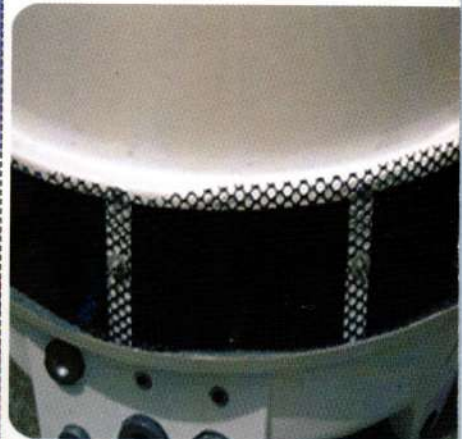


KS

WATER COOLING

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COUNTER FLOW MODEL KSR: 10 - 1200

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CTI CORPORATE MEMBER

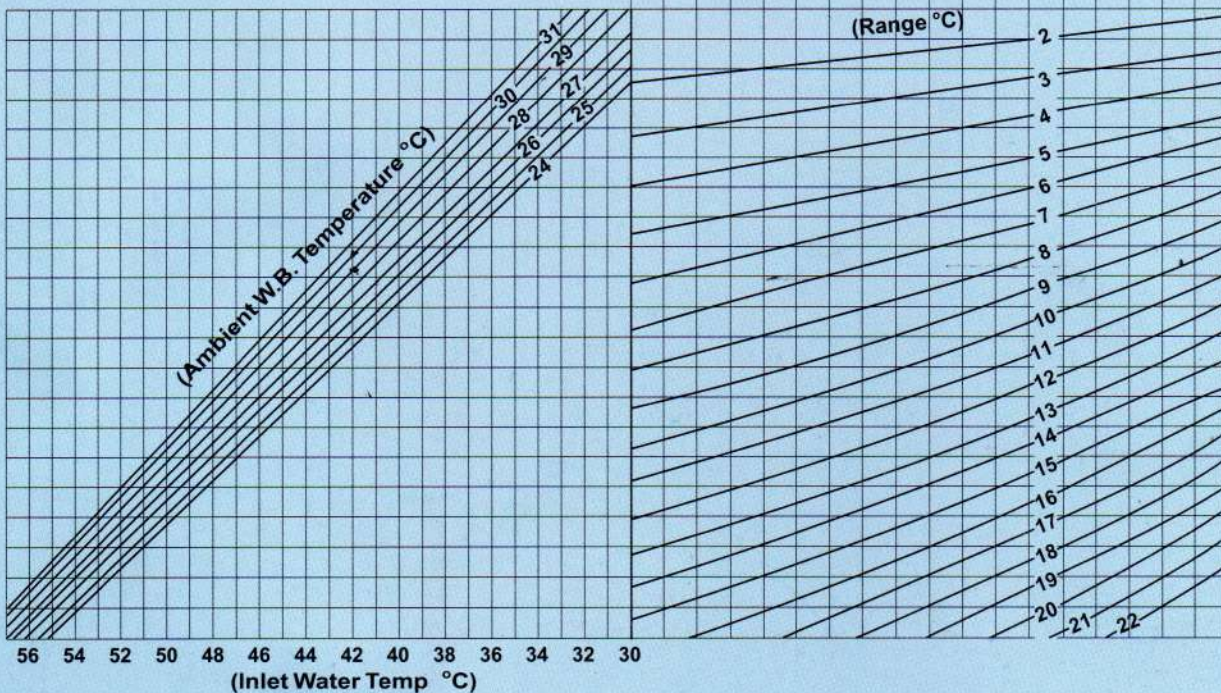
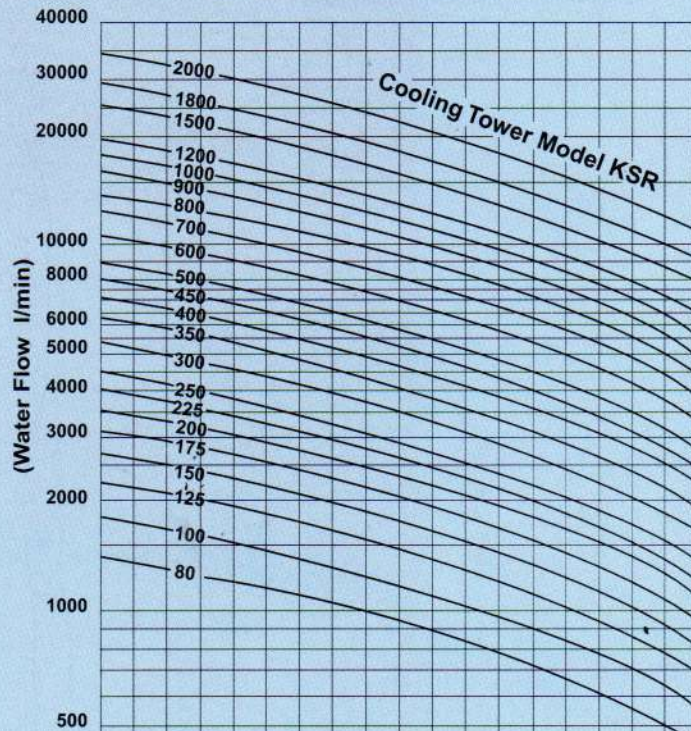


