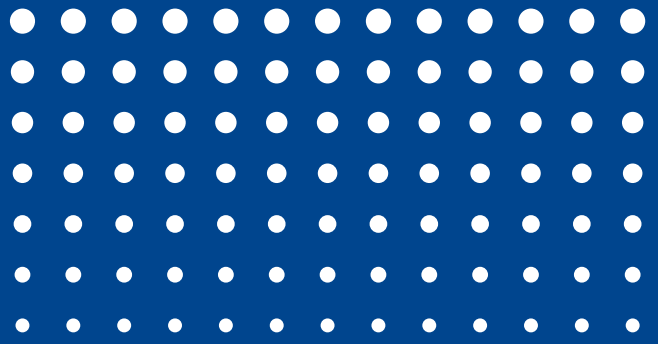




格瑞德
GRAD

您身边的中央空调定制专家
GRAD--the central air conditioning
customization expert around you



闭式冷却塔

山东格瑞德集团
SHANDONG GRAD GROUP

低碳节能格瑞德，绿色健康新生活！

Low-carbon and Energy-saving
GRAD brings you Green and Healthy new life

集团简介

山东格瑞德集团有限公司位于德州市，集中央空调、复合材料、太阳能新能源产品的研发、设计、生产、销售、维护于一体，是中国制冷空调工业协会命名的“德州·中央空调城”的支柱企业，全国中央空调系统、复合材料的主导企业之一。

格瑞德集团致力于打造您身边的中央空调定制专家并提供综合能源解决方案，格瑞德集团拥有国家机电设备安装壹级资质，空气净化工程贰级资质，具备整体项目承揽能力。多次承担国家、省市级科技攻关项目，累计获专利技术成果110多项。300多位高级工程师量身设计中央空调解决方案。70万平米制造基地生产从主机到末端全系列产品，高效降膜离心式冷水机组国内领先，风机墙空气处理机组填补国内空白，被列入国家火炬计划。格瑞德中央空调性能检测中心作为国家级检测中心，已通过CNAS认证，确保产品品质。格瑞德集团在北京、天津、沈阳、西安、武汉、南京等城市建有30多个办事处，销售、设计、安装、售后网络覆盖全国，产品出口40多个国家。

目前，格瑞德集团下设销售工程公司、主机公司、空调公司、复合材料公司、风电公司等五个分公司，已全面通过ISO9001国际质量管理体系、ISO14001国际环境管理体系认证和OHSAS18001职业健康安全管理体系认证。



Brief Introduction Of The Group

Shandong GRAD Group is situated in Dezhou, Shandong. It is a large modern enterprise with the research & development, design, production, sales, installation and maintenance for central air conditioning products, composite material products and solar energy products. It is named the pillar enterprise by China Refrigeration and Air Conditioning Industry Association(CRAA) and is one of the leading enterprises in central air conditioning and composite material industry.

GRAD Group devotes itself to be a central air conditioning customization expert around you and provides you a comprehensive energy solution, GRAD possesses national mechanical and electrical equipment installation Class I qualification and purification equipment installation Class II qualification. GRAD has the overall project contacting ability. It has contracted national class and provincial class technology research projects for many times. The accumulated patents for technological achievements has passed 110 items. There are more than 300 senior engineers available for central air conditioning design and solution. The 700,000 m² manufacturing base includes the whole central air conditioning series: from chiller to terminal products. The high efficient falling film centrifugal chiller maintains domestic leading position and the large fan wall air handling unit has filled domestic blank and been listed in the national torch plan. GRAD has the national class air conditioning testing center and has passed CNAS certification. The products quality can be well guaranteed. At the mean while, GRAD has established more than 30 offices all over China, such as Beijing, Tianjin, Shenyang, Xi'an, Wuhan, Nanjing, etc. The sales, design, installation and after sales network has covered every corner of China. Moreover, its products have been exported to more than 40 countries.

Until now, GRAD Group has established five subsidiaries: Sales Engineering Company, Chiller Company, Air-conditioning Company, Composite Material Company and Wind Power Company. It has already passed ISO 9001 quality management system certification, ISO 14001 environmental management system certification and OHSAS 18001 occupational health safety management system certification.



企业资质

低碳节能格瑞德，绿色健康新生活！

Low-carbon and Energy-saving

GRAD brings you Green and Healthy new life

Enterprise Qualification



格瑞德集团始终以“以德为基，以人为本，顾客至上”的经营理念，建立以客户为导向的质量管理体系，注重全员参与和团队协作，用产品的高技术、高品质，服务的高效率、高质量持续赢得客户。

2008年获得国家机电设备安装一级资质，空气净化工程二级资质，成为行业内获得双项殊荣的企业之一。集团通过了ISO9001国际质量管理体系和产品质量双认证，ISO14001：9006国际环境管理体系认证，OHSAS18001职业健康安全管理体系认证，是国内第一批获得制冷生产许可证的企业，公司生产的空调产品先后取得国家制冷设备生产许可证，3C中国国家强制性产品认证、CRAA中国制冷空调行业权威性产品性能认证，在国内同行业中率先获得了压力容器设计制造许可证，风机产品荣获中国节能产品认证；冷却塔产品荣获中国节水产品认证；SMC模压产品荣获山东省卫生厅卫生许可认证。



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工作原理

冷却流体在闭式冷却塔的盘管内流过，热量向盘管管壁传导；塔顶风机作抽风运行，外循环喷淋水与风机引入的新风在塔内充分接触，进行潜热和显热交换，使喷淋水水温降低，温度较低的喷淋水在盘管管壁外形成水膜，吸收盘管管壁的热量，从而带走介质的载热，达到冷却的目的。塔内的预冷填料片有助于外循环的进一步冷却。

