HORNG SHIUH FCU

上海弘旭空调设备有限公司
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风机盘管

FAN COIL UNIT

上海弘旭空调设备有限公司

SHANGHAI HORNG SHIUH AIR CONDITIONING EQUIPMENT CO.,LTD.

HORNG SHIUH

企业认证 Certification

2004 年通过 ISO-9001:2000

2004 年通过 CRAA 认证

2005 年获得‘ 全国工业产品生产许可证 ”

2006 年获得 “ 中国名优品牌 ”

公司简介 HORNG SHIUH

Company introduction

1980 年 公司创立

弘旭公司成立于西元 1980 年，址设台湾省新北市汐止区，主要从事空调箱及盘管风机之制造。自公元 1986 年有感于市场环境对空调品质要求日益提高，便开始致力于空调机械及结构之研发，并参考欧美日先进国家之制作技术，于公元 1988 年领先空调业界首先推出框架组合式空调箱箱体结构设计，并获各界业主好评而奠定今日本公司在空调界之基础。

1988 年 成立台湾澳底分厂

公元 1988 年本公司吴董事长明城先生有鉴于社会之急剧变迁及劳力成本之不断提升，更为改善生产环境，变更生产程序以作业别化分以提高生产效率。将汐止厂规划成空调箱专业制造厂，另筹设澳底分厂以盘管风机之制作为主。（同时为求产品品质之标准化，特别加装电子式检验仪器），以确保产品品质。

1993 年 创立台湾高雄分厂

公元 1993 年本公司为求产销协调，筹设高雄厂之成立。同时为求专业化与量产之经济性，将冰水机组与气冷式主机迁至高雄市梓官区与上市公司主机专业制造厂堃霖公司合资共同经营，以符合生产效益与最佳之竞争力。

1996 年 通过 ISO 9002 认证

为求本公司之产品品质达到国际水准，于公元 1996 年筹划 ISO ： 9002 认证之相关事宜。在全体员工良好制度与技术加上不分彼此的努力。顺利于公元 1997 年初获得德国 ISO 9002 国际品保认证。

1998 年 兴建汐止二厂及汐止总厂 B 栋厂房

本公司不仅在品牌形象及品质服务得到业界更多的肯定，而在业绩每年频创新高情形下，原汐止总厂、高雄总厂、澳底分厂已不敷使用，故于公元 1998 年兴建汐止二厂，并于公元 1999 年改建汐止总厂 B 栋厂房。以使得往后业绩得以更大的突破发展。

2001 年 创立上海厂

鉴于国内在经济市场上快速成长及外商纷纷至国内设厂。弘旭空调产品历经 20 年的成长及进步，品质已达国际水准。为提供客户更好更快速的服务，业已在上海松江区九亭镇设立上海厂。

发展现况愿景

弘旭空调目前设六个分厂，弘旭公司在全体员工历经三十余年的努力经营，无论在品质及服务上均得到空调界认同与肯定，因此确定弘旭空调产品在国际空调产品的地位。近年来之平均成长率均维持在 20% 以上，空调箱与主机在台湾整个市场约有 30%~40% 占有率，更外销至东南亚、印度、美国等地堪称台湾地区最大中央空调设备专业制造厂，2000 年弘旭在上海设厂后更大大提升国内与国际市场竞争力。弘旭公司在依循传统，秉著刻苦耐劳的精神，脚踏实地的经营客户关系，同时也以不断的创新，以更为有效地方式来提供客户最好的产品与服务，未来将秉持诚信与创新之原则，实现企业永续发展的理想。

Year 1980: Company establishment

Horng Shiuh Company was established in Xizhi District, New Taipei City. Taiwan Province. Horng Shiuh Company was specialized in producing air-conditioning box and fan coil. Since 1986, Horng Shiuh has realized that the requirement for the quality of air conditioners of the market environment had been increasing. Thus, Horng Shiuh devoted to the research and development of the mechanism and structure of air conditioners. Drawing on the advanced manufacturing technology of Europe, America, and Japan. And introduced the frame-combined-type structure of air-conditioning boxes in the year of 1988 firstly.

Year 1988: Horng Shiuh Aodi Branch was established in 1988

Because of the realization of the rapid changing in society, increasing in labor cost, improving the production environment, and increasing productivity by production procedure alteration and labor division. Horng Shiuh Company's President Mr. Mingcheng decided Xizhi Branch as a professional manufactory of air conditioners and established Aodi Branch with fan coil as its main product. At the same time, Horng Shiuh Company specially installed electronic inspection instrument to standardize and ensure product quality.

Year 1993: Horng Shiuh Gaoxiong Branch was established in 1993

To coordinate production and marketing, pursue professionalism, and mass-production. Horng Shiuh Company set up The Gaoxiong Branch and relocated chilling water units and air-cooled main engine in Xinguan Township, Gaoxiong City in 1993 actively. Besides, Horng Shiuh Company became a joint venture with Kuenling Company which is a listed company specialized in manufacturing main engine to gain the best production efficiency and competitiveness.

Horng Shiuh passed the authentication of ISO 9002 quality system in 1996.

In order to make our product quality reach international standards, Horng Shiuh actively arranged for matters relating to ISO 9002 certification in 1996. With all employees upholding the original good system and making great effort in improving the processing technology, our company successfully obtained the certification of International Standard for Quality Assurance (ISO 9002).

Year 1998 and 1999 ：Horng Shiuh Company Second Plant and The B Building of Main Plant in Xizhi were established.

Since Horng Shiuh Company not only had earned plenty of affirmation for its Brand Image and quality of service from the industry, but the achievement also reached new record from 1980-1999 continually. Therefore, the original plant in Xizhi, Gaoxiong, and Aodi were no longer adequate for the need. So, The Xizhi second plant was set up in 1998, and the B building of Xizhi Main plant was rebuilt in 1999 to make breakthroughs in achievement in the future.

Year 2001: Horng Shiuh Company established Shanghai Branch in 2001

In view of rapid growth in Chinese economic Market International Merchants established factories in China successfully,Through 20 years of Growth and progress, and the quality of Horng Shiuh air conditioners have reached International standards. Horng Shiuh Company decided to establish Shanghai Branch in Jiuting Town, Songjiang District, Shanghai, China to provide better and faster service to our customers.

Conclusion and Expectation

Briefly speaking, Horng Shiuh Company has six branches currently, and with the joint effort of all the staff for over three decades, Horng Shiuh have earned affirmation from the air conditioner industry in terms of product quality and service. Product of Horng Shiuh Company has been established to reach international standing. The average growth rate of Horng Shiuh Company in recent years is over 20% continuously, and the market share of Horng Shiuh Company's air-conditioning boxes and main engines in Taiwan is around 30%-40%. Moreover, products of Horng Shiuh Company have been exported to Southeast Asia, India, U.S.A.etc. So, it is no question Horng Shiuh could be rated as the largest manufacturer specialized in central air conditioning equipment in Taiwan. And after establishing the Shanghai Branch in 2001, Horng Shiuh Company is looking for further improvement of competitive strength in domestic and international market.

标准型基本性能参数(两管制)
Standard Type Technical Data (Two-Tubes)

型号 Type			HHB. HHC. HVB. HVF								
			200	300	400	500	600	800	1000	1200	1400
表冷器 Surface Cooler	型 式 Class		3/8"紫铜管 铝鳍片 3/8" Red Copper Tube Aluminum Fins								
	迎风面积 Wind facing area (M^2)		0.096	0.116	0.136	0.156	0.177	0.238	0.299	0.339	0.380
	排 数 Rows		3								
	每排管数 Coil Number		8								
	回路数 Loop Number		3					6			
	每寸片数 Pieces/ Per inch		11～12								
	供冷量 Refrigerating Capacity (KW)		1.8	2.7	3.6	4.5	5.4	7.2	9	10.8	12.6
	供热量 Heat Production (KW)		2.7	4.05	5.4	6.75	8.1	10.8	13.5	16.2	18.9
	接管尺寸 Tube Size		3/4"FPT(DN20)							1"FPT(DN25)	
	冷水水量 Consumption of cold Water (L/S)		0.09	0.13	0.18	0.22	0.27	0.35	0.43	0.53	0.61
	热水水量 Consumption of hot Water (L/S)		0.06	0.1	0.13	0.16	0.19	0.25	0.31	0.35	0.41
风机 Fans	水阻 Water resistance (Kpa)		30	30	30	30	40	40	40	40	50
	耐压强度 Pressure resistance		22Kgf/cm^2								
	型 式 Class		铁质多翼离心式 Type Iron Multi-Blade Centrifugal								
	风机尺寸 Size		143mm*202mm								
	风机个数 Number		1		2			3	4		
	标准风量 Power (CMH)		340	510	680	850	1020	1360	1700	2040	2380
	风量调节 Standard Air Volume		三段切换 Air Volume Regulation Three Segment Switching								
电机 Motor	电源 Power		220V 50Hz								
	电机个数 Number		1					2			
	输入功率 Input (W)	12pa	37	52	62	76	96	134	152	189	228
		30pa	44	59	72	87	108	156	174	212	253
		50pa	49	66	84	100	118	174	210	250	300

