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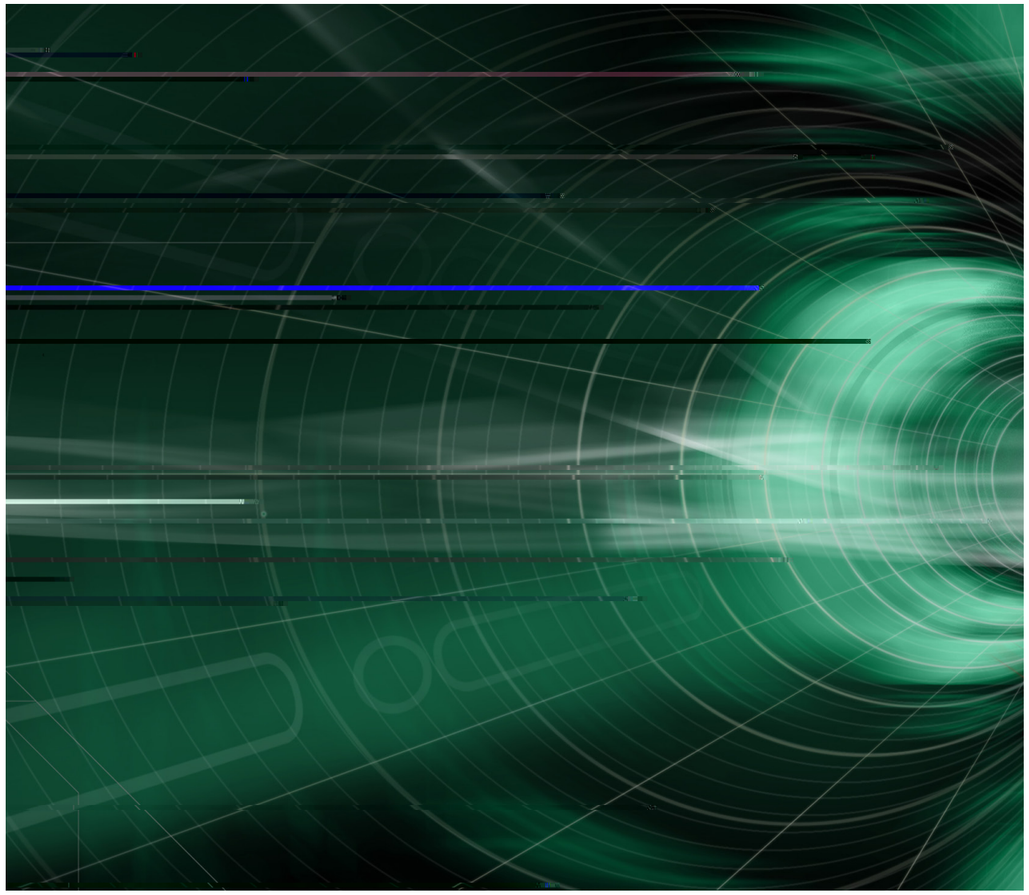

Yilida Air Conditioning Ventilation Technical Manual

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: A202012
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This fan features described in the sample, such as size, performance parameters, the Company reserves the right to change without notice; if unknown place, please call us.

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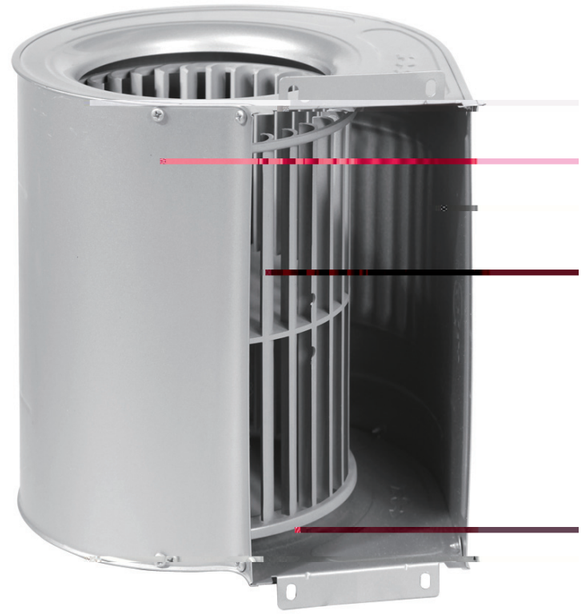
The Smart Air

Yilida
The Smart Air



The SYP series air-conditioning fan, used for fan coil only, is the forward multi-vane centrifugal metallic fan developed and manufactured first by our company in the country. The fan Wheels are made of high quality of hot galvanizing steel sheet by using stamping technology with the advantages of high efficiency, lower noise and precision construction. Both the flow volume and pressure can meet with wide application, and the diameter of the Wheel is from 130mm to 250mm. The flow volume ranges from 250m^3/h to 3000m^3/h. Our products have reached the advanced level and have replaced those imported ones first in the country. Now the products have 55% share of the domestic market.

