DWT Series Roof Fan

DWT系列屋顶通风机

WRF系列屋顶通风器

ISO14001

ISO9001

国家质量管理奖

DWT屋顶通风机概述

该风机系列入国家经贸委“双加工程”的大型技改项目，原于一九八七年列入国家级“星火”计划，由上海交通大学、浙江上风实业股份有限公司联合研究所研制开发，已经专家鉴定，获得国家实用新型专利。现已广泛应用于发电厂、化工厂、橡胶厂、机械制造等车间和高级民用建筑的送排风，其中已用于发电厂的有广州发电厂、广东惠州发电厂、广东中山发电厂、广东佛山电厂、广东汕头电厂、广东阳江电厂、深圳马湾电厂、大亚湾核电厂、珠海发电厂、四川绵阳电厂、孟加拉国吉大港电厂、巴基斯坦二家发电厂等三十多家发电厂。广大用户给予高效、节能、低噪声、运行可靠等高度评价，风机叶轮和外壳、风帽均可根据用户要求采用玻璃钢、铝合金、碳钢等材料制作。

The series fan is in product of national grade sparkle product developed by Shanghai Jiaotong University and Zhejiang Shangfeng Industrial co.,Ltd. As approved by professional experts, gained national latest practical patent. Therefore it is widely used in power plants, chemical industry, Rubber shop,machine workshops and highclass civil buildings, Here to show the evidences Guangzhou, Guangdong Huizhou, Guangdong Zhongshan, Guangdong Foshan, Guangdong Shantou, Guangdong Yanjiang, Shenzheng Mawan, Shenzheng Dayawan, Zhuhai, Sichuan Mianyang, Chittagong Bangladesh Parkistan ang etc, As more as over 30 power plants。 mass users have given their high praise for its high efficiency, power-saving, Low noise, reliable operation etc. Whatever you choose making-material of frp, al-alloy, steel, for every parts of fan,It will come into being upon request.

一、DWT系列屋顶式通风机特点

1、规格型式多，应用范围广：可根据使用场合的压力、风量和噪声的不同，选用以下二种型式风机；

a.轴流式屋顶风机：代号为DWT－Ⅰ型，宜用于中低压、大流量的使用场合。同时根据用户需求还可以设计成双向旋转可逆式，具有正反式工况等效的特点（本产品已获得国家专利）；

b.离心式屋顶风机：代号为DWT－Ⅱ型、DWT－Ⅲ型二种型式，宜适用于风量较小而压力要求较高的场合；

2、效率高，噪声低：本风机采用先进的CAD系统软件，经多目标优化设计、开发。本设计已获国家实用新型专利证书及国家优秀专利奖。本系列机号中1200、1400、1500、1600、1800、2000、2200及2400mm风机，采用相同直径不同转速、不同角度和不同叶型的方法，以满足不同使用工况的需要，达到风机与系统匹配，以利实现节能和降噪；

3、质轻、高强、耐腐蚀：风机叶轮可根据工作介质不同的腐蚀性而采用不同的材质，分别有ABS（工程塑料）、FRP（玻璃钢）和铝合金板材制作，对于压力要求高，风机转速较大的离心风机，叶轮表面经特殊的镀锌加喷塑耐腐蚀处理，不仅降低了整机重量，且有良好的耐腐蚀性；

4、运转平稳，寿命长：本风机的转动惯量小，动平衡精度高，运转平稳，且各项性能指标在工厂内控标准中的要求均高于风机行业标准，能确保风机长期稳定地运行；

5、适用面广：本风机可以根据使用要求，制造成防爆型、阻燃型、适用于抗老化抽送、排易燃、易爆及有腐蚀性气体的场合；

6、外型美观：本风机的风帽采用玻璃钢制作，外表应用进口胶衣树脂膜，曲面过渡柔和、美观大方，实用性强，也可根据用户要求制成钢风帽经镀锌后喷塑（PVC）处理；

7、使用条件：介质温度不超过60℃，气体中不允许含有过量粘性物质，含尘量小于100mg/m²。对介质温度高的场合，我厂的消防高温排烟风机（已获国家专利）可制成屋顶风机供用户使用；

8、本产品经浙江省产品质量监督所检测合格，检测项目含有燃烧时间、燃烧扩展长度、导电性能、防爆、抗风性能。

FEATURES

1、Wide application, various in types and size: There are two kinds of fan for selection in accordance with different air pressure airflow, noise requirements.

A).request it can be designed with dual-direction revolving and gets equivalent performance.(Won national patent)

B).Centrifugal style roof fan named DWT-II :it's suitable for in where less air-flow, high air pressure required.

2、High efficiency, Low noise: The fan was developed by advanced CAD software system. The design has won the Latest pratical patent Certificate of the Nation, and won the prize of National Excellence Patent. Fan sized 1200,1400,1600,1800,2000,2400mm among are adopted same dia. with different speeds, different blade angles, different blades shapes to meet multipurpose, therefore gets realization of powersaving, noisereducing.

3、Light, Reinforced, Corrosion resistance: Impeller can be made of ABS, of FRP or AL-alloy plate according to different corrosion of fluid for those centrifugal fan required high air pressure and high speed, impellers are treated with galvanization and PVC coated, this not only reduces, weight but also strengthen corrostion ability as well.

4、Reliable operation, Long life: The fan is made with little inertia, high dynamic balance precision, each performance is controlled to higher level than profession standard to ensure a long reliable service.

5、Suitable for use within large scope: The fan can be made with explosion-proof, corrosion-proof according to service condition, like drafting of combustible, corrosire gas.

6、Beauty in outlook:The hood of fan is made of FRP with imported resins, designed in magnificant shape. The hood made of steel is available upon request, and the hood could be galvanized and plastic coated with PVC.

7、Serive condition: Temperature of fluid shall not exceed 60℃,and without excessive clinging dust intensity under 100 mg/m2.For higher temperature fluid, we have other kinds of fan to supply. We have our patented HTF series hi-temperature smoke drafting fan for such service.

8、The fan has passed examination given by Zhejiang provincial Commodity Quality Supervision Station. Items checked include: burning time, burning expansion length, conductivity, explosion-proof, windproof property.

二、型号结构说明

1、轴流式屋顶风机直径自Φ300~Φ2400mm，共十七种机号，离心式屋顶风机自Φ300~Φ1000九种机号，离心轴流式屋顶风机直径自Φ280~Φ800mm，共十种机号，且还可根据用户需要提供其它机号风机；

2、各种型号的风机结构可参阅总装图，它由叶轮、风筒、风帽、传动部件、活页风门、防鸟网、安全网等部件组成；

3、风机传动形式：DWT－Ⅰ型风机Φ≤2200mm，采用电机直联传动，如用户根据使用场合需用皮带传动，本公司亦可按要求生产，Φ＞2200mm以上采用皮带传动形式，也可采用减速器传动形式，活页风门有重力式、电动式和手动式三种；

4、屋顶风机应用面广量大，根据用途的需要结构形式繁多，本公司可按用户不同的技术参数要求进行研制、开发和外形结构的改进；

5、本屋顶风机送排风压力高于600Pa以上应采用离心式或离心轴流式风机；压力在400Pa~600Pa应采用混流式通风机；压力低于400Pa以下应采用轴流式通风机。

Brief introduction

1、Axial-flow style roof fan has 17 sizes with dia, ranged from Φ300-Φ1000,Additiona sizes are available upon request.

2、Structures of various fans refer to our general assembly drawings, formed by: impeller, casing, hood, driving parts, control damper, birds guard, fan guard.

3、Fan driven form: For DWT-Ⅰ fan, fans dia Φ≤2200,are directly connected with motor, or driven by pulley belt upon request of users those dia. Over Φ2200 are driven by pulley belt or, speed reducer, control damper has gravitational, electrical, manual 3 styles.

4、Roof fan has wide application with large quantity variety in structure and type according to different usage. We can make special design for customers on provided technical data, assembly structure and etc.

5、Centrifugal fans are used for where high air pressure≥600Pa required. Mixed-flow are for medium air pressure 400-600Pa.Axial-flow fans are for low air pressure≤400Pa.

DWT-Ⅰ型轴流式屋顶通风机性能参数（固定角度）

DWT-Ⅰ Type axial flow roof fan performance data(fixed pitch)

叶轮直径 Impeller DIA. (mm)	风量 Air flow Rate (m3/h)	风压 Total Pressure (Pa)	转速 Speed (r/min)	装机容量 Rated power (Kw)	噪声 Noise level dB(A)	叶轮直径 Impeller DIA. (mm)	风量 Air flow Rate (m^3/h)	风压 Total Pressure (Pa)	转速 Speed (r/min)	装机容量 Rated power (kw)	噪声 Noise level dB(A)
300	3300 3000 2600	181 206 232	2850	0.37	66	800	27000 25000 23000	175 207 228	960	2.2	72
	1650 1560 1450	62 66 72	1450	0.06	52		20000 18000 16000	129 154 167	720	1.5	66
400	7450 6350 5300	193 230 250	2850	0.75	69		15750 14500 12250	78 96 121	560	0.75	63
	5700 5400 4580	176 184 190	1450	0.55	67		34500 29000 24000	202 236 256	960	3.0	76
500	8000 7000 5600	135 162 191	1450	0.55	68	900	32000 28000 24000	126 156 177	720	2.2	73
	7000 6700 6400	113 122 131	960	0.37	63						
	6000 5000 4100	88 92 96	720	0.25	58		24000 21500 18600	102 118 126	560	1.1	67
600	15000 14000 13000	232 251 267	1450	1.5	73	1000	50000 45000 39000	251 286 317	960	5.5	81
	11000 10000 9100	168 183 193	960	1.1	67		46000 40000 35000	141 167 183	720	3.0	76
	8500 8000 7600	111 127 136	720	0.55	62		28000 24000 20000	111 125 133	560	1.5	69
700	17500 15000 12500	165 201 212	960	1.5	69	1120	56900 49500 40400	253 296 322	960	5.5	82
	12000 11000 9200	141 163 177	720	0.75	63		52500 45000 40000	138 169 183	720	3.0	77
	9300 8500 7200	83 94 102	560	0.55	59		32000 28000 25000	111 128 142	560	1.5	71

DWT-Ⅰ型轴流式屋顶通风机性能参数（可变角度）

DWT-Ⅰ Type axial flow roof fan performance data(adjustable pitch)

叶轮直径 Impeller DIA. (mm)	安装角度 Ang. Deg.	风量 Airflow Rate (m^3/h)	风压 Total Pressure (Pa)	转速 Speed (r/min)	装机容量 Rated power (Kw)	噪声 Noise level dB(A)
1200	22° 19° 16°	57000 50000 44000	196 205 209	720	5.5	73
1200	27° 24° 21°	42000 37500 33000	126 134 148	560	3	67
1400	17° 15° 13°	76700 68000 57500	250 261 268	720	7.5	77
1400	22° 20° 18°	69000 60000 51500	159 169 175	480	4.0	69
1500	19° 17° 15°	88500 80000 70000	195 203 208	720	7.5	78
1500	23° 21° 19°	74750 65000 55800	149 158 165	480	4.0	70
1600	20° 18° 16°	107500 95000 81500	235 248 256	720	11	79
1600	27° 25° 23°	61000 52500 42600	131 152 167	320	4.0	70

