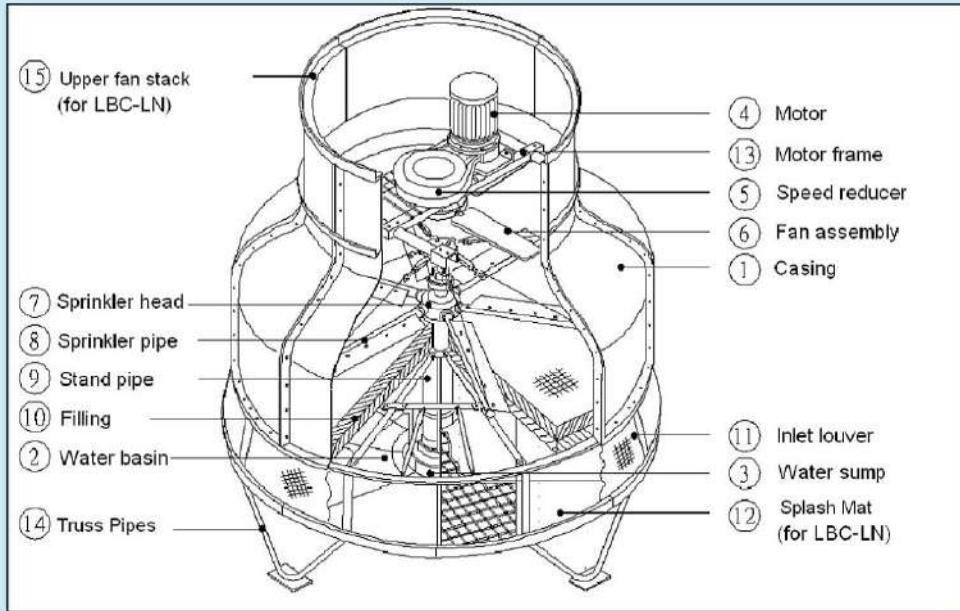


LBC & LBC-LN Round Counter Flow Type Cooling Tower



INSTRUCTIONS FOR THE INSTALLATION OF LBC/LBC-LN 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:

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.

5. Additional Notes:

- 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.

Structure & Feature:

LBC :

Standard type for operating at higher fan speed based on the feature of fan blade. It's suitable for general application.

LBC-LN :

Standard low-noise type going with upper fan stack, splash mat, etc. for running at lower fan speed based on the feature of fan blade. Its noise is lower than standard type by 7~10 dB that is suitable for the application of quietness.

① FRP Casing ② Water basin ③ Water sump

Above parts are made of Fiberglass Reinforced Polyester (FRP), featuring good structure stress, non-chap, non-crack, non-aging, firmness and long duration. The models below LBC-(LN)-175 adopt one-piece water basin integrated with FRP legs that are non-corrosive and maintenance cost saving.

The pipings for the models above LBC-(LN)-200 are collected on water sump③ for easy piping work and saving cost.

④ Motor

Cooling tower is equipped with totally enclosed outdoor specialized motor that can run with low noise and endure under poor environment.

⑤ Speed reducer

LBC-3~200 and LBC-LN-3~125 are driven directly by low-noise motor. LBC-225~1500 and LBC-LN-150~150 are driven by general V-type belt (B form) that is featuring wide contacting area, light vibration and stable transmission. Belts have FRP protection cover that leads to moist-resistance, smooth running, wear-resistance, firmness, low refueling and easy maintenance.

⑥ Fan Blade Assembly

Special multi-blade, axial-flow and low-noise fan assembly is running quietly at lower power consumption level after being balanced. The models below LBC-(LN)-30 are made of reinforced plastic. The models above LBC-(LN)-40 are made of aluminum alloy. According to air volume required, the fan angle for the models above LBC-(LN)-60 are adjustable in order to reach the maximum air-exhaustion effectiveness.

⑦⑧⑨ Auto-rotation Water Distribution Device

A highly efficient automatic rotating device: sprinkler head⑦ for model below LBC-(LN)-60 is made of plastic steel. The model above LBC-(LN)-70 is made of aluminum alloy. Sprinkler pipe⑧ and stand pipe⑨ are of PVC plastic tubes featuring low water pressure, even water distribution, lower water consumption and maximum heat exchange efficiency.