C P

SYP series fans are mainly consisted of housing , Wheel and hub.

The housing is made of imported quality galavanizing sheet. Its side plates take the shape according to the aerodynamic profile and are fixed with biting-scroll with tapping screws.

Forwards curved radial Wheel is made of high-grade imported hot-galvanizing steel punched with precision mould and curled.The reasonable design of impeller makes the ventilator work in the optimum condition. The Wheel is fixed on the middle disk plate and on the end ring with riveting grippers. The Wheel has enough rigidity during continuous rotation with maximum power. All Wheels have passed by ANSI/AMCA-204 balance test according to the Company Standard which is higher level than National Standard.

The connection of Wheel with electric motor shaft is guaranteed by the hub which is made of constructional steeldor die cast zinc alloy followed by precision processing. The permissible tolerance of hole diameter, per- pendicularity and coaxality are all kept within 0.01 mm.

SYP 250 / 190 J

- J: Code J, can be omitted(technology of edge-curled wheel, nothing with fan performance and dimensions)
- 190: Norminal length Wheel(inch)
- 250: Nominal diameter of Wheel (inch)
- SYP: Fan series with multi-vane forward curved blades

I

According to the installed position of the hub, the fan can be divided into two types, right type and left type; viewing from hub side, if the Wheel rotates clockwise, the fan is called right type; if it rotates anti-clockwise, the fan is called left type.

1) Matching electric motor power of ventilation denotes internal power plus safety coefficient of electric motor capacity in special operating condition,it does denote the power required during full opening of air outlet.Therefore no-load running of fan without any applied resistance is strictly prohibited in order to avoid burning out of the motor caused by its operation at over rated power.

2) Special care should be taken during transportation, load and unload.

The fan is limited for use in areas where air substances are non-corrosive, non-toxics and non-erosive.

3) Prior to installing fan,rotate the Wheel by hand or stick to check for tightness or impact.If it is ensured that there is no tightness and impact,then the installation can be carried out.

4) After installing,the fan,the scroll of fan should be inspected,There should not be tools and extra matters remained in the casing.

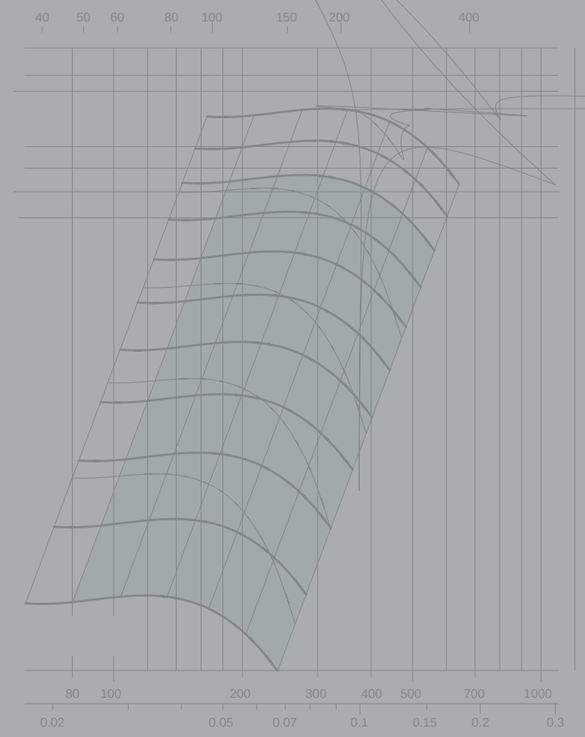
5) Prior to official operation of ventilation,it is necessary to check the rotating direction of both motor and fan for their coordination.

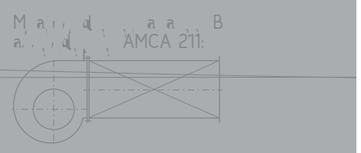
6) During ordering it is necessary to state the type of fan,speed,air volume,air pressure,direction of air outlet,rotating direction,type of electric motor and its specifications.