叶轮直径 Impeller DIA. (mm)	安装角度 Ang. Deg.	风量 Air flow Rate (m^3/h)	风压 Total Pressure (Pa)	转速 Speed (r/min)	装机容量 Rated power (Kw)	噪声 Noise level dB(A)
1800	17° 15° 13°	129300 112500 96450	261 276 287	720	15	80
1800	23° 21° 19°	96250 86150 74300	122 136 143	480	5.5	71
1800	26° 23° 20°	79150 71550 62500	115 126 148	320	4.0	66
2000	23° 21° 19°	168700 15000 131000	215 234 247	480	15	78
2000	21° 18° 15°	125500 110000 95200	118 121 132	320	5.5	68
2200	18° 16° 14°	201600 180000 165000	193 205 210	480	15	79
2200	29° 27° 25°	155000 120000 119500	135 142 155	320	7.5	71
2400	19° 17° 15°	220800 198500 176500	212 228 246	480	22	84
2400	26° 23° 20°	175000 162000 135000	148 164 188	320	11	77
2400	21° 18° 15°	140000 120000 85000	150 162 171	220	7.5	70

DWT-II 型离心式屋顶通风机性能参数

DWT- II Type centrifugal flow roof fan performance data

机号 No	转速 Speed (r/min)	风压 Total Pressure (Pa)	风量 Airflow Rate (m^3/h)	功率 Power (Kw)	噪声 Noise level dB(A)	重量 Weight (kg)
3	1450	220 210 188 167 122	878 925 1059 1130 1253	0.75	57	88
3.5	1450	299 285 256 227 166	1395 1470 1682 1794 1990	1.1	59	95
4	1450	412 391 372 334 298	1887 2083 2194 2510 2677	1.1	62	115
4.5	1450	495 471 423 376 231	2966 3124 3574 3812 4514	1.1	63	154
5	1450	615 582 522 485 378	4068 4285 4903 5438 6113	2.2	64	195
6	960	385 367 330 293 223	5024 5512 6120 6782 7338	1.5	65	234
7	960	548 499 448 398 371	8015 8804 9827 10836 11925	3.0	68	292
8	960	721 686 654 587 521	12563 13565 14157 15824 16708	5.5	70	374
10	720	1072 1020 916 813 702	22150 23298 26573 28395 31436	11	72	396

DWT－III型离心轴流式屋顶通风机性能参数

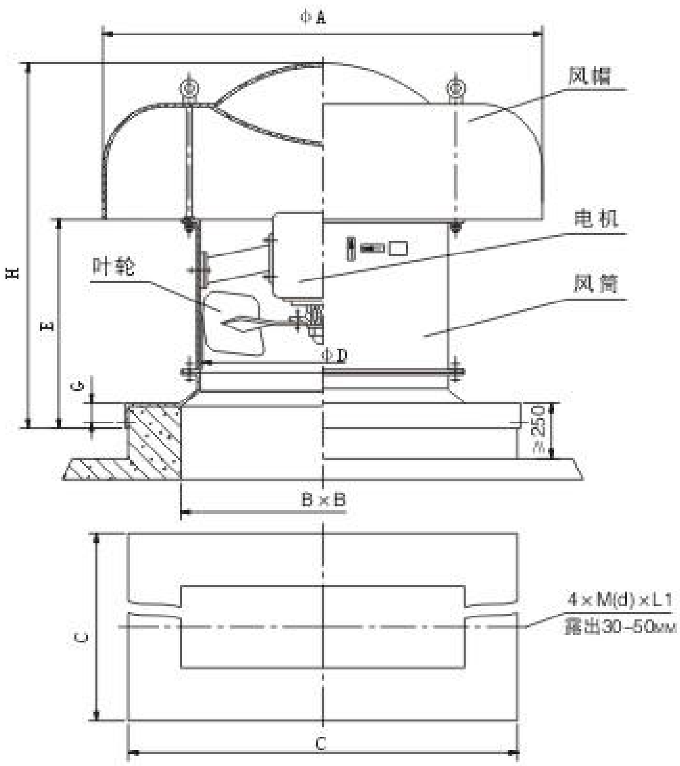
DWT-III Type centrifugal Axial style roof fan performAnce data

机号 No	转速 Speed (r/min)	风量 Airflow Rate (m³/h)	静压Total pressure (Pa)	电机容量 Rated power (kw)	重量 Weight (kg)
2.8	1440	1260 1040	100 150	0.55	18
	2880	3080 2710 2300	100 300 500	1.1	20
3.15	1440	2050 1740 1450	80 150 200	0.55	19
	2880	4370 3920 3470	150 400 600	1.5	24
3.55	1440	2880 2620 2320	100 150 200	1.1	21
	2880	6270 5760 4930	150 400 700	2.2	29
4.0	960	2750 2590 2040	80 100 150	0.75	32
	1440	4460 4030 3420	100 200 300	1.1	35
4.5	960	3940 3460 2760	100 150 200	0.75	34
	1440	6280 5470 4680	150 300 400	1.1	39
5.0	720	4230 3870 2450	80 100 150	0.55	46
	960	6120 5530 4470	100 150 200	1.1	46
	1440	9650 8640 7740	150 300 400	2.2	52

机号 No	转速 Speed (r/min)	风量 Airflow Rate (m³/h)	静压Total pressure (Pa)	电机容量 Rated power (kw)	重量 Weight (kg)
5.6	720	4860 1800	150 200	0.75	67
	960	9040 8460 7800	100 150 200	1.1	67
	1440	14040 12960 11160	150 300 500	3.0	77
6.3	720	9090 7920 6210	100 150 200	1.1	80
	960	12450 11760 9840	150 200 300	3.0	83
	1440	20020 18970 17100	150 300 500	5.5	85
7.1	720	13800 12600 11400	100 150 200	1.1	96
	960	17600 16170 14700	150 200 300	3.0	98
	1440	27000 25400 24000	200 300 500	7.5	136
8.0	720	19800 18000 17200	100 150 200	2.2	146
	960	26000 25020 24000	150 200 300	4.0	146
	1440	40000 37800 35800	200 300 500	11.0	163

No3-11.2轴流式屋顶通风机外形结构图及安装尺寸(固定角度)

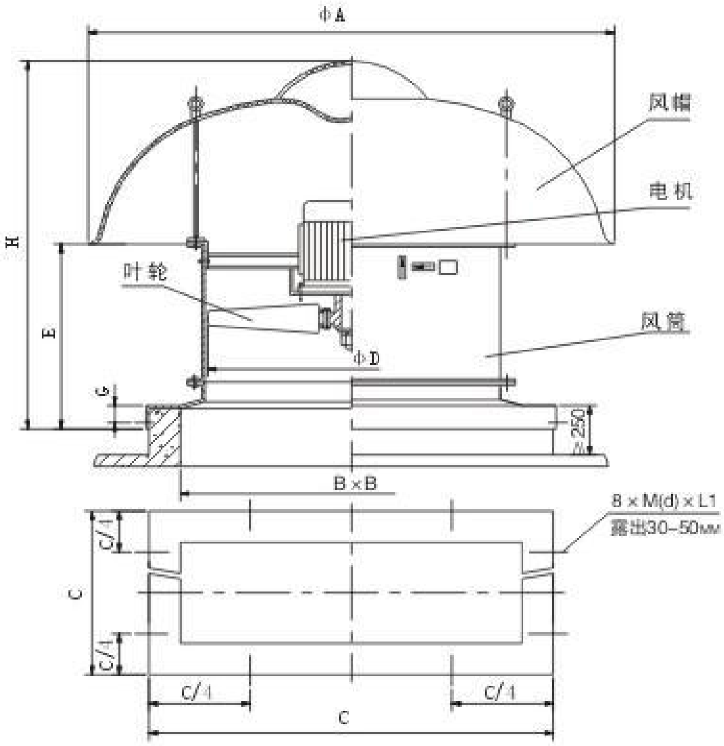
No3-11.2Axial style toof fan overall figure and install taion dimesions(fixed pitch)



尺寸 Size / 机号 (No.)	ϕA	ϕD	B	G	C	E	H	M(d)×L	重量 Weight(kg)
3	ϕ650	ϕ300	400^{+10}_{0}	40	600^{0}_{-10}	300	635	M8×100	15
4	ϕ650	ϕ400	500^{+10}_{0}	40	700^{0}_{-10}	340	695	M12×100	28
5	ϕ800	ϕ500	600^{+10}_{0}	40	800^{0}_{-10}	390	815	M12×100	37
6	ϕ1000	ϕ600	700^{+10}_{0}	40	900^{0}_{-10}	440	905	M12×120	57
7	ϕ1120	ϕ700	800^{+10}_{0}	40	1000^{0}_{-10}	480	1110	M12×120	85
8	ϕ1340	ϕ800	900^{+10}_{0}	40	1100^{0}_{-10}	480	1110	M12×120	124
9	ϕ1500	ϕ900	1000^{+10}_{0}	40	1250^{0}_{-10}	480	1110	M12×120	146
10	ϕ1650	ϕ1000	1100^{+10}_{0}	60	1400^{0}_{-10}	480	1265	M12×150	216
11.2	ϕ1800	ϕ1120	1240^{+10}_{0}	60	1540^{0}_{-10}	480	1265	M16×150	258

No. 12-20轴流式屋顶通风机外形结构图及安装尺寸(可变角度)

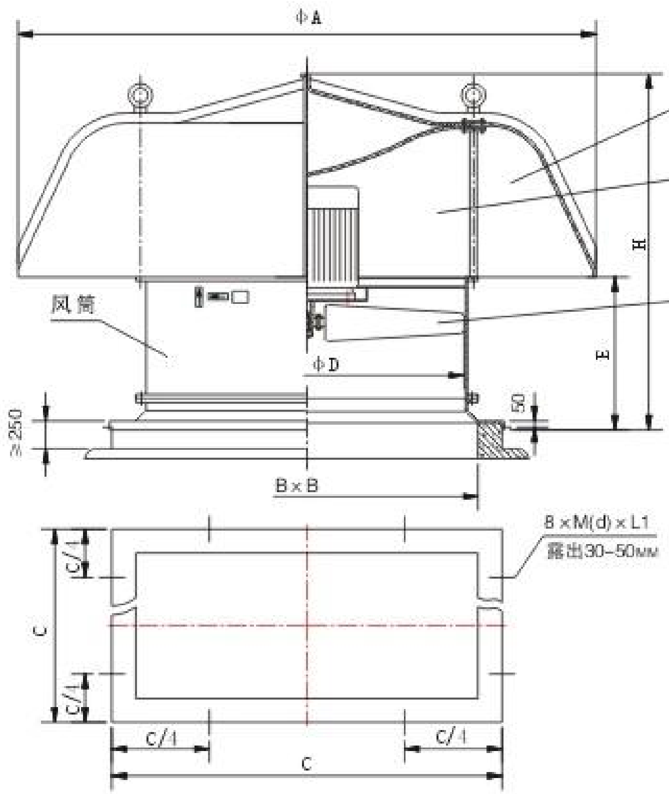
No.12-20 axial-flow fan overall and installation dimensions tabal (adjustable pitch)



尺寸 Size / 机号 (No.)	ϕA	ϕD	B	G	C	E	H	M(d)×L	重量 Weight(kg)
12	ϕ1800	ϕ1200	1360^{+15}_{0}	60	1660^{0}_{-15}	500	1315	M16×150	279
14	ϕ2500	ϕ1400	1560^{+15}_{0}	60	1900^{0}_{-15}	600	1450	M16×100	357
15	ϕ2500	ϕ1500	1700^{+20}_{0}	60	2040^{0}_{-20}	600	1450	M18×200	386
16	ϕ3000	ϕ1600	1800^{+20}_{0}	60	2160^{0}_{-20}	600	1580	M18×200	397
18	ϕ3000	ϕ1800	2000^{+20}_{0}	60	2400^{0}_{-20}	600	1580	M18×200	562
20	ϕ3400	ϕ2000	2200^{+30}_{0}	60	2600^{0}_{-30}	600	1580	M20×200	721

