

INTERCOOL FRP COOLING TOWERS

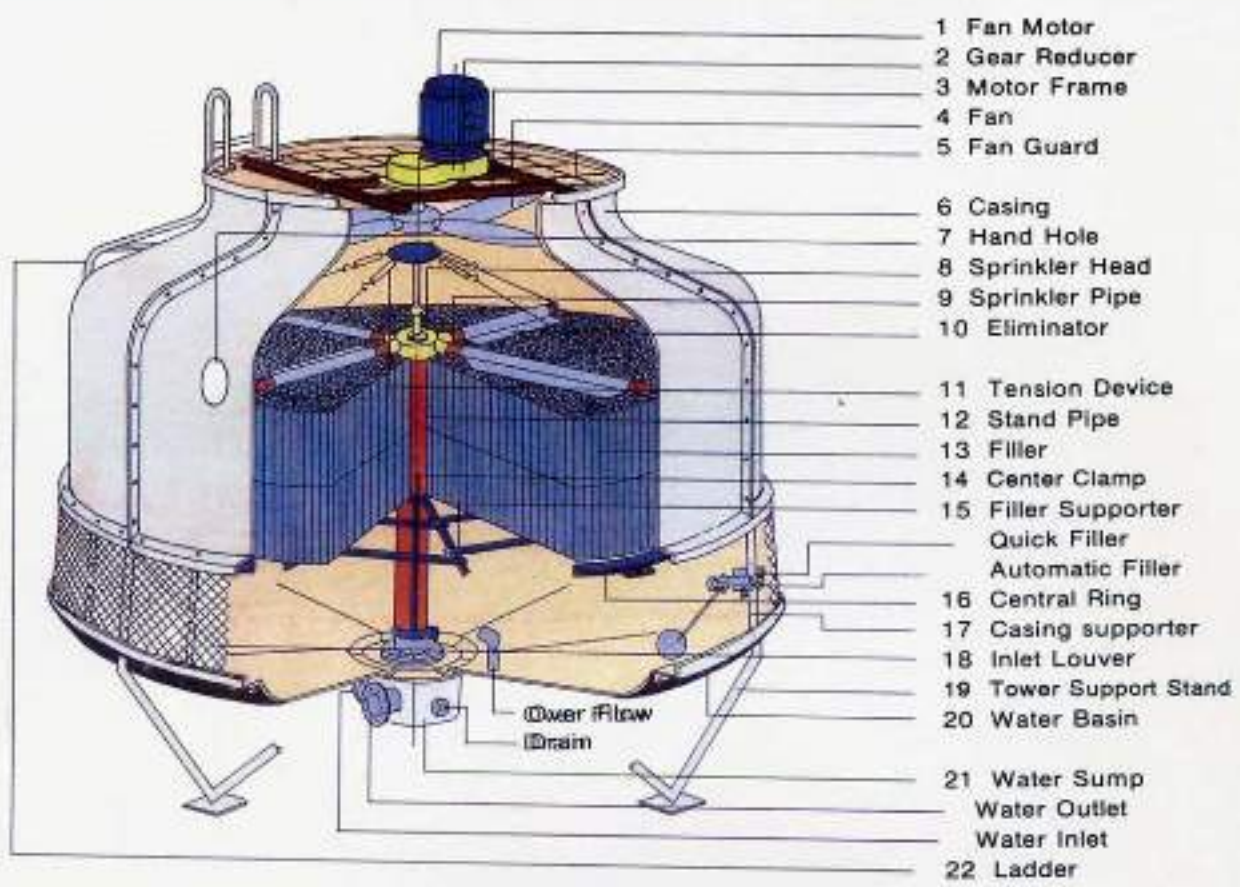
IC SERIES



INTERCOOL

COOLING TOWER, INC.