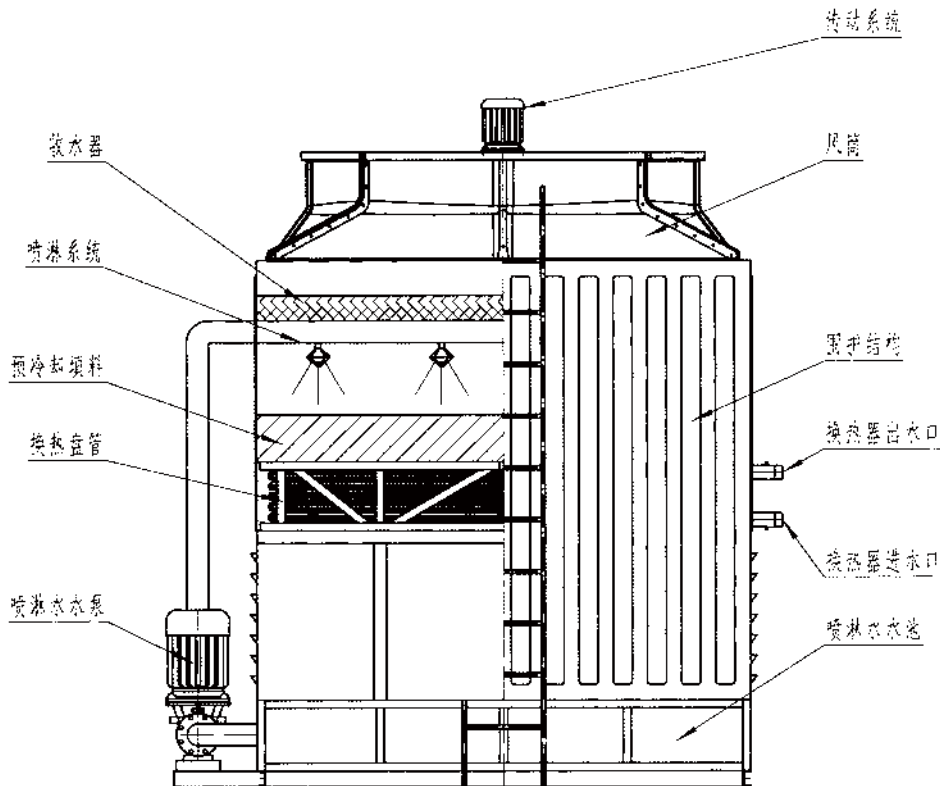
在热交换过程中，盘管内的载热介质因为没有与空气直接接触而保持其原来的品质特性，不会被污染、浓缩、稀释、挥发。盘管外的喷淋水除少量的蒸发损失外，汇聚于塔底水池，循环使用。

闭式塔适用于被冷却流体不能与外界空气直接接触，且进口温度低于80℃，有充足的喷淋水源及水源水质不易结垢的场合。

结构特点说明

1. 采用预冷散热填料和换热盘管协同排热结构，冷效好，体积小。
2. 进风处设进风百叶，避免阳光直射入塔内，藻类滋生，喷淋水质清洁。
3. 换热管采用T2紫铜管，设计耐压1.6Mpa，保持流体免于污染。
4. 换热盘管采用模块式设计。
5. 采用铝合金轴流风机，出口风速高，避免热空气回流，运行噪声低。

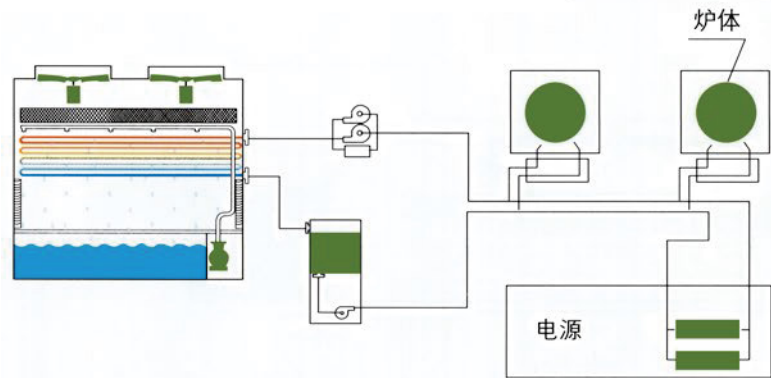
冷却塔结构示意图



适用范围

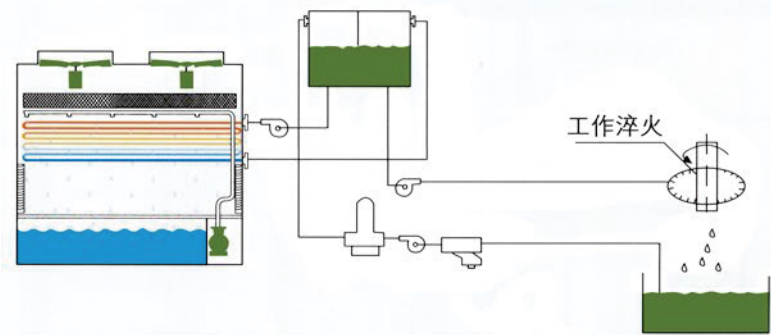
感应加热行业

- * 高频、中频电源
- * 熔炼炉、保温炉、透热炉
- * 高频、中频淬火成套设备



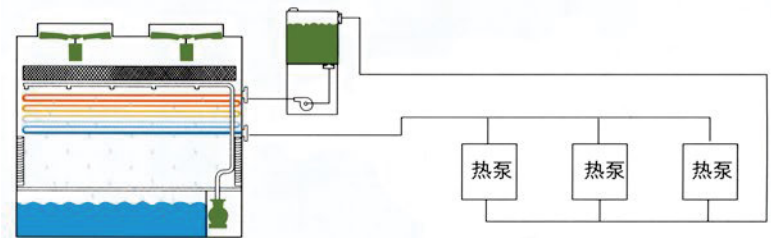
工业流体

- * 淬火水
- * 淬火油
- * 液压油
- * 电镀溶液



空调系统

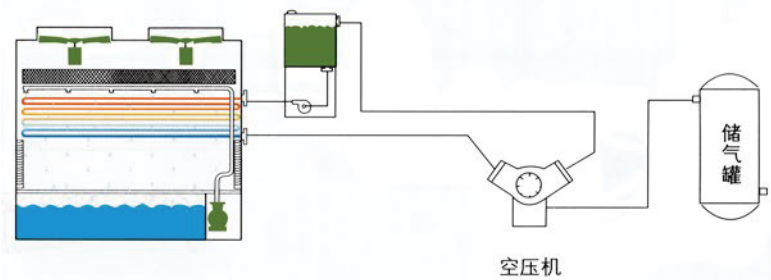
- * 水源式热泵系统
- * 机房空调系统
- * 辅助供冷系统
- * 其他各种类型的重量空调



