

Water Cooling Towers



Series DFC-50



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A Word About Cooling Towers

Cooling Tower is a device for reducing the temperature of water by bringing it into contact with an air stream, where a minor portion of water is evaporated and main portion is cooled.

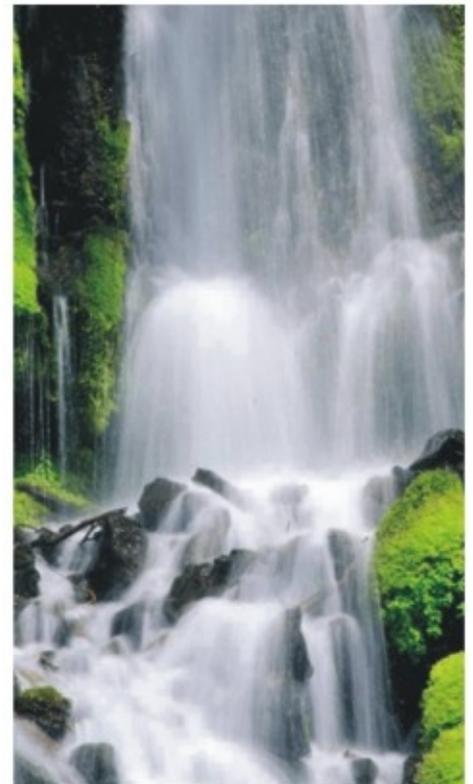


Water is the most essential element of our life. About three-fourth of the Earth's surface is covered by water, but 97 percent of that is stored in ocean. Of the remaining 3 percent two are frozen permanently as ice. What is left is what we have to work with. And this precious and meager amount needs a lot of attention to perform its function properly in the machines of civilisation.

Water plays a great role in industries. It is used as a coolant in various machineries. Earlier small cooling requirements were catered for by 'once through' system with warm water discharged to waste. Today's water cost, limited water resource and drainage system render this approach quite untenable, and it is now abundantly clear that water charges will go on rising at well beyond inflation rates in most industrialised countries.



Re-circulation is therefore, absolutely essential and Cooling Tower in its many forms and sizes, is the cooling device with the lowest capital and running cost together with maximum operational flexibility.



SPECIAL FEATURES

- Compact and light weight.
- Uniform distribution of water by automatic sprinkler.
- Honeycomb PVC fills and eliminator.
- Choice of LPS fills.
- FRP (Fiberglass reinforced plastic) Body.
- Corrosion resistant.
- Long Life.
- Easy maintenance.



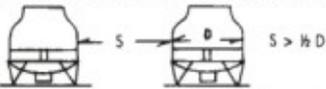
Features and Applications

APPLICATIONS

- Air Conditioning & Refgn. Systems
- Compressors & Chillers
- Injection & Blow Moulding Machines
- Diesel Generator Sets
- Induction Furnace
- Process Cooling
- Chemical Process
- Pharmaceutical Industries
- Oxygen Plants
- Welding Machines
- Extruders
- Dry Cleaning Machines
- And many more.....

LOCATION

- Well-ventilated and clean area.
- Minimum distance between two towers



Minimum clearance between tower and enclosure



- Discharged air from the cooling tower is not re-circulated into the tower.
- Free from dust and dirt, sulfurous acid and hazard gases.
- These are the major elements to damage refrigerator condenser or some other applications.
- Open and not affected by sound resonance.

POSITION

- See that piping job can be carried out easily.
- Ascertain tower must keep level. The uneven water distribution will decrease cooling efficiency seriously.



- Tighten anchor bolts fully on the foundation.

Installation

PIPING

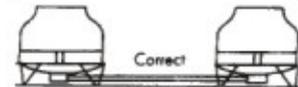
- The inlet/outlet pipe must be lower than the pipe connections of water sump.



- The circulation pump must be located below the water sump under proper operating.



- Two cooling towers with one pump at design, it must offer an equalizer on each tower to keep same water level in it.



OTHERS

- As tower is set-up completely, be sure there are no tools or other objects left in the tower.
- Check-up if piping or water basin is leaked.
- As make-up water pressure is lower than the specified, install one water tank higher than the water level or a make-up pump in the piping system to obtain the desired pressure.