SHS F-300-HHB

- 上海弘旭 Name Plate
- 风机盘管 Fan Coil
- 机型编号 Serial Number
- HHB-吊挂隐蔽式 Hanging Hidden Type
- HHC-吊挂露明式 Hanging Type
- HVB-落地隐蔽式 Vertical Hidden Type
- HVF-落地露明式 Vertical Type

冷暖型基本性能参数(四管制)
arm Type Technical Data (Four -Tubes)

型号 Type			HHB. HHC.								
			200	300	400	500	600	800	1000	1200	1400
表冷器 Surface Cooler	型 式 Class		3/8"紫铜管 铝鳍片 3/8" Red Copper Tube Aluminum Fins								
	迎风面积 Wind facing area (M^2)		0.096	0.116	0.136	0.156	0.177	0.238	0.299	0.339	0.380
	排 数 Rows		3+1								
	每排管数 Coil Number		8								
	回路数 Loop Number		3+1					6+1			
	每寸片数 Pieces/ Per inch		11～12								
	供冷量 Refrigerating Capacity (KW)		1.8	2.7	3.6	4.5	5.4	7.2	9	10.8	12.6
	冷水接管尺寸 Cold Water Tube size		3/4"FPT (DN20)							1"FPT (DN25)	
	冷水水量 Consumption of cold Water (L/S)		0.09	0.13	0.17	0.21	0.25	0.35	0.43	0.52	0.61
	供热量 Heat Production (KW)		1.48	2.22	2.97	3.71	4.44	5.94	7.42	8.91	10.34
	热水接管尺寸 Hot Water Tube size		1/2"FPT(DN15)								
	热水水量 Consumption of hot Water (L/S)		0.035	0.053	0.071	0.088	0.106	0.142	0.177	0.213	0.248
风机 Fans	耐压强度 Pressure resistance		22Kgf/cm^2								
	型 式 Class		铁质多翼离心式 Type Iron Multi-Blade Centrifugal								
	风机尺寸 Size		143mm*202mm								
	风机个数 Number		1		2			3	4		
	标准风量 Power (CMH)		340	510	680	850	1020	1360	1700	2040	2380
	风量调节 Standard Air Volume		三段切换 Air Volume Regulation Three Segment Switching								
电机 Motor	电源 Power		220V 50Hz								
	电机个数 Number		1					2			
	输入功率 Input (W)	12pa	37	52	62	76	96	134	152	189	228
		30pa	44	59	72	87	108	156	174	212	253
		50pa	49	66	84	100	118	174	210	250	300

注：以上冷水管排按27℃DB/19.5℃WB进风，进出水温度7℃/12℃计算；
热水管排按21℃DB进风，60℃进水计算

PS. The Calculation of above is adopt into the rate:
Cold Water Tube 27 DB /19.5 WB Wind Inlet 7/12 Water Inlet / Water Outlet Hot Water Tube 21 DB Wind Inlet 60 Water Outlet

标准型冷卻能力
Standard Type Cooling Capacity

入口空气状态: 干球温度=27℃　湿球温度=19.5℃　相对湿度=55%　　单位=W

Input Air Status: Dry Bulb Temperature=27℃ Wet Bulb temperature=19.5℃ Relative humidity=55%　　Unit =W

型号 Class	水量 Water Consumption (L/S)	水压损 Water Pressure Loss (Kpa)	进水温度 Input Water temperature (℃)									
			5		6		7		8		9	
			显热 Sensible Heat	全热 Total Heat	显热 Sensible Heat	全热 Total Heat	显热 Sensible Heat	全热 Total Heat	显热 Sensible Heat	全热 Total Heat	显热 Sensible Heat	全热 Total Heat
200	0.06	2.10	1167	1467	1096	1353	1027	1238	940	1119	857	1009
	0.08	3.40	1426	1999	1355	1844	1270	1687	1164	1525	1073	1375
	0.09	4.80	1557	2325	1512	2144	1412	1962	1295	1774	1199	1599
300	0.08	3.20	1605	2018	1507	1861	1413	1703	1293	1540	1179	1388
	0.11	6.00	1972	2765	1873	2550	1757	2333	1610	2109	1484	1901
	0.13	11.00	2162	3229	2100	2978	1961	2725	1798	2463	1666	2221
400	0.11	6.90	2168	2726	2036	2514	1909	2300	1746	2079	1593	1875
	0.15	10.80	2667	3739	2533	3448	2376	3155	2177	2852	2007	2571
	0.18	15.20	2949	4403	2865	4062	2675	3716	2452	3359	2272	3029
500	0.14	9.60	2737	3442	2572	3175	2411	2905	2205	2626	2012	2368
	0.19	18.20	3395	4759	3224	4389	3024	4016	2771	3630	2555	3273
	0.22	25.20	3701	5527	3595	5098	3357	4664	3078	4216	2851	3801
600	0.17	14.40	3307	4158	3106	3835	2912	3509	2664	3172	2430	2860
	0.23	26.00	4098	5744	3892	5298	3650	4847	3345	4382	3083	3950
	0.27	28.00	4421	6602	4294	6089	4010	5571	3676	5036	3406	4540
800	0.21	5.10	4229	5318	3973	4905	3725	4488	3407	4057	3108	3658
	0.30	9.20	5268	7385	5004	6812	4693	6232	4300	5634	3965	5079
	0.35	15.70	5791	8648	5626	7977	5253	7298	4816	6597	4462	5948
1000	0.27	9.20	5280	6640	4960	6124	4650	5603	4253	5065	3879	4566
	0.37	16.70	6509	9125	6182	8416	5799	7700	5313	6961	4899	6276
	0.43	23.40	7172	10710	6967	9879	6506	9038	5964	8170	5526	7366
1200	0.33	12.90	6448	8109	6058	7479	5679	6843	5195	6186	4738	5577
	0.46	19.60	8087	11337	7681	10457	7205	9567	6601	8649	6086	7797
	0.53	36.20	8859	13229	8605	12202	8036	11164	7367	10092	6826	9099
1400	0.37	15.20	7272	9145	6832	8435	6404	7717	5858	6976	5343	6289
	0.52	28.00	9249	12966	8785	11960	8240	10942	7550	9892	6961	8918
	0.61	44.00	10038	14990	9750	13826	9106	12650	8349	11436	7734	10310

入口空气状态: 干球温度=24℃　湿球温度=17℃　相对湿度=55%　　单位=W

Input Air Status: Dry Bulb Temperature=24℃ Wet Bulb Temperature=17℃ Relative Humidity=55%　　Unit =W