No.22以上皮带传动轴流式屋顶通风机外形结构图及安装尺寸（可变角度）

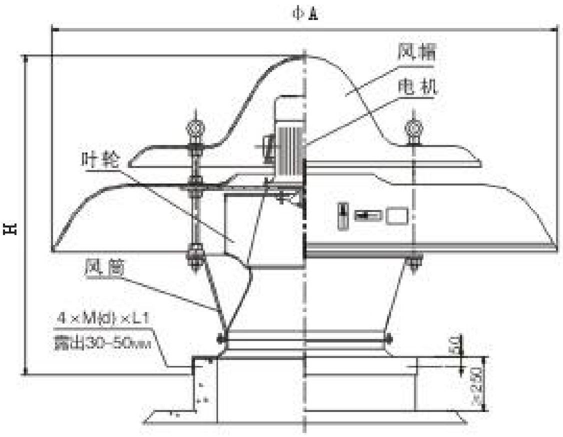
Over No.22 axial-flowfan with pulley belt driven overall and installation dimensionstabal (adjustable pitch)

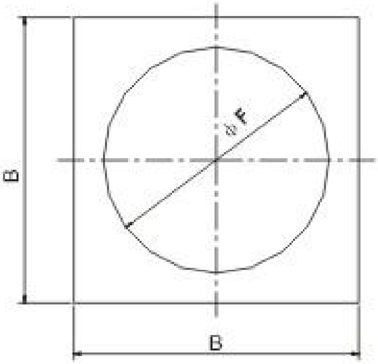


尺寸 Size / 机号 (No.)	φA	φD	B	G	C	E	H	M(d)×L	重量 Weight(kg)
24	φ3800	φ2200	2400^{+30}_{0}	60	2800^{0}_{-30}	600	1660	M20×200	756
24	φ3800	φ2400	2600^{+30}_{0}	60	3000^{0}_{-15}	600	1660	M20×200	856

DWT-Ⅱ型离心式屋顶通风机外形结构图及安装尺寸

DWT-Ⅱ Type Centrifugal Roof Fan Overall And Installation Dimensions





机号 (No.)	ϕA1	ϕA	B	C	D	E	∅F	H	G	n×M(d)×L1
3	680	690	430^{0}_{-10}	80	277	382	300	702	50	4×M8×80
3.5	680	805	480^{0}_{-10}	80	298	418	350	758	50	4×M8×80
4	680	920	520^{0}_{-10}	80	328	463	400	803	50	4×M8×30
4.5	850	1035	570^{0}_{-10}	80	343	493	450	833	50	4×M10×100
5	850	1150	640^{0}_{-10}	80	383	548	500	948	50	4×M10×100
6	1000	1250	820^{0}_{-10}	80	431	626	600	1026	50	4×M12×120
7	1190	1460	910^{0}_{-10}	80	509	734	700	1229	50	4×M12×120
8	1190	1610	1050^{0}_{-10}	80	563	818	800	1353	50	4×M12×120
10	1500	1840	1300^{0}_{-10}	80	655	970	1000	1560	50	4×M16×150

DWT-Ⅲ型离心式屋顶通风机

DWT-Ⅲ Type centrifugal Axial style roof fan

本系列风机是由上海交通大学与本公司在吸收、消化国际先进技术的基础上进行研制开发的新一代产品,机号自∅280～∅800mm,风量自1000～32000m^3/h,静压自80～700Pa,具有效率高、体积小、噪声低、防腐性能优良等特点。

（一）、主要部件简介

1、风机座：采用玻璃钢制作，具有质轻、防腐蚀等特点；

2、电机座：采用不锈钢制作或采用钢板经镀锌后喷塑处理，具有拆装方便，防腐蚀等特点；

3、电机：采用户外立式电机，具有防潮、防水等特点；

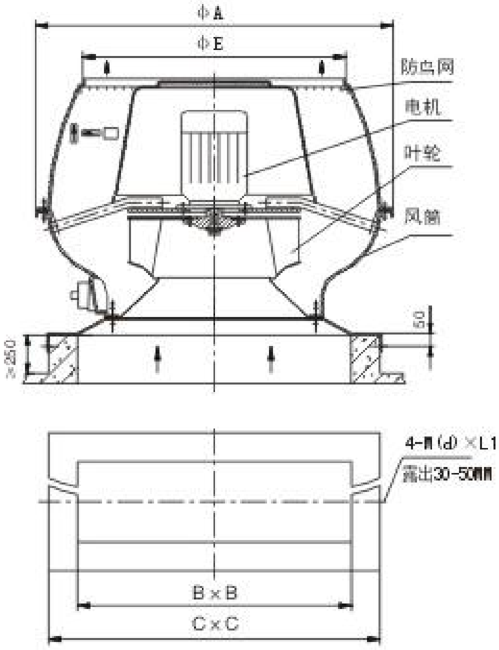
4、风机叶轮：具有高效、低噪等特点，材质为碳钢或铝合金；

5、风机上、下段外壳：采用玻璃钢制作，具有质轻、防腐蚀等特点；

6、风机整流罩：采用玻璃钢制作，具有防腐、防水、质轻等特点；

7、防鸟网：采用不锈钢制作或采用碳钢经镀锌后喷塑处理，防腐性能好；

8、电机接线盒：具有防水、防腐蚀等特点。

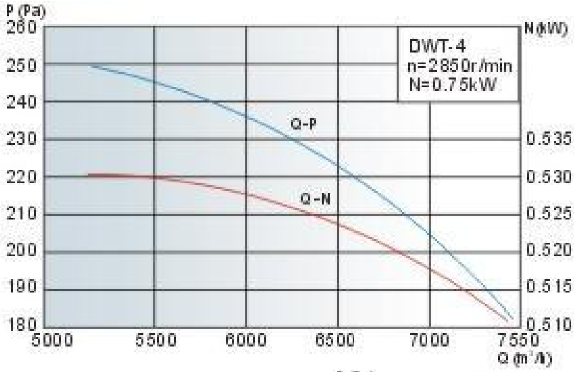


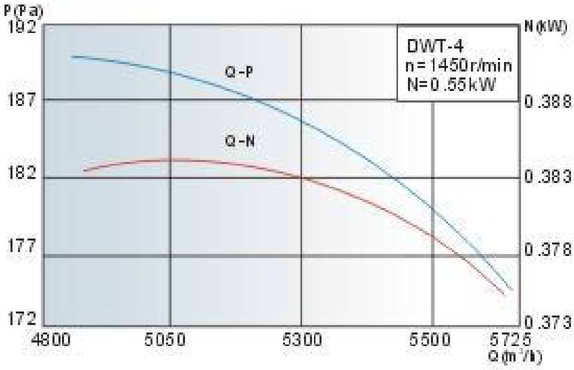
（二）、DWT－Ⅲ离心轴流式屋顶风机外形结构及安装尺寸外形尺寸图：

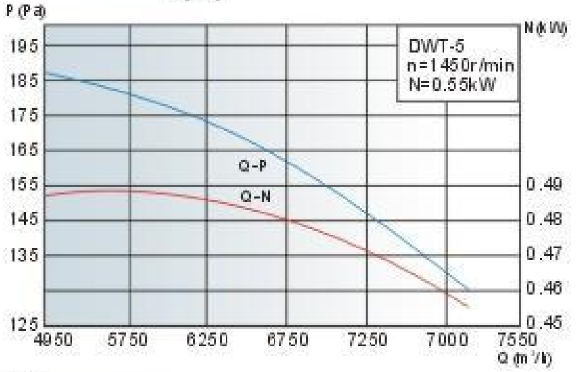
机号 (No.)	A	B	E	C	H	M(d)×L1
2.8 3.15 3.55	690	370	500	570^{0}_{-10}	615	M8×200
4.0 4.5 5.0	935	640	700	850	722	M8×200
5.6 6.3	1135	930	900	1140	935	M10×250
7.1 8.0	1380	1355	970	1655	1135	M12×250

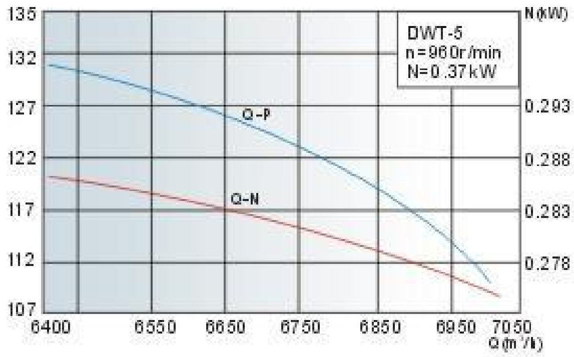
DWT–Ⅰ型屋顶式通风机（固定角度）性能曲线

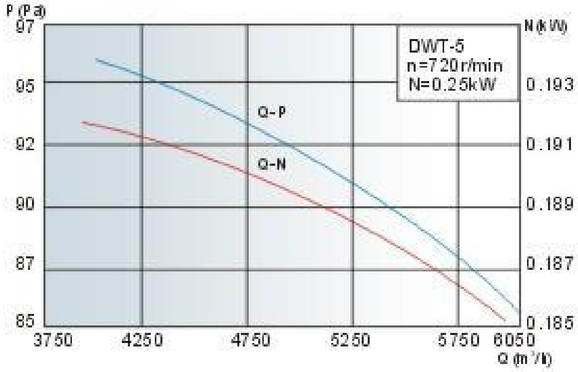
DWT-Ⅰ Type roof style fan(fixed pitch)performan curve