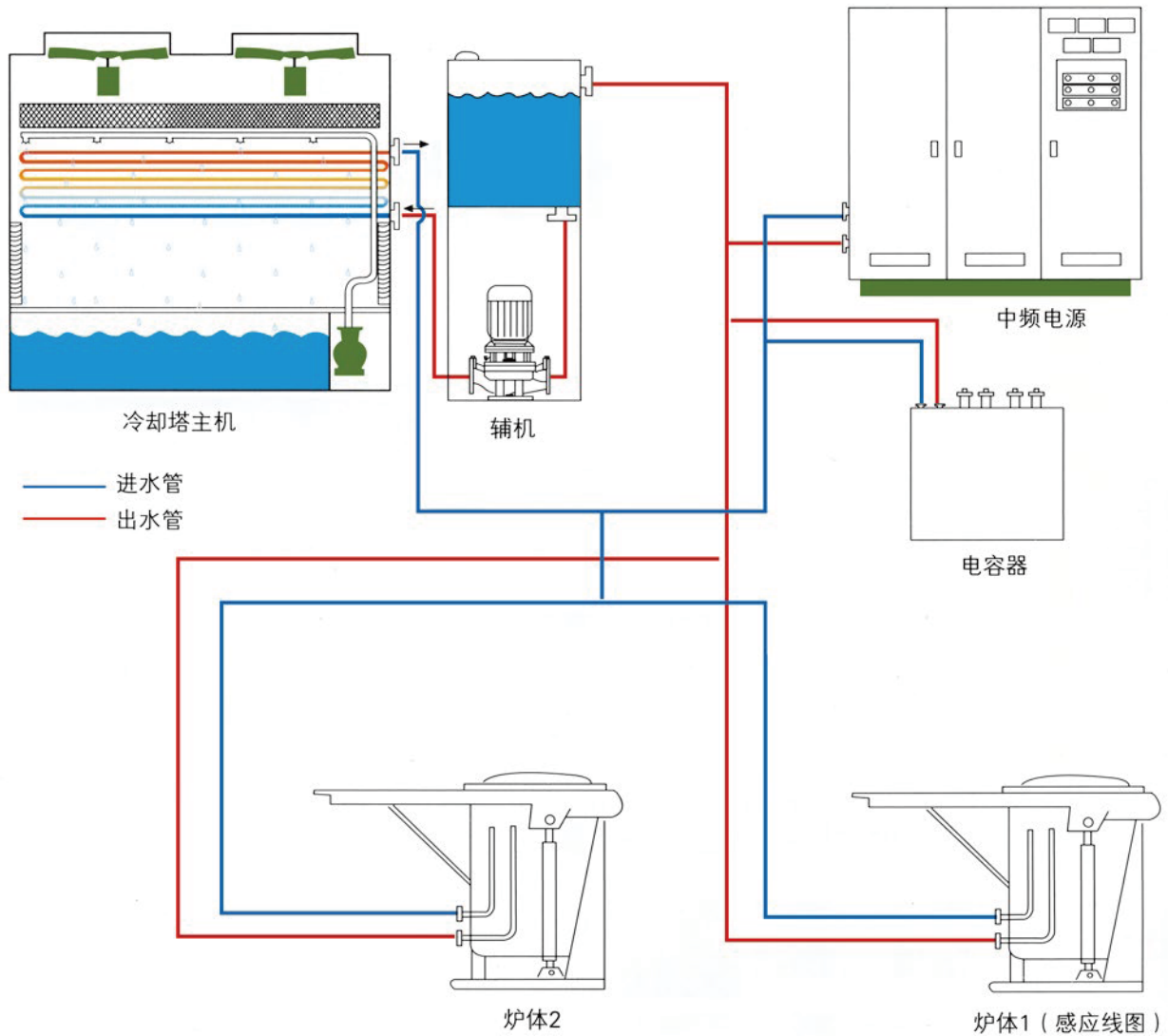
空压机水套冷却

- 注塑机冷却
- 变压器冷却
- 玻璃熔窑冷却
- 发电厂
- 化工厂

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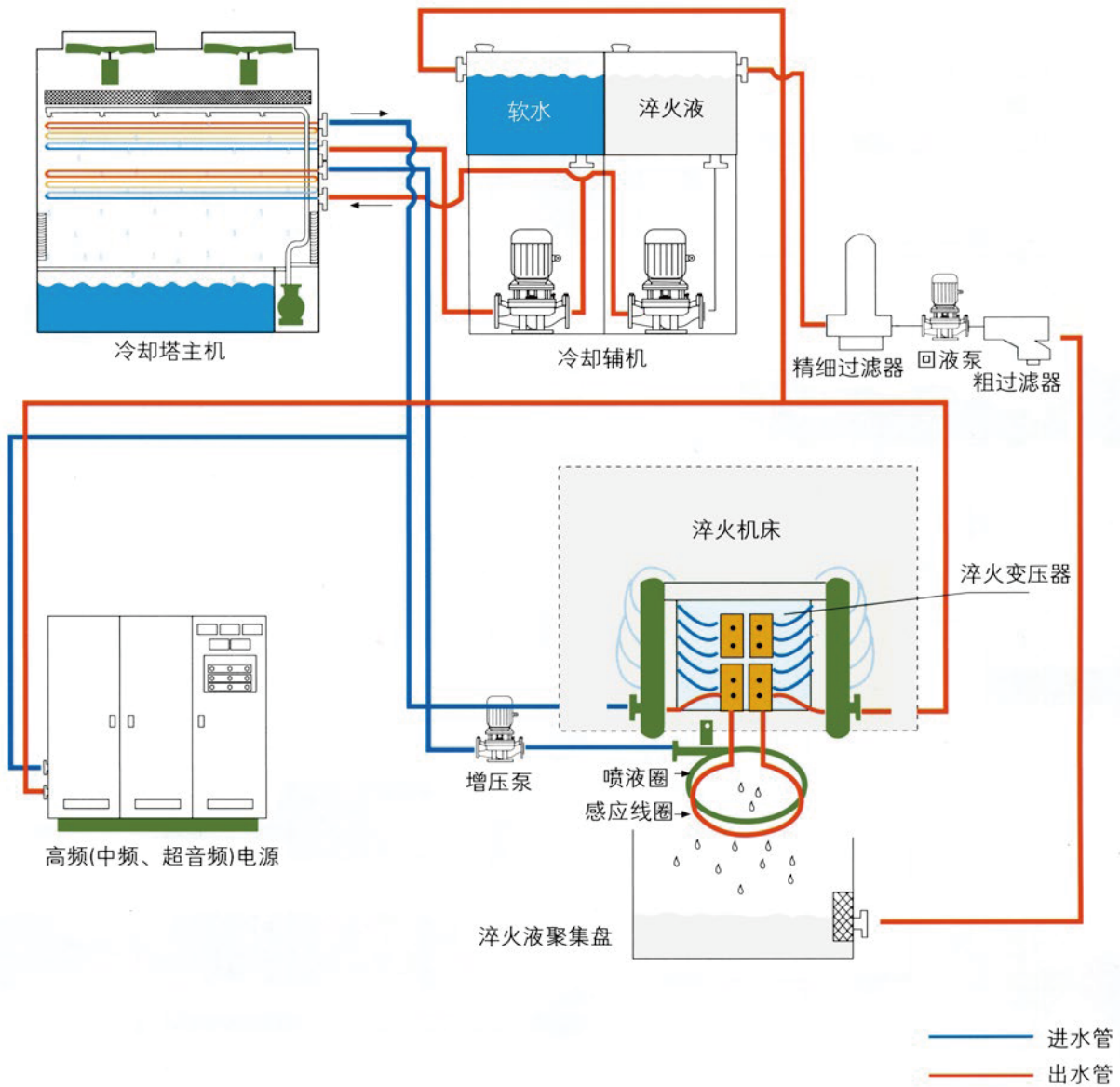
例一 典型中频熔炼炉水系统布置简图