⑩ High efficiency PVC Filling

The embossed filling is made of PVC sheet that is processed by surface treatment of wrinkled and corrugated pattern. The filling are glued together to extend the retention time of flowing water and have adequate surface in contact with ambient air to increase the heat exchange efficiency. The maximum applicable inlet temperature is 48°C or 118°F.

⑪ P.V.C. Inlet Louver

Inlet louver is of PVC plastic mesh to prevent objects entering the water basin.

⑫ Splash Mat (used for LBC-LN)

The special polyester noise-absorption mat is applied to reduce dripping noise and prevent water splash.

⑬⑭ Hot Dip Galvanized Steel Parts

The motor frame assembly⑬ and truss pipe assembly⑭ are of hot dip galvanized and anti-rust steel parts. There is no concern of corrosion.

⑮ Upper Fan Stack (Used On LBC-LN)

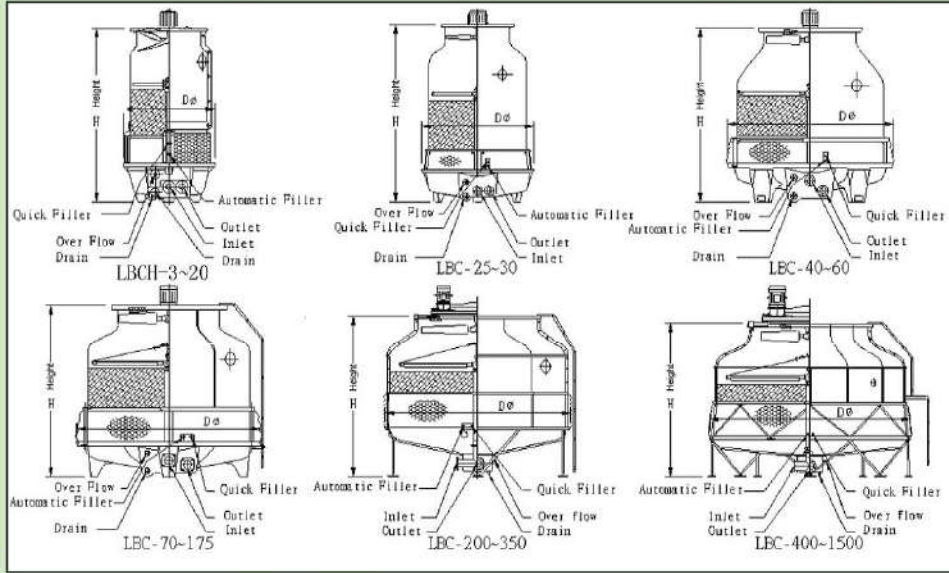
A FRP upper fan stack is added on air outlet in order to reduce air-exhaustion noise (for LBC-LN-150 & upwards.)

Note:

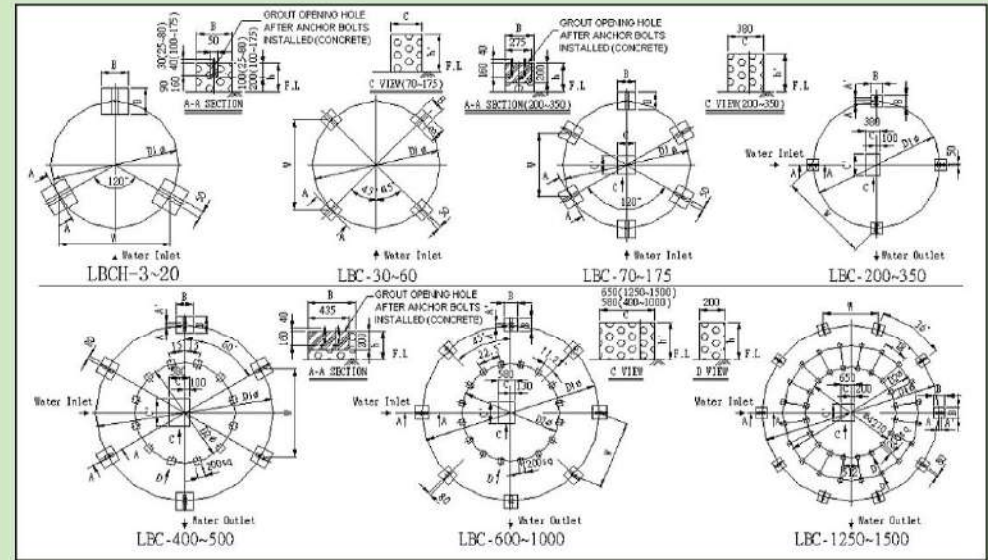
- Above-mentioned items are for standard structure, parts names and material for cooling tower.
- Optional material of components and optional accessories are as below:
 - Gear reducer.
 - Changing HDGS parts to SUS-304 parts.
 - Drift eliminator.
 - Air inlet baffle plate.
 - Channel base.
 - Vibration isolator.

