



GAT系列冷却塔

GAT Cooling Tower Products



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SHANDONG GRAD GROUP

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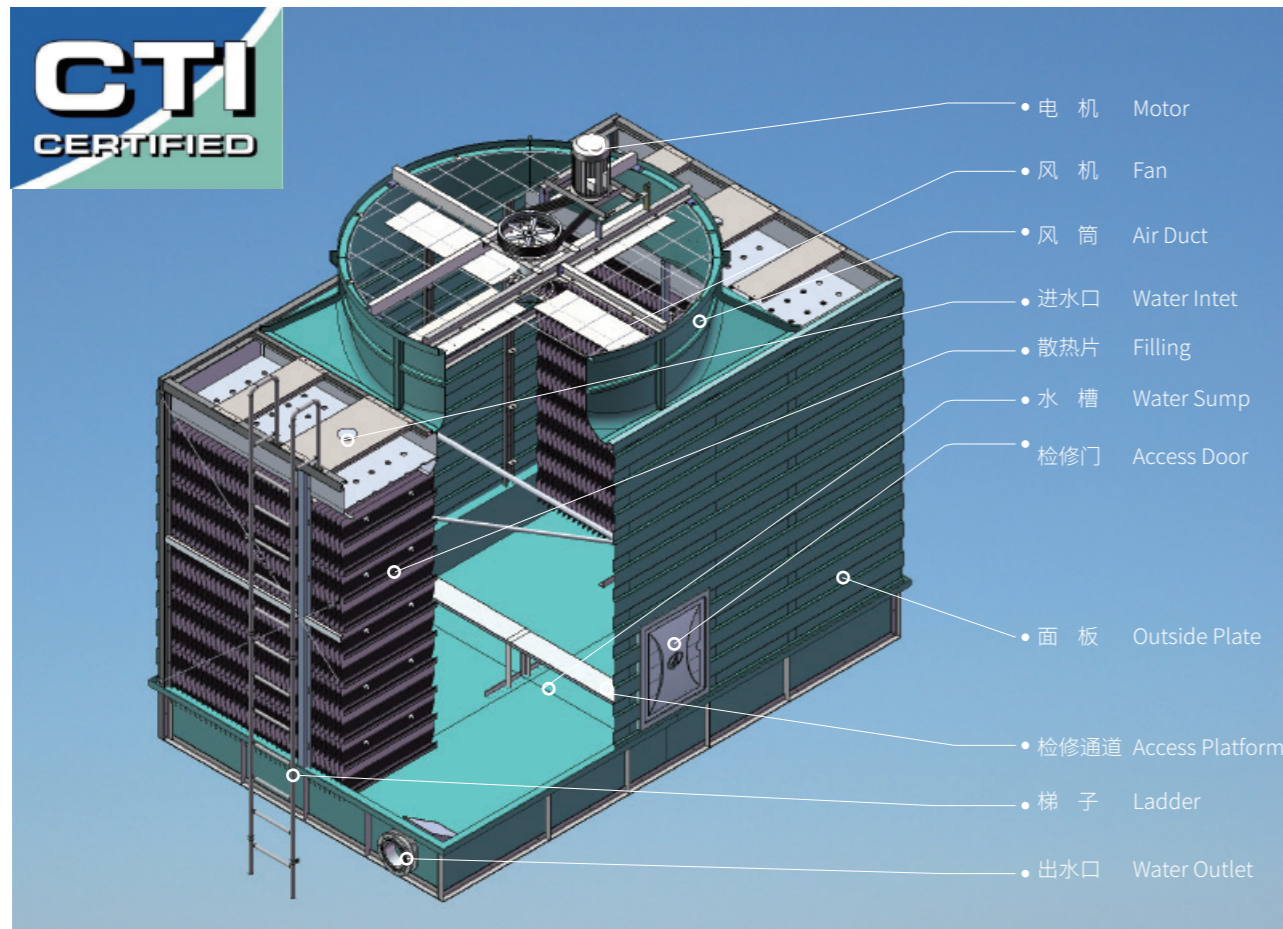
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GRAD--The Central Air Conditioning
Customization Expert around You

GAT系列冷却塔

GAT Series Cooling Tower



特别设计、突现出特别品质

GAT系列横流开式冷却塔,在传统的方形冷却塔基础上对其结构、工艺进行优化设计,合理选用各内件的功能,所有部件和材料都经过严格的挑选和测试以保证其使用寿命长和运行可靠。独特精良的机械加工工艺改良为冷却塔高品质提供可靠保障的同时,有效减轻了塔体自重,使GAT系列冷却塔具有体积小、重量轻、高效耐用、运行稳定等特点。同时,可配用新型变频装置,实现不同温度条件及不同负荷条件下风机转速随冷却水的温度变化自动调节,达到节能、降噪的目的,为用户节省设备运行费用。

GAT series is an improved model on structure and technology from the traditional square cooling tower. Every internal component is appropriately used. All parts and materials are rigidly checked and tested to make sure their service life and operation. The improved mechanical technology not only ensures the high quality of the cooling tower, but also effectively reduces the dead weight of the tower, making the GAT series endowed with advantages of small in size, light in weight, high efficient, long service life and stable operation. Equipped with frequency inverter, this series can automatically regulate the fan speed as the cooling water temperature changes under different temperature and load which can save energy and lower noise. This function saves operation cost for the users.

