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■ Note: This specification may be changed without notice due to design improvements.

Main Features:

Sabalan Cooling Towers

SABALAN GOSTAR TAHVIEH counter flow, forced draft Cooling Towers offer durability, high performance, whisper-quiet operation and low pressure drop and are ranged in capacities of 10 to 1140 tons of refrigeration in two different types of single and two stage(s).

In counter flow forced draft cooling towers, air is forced upward through the packing by centrifugal blowers while the condenser returnee water flows downward over the cooling surfaces and into the tower basin.

Casing

All the integralparts are enclosed in rigidly constructed casing made of galvanized iron sheet, while the blowers have their own housings.

Basin

The basin is made of heavy galvanized iron sheets and includes make up, drain, suction,overflow and quick fill connection.

Blowers

Double inlet, forward curved, centrifugal blowers are statically and dynamically balanced, so these offer a smooth running and quiet operation. Fans and fan housings are made of galvanized steel sheets. And Drip-proof, fan cooled, 3 phase, 380 volts, 50 cycle electric motors are used to match the required brake horsepower.

TABLE 1
Engineering Data

UNIT SIZE	CT0010	CT0015	CT0020	CT0025	CT0030	CT0035
Normal Capacity (tons)	10	15	20	25	30	35
Waterflow Rate (gpm)	30	45	60	75	90	105
Pressure Drop (ft)	22	22	22	22	22	22
		Blower				
Number	1	1	1	1	1	1
Size (inch)	14	16	17	19	22	22
Motor Number & Power (hp)	1x0.75	1x1.5	1x2.0	1x3.0	1x3.0	1x4.0
Airflow Rate (CFM)	2800	4200	5600	7000	8400	9800

UNIT SIZE	CT0040	CT0050	CT0060	CT0075	CT0090	CT0105
Normal Capacity (tons)	40	50	60	75	90	105
Waterflow Rate (gpm)	120	150	180	225	270	315
Pressure Drop (ft)	22	23	23	23	23	23
		Blower				
Number	1	1	2	2	2	2
Size (inch)	22	22	14	16	17	19
Motor Number & Power (hp)	1x5.5	1x7.5	1x7.5	1x10	1x10	1x10
Airflow Rate (CFM)	11200	14000	17000	21000	23500	28000

UNIT SIZE	CT0120	CT0140	CT0160	CT0180	CT0220	CT0260
Normal Capacity (tons)	120	140	160	180	220	260
Waterflow Rate (gpm)	360	420	480	540	660	780
Pressure Drop (ft)	23	23	23	23	23	23
		Blower				
Number	3	3	4	4	5	6
Blowers Size (inch)	22	22	22	22	22	22
Motor Number & Power (hp)	1x10	1x10	2x10	2x10	2x10	3x10
Horsepower	1x5.5	1x5.5			1x5.5	
Airflow Rate (CFM)	34000	39000	45000	48500	55000	66000

UNIT SIZE	CT0300	CT0350	CT0400	CT0450	CT0500	CT0580
Normal Capacity (tons)	300	350	400	450	500	580
Waterflow Rate (gpm)	900	1050	1200	1350	1500	1740
Pressure Drop (ft)	23	23	23	23	23	23
		Blower				
Number	7	8	10	12	12	14
Blowers Size (inch)	22	22	22	22	22	22
Motor Number & Power (hp)	3x10	4x10	4x10	6x10	6x10	6x10
Horsepower	1x5.5		2x5.5			2x5.5
Airflow Rate (CFM)	78000	90000	110000	128000	132000	154000

UNIT SIZE	CT0660	CT740	CT0820	CT0900	CT0980	CT1100
Normal Capacity (tons)	660	740	820	900	980	1100
Waterflow Rate (gpm)	1980	2220	2460	2700	2940	3300
Pressure Drop (ft)	23	23	23	23	23	23
		Blower				
Number	16	18	20	22	24	28
Blowers Size (inch)	22	22	22	22	22	22
Motor Number & Power (hp)	8x10	8x10	10x10	10x10	12x10	14x10
Horsepower		2x5.5		2x5.5		
Airflow Rate (CFM)	176000	198000	220000	242000	264000	308000

- Note: Capacity ratings are based on 70°F EWB, 95°F EWT and 85°F LWT.