W , ,	D = 130	Fa , ,	= 0.95 kg
M , , , , , a	J = 0.001 2	S , ,	= 1400 , /

P C

Performance certified is for installation type B: free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet L_{wi}A sound power levels for installation type B: free inlet, ducted outlet.



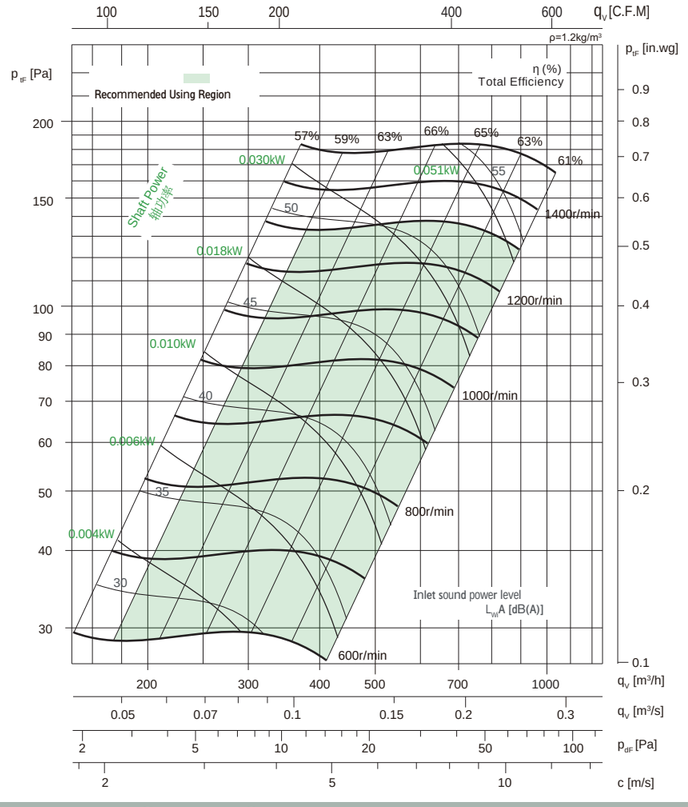


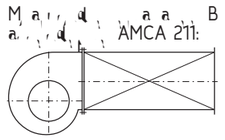
O S

W , , d a , , ,	D = 145 ! !	Fa , ,	! = 1.01 kg
M ! , , , , , , a	J = 0.002 ! 2	S , , d !	= 1300 , /

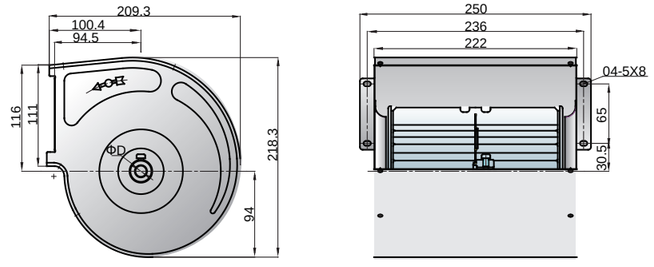
P C

Performance certified is for installation type B: free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet $L_{WI}A$ sound power levels for installation type B: free inlet, ducted outlet.





O S



ΦD	Φ12	Φ14

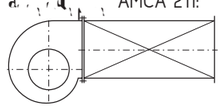
W , , d a , , , D = 150 ! ! Fa , , ! = 1.30 kg

M ! , : : : , a J = 0.002 ! 2

P C

Performance certified is for installation type B: free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet L_{wi}A sound power levels for installation type B: free inlet, ducted outlet.

M a , , d , , a a , , B
a , , d , , , AMCA 211:



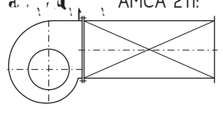
O S

W , , ud a' , , ,	D = 160 ! !	Fa , , t	! = 1.27 kg
M ! , , : : , , a	J = 0.003 ! 2	S , , d !	= 1300 , /

P C

Performance certified is for installation type B: free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet L_{WI}A sound power levels for installation type B: free inlet, ducted outlet.

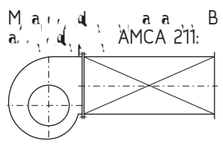
M a , , d , , a a , , B
a , , d , , , AMCA 211:



O S

P C

Performance certified is for installation type B: free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet L_{wi}A sound power levels for installation type B: free inlet, ducted outlet.