主要部件 Main parts

电机

采用全封闭冷却塔专用电机,适宜在湿热的环境下长期连续运行,具有高效率,低噪音,寿命长,可靠性高等特点,还可根据客户要求配备国产或进口电机及相应的变频器。

Motor

It is totally enclosed motor specially for cooling tower. This type of model can run continuously under muggy environment. It has the characteristic of high-efficient, low noise, long service life and high reliability. Domestic or imported motor with relative inverter is available according to the customers requirement.

皮带和减速箱

采用进口V型皮带,减速箱采用外壳全封闭,双密封圈防水结构,经平衡调试,运行稳定、噪声低、防腐防水性能佳。

Belt and speed reducer

The belt is imported V shaped belt. The speed reducer cabinet is totally enclosed with two layers of sealing ring waterproof structure. In the balance test, it is proved to have stable operation, low noise and fine corrosion resistance and water-proof performance.

风机

表层电化防腐处理,经平衡调试,大弦角空间扭曲结构,风量大、效率高、运行静、耐腐蚀。

Fan

Electrochemical protection surface has gone through balance test. Large angle and space warp structure produces large air volume, high efficiency, low noise and corrosion resistance ability.

风筒

玻璃钢风筒采用真空导入工艺成型,即风电机舱罩成型工艺;强度和韧性比手糊工艺大幅度提高;

Air duct

The glass fiber reinforced plastic (FRP) air duct is shaped by vacuum leading-in process, that is, the molding process of wind power cabin hood; The strength and toughness were greatly improved.

喷头

选用方形喷头,整个喷淋面为方形,喷淋无死角、无重叠,将冷却塔连续均匀地送到填料的每个角落,并能自动除垢,具有寿命长、不堵塞、效率高等特点。

Nozzle

Square nozzles give square spraying area without blind or overlap area. They distribute cooling water to every corner of the filling, and automatically self-clean. They are durable, high efficient and will not block.

填料

具有专利技术的整体式淋水填料,填料表面设计有“格瑞德”logo,自带进风段和收水段,表面亲水性好、散热面积大、风阻小、冷效高、耐腐蚀、无漂水,波纹设计提高比表面积10%;

Filling

Integral water-spraying filling with patented technology; There is the GRAD logo on the surface of filling; With the air inlet section and the water intake section. Good hydrophilic property, large heat dissipation area, small wind resistance, high cold effect, corrosion resistance and no floating water; The corrugated design can increase surface area by 10%.

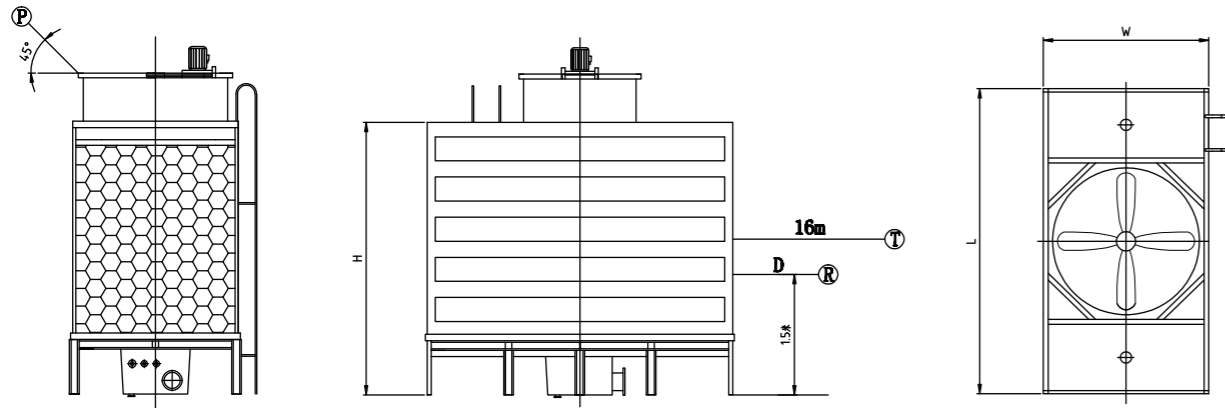
框架

钢制框架采用一次C型槽加筋设计,提高强度。立面带有“格瑞德”logo,起到防伪效果;