Interior View of "INTERCOOL" Cooling Tower



STANDARD SPECIFICATIONS

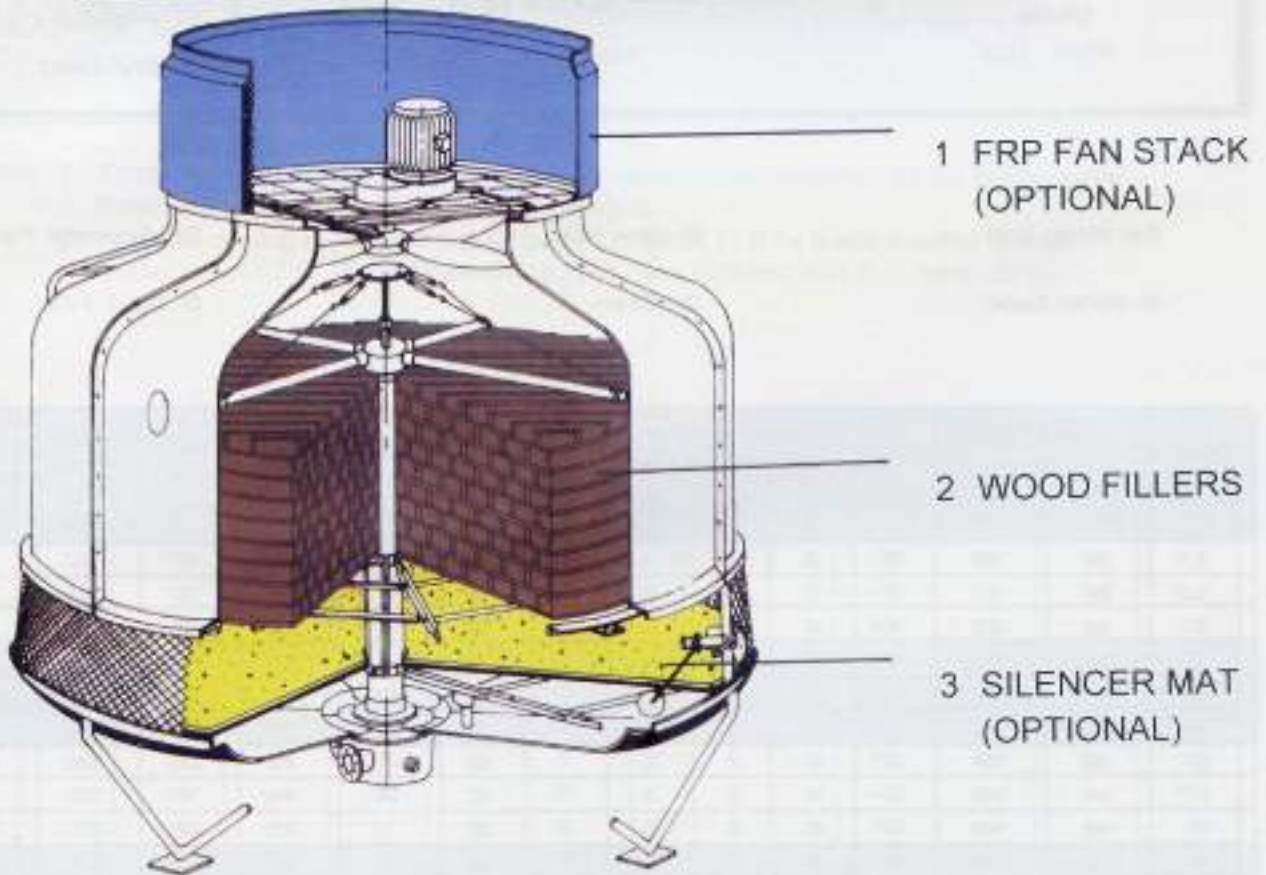
Model	IC	3	10	20	30	40	50	60	100	150	225	300	400	1500	
1 Fan Motor		*TECO* Brand				220/440/30/60Hz				TEFC					
2 Fan Drive		Direct										Gear Reducer			
3 Motor Frame		Hot Dip Gal. Steel													
4 Fan		Plastic Alloy				Alluminum Alloy									
5 Fan Guard		NO NEED				Hot Dip Gal. Steel									
6 Casing		F.R.P.													
7 Hand Hole		PE													
8 Sprinkler Head		Nylon				Alluminum Alloy									
9 Sprinkler Pipe		P.V.C.													
10 Eliminator		NO NEED				F.R.P.									
11 Tension Device		NO NEED													
12 Stand Pipe		P.V.C.													
13 Filler		P.V.C Honeycomb													
14 Center Clamp		Hot Dip Gal. Steel													
15 Filler Supporter		P.V.C.		Hot Dip Gal. Steel											
16 Central Ring														Hot Dip Gal. Steel	
17 Casing Supporter		Nylon				Hot Dip Gal. Steel									
18 Inlet Louver		P.V.C.													
19 Tower Support Stand		F.R.P.				Hot Dip Gal. Steel									
20 Water Basin		F.R.P.													
21 Water Sump						Build-In				F.R.P.					
22 Ladder		NO NEED				Hot Dip Gal. Steel									