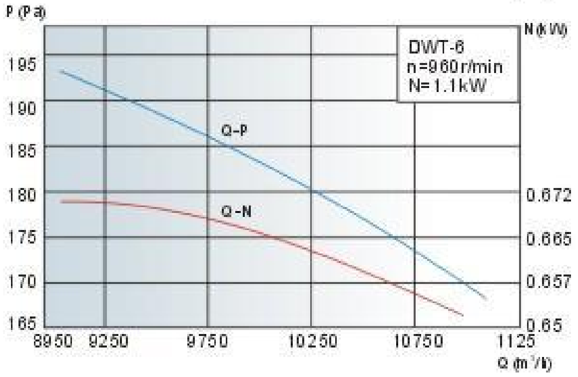






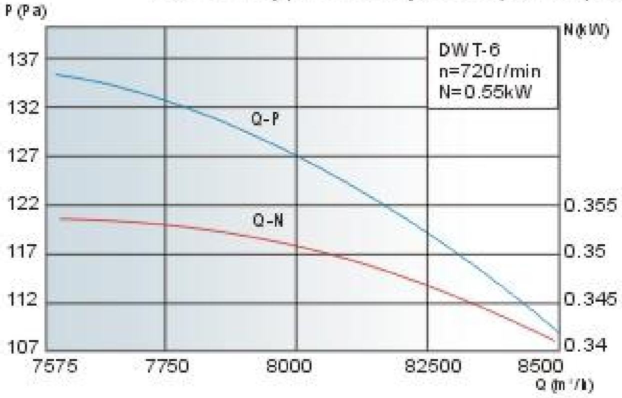


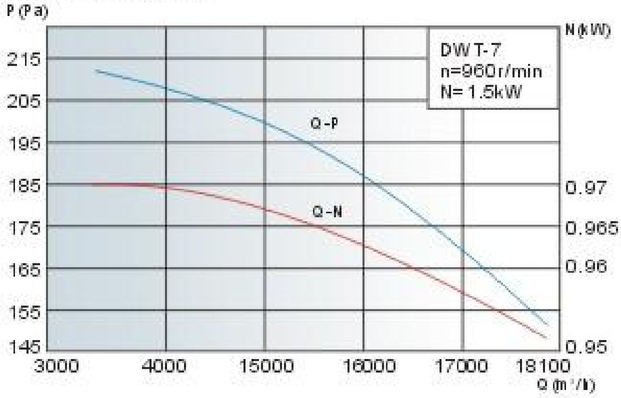


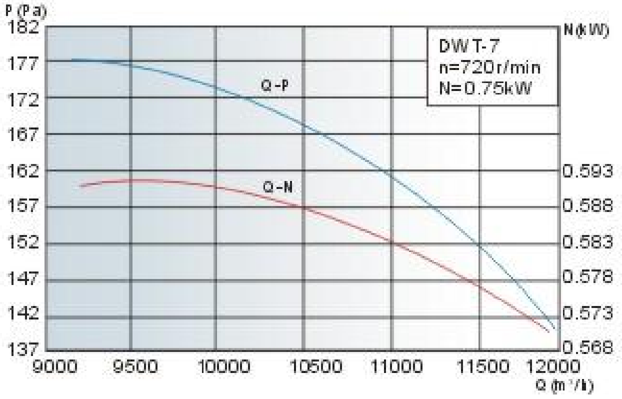


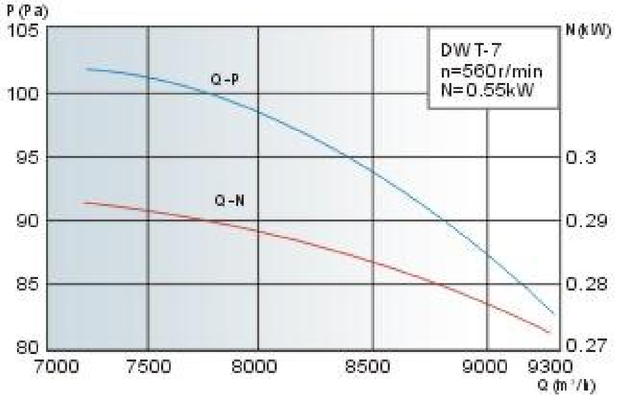
DWT-Ⅰ型屋顶式通风机（固定角度）性能曲线

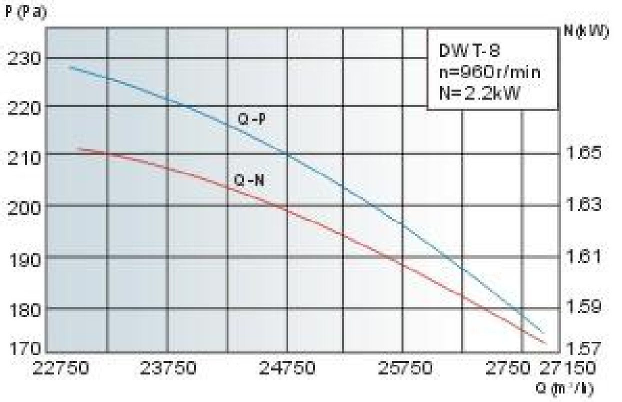
DWT-Ⅰ Type roof style fan(fixed pitch)performan curve

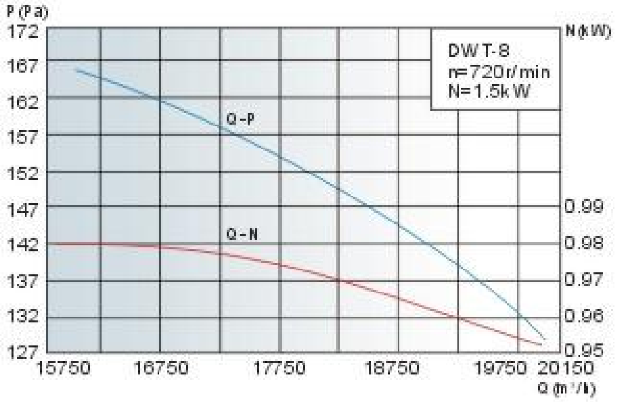


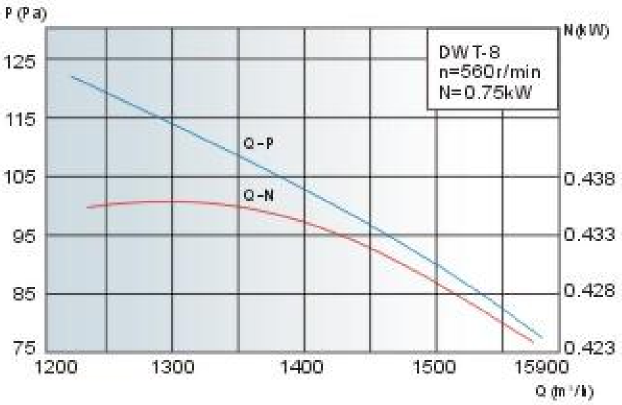


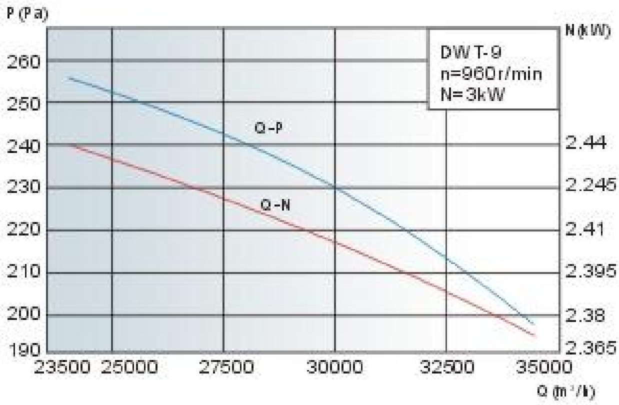






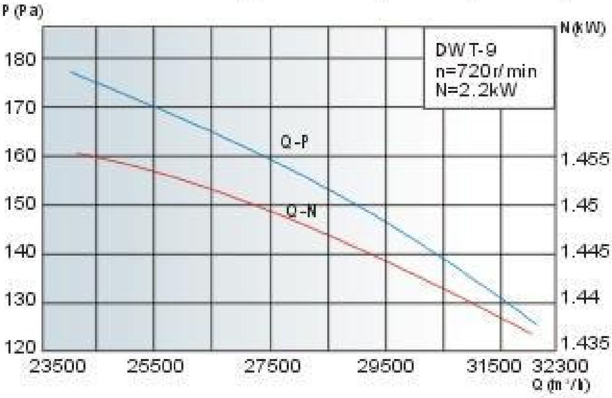


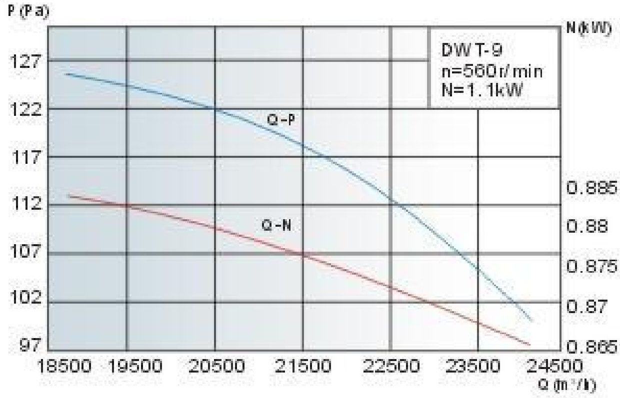


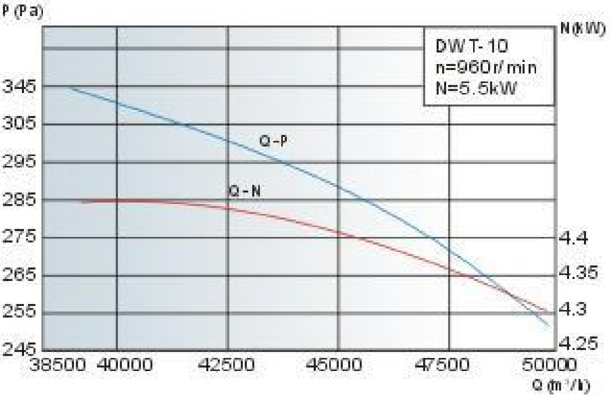


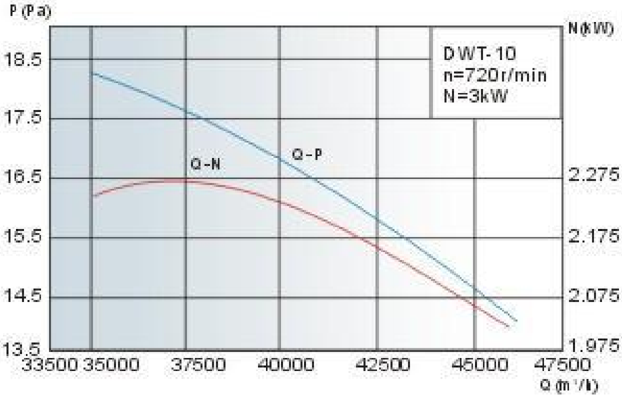
DWT-Ⅰ型屋顶式通风机（固定角度）性能曲线

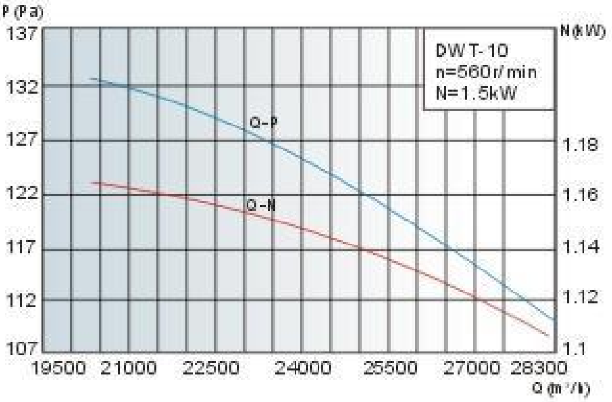
DWT-Ⅰ Type roof style fan(fixed pitch)performan curve