使用特点

- 1、本系统封闭式循环，避免管路因为结垢逐渐减少流量，甚至阻塞造成元件过热损坏(如电子管、可控硅、IGBT电源、电抗器、电容器、感应线圈等)。
- 2、封闭式循环水耗量很小，符合环保节能的要求。
- 3、散热效率高，运行成本低。
- 4、占地小、搬动方便、免挖水池。

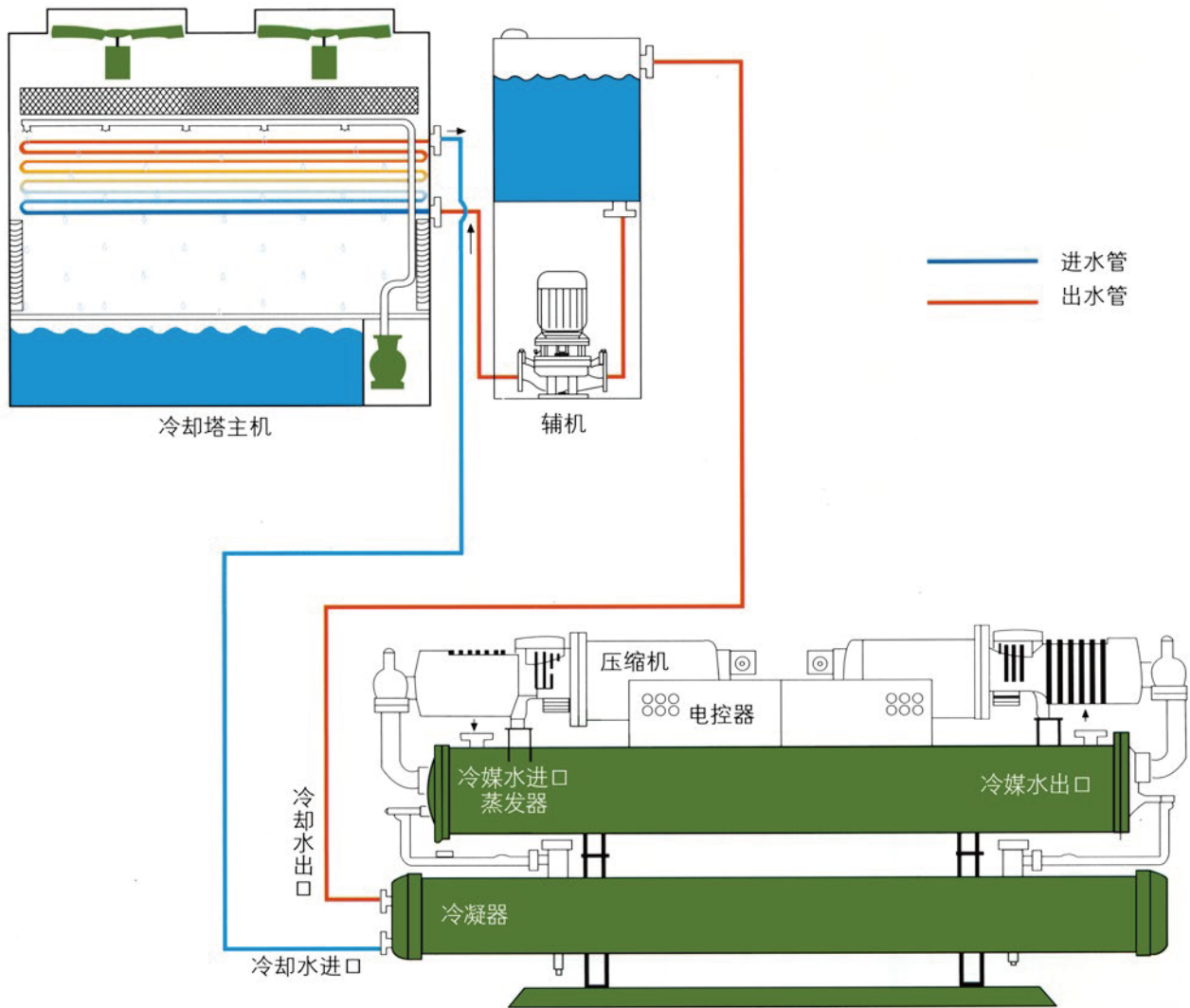
例二 典型淬火机床冷却系列布置简图



使用特点

- 1、电源、淬火变压器、感应线圈的使用特点参照前面。
- 2、淬火液循环使用、介质无损耗，成分比例稳定。
- 3、多级分段过滤、分段压力控制。
- 4、温控精确度好，确保工件淬火质量。

例三 典型中央空调外水冷却系列布置简图



使用特点

- 1、本系统封闭式循环，循环用水采用纯水或软化水而不结垢，免去经常性的管路除垢(因使用城市自来水而引起的结垢，使循环水流量逐渐变小而引起制冷效果降低。
- 2、本系统散热效率高，免去往循环水箱里加冰块。
- 3、循环的软化水消耗量很小，按液位显示，定期适量补充既可。

FBP冷却塔技术参数表

型号 FBP	电机 功率 (kw)	风机 直径 (mm)	喷淋泵 功率 (Kw)	喷淋 流量 (m ³ h)	自重 (kg)	运行重 (kg)	进水 (DN)	出水 (DN)	溢流 (DN)	补水 (DN)	快补 (DN)	排污 (DN)	外形尺寸(mm) A × B × H
15	1.1	800	0.37	16	770	1300	50	50	40	20	20	40	1000 × 1000 × 3370
20	2.2	1000	0.55	23	820	1400	65	65	40	20	20	40	1200 × 1200 × 3370
30	3	1200	1.1	36	1170	2140	80	80	40	20	20	40	1500 × 1500 × 3470
40	4	1200	1.1	53	1260	2610	80	80	40	20	20	40	1700 × 1700 × 3470
50	4	1400	1.5	70	1360	2810	65 × 2	65 × 2	50	25	25	50	1900 × 1900 × 3670
65	5.5	1400	2.2	80	1510	3220	80 × 2	80 × 2	50	25	25	50	2200 × 2200 × 3670
80	7.5	1600	2.2	100	1620	3920	100 × 2	100 × 2	50	25	25	50	2400 × 2400 × 3870
100	7.5	2000	3	120	1780	4690	100 × 2	100 × 2	50	32	32	50	2700 × 2700 × 3870
125	11	2200	3	150	2120	5720	100 × 2	100 × 2	80	32	32	50	3000 × 3000 × 3870
150	7.5 × 2	1600 × 2	4	180	3400	9200	125 × 2	125 × 2	80	32	32	50	4600 × 2300 × 3870
200	7.5 × 2	2000 × 2	5.5	240	3400	9200	125 × 2	125 × 2	80	40	40	50	5400 × 2700 × 3870
250	11 × 2	2200 × 2	7.5	280	4200	11400	150 × 2	150 × 2	80	40	40	50	6000 × 3000 × 3870