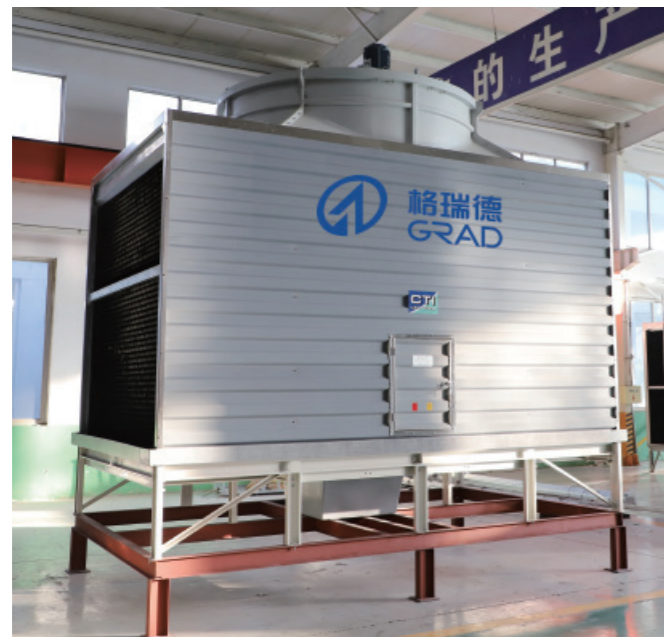
Frame

The steel frame adopts primary c-groove reinforcement design to improve its strength. There is GRAD logo on the surface to avoid anti-counterfeiting.

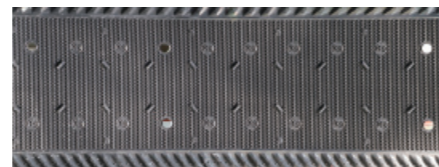
GAT系列冷却塔技术参数 Cooling Tower Technical Data



- 测点(R)、(T)均在冷却塔进风口方。当量直径 $D=1.13WL$ ，其中W、L分别为冷却塔边长。
Testing point R and T are at the air inlet of the cooling tower, Equivalent diameter $D=1.13WL$ and W are the length of cooling tower.
- 噪声测定前冷却塔周围必须安静，环境噪声应比塔正常工作时测点R处的噪声低10dB(A)以上，否则，应进行修正。
The surroundings of the cooling tower should be quiet before and during the noise level testing, It should be lower 10dB(A) than R point for running. Otherwise, the cooling tower needs correction
- 图示DF为出风口当量直径的距离 $1.5 \leq DF \leq 5m$ 。
The DF in the drawing is the equivalent diameter of the outlet. It ranges from 1.5 to 5 meters.



冷却塔 Cooling Tower



填料 filling



风机 fan

GAT系列冷却塔基本数据表 Cooling Tower Basic Data

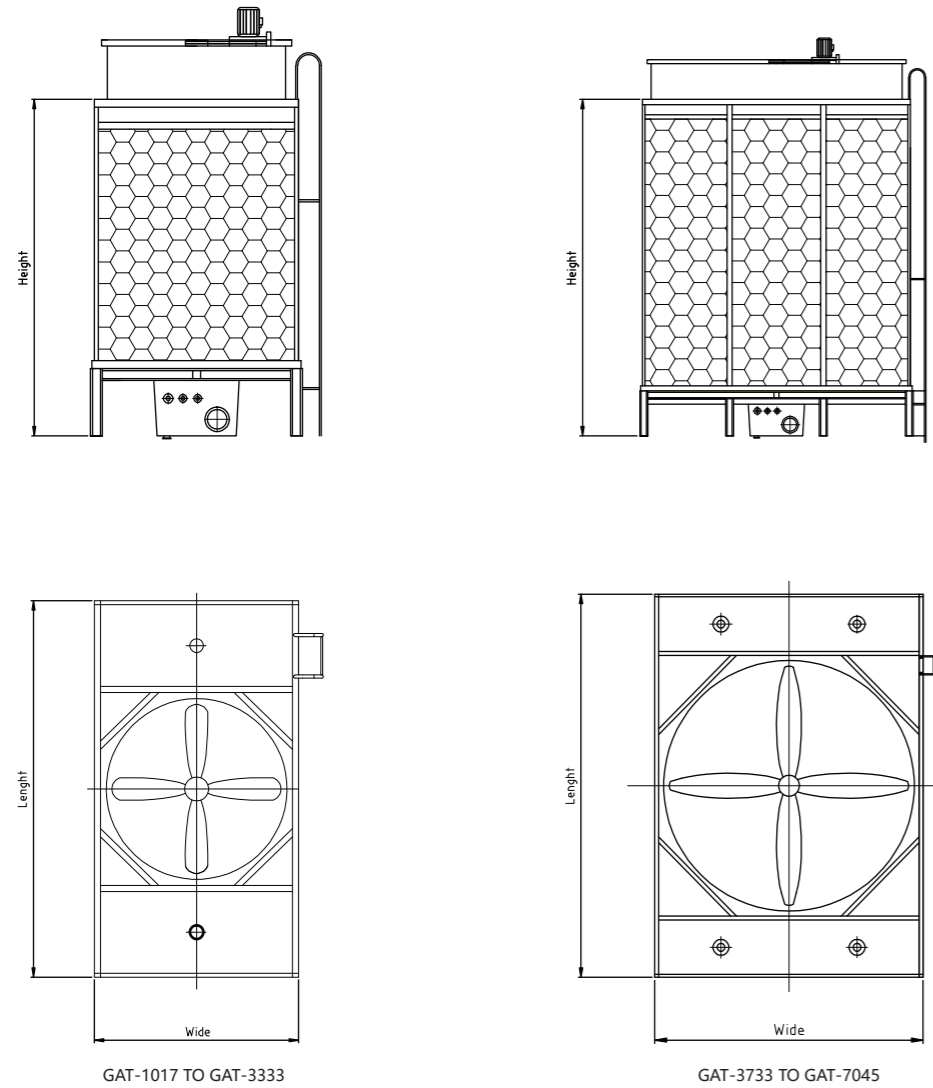
型号 Model	流量 (m³/h) Flow (m³/h)	电机功率 (kw) Motor Power (kw)	风机直径 (mm) Fan Diameter (mm)	长度 (mm) Length (mm)	宽度 (mm) Width (mm)	高度 (mm) Height (mm)	自重 (kg) Dry Weight (kg)	运行重 (kg) Op. Dry Weight (kg)	噪声 dB(A) Noise dB(A)
GAT-1017	100	3	1768	2060	3800	3350	1155	2355	57.4
GAT-1217	125	4	1768	2060	4200	3350	1254	2787	57.6
GAT-1521	150	4	2168	2460	4200	3350	1452	3152	57.8
GAT-1721	175	5.5	2168	2460	4600	3350	1672	3602	58.1
GAT-2025	200	5.5	2560	2860	4600	3350	1859	4129	58.7
GAT-2225	225	7.5	2560	2860	5000	3350	2277	4677	59.3
GAT-2529	250	7.5	2954	3260	5000	4000	2530	5570	59.8
GAT-3029	300	7.5	2954	3260	5400	4000	2838	5938	60.6
GAT-3333	330	11	3340	3660	5400	4000	3179	6669	60.4
GAT-3733	370	11	3340	4060	5800	4500	3707	7712	60.7
GAT-4037	400	11	3744	4060	5800	4500	4202	8482	61.3
GAT-4537	450	15	3744	4460	6200	4500	4433	9333	61.4
GAT-5041	500	15	4140	4460	6600	5000	4895	10085	61.7
GAT-6041	600	18.5	4140	4460	7000	5000	5467	10817	62.4
GAT-7045	700	22	4540	4860	7400	5000	5841	12471	63.6

