threaded shaft).

REDUCTION GEAR BOX DRIVE SYSTEM

Bigger capacity cooling towers are supplied with fan assembly driven through reduction gear reducer of spiral bevel type with the help of non-lubricated balanced drive shaft with flexible links. Fans are driven by an electric motor coupled to a gearbox through a dynamically balanced tubular drive shaft. The complete equipment will be supported on a single fabricated mild steel frame adequately weather proofed.

REINFORCED CEMENT CONCRETE COOLING TOWER

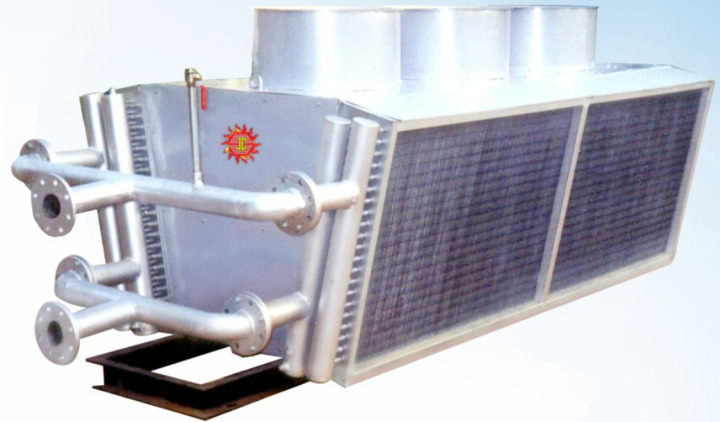
CCT is a recognized leader in the design, engineering and construction of permanent concrete/masonry shell cooling towers. With broad-based professional expertise, CCT has gained the confidence of clients and consultants alike by setting new standards in quality, permanence and human-engineered design concepts. Designing, Erection and Commissioning of RCC COOLING TOWERS. The Products range catering into the segments of Thermal and Captive Power Plants, Petro - chemicals, Fertilizers, Atomic Energy, Cements, Paper and Chemicals Industries.



DRY COOLING TOWER

NECESSITY OF DRY COOLING TOWER

Water is the most essential elements of our life. About 97 percent of that is stored in ocean. Of that remaining 3% percent, 2% are frozen permanently as ice. What os left is what we have to work with. And this precious and meager amount needs a lot of attention to perform its function properly in the machines of civilization. Water plays a great role in industries. It is used as a coolant in various machineries. In water cooling towers like FRP Tower or Timber Tower, huge loss of water due to drift, evaporation, spray loss and blow down. It is now abundantly cleat that water charges will go on rising at well beyond inflation rates. So for that we are introducing the DRY-COOLING TOWERS for save the water.



DIFFERENCE BETWEEN AIR COOLING TOWER AND WATER COOLING TOWER:

AIR COOLING TOWER

- Plant location restriction is not required.
- Scale formations are impossible.
- Water consumption is not required.
- No corrosions due to air.
- Mixing of dust, dirt is not possible when processing of water.
- Except fan and motors maintenance is negligible.

WATER COOLING TOWER

- Water source decides the location of large plants.
- Scale formation is unavoidable.
- Huge loss of water due to evaporation, drift loss.
- Steel parts in contact with water are corroded.
- Water exposed to dust and dirt will be contaminated.
- Maintenance is required

NOTE:

- (1). The Motor HP may be changed due to the ambient temperature of Air Cooling media and temperature of the water.
- (2). Primary circuit inlet water temperature 80°C outlet water temperature 70 °C. In Secondary circuit inlet water temperature 66°C outlet water temperature 56°C.
- (3). Other applications and models please contact "CCT".

NATURAL DRAFT COOLING TOWER

The **Natural draft cooling towers** are particularly pretty as a cost-saving solution for power plants and other industrial plants requiring larger quantities of cooling water. Natural Draft cooling tower operates without fans and Fills, the large amount of electric power or else required for large cooling tower systems is not required. The mandatory cooling air is pass on through the tower by natural draft henceforth neither fan nor fan power is required for these kind of Cooling Solution. No maintenance required like other Wet (or) Dry cooling towers. By using of Non clock nozzle are easy to cleaning reduce spillage and evaporation loss. Hot Dipped Galvanized Structural's and S.S fasteners increase the lifetime as well as the efficiency of the cooling tower it can be installed for any range of cooling application



Structure: Is made from heavy M.S.Angle/Tee/Channel sections and Hot Dipped Galvanised or lined with FRP for corrosion resistance.

Louvers: Are made from Fiberglass Reinforced Plastics which ensures corrosion resistance and good mechanical properties.

Water Distribution Headers: Are made from "c" class galvanised pipe.

Nozzles: Are made from Rigid PVC (or) Brass Nozzle to give good corrosion resistance.

Nuts & Bolts: Are made from Stainless steel (or) HDG Bolt & Nuts.

Features and Functions

Natural draft cooling tower especially hold attraction as solution for saving costs for large industrial plants and power stations; that require large amounts of cooling water.

The needed cooling air is transported to the tower with the help of natural draft. Hence there is no necessity for fan or fan power

It is also used for the release of treated exhaust gas. It also implies that there is no need of gas reheating or chimney.