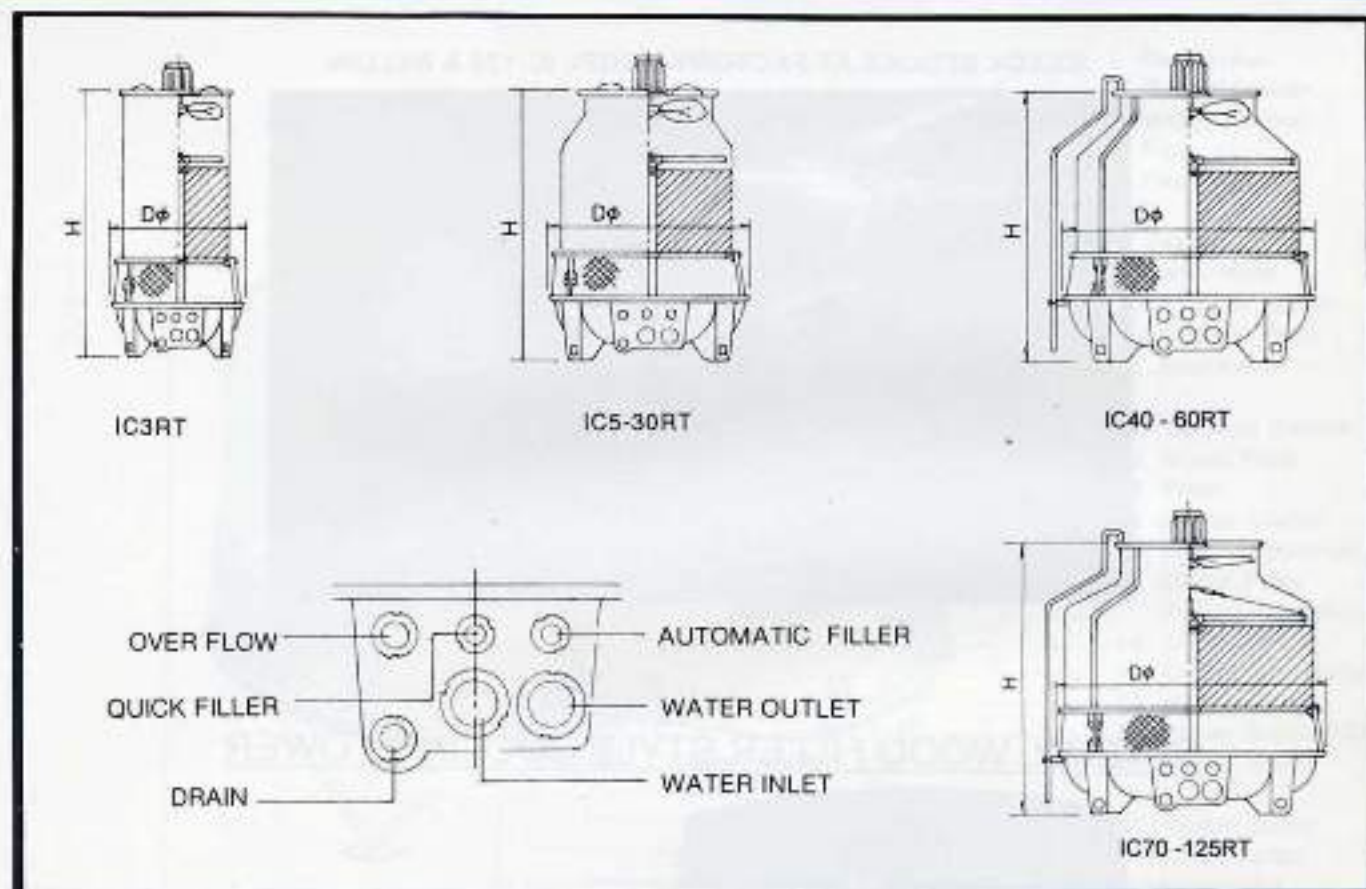
Installations all over the Philippines

READY STOCKS AT FACTORY MODEL IC-125 & BELOW.