设计工况: 进水温度37°C, 出水温度32°C, 干球温度31.5°C, 湿球温度28°C。
Design Conditions: Water-in temperature 37°C, Water-out temperature 32°C,
Dry bulb temperature 31.5°C, Wet bulb temperature 28°C.

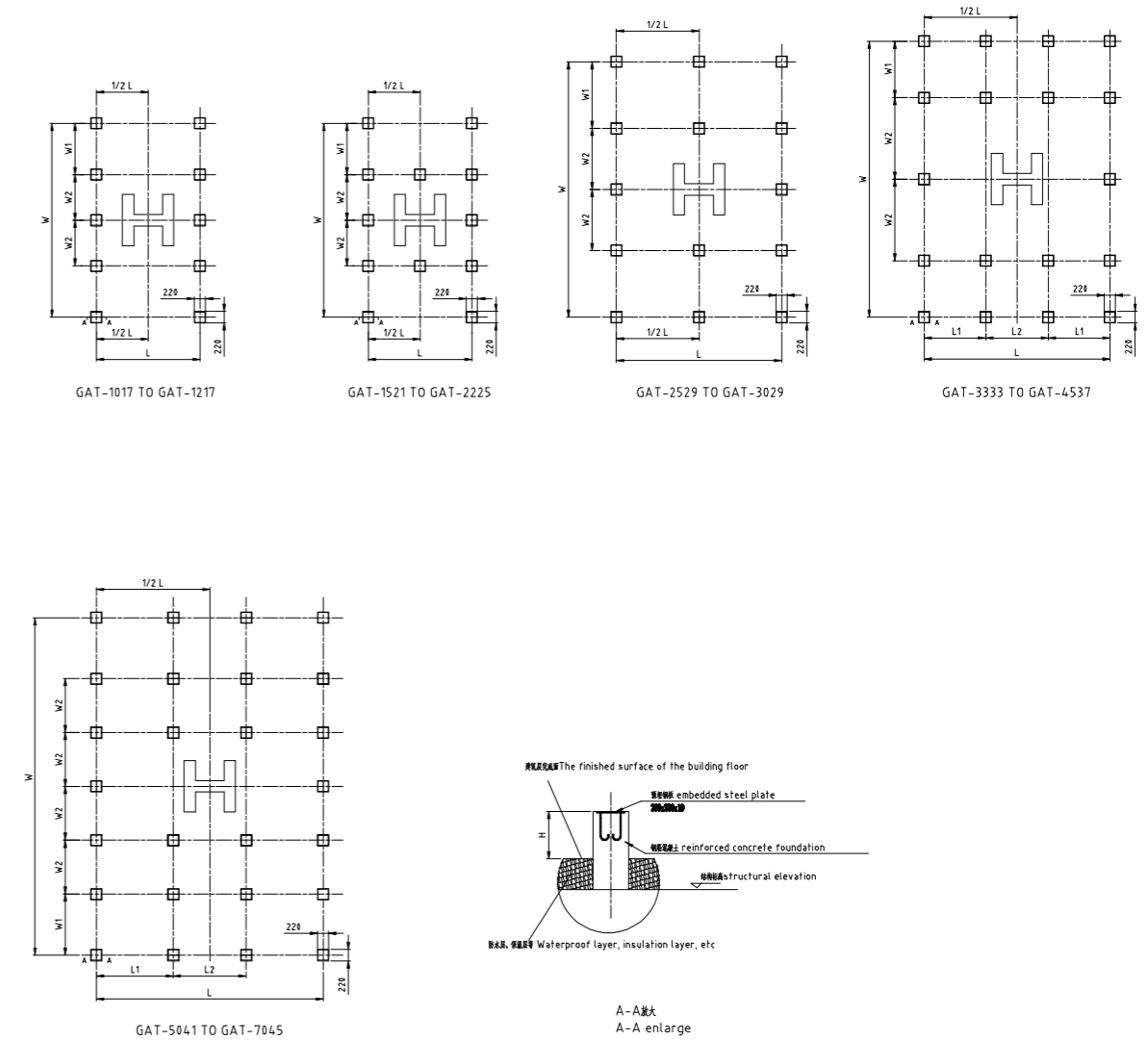
GAT系列冷却塔基础尺寸表 Cooling Tower Foundation Size Data