If there's any need of above optional items, please let us know in advance in order to quote accordingly.

DIMENSION & STANDARD SPECIFICATION FOR LBCH-3~LBC-1500



RECOMMENDED CONCRETE FOUNDATION FOR LBCH-3~LBC-1500



Tower Model LBC	Cooling Capacity Kcal/Hr*1	Nominal Water Flow l/min	Dimensions mm		Fan Assembly			Pipe Connections(A) mm *2					Filler #3		
			H Height	D Dia.	Motor HP	Air Volume m3/min	Fan D φ mm	INLET	OUTLET	DRAIN	OVER FLOW	Automatic (Ba)	Quick (Q)	Filler #3	
														Automatic (Ba)	Quick (Q)
H-3	11700	39	1410	750	1/6	25	500	40	40	20	25	15	15		
H-5	19500	65	1410	750	1/6	60	500	40	40	20	25	15	15		
H-8	31200	104	1690	860	1/6	75	500	40	40	25	25	15	15		
H-10	39000	130	1690	860	1/4	100	500	40	40	25	25	15	15		
H-15	58500	195	1940	1170	1/4	135	670	50	50	25	25	15	15		
H-20	78000	260	1940	1170	1/2	180	670	50	50	25	25	15	15		
25	97500	325	1800	1380	3/4	200	770	65	65	50	25	15	15		
30	117000	390	1735	1580	1	225	770	65	65	50	25	15	15		
40	156000	520	1890	1820	1 1/2	280	970	65	65	50	25	20	20		
50	195000	650	1890	2000	1 1/2	330	970	80	80	50	25	20	20		
60	234000	780	1895	2000	1 1/2	420	1170	80	80	50	25	20	20		
70	273000	910	2045	2175	1 1/2	500	1170	100	100	50	25	20	25		
80	312000	1040	2045	2175	2	540	1170	100	100	50	25	20	25		
100	390000	1300	2235	2650	3	700	1470	100	100	50	25	25	25		
125	487500	1625	2260	3050	3	830	1470	125	125	50	50	25	25		
150	585000	1950	2315	3300	5	950	1750	125	125	50	50	25	25		
175	682500	2275	2515	3300	5	1150	1750	125	125	50	50	25	25		
200	780000	2600	2990	3770	5	1250	1750	150	150	50	50	32	32		
225	877500	2925	3190	3770	7 1/2	1750	2360	150	150	50	50	32	32		
250	975000	3250	3190	3770	7 1/2	1750	2360	200	200	50	50	32	32		
300	1170000	3900	3350	4440	10	2200	2360	200	200	50	50	32	32		
350	1365000	4550	3390	4790	10	2200	2360	200	200	50	50	32	32		
400	1560000	5200	3890	5180	15	2600	2970	200	200	50	100	50	50		
500	1950000	6500	3930	5580	15	2600	2970	250	250	50	100	50	50		
600	2340000	7800	4360	6600	20	3750	3380	250	250	50	100	50	50		
700	2730000	9100	4605	6600	20	3750	3380	250	250	50	100	50	50		
800	3120000	10400	4945	7600	30	5000	3580	300	300	80	100	50	50		
1000	3900000	13000	5145	7600	30	5000	3580	300	300	80	100	50	50		
1250	4875000	16250	5870	8430	40	6200	4270	300	300	80	100	65	65		
1500	5850000	19500	6095	8430	50	7500	4270	350	350	80	100	65	65		

- Cooling capacity is defined as circulating water flow at 13l/min/RT(1RT=3900Kcal/HR), cooled from 37°C to 32°C with 27°C wet bulb temperature.
- 15 ↔1/2B · 20 ↔3/4B · 25 ↔1B · 32 ↔1 1/4B · 40 ↔1 1/2B · 50 ↔2B · 65 ↔2 1/2B · 80 ↔3B · 100 ↔4B · 125 ↔5B · 150 ↔6B · 200 ↔8B · 250 ↔10B · 300 ↔12B · 350 ↔14B ·
- Ba : Automatic Filler, Q : Quick filler ·