HI-TEMP. WOOD FILLER STYLE COOLING TOWER





De: Water Inlet

O: Over Flow

Ba: Automatic Filler

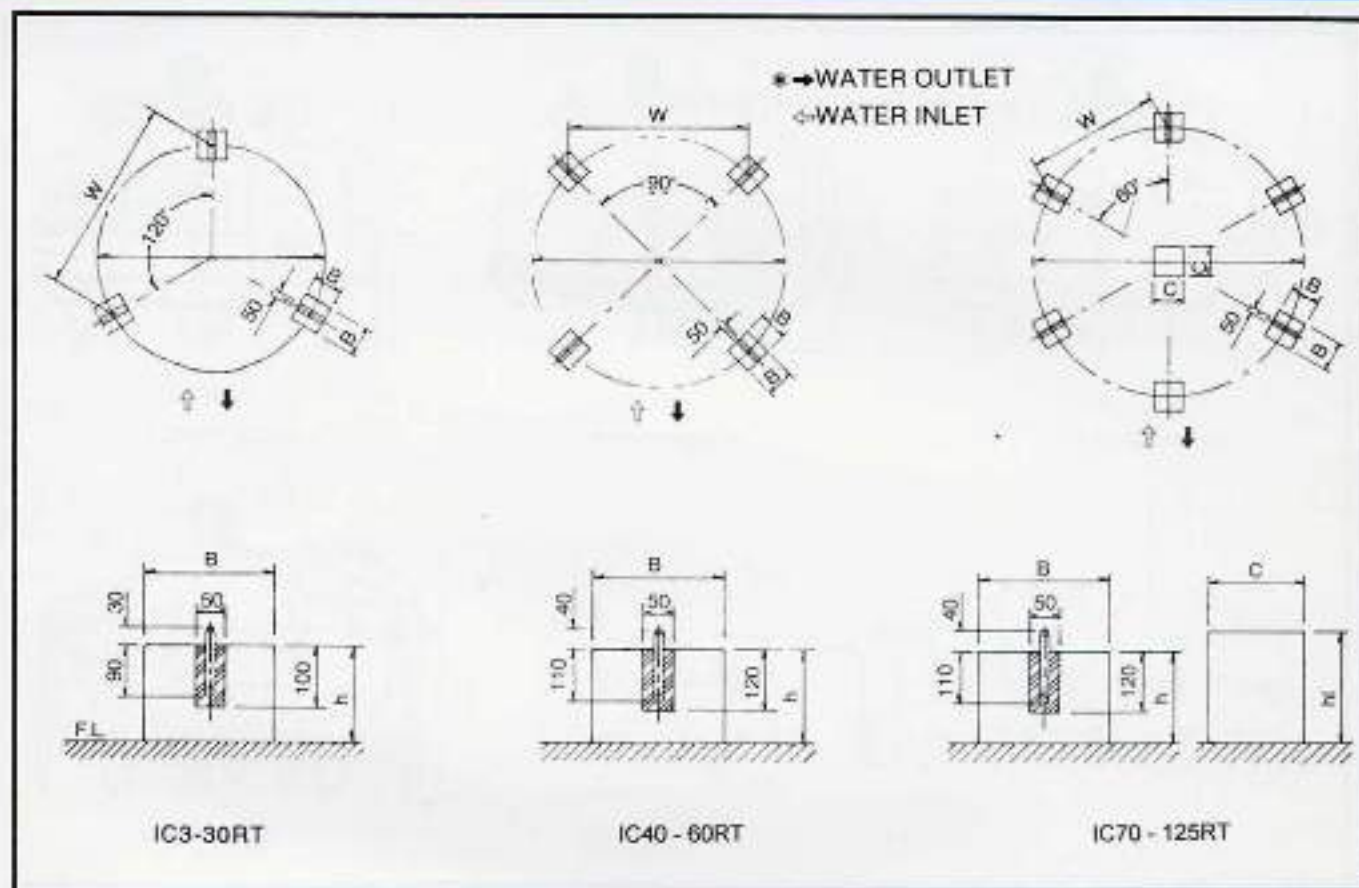
S: Water Outlet

Dr.: Drain

Q: Quick Filler

Tower Model IC	Dimension		Pipe Connection (m/m)						Fan Motor HP	Fan Dia m/m	Air Volume m ³ /min	Nominal Water Flow t/min	Pump Head M
	Dφ m/m	H m/m	De	S	O	Dr	Ba	Q					
3	960	1200	25	25	25	15	15		1/6	900	45	39	1.3
5	985	1320	40	40	25	25	15	15	1/6	900	55	65	1.5
8	985	1510	40	40	25	25	15	15	1/6	900	70	104	1.5
10	980	1450	40	40	25	25	15	15	1/4	600	95	130	1.5
15	1140	1480	50	50	25	25	15	15	1/4	600	140	195	1.7
20	1380	1740	50	50	25	25	15	15	1/2	700	175	260	1.7
25	1380	1890	65	65	25	25	15	15	1/2	700	205	325	1.8
30	1580	1810	65	65	25	25	15	15	1/2	700	240	390	1.8
40	1865	1870	65	65	25	25	20	20	1	900	280	520	2.0
50	1865	2020	80	80	25	25	20	20	1	900	330	620	2.0
60	1865	2020	80	80	25	25	20	20	2	1200	420	780	2.0
70	2085	1920	100	100	25	25	20	20	2	1200	430	910	2.0
80	2085	2070	100	100	25	25	20	20	2	1200	450	1040	2.0
100	2690	2310	125	125	25	25	25	25	3	1500	700	1300	2.5
125	2690	2310	125	125	25	25	25	25	3	1500	830	1525	2.5

Foundation Dimension

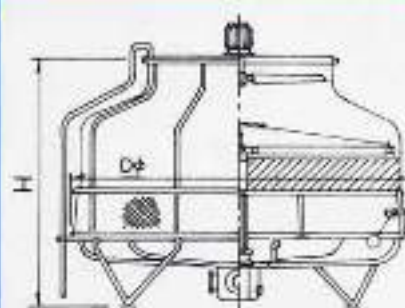


- REMARK 1. Pump Head is obtained by adding resistance of piping/condenser to the tower height. (Interior head loss is included in tower height)
2. Nominal cooling capacity is based on 13 ℓ/min/RT (1 RT= 3,900 Kcal/hr) at Inlet Water temp. 37°C, Outlet Water temp. 32°C and Ambient Wet Bulb temp. 27°C.

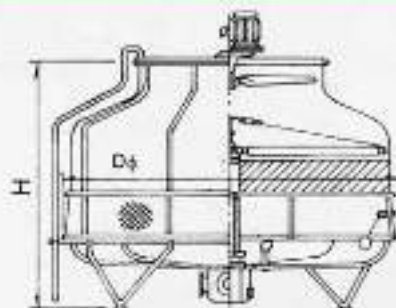
Tower Model IC	Approx Weight		Pipe Connection (m/m)						Anchor Bolt			Cooling Capacity K.Kcal/hr
	Dry kg	Operating kg	D1φ	W	B	C	h	h1	Size m/m	Length m/m	Quantity pcs.	
3	28	73	440	381	200		150		M13	120	3	11.7
5	35	110	590	511	250		150		M13	120	3	19.5
8	42	115	660	511	250		150		M13	120	3	31.2
10	55	150	702	608	250		150		M13	120	3	39
15	65	200	862	747	250		150		M13	120	3	58.5
20	87	230	1104	858	250		150		M13	120	3	78
25	100	300	1104	858	250		150		M13	120	3	97.5
30	110	390	1250	1082	250		150		M13	120	3	117
40	170	450	1580	1117	250		200		M13	150	4	166
50	195	480	1580	1117	250		200		M13	150	4	195
60	240	650	1580	1117	250	200	200	280	M13	150	4	234
70	280	680	1780	890	250	200	200	280	M13	150	6	273
80	280	730	1780	890	250	200	200	280	M13	150	6	312
100	420	1200	2370	1185	250	200	200	280	M13	150	6	390
125	450	1300	2370	1185	250	200	200	280	M13	150	6	487.5

IC150 - 1500

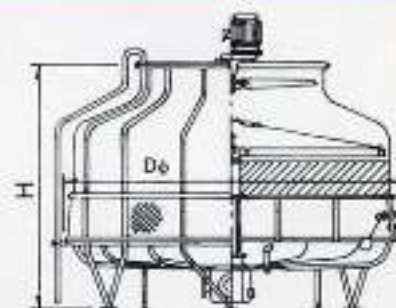
Dimension Table & Pipe Connection



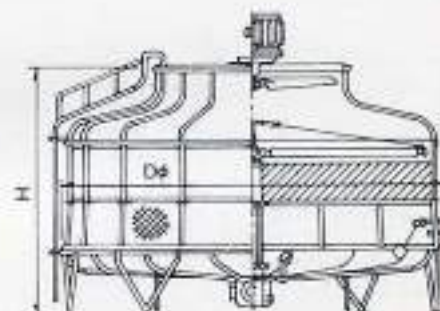
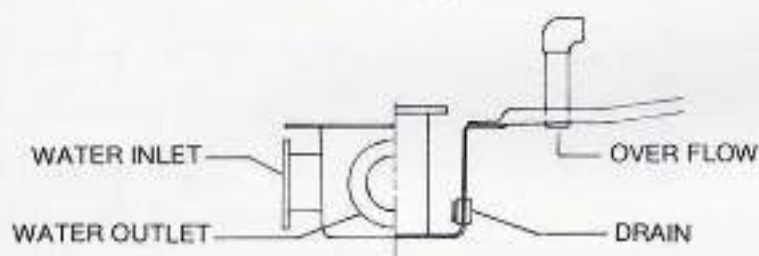
IC150-200RT



