

# LIANG CHI Industrial Cooling Tower



COUNTERFLOW INDUCED DRAFT (MODEL LBC-W)



Liang Chi Model LBC-W is specially designed with preservative treated wood filling. It suited for industrial cooling of high temperature and poor water quality.



**LIANG CHI INDUSTRY CO., LTD.**

# GENERAL DESCRIPTION AND FEATURES

**Design Features:** Specially designed counter flow bottle type for industrial cooling of high temperature and poor water quality such as contaminated, scale, slim and algae etc.

The all Fibreglass Reinforced Polyester casing is circular shaped thus eliminating special positioning requirements and is not affected by prevailing wind directions.

It further permits quick and easy installation due to light weight and compactness. Site assembly is simplified by the modular design of components.

## General Description:

**Casing:** Liang Chi Model LBC-W of Fiber Glass reinforced polyester cooling towers have been designed for durability.

**Fan Drive:** Model LBC-W125 upwards feature a unique belt drive to avoid excessive noise.

**Fan Blade:** Aero dynamically designed propeller fans at slow speeds are used to save on power consumption and to assure quiet operation.  
Model LBC-W 125 upwards feature aluminium alloy fans.

**Water Distribution:** A highly efficient rotating sprinkler head system in aluminium alloy is used.  
The sprinkler system is self rotating at low head loss.

**Eliminators:** Are of special P.V.C. R-Packing design to reduce carry-over to the barest minimum.

**Filling:** The filling is made of preservative treated wood to enable easy replacement, having a high heat transfer efficiency.  
It is suitable for operation with high temperature and poor water quality.

**Inlet Louver:** P.V.C. plastic mesh to prevent objects entering the water basin.

**Ladde:** Accessibility for maintenance to operating fan unit, etc.

## REQUESTS WHEN MAKING INQUIRES

When making enquiries please supply information on the following:

- 1) Circulating Water Flow Rate.
- 2) Outlet Temperature.
- 3) Inlet Temperature.
- 4) Atmospheric Wet Bulb Temperature.
- 5) Electrical Voltage and Frequency.
- 6) Site Conditions and Area Size.
- 7) Water Quality.