O S

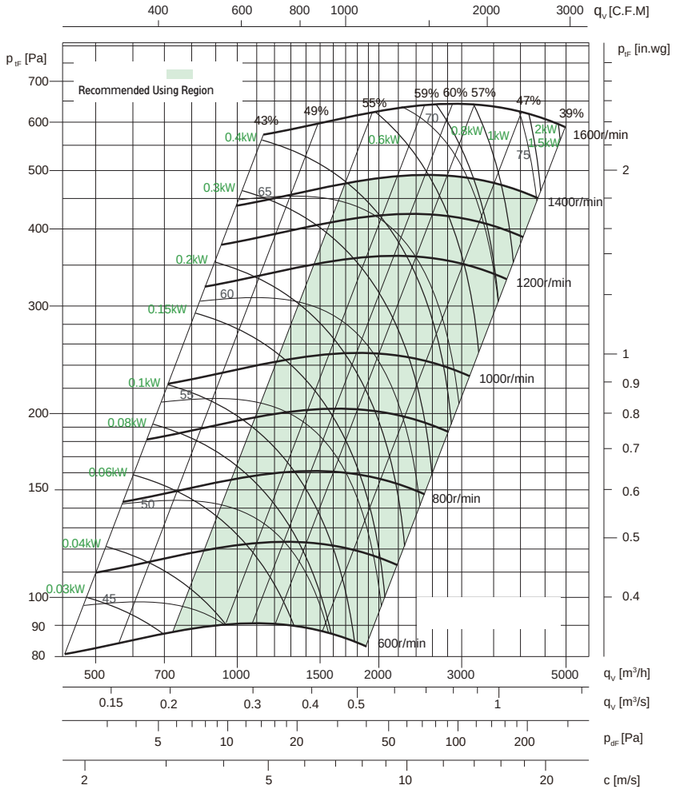
P C

O S

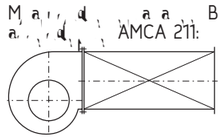
W , , d a , , ,	D = 250 ! !	Fa , ,	! = 4.29 kg
M ! , , , , , , a	J = 0.018 ! 2	S , , d !	= 1400 , /

P C

Performance certified is for installation type B: free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet L_{WI}A sound power levels for installation type B: free inlet, ducted outlet.



M a , , d , , a a , , B a , , d , , AMCA 211:



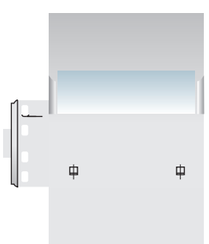
O S

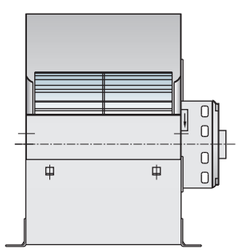
Φ D	Φ 12.7	Φ 15	

SYZ series centrifugal air-conditioning fans are based on SYT series, which are newly developed and manufactured products with internationally advanced by this company. It was developed by using high technology and with low noise and compact structure. It was specially designed for the air-conditioning. The flow rate and total pressure range of this series fan are from 800m /h to 5000m /h. It is the ideal equipment for the changeable air conditioners, tube type units, VAV system, heating and other kind of fan system.

SYZ 7 – 7 I (90W – 6)

- (90W – 6) — Motor polar number
- 90W — Motor power(W)
- I — Mark of revision
- 7 — Width of Wheel(inch)
- 7 — Nominal diameter of Wheel (inch)
- SYZ — Fan series blades





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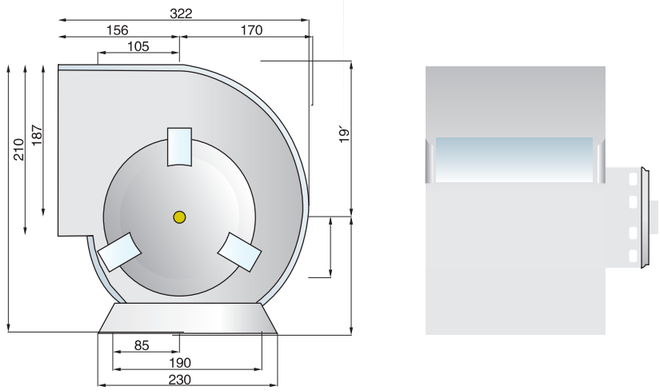
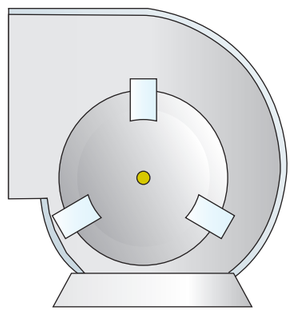
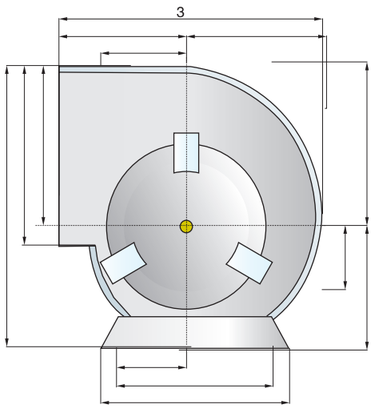
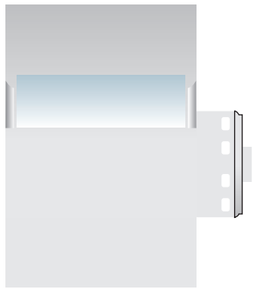