IC225-500RT



IC600-700RT



IC800-1500RT

De: Water Inlet

O: Over Flow

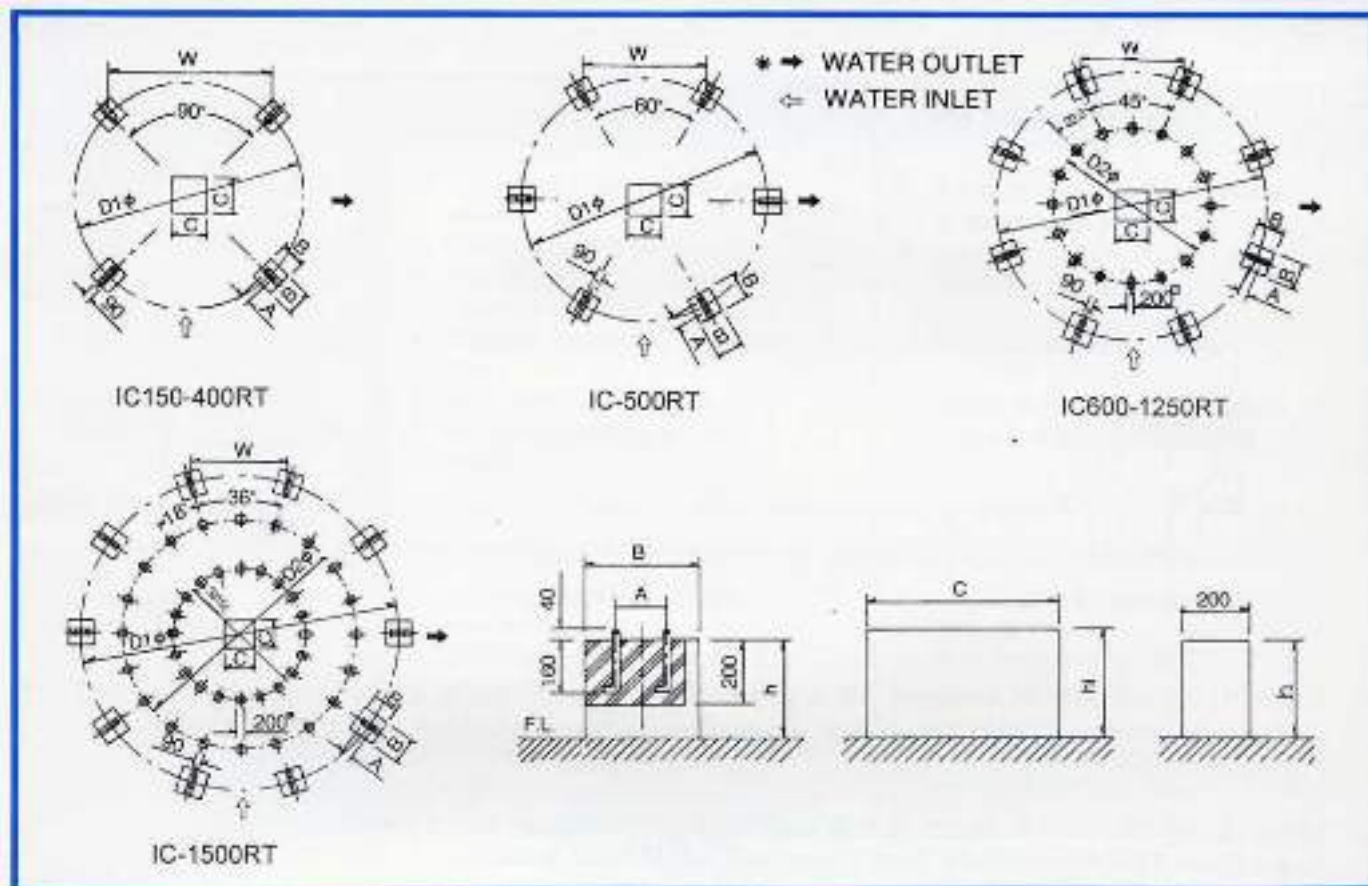
Ba: Automatic Filler

S: Water Outlet

Dr.: Drain

Q: Quick Filler

Tower Model IC	Dimension		Pipe Connection (m/m)						Fan Motor HP	Fan Dia m/m	Air Volume m ³ /min	Nominal Water Flow ℓ/min	Pump Head M
	Dφ m/m	H m/m	De	S	O	Dr	Ba	Q					
150	3340	2615	150	150	50	40	25	25	5	1,800	960	1,950	3.0
175	3340	2765	150	150	50	40	25	25	5	1,800	1,150	2,275	3.2
200	3740	2935	150	150	50	40	25	25	5	1,800	1,250	2,600	3.2
225	3740	3150	150	150	50	40	25	25	7 1/2	2,400	1,750	2,925	3.6
250	4040	3385	200	200	80	50	32	32	7 1/2	2,400	1,750	3,250	3.6
300	4440	3360	200	200	80	50	32	32	10	2,400	2,200	3,900	3.8
350	4840	3600	200	200	80	50	32	32	10	2,400	2,350	4,550	3.6
400	4840	3640	200	200	80	50	50	50	15	3,000	2,600	5,200	4.0
500	5600	4000	250	250	100	50	50	50	15	3,000	2,800	6,500	4.0
600	6600	4400	250	250	100	50	50	50	20	3,400	3,750	7,800	5.0
700	6800	4500	250	250	100	50	50	50	20	3,400	3,950	9,100	5.0
800	7600	4800	300	300	100	65	65	65	30	3,600	5,000	10,400	6.0
1000	7600	5000	300	300	100	65	65	65	30	3,900	5,200	13,000	6.0
1250	7600	6000	360	350	100	80	65	65	40	3,900	6,200	16,250	6.8
1500	8600	6000	360	360	100	80	65	65	40	4,200	6,500	19,500	6.8