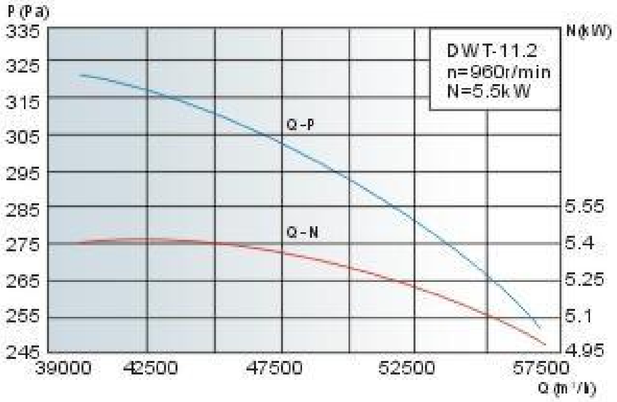


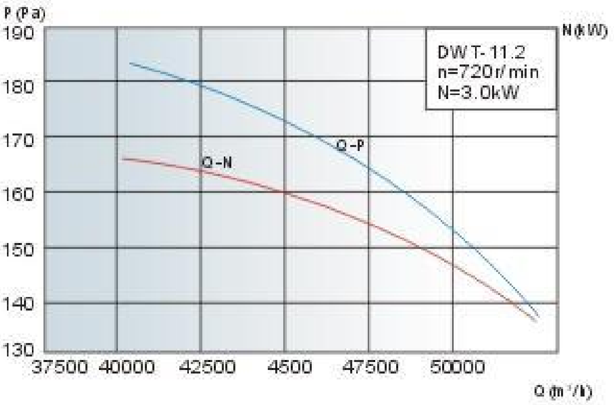


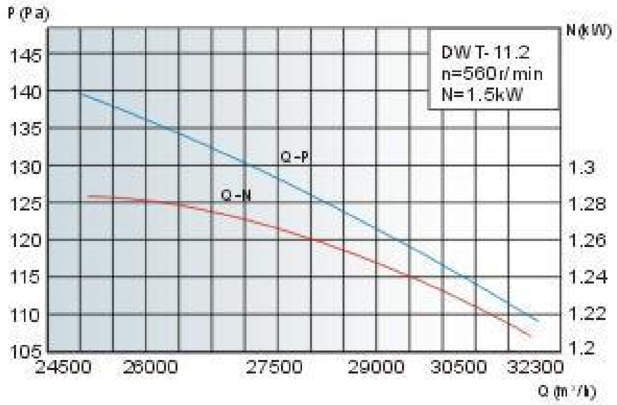






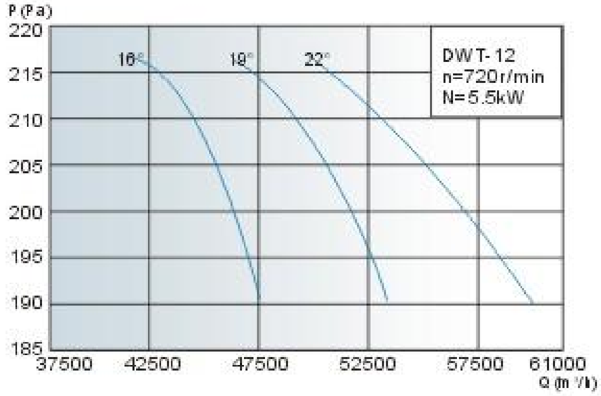


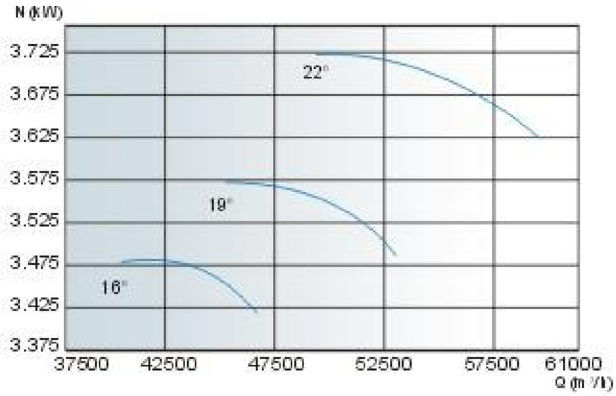


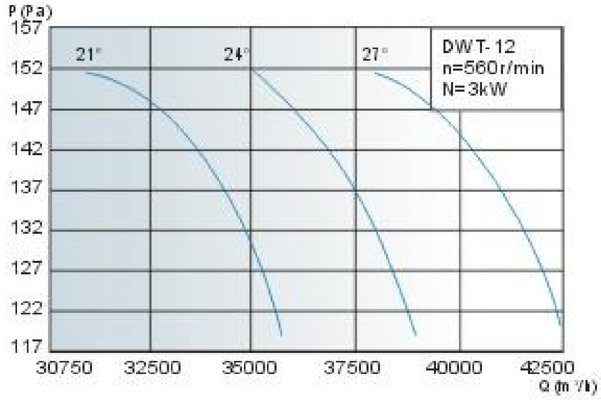


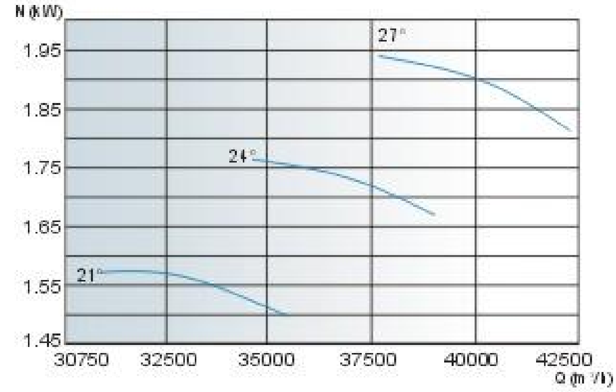
DWT-Ⅰ型屋顶式通风机（可变角度）性能曲线

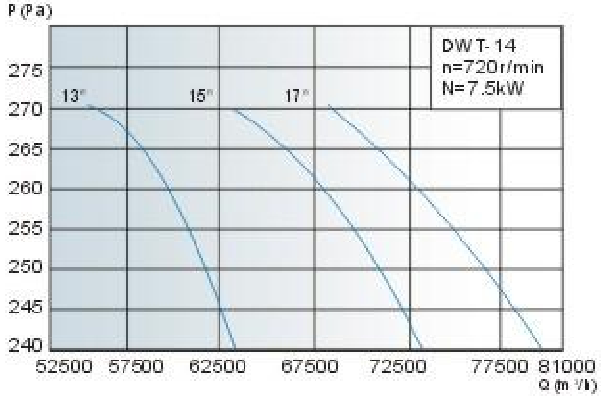
DWT-Ⅰ Type roof style fan(adjutble pitch)performan curve

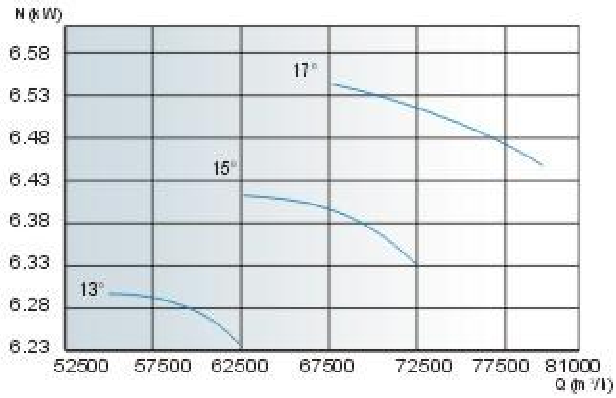






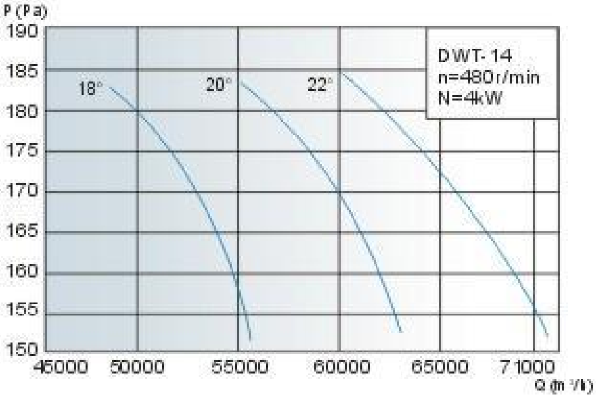


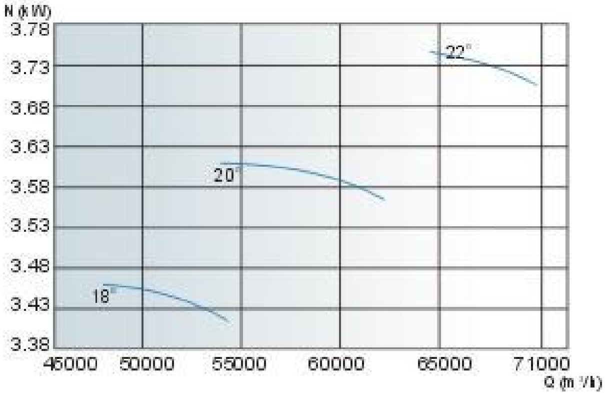


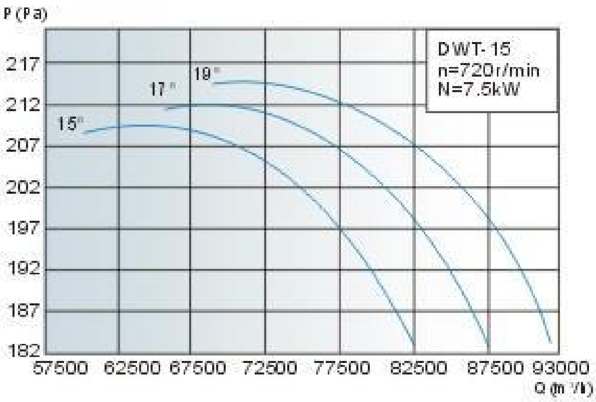


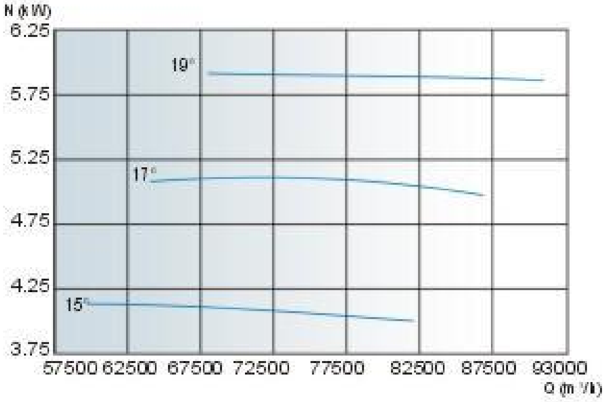
DWT-Ⅰ型屋顶式通风机（可变角度）性能曲线

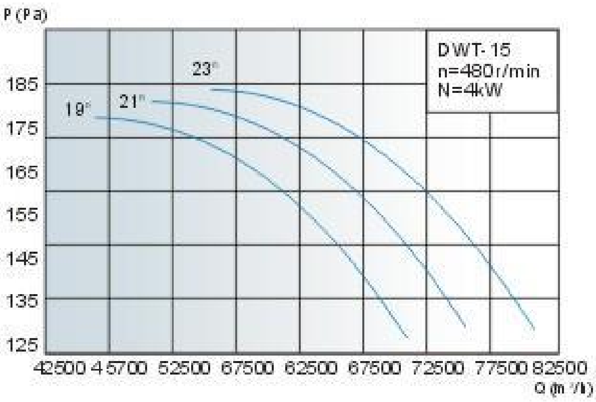
DWT-Ⅰ Type roof style fan(adjutble pitch)performan curve