FBP冷却塔基础尺寸表

项目/型号	宽度 (mm)		长度 (mm)		基础高度 (mm)
	w	w1	L	L1	H
15	1000	/	1000	/	500
20	1200	/	1200	/	500
30	1500	/	1500	/	500
40	1700	850	1700	850	500
50	1900	950	1900	950	500
65	2200	1100	2200	1100	500
80	2400	1200	2400	1200	500
100	2700	1350	2700	1350	500
125	3000	1500	3000	1500	500
150	4600	1150	2300	1150	500
200	5400	1350	2700	1350	500
250	6000	1500	3000	1500	500

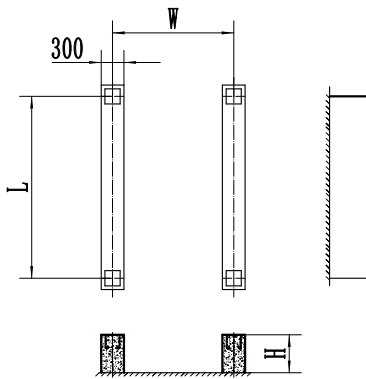
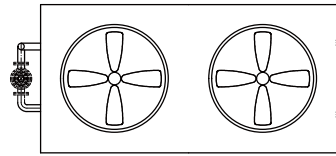
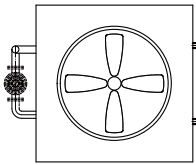
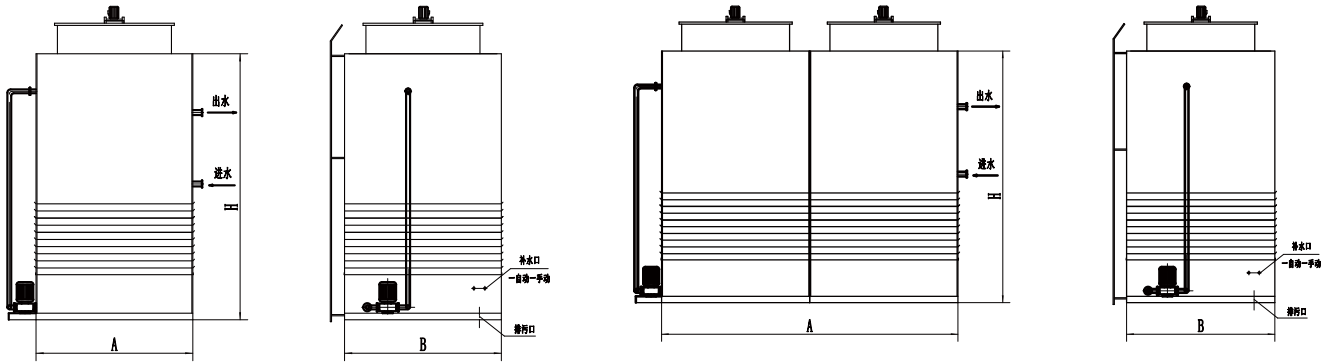
HBS冷却塔技术参数表

产品型号	冷却水量 (m ³ /h)	设备尺寸 (mm)			轴流风机		喷淋水量 (m ³ /h)	功率 (KW)	重量 (kg)		管径		
		W	L	H	型号直径	功率KW			运输	运行	进出口径	补水	排污
HBS-20	20	2000	1400	2100	710	1.5	30	0.8	1080	1970	DN50	DN20	DN32
HBS-30	30	2000	1460	2500	800	2.2	30	0.8	1210	2290	DN65	DN20	DN32
HBS-40	40	2300	1900	2700	800	1.5X2	45	1.1	1570	3090	DN80	DN50	DN40
HBS-50	50	2500	1900	2700	800	1.5X2	45	1.1	2076	3700	DN100	DN25	DN40
HBS-60	60	2600	2000	2700	800	2.2X2	45	1.1	2600	4500	DN100	DN25	DN40
HBS-70	70	2700	2300	2700	1000	2.2X2	60	1.5	2800	4700	DN100	DN25	DN40
HBS-80	80	3000	2300	2900	1000	3X2	60	1.5	2900	4900	DN125	DN25	DN40
HBS-100	100	3000	2600	3300	1100X2	5.5X2	84	2.2	3210	5900	DN125	DN32	DN50
HBS-125	125	3400	2800	3500	1200X2	5.5X2	120	2.2	3300	6300	DN150	DN32	DN50
HBS-150	150	4500	2900	3500	1300X2	5.5X2	160	3.0	4200	8500	DN150	DN32	DN50
HBS-200	200	5000	2900	3500	1200X3	5.5X3	180	4.0	5180	10200	DN125X2	DN40	DN50
HBS-250	250	6600	2900	3700	1200X4	5.5X4	230	5.5	7140	13630	DN150X2	DN40	DN50
HBS-300	300	6800	3000	4100	1300X4	7.5X4	230	7.5	8200	14600	DN150X2	DN40	DN50
HBS-350	350	7500	3000	4500	1400X4	7.5X4	280	11.0	9300	16800	DN200X2	DN40	DN50

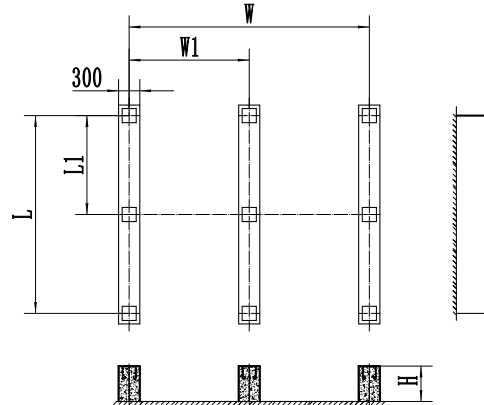
HBS冷却塔基础尺寸表

产品型号	宽度W (mm)				长度L (mm)		基础高度 (mm)
	W	W1	W2	W3	L	L1	H
HBS-20	2000	1000			1400	700	500
HBS-30	2000	1000			1460	730	500
HBS-40	2300	1150			1900	950	500
HBS-50	2500	1250			1900	950	500
HBS-60	2600	1300			2000	1000	500
HBS-70	2700	1350			2300	1150	500
HBS-80	3000	1500			2300	1150	500
HBS-100	3000	1500			2600	1300	500
HBS-125	3400	1100	1200		2800	1400	500
HBS-150	4500	1500	1500		2900	1450	500
HBS-200	5000	1600	1800		2900	1450	500
HBS-250	6600	1650	1650	1650	2900	1450	500
HBS-300	6800	1700	1700	1700	3000	1500	500
HBS-350	7500	1875	1875	1875	3000	1500	500