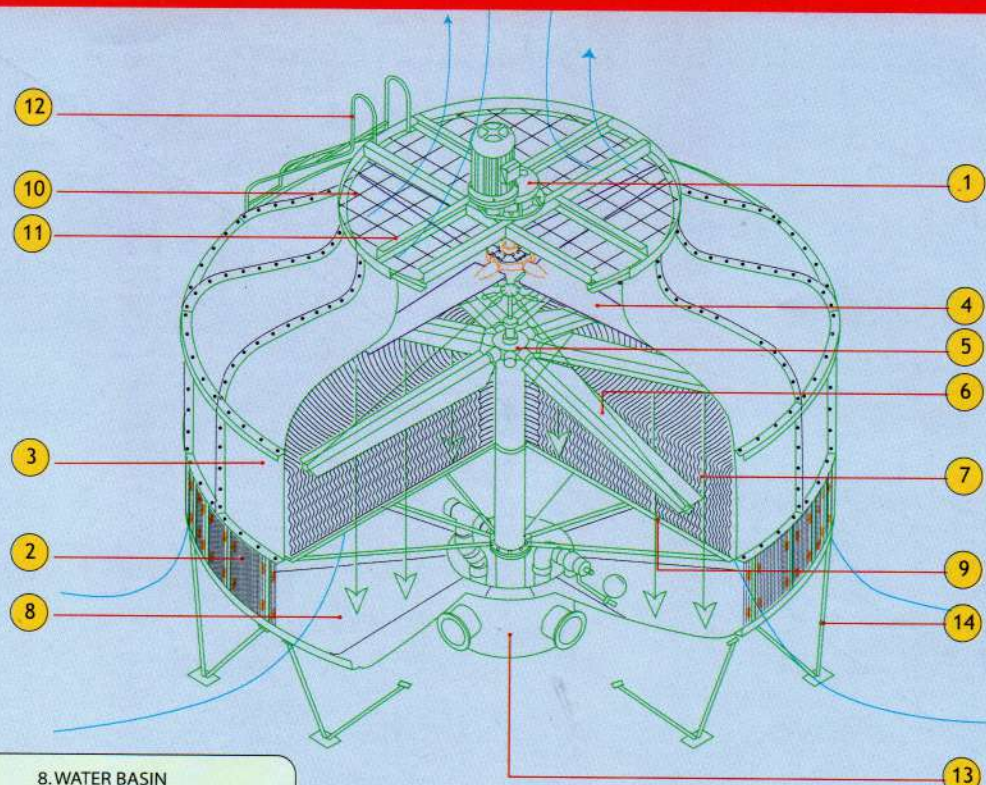
PERFORMANCE CURVE OF COOLING TOWER

SELECTION DATA FOR COOLING TOWER

	RT	SET
MODEL KSR		
	C	F
Inlet Temp.		
Outlet Temp.		
Range		
Ambient Temp. (W.B.)		
	l/min	GPM.
Flow Rate		