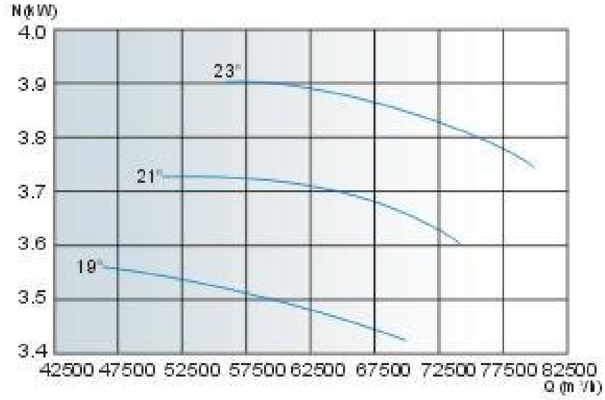






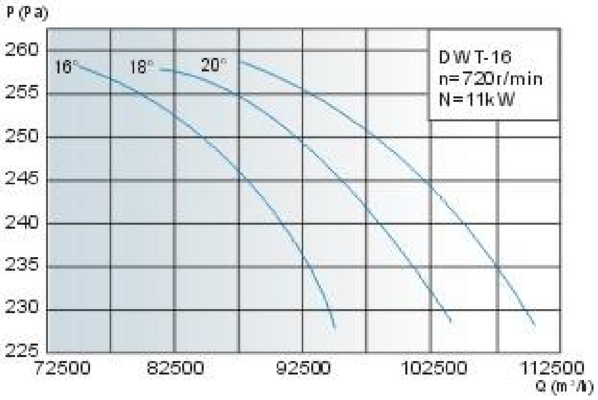


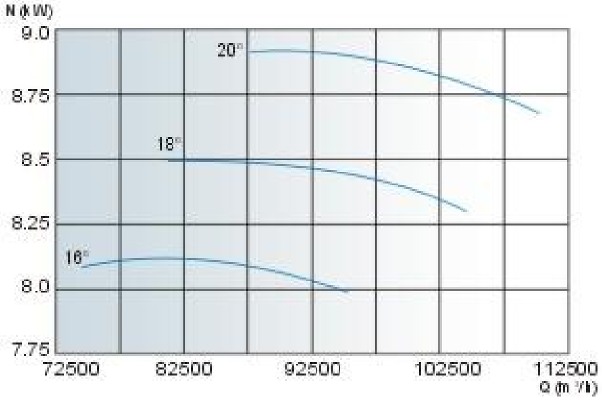


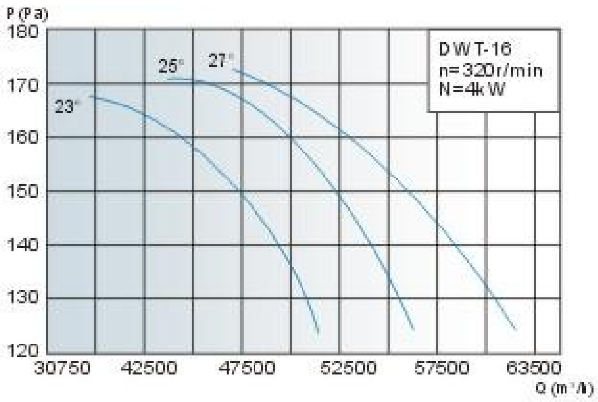


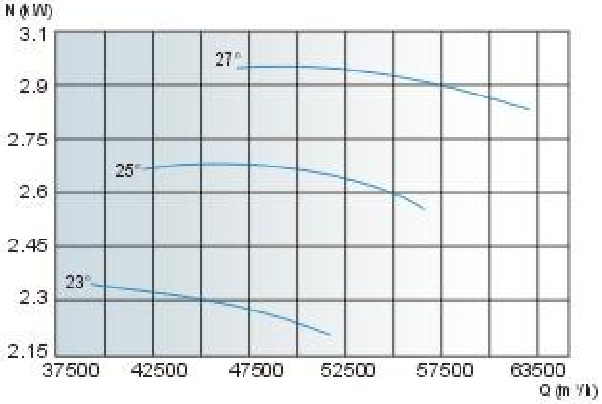
DWT-Ⅰ型屋顶式通风机（可变角度）性能曲线

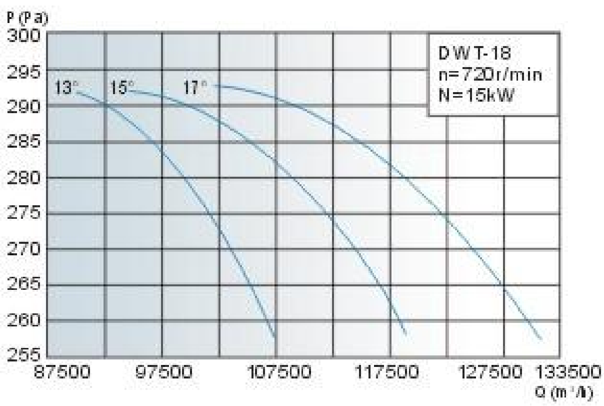
DWT-Ⅰ Type roof style fan(adjutble pitch)performan curve

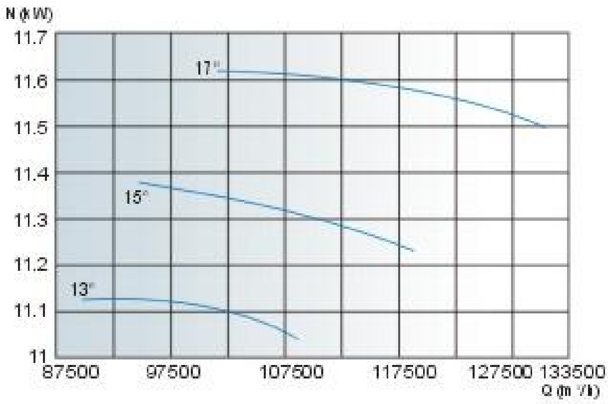






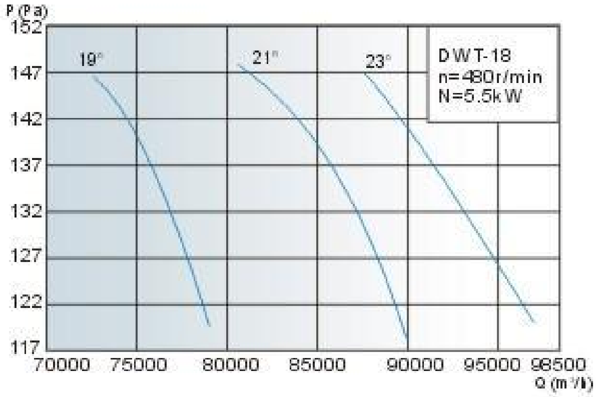


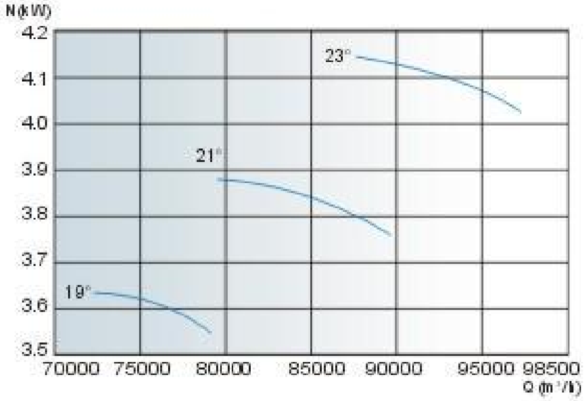


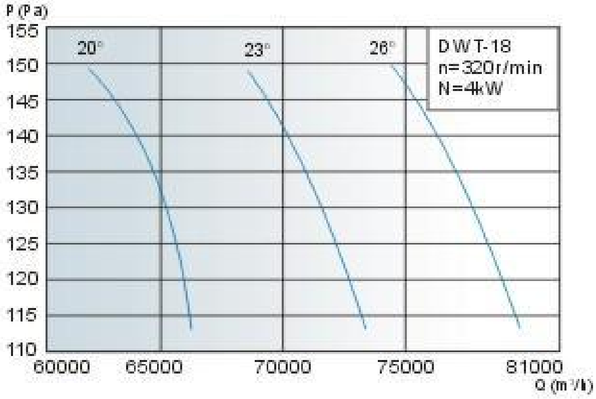


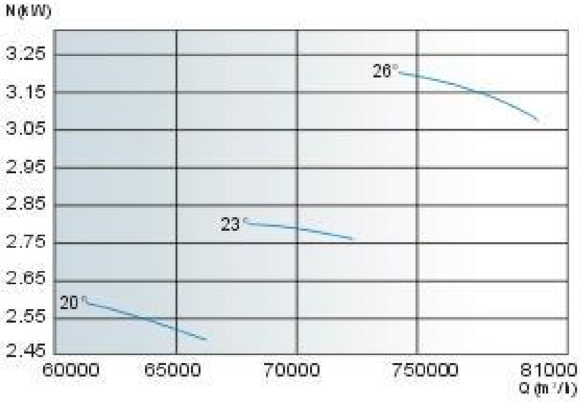
DWT-Ⅰ型屋顶式通风机（可变角度）性能曲线

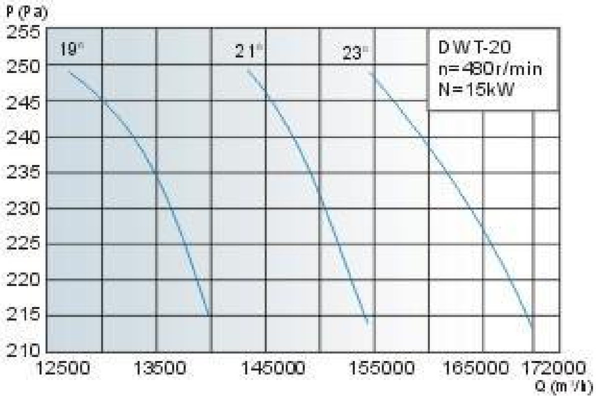
DWT-Ⅰ Type roof style fan(adjutble pitch)performan curve

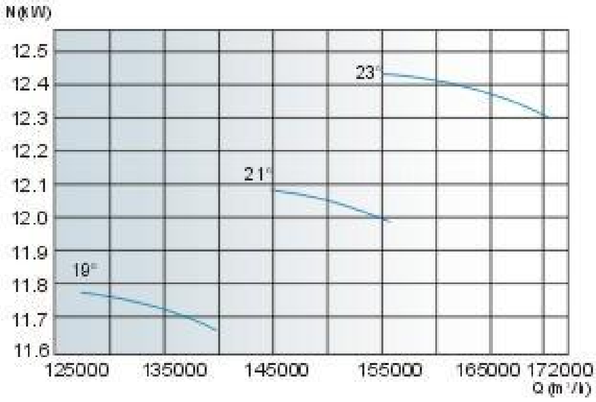






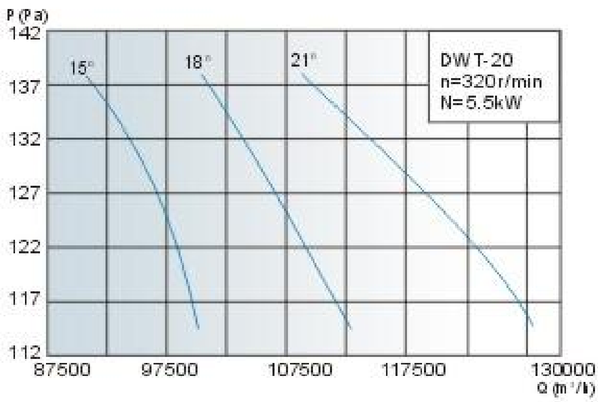


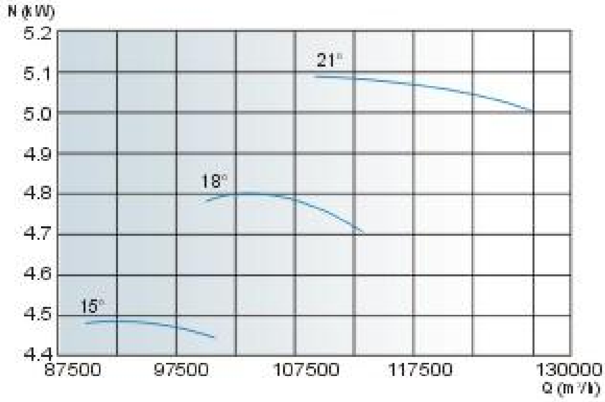


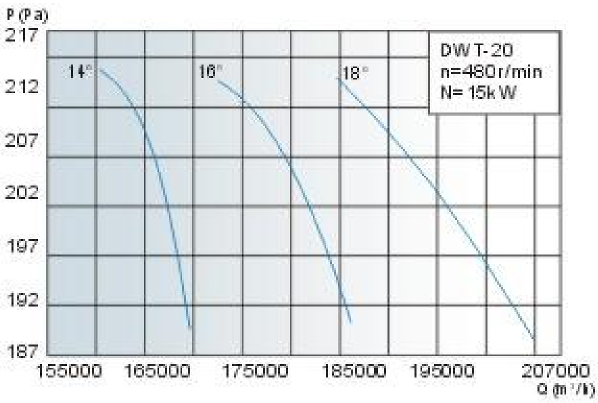


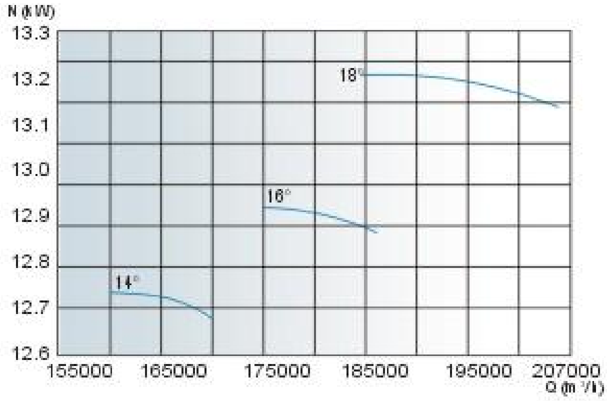
DWT-Ⅰ型屋顶式通风机（可变角度）性能曲线

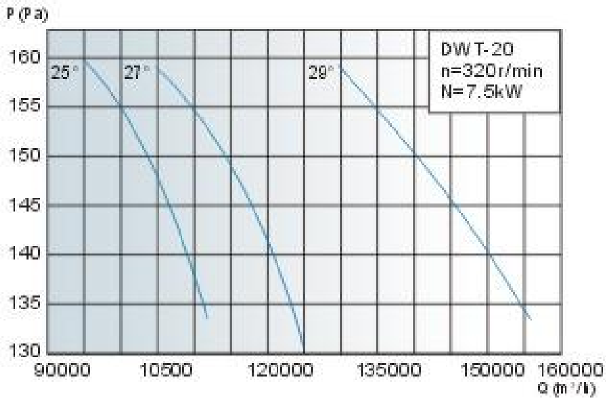
DWT-Ⅰ Type roof style fan(adjutble pitch)perform an curve