型号 Class	水量 Water Consumption (L/S)	水压损 Water Pressure Loss (Kpa)	进水温度 Input Water temperature (℃)									
			5		6		7		8		9	
			显热 Sensible Heat	全热 Total Heat	显热 Sensible Heat	全热 Total Heat	显热 Sensible Heat	全热 Total Heat	显热 Sensible Heat	全热 Total Heat	显热 Sensible Heat	全热 Total Heat
200	0.06	2.10	980	1101	913	1015	845	929	773	840	711	757
	0.08	3.40	1334	1499	1129	1383	1045	1265	957	1144	891	1031
	0.09	4.80	1343	1744	1255	1609	1163	1472	1065	1331	996	1200
300	0.08	3.20	1347	1513	1256	1396	1162	1277	1062	1154	978	1041
	0.11	6.00	1845	2074	1562	1913	1446	1750	1323	1582	1232	1426
	0.13	11.00	1865	2422	1743	2234	1615	2044	1479	1848	1383	1666
400	0.11	6.90	1820	2044	1696	1885	1569	1725	1435	1559	1321	1406
	0.15	10.80	2495	2804	2111	2586	1955	2366	1789	2139	1665	1928
	0.18	15.20	2544	3303	2376	3046	2202	2787	2016	2519	1885	2271
500	0.14	9.60	2299	2582	2144	2382	1982	2179	1813	1970	1669	1776
	0.19	18.20	3175	3569	2688	3292	2489	3012	2278	2723	2121	2455
	0.22	25.20	3192	4145	2983	3823	2764	3498	2530	3162	2367	2851
600	0.17	14.40	2777	3119	2589	2877	2394	2632	2189	2379	2016	2145
	0.23	26.00	3832	4307	3243	3973	3004	3635	2749	3286	2559	2963
	0.27	28.00	3813	4951	3563	4567	3302	4178	3022	3777	2827	3405
800	0.21	5.10	3552	3989	3311	3679	3062	3366	2800	3043	2578	2743
	0.30	9.20	4928	5539	4171	5109	3863	4674	3534	4225	3290	3809
	0.35	15.70	4996	6487	4668	5983	4326	5474	3959	4948	3703	4461
1000	0.27	9.20	4433	4979	4133	4593	3823	4202	3496	3799	3219	3425
	0.37	16.70	6088	6843	5153	6312	4773	5775	4368	5221	4066	4707
	0.43	23.40	6186	8033	5780	7409	5357	6779	4903	6128	4586	5525
1200	0.33	12.90	5414	6081	5048	5609	4669	5132	4269	4639	3932	4183
	0.46	19.60	7564	8502	6402	7842	5930	7175	5426	6486	5051	5848
	0.53	36.20	7641	9922	7140	9152	6617	8373	6056	7569	5665	6824
1400	0.37	15.20	6107	6859	5693	6326	5265	5788	4815	5232	4433	4717
	0.52	28.00	8652	9725	7323	8970	6782	8207	6206	7419	5778	6689
	0.61	44.00	8658	11243	8090	10370	7498	9488	6863	8577	6419	7733

标准型加热能力
Standard Type Heating Capacity

入口空气状态:干球温度=21℃　　单位=W

Input Air Status: Dry Bulb Temperature=21℃　　Unit =W

型号 Class	水量 Water Consumption (L/S)	水压损 Water Pressure Loss (Kpa)	进水温度 Input Water temperature (℃)									
			40	45	50	55	60	65	70	75	80	85
200	0.065	2.10	1212	1705	2046	2387	2728	3069	3410	3749	4065	4433
	0.072	3.40	1352	1901	2281	2662	3042	3422	3802	4179	4532	4943
	0.075	4.80	1397	1965	2358	2752	3145	3538	3931	4321	4685	5110
300	0.089	3.20	1668	2346	2815	3284	3753	4222	4691	5157	5592	6099
	0.100	6.00	1869	2629	3155	3681	4207	4732	5258	5780	6268	6836
	0.104	11.00	1941	2730	3276	3822	4368	4913	5459	6001	6508	7097
400	0.121	6.90	2253	3168	3802	4435	5069	5702	6336	6964	7552	8237
	0.135	10.80	2528	3555	4267	4978	5689	6400	7111	7816	8476	9244
	0.142	15.20	2647	3722	4467	5211	5956	6700	7445	8183	8874	9678
500	0.152	9.60	2845	4001	4801	5602	6402	7202	8002	8796	9539	10403
	0.172	18.20	3218	4526	5431	6336	7241	8146	9052	9949	10789	11767
	0.178	25.20	3322	4672	5606	6541	7475	8410	9344	10271	11138	12147
600	0.184	14.40	3437	4833	5800	6766	7733	8700	9666	10625	11522	12566
	0.208	26.00	3884	5462	6555	7647	8740	9832	10925	12008	13022	14202
	0.213	28.00	3968	5581	6697	7813	8929	10045	11161	12268	13304	14510
800	0.236	5.10	4395	6182	7418	8654	9891	11127	12363	13590	14737	16072
	0.268	9.20	4994	7023	8428	9832	11237	12642	14046	15440	16743	18260
	0.279	15.70	5198	7311	8773	10235	11697	13159	14621	16072	17428	19007
1000	0.294	9.20	5487	7717	9261	10804	12348	13891	15435	16966	18398	20065
	0.331	16.70	6170	8677	10413	12148	13884	15619	17355	19076	20687	22561
	0.345	23.40	6437	9054	10864	12675	14486	16296	18107	19903	21584	23539
1200	0.359	12.90	6702	9425	11310	13195	15081	16966	18851	20721	22470	24506
	0.411	19.60	7666	10781	12938	15094	17250	19407	21563	23702	25703	28032
	0.426	36.20	7952	11183	13420	15657	17893	20130	22366	24585	26661	29076
1400	0.405	15.20	7558	10629	12755	14881	17007	19132	21258	23367	25340	27636
	0.470	28.00	8768	12331	14797	17263	19729	22196	24662	27108	29397	32060
	0.483	44.00	9010	12672	15206	17740	20275	22809	25344	27858	30210	32947

入口空气状态:干球温度=24℃　　单位=W

Input Air Status: Dry Bulb Temperature=24℃　　Unit =W

型号 Class	水量 Water Consumption (L/S)	水压损 Water Pressure Loss (Kpa)	进水温度 Input Water temperature (℃)									
			40	45	50	55	60	65	70	75	80	85
200	0.060	2.10	1091	1569	1909	2208	2524	2839	3155	3468	3760	4101
	0.067	3.40	1217	1749	2129	2462	2814	3165	3517	3866	4192	4572
	0.069	4.80	1258	1808	2200	2545	2909	3272	3636	3997	4334	4727
300	0.083	3.20	1091	2158	2626	3038	3472	3096	4339	4770	5173	5641
	0.093	6.00	1217	2419	2944	3405	3891	4378	4864	5346	5798	6323
	0.096	11.00	1258	2511	3056	3535	4040	4545	5050	5551	6020	6565
400	0.112	6.90	1501	2915	3547	4102	4689	5275	5861	6442	6986	7619
	0.125	10.80	1682	3271	3981	4604	5262	5920	6578	7230	7841	8551
	0.131	15.20	1747	3425	4168	4821	5509	6198	6886	7570	8209	8952
500	0.141	9.60	2027	3681	4480	5182	5922	6662	7402	8137	8824	9623
	0.159	18.20	2275	4164	5067	5861	6698	7535	8373	9203	9980	10884
	0.165	25.20	2382	4298	5231	6050	6915	7779	8643	9501	10303	11236
600	0.170	14.40	3093	4447	5411	6259	7153	8047	8941	9828	10658	11624
	0.192	26.00	3495	5025	6116	7074	8084	9095	10105	11108	12045	13137
	0.197	28.00	3571	5134	6248	7227	8259	9292	10324	11348	12306	13421
800	0.218	5.10	3956	5687	6921	8005	9149	10292	11436	12570	13632	14867
	0.247	9.20	4494	6461	7863	9095	10394	11693	12993	14282	15487	16890
	0.258	15.70	4678	6726	8185	9467	10820	12172	13525	14866	16121	17582
1000	0.272	9.20	4939	7100	8640	9994	11422	12849	14277	15693	17018	18560
	0.306	16.70	5553	7983	9715	11237	12843	14448	16053	17646	19135	20869
	0.319	23.40	5794	8329	10136	11724	13399	15074	16749	18411	19965	21774
1200	0.332	12.90	6032	8671	10553	12206	13949	15693	17437	19167	20785	22668
	0.380	19.60	6899	9919	12071	13962	15956	17951	19946	21924	23775	25929
	0.394	36.20	7157	10289	12521	14482	16551	18620	20689	22741	24661	26896
1400	0.375	15.20	6802	9779	11900	13765	15731	17698	19664	24615	23439	25563
	0.435	28.00	7891	11344	13806	15969	18250	20531	22812	25075	27192	29656
	0.447	44.00	8109	11658	14187	16410	18754	21099	23443	25768	27944	30476

四管制加热能力(3+1)
Four Tube Type Heating Capacity

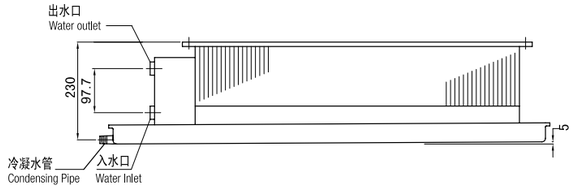
入口空气状态:干球温度=21℃ 单位=W
Input Air Status: Dry Bulb Temperature=21℃ Unit =W