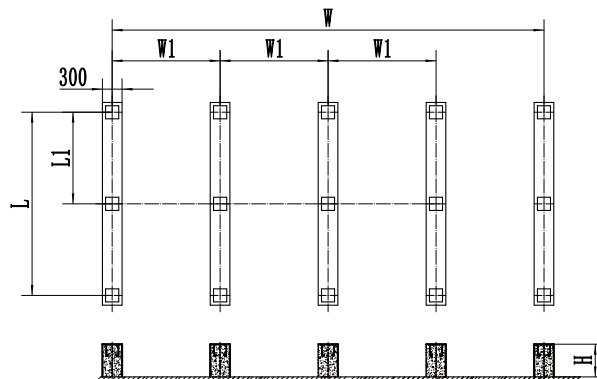
FBP基础外形图



FBP15-FBP30基础图

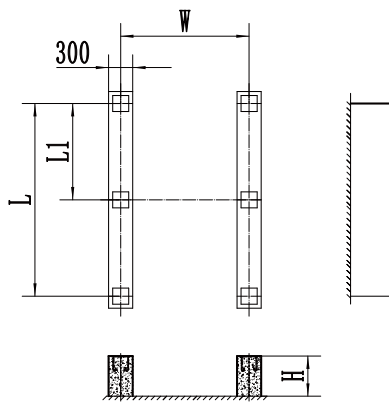
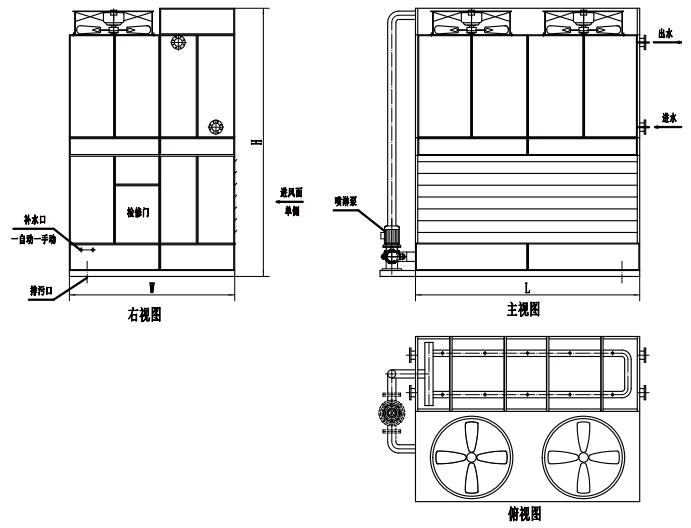
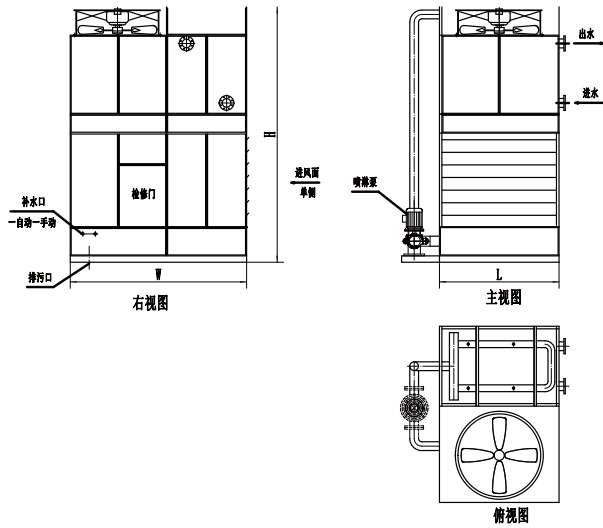


FBP40-FBP125基础图

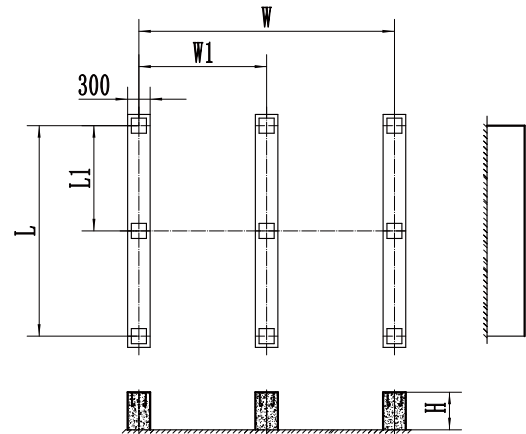


FBP150-FBP250基础图

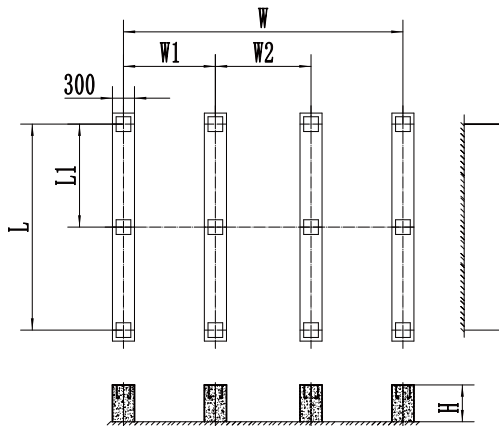
HBS基础外形图



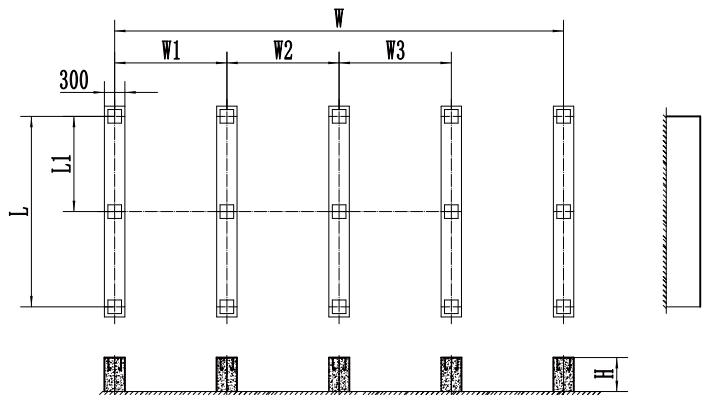
HBS20-HBS50基础图



HBS60-HBS125基础图



HBS150基础图



HBS200-HBS250基础图



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January 10, 2023
(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.
FBP Series Induced-draft, Counter-Flow, Closed-Circuit Cooling Tower Line

Greetings:

The Shandong Grad Group Co., Ltd. (GRAD) line of FBP Series induced-draft, counter-flow, closed-circuit cooling towers, as described in your original application and subsequent revisions and clarifications through December 28, 2022, 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(21). A listing of the twelve (12) FBP Series cooling tower models encompassed by this certification is included with this letter for reference.