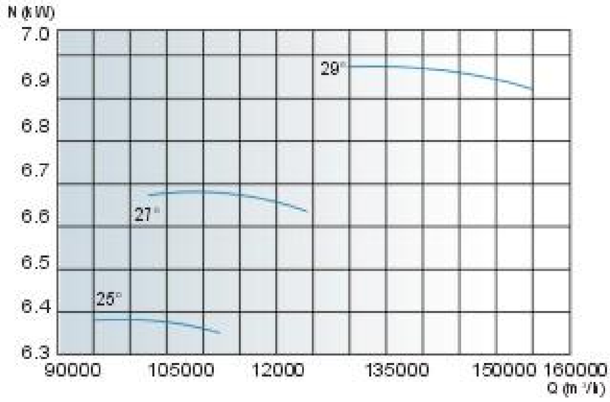






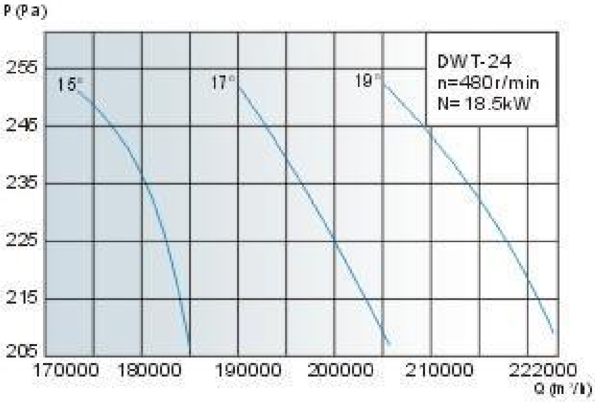


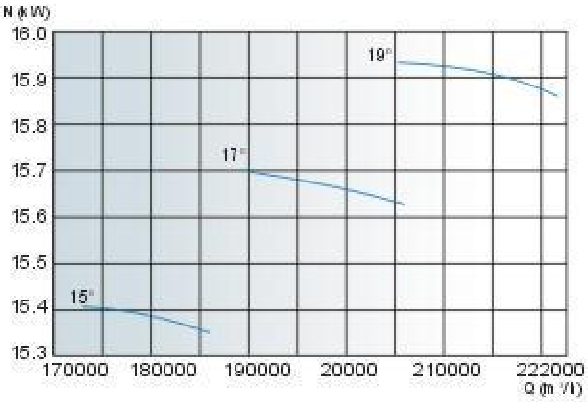


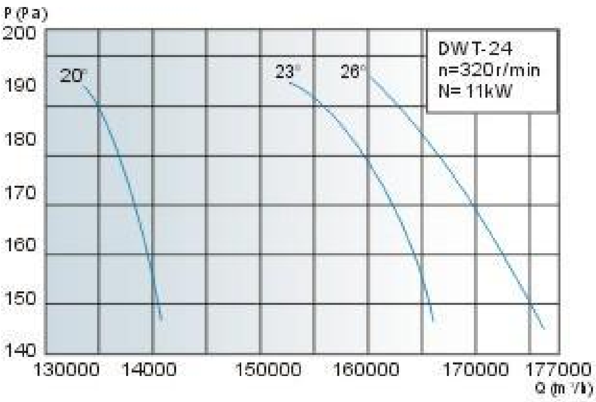


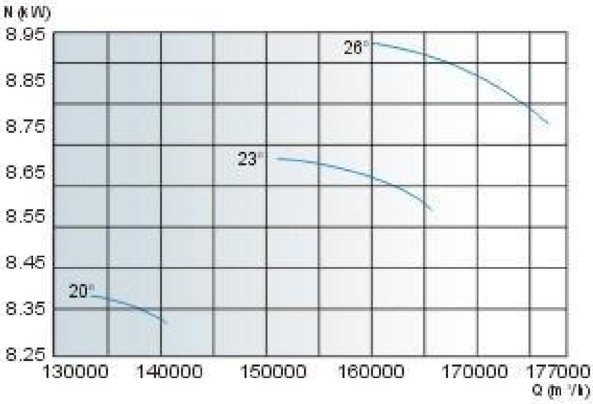
DWT-Ⅰ型屋顶式通风机（可变角度）性能曲线

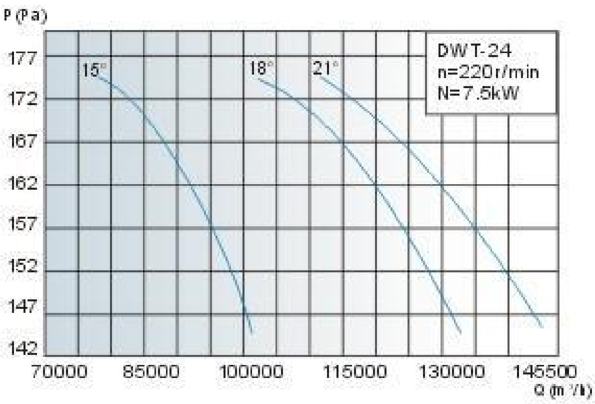
DWT-Ⅰ Type roof style fan(adjutble pitch)perform an curve

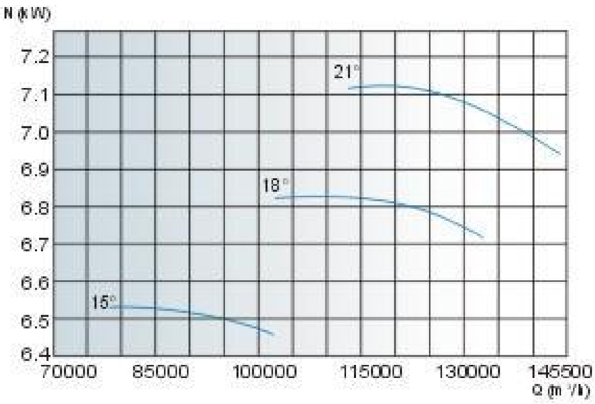












安装、使用、维护说明
Installation operation & Maintenance instruction

1、打开包装后，检查风机各部件（特别是叶轮及机壳）有否损伤变形，联接有否松动，若有则应及时纠正。

2、在预制的安装基础上放一圈橡皮密封胶，然后起吊风机至安装基础上，底脚螺栓对位不用敲打的办法对位，对上后螺栓紧固。

3、起吊风机必须用铁索托住风机，不允许用吊钩勾住风帽边缘起吊。

4、NO.12以上的大风机的风帽为剖分式，供货时分件包装，对于大机号风机应先把风机主体装在基础上，然后再把风帽装在风机主体上，剖分式风帽联接法兰上需加防水密封胶。

5、轴流式、离心式的进口联接管道，应用软接头联接，风机不承负管道重量。

6、安装完毕后，接通电源运转，检查风机是否正常。

7、在试运转或正常使用中，碰到下列情况应立即停机，查明原因，等故障排除后方可启动；

1）、发生强烈振动；2）、突然噪声加大或发出异常声音；3)、电机超功率；4)、电机冒白烟；

8、在使用中应定期检查风机连接件，紧固件有否松动，叶轮有否积尘，并定期加润滑油。

1、To check if there is any damage to each part of fan (especially impeller and casings and connecting parts)when opens package.

2、Put a sheet of rubber gasket or sealing on premade base, then hook up the fan,and set onto it. Don't hammer down the fan for anchor bolts alignment, tighten the anchor bolts when fan set in place.

3、To hook up fan by using cable, to sling on hood edge is not allowed.

4、We supply fans size over No.12 with split hoods, separately packed for large sizefan, set the fan body assembly on foundation first, then install the hood, apply sealingon split type hood flange for water-seal.

5、If required, fexible duct should be connected to inlet of axial flow or centrifugalfan, fan is not designed for rigid connecting duct load.

6、After mounting is done, “bump” the fan for correction rotation.

7、Stop to check if any of the following situation happens during trial operation:

1).Strong vibration;

2).Sudden excessive noise or abnormal noise or increasee;

3).Motor overload;4).Motor smoking out.

8、Regular check to each part of fan is needed, check for any loosing parts or fastener,check impeller for excessive dust accmulation, Keep regular lubriction schedule.

注意事项

1、用户订购我公司风机应明确下列内容:

1）.风机的名称、型号、电源、频率、电压；

2）.工作介质（一般为工业气体）的物理、化学性质及此状态下的性能参数；如不注明介质一律视为标准状态下的空气；

3）.应注明所需的附件名称及其型式（防鸟网、安全网、活页风门作为风机的附件不包括在风机中），若不注明我公司不负责提供附件；

2、当用户难以确定选用何种风机适合时，我公司可为用户先型并指明随带附件，若用户所需的性能参数与样本不符合时，我公司可作特殊设计生产。

How to order

1、Following information should be specified by buyer during ordering.

1).Fan type, model, motor power supply voltage, frequency, current.

2).Working fluid type(normally Industrial gas or air)physical, chemical property and fan perfomance data under such working condition; Air in standard condition will be regarded as working fluid otherwise specified.

3).Please specify the auxiliary parts and type, optional parts will not be provided if not specified by customer, birdguard, fanguard, control damper are listed as optional parts. 2、We are willing to make our recommendation on model selection and optional part for customer if required, and will design new fan when customer desired fan performance is not standard product.

概　述

WRF系列屋顶式通风装置由脊瓦、排水槽、托架、墙板、保温阀板、泛水板、检修门、安全网等部件组成，属自然通风形式，其骨架部分由标准型材组成，并经表面防腐处理后进行组合而成；该装置结构采用自然通风流线形进行精心设计，具有结构简单、重量轻、安装方便、维护简便、外形美观等特点，无须用动力能达到良好的通风效果。

该装置广泛应用于电力、冶金、机械、石化、轻工、电子、造纸等各种热量产生而需排放的车间自然通风。

本公司通过吸收国内外同类产品的先进技术和通风系统优化丰富经验开发的WRF系列屋顶式通风装置，同时，根据不同使用条件开展流体机理研究，不断改进装置通风效率，使装置结构更加合理，通风效果更加明显，是理想的节能型通风装置。

GENERAL

WRF series aerator is composed of hip tile，waterspout，bracket，wall support，boarding，insulation valve plate，flashing，inspection door，bird wire，which are made of steel sheet and surface treatment for prevention.The design of the structure is nature ventilation strea-mline style.This range has the characteristic of simple structure，lig-htweight，easy installation，non-maintenance，good outlook，non p-ower for good ventilation effect，etc.

The range is applied for nature ventilation to exhaust heat in wor-kshop of electricpower，metallurgy，machinery，lapidification，light industry，electron，papermaking，etc.