## MAIN PARTS

### FRP CASING



### SPECIAL V-BELT SPEED REDUCER (PATENT NO. 6504)



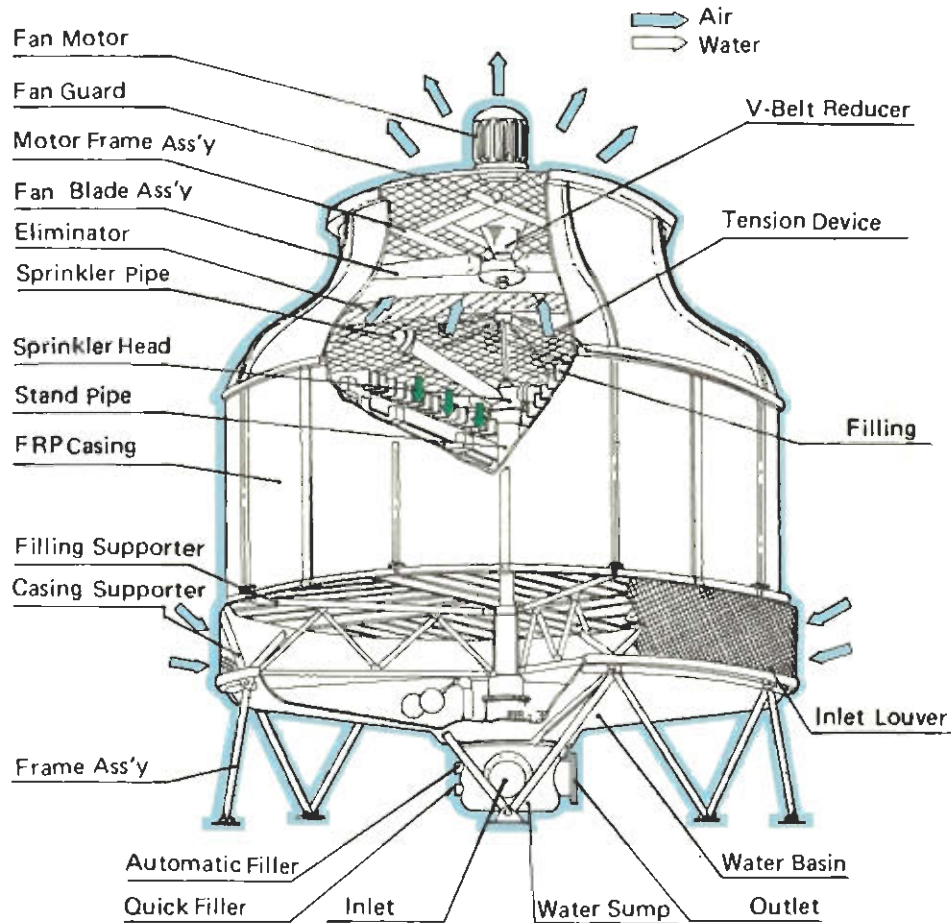
### ALUMINUM ALLOY FANS



### ALUMINUM ALLOY ROTATING SPRINKLER HEAD



# CONSTRUCTION AND INSTALLATION DATA



## INSTRUCTIONS FOR THE INSTALLATION OF LBC-W COOLING TOWERS

### 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.



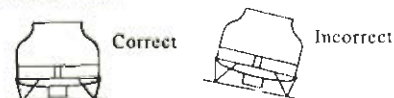
- Minimum space for cooling tower being near the enclosure.



- Keep away from smoke and dusty yards.
- Avoid places where corrosive gases exist, such as chimneys or hot springs.
- Keep away from hot places such as boilers, kitchens, etc.

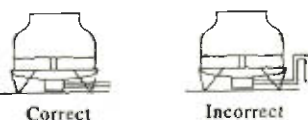
### 2. Position:

- See that the piping can be carried out easily.
- Be sure to place the tower vertically, as uneven sprinkling will lower 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:

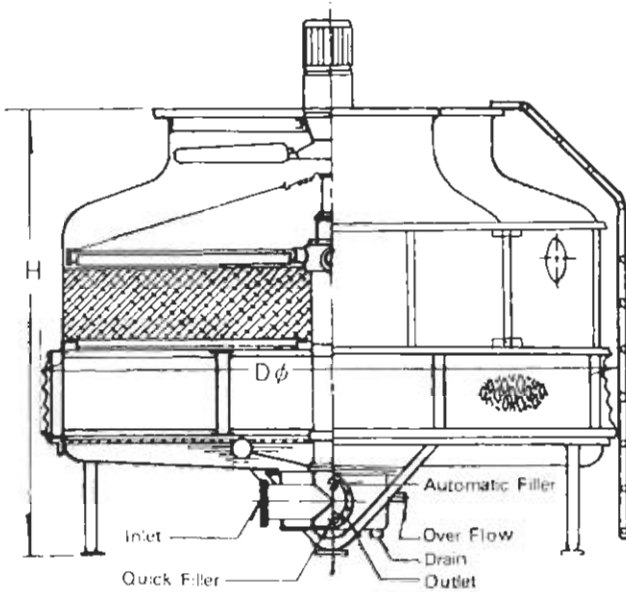


- High pressure flexible tubes must be used at the joints of circulating outlet and inlet, which sizes are over 4 inches (100mm), to prevent vibration transmitted from the piping, and breakage of the water basin caused by improper piping.

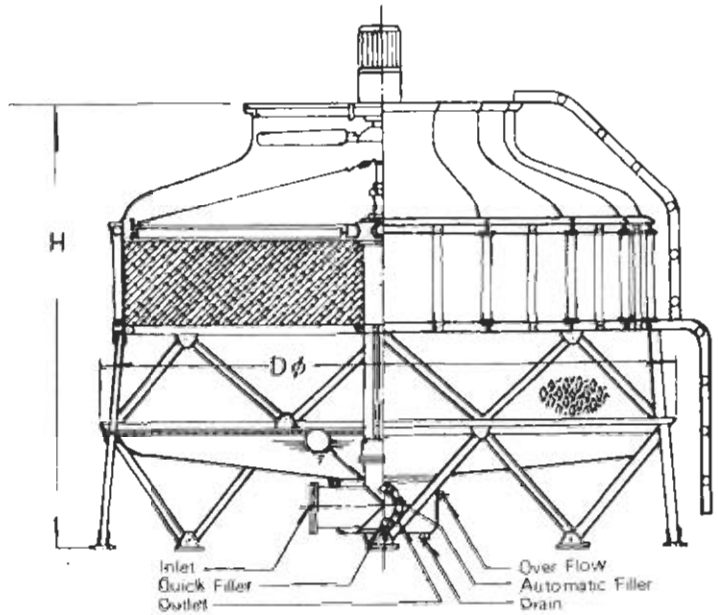
### 4. Other:

- 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.