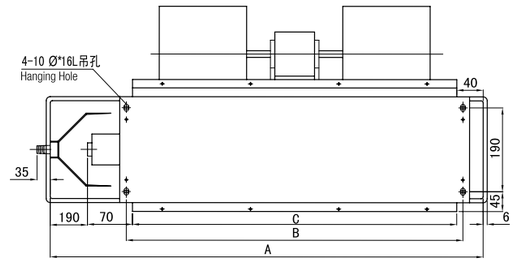
型号 Class	水量 Water Consumption	水压损 Water Pressure Loss	进水温度 Input Water temperature (℃)									
	(L/S)	(Kpa)	40	45	50	55	60	65	70	75	80	85
200	0.031 0.035 0.036	3.1 3.5 3.6	591 659 681	833 928 959	999 1114 1151	1166 1300 1343	1332 1485 1534	1499 1671 1726	1665 1856 1918	1830 2041 2108	1985 2213 2286	2165 2413 2494
300	0.047 0.053 0.055	5.8 7.4 7.7	883 989 1027	1243 1392 1446	1492 1671 1735	1740 1949 2024	1989 2228 2313	2238 2506 2602	2486 2785 2892	2733 3061 3178	2964 3319 3447	3232 3620 3759
400	0.063 0.071 0.074	12.6 14.2 14.8	1175 1319 1380	1654 1856 1942	1985 2227 2331	2316 2599 2719	2647 2970 3108	2978 3341 3496	3309 3712 3884	3637 4081 4270	3944 4425 4630	4301 4826 5050
500	0.078 0.088 0.091	18.9 21.4 26.2	1458 1649 1701	2052 2321 2395	2462 2785 2873	2873 3249 3352	3283 3713 3831	3693 4177 4310	4104 4641 4789	4511 5102 5264	4892 5532 5709	5335 6034 6226
600	0.094 0.106 0.108	27.0 36.0 36.7	1747 1974 2016	2459 2778 2837	2951 3334 3405	3442 3890 3972	3934 4445 4540	4426 5001 5107	4918 5557 5675	5405 6108 6238	5862 6624 6764	6393 7224 7377
800	0.125 0.142 0.147	9.4 10.6 11.0	2322 2637 2744	3268 3713 3863	3922 4455 4636	4575 5198 5408	5229 5940 6181	5883 6683 6953	6536 7425 7726	7185 8162 8492	7791 8851 9209	8497 9653 10044
1000	0.158 0.177 0.185	17.9 20.0 23.6	2933 3297 3440	4129 4641 4843	4955 5569 5812	5780 6497 6780	6606 7425 7749	7432 8353 8717	8258 9281 9686	9077 10202 10647	9843 11063 11546	10735 12066 12592
1200	0.186 0.213 0.221	26.9 34.5 35.8	3461 3956 4105	4872 5569 5778	5846 6682 6934	6821 7796 8089	7795 8910 9245	8769 10023 10400	9744 11137 11556	10710 12242 12702	11615 13275 13775	12667 14478 15023
1400	0.214 0.248 0.255	37.5 43.4 52.0	3979 4615 4743	5601 6497 6676	6721 7796 8011	7841 9095 9346	8961 10395 10682	10081 11694 12017	11201 12993 13352	12312 14282 14676	13352 15488 15915	14562 16891 17357

入口空气状态:干球温度=24℃ 单位=W
Input Air Status: Dry Bulb Temperature=24℃ Unit =W

型号 Class	水量 Water Consumption	水压损 Water Pressure Loss	进水温度 Input Water temperature (℃)									
	(L/S)	(Kpa)	40	45	50	55	60	65	70	75	80	85
200	0.029 0.032 0.033	3.1 3.5 3.6	547 610 630	770 859 887	924 1030 1065	1078 1202 1242	1232 1374 1419	1386 1546 1597	1540 1717 1774	1693 1888 1950	1836 2047 2115	2002 2232 2306
300	0.044 0.049 0.051	5.8 7.4 7.7	817 915 950	1150 1288 1337	1380 1545 1605	1610 1803 1872	1840 2061 2140	2070 2318 2407	2300 2576 2675	2528 2831 2940	2741 3070 3188	2990 3348 3477
400	0.058 0.065 0.068	12.6 14.2 14.8	1087 1220 1276	1530 1717 1797	1836 2060 2156	2142 2404 2515	2448 2747 2875	2755 3091 3234	3061 3434 3593	3364 3775 3950	3648 4093 4283	3979 4464 4671
500	0.072 0.082 0.084	18.9 21.4 26.2	1348 1525 1573	1898 2147 2215	2278 2576 2658	2657 3005 3101	3037 3435 3544	3416 3864 3987	3796 4293 4430	4173 4719 4869	4525 5118 5280	4935 5581 5759
600	0.087 0.098 0.100	27.0 36.0 36.7	1616 1826 1865	2274 2570 2625	2729 3084 3150	3184 3598 3674	3639 4112 4199	4094 4626 4724	4549 5140 5249	5000 5650 5770	5422 6127 6257	5913 6682 6824
800	0.115 0.131 0.136	9.4 10.6 11.0	2148 2440 2538	3023 3434 3573	3628 4121 4288	4232 4808 5002	4837 5495 5717	5441 6181 6432	6046 6868 7146	6646 7550 7855	7207 8187 8519	7860 8929 9290
1000	0.146 0.164 0.171	17.9 20.0 23.6	2713 3050 3182	3819 4293 4480	4583 5151 5376	5347 6010 6272	6111 6868 7168	6874 7727 8064	7638 8585 8960	8396 9437 9848	9105 10234 10680	9930 11161 11647
1200	0.172 0.197 0.204	26.9 34.5 35.8	3201 3659 3797	4506 5151 5345	5408 6181 6414	6309 7211 7483	7210 8241 8552	8112 9272 9620	9013 10302 10689	9907 11324 11750	10743 12280 12742	11717 13392 13896
1400	0.198 0.229 0.236	37.5 43.4 52.0	3680 4269 4387	5181 6009 6175	6217 7211 7410	7253 8413 8645	8289 9615 9880	9325 10817 11115	10361 12019 12350	11389 13211 13576	12350 14327 14722	13470 15625 16056

HHB 卧式暗装风机盘管
Horizontal Hidden Outfit-Fan-Coil-Units





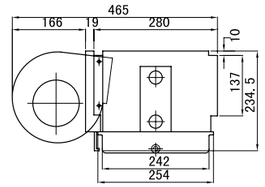
(图示为左接管)
(The graphic is left side adapter)

材料规范说明

1. 冰水盘管液管材质为 3/8"Ø*0.3t 紫铜管，含铜量 99.9%
2. 冰水盘管鳍片材质为 0.12mmt 纯铝箔
3. 外壳为镀锌铁板厚度 1.0t 以上，箱体内部 PE 保温 6mm 以上
4. 风车组为多翼式铁质风车组
5. 电机采用直接传动可分高中低三段变速
6. 水盘长度为标准型，PE 保温采用 6mm 以上

Material Description

1. The cold water coil is made by 3/8"Ø*0.3t red copper cube, which the content of cooer is 99.9%.
2. The fin of cold water coil is made by 0.12 mmt pure aluminum foil.
3. The Shell is made by galvanized which thickness is above 1.0t, and the thickness of PE heat preservation inside the box is above 6mm.
4. The fan units are Iron -Multi-Blades Type.
5. The Motor adopt direct transmission in high-medium-low three segments of speed.
6. The length of water plate is standard type, and the thickness of the PE heat preservation is above 6mm.

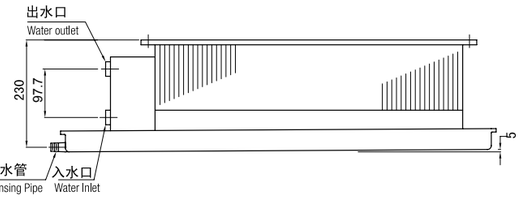


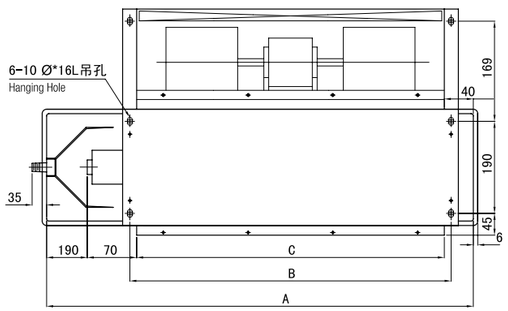
单位 / Unit: mm

机型 Type	200	300	400	500	600	800	1000	1200	1400
A	820	920	1020	1120	1220	1520	1820	2020	2220
B	549	649	749	849	949	1249	1549	1749	1949
C	520	620	720	820	920	1220	1520	1720	1920
重量 Weight (kg)	15	18	20.5	21	21.5	31.5	33.5	36	43
风机数量 Fan number	1	1	2	2	2	3	4	4	4
电机数量 Motor number	1	1	1	1	1	2	2	2	2

注：四管制尺寸同标准型。PS. The dimensions of four tube type is same as standard type.