TABLE 2
Dimensions & Connections Size

UNIT SIZE	CT0010	CT0015	CT0020	CT0025	CT0030	CT0035	CT0040	CT0050	CT0060	CT0075
Dimensions (mm)										
L	1000	1050	1150	1200	1300	1300	1300	1300	2000	2100
W	3050	3150	3250	3350	3450	3450	3450	3450	3050	3150
H	2040	2040	2040	2040	2240	2240	2240	2240	2740	2740
F	930	930	930	930	930	930	930	930	930	930
Connections size (inch)										
A	1 1/2"	1 1/2"	2"	2"	3"	3"	3"	3"	3"	3"
B	1 1/2"	1 1/2"	2"	2"	3"	3"	3"	3"	3"	3"
C	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
D	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"	1"	1"
Q	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"	1"	1"
O	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"

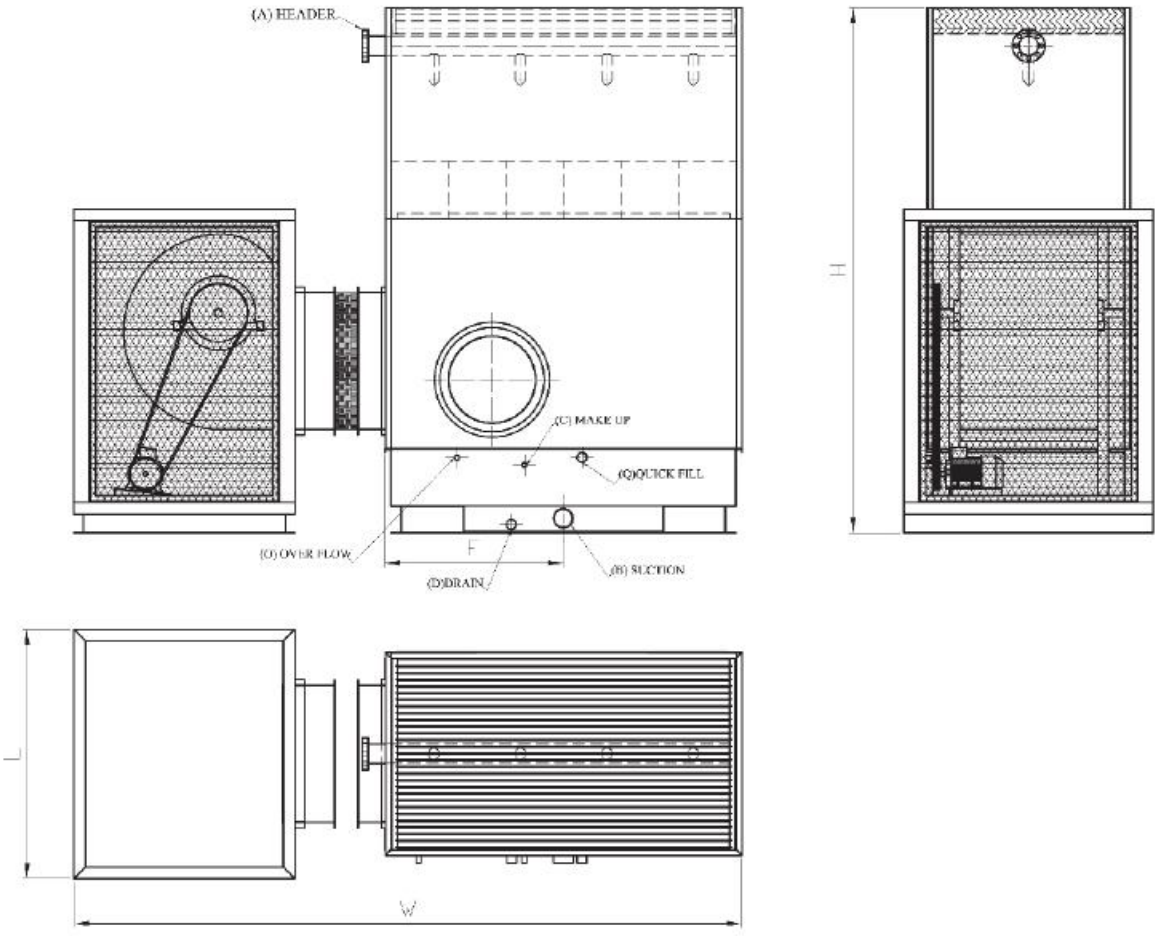
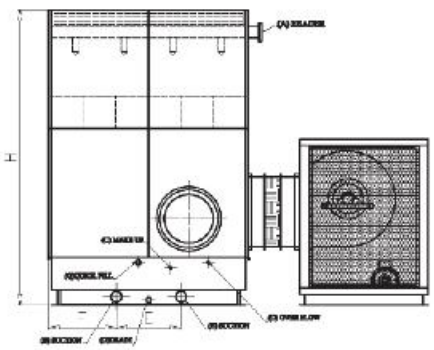
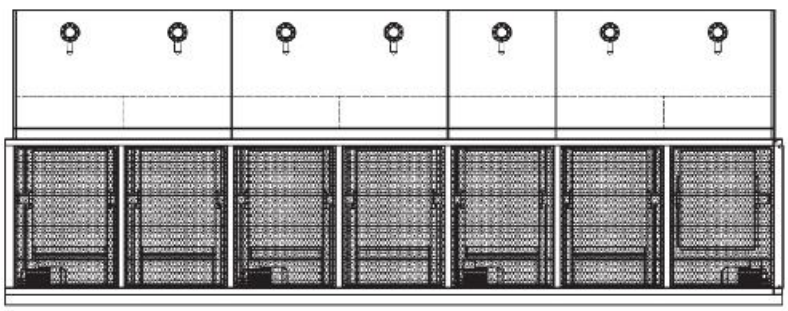