# SPECIFICATIONS & DIMENSIONS



**LBC-W-125-350**

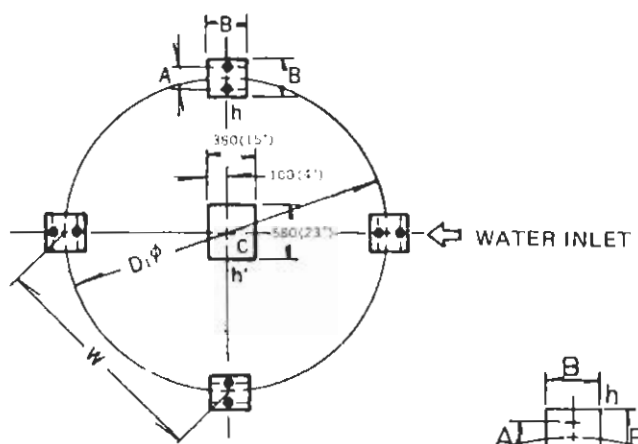
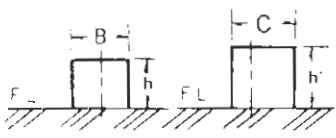


**LBC-W-400 ~ 1000**

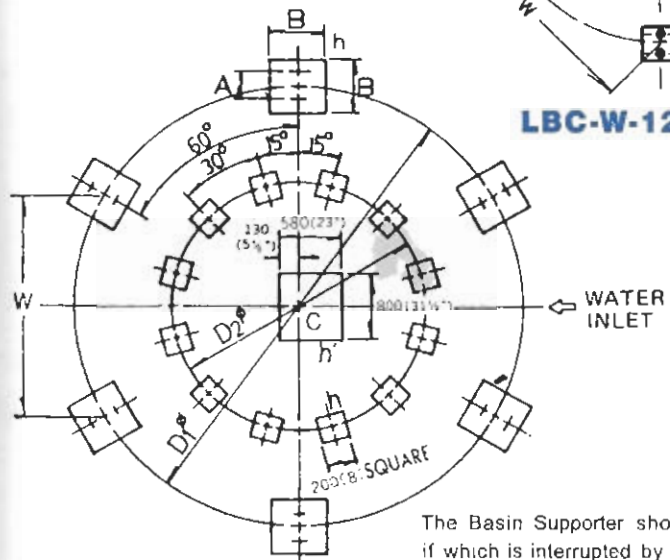
Tower Model LBC-W	Dimensions mm(inch)				Pipe Connection mm(inch)								Fan Motor H.P.	Fan Dia		Nominal Water Flow		Tower Head					
	H	D φ		OUTLET	INLET	OVER FLOW	Drain	Auto. Filler	Quick Filler	mm(Inch)	mm(Inch)	2 / min(USGPM) *1		m(ft) *2									
125	3335	131 1/4	3050	120	125	5	125	5	50	2	50	2	32	1 1/4	32	1 1/4	5	1750	68%	1000	264	3.5	11.5
150	3130	123 1/4	3220	126 1/4	125	5	125	5	50	2	50	2	32	1 1/4	32	1 1/4	7 1/2	2360	93	1200	317	3.5	11.5
175	3375	132 1/2	3220	126 1/4	125	5	125	5	50	2	50	2	32	1 1/4	32	1 1/4	7 1/2	2360	93	1400	370	3.5	11.5
200	3510	138 1/2	3770	148 1/2	150	6	150	6	50	2	50	2	32	1 1/4	32	1 1/4	10	2360	93	1600	423	3.5	11.5
225	3630	142 1/2	3770	148 1/2	150	6	150	6	50	2	50	2	32	1 1/4	32	1 1/4	10	2360	93	1800	475	4	13.1
250	3750	147 1/2	3770	148 1/2	200	8	200	8	50	2	50	2	32	1 1/4	32	1 1/4	10	2360	93	2000	528	4	13.1
300	3955	155 1/2	4440	174 1/4	200	8	200	8	50	2	50	2	32	1 1/4	32	1 1/4	15	2970	117	2400	634	4	13.1
350	3990	157 1/2	4790	188 1/4	200	8	200	8	50	2	50	2	32	1 1/4	32	1 1/4	15	2970	117	2800	740	4.5	14.8
400	4485	176 1/2	5180	203 1/4	200	8	200	8	100	4	50	2	50	2	50	2	20	3380	133	3200	846	4.5	14.8
500	4725	186	5580	219 1/4	250	10	250	10	100	4	50	2	50	2	50	2	20	3380	133	4000	1056	5	16.4
600	4895	192 1/2	6600	259 1/4	250	10	250	10	100	4	50	2	50	2	50	2	30	3580	141	4800	1274	5.5	18
700	5140	202 1/2	6600	259 1/4	250	10	250	10	100	4	50	2	50	2	50	2	30	3580	141	5600	1480	6	19.7
800	5360	211	7600	299 1/4	300	12	300	12	100	4	80	3	50	2	50	2	40	4270	168 1/2	6400	1692	6.5	21.3
1000	5735	225 1/2	7600	299 1/4	300	12	300	12	100	4	80	3	50	2	50	2	40	4270	168 1/2	8000	2112	7	23