The Grad FBP Series cooling towers have been assigned and should begin to use CTI Certification Validation Number C88B-23R00. 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



COOLING TECHNOLOGY INSTITUTE

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Shandong Grad Group Co., Ltd. (GRAD)
Line of FBP Series CTI Certified Cooling Towers
CTI Certification Validation Number C88B-23R00
January 10, 2023 (Revision 0)

FBP-15	FBP-80
FBP-20	FBP-100
FBP-30	FBP-125
FBP-40	FBP-150
FBP-50	FBP-200
FBP-65	FBP-250

Footnotes:

- 1) Inline, multi-cell configurations of the primary single cell models are included in the certification with an adjustment of the inlet window height to account for changes in the inlet due to adjacent cells.
- 2) Certification includes units with stainless steel tube heat exchangers and water as the process fluid. Alternate copper tube material is also available and provides an increment in rated capacity of the models of 3%.
- 3) Certification includes optional external features that do not affect thermal performance such as handrail and/or ladder cage.
- 4) Certification includes galvanized steel plate or stainless steel plate structure materials and PVC or glass fiber reinforced casing materials.
- 5) Certified Model Number Example: FBP-100-2
FBP – Line Designation
100 – Model Number
2 – Two inline cells (capacity equals two times one cell rated capacity)

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	16	17	18	19	20	21	22	23	24	25
Wet Bulb °C	10	10	10	10	10	13	13	13	13	13	16	16	16	16	16	16	17	18	19	20	21	22	23	24	25
Range °C	6	6	6	8	8	6	6	6	8	8	6	6	6	8	8	16	17	18	19	20	21	22	23	24	25
Approach °C	4	6	7	4	7	4	6	7	4	7	4	6	7	4	7	16	17	18	19	20	21	22	23	24	25
Inlet Water Temperature °C	20	22	23	22	25	23	25	26	25	28	26	28	29	28	31	16	17	18	19	20	21	22	23	24	25
Outlet Water Temperature °C	14	16	17	14	17	17	19	20	17	20	20	22	23	20	23	16	17	18	19	20	21	22	23	24	25
in m3/h																									
FBP - 15	3.8	5.4	6.2	3.2	5.1	4.4	6.2	7.1	3.7	5.9	5.0	7.1	8.2	4.3	6.8	5.5	7.8	9.0	4.7	7.5	6.4	9.0	10.4	5.4	8.7
FBP - 20	5.1	7.2	8.3	4.3	6.8	5.8	8.2	9.5	4.9	7.8	6.7	9.5	10.9	5.7	9.0	7.4	10.4	12.0	6.2	10.0	8.5	12.0	13.9	7.2	11.5
FBP - 30	7.7	10.8	12.5	6.5	10.3	8.8	12.3	14.3	7.4	11.8	10.1	14.2	16.4	8.5	13.6	11.1	15.6	18.0	9.4	14.9	12.8	18.1	20.9	10.9	17.3
FBP - 40	10.2	14.4	16.6	8.6	13.7	11.7	16.5	19.0	9.9	15.7	13.4	18.9	21.9	11.3	18.1	14.7	20.8	24.0	12.5	19.9	17.1	24.1	27.8	14.5	23.1
FBP - 50	12.8	18.0	20.8	10.8	17.1	14.6	20.6	23.8	12.3	19.6	16.8	23.6	27.3	14.2	22.6	18.4	26.0	30.1	15.6	24.9	21.3	30.1	34.8	18.1	28.9
FBP - 65	16.6	23.4	27.0	14.0	22.3	19.0	26.8	30.9	16.0	25.5	21.8	30.7	35.5	18.4	29.4	23.9	33.8	39.1	20.3	32.3	27.7	39.1	45.2	23.5	37.5
FBP - 80	20.5	28.8	33.3	17.3	27.4	23.4	32.9	38.0	19.7	31.4	26.8	37.8	43.7	22.7	36.1	29.5	41.6	48.1	25.0	39.8	34.1	48.2	55.7	28.9	46.2
FBP - 100	25.6	36.0	41.6	21.6	34.2	29.2	41.2	47.5	24.7	39.2	33.5	47.3	54.6	28.4	45.2	36.8	52.0	60.1	31.2	49.8	42.6	60.2	69.6	36.2	57.7
FBP - 125	32.0	45.0	52.0	27.0	42.8	36.5	51.4	59.4	30.8	49.0	41.9	59.1	68.3	35.5	56.5	46.1	65.0	75.1	39.0	62.2	53.3	75.2	87.0	45.2	72.1
FBP - 150	38.4	54.0	62.4	32.4	51.4	43.8	61.7	71.3	37.0	58.9	50.3	70.9	82.0	42.6	67.8	55.3	78.0	90.2	46.8	74.6	63.9	90.3	104.4	54.3	86.6
FBP - 200	51.2	72.0	83.2	43.2	68.5	58.4	82.3	95.1	49.4	78.5	67.0	94.6	109.3	56.7	90.3	73.7	104.0	120.2	62.5	99.5	85.3	120.4	139.2	72.4	115.4
FBP - 250	63.9	90.1	104.0	54.0	85.6	73.0	102.9	118.9	61.7	98.1	83.8	118.2	136.6	70.9	112.9	92.1	130.0	150.3	78.1	124.4	106.6	150.5	174.0	90.5	144.3