322
156
170
105
210
187
19'
85
190
230

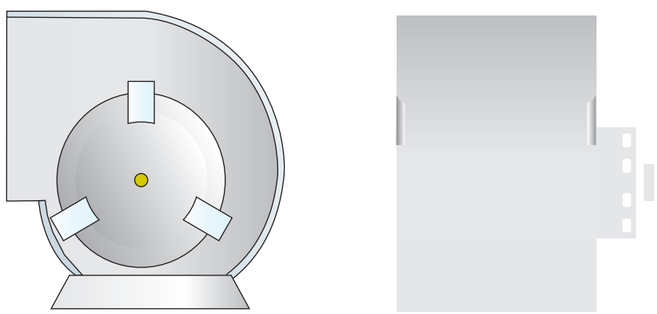


Type: SYZ 9-7 I	m: 15.7 kg	P_N: 375W-6P
	U: 220 v	f_1: 50HZ
	I_N: 3.5 A	IP: IP20

	n(r/min)	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} dB (A)
A	969	55.0	63.4	59.3	61.7	60.1	57.8	48.7	68.2
B	952	53.0	60.1	61.4	64.5	62.9	62.7	53.7	69.8
C	937	53.2	61.2	64.0	67.6	65.9	66.9	59.2	72.9
D	924	56.1	63.3	65.5	69.4	68.0	69.2	62.0	74.9
E	909	58.5	65.5	66.8	71.0	69.9	71.0	64.4	76.7
F	895	59.8	66.6	67.8	72.2	71.1	72.5	66.1	78.0







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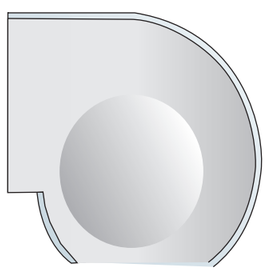