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Design Concept DFC-50 Series

Now engineers, architects and industry in general will be able to satisfy any project or process requirements using DELTA COOLING TOWERS. Superior design and technology have made Delta's DFC-50 Series Towers the standard of bottle shape Cooling Towers. The series has been designed to meet the high standard demanded by Engineers who require a compact, efficient Cooling Tower with a long service life and an aesthetic design.

Being round, the air flow through the tower is more evenly distributed. Structural members do not interrupt air intake and therefore they have been proven to be thermodynamically the most efficient design in the field. This translated directly into reducing running costs.

The rotary counter flow Fiberglass Cooling Towers are either moulded in single section or in segments for access into stairways.

They are usually bolted and fixed on site. FRP (Fiberglass Reinforced Plastic) casing and basins are designed to withstand severe vibration, high wind load and to resist corrosion.

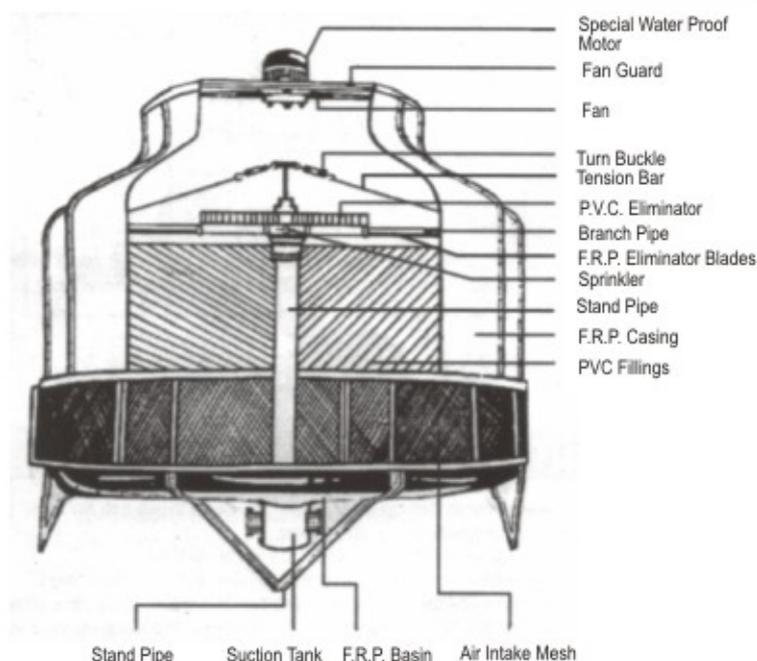
The Tower offers PVC fills and eliminators in a design that maximises economy and efficiency. The shape makes possible to provide maximum cooling in a minimum plan area with lower energy consumption.

The water is distributed by means of an auto rotating sprinkler in which there is no motor, but with the reaction force to rotate and distribute water.

All materials used in this series DFC-50 counter flow Cooling Towers are chosen specifically for Cooling Tower application. Aluminium Fans are axial flow direct driven, no V-belts bearings or gears. Thus maintenance cost is kept to a minimum.



The Inside Story



DIMENSIONS & TECHNICAL DATA

Model	Cooling Capacity		Dimensions		Fan Diameter (mm)	Motor Capacity (HP)	Operating Weight (Kg.)	Pump Head (MWC)
	Nominal TR	K.Cal.Hr. X 1000	Height (mm)	Diameter (mm)				
5000	5	19	2100	750	450	0.5	180	1.7
5001	8	28	2250	950	600	1.0	270	1.7
5002	10	38	2250	950	600	1.0	300	1.7
5011	15	56	2300	1200	700	1.0	350	2.0
5012	18	67	2300	1200	700	1.0	370	2.0
5021	20	75	2500	1400	700	1.0	400	2.5
5022	25	94	2500	1400	700	2.0	475	2.5
5031	30	114	3000	1850	900	2.0	500	2.6
5032	35	132	3000	1850	900	2.0	525	2.6
5033	40	150	3000	1850	900	2.0	600	3.0
5051	50	188	3000	2200	1200	3.0	825	3.0
5052	60	225	3100	2200	1200	3.0	850	3.0
5061	80	300	3100	2400	1400	3.0	1200	3.0
5062	100	375	3700	3000	1500	5.0	1400	3.0
5063	115	431	3700	3000	1500	5.0	1500	3.3
5064	125	468	3700	3000	1500	7.5	1600	3.3
5071	130	490	3900	3400	1800	7.5	1700	3.6
5072	160	600	3900	3400	1800	7.5	1800	3.6
5081	180	675	4400	3550	1800	7.5	2100	3.8
5082	200	750	4400	3550	1800	10.0	2250	3.8
5083	225	844	4400	3550	1800	10.0	2750	3.8
5091	250	940	4200	4250	2100	10.0	3500	4.2
5092	300	1125	4200	4250	2100	10.0	3800	4.2
5095	350	1312	4200	4800	2300	12.5	5000	4.2
5096	400	1500	4200	4800	2300	12.5	6000	4.5
5097	500	1875	4300	5400	2700	15.0	6300	4.5