1. Cooled from 50°C to 35°C with 27°C wet bulb temperature.
2. Total pump head required for cooling water circulation pump is the sum of condenser water pressure drop, piping friction loss and tower head.

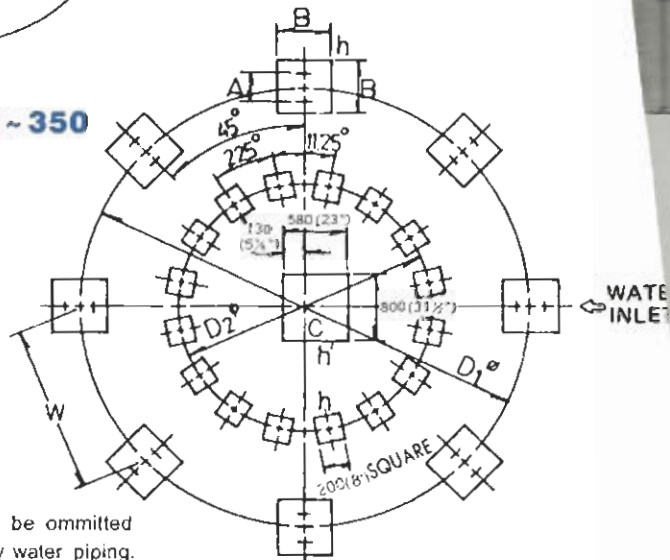
# RECOMMENDED CONCRETE FOUNDATIONS



**LBC-W-125 ~ 350**



**LBC-W-400 ~ 500**



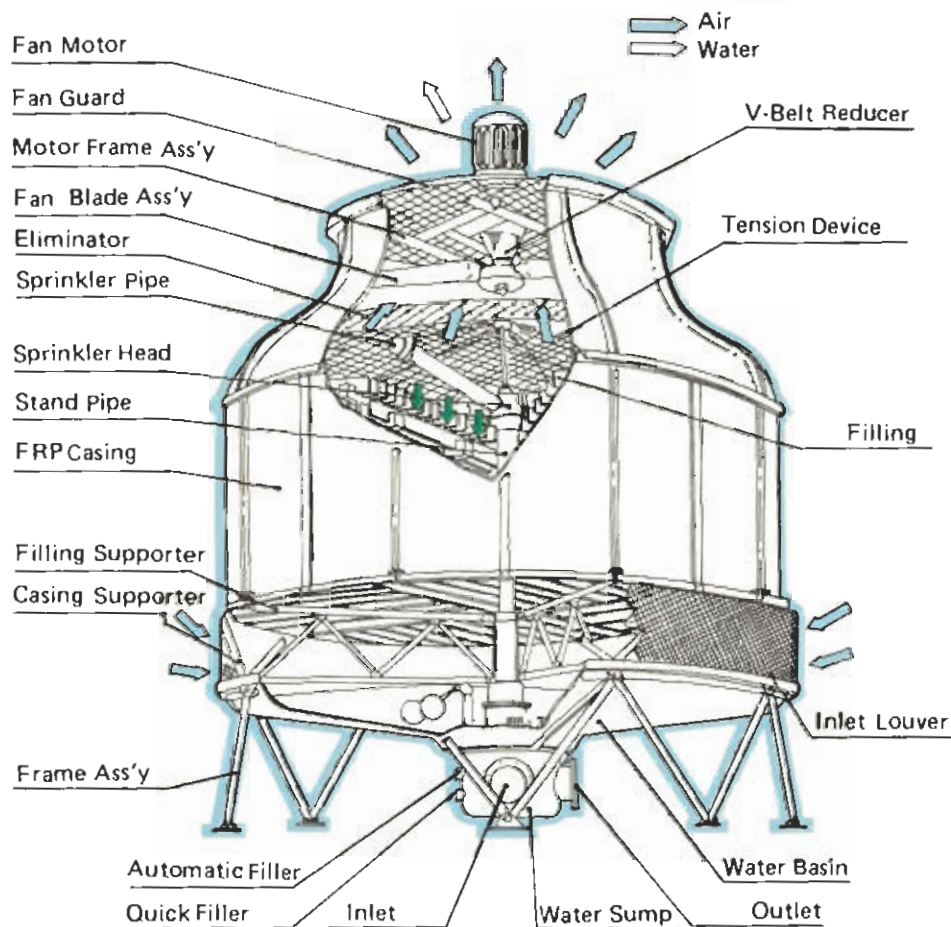
**LBC-W-600 ~ 1000**

The Basin Supporter should be omitted if which is interrupted by any water piping.

Model Tower LBC-W	Approx. Wt: kg		D1		W		D2		A		B		h		h'		Anchor Bolt			
	Dry	Operating	mm(inch)	mm(inch)	mm(inch)	mm(inch)	mm(inch)	mm(inch)	mm(inch)	mm(inch)	mm(inch)	mm(inch)	mm(inch)	mm(inch)	mm(inch)	mm(inch)	Size mm(inch)	Length mm(inch)	Quantity (pcs)	
125	1390	2280	2705	106 1/2	1913	75%			130	5	300	12	300	12	400	16	16	200	8	8
150	1763	3718	2860	112%	2022	79%			130	5	300	12	300	12	400	16	16	200	8	8
175	1928	3878	2860	112%	2022	79%			130	5	300	12	300	12	400	16	16	200	8	8
200	2265	4855	3354	132	2372	93%			130	5	300	12	300	12	400	16	16	200	8	8
225	2392	4952	3354	132	2372	93%			130	5	300	12	300	12	400	16	16	200	8	8