型号 Model	进水口 (mm) Water Inlet (mm)	出水口 (mm) Water Outlet (mm)	排污口 (mm) Drain (mm)	溢流口 (mm) Overflow (mm)	补水口 (mm) Auto, Quick Filler (mm)	宽度 (mm) Width (mm)			长度 (mm) Length (mm)			基础高度 (mm) Foundation Height
						W	W1	W2	L	L1	L2	
GAT-1017	100x2	125	40	80	40, 40	3780	1000	890	2020	1010		≥400
GAT-1217	100x2	150	40	80	40, 40	4180	1190	900	2020	1010		≥400
GAT-1521	100x2	150	40	80	40, 40	4180	1100	990	2420	1210		≥400
GAT-1721	125x2	200	40	80	40, 40	4580	1190	1100	2420	1210		≥400
GAT-2025	125x2	200	40	80	40, 40	4580	1100	1190	2820	1410		≥600
GAT-2225	125x2	200	40	80	40, 40	4980	1190	1300	2820	1410		≥600
GAT-2529	125x2	200	50	80	40, 40	4980	1300	1190	3220	1610		≥600
GAT-3029	150x2	200	50	80	40, 40	5380	1190	1500	3220	1610		≥600
GAT-3333	150x2	250	50	80	50, 50	5380	1100	1590	3620	1200	1220	≥600
GAT-3733	125x4	250	50	80	50, 50	5780	1190	1700	3620	1200	1220	≥600
GAT-4037	125x4	250	50	80	50, 50	5780	1100	1790	4020	1300	1420	≥600
GAT-4537	125x4	250	50	80	50, 50	6180	1190	1900	4020	1300	1420	≥600
GAT-5041	125x4	250	50	80	50, 50	6580	1190	1050	4420	1500	1420	≥600
GAT-6041	150x4	250	50	80	50, 50	6980	1370	1060	4420	1500	1420	≥600
GAT-7045	150x4	250	50	80	50, 50	7380	1370	1160	4820	1600	1620	≥600

GAT系列冷却塔外形示意图 Cooling Tower Outside Drawing



GAT系列冷却塔基础示意图 Cooling Tower Foundation Drawing



说明 Description:

1. 安装位置四周建议留有一米以上的维修空间。
It should be kept more than 1m space for maintenance during installation.
2. 多台塔拼装或多台单独安装时, 应注意集水盘的水位应在同一水平面上。
When multiple cooling towers are assembled or installed separately, it should keep the water level of water collector at the same level.
3. 多台塔单独安装时, 应注意平衡口的大小是否符合要求。
When multiple cooling towers are installed independently, check whether the size of balance point meets requirement.

基础高度为净高尺寸, 不含任何结构层的高度。
The foundation height is net size without any structure layer's height.



COOLING TECHNOLOGY INSTITUTE

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August 31, 2017
(Revision 0)

Shandong Grad Group Co., Ltd.
No.6, Grad Road, Tianqu Industrial Park
Dezhou, Shandong Province, China

Subject: CTI Cooling Tower Certification of Shandong Grad Group Co., Ltd.
GAT Series Induced-draft, Cross-flow, Cooling Tower Line

Greetings:

The Shandong Grad Group Co., Ltd. (Grad) line of GAT Series induced-draft, cross-flow, cooling towers, as described in your original application and subsequent revisions and clarifications through August 21, 2017, has satisfactorily fulfilled the requirements for certification of thermal performance by the Cooling Technology Institute (CTI), as set forth in the CTI Certification Standard STD-201(15). A listing of the fifteen (15) GAT Series cooling tower models encompassed by this certification is included with this letter for reference.

The Grad GAT Series cooling towers have been assigned and should begin to use CTI Certification Validation Number C88A-17R00. You are hereby authorized and encouraged to display the CTI Certification Logo in all pertinent literature and are required to affix the CTI Certification Label on all towers comprising the line, as provided in the Certification Standard.