1. Nominal TR capacity has been computed on the basis of water circulation rate of 4 USGPM/TR at 97.5-90-83°F conditions.
2. Performance is based upon installation, in an outdoor location and absence of nearby structures which might prevent free air movement.
3. All models are available in grey colour normally, other colours to match environment can be made available on special request.
4. Cooling towers smaller than 15 TR are not supplied with the ladder.
5. All MS parts are hot dip galvanized and hardwares are G.I.
6. Cooling towers do not include motor starter, pumps, valves, controls, float valves, foundation, pipe fittings etc.. The job excludes civil work, electrical work, plumbing or piping work etc.
7. The company operates a policy on continuous improvements and reserves the right to make alterations in designs and specification without any notice.

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Spare Parts Repair & Maintenance



Cooling Tower maintenance, repair and tower performance, upgrades are important components of Delta's business. Delta offers a complete set of capabilities to meet every need of the customers. Delta has people, service experience and products to handle any repair job. Spare parts are readily available ex-godown.



FILLS/ PACKINGS & ELIMINATORS



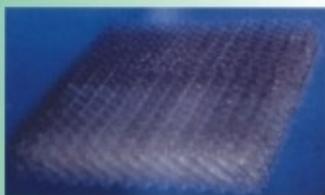
PVC Honey Comb Fills



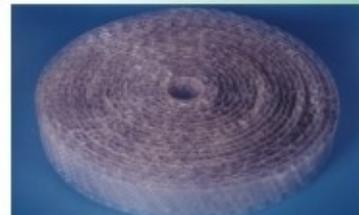
FRP Eliminators



Loose Poly Propylene splash pack Fills (LPS)



PVC Honey Comb Eliminators



PVC Honey Comb Eliminators

HARDWARES



Various Nuts, Bolts, Washers, Nails
Tension Device in S.S., M.S. and
G.I. Materials



NOZZELS



Various Nozzels in P.P., Polythene
Nylon, Brass and Bronze

**Spare Parts
Repair &
Maintenance**



FRP CASINGS AND BASINS



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WATER DISTRIBUTION SYSTEMS



Rotary Sprinkler (Aluminium)



S.S. Sprinkler



PVC Sprinkler



Branch / Sprinkler Pipe

ELECTRICAL MOTOR



Special Water-proof Motor
with extended shaft

FANS



FRP Fan



Aluminium Fan

DELTA'S ACTIVITIES INCLUDE

- Manufacturing of FRP counter flow cooling tower in Cuboid design. Series — DFC-60.
- Manufacturing of on line Non Chemical Water Treatment Device.
- Manufacturing of Shell & Tube Type Heat Exchangers, Chillers and Condensers.
- Pipe line jobs on turn-key basis.
- Manufacturing of FRP Air Washers.
- Maintenance, repair, modification, upgradation, overhauling of all type of cooling towers.
- Custom made spare parts of all makes.



DELTA WELCOMES YOUR ENQUIRY

To discuss and suggest best cooling tower suitable for your specific needs, following are the data requirements:

1. Type of Application
2. Water Circulation Rate.
3. Temperature of water entering to the Cooling Tower.
4. Temperature of water leaving the Cooling Tower.
5. Ambient Wet Bulb Temperature.
6. Space/ Power restrictions, if any.



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