250	3016	5558	3354	132	2372	93%			130	5	300	12	300	12	400	16	16	200	8	8
300	3812	7074	3964	156 1/2	2803	110%			140	5 1/2	300	12	300	12	400	16	16	200	8	8
350	4446	7728	4297	169%	3039	119%			140	5 1/2	300	12	300	12	400	16	16	200	8	8
400	5304	9953	5100	200 3/4	2550	100%	2900	114%	140	5 1/2	500	20	300	12	400	16	20	200	8	12
500	5973	10622	5500	216 1/2	2750	108%	3100	122	140	5 1/2	500	20	300	12	400	16	20	200	8	12
600	7516	14901	6480	255%	2480	97%	3600	141%	140	5 1/2	500	20	300	12	400	16	20	200	8	16
700	8490	15890	6480	255%	2480	97%	3600	141%	140	5 1/2	500	20	300	12	400	16	20	200	8	16
800	10608	18208	7500	295%	2870	113	4155	163 1/2	140	5 1/2	500	20	300	12	400	16	20	200	8	16
1000	11933	19733	7500	295%	2870	113	4155	163 1/2	140	5 1/2	500	20	300	12	400	16	20	200	8	16

\* We reserve the right to make change in specifications and dimensions please contact our sole agent for latest data.

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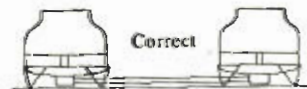
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