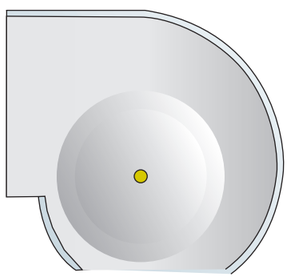

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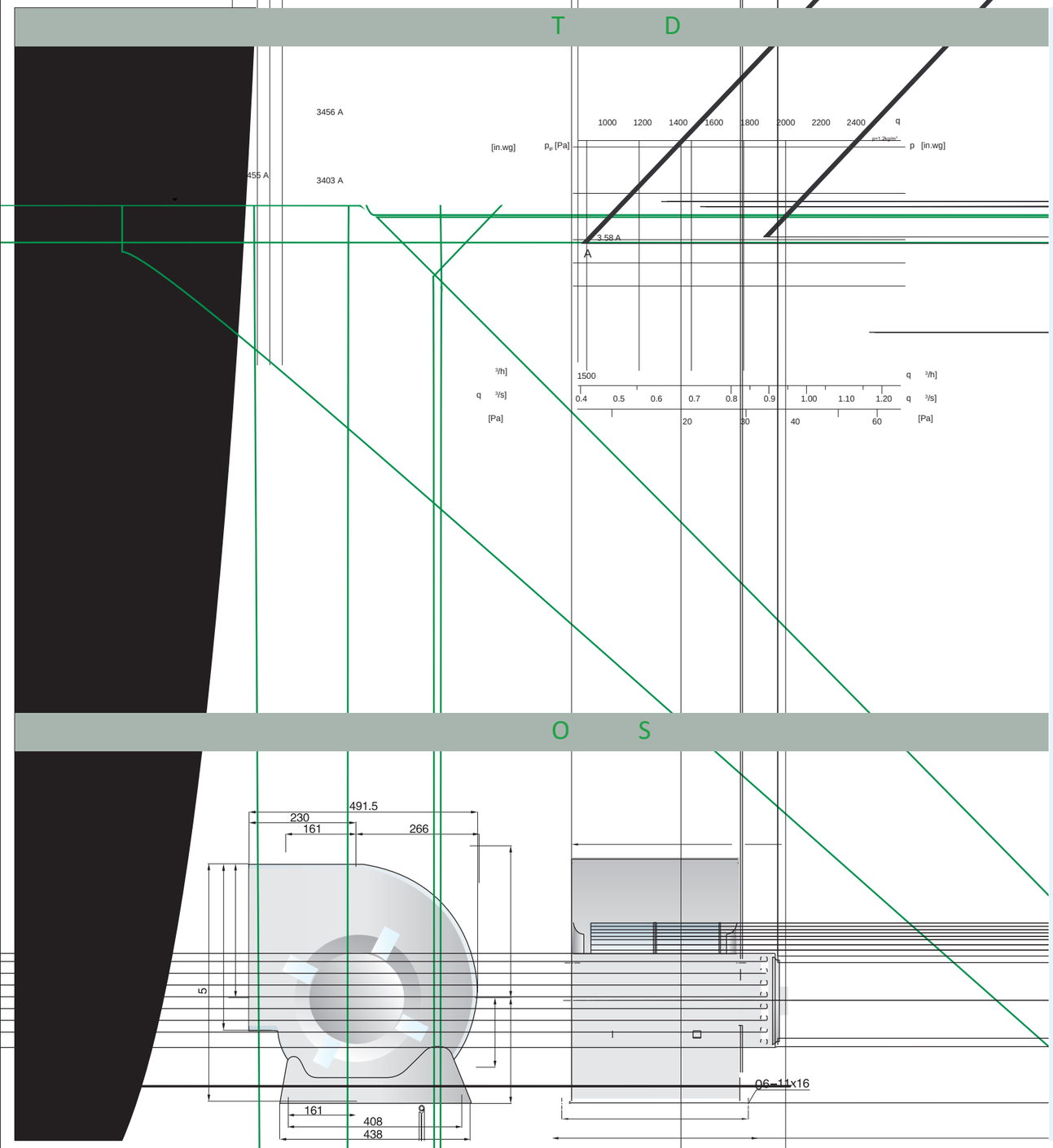
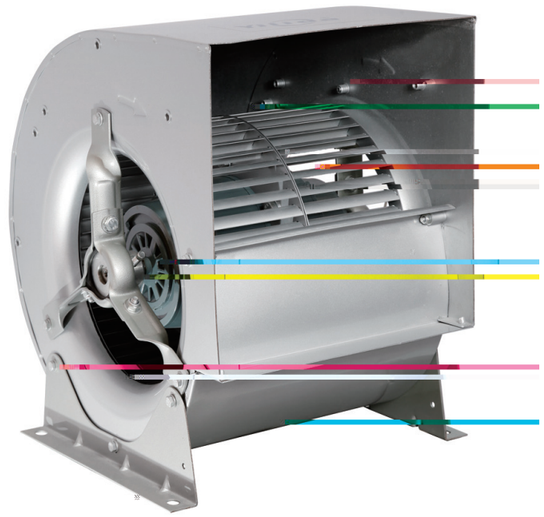
T D



O S



S

The SYB Series centrifugal fan is kind of air-conditioning fan. The Wheel of the fan is driven by three phases external motor. It was developed by using high technology and with low noise and compact structure. It was specially designed for the air-conditioning. The flow rate and total pressure range of this series fan are from 1000m /h to 20000m /h and 200Pa to 850Pa. It is the ideal equipment for the air-conditioning and other kind of fan system.

N

SYB 200 I (0.25 – 4)

- 4 — Motor Poles
- 0.25 – 4 — Motor Power (kW)
- I — Mark of Revision
- 200 — Diameter of Wheel (mm)
- SYB — Fan series blades

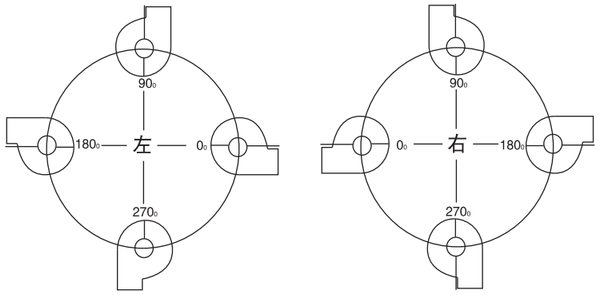
P F

R D

SYB series fans have two direction of rotations, left-hand rotation (LG) and right-hand rotation (RD); Viewing from drive side, if the Wheel rotates clockWise, it is left hand (LG) rotation. If the Wheel rotates counter cloc ise, it is right-hand (RD).