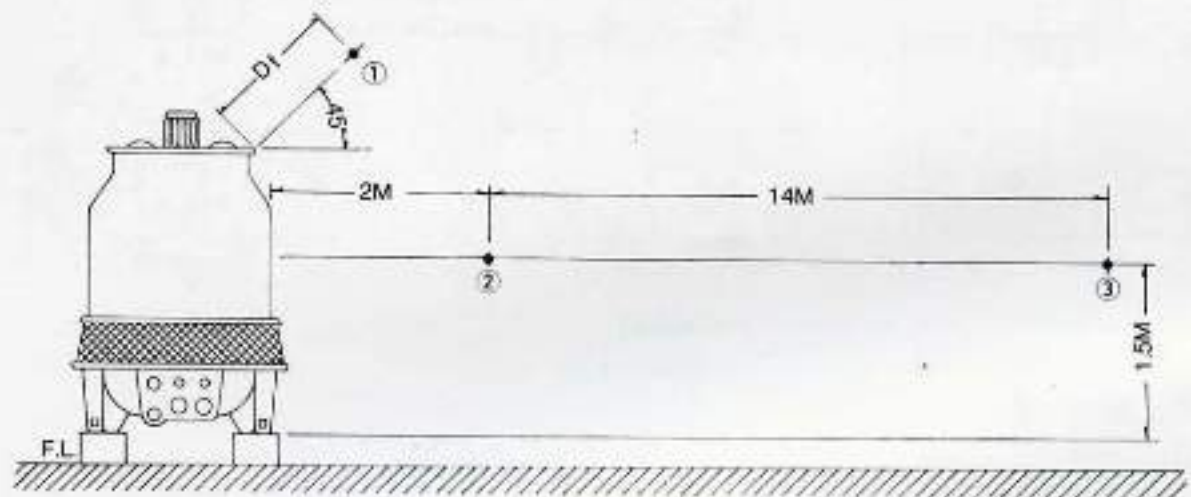


REMARK 1. Pump Head is obtained by adding resistance of piping/condenser to the tower height.
(Interior head loss is included in tower height)

2. Nominal cooling capacity is based on 13 ℓ/min/RT (1 RT= 3,900 Kcal/hr) at Inlet Water temp. 37°C, Outlet Water temp. 32°C and Ambient Wet Bulb temp. 27°C.

Tower Model IC	Approx Weight		Pipe Connection (m/m)								Anchor Bolt			Cooling Capacity K. Kcal/hr
	Dry kg	Operating kg	D1φ	D2φ	W	A	B	C	h	hi	Size m/m	Length m/m	Quantity pcs.	
150	785	1970	3220		2280	150	300	800	300	380	M16	200	8	565
175	860	2100	3220		2280	150	300	800	300	380	M16	200	8	582.5
200	980	2380	3610		2550	150	300	800	300	380	M16	200	8	780
225	1080	3480	3610		2553	150	300	800	300	380	M16	200	8	877.5
250	1320	3550	3910		2770	150	300	800	300	380	M16	200	8	975
300	1420	4050	4360		3090	150	300	800	300	380	M16	200	8	1170
350	1490	4300	4710		3330	150	300	800	300	380	M20	200	8	1385
400	1720	5600	4710		3330	150	300	800	300	380	M20	200	8	1560
500	2365	7500	5480		2740	150	500	800	300	380	M20	200	12	1950
600	3200	10500	6500	3900	2490	150	500	800	300	380	M20	200	16	2340
700	3400	10700	6500	3900	2490	150	500	800	300	380	M20	200	16	2730
800	4250	12800	7360	4490	2820	150	500	800	300	380	M20	200	16	3120
1000	4850	14000	7360	4490	2820	180	500	800	300	380	M20	200	16	3900
1250	6200	20400	7360	4490	2820	180	500	1000	300	400	M20	200	20	4870
1500	6800	26000	8500	6090	2627	160	500	1000	300	400	M20	200	20	5850

Noise Level



1. Point (1) as denoted in distance "Df" is at 45° angle and fan blade dimension away from the surface of casing. If the fan blade dimension is less than 1.5M ; 1.5M will be taken as minimum-distance.
2. Point (2) as denoted in distance 2 M horizontally from tower and 1.5M from ground, Point (3) is 16M horizontally from tower and 1.5 M from ground.
3. Value given on the table was taken with plenty of space around the cooling tower. If the surrounding conditions vary, so would the measured value.

TYPE	Measuring Point dB(A)			Lenght(m)
	1	2	3	
IC-3	59	56	45	Df
5	60	56	46	1.5
8	60	56	46	1.5
10	61	57	47	1.5
15	63	58	48	1.5
20	65	60	48	1.5
25	65	60	50	1.5
30	66	60	50	1.5
40	69	66	56	1.5
50	74	68	59	1.5
60	75	70	58	1.5
70	77	70	58	1.5
80	78	72	60	1.5
100	78	72	60	1.5
125	79	73	61	1.5

TYPE	Measuring Point dB(A)			Lenght(m)
	1	2	3	
IC-150	80	73	61	Df
175	80	74	62	1.8
200	80	74	62	1.8
225	77	72	61	2.4
250	77	73	62	2.4
300	78	73	62	2.4
350	79	74	63	2.4
400	80	75	65	3.0
500	81	76	66	3.0
600	80	75	66	3.6
700	81	76	67	3.6
800	82	77	67	3.9
1000	82	77	68	3.9
1250	84	80	70	4.2
1500	84	80	70	4.2