This CTI Certification requires the successful completion of a CTI Annual Reverification Test on a different model each year to remain in effect in the subsequent year.

Very truly yours,

Michael G. Womack, PE
CTI Thermal Certification Administrator



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Shandong Grad Group Co., Ltd. (Grad)
Line of GAT Series CTI Certified Cooling Towers
CTI Certification Validation Number C88A-17R00
August 31, 2017 (Revision 0)

GAT-1017	GAT-3029
GAT-1217	GAT-3333
GAT-1521	GAT-3733
GAT-1721	GAT-4037
GAT-2025	GAT-4537
GAT-2225	GAT-5041
GAT-2529	GAT-6041
	GAT-7045

Footnotes:

- Multiple cell configurations of the single cell models above are also available but not listed individually. Multi-cell configurations are end-wall to end-wall arrangements of the single cell designs which do not impact the air flow rate or capacity of the individual cells, and are included in the certification. See example model number below.
- Certification includes galvanized steel plate or stainless steel plate structure materials and PVC or glass fiber reinforced casing materials.
- Certification includes optional items that do not affect thermal performance, for example, access ladder and handrails.
- Certification includes units with optional gear drive in place of standard belt drive.
- Certified Model Number Example: GAT-1217-2
GAT – Line Designation
1217 – Model Number
'-2' – Two cell arrangement of the primary certified model (capacity equals 2 times rated capacity)

Selection Data Sheet

STD-201RS Table 3b - SI Units - Cooling Towers (CT)

Condition Reference #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Wet Bulb ° C	10	10	10	10	10	13	13	13	13	13	16	16	16	16	16
Range ° C	6	6	6	8	8	6	6	6	8	8	6	6	6	8	8
Approach ° C	4	6	7	4	7	4	6	7	4	7	4	6	7	4	7
Inlet Water Temperature ° C	20	22	23	22	25	23	25	26	25	28	26	28	29	28	31
Outlet Water Temperature ° C	14	16	17	14	17	17	19	20	17	20	20	22	23	20	23
in l/s															
GAT-1017	9.95	14.12	16.31	8.33	13.31	11.34	15.74	18.51	9.72	15.16	13.3	18.51	21.17	11.11	17.7
GAT-1217	12.5	17.59	20.36	10.41	16.55	14.12	19.67	23.14	12.15	18.97	16.55	23.26	26.5	13.88	22.1
GAT-1521	14.93	21.17	24.41	12.5	19.9	17	23.6	27.77	14.46	22.79	19.9	27.88	31.82	16.55	26.5
GAT-1721	17.47	24.64	28.58	14.46	23.26	19.79	27.54	32.39	16.89	26.61	23.26	32.51	37.14	19.32	31
GAT-2025	19.9	28.23	32.63	16.55	26.5	22.68	31.47	37.02	19.32	30.43	26.5	37.14	42.46	22.1	35.4
GAT-2225	22.45	31.7	36.68	18.63	29.85	25.45	35.41	41.65	21.75	34.25	29.85	41.77	47.67	24.88	39.8
GAT-2529	24.88	35.29	40.73	20.71	33.21	28.35	39.45	46.28	24.18	38.07	33.21	46.4	52.99	27.65	44.2
GAT-3029	29.85	42.23	48.94	24.88	39.8	34.02	47.32	55.54	29.04	45.59	39.8	55.65	63.64	33.21	53.11
GAT-3333	32.86	46.51	53.8	27.42	43.85	37.37	51.95	61.09	31.93	50.21	43.85	61.21	69.99	36.45	58.43
GAT-3733	36.79	52.77	60.28	30.66	49.06	41.88	58.31	68.49	35.75	56.23	49.05	68.61	78.44	40.96	65.49
GAT-4037	39.8	56.35	65.25	33.21	53.11	45.35	63.06	74.05	38.64	60.86	53.11	74.28	84.81	44.2	70.81
GAT-4537	44.78	63.4	73.35	37.37	59.7	51.02	70.92	83.3	43.5	68.38	59.7	83.54	95.45	49.75	79.6
GAT-5041	49.75	70.46	81.57	41.54	66.41	56.69	78.79	92.68	48.36	76.01	66.42	92.79	106.1	55.3	88.51
GAT-6041	59.7	84.58	97.77	49.75	79.6	67.92	94.52	111.19	58.08	91.18	79.6	113.3	127.27	66.41	106.1
GAT-7045	69.65	98.69	114.08	58.08	92.91	79.25	110.26	129.69	67.68	106.44	92.91	129.93	148.44	77.4	123.8