TABLE 2 (Continued)
Dimensions & Connections Size

UNIT SIZE	CT0090	CT0105	CT0120	CT0140	CT0160	CT0180	CT0220	CT0260	CT0300	CT0350
Dimensions (mm)										
L	2200	2400	3500	3500	4600	4600	5800	7000	8200	4600
W	3250	3350	3450	3450	3450	3450	3450	3450	3450	6900
H	2740	2740	2740	2740	2740	2740	2740	2740	2740	2740
F	930	930	930	930	630	630	630	630	630	630
E	-	-	-	-	600	600	600	600	600	600
Connections size (inch)										
A	4"	3 x 3"	3 x 3"	4 x 3"	4 x 3"	5 x 3"	6 x 3"	6 x 3"	8 x 3"	8 x 3"
B	4"	4"	5"	5"	2 x 4"	2 x 4"	3 x 4"	3 x 4"	3 x 5"	4 x 4"
C	1"	1"	1"	1"	1"	1"	1"	1"	1 1/2"	2 x 1"
D	1"	1"	1"	1"	2 x 1"	2 x 1"	3 x 1"	3 x 1"	3 x 1"	4 x 1"
Q	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"
O	2"	2"	2"	2"	2"	2"	2"	2"	2 x 2"	2"





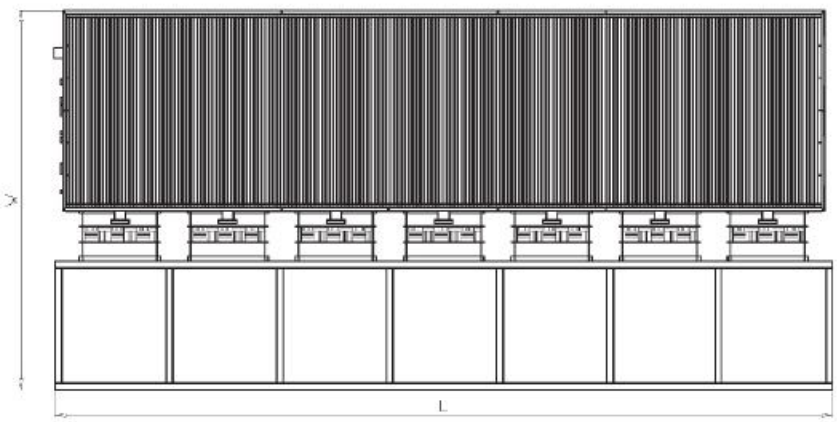
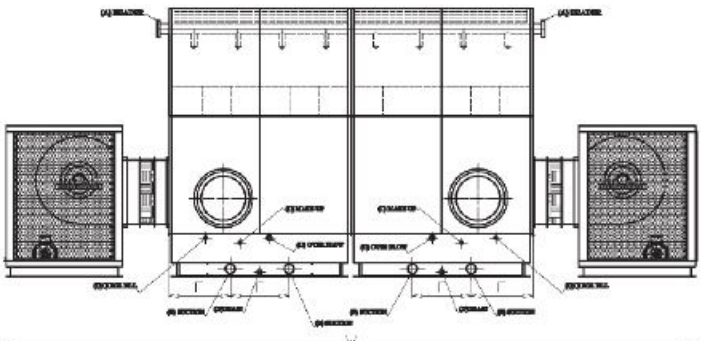
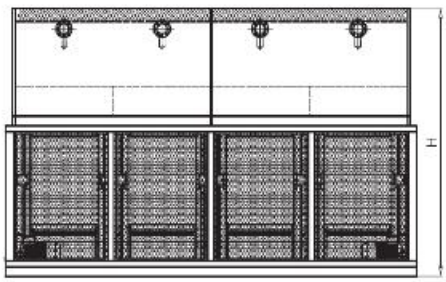
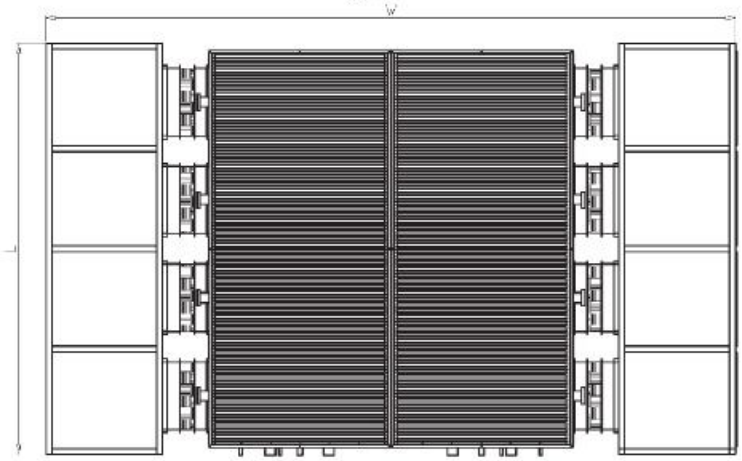