Depending on the advanced technology absorbed from the similar products both here and abroad and long -term accumulated experience in HVAC optimized design，according to the different condition，to im-prove on the ventilation efficiency and make the structure more reaso-nable，more visible ventilation effect.

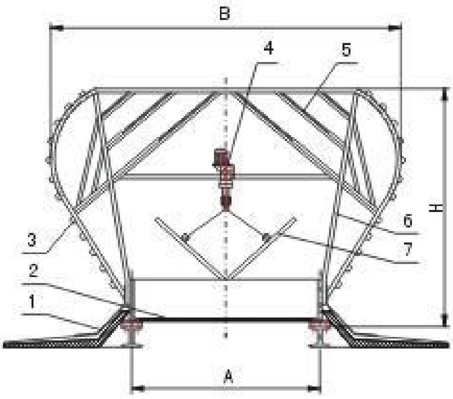
WRF系列屋顶式通风装置结构形成

WRF系列屋顶式通风装置根据喉口尺寸分6种规格，即1500、2000、2500、3000、4000、5000mm。新的流线形设计改变了传统的多边形设计结构，使其呈最佳的空气流动状态（流量系数大），同时能更好地承受大气压力（风速）和缩小装置的结构尺寸。

STRUCTURE AND OUTLINE

According to the size of throat opening，WRF series roof aerator is divided into six specs：1500mm，2000mm，2500mm，3000mm，4000mm，5000mm.New streamline structure shall become the best airflow（big flow-flowrate coefficient），and load the atmosphere pressure（airvelocity）and compact the structure.

WRF系列屋顶式通风装置示意图及外形尺寸
Structure and outline



1、泛水板
2、安全网
3、外围板
4、传动机构
5、挡雨板
6、骨架
7、阀板

序号 Item	型号 Model	喉口直径 Throat opening dia. A(mm)	外径尺寸 Outline dimension B(mm)	H(mm)	重量 Weight (kg/m)
1	WRF-15	1500	3500	2000	235
2	WRF-20	2000	4500	2500	270
3	WRF-25	2500	5500	3100	315
4	WRF-30	3000	6500	3600	330
5	WRF-40	4000	8500	4700	380
6	WRF-50	5000	10500	5700	410
7	WRF-60	6000	12500	6500	520

注：风荷载为1200Pa.Remarks: Air load 1200Pa.

WRL系列屋顶式通风装置型号表示方法
Explanation to the code

W RF □

□ — 喉口尺寸×100mm Throat opening size
RF — 自然通风 Nature ventilation
W — 屋顶式 Roof style

WRF系列屋顶式通风装置选型计算方式
SELECTLON CALCULAT ION FORMULA

按下列公式计算排风量:
To calculate the exhaust air volume according to the following formula:

$$G=f.\mu\sqrt{2g\rho_p.\rho_{hp}.(\rho_w-\rho_{np})}$$

根据排风量按下列公式计算喉口面积:
To calculate the throat opening area as the exhaust air volume according to the following formula:

$$f=G/\mu\sqrt{2g\rho_p.\rho_{hp}.(\rho_w-\rho_{np})}$$

式中：G-通风装置的排风量，exhaust volume of aerator，kg/s；
F-通风装置的喉口面积，throat opening area of aerator，m^2；

G-重力加速度，acceleration of gravity，m/s^2

ρ_P-排风空气密度，exhaust air density，kg/m^3

ρ_W-室外空气密度，outside air density，kg/m^3

μ-通风装置流量系数，flowrate co-efficiency of aerator.

ρnp-室内平均空气密度，inside average air density，

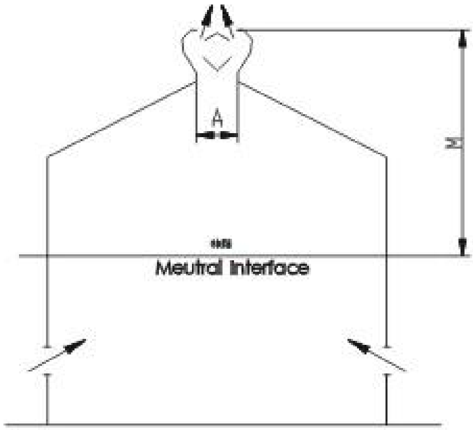
$\rho np=0.5(\rho_P+\rho_W)$，$kg/m^3$

hp-通风装置顶部距中和界面高度M（如图）

height m from the top of aerator to the neutral interface，see figure

μ-流量系数根据模型试验为0.80~0.85。

Flowrate co-efficiency 0.80~0.85got from the model test.



根据实际排风需要选择喉口尺寸和装置规格；并按上述公式计算总通风量确定通风装置的总长度。

To select the throat opening size and aerator model according to the actual exhaust demand, and calculate total air volume as the above formulas to make sure the length of aerator.

WRF系列屋顶式自然通风装置排风量估算表(kg/s.m)(μ =0.80~0.85)

Reference table of exhaust volume of WRF series roof aerator

$T_P - t_W = 8℃$

HP(m) / 型号 Model	10	15	20	25	30	40	50	60
WRF-15	8435	10330	11929	13337	14609	16843	18861	20661
WRF-20	11246	13774	15905	17782	19479	22457	25148	27548
WRF-25	14508	17217	19881	22228	24348	28071	31435	34435
WRF-30	16870	20661	23857	26673	29218	33686	37722	41322
WRF-40	22493	27548	31809	35564	38957	44914	50296	55096
WRF-50	28116	34435	39762	44455	48697	56143	62870	68870
WRF-60	33740	41322	47714	53346	58436	67372	75444	82644

$T_p - t_w = 10℃$

型号 Model \ HP(m)	10	15	20	25	30	40	50	60
WRF-15	9387	11495	13274	14841	16258	18773	20988	22992
WRF-20	12515	15327	17700	19788	21677	25031	27984	30656
WRF-25	15644	19159	22123	24735	27096	31289	34980	38320
WRF-30	18773	22991	26548	29682	32515	37546	41976	45884
WRF-40	25031	30654	35397	39576	43353	50062	55967	61312
WRF-50	31289	38318	44247	49470	54192	62577	69960	76640
WRF-60	37546	45982	53096	59364	65030	75092	83952	91768

$T_p - t_w = 12℃$

型号 Model \ HP(m)	10	15	20	25	30	40	50	60
WRF-15	10233	12533	14471	16180	17724	20466	22881	25065
WRF-20	13644	16711	19295	21573	23632	27288	30508	33420
WRF-25	17055	20889	24119	26966	29540	34111	38135	41775
WRF-30	20466	25067	28943	32360	35448	40933	45762	50130
WRF-40	27288	33422	38590	43146	47263	54577	61016	66841
WRF-50	34111	41778	48238	53933	59079	68221	76271	83550
WRF-60	40932	50134	57886	64720	70896	81866	91524	100260

$T_p - t_w = 15℃$

型号 Model \ HP(m)	10	15	20	25	30	40	50	60
WRF-15	11360	13913	16065	17962	19676	22719	25402	27826
WRF-20	15147	18550	21420	23950	26234	30292	33869	37101
WRF-25	18934	23188	26775	29937	32793	37865	42336	46376
WRF-30	22721	27826	32730	35924	39352	45438	50884	55651
WRF-40	30244	37101	42840	47899	52469	60585	67738	74202
WRF-50	37868	46376	53550	59874	65589	75731	84673	92752
WRF-60	45442	55652	65460	71848	78704	90876	101768	111302

WRF系列屋顶式自然通风装置安装方法
INSTALLATION

1）该通风装置可以单排布置、双排布置或多排布置。

2）通风装置安装位置可布置在双坡屋面的屋脊上，也可布置斜屋面上。

3）通风装置的安装方法如下图所示。

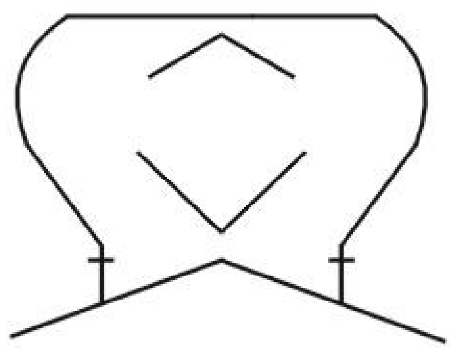
4）通风装置基础安装如下图

1）The roof aerator has the single low arrangement，dual lows arrangement or multi lows arrangement.

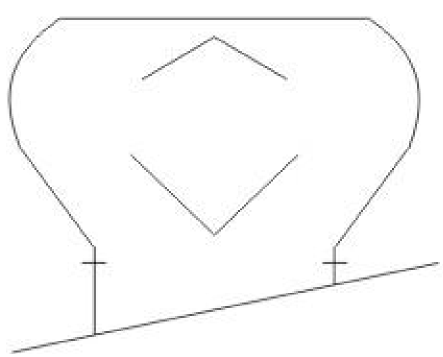
2）The roof aerator shall be installed on the fastigium of the dual grade roof or bevel roof.

3）The installation of the roof aerator as the following figure：

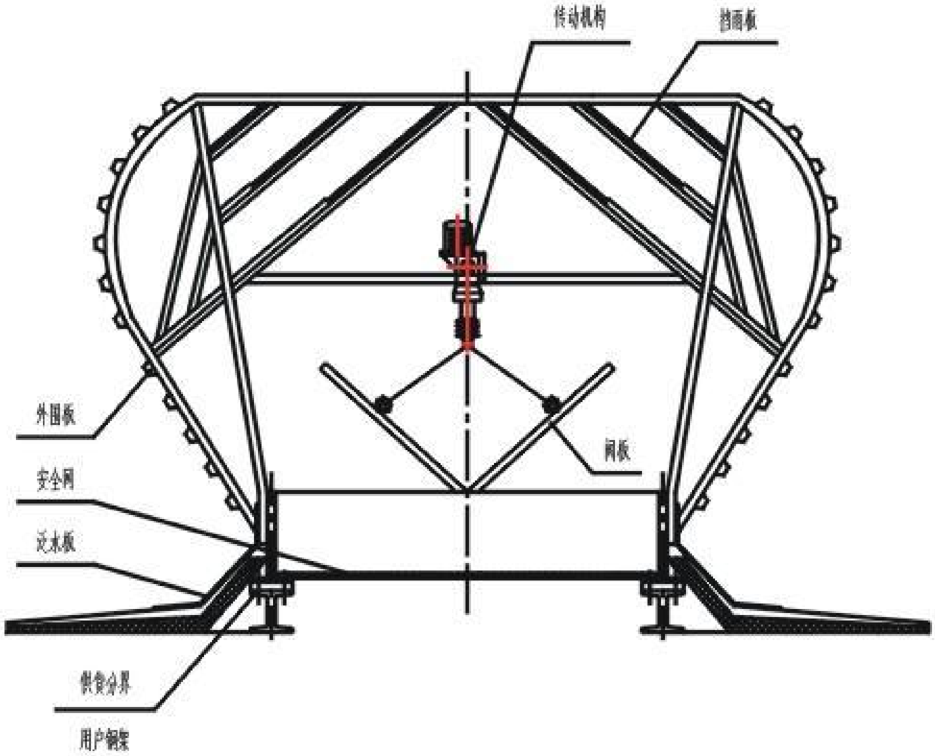
4）The foundation of the roof aerator as the following figure：



屋脊上安装示意图



斜面上安装示意图



WRF系列屋顶式自然通风装置订货须知

1）用户订货时，应根据设计要求提供装置规格、总长度、涂装颜色。
2）本公司可根据用户需要，免费设计非标准规格的通风装置。
3）本公司设有专门的安装队，为用户提供安装和良好的售后服务。

ORDER NOTICE

1）Specification，total length and coat color of aerator shall be shown in the order.
2）We will design the nonstandard aerator free of charge on the request of the user.
3）Our professional fitting-up gang will offer the erection and sales-after service.