D D

According to Fig1, SYB Series fans can be made in four air-outlet directions:0°, 90°, 180°, and 270°.



C P

SYB series fans consist of housing, Wheel, baseplate(frame), motor, shaft sleeve and air outlet flange.

H

The housing is made of hot galvanized steel sheet. The side plates include inlets cones that are designed with the best aerodynamics for inlet condition. The scroll is fixed to the side plates by spot welding. On the side of the scroll, there is a series of holes drilled in advance for riveting nuts to carry out installation according to air outlet direction needed by the customer.

W

Forward curved impell er is constructed of high-grade hot galvanized steel sheet with the advanced aerodynamics profile to achieve the highest efficiency and the lowest noise level. The Wheel is fixed on the center plate and on the end ring with riveting grip pres. The Wheel is constructed with maximum strength that endures the continuous operation with maximum power. All Wheels are balanced to the ANSI/AMCA 204 Notional Standard. Yilida's internal standard is G2.5 or higher for wheel balancing.

F

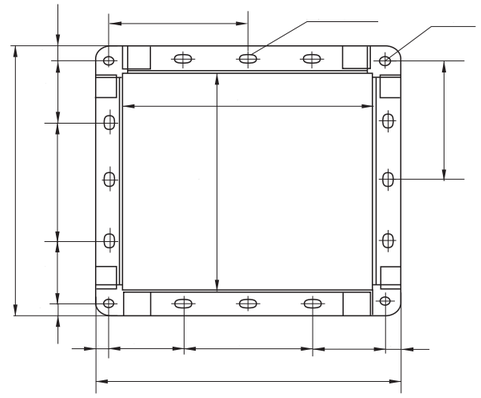
SYB Series fan baseplate is made of high quality hot galvanizing steel sheet, and the unique process of strengthening ensures the sufficient strength. The direction of baseplate installation can be carried out according to the different requirements of customers, Over SYB 315 fan frame is made of angle steel and flat steel. On four sides of the frame, there are holes drilled for installation to meet customers's requirements in different installation directions.

M

The motor used in SYB series fans are low noise three phases asynchronous motors with external rotors. The Wheel is installed on the external casing of the motor. The motor rotation speed can be changed by using provided with three-phase voltage regular; silicon controlled. Voltage regulator, frequency converter and etc. to satisfy the changeable load in the system.

F

The flange is made of galvanized steel. The connections of the flange components to the scroll are made using a TOX non-welding process. This maintains a good flange appearance while also providing sufficient strength and rigidity. The dimensions and type of flange are shown in Fig2.



Type	200I	200II	225I	225II	225III	250I	250II	280I	280II	315I	315II	355I	355II	400I	400II	450I	450II	500I	500II
A	122.5	160	139	154	160	150.5	160	160	188										
B	119.5	125	133	133	146.5	146.5	146	162.5	162.5										
C										140	140	140	140	140	140	170	170	170	170
D										140	140	140	140	140	140	170	170	170	170
E	265	340	298	328	340	321	340	340	396	394	456	431	487	475	516	525	586	562	656
F	259	270	286	286	313	313	312	345	345	394	394	431	431	475	475	525	525	562	562
G	225	300	258	288	300	281	300	300	356	338	400	375	431	419	460	469	530	506	600
H	219	230	246	246	273	273	272	305	305	338	338	375	375	419	419	469	469	506	506
I	10	10	10	10	10	10	10	10	10	13	13	13	13	13	13	13	13	13	13

Note: the size unit in the form and overall size are mm.

I

1) The rated motor power as calculated herein might not be sufficient to drive the fan with an unrestricted discharge flow. Operating the fan with an unrestricted discharge outlet will result in flow rate that exceeds the specified fan capabilities. Such operation will quickly burn the motor and damage the fan. Great care must be taken in operating the fan to make sure that the maximum rated flows, as provided on the performance charts in this catalog, are not exceeded.

2) The fan performance in the catalog is tested under the motor rated speed, we can meet the actual requirement of the user by changing the motor speed.

3) Special care should be taken during transportation, load and unload.The fan is limited for use in areas where air substances are non-corrosive, non-toxics and non-erosive.