Tower Model LBC	Approx. Wt.		Foundation Dimensions										Anchor Bolt			Pump Head *4 M		
	Dry Weight (kg)	Operating Weight (kg)	D1 mm	D2 mm	W mm	A mm	A' mm	B mm	C mm	C' mm	h mm	H' mm	Size mm(inch)	Length mm(inch)	Quantity (pcs)			
H-3	36	82	550	-	476	-	-	200	-	-	150	-	M12 1/2	120	5	3	1.5	
H-5	40	115	550	-	476	-	-	200	-	-	150	-	M12 1/2	120	5	3	1.5	
H-8	50	127	650	-	563	-	-	200	-	-	150	-	M12 1/2	120	5	3	1.7	
H-10	55	200	650	-	563	-	-	200	-	-	150	-	M12 1/2	120	5	3	1.7	
H-15	80	260	950	-	823	-	-	200	-	-	150	-	M12 1/2	120	5	3	2	
H-20	90	330	950	-	823	-	-	200	-	-	150	-	M12 1/2	120	5	3	2	
25	103	403	1120	-	970	-	-	200	-	-	150	-	M12 1/2	120	5	3	1.7	
30	115	488	1330	-	940	-	-	200	-	-	150	-	M12 1/2	120	5	4	1.8	
40	168	515	1470	-	1039	-	-	250	-	-	200	-	M12 1/2	120	5	4	2	
50	197	597	1680	-	1188	-	-	250	-	-	200	-	M12 1/2	120	5	4	2	
60	229	669	1680	-	1188	-	-	250	-	-	200	-	M12 1/2	120	5	4	2	
70	277	707	1760	-	880	-	-	250	250	250	200	300	M12 1/2	120	5	5	2	
80	292	722	1760	-	880	-	-	250	250	250	200	300	M12 1/2	120	5	5	2	
100	403	1073	2350	-	1175	-	-	300	300	300	300	400	M16 5/8	200	8	5	2.5	
125	466	1356	2620	-	1310	-	-	300	300	300	300	400	M16 5/8	200	8	5	3	
150	625	2605	2860	-	1430	-	-	300	400	400	300	400	M16 5/8	200	8	5	3	
175	713	2676	2860	-	1430	-	-	300	400	400	300	400	M16 5/8	200	8	5	3.2	
200	870	3460	3354	-	2372	65	65	300	280	100	580	300	400	M16 5/8	200	8	8	3.2
225	960	3520	3354	-	2372	65	65	300	280	100	580	300	400	M16 5/8	200	8	8	3.2
250	1030	3570	3354	-	2372	65	65	300	280	100	580	300	400	M16 5/8	200	8	8	3.6
300	1283	4543	3964	-	2803	70	70	300	280	100	580	300	400	M16 5/8	200	8	8	3.6
350	1362	4620	4297	-	3039	70	70	300	280	100	580	300	400	M16 5/8	200	8	8	4
400	2171	6811	5100	2900	2550	70	70	500	450	130	800	300	400	M20 3/4	200	8	12	4
500	2428	7068	5500	3100	2750	70	70	500	450	130	800	300	400	M20 3/4	200	8	12	4
600	3364	10774	6480	3600	2480	70	70	500	450	130	800	300	400	M20 3/4	200	8	16	5
700	3567	10967	6480	3600	2480	70	70	500	450	130	800	300	400	M20 3/4	200	8	16	5.5
800	4380	11980	7500	4155	2870	70	70	500	450	130	800	300	400	M20 3/4	200	8	16	6
1000	4636	12436	7500	4155	2870	70	70	500	450	130	800	300	400	M20 3/4	200	8	16	6
1250	6554	26064	8330	6400	2574	70	70	500	450	200	800	300	400	M20 3/4	200	8	20	6.5
1500	7000	26512	8330	6400	2574	70	70	500	450	200	800	300	400	M20 3/4	200	8	20	7

- Total Pump Head: Piping Friction Loss + Chiller Pressure Loss + Tower Head.
- We reserve the right to make change in the specifications and dimensions please contact Taipei head office or local offices for latest data.
- When foundation is made, please make sure the level of foundation is horizontal.