



## Power Tower® Series Cooling Towers

Through extensive development and testing, the Power Tower cooling tower cells are space efficient, highly versatile and have a lower first cost and operating cost when compared to other cooling methods.

Advantage's Power Tower is simple to operate with easy to understand controls and utilizes energy-efficient evaporative cooling to provide cooled water for a variety of industrial applications and equipment.

Power Towers receive warm water returning from the process and evenly distributes it over the wet deck using its water distribution header and spray nozzles. The direct drive fan draws air from the inlet louvers, through the wet deck and out the top of the tower.

The falling water and counter airflow causes a portion of the warm process water to evaporate. The small amount of water evaporating cools the remaining water.

Under design conditions about 1% of the water flow rate evaporates to achieve the cooling affect desired.



135 TON POWER TOWER®  
COOLING TOWER

405 TON POWER TOWER®  
COOLING TOWER

- Maintains full capacity & temperature control stability over a wide range of wind, air temperature and humidity extremes
- Capacity range is from 45 to 540 tons
- The nominal rating condition is cooling 3 gallons per minute per ton of capacity from 95°F to 85°F at 78°F wet bulb
- All wetted surfaces are made of fiberglass, stainless steel, PVC or other non-rusting material
- Materials are designed for constant water contact under hot and cold air temperature extremes
- Fiberglass shells up to 1/2" thick in structural areas assure mechanical integrity and long service life

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A dynamic background image featuring a large splash of water at the top, with various droplets and bubbles scattered throughout the blue-toned scene.

# Engineered and Constructed for Performance and Dependability

## FEATURES

### TOWER DESIGN

- Totally non-ferrous wetted surfaces
- Single or multiple fan cells
- Single inlet and drain connections (45 to 270 ton models) or two inlet and drain connections (315 to 540 ton models)
- Structural galvanized steel base (45 to 135 ton models) or painted steel base (170 to 540 ton models)
- Designed for outdoor installation

### SHELL CONSTRUCTION

- High strength fiberglass, with additional 1/2" of structural thickness in reinforced areas, and finished with UV stabilized coating
- A two part methacrylate adhesive bonds the shell halves together

### FAN

- Glass filled polypropylene blades are air foil shaped for optimum air flow
- Fan is direct drive and is the only moving part in the cooling tower

### MOTOR

- Totally Enclosed Fan Cooled (TEFC) motors are rated for outdoor and moist air extremes
- The fan and motor assembly is supported by a stainless steel framework attached to the fiberglass shell at reinforced locations held in place by stainless steel fasteners

### WATER DISTRIBUTION HEADER

- The computer designed non-ferrous water distribution header assures complete wet deck coverage under a wide range of flow rates
- The spray nozzles have no small orifices to plug
- The PVC header is stationary, with no rotating "spray trees" that create excessive pressure drop and waste system pump energy

### WET DECK

- Constructed using PVC with tacked honeycomb pattern maximizing water and air flow promoting greater cooling efficiency

### DRIFT ELIMINATORS

- Placed above the stationary water distribution header to prevent water drift from the top of the cell
- Drift eliminators and air inlet louvers combine to save water, prevent winter icing and maintain a dry area around the cell

### INSPECTION COVERS

- Easy to remove and reinstall
- A gasket seals the cover to prevent water leakage
- Fasteners attach the cover to the shell
- The inspection openings are used for water distribution system maintenance and are large enough for wet deck replacement

### WARRANTY

- 10 year shell warranty
- 5 year fan and motor warranty

## OPTIONS

### FAN STARTER KIT

- Motor starter
- NEMA 1 enclosure
- Fan thermostat

### SIDE OUTLET

(Required when no remote tank will be used)

- PVC flange
- Factory installed

### BASIN FLOAT VALVE

(Required when no remote tank will be used)

- Mechanical float and water make-up valve
- Factory or field installed

### TOWER STAND (pictured right)

- Elevates tower for use with above ground indoor or remote tanks
- Since all Power Tower Cells include a structural base, stands are simple and inexpensive compared to stands for competitive cooling towers that often require special and more complex structures

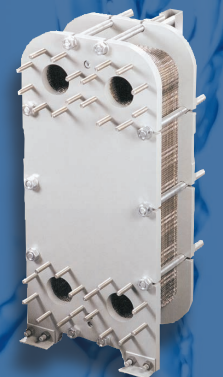
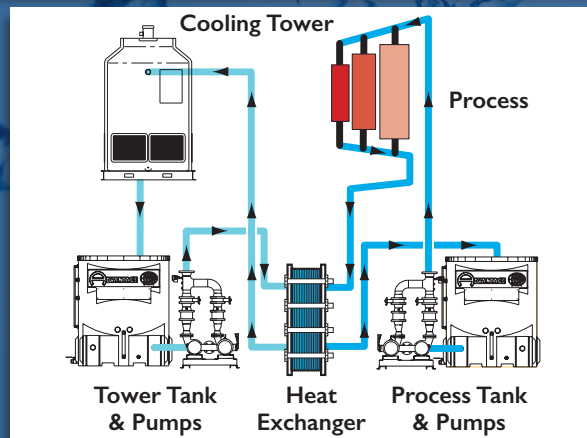
### OPTIONAL CLOSED LOOP SYSTEM

(See detailed information below)



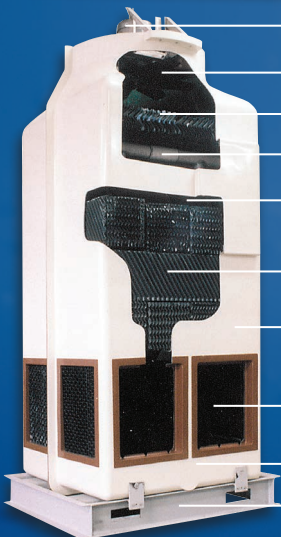
## Reduce Maintenance with a Closed Loop System

Closed loop systems use high efficiency plate and frame heat exchangers to isolate the process water from the water circulated through the cooling tower. Process water is isolated from the contaminants contained in the tower water loop keeping the process water clean and decreasing maintenance needs for hydraulic heat exchangers, molds, rolls, chiller condensers and other equipment.