4) Following the installation, the Wheel should be turned by hand or with the use of a wrench to make sure that it turns freely without colliding with other parts of the fan. Once all this is done, the fan can be commissioned normally.

5) A flexible connector should be used between the fan out let flange and its mating ductwork. The flex connector should not be over-stretched.

6) The inside of the scroll and casing need to be checked to make sure that there are no foreign objects inside the housing, such as tools or loose parts.

7) The rotational directions of the motor and Wheel should be checked to ensure that they are in compliance with the specification and purchase orders.

8) During ordering it is necessary to state the type of fan, motor type, air flow, air pressure and other parameters.

T D

Type: SYB200 I	m: 15 kg	P_N: 0.18kW-4P
	U: 380 v	f_1: 50HZ
	I_N: 0.56 A	IP: IP44

	n(r/min)	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA}dB (A)
A	1388	55.2	62.9	64.5	69.6	66.0	64.1	55.5	73.2
B	1365	53.8	62.0	65.9	71.1	67.5	66.0	57.8	74.6
C	1350	54.1	63.0	67.0	74.6	69.3	68.1	60.5	77.1
D	1350.03	54.3	63.2	66.4	73.4	69.4	68.9	59.4	75.4
E		54.1	63.4	67.8	75.4	70.3	69.3	62.1	78.1
F		55.2	64.4	68.8	74.6	71.7	70.8	64.0	78.4

Type: SYB200 I	m: 15 kg	P_N: 0.18kW-6P
	U: 380 v	f_1: 50HZ
	I_N: 0.79 A	IP: IP44

	n(r/min)	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA}dB (A)
A	965	46.2	55.2	58.7	63.0	60.5	58.6	49.9	67.0
B	961	46.6	56.2	58.7	62.6	59.2	56.2	46.0	66.3
C	953	50.6	59.1	61.5	65.2	63.1	61.5	52.6	69.7
D	951	52.3	60.4	62.8	66.5	64.5	63.4	54.9	71.1
E	948	52.8	62.4	64.8	69.1	67.2	66.1	58.5	73.6
F	942	54.4	63.3	65.9	70.4	68.5	67.6	60.2	74.9

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Type: SYB225 I	m: 17.6 kg	P_N: 0.25kW-6P
	U: 380 v	f_1: 50HZ
	I_N: 1.04 A	IP: IP44

	n(r/min)	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{wa}dB（A）
A	973	51.4	60.0	61.2	64.9	60.5	58.8	59.6	69.2
B	966	52.5	61.6	63.2	66.7	62.4	60.1	59.6	70.8
C	958	52.1	62.9	65.5	68.4	64.8	69.0	59.7	73.9
D	952	53.5	64.9	67.5	70.1	67.0	65.7	60.5	74.6
E	941	55.1	66.6	70.2	73.6	69.5	68.6	62.2	77.1
F	935	56.8	67.9	71.9	74.2	71.2	70.5	63.7	78.8

Type: SYB225 I	m: 18.9 kg	P_N: 0.32kW-6P
	U: 380 v	f_1: 50HZ
	I_N: 1.29 A	IP: IP44

	n(r/min)	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{wa}dB（A）
A	956	52.1	61.2	62.8	66.4	62.1	59.7	59.3	70.5
B	960	51.8	62.5	65.2	68.1	64.4	68.7	59.4	73.6
C	965	53.1	64.6	67.1	69.7	66.6	65.3	60.2	74.2
D	968	54.8	66.3	69.9	72.2	69.1	68.2	61.8	76.7
E	972	56.4	67.6	71.6	73.8	70.9	70.2	63.3	78.4
F	978	57.6	68.8	73.7	75.9	73.3	72.6	65.6	80.6

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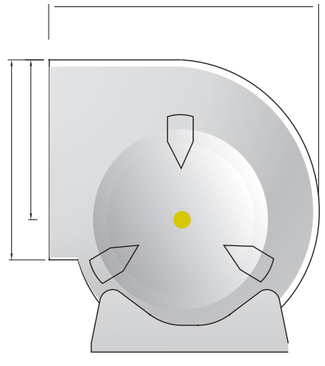

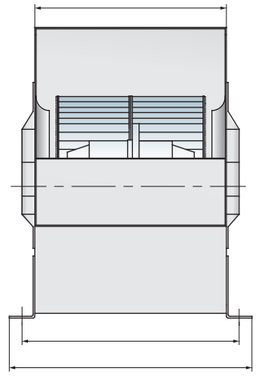

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