PROJECT	
DATE	




STRUCTURE

- | | |
|----------------------|-----------------------|
| 1. MOTOR & FAN DRIVE | 8. WATER BASIN |
| 2. AIR INLET MESH | 9. FILLER SUPPORT |
| 3. TOWER CASE | 10. FAN GUARD |
| 4. FAN BLADE & HUB | 11. MOTOR SUPPORT |
| 5. SPRINKLER HEAD | 12. LADDER |
| 6. DRIFT ELIMINATOR | 13. AUX. SUCTION TANK |
| 7. FILLER | 14. BASIN SUPPORT |

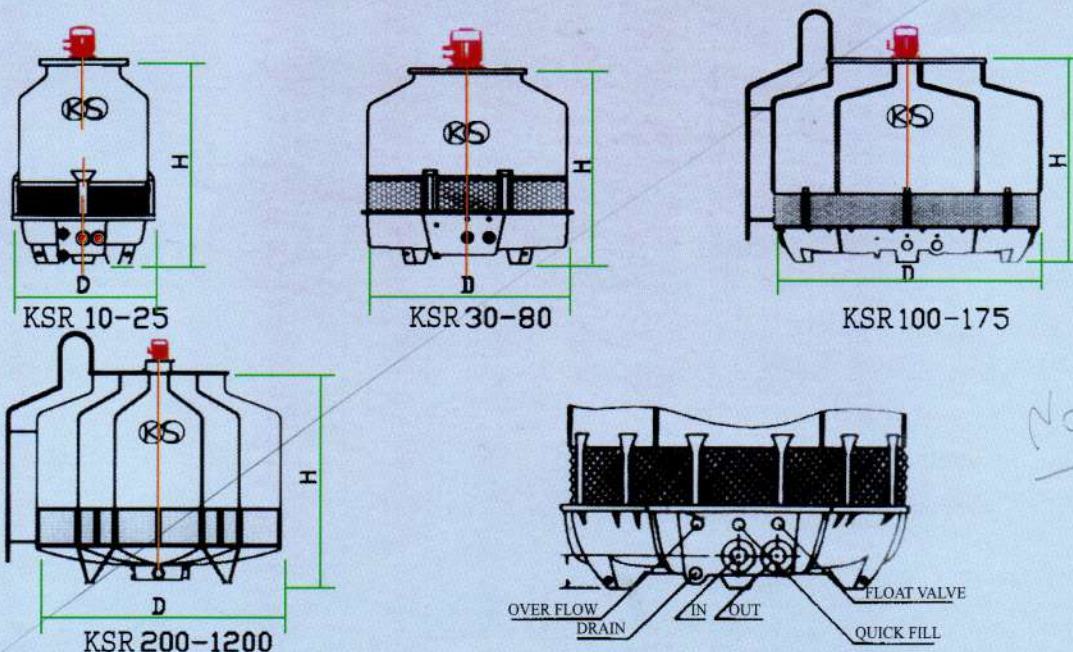
FLOW DIRECTION

- Cooling Water Flow
 Air Flow

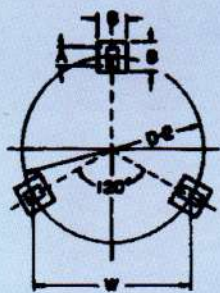
MATERIAL SPECIFICATION

MODEL KSR :	0 10 15 20 25 30 40 50 60 70 80 100 125 150 175 200 225 250 300 350 400 500 600 700 800 1000 1200																							
MOTOR	220 / 380 V., 3 Ph 50 / 60 Hz												380 / 660 V., 3 Ph 50 / 60 Hz											
FAN DRIVE	DIRECT DRIVE												SPEED REDUCER											
FAN BLADE	SS		ALUMINIUM ALLOY																					
CASING	FRP																							
SPRINKLER HEAD	SPECIAL ALLUMINIUM ALLOY WITH STAINLESS STEEL SHAFT																							
ELIMINATOR	NONE						FRP																	
FILLER	PVC																							
AIR INLET MESH	HDPE																							
LADDER	NONE						HDG																	
MOTOR SUPPORT	HDG																							
CASING SUPPORT	FRP												HDG											
BASIN SUPPORT	FRP												HDG											
STRAINER	STAINLESS STEEL MESH																							
WATER BASIN	FRP																							