Heat Exchanger

## Built for the Industrial Environment



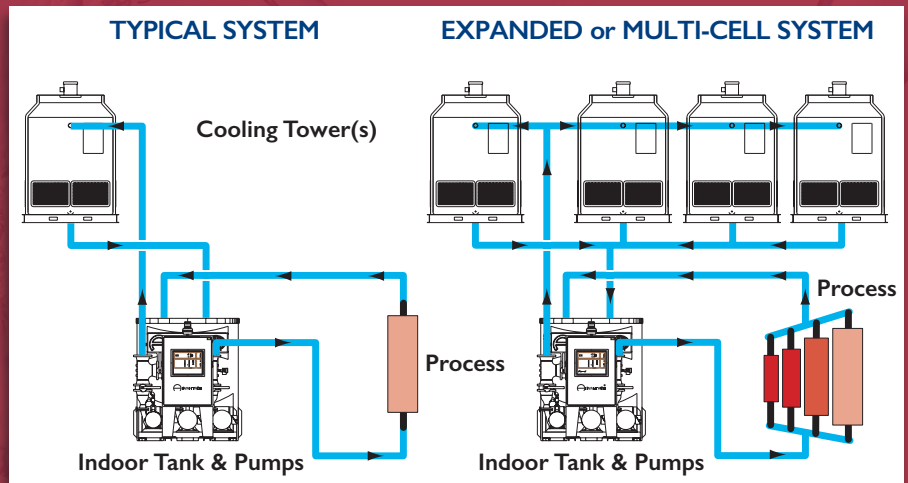
- Fan Motor With Stainless Steel Support Framework
- Air-Foil Shaped Glass Filled Polypropylene Fan Blades
- Drift Eliminator
- Stationary Water Distribution Header and Spray Nozzles
- Inspection Cover
- Stacked Honey Comb Wet Deck
- Wet Deck Shelf and Flow Diverter (not visible)
- Inlet Louvers
- Flooded Sump Outlet
- Structural Steel Base



## TYPICAL FLOW SCHEMATIC – OPEN LOOP SYSTEM

Most Advantage cooling tower systems employ a two pump system with a pump dedicated to process flow and a second pump dedicated to providing the proper flow through the cooling tower. A two pump system is preferred because process flow often changes based on production demand changes while the second pump delivers a constant flow to the tower to maximize cooling efficiency.

With advanced planning, your system can be expanded to meet future cooling needs and to provide system back up and redundancy.



	Model	TC-45F	TC-85F	TC-105F	TC-135F	TC-170F	TC-210F	TC-270F	TC-315F	TC-405F	TC-540F
<b>Water Capacity</b>	Tons <sup>1</sup>	45	85	105	135	170	210	270	315	405	540
<b>Flow Rate</b>	GPM	135	255	315	405	510	630	810	945	1,215	1,620
<b>Fan (direct drive)</b>	Quantity	1	1	1	1	2	2	2	3	3	4
	RPM	1,170	1,170	1,170	870	1,170	1,170	870	1,170	870	870
	CFM (total)	12,040	21,700	25,000	30,500	43,400	50,000	61,000	76,388	91,500	122,000
<b>Fan Motor</b>	Quantity	1	1	1	1	2	2	2	3	3	4
	Fan HP (each)	3	5	10	7.5	5	10	7.5	10	7.5	7.5
	Total Nameplate HP	3	5	10	7.5	10	20	15	30	22.5	30
	Amps @ 230/3/60	9.2	14.6	28.2	24.2	29.2	56.4	48.4	84.6	72.6	96.8
	Amps @ 460/3/60	4.6	7.3	14.1	12.1	14.6	28.2	24.2	42.3	36.3	48.4
	Amps @ 575/3/60	3.7	5.8	11.5	9	11.6	23.0	18.0	34.5	27.0	36.0
<b>Tower Connections (inches)</b>	To Tower	3	4	4	4	6	6	6	2@6	2@6	2@6
	From Tower (drain <sup>2</sup> )	4	6	6	6	10	10	10	2@10	2@10	2@10
	Drain Location	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
<b>Dimensions (inches)</b>	Height	138	138	138	140	138	138	140	140	140	140
	Length	60	84	84	96	145	145	169	217	254	338
	Depth	49	73	73	85	84	84	96	84	96	96
<b>Weight (pounds)</b>	Dry	725	1,290	1,390	1,950	2,210	2,250	3,125	4,000	5,350	6,800
	Wet	1,470	3,100	3,200	4,200	5,600	5,640	7,800	10,700	11,000	15,000
	Shipping	1,100	1,580	1,680	1,950	2,210	2,250	3,125	4,000	5,350	6,800

1. Cooling water from 95°F to 85°F at 3 gpm/ton and 78°F wet bulb temperature. 2. When used with remote sump. Consult factory for connection size when the base of the tower will be used as the water reservoir. The treatment of cooling tower water is critical. Chemicals and biocides or other treatment systems must be used in quantities and combinations sufficient to control the presence of Legionella, minimize biofilms and prevent scaling and corrosion. Always consult with a local water treatment expert.

### Model Designator for Power Tower Series Cooling Towers

TC — 135 F

Cooling Tower      Tons of Capacity      Construction F : Fiberglass



**Proudly Made In The USA since 1977**

*Since product innovation and improvement is our constant goal, all features and specifications are subject to change without notice or liability.*

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