HHB-B 卧式暗装风机盘管附回风箱
Horizontal Hidden Outfit-Fan-Coil-Units attached to the return -air box



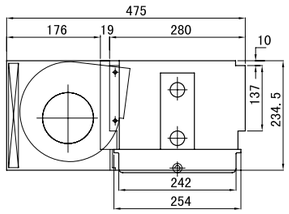


材料规范说明

1. 冰水盘管液管材质为 3/8"Ø*0.3t 紫铜管，含铜量 99.9%
2. 冰水盘管鳍片材质为 0.12mmt 纯铝箔
3. 外壳为镀锌铁板厚度 1.0t 以上，箱体内部 PE 保温 6mm 以上
4. 风车组为多翼式铁质风车组
5. 电机采用直接传动可分高中低三段变速
6. 水盘长度为标准型，PE 保温采用 6mm 以上（加长型尺寸加 6mm）
7. 滤网采用可洗式尼龙网

Material Description

1. The cold water coil is made by 3/8"Ø*0.3t red copper cube, which the content of cooer is 99.9%.
2. The fin of cold water coil are made by 0.12 mmt pure aluminum foil.
3. The Shell is made by galvanized which thickness is above 1.0t, and the thickness of PE heat preservation inside the box is above 10mm.
4. The fan units are Iron -Multi-Blades Type.
5. The Motor adopt direct transmission in high-medium-low three segments of speed.
6. The length of water plate is standard type, and the thickness of the PE heat preservation is above 6mm.
7. The filter adopt washable Nylon Mesh.

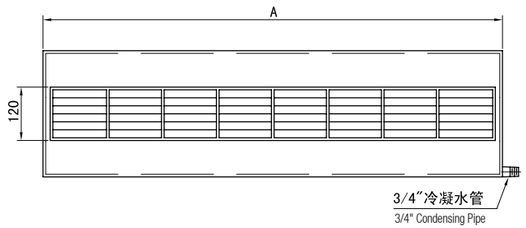


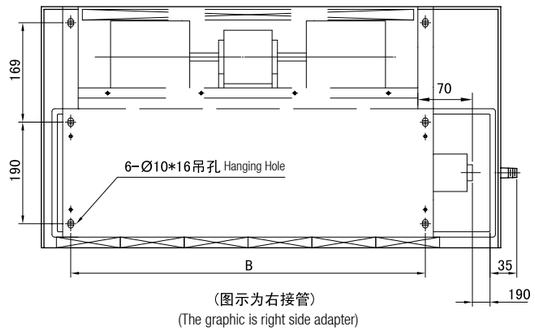
单位 / Unit: mm

机型 Type	200	300	400	500	600	800	1000	1200	1400
A	820	920	1020	1120	1220	1520	1820	2020	2220
B	549	649	749	849	949	1249	1549	1749	1949
C	520	620	720	820	920	1220	1520	1720	1920
重量 Weight (kg)	18	21.5	24.3	25.2	26.1	37.3	40.4	43.5	51.2
风机数量 Fan number	1	1	2	2	2	3	4	4	4
电机数量 Motor number	1	1	1	1	1	2	2	2	2

注：四管制尺寸同标准型。PS. The dimensions of four tube type is same as standard type.

HHC 卧式明装风机盘管
Horizontal Outfit-Fan-Coil-Units





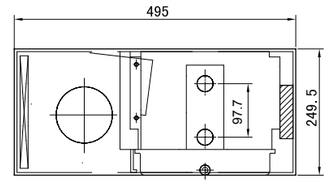
（图示为右接管）
(The graphic is right side adapter)

材料规范说明

1. 冰水盘管液管材质为 3/8"Ø*0.3t 紫铜管，含铜量 99.9%
2. 冰水盘管鳍片材质为 0.12mmt 纯铝箔
3. 外壳为镀锌铁板厚度 1.0t 以上，烤漆处理，箱体内部 PE 保温 6mm 以上
4. 风车组为多翼式铁质风车组
5. 电机采用直接传动可分高中低三段变速
6. 滤网采用可洗式尼龙网
7. 出风隔栅材质为 PVC，冬季热水进水温度最高位 60℃，否则须改为铝合金隔栅
8. 水盘长度为标准型（明装水盘不加长）
9. 机外余压为 12Pa（标准型）

Material Description

1. The cold water coil is made by 3/8"Ø*0.3t red copper cube, which the content of cooer is 99.9%.
2. The fin of cold water coil is made by 0.12 mmt pure aluminum foil.
3. The Shell is made by galvanized which thickness is above 1.0t, and the thickness of PE heat preservation inside the box is above 6mm.
4. The fan units are Iron -Multi-Blades Type.
5. The Motor adopt direct transmission in high-medium-low three segments of speed.
6. The filter adopts washable Nylon Mesh.
7. The air grilles are mad of PVC.The maximum hot water inlet temperature in winter season is 60 or the material of the air grilles has change to aluminum alloy.
8. The length of water plate is standard type.
9. The external pressure of the units is set up at 12Pa as standard.

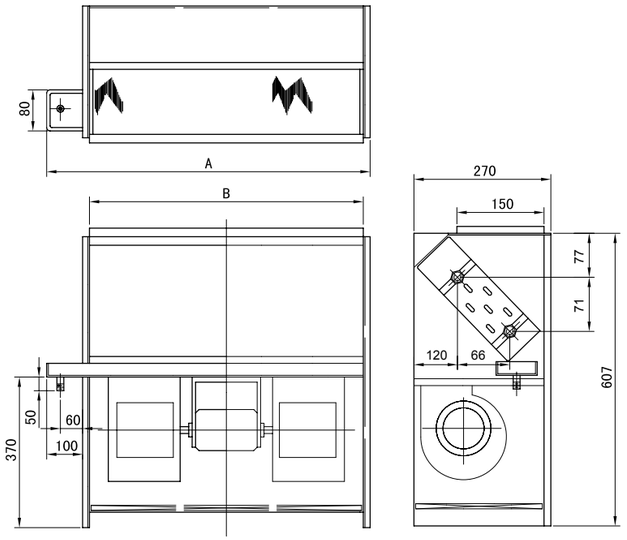


单位 / Unit: mm

机型 Type	200	300	400	500	600	800	1000	1200	1400
A	880	1000	1120	1240	1360	1600	1960	2080	2320
B	549	649	749	849	949	1249	1549	1749	1949
风机数量 Fan number	1	1	2	2	2	3	4	4	4
电机数量 Motor number	1	1	1	1	1	2	2	2	2
重量 Weight (kg)	28.5	32.5	36.5	38.5	39.5	53.5	58.5	63.5	73
格栅数量 Air grille number	7	8	9	10	11	13	16	17	19

注：四管制尺寸同标准型。PS. The dimensions of four tube type is same as standard type.

HVB 立式暗装风机盘管
Vertical Hidden Outfit-Fan-Coil-Units



（图示为左接管）
(The graphic is left side adapter)

材料规范说明】

1. 冰水盘管液管材质为 3/8"Ø*0.3t 紫铜管，含铜量 99.9%
2. 冰水盘管鳍片材质为 0.12mmt 纯铝箔
3. 外壳为镀锌铁板厚度 1.0t 以上，箱体内部 PE 保温 6mm 以上
4. 风车组为多翼式铁质风车组
5. 电机采用直接传动可分高中低三段变速
6. 滤网采用可洗式尼龙网
7. 水盘长度为标准型

Material Description

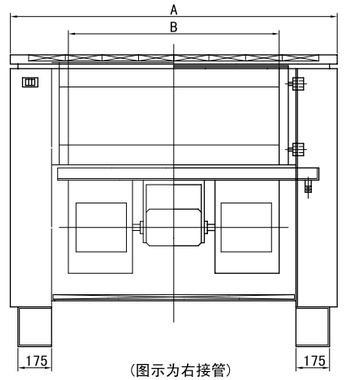
1. The cold water coil is made by 3/8"Ø*0.3t red copper cube, which the content of cooer is 99.9%.
2. The fin of cold water coil is made by 0.12 mmt pure aluminum foil.
3. The Shell is made by galvanized which thickness is above 1.0t, and the thickness of PE heat preservation inside the box is above 6mm.
4. The fan units are Iron -Multi-Blades Type.
5. The Motor adopt direct transmission in high-medium-low three segments of speed.
6. The filter adopts washable Nylon Mesh.
7. The length of water plate is standard type.