Trouble Analysis Chart

Trouble	Causes	Counter-measures
Rise in cooling water temperature	<ol style="list-style-type: none"> 1. Too much or too little cooling water. 2. Irregular flow of air taken in. 3. Recirculation of air exhausted from tower. 4. Irregular operation of sprinkler pipes. 5. Improper flow of fanned air. 6. Stopping up of the packing mesh. 	<ol style="list-style-type: none"> 1. Adjust to the volume specified in the design. 2. Improve ventilation. 3. Same as above. 4. Remove dust and scales. 5. Adjust the angle of fan blades. 6. Clean the stopped up mesh.
Drop in the volume of cooling water	<ol style="list-style-type: none"> 1. Stopping up of the sprinkler pipe holes. 2. Stopping up of strainer mesh. 3. Drop in the water level of water basin. 4. Mal-selection of water circulating pump. 	<ol style="list-style-type: none"> 1. See section for maintenance and control. 2. Remove dust and dirt. 3. Adjust pole tap and quick water supply. 4. Replace the pump with one matching planned volume of water.
Noise and vibration	<ol style="list-style-type: none"> 1. Possible touching of tower proper with tips of fan blades. 2. Improper mounting of fan blades. 3. Loose tightening bolts. 4. Trouble with geared motor. 5. Shortage of speed reducer grease 	<ol style="list-style-type: none"> 1. Adjust the fan mounting shaft. 2. Correct the mount. 3. Check for loose bolt and tighten them. 4. Repair or replacement of geared motor. 5. Supply grease up to the level specified.
Overcurrent for operation	<ol style="list-style-type: none"> 1. Drop in voltage. 2. Irregularities in the angles of the fan blades. 3. Trouble with the geared motor 4. Overload through over-air flow. 	<ol style="list-style-type: none"> 1. Measure voltage supplied and contact the power company. 2. Adjust carefully. 3. Have the maker repair or replace it. 4. Adjust the angle of fan blades.
Carry over	<ol style="list-style-type: none"> 1. Irregular operation of sprinkler pipes. 2. Stopping of the packing mesh. 3. Defective Eliminator. 4. Too much circulating water. 	<ol style="list-style-type: none"> 1. Adjust the angle of the sprinkler pipe and the sprinkler head. 2. Eliminate mesh stopping up at the upper edge of the packing. 3. Improve the standard eliminator. 4. Adjust the water flow by means of the valve.

IC – MODEL COOLING TOWER WATER QUANTITY AND TEMPERATURE SELECTION CHART

W-B	27 °C																						
RANGE	5			6			7			8			9			10			11			15	
Temp.	37	36	35	38	37	36	39	38	37	40	39	38	41	40	39	42	41	40	43	42	41	50	45
Model																							
	32	31	30	32	31	30	32	31	30	32	31	30	32	31	30	32	31	30	32	31	30	32	30
IC 3	39	30	23	33	25	20	28	24	18	25	21	15	24	19	-	22	18	-	21	-	-	24	-
5	65	50	40	56	42	36	48	39	32	43	36	25	40	30	27	36	28	-	32	25	-	41	-
8	104	84	69	89	74	57	79	66	52	73	60	46	65	55	44	62	52	42	55	48	40	71	33
10	130	107	86	113	95	75	100	85	68	93	75	60	85	70	58	77	65	53	72	60	50	90	42
15	195	156	122	170	138	105	153	125	97	140	115	90	125	107	85	120	100	76	110	92	72	135	66
20	260	218	170	230	190	155	208	175	140	190	155	133	175	150	120	165	140	115	155	135	105	190	95
25	325	272	190	288	238	188	259	218	173	238	195	162	219	188	148	205	173	140	196	165	128	238	118
30	360	325	210	345	285	220	310	260	205	285	235	190	262	225	175	245	205	165	235	195	150	285	140
40	520	440	350	465	390	305	415	350	280	390	320	265	347	300	241	335	285	228	315	270	215	380	190
50	650	545	415	570	485	375	510	430	345	470	400	320	440	360	290	410	350	275	390	330	265	470	235
60	780	640	500	680	560	440	630	510	400	570	490	370	525	435	340	505	415	330	465	390	315	580	290
70	910	755	585	805	675	535	730	618	495	675	580	460	628	530	425	601	500	405	560	475	363	690	345
80	1040	870	710	930	795	630	835	725	590	780	670	550	730	625	510	697	585	480	660	560	470	800	410
100	1300	1070	860	1150	980	750	1050	900	690	970	810	640	950	740	595	830	700	560	780	670	530	975	460
125	1625	1330	1070	1430	1180	950	1300	1080	880	1180	990	820	1020	920	750	1030	870	700	980	830	670	1200	580
150	1950	1600	1270	1720	1430	1120	1560	1320	1050	1430	1200	960	1320	1100	900	1250	1050	860	1170	1000	810	1440	680
175	2275	1900	1500	2040	1690	1320	1810	1520	1220	1670	1360	1150	1560	1310	1050	1450	1220	990	1370	1160	940	1700	800
200	2600	2150	1700	2300	1900	1500	2070	1750	1400	1920	1600	1310	1770	1490	1190	1660	1410	1120	1560	1340	1100	1950	910
225	2925	2530	1900	2620	2150	1680	2350	1950	1650	2180	1780	1450	2000	1650	1300	1880	1590	1270	1780	1490	1190	2170	990
250	3250	2700	2100	2900	2400	1850	2600	2180	1700	2440	1950	1600	2200	1800	1450	2100	1750	1390	1980	1690	1320	2410	1130
300	3900	3210	2510	3500	2850	2250	3150	2620	2050	2880	2350	1900	2700	2200	1750	2490	2120	1680	2360	2000	1600	2890	1330
350	4550	3800	2990	4020	3400	2700	3600	3090	2500	3370	2800	2330	3160	2610	2150	2920	2480	2050	2720	2360	1950	3400	1650
400	5200	4400	3500	4750	3900	3150	4200	3500	2900	3850	3250	2700	3600	3050	2500	3400	2900	2350	3200	2750	2250	3900	1940
500	6500	5550	4350	5850	5000	4200	5400	4550	3800	5050	4350	3700	4750	4090	3430	4550	3950	3300	4350	3800	3200	5200	2850
600	7800	6430	5070	6850	5700	4600	6100	5200	4250	5650	4700	3900	5200	4450	3600	4900	4100	3450	4700	4050	3600	6000	3000
700	9100	7700	6300	8150	7000	5800	7500	6450	5400	7000	6000	5050	6900	5670	4700	6250	5400	4500	6000	5200	4350	7300	3810
800	10400	8520	6860	9100	7850	6100	8100	6900	5650	7500	6300	5200	6900	5900	4900	6800	5500	4800	6250	5410	4600	8000	3950
1000	13000	11100	8970	11520	10100	8250	10700	9300	7800	10000	8550	7300	9450	8050	6900	8900	7700	6600	8500	7400	6300	10500	5800

NOTE: THE HUMIDITY OF AMBIENT ATMOSPHERE AFFECTS DIRECTLY THE OUTLET TEMPERATURE OF THE COOLING TOWER, WHILE IT CAN BE SELECTED AND ORDERED, IT SHALL DEPEND ON THE CHANGES OF OUTSIDE HUMIDITY TO DETERMINE THE PROPER MODEL OF THE COOLING TOWER.