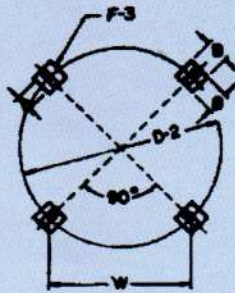
- HDG : HOT DIPPED GALVANIZED STEEL
 SS : STAINLESS STEEL
 PVC : POLYVINYL CHLORIDE
 HDPE : HIGH DENSITY POLYETHYLENE
 FRP : FIBER GLASS REINFORCED PLASTIC



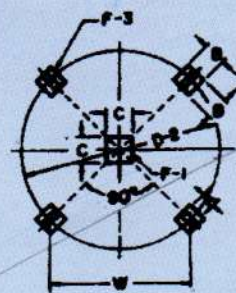
MODEL KSR	DIMENSION mm.		PIPE CONNECTION mm. (inch)						FAN MOTOR HP	FAN DIAMETER mm (inch)	AIR VOLUM M ³ /MIN.	NORMAL WATER FLOW l/min.	WEIGHT : kg.	
	H	D	IN	OUT	OVER FLOW	DRAIN	FLOAT VALVE	QUICK FILL					DRY	OPR
10	1370	960	40 (1½)	40 (1½)	25 (1)	25 (1)	15 (1/2)	15 (1/2)	1/4	460 (18)	74	130	50	180
15	1430	1100	50 (2)	50 (2)	25 (1)	25 (1)	15 (1/2)	15 (1/2)	1/2	620 (24)	140	195	65	240
20	1500	1200	50 (2)	50 (2)	25 (1)	25 (1)	15 (1/2)	15 (1/2)	1/2	620 (24)	180	260	90	320
25	1630	1380	65 (2½)	65 (2½)	25 (1)	25 (1)	15 (1/2)	15 (1/2)	1	820 (33)	200	325	95	400
30	1720	1570	65 (2½)	65 (2½)	25 (1)	25 (1)	15 (1/2)	15 (1/2)	1	850 (33)	230	390	110	500
40	1690	1760	80 (3)	80 (3)	25 (1)	25 (1)	20 (3/4)	20 (3/4)	1	960 (38)	280	520	165	580
50	1760	1950	80 (3)	80 (3)	25 (1)	25 (1)	20 (3/4)	20 (3/4)	1	960 (38)	330	650	205	630
60	1860	1950	80 (3)	80 (3)	25 (1)	25 (1)	20 (3/4)	20 (3/4)	1½	960 (38)	420	780	225	650
70	1960	2120	100 (4)	100 (4)	25 (1)	25 (1)	20 (3/4)	25 (1)	1½	1160 (46)	500	910	280	710
80	1960	2120	100 (4)	100 (4)	25 (1)	25 (1)	20 (3/4)	25 (1)	1½	1160 (46)	540	1040	300	730
100	2080	2650	100 (4)	100 (4)	25 (1)	25 (1)	25 (1)	25 (1)	2	1500 (60)	700	1300	420	1090
125	2250	2900	125 (5)	125 (5)	50 (2)	25 (1)	25 (1)	25 (1)	2	1500 (60)	830	1675	470	1360
150	2640	3460	125 (5)	125 (5)	50 (2)	50 (2)	32 (1¼)	32 (1¼)	3	1700 (68)	950	1950	650	1800
175	2640	3460	125 (5)	125 (5)	50 (2)	50 (2)	32 (1¼)	32 (1¼)	5	1700 (68)	1150	2275	680	2300
200	3450	3860	150 (6)	150 (6)	50 (2)	50 (2)	32 (1¼)	32 (1¼)	7½	2100 (84)	1250	2600	780	2900
225	3450	3680	150 (6)	150 (6)	100 (4)	50 (2)	32 (1¼)	32 (1¼)	7½	2100 (84)	1750	2925	800	3200
250	3450	3860	200 (8)	200 (8)	100 (4)	50 (2)	32 (1¼)	32 (1¼)	7½	2100 (84)	1850	3250	850	3500
300	3170	4200	200 (8)	200 (8)	100 (4)	50 (2)	32 (1¼)	32 (1¼)	10	2400 (96)	2200	3900	1500	4400
350	3170	4200	200 (8)	200 (8)	100 (4)	50 (2)	32 (1¼)	32 (2)	10	2400 (96)	2300	4550	1600	4500
400	4300	5400	250 (10)	250 (10)	100 (4)	50 (2)	50 (2)	50 (2)	15	3100 (124)	2600	5200	2200	6700
500	4300	5400	250 (10)	250 (10)	100 (4)	50 (2)	50 (2)	50 (2)	15	3100 (124)	2750	6500	24500	7000
600	4500	5750	250 (10)	250 (10)	100 (4)	50 (2)	50 (2)	50 (2)	20	3100 (124)	3750	7800	3150	9300
700	4800	6800	250 (10)	250 (10)	100 (4)	50 (2)	50 (2)	50 (2)	20	3400 (136)	4050	9100	3800	10650
800	6060	7340	300 (12)	300 (12)	100 (4)	80 (3)	80 (3)	80 (3)	25	3600 (144)	5000	10400	4500	12000
1000	5060	7340	300 (12)	300 (12)	100 (4)	80 (3)	80 (3)	80 (3)	30	3600 (144)	5500	13000	5050	12300
1200	5200	8500	300 (12)	300 (12)	100 (4)	80 (3)	80 (3)	80 (3)	40	4200 (168)	6500	15600	5600	13200