Condition Reference #	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Wet Bulb ° C	18	18	18	18	18	21	21	21	21	24	24	24	24	24	24
Range ° C	6	6	6	8	8	6	6	6	8	8	6	6	6	8	8
Approach ° C	4	6	7	4	7	4	6	7	4	7	4	6	7	4	7
Inlet Water Temperature ° C	28	30	31	30	33	31	33	34	33	36	34	36	37	36	39
Outlet Water Temperature ° C	22	24	25	22	25	25	27	28	25	28	28	30	31	28	31
in l/s															
GAT-1017	14.69	20.25	23.14	12.5	19.32	16.55	23.49	27.42	13.77	22.8	19.32	27.31	31.82	16.31	26.73
GAT-1217	18.28	25.34	28.93	15.5	24.18	20.71	29.39	34.25	17.24	28.58	24.07	34.13	39.69	20.36	33.32
GAT-1521	21.98	30.43	34.71	18.63	29.04	24.88	35.2	41.07	20.71	34.25	28.93	40.96	47.67	24.41	40.03
GAT-1721	25.69	35.4	40.5	21.75	33.9	29.04	41.07	47.9	24.18	39.92	33.78	47.78	55.65	28.58	46.74
GAT-2025	29.27	40.5	46.28	24.88	38.64	33.21	46.97	54.73	27.65	45.59	38.53	54.61	63.52	32.63	53.34
GAT-2225	32.97	45.59	52.07	28	43.5	37.26	52.87	61.55	31.12	51.37	43.39	61.44	71.5	36.68	60.05
GAT-2529	36.68	50.68	57.85	31.12	48.36	41.42	58.78	68.38	34.6	57.04	48.25	68.26	79.49	40.73	66.76
GAT-3029	43.97	60.74	68.2	37.37	58.08	49.75	70.46	82.15	41.42	68.48	57.85	81.92	95.34	48.94	80.06
GAT-3333	48.36	66.87	76.3	41.07	63.87	54.73	77.52	90.25	45.59	75.32	63.64	90.13	105.1	53.8	88.05
GAT-3733	54.15	74.97	85.62	46.05	71.62	61.32	86.89	101.24	51.14	84.46	71.39	101.12	117.55	60.28	98.7
GAT-4037	58.54	80.99	92.56	49.75	77.4	66.3	93.95	109.45	55.3	91.29	77.17	109.22	127.15	65.25	106.67
GAT-4537	65.95	91.17	104.13	56	87	74.63	105.75	123.1	62.13	102.63	86.78	122.87	143	73.35	103.8
GAT-5041	73.24	101.24	115.7	62.25	96.73	82.96	117.55	136.87	69.07	114.08	96.49	136.64	158.97	81.57	120.1
GAT-6041	87.93	121.49	138.84	74.63	116.05	99.5	141.04	164.18	82.84	136.87	115.7	163.95	190.67	97.77	133.4
GAT-7045	102.51	141.73	161.98	87.12	135.37	116.05	164.53	191.6	96.73	159.67	135.02	191.25	222.5	114.08	186.74

Selection Data Sheet

STD-201RS Table 3b - SI Units - Cooling Towers (CT)

Condition Reference #	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
Wet Bulb ° C	27	27	27	27	27	29	29	29	29	29	32.2	32.2	32.2	32.2	32.2	21	25.56	27	28
Range ° C	6	6	6	8	8	6	6	6	8	8	6	6	6	8	8	5	5.56	5	5
Approach ° C	4	6	7	4	7	4	6	7	4	7	4	6	7	4	7	6	3.89	5	4
Inlet Water Temperature ° C	37	39	40	39	42	39	41	42	41	44	42.2	44.2	45.2	44.2	47.2	32	35.00	37	37
Outlet Water Temperature ° C	31	33	34	31	34	33	35	36	33	36	36.2	38.2	39.2	36.2	39.2	27	29.44	32	32
in l/s																			
GAT-1017	22.79	32.51	37.26	19.55	31.12	25.1	35.4	40.84	21.52	34.36	29.8	41.99	48.94	25.45	40.96	26.73	22.09	31.47	27.65
GAT-1217	28.58	40.6	46.63	24.53	38.99	31.35	44.2	51.02	26.96	43.04	37.37	52.53	61.21	31.82	51.14	33.32	27.65	39.34	34.59
GAT-1521	34.25	48.71	55.88	29.39	46.74	37.6	52.99	61.21	32.28	51.6	44.78	63.06	73.35	38.18	61.32	40.03	33.21	47.21	41.42
GAT-1721	39.92	56.81	65.25	34.25	54.49	43.85	61.89	71.39	37.72	60.16	52.29	73.47	85.62	44.54	71.62	46.74	38.64	55.19	48.36
GAT-2025	45.59	64.91	74.51	39.22	62.36	50.1	70.69	81.68	43.04	68.73	59.7	83.99	97.88	50.91	81.79	53.34	44.19	63.06	55.3
GAT-2225	51.37	73.01	83.88	44.08	70.11	56.46	79.6	91.87	48.48	77.4	67.22	94.53	110.03	57.27	92.09	60.04	49.75	70.92	62.25
GAT-2529	57.04	81.22	93.25	49.06	77.98	62.71	88.39	102.05	53.8	85.97	74.63	105.06	122.29	63.64	102.28	66.76	55.3	78.79	69.07
GAT-3029	68.49	97.42	111.88	58.78	93.49	75.21	106.09	122.41	64.56	103.2	89.55	125.99	146.71	76.25	122.76	80.06	66.29	94.53	82.96
GAT-3333	75.32	107.14	122.99	64.68	102.86	82.73	116.63	134.67	71.04	113.5	98.46	138.61	161.4	83.88	135.02	88.05	73	104.01	91.17
GAT-3733	84.46	120.1	137.91	72.54	115.35	92.79	130.86	150.99	79.72	127.27	110.49	155.39	180.95	94.06	151.34	98.69	81.79	116.63	102.28
GAT-4037	91.29	129.82	149.14	78.44	124.72	100.31	141.39	163.25	86.08	137.57	119.4	167.99	195.65	101.7	163.59	106.68	88.39	125.99	110.61
GAT-4537	102.63	146.13	167.78	88.16	140.23	112.81	159.08	183.73	96.84	154.69	134.33	189.05	220.18	114.43	184.08	120.09	99.5	141.73	124.38
GAT-5041	114.08	162.33	186.4	97.99	155.85	125.42	176.79	204.09	107.72	171.93	149.25	210.11	244.59	127.15	204.56	133.4	110.61	157.58	138.26
GAT-6041	136.87	194.48	223.65	117.55	186.97	150.41	212.19	244.94	129.24	206.29	179.1	252.11	293.53	152.61	245.52	160.13	132.71	189.05	165.79
GAT-7045	159.67	227.23	260.09	137.22	218.21	175.55	247.48	285.78	150.76	240.66	208.95	294.11	324.47	178.06	286.36	186.74	154.81	220.52	193.45