单位 / Unit: mm

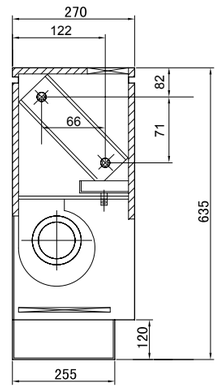
机型 Type	200	300	400	500	600	800	1000	1200	1400
A	666	766	866	966	1066	1366	1666	1866	2066
B	522	622	722	822	922	1222	1522	1522	1922
风机数量 Fan number	1	1	2	2	2	3	4	4	4
电机数量 Motor number	1	1	1	1	1	2	2	2	2
重量 Weight (kg)	21.5	24	27	29	31	42	48.5	51.5	55.5

注：四管制尺寸同标准型。PS. The dimensions of four tube type is same as standard type.

HVF 立式明装风机盘管
Vertical Outfit-Fan-Coil-Units



（图示为右接管）
(The graphic is right side adapter)



材料规范说明】

1. 冰水盘管液管材质为 3/8"Ø*0.3t 紫铜管，含铜量 99.9%
2. 冰水盘管鳍片材质为 0.12mmt 纯铝箔
3. 外壳为镀锌铁板厚度 1.0t 以上，烤漆处理，箱体内部 PE 保温 6mm 以上
4. 风车组为多翼式铁质风车组
5. 电机采用直接传动可分高中低三段变速
6. 滤网采用可洗式尼龙网
7. 水盘（依明装另挂）
8. 出风隔栅材质为 PVC
9. 机外静压为 12Pa（标准型）

Material Description

1. The cold water coil is made by 3/8"Ø*0.3t red copper cube, which the content of cooer is 99.9%.
2. The fin of cold water coil is made by 0.12 mmt pure aluminum foil.
3. The Shell is made by galvanized which thickness is above 1.0t, and the thickness of PE heat preservation inside the box is above 6mm.
4. The fan units are Iron -Multi-Blades Type.
5. The Motor adopt direct transmission in high-medium-low three segments of speed.
6. The filter adopts washable Nylon Mesh.
7. Water coil:
8. The air grilles are mad of PVC.
9. The external pressure of the units is set up at 12Pa as standard.

单位 / Unit: mm

机型 Type	200	300	400	500	600	800	1000	1200	1400
A	900	1000	1100	1200	1300	1900	1900	2100	2300
B	522	622	722	822	922	1522	1522	1722	1922
风机数量 Fan number	1	1	2	2	2	4	4	4	4
电机数量 Motor number	1	1	1	1	1	2	2	2	2
重量 Weight (kg)	32.8	36.5	40.5	43	46	59.5	68	72	78
格栅数量 Air grille number	4	5	6	7	8	13	13	14	16

注：四管制尺寸同标准型。PS. The dimensions of four tube type is same as standard type.

安装及维护使用说明
The description of installation and maintenance

风机盘管安装要点

1. 请按图示并结合三速开关或温控器的接线图进行施工。
2. 所有风机盘管的电机至端子台连接线在出厂前以接好，客户毋需再施工。
3. 卧式机组应使上平面保持水平，立式机组应通过调节螺栓调整水平。暗装型机组安装时必须留出维修用检查口，安装后如建筑装修还在施工，外表须加以保护，以防垃圾侵入。
4. 安装进出水管时，必需用管钳夹紧管子端部，进出水管道应装设阀门。管道的最高处应装放气阀，最低处装放水阀。凝结水管需要一定的坡度，以利于冷凝水顺利排放。在阀门、进出水管及凝结水管部要有严格的保温防露措施。
5. 使用时应先开启机组的放气阀，将管道内空气排除，看见水流出后再将阀门关闭。使用一个月左右应清洗一次过滤器，对于盘管则视积灰程度定期清洗，以保证换热效率。
6. 盘管进出水管及冷凝水管进行连接时不可用力过度，防止盘管铜管扭裂漏水。
7. 机组进出水管应保温，并加装控制阀门。
8. 水系统安装过滤器，防止盘管内部堵塞。
9. 安装后如建筑装修还在施工，外表须加以保护，以防垃圾侵入。

风机盘管运行及保养要点

1. 机组初次运行前，检查水盘内、风机蜗壳内即盘管周围有无异物并清除，并检查水管及电源接线是否正确。
2. 盘管初次运行时，须将盘管出水管上的放气阀打开，排尽盘管及管路内空气。
3. 在机组停用季节中，当环境温度在 0℃以下时，将盘管内的水排放干净或往循环水中加适当浓度放冻液等有效措施进行防冻，以防盘管冻裂。
4. 机组长时间不用时，须切断电源，重新使用时需在运转前测定绝缘电阻。
5. 当风机关闭时，需同时切断冰水于机内循环，否则将导致机壳结露反潮，减少机体寿命。
6. 风机盘管换热器应定期清洗，保持清洁，如有过滤网也须定期清洗，确保回风通畅。

The key points of installation the fan-coil

1.Connecting the wiring diagram of three speed switch thermostat with the diagram of fan coil.
2. All the terminal connection line to the motors should be connected before leaving the factory for the customers.
3. The upper plate of the horizontal units should keep horizontal, using adjusting bolt to adjust the horizontal level of vertical units, and set up the maintenance check out when install the hidden units. Moreover, if the architectural is still in processing, the surface of the units need to be protected to avoid the invasion of the rubbish.
4. When installing the inlet/outlet water pipe, must use forceps to tighten the end of the pipes. The inlet /outlet should assemble valves. The highest spot of pipes should assemble valves to relief are, and the lowest spot of pipes should assemble valves for relief water. And the condensation water pipe need certain slope to discharge the condensation water smoothly. Moreover, the hear preservation and anti-dews measures set up at valves, inlet/outlet water pipes and condensation water pipes need to be done strictly.
5. Open the air relief valves of the units before operate the units to exclude the air in pipes, until water flow had been observed then close the valves. The filters or strainers should be cleaned monthly. And for the regularity of cleaning the coins depends on the degree of ash accumulation to insure the efficiency of heat change.
6. Cannot over force when connecting the inlet/out water pipe on coils with condensation water pipes to avoid the torsional leakage from the copper pipes of the coils.
7. Inlet/Outlet water pipes should have heat preservation and assemble valves.
8. The water system assembles strainers to avoid interior occlusion from coils.
9. If the architectural is still in processing, the surface of the units need to be protected to avoid the invasion of the rubbish.

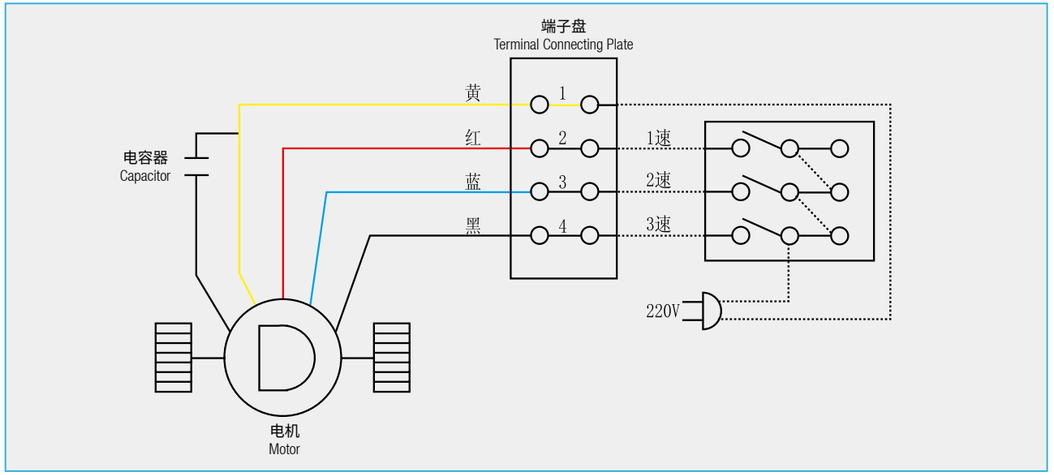
The main points of operating and maintenance fan coils

1. Before the units first operating, checking there are foreign materials or not inside the water plate, interior part of shell and grounding area of coils. And inspect the water pipes and power wiring connect correctly.
2. When first operating coils, must open the air relief valves which located at the outlet water pipes on the coils, and exclude the air in coils and pipes completely.
3. During the units non-operating season, discharge the water in the coils completely or add proper concentration anti-freeze liquid effective measures in circulatory water to against the freezing and avoid coil leakage. when the temperature of the environment is below 0.
4. Must shut down the power of units and determine the insulation resistance before re-operating the units when the units are non-operating for a long period of time.
5. When turn-off the units, shut down the cold water circulatory in the units at the same time or it will cause shell dew camp, reducing unit ’ s service of life.
6. The heat exchanger and filters should be wash regularly to keep clean and insure air return smoothly.