Condition Reference #	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
Wet Bulb °C	24	24	24	24	24	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	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	4	6	7	4	7	6	3.89	5	4
Inlet Water Temperature °C	34	36	37	36	39	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	28	30	31	28	31	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 m3/h																								
FBP - 15	7.4	10.5	12.1	6.3	10.1	8.7	12.2	14.2	7.4	11.8	9.6	13.6	15.7	8.2	13.1	11.4	16.1	18.6	9.7	15.6	10.2	8.2	11.7	10.2
FBP - 20	9.9	14.0	16.2	8.4	13.4	11.5	16.3	18.9	9.8	15.7	12.8	18.1	20.9	10.9	17.5	15.2	21.5	24.8	13.0	20.7	13.6	11.0	15.6	13.6
FBP - 30	14.9	21.0	24.3	12.6	20.2	17.3	24.5	28.3	14.8	23.6	19.2	27.2	31.4	16.4	26.2	22.8	32.2	37.2	19.5	31.1	20.5	16.4	23.4	20.4
FBP - 40	19.8	28.0	32.4	16.8	26.9	23.1	32.6	37.7	19.7	31.4	25.6	36.2	41.9	21.9	34.9	30.4	42.9	49.7	26.0	41.5	27.3	21.9	31.2	27.2
FBP - 50	24.8	35.0	40.4	21.1	33.6	28.9	40.8	47.2	24.6	39.3	32.1	45.3	52.4	27.3	43.6	38.0	53.7	62.1	32.5	51.8	34.1	27.4	39.0	34
FBP - 65	32.2	45.5	52.6	27.4	43.7	37.5	53.0	61.3	32.0	51.0	41.7	58.9	68.1	35.5	56.7	49.4	69.8	80.7	42.2	67.4	44.3	35.6	50.7	44.2
FBP - 80	39.6	56.0	64.7	33.7	53.8	46.2	65.3	75.5	39.3	62.8	51.3	72.4	83.8	43.7	69.8	60.8	85.9	99.3	51.9	82.9	54.6	43.8	62.5	54.4
FBP - 100	49.5	69.9	80.9	42.1	67.2	57.7	81.6	94.3	49.2	78.5	64.1	90.5	104.7	54.6	87.3	76.0	107.3	124.2	64.9	103.7	68.2	54.8	78.1	68
FBP - 125	61.9	87.4	101.1	52.6	84.0	72.2	102.0	117.9	61.5	98.1	80.1	113.2	130.9	68.3	109.1	95.0	134.2	155.2	81.1	129.6	85.2	68.5	97.6	85
FBP - 150	74.3	104.9	121.3	63.2	100.8	86.6	122.4	141.5	73.8	117.8	96.2	135.8	157.1	82.0	130.9	114.0	161.0	186.2	97.4	155.5	102.3	82.2	117.1	102
FBP - 200	99.0	139.9	161.8	84.2	134.4	115.5	163.1	188.7	98.4	157.0	128.2	181.1	209.5	109.3	174.5	152.0	214.6	248.3	129.8	207.3	136.4	109.6	156.1	136
FBP - 250	123.8	174.9	202.2	105.3	168.0	144.4	203.9	235.9	122.9	196.3	160.3	226.3	261.8	136.6	218.2	190.0	268.3	310.4	162.3	259.2	170.5	137.0	195.2	170

Table 6b. Closed Circuit Coolers(CC) pressure drop, SI Units(Pa)

Product model number	First Flow (water as the process fluid)			Second Flow (water as the process fluid)			Third Flow (water as the process fluid)			Min. flow rate	Max. flow rate
	1/s	KPa	Std.coil conn. Size x Quantity	1/s	KPa	Std.coil conn. Size x Quantity	1/s	KPa	Std.coil conn. Size x Quantity		
FBP - 15	2.8	15	60 1	2.3	9.6	60 1	3.4	21.6	60 1	1.7	4.0
FBP - 20	3.8	20	75 1	3.0	12.8	75 1	4.5	28.8	75 1	2.3	5.3
FBP - 30	5.7	40	89 1	4.5	25.6	89 1	6.8	57.6	89 1	3.4	7.9
FBP - 40	7.6	10	89 1	6.0	6.4	89 1	9.1	14.4	89 1	4.5	10.6
FBP - 50	9.4	10	75 2	7.6	6.4	75 2	11.3	14.4	75 2	5.7	13.2
FBP - 65	12.3	10	89 2	9.8	6.4	89 2	14.7	14.4	89 2	7.4	17.2
FBP - 80	15.1	10	114 2	12.1	6.4	114 2	18.1	14.4	114 2	9.1	21.2
FBP - 100	18.9	15	114 2	15.1	9.6	114 2	22.7	21.6	114 2	11.3	26.4
FBP - 125	23.6	15	114 2	18.9	9.6	114 2	28.3	21.6	114 2	14.2	33.1
FBP - 150	28.3	30	140 2	22.7	19.2	140 2	34.0	43.2	140 2	17.0	39.7
FBP - 200	37.8	30	140 2	30.2	19.2	140 2	45.3	43.2	140 2	22.7	52.9
FBP - 250	47.2	30	165 2	37.8	19.2	165 2	56.7	43.2	165 2	28.3	66.1

冷却塔相关图片



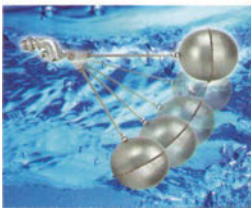
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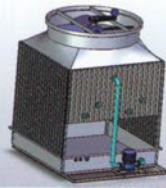
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北京多元



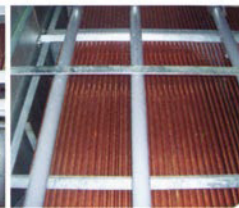
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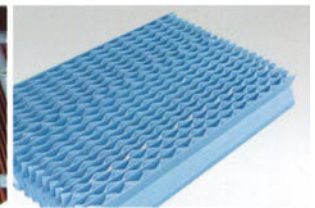
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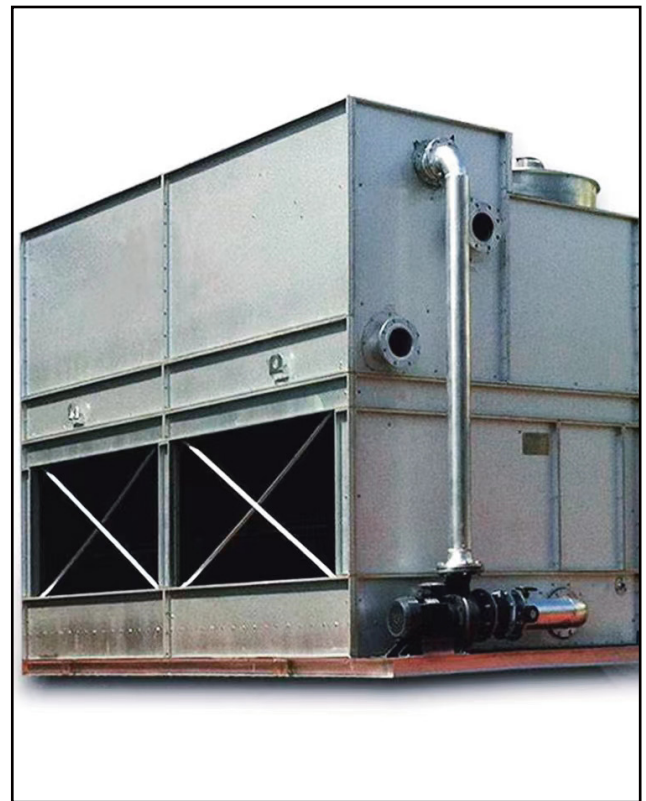
框架



换热器



收水器



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