MANUFACTURER'S PUBLISHED THERMAL PERFORMANCE IS CERTIFIED BY THE COOLING TECHNOLOGY INSTITUTE UNDER THE PROVISIONS OF STD-201(15)

CERTIFICATION WAL IDATION NUMBER

C 8 8 A - 1 7 R 0 0 .



设计选型注意事项

- 1、国家标准设计工况：进水温度37°C；出水32°C；湿球温度28°C；干球温度31.5°C；大气压力9.94x104pa；
- 2、我公司冷却塔是按照国家标准工况设计，同时可以为客户提供非标设计工况下的产品设计和制造；
- 3、当用户场地受限时，可以提供非标尺寸的产品设计和制造；
- 4、样本标注的基础高度为单台冷却塔的标准设计尺寸，可以根据现场回水管的管径和安装高度调整；
- 5、两台或两台以上冷却塔组装时，我公司将提供平衡法兰；
- 6、若用户需要加大冷却塔接管尺寸时，请在订货时说明；
- 7、不同型号的冷却塔连通时，必须保证水盘的水位平衡，可通过调整基础高度来实现；
- 8、当冷却塔安装在噪声敏感区，请务必考虑噪声的影响，及时与我公司设计人员联系；
- 9、冷却塔进风面距建筑物的允许最小距离与塔大小、台数、当地风向有关，如遇此种问题，请及时与我公司设计人员联系；

运行保养注意事项

- 1、每运行3个月或根据实际情况，清理播水盘和过滤器上的杂物，保持水流运行通畅；
- 2、每运行1个月，需要检查减速机润滑油；
- 3、传动皮带应在运行一周后，再调整一次，以后每运行3个月，需检查一次；
- 4、冬季停机时，需排空积水盘内积水，并清洗干净；
- 5、冷却塔超过半年不运行时，应松开传动皮带，并对电机接线盒做防护；

安装注意事项

- 1、冷却塔应安装在通风良好、干净的场所；
- 2、冷却塔进风口与建筑物应保持一定的距离，确保新风进入塔内；
- 3、每运行3个月或根据实际情况，清理播水盘和过滤器上的杂物，保持水流运行通畅；
- 4、冷却塔应安装在空旷场所，避免因声音反射而造成噪音放大；
- 5、应避免在多灰尘、多酸性气体场所使用，否则会导致冷却塔部件以及配管的损伤；
- 6、应避免安装在烟囱及其他靠近热源的场所；
- 7、冷却塔应水平放置，不能倾斜，以免布水不均而影响冷却效果；
- 8、冷却塔风机出厂前已做过平衡试验，安装时注意风机叶片与轮毂编号一致；

管路定位注意事项

- 1、循环水泵吸入口应放置于冷却塔集水盘水位以下的位置；冷却塔出水口一定不能高于集水盘最高水位；
- 2、管路安装时，应设置管道支架，而不应使冷却塔直接承受管道的重量；
- 3、进水口应设置水量调节阀，以使进入各塔的水量平衡；
- 4、冷却塔接管，法兰公称压力为1.0mpa；补水、溢水排污接口采用国标管螺纹；
- 5、冷却塔的补水管应设置支撑台架，避免浮球阀补水时的振动，补水压力宜在5米以下；
- 6、冷却塔法兰和管路联接时，应保证中心对齐，水平对齐，避免使用外力，撬动管道；避免冷却塔法兰底部受力，造成联接面渗水或漏水；

技术服务

- 1、我公司提供电脑选型软件，可计算不同工况下，冷却塔的热力性能指标，供客户使用；
- 2、我公司在全国主要城市，设有办事处，可为您及时提供各种技术支持需求；



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