风机盘管异常原因及排除方法 The abnormal cause and troubleshooting of fan coils

故障现象 Failures phenomenon	可能原因 Possible cause	处理方法Treatment Method
不出风或风量小 No wind or small air volume	风管阻力超过机组能力 Wind pipe resistance over the capability of units	降低风管阻力或更换机组电机 Reducing Wind pipe resistance or replacing motors of units
	风口有障碍物 Inlet/outlet of wind barriers	去除障碍物 Removing obstacles
	进风口被堵 The air inlet is blocked	去除障碍物，或清洗盘管 Removing obstacles or clean coils
机组运行噪音大 The units operate noise loudly	电机轴承损坏 The motor bearing damage	更换轴承 Replacing bearings
	电机固定螺丝松动 The fixed sews of motor loosening	重新紧固螺丝 Re-fastening screws
	蜗壳变形与叶轮碰撞 Shell deformation and impellers collusion	更换风机 Replacing fans
	叶轮固定螺丝松动位移与蜗壳摩擦 The fixed screws of impellers losing to displacement and frictions of shells.	调整叶轮位置重新紧固螺丝 Re-fastening screws
风不冷（或风不热） Wind is not cool(or wind is not warm)	盘管内有空气 Air inside coils	从排气阀排出空气 Excluding air from air relief valves
	供水循环停止 Water supply circulatory non-working	检查供水装置 Inspecting water supply equipment
	进出控制阀门关闭 Inlet/Outlet control valves closed	开启控制阀门 Open control valves
漏水 Water leakage	凝结排水管排水不畅或堵塞 condensation drain pipe poor draining or blocking	检查排水系统 Inspecting drain-water system
	水管有漏水 Water pipe leakage	检查修复漏水点 Inspecting and fixing leakage points

接线图 Wiring diagram



注意

1. 在施工和维修过程中，请严格按图示线色和端子标号接线，否则将引起电机烧毁。
2. 若干台风机盘管共用一只开关连动的场合，仅限于同一型号机组，且接线务必正确一致，否则电机烧毁，连动台数请考虑所配开关的电气容量。不同型号机组不能连动。

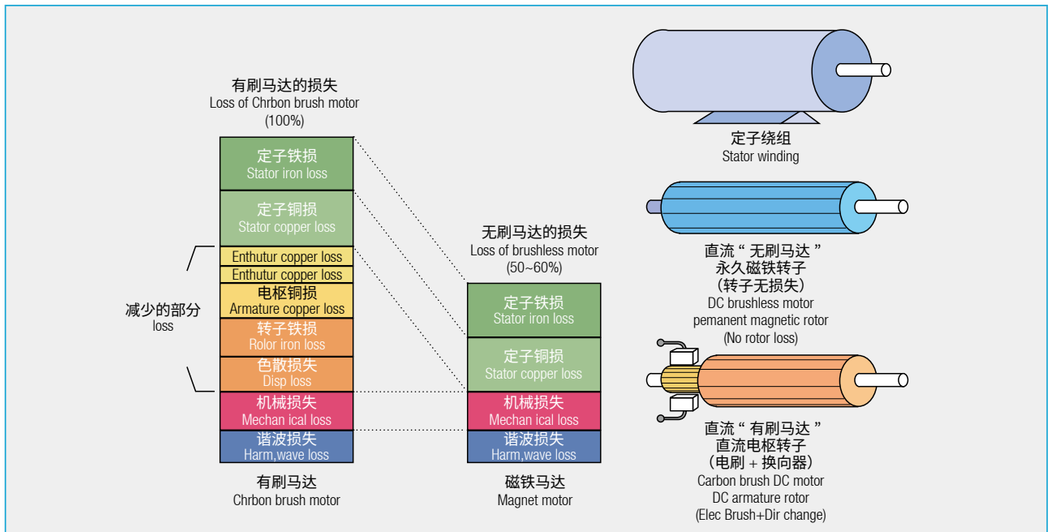
Cautioned Notice

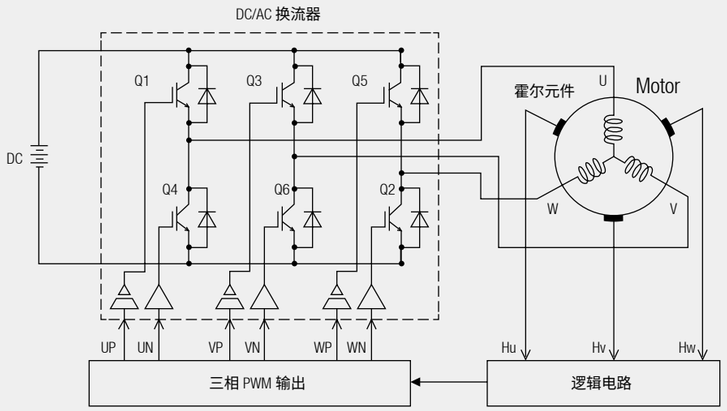
1. During the process of working and maintenance, connecting the terminal connecting followed by the color and numbers on the graphics strictly, or it will cause the motor burned.
2. At the condition of several fan coils sharing one linkage switching, only allowed same serial number of units and the connecting must be correctly, or it will cause the motor burned. Besides, the capacitor of the switching should be a factor of concern when linkage several fan coils. Moreover, different serial number of units cannot be linkage.