TABLE 2 (Continued)
Dimensions & Connections Size

UNIT SIZE	CT0400	CT0450	CT0500	CT0580	CT0660	CT0740	CT0820	CT0900	CT0980	CT1100
Dimensions (mm)										
L	5800	7000	7000	8200	9200	10600	11600	13000	14000	16400
W	6900	6900	6900	6900	6900	6900	6900	6900	6900	6900
H	2740	2740	2740	2740	2740	2740	2740	2740	2740	2740
F	630	630	630	630	630	630	630	630	630	630
E	600	600	600	600	600	600	600	600	600	600
Connections size (inch)										
A	10 x 3"	12 x 3"	12 x 3"	14 x 3"	16 x 3"	18 x 3"	20 x 3"	22 x 3"	24 x 3"	28 x 3"
B	4 x 5"	4 x 5"	4 x 5"	4 x 5"	4 x 5"	6 x 5"	6 x 5"	6 x 5"	8 x 5"	8 x 5"
C	2 x 1"	2 x 1"	2 x 1"	4 x 1"	4 x 1"	4 x 1"	4 x 1"	4 x 1"	4 x 1"	4 x 1"
D	4 x 1"	4 x 1"	4 x 1"	4 x 1"	4 x 1"	2 x 1 1/2"	2 x 1 1/2"	2 x 1 1/2"	2 x 1 1/2"	2 x 1 1/2"
Q	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"
O	2 x 2"	2 x 2"	2 x 2"	4 x 2"	4 x 2"	4 x 2"	4 x 2"	4 x 2"	4 x 2"	4 x 2"