W-B	28 °C																						
RANGE	5.5	5		6			7			8			9			10			11			15	
Temp.	36.6	36	39	38	37	40	39	38	41	40	39	42	41	40	43	42	41	44	43	42	50	46	
Model	31.1	31	33	32	31	33	32	31	33	32	31	33	32	31	33	32	31	33	32	31	35	31	
IC 3	24	24	35	29	22	30	24	19	28	24	18	26	21	-	23	19	-	22	18	-	23	-	
5	40	40	60	45	36	51	40	32	44	35	30	42	34	29	30	30	-	36	30	-	40	-	
8	66	69	96	77	62	82	69	56	76	64	51	73	69	46	65	54	44	60	51	42	70	35	
10	86	86	121	100	79	105	88	70	95	80	65	91	73	60	82	70	57	76	65	52	89	47	
15	125	130	180	148	120	155	135	105	145	120	95	140	110	88	125	105	87	115	98	78	131	67	
20	171	180	240	200	165	215	182	150	200	170	140	188	157	128	170	147	120	163	138	115	187	98	
25	220	223	303	250	205	270	229	185	248	210	170	234	194	157	213	181	146	202	172	142	230	119	
30	256	265	365	300	245	325	275	220	295	250	200	280	230	185	255	215	172	240	205	170	272	140	
40	350	380	490	400	320	430	360	300	390	340	280	375	310	255	350	300	240	330	280	230	370	197	
50	436	440	600	500	400	540	460	375	495	420	345	470	385	315	433	365	290	400	350	290	455	230	
60	504	530	710	600	470	630	540	435	600	510	405	590	470	370	525	435	345	490	420	350	530	280	
70	610	635	835	710	565	768	660	528	703	605	493	670	565	455	628	525	428	588	503	420	637	310	
80	715	740	960	820	660	875	760	620	805	700	580	790	690	540	730	615	510	695	585	490	745	430	
100	864	880	1250	1040	800	1100	930	740	1010	860	710	950	790	650	890	730	610	820	710	570	900	480	
125	1080	1100	1530	1260	1010	1360	1130	940	1230	1050	860	1180	960	800	1080	910	750	1010	870	720	1130	600	
150	1300	1350	1850	1520	1200	1630	1370	1100	1500	1270	1040	1420	1170	970	1310	1110	910	1230	1050	870	1360	715	
175	1500	1560	2180	1780	1420	1900	1600	1300	1730	1480	1210	1680	1360	1120	1530	1300	1050	1430	1220	1020	1600	850	
200	1735	1800	2480	2020	1600	2170	1840	1490	1990	1710	1400	1900	1570	1280	1750	1480	1210	1630	1410	1150	1800	960	
225	1940	2000	2780	2340	1900	2500	2100	1670	2290	1940	1570	2130	1780	1400	2000	1660	1370	1840	1590	1300	2030	1050	
250	2134	2200	3100	2560	2000	2780	2340	1850	2520	2140	1780	2400	1950	1570	2220	1860	1520	2050	1780	1450	2240	1150	
300	2520	2600	3700	3100	2400	3330	2800	2200	3040	2590	2100	2850	2360	1900	2650	2220	1830	2440	2120	1750	2700	1390	
350	3060	3200	4250	3560	2890	3820	3200	2650	3500	2950	2470	3350	2740	2270	3070	2590	2130	2880	2480	2060	3200	1750	
400	3540	3660	4900	4150	3350	4450	3700	3050	4050	3450	2850	3870	3200	2650	3600	3060	2450	3350	2850	2400	3700	2050	
500	4608	4750	6100	5250	4350	5650	4850	4050	5250	4550	3850	5000	4270	3640	4750	4150	3450	4500	3850	3350	4800	2900	
600	5240	5360	7300	5950	4800	6300	5400	4400	5850	5000	4100	5610	4850	3800	5200	4400	3560	4900	4200	3450	5600	3100	
700	6420	6600	8600	7250	6100	7800	6700	5650	7250	6300	5250	7000	5940	5000	6550	5700	4800	6250	5450	4600	6750	3950	
800	7000	7200	9600	8000	6450	8500	7200	5950	7750	6800	5400	7400	6100	5050	6900	5800	4900	6500	5500	4800	7480	4300	
1000	9288	9400	12000	10500	8650	11200	9600	8100	10500	9050	7600	9600	8500	7200	9400	8150	6950	8900	7800	6650	9650	5700	



MEMBER

INTERCOOL

COOLING TOWER, INC.

QUEZON CITY OFFICE:

NO. 13 SAINT MARY STREET, PARADISE VILLAGE, PROJECT 8, Q.C.

TEL. NO. 924-2797 / 926-9737 FAX NO. (0632) 924-2797

E-mail: intercool@thenet.ph / intercool5@yahoo.com.ph

CEBU OFFICE:

5 SUDLON STREET, LAHUG, CEBU CITY

TEL. NO. (032) 254-6761 * FAX NO. (032) 255-0403

ROBINSONS OFFICE c/o HI-COOL:

19TH FLR., ROBINSONS GALLERIA CORP. CENTER

EDSA CORNER ORTIGAS AVE., QUEZON CITY

FACTORY:

25 TANGUILE STREET, MARIKINA HEIGHTS, MARIKINA CITY, M.M.

Authorized Dealer

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