直流无刷马达原理简介
Brief introduction of the principle of DC brushless motor

直流无刷马达的特性和原理

传统 AC 马达的缺点：碳刷与整流子间以接触式换向，换向过程易产生不必要的耗损与故障。
改进方式：电子换向采用非接触式换向（碳刷与整流子→电子感应原件）



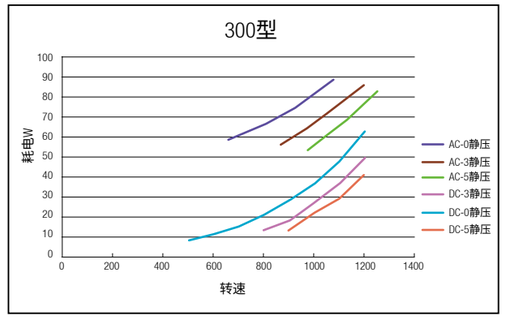


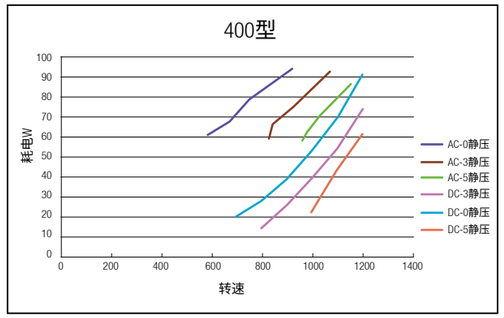
直流无刷马达较省电

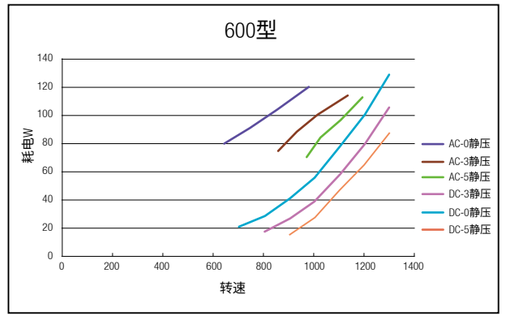
功耗
Power waste

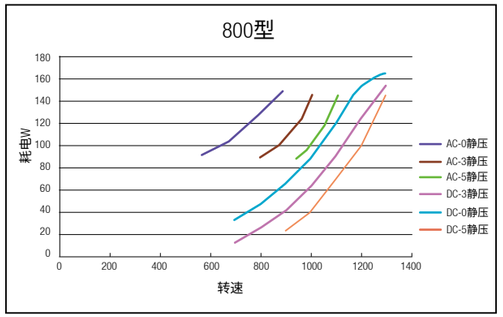
DC 马达与 AC 马达在相同转速下之耗电量比较图

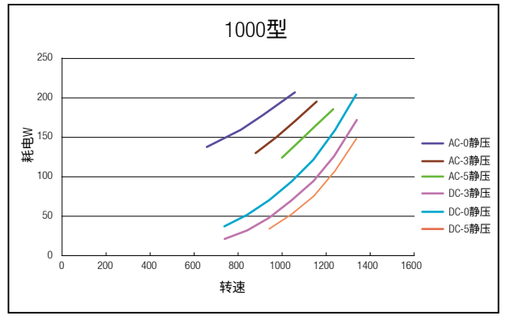
《直流马达 VS 一般马达》

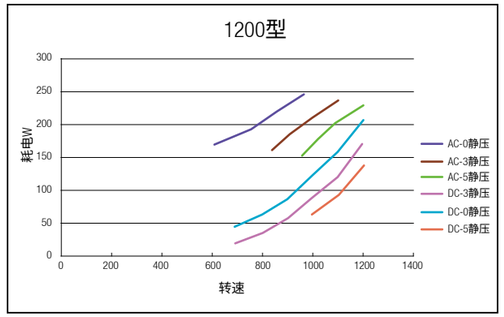












在相同转速条件下，DC 马达省电效能可从 30%~70% 不等

控制逻辑图及安装注意事项
Power meter of Cabinet type fan coil

冷风机接线示意图（单马达型式）

冷风机

温控器

单控 / 副控面板

直流无刷马达及驱动模组

以上为系统示意图，实际产品可能因产品演进而有所不同

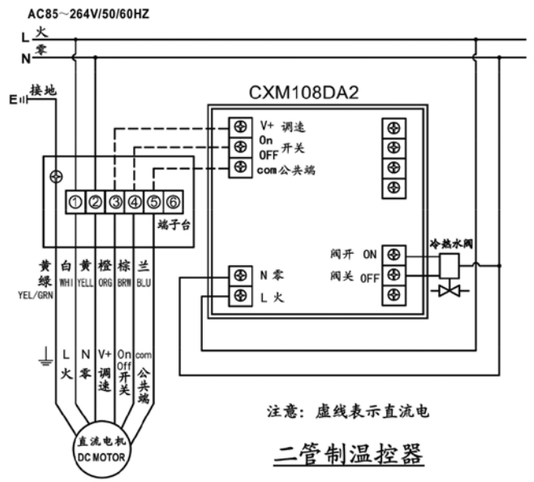
安装

1. 吊挂式机组应使上平面保持水平，落地式机组应通过调节螺丝调整水平。吊挂隐蔽式机组安装时，必须留出维修用检查口，安装后如建筑装修还在施工，外表须加以保护，以防垃圾侵入。
2. 安装进出水管时，必需用管钳夹紧管子端部，进出水管应装设阀门，管道的最高处应装放气阀，最低处装放水阀。凝结水管需要一定的坡度，以利于冷凝水顺利排放。在阀门、进水管及凝结水管要有严格的保温防露措施。
3. 请按温控器的接线图进行施工，以避免马达烧毁。
4. 所有送风机的马达至端子台连接于出厂前需接好，客户无需再施工。
5. 如有电热装置，需注意电热管的过热保护器在控制系统的安装与动作。

Install

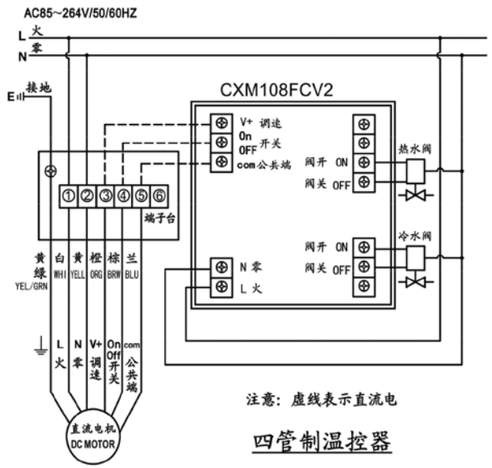
1. The hanging units should maintain the upper plane level and the console units should be adjusted by adjusting screws. When installing the concealed unit, it is necessary to set up the inspection port for maintenance. After installation, such as building decoration is still under construction, the exterior must be protected from invasion.
2. When installing and entering and leaving pipes, the pipe end must be clamped with pipe tongs. The inlet pipe should be equipped with valves. The highest place of the pipe should be equipped with a gas release valve and the minimum discharge valve. The condensate pipe needs a certain gradient to facilitate the condensate discharge smoothly. Strict insulation and dew protection measures should be provided for valves, intake pipes and condensate pipes.
3. Please follow the wiring diagram of the thermostat to avoid burning the motor.
4. The connection of all blower motors to terminal blocks is required before they are ready to go out and no need for further construction.
5. If there is an electric heating device, attention should be paid to the installation and action of the overheat protector of the electric heating tube in the control system.

接线图
Wiring diagram



注意：虚线表示直流电

二管制温控器



注意：虚线表示直流电

四管制温控器

注意

1. 在施工和维修过程中，请严格按图示线色和端子标号接线，否则将引起马达烧毁。
2. 若干台风机盘管共用一只开关连动的场合，局限于同一型号机型，且接线务必正确一致，否则马达烧毁，连动台数请参考所配开关的电气容量。不同型号机组不能连动。
3. 配管时请勿用力过度造成盘管内侧铜管扭断而导致漏水。
4. 直流无刷马达请采用专用金属隔离线，避免干扰而造成马达控制器损坏。

保养

1. 附回风箱的送风机需一个月左右清洗一次过滤器。
2. 排水盘每月需清洗一次，以避免灰尘污垢堵塞排水管导致排水不良。
3. 随时注意冰水管路系统内有无空气存在，若有，使用时应打开排水阀排除空气，以避免产生噪音及造成盘管能力减少。
4. 盘管在长时间运转后，液管内部将附有水垢，导致热传效应降低，需用化学药剂留于液管内，隔天将化学剂排出后，再以清水冲洗。（化学药剂组成为 7% 盐酸、1% 腐蚀抑制剂、1% 界面活性剂其余 91% 为水混合而成）。
5. 当风车关闭时，须同时切断冰水供应阀，否则冰水若持续于盘管内循环，将导致机壳结露返潮，减少机体寿命。
6. 长时间停用电热管，再次启动时，需注意过热保护器在控制系统是否有效运作。

Be careful

1. During the construction and maintenance process, please follow the line color and terminal label strictly, otherwise it will cause the motor to burn down.
2. Several occasions where a number of typhoons are shared with the same type of switch, it is limited to the same model, and the wiring must be correctly consistent, otherwise the motor will burn up, and the number of connected lines will refer to the electrical capacity of the switch. Different types of units can not be moved.
3. Do not overexert in the piping, causing the copper pipe to break and cause leakage.
4. The DC brushless motor uses a special metal isolation line to avoid interference and cause damage to the motor controller.

Maintain

1. The air blower attached to the bellows must be cleaned once a month or so.
2. Drainage plates need to be cleaned once a month to prevent dirt and dirt from blocking drainage pipes and leading to poor drainage.
3. always pay attention to the presence of air in the ice water pipeline system. If there is, open the drain valve to remove the air in use in order to avoid noise and reduce the capacity of the coil.
4. After long running, the pipe will be attached with scale in the pipe, which causes the effect of heat transfer to be reduced. The chemical agent should be kept in the liquid tube. The chemical agent is discharged the other day and then rinsed with water. (chemical composition is 7% hydrochloric acid, 1% corrosion inhibitor, 1% surfactant and the remaining 91% is water mixed).
5. When the windmill is closed, the ice water supply valve must be cut off at the same time, otherwise the ice water will continue to circulate in the coil, which will lead to the condensation and return of the casing and reduce the life span of the body.
6. When the electric heating pipe is stopped for a long time, it is necessary to pay attention to whether the overheating protector is in effective operation of the control system when it starts again.