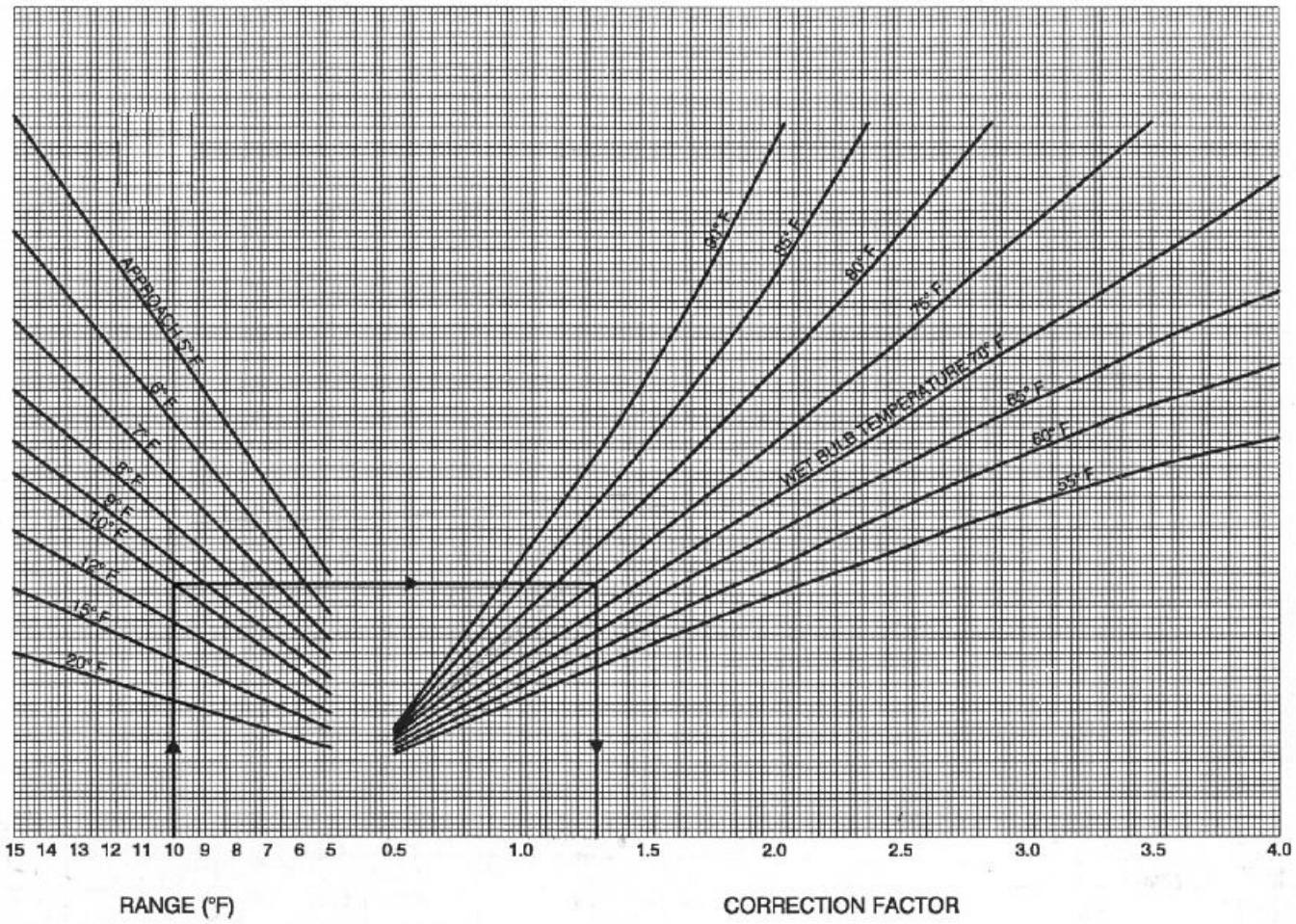


FIGURE 1. COOLING TOWER CORRECTION FACTORS

Selection Procedure

Select the proper size of centrifugal cooling towers for whatever application desired, as illustrated by the following example :

Example

Selected a centrifugal cooling tower for following conditions:

Waterflow Rate	320gpm
Inlet Water Temperature	95°F
Outlet Water Temperature	85°F
Inlet Air Wet-Bulb Temperature	75°F

Step 1:

Table 1 shows the capacity of cooling towers at nominal conditions.

Nominal conditions are as followings:

Wet-Bulb Temperature	70°F
Inlet Water Temperature	95°F
Outlet Water Temperature	85°F

At Nominal conditions find cooling tower nominal capacity by dividing cooling waterflow rate by 3:

Nominal Capacity =Water Flow Rate (gpm)/3

In this example it is : 320/3=107 Ton

Step 2:

For other conditions find actual cooling tower capacity by applying correction factors.

Actual Capacity = Nominal Capacity*Correction Factor

Correction Factors can be obtained from Figure 1 :

Degree Range = 95 -85=10

Approach Temperature =85°F-75°F=10°F

Correction Factor = 1.3

Actual Capacity = 107*1.3=1 39 tons

Step 3:

From table 1 model CT 0140 is selected.