PVC fills, Motor, Fan are not required by Natural Draft Cooling Towers

FRP louvers that are specially designed aerodynamically, minimize evaporation loss and spillage

Heat Exchanger



DESIGN FEATURES

We are manufacturing of the Heat Transfer Equipments as per the TEMA [Tubular Exchanger Manufacturers Association] ASTM Section (VIII)(Unfired Pressure Vessels) BS, DIN standard's. And follows IS 2825 ,IS 6088 , IS-4503, Codes. Our devices efficiently transfer heat from one fluid to another & are in wide use in engineering processes.

We have the facility of various software from development of flow chart, P & I diagrams piping layout to preparation of fabrication drawing through cad. It is supported by a library consisting of as me, BS, ADMERKBLATTER, ANSI, IBR, TEMA, LLOYD's rules, Indian Register of Shipping Rules, Regulation and Standards. Our plant has modern Plate

Processing, Machining, Welding, Heat Treatment, NDE and Handling Equipments.

We are using Tubes of SS 304, 316, 304L, 316L, copper, brass, titanium, cupro-nickel 90/10, 70/30, etc for Fixed or Floating heads and removable or fixed tube bundle, in Single or Multi Pass. In all plate materials are SS, CS, Aluminium etc. For High Temperature and pressure, with self latest computerized thermal as well as mechanical design.

OUR PRODUCT RANGE

- ❖ Water Heat Exchanger [For Generator sets, Furnaces and Bearing Cooling]
- ❖ Oil Coolers - [For Lubrication of Machine Tools, Centrifugals, Quenching Systems, Transformers, Turbines, Gear box etc.]
- ❖ After Cooler [For Air & Gas Compressors]
- ❖ Condensers [For Steam and Process Fluids]
- ❖ Chillers [for Refrigeration Systems]
- ❖ Fuel Oil Heaters [For Pre-Heating Furnace Oil]
- ❖ Evaporators [For Thickening Process Liquids]
- ❖ Steam-Air Heaters [For Hot Air Generation for Drying applications]
- ❖ Re-Boilers [For Distillation application]
- ❖ Water heater [for hot water generation]
- ❖ Bitur reactor ❖ Column ❖ Surface Condenser ❖ Deaerator
- ❖ Air Tank Cooler ❖ Marine Heat Exchanger ❖ Marine Oil Cooler
- ❖ Air Pre-heater Driers ❖ Pressure Vessels
- ❖ Columns and all Heat Transfer Equipments.
- ❖ Air Blast Oil Cooler ❖ Break Oil ❖ Tray Driers ❖ Rexin /Le
- ❖ Plate type Heat Exchangers ❖ Water Makers
- ❖ Heat Recovery Systems



TECHNICAL SPECIFICATIONS FOR SHELL AND TUBE HEAT EXCHANGERS

Types	: Fixed type, removable type, 'u' type Heat Exchangers
Tube to tube sheet joints	: Expansion type, growing and expansion type, expansion and welding type and seam welding type.
Tube materials	: Stainless steel:304, 316, etc M.S:SA-179, seamless, welded, copper, brass, Adm brass, aluminium brass, cupronickle etc [With dimension tolerance asper is-5493/1]
Tube sheets	: S.S,M.S, Carbon Steel, SA-285 GRC, IS-2041/62 and Brass.
Shells	: M.S,S.S, Brass etc
Baffels	: M.S,S.S, Brass, Aluminium etc.

Shell and Tube Heat Exchangers



A shell and tube heat exchanger is the most common type of heat exchanger in all Industries. Mostly used in higher-pressure and Higher Temperature applications. This Type of Heat exchangers are having two divisions one is shell and other is Tubes. Here One fluid runs through the tubes, and another fluid flows over the tubes (through the shell) to transfer heat between the two fluids. For this purpose seamless/ERW or Rolled pipes are used for shell. And Seamless tubes are used for Tubes.

Kettle Reboiler Type Heat Exchangers

Kettle Reboiler is one Type of Shell and Tube Heat Exchanger, Here U Tube Bundle Arrangement will be used. The main Purpose of These Heat Exchanger is in nuclear power plants and High Pressure Petroleum Refineries. The Construction of these Heat Exchangers as per TEMA K Type.



Finned Tube Heat Exchangers



An Finned Tube heat exchanger, is simply a pressure vessel which cools a circulating fluid within finned tubes by forcing ambient air over the exterior of the tubes. Also, This is known as device for rejecting heat from a fluid directly to ambient air. The main advantage of an FTHE is that it does not require water, which means the plants requiring large cooling capacities are need not be located near a supply of cooling water.

Double pipe Heat Exchangers :



A double pipe heat exchanger is one of the simplest form of Shell and Tube Heat Exchangers. The wall of the inner pipe is the heat transfer surface. To make an Unit very Compact, The Arrangement is made Multiple Times and Continues Serial and Parallel flow. This is also called as a hairpin heat exchanger.



For Optimal selection of cooling Tower contact us with the following information :

- ❖ Type(s) of cooling tower required
- ❖ Flow rate of water to the cooling tower (M3/hr)
- ❖ Hot water temperature to the cooling tower
- ❖ Cold water temperature from the cooling tower
- ❖ Design Ambient wet bulb Temperature

Manufacturers & Exporters of :



JC Equipments Pvt. Ltd

An ISO 9001:2008 Certified Company

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