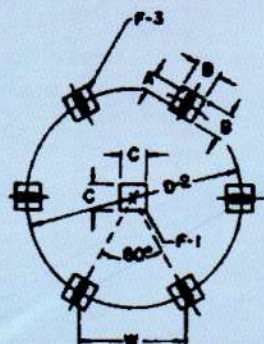
KSR 10 - 25



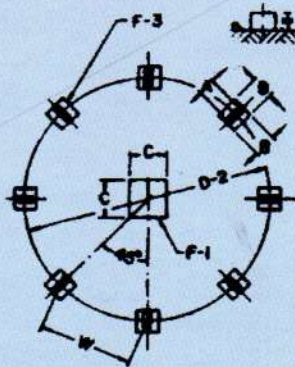
KSR 30 - 40



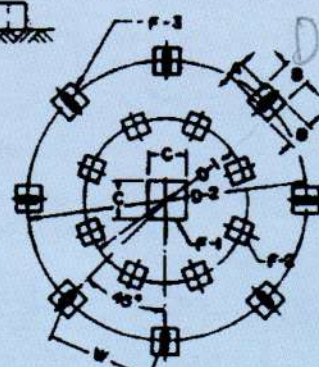
KSR 50 - 80
KSR 200 - 350



KSR 100 - 125
KSR 400 - 600



KSR 150 - 175



KSR 700 - 1200

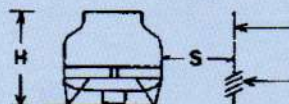
DIMENSION mm.								F-1	F-2	F-3	ANCHOR BOLT			PUMP HEAD	Model
D1	D2	W	A	B	C	H-1	H-2	kg.	kg.	kg.	SIZE mm. (inch)	LENGTH mm. (inch)	QTY. pcs	m.	KSR.
-	600	520	100	200	-	150	-	-	-	59	12 (1/2)	120 (4 3/4)	3	1.3	10
-	840	725	100	200	-	150	-	-	-	87	12 (1/2)	120 (4 3/4)	3	1.4	15
-	840	725	100	200	-	150	-	-	-	110	12 (1/2)	120 (4 3/4)	3	1.5	20
-	920	795	100	200	-	200	-	-	-	140	12 (1/2)	120 (4 3/4)	3	1.6	25
-	1175	830	100	250	-	200	-	-	-	125	12 (1/2)	120 (4 3/4)	4	1.8	30
-	1360	960	100	250	-	200	-	-	-	163	12 (1/2)	120 (4 3/4)	4	1.8	40
-	1420	1000	100	250	250	200	200	225	-	148	12 (1/2)	120 (4 3/4)	4	1.9	50
-	1420	1000	100	250	250	200	200	274	-	164	12 (1/2)	120 (4 3/4)	4	1.9	60
-	1760	1245	100	250	250	200	200	346	-	207	12 (1/2)	120 (4 3/4)	4	2.0	70
-	1760	1245	100	250	250	200	200	353	-	212	12 (1/2)	120 (4 3/4)	4	2.0	80
-	2350	1175	100	300	600	300	300	510	-	200	16 (5/8)	200 (8)	5	3.0	100
-	2600	1330	100	300	600	300	300	585	-	228	16 (5/8)	200 (8)	5	3.0	125
-	2700	1033	100	300	600	300	300	750	-	218	16 (5/8)	200 (8)	7	3.2	150
-	2700	1033	100	300	600	300	300	870	-	254	16 (5/8)	200 (8)	7	3.2	175
-	3470	2455	100	300	600	300	300	1000	-	582	16 (5/8)	200 (8)	4	3.5	200
-	3470	2455	100	300	600	300	300	1020	-	596	16 (5/8)	200 (8)	4	3.5	225
-	3470	2455	100	300	600	300	300	1050	-	612	16 (5/8)	200 (8)	4	4.0	250
-	4100	2900	100	300	700	300	300	1320	-	770	16 (5/8)	200 (8)	4	4.0	300
-	4100	2900	100	300	700	300	300	1380	-	804	16 (5/8)	200 (8)	4	4.0	350
-	5100	2550	350	500	1000	300	300	2220	-	863	20 (3/4)	200 (8)	6	5.0	400
-	5100	2550	350	500	1000	300	300	2550	-	990	20 (3/4)	200 (8)	6	5.0	500
-	5400	2700	350	500	1000	300	300	2790	-	1085	20 (3/4)	200 (8)	6	5.5	600
3850	6500	2487	350	500	1000	300	300	3230	110	944	20 (3/4)	200 (8)	16	5.5	700
4460	7100	2716	350	500	1200	300	300	3300	125	962	20 (3/4)	200 (8)	16	6.0	800
4460	7100	2716	350	500	1200	300	300	3390	125	988	20 (3/4)	200 (8)	16	6.0	1000
5000	8200	3138	350	500	1200	300	300	4000	150	1000	20 (3/4)	200 (8)	16	6.5	1200

1. Location Selection

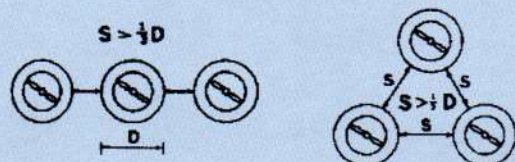
- Roofs or other open places with free air supply are the best sites for Cooling Towers.
- Minimum distance between two cooling tower location.



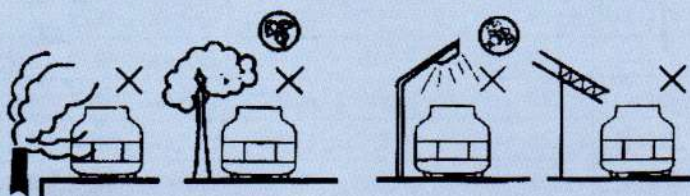
- Minimum space for cooling tower being near the enclosure.



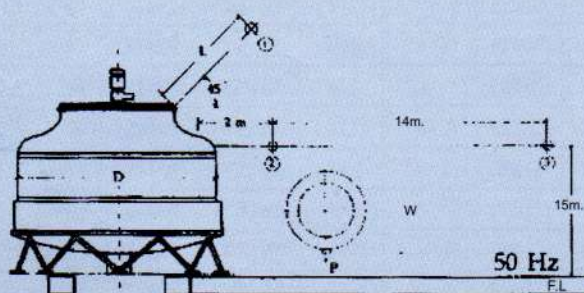
- In case of multicell installation in line perpendicular installation to air flow direction is recommended.



- Avoid places where corrosive gases exist, such as chimneys or hostsprings.
- Keep away from hot places such as boiler, kitchens, etc.
- Keep away from smoke and dusty yards.
- Keep away from high voltage line or transformer.



SOUND LEVEL



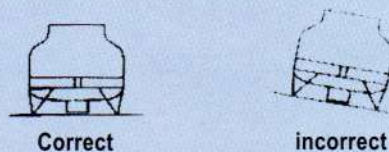
L= DIAMETER OF FAN OR 15m WHICHEVER IS LARGER.

MODEL KSR	10	15	20	25	30	40	50	60	70	80	100	125	150	175	200	225	250	300	350	400	500	600	800	1000	1200	
POSITION 1	61	66	66	73	73	74	74	74	78	79	76	81	77	80	79	76	76	77	77	79	79	77	77	78	80	80
POSITION 2	56	63	63	67	67	68	68	68	72	73	68	71	71	75	73	71	71	72	72	74	74	72	72	74	75	75
POSITION 3	45	50	50	58	58	59	59	59	63	64	57	61	62	65	63	62	62	63	63	65	65	63	63	65	66	66

UNIT : dBA

2. Location:

- See that the piping can be carried out easily.
- Be sure to place the tower vertically, as uneven sprinkling will tower the cooling efficiency. See picture below:
- Tighten the anchor bolts.

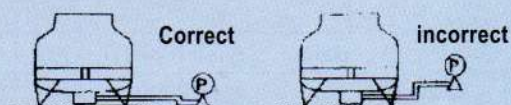


3. Piping :

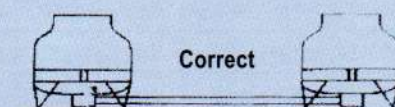
- The inlet and outlet pipes must have a downward installation and be lower than the pipe connections of the water sump. See picture below.



- The pipe should be the same size as the pipe connections on the water sump. Smaller ones will lower the cooling efficiency and larger ones will be a waste of material.
- The circulating pump must be located below the water sump under normal operation. See picture below.



- Twin cooling towers with one pump must also share an additional equalizer between each other so that the water in both towers will have the same level. See picture below.



- High pressure flexible tubes must be used at the joints of circulating outlet and inlet, which sizes are over 4 inches (100mm), to prevent vibration transmitted from the piping, and breakage of the water basing caused by improper piping.

4. Other :

- After the installation is completed, examination must be made to see that there are no tools or other objects left in the tower.
- See that neither the piping nor the water basin leaks.
- When the make-up water pressure is low, install either a water tank higher than the water level or a water make-up pump somewhere in the piping system to obtain the desired water pressure.



W.B.	28°C																	29°C			30°C		
Temp Dit	5°C			6°C		7°C			8°C			9°C		10°C				5°C			5°C		
Temp	38	37	36	38	37	40	39	38	41	40	39	41	40	45	43	42	41	39	38	37	41	40	39
Model KSR	33	32	31	32	31	33	32	31	33	32	31	32	31	35	33	32	31	34	33	32	36	35	34
10	137	112	87	96	76	102	86	68	93	78	62	73	60	105	77	65	57	144	117	91	158	121	96
15	204	170	130	114	116	155	130	104	140	118	95	109	90	160	122	100	82	213	170	137	231	170	149
20	270	225	175	193	153	205	172	137	188	155	123	142	115	210	158	130	120	285	230	181	300	230	183
25	338	283	223	244	195	260	219	175	239	200	159	184	150	270	204	170	145	355	290	231	355	280	220
30	405	340	270	295	236	315	265	213	290	245	195	225	185	330	250	210	170	425	350	280	455	350	285
40	540	450	365	400	326	425	360	295	385	335	275	305	255	440	340	290	240	570	465	375	610	480	380
50	670	570	460	505	420	540	460	380	505	430	355	395	333	570	440	380	320	700	590	480	740	615	520
60	820	700	560	610	510	660	560	465	600	520	430	480	405	690	535	460	380	860	720	590	930	720	650
70	930	810	660	720	605	775	665	555	705	620	520	580	490	820	645	550	465	950	840	680	970	835	690
80	1040	920	760	830	700	890	770	645	810	720	605	680	570	950	750	640	550	1040	960	770	1040	940	770
100	1370	1150	935	1020	850	1100	930	770	1020	870	725	810	680	1150	890	760	640	1430	1200	975	1550	1300	1040
125	1670	1420	1150	1250	1040	1360	1140	950	1240	1070	890	1000	830	1380	1110	940	790	1740	1480	1200	1830	1570	1300
150	2000	1700	1380	1520	1260	1640	1390	1160	1500	1290	1070	1210	1010	1720	1340	1150	960	2100	1760	1450	2200	1850	1570
175	2360	2020	1620	1790	1480	1930	1640	1360	1760	1520	1260	1430	1190	2020	1580	1350	1130	2490	2090	1720	2650	2140	1860
200	2650	2270	1830	2020	1670	2180	1850	1540	2000	1730	1440	1620	1340	2300	1790	1530	1280	2800	2350	1930	2900	2450	2090
225	3000	2500	2030	2200	1800	2350	2000	1670	2180	1860	1540	1745	1450	2480	1900	1630	1370	3150	2600	2130	3300	2800	2330
250	3400	2900	2320	2540	2100	2750	2330	1930	2500	2150	1790	2000	1690	2870	2200	1900	1600	3600	2990	2450	3920	3040	2610
300	4000	3350	2730	2980	2450	3200	2700	2260	2950	2550	2080	2350	1950	3350	2600	2200	1850	4200	3500	2880	4400	3800	3020
350	4700	4000	3250	3550	2950	3850	3250	2720	3550	3000	2540	2820	2360	4050	3150	2700	2250	4900	4100	3400	5200	4100	3610
400	5650	4800	3900	4250	3550	4600	3900	3250	4200	3650	3060	3420	2850	4900	3800	3250	2750	5900	5000	5100	6400	5400	4500
500	6750	5800	4800	5250	4400	5650	4850	4050	5250	4550	3850	4270	3640	6000	4750	4150	3450	7050	6000	5000	7550	6250	5250
600	8100	6900	5650	6150	5100	6600	5700	4700	6150	5250	4400	4950	4170	7000	5450	4700	3950	8550	7200	5850	9150	7800	5950
700	9400	8100	6600	7250	6100	7800	6700	5650	7250	6300	5250	5940	5000	8400	6550	5700	4800	9850	8400	6950	10450	8700	7550
800	10800	9200	7500	8200	6750	8850	7500	6300	8150	7000	5850	6550	5500	9400	7300	6150	5250	11300	9500	7800	12100	9800	8250
900	12100	10400	8600	9400	7800	10050	8500	7275	9350	8050	6850	7600	6450	10750	8450	7275	6175	12700	107580	8900	13600	11150	9525
1000	13500	11600	9600	10600	8800	11350	9750	8250	10650	9200	7800	8700	7400	12100	9600	8400	7100	14100	12000	10000	15100	12500	10800
1200	16200	13800	11300	12300	10200	13200	11400	9400	12300	10500	8800	9900	8340	14000	10900	9400	7900	17100	14400	18300	17100	15600	11900

W.B. : AMBIENT WET BULB TEMPERATURE

TEMPDIF: WATER INLET TEMPERATURE-WATER OUTLET TEMPERATURE

Technical information for enquiries.

1. Circulation water volume (LPM or M³/HR)
2. Tower inlet water temperature (°C)
3. Tower outler water temperature (°C)
4. Wet Bulb temperature or Dry Bulb temperature (°C) and relative humidity (%)
5. Area size and site condition
6. Water quality
7. Power supply ; voltage and frequency
8. Purpose of tower usage
9. Any other items of preference



KS WATER COOLING
LIMITED PARTNERSHIP



- PIPING FOR COOLING TOWER
- ELECTRONIC FOR COOLING TOWER
- CHEMICA FOR COOLING TOWER
- COATING PIPE & FLOOR
- FOUNDATION



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Web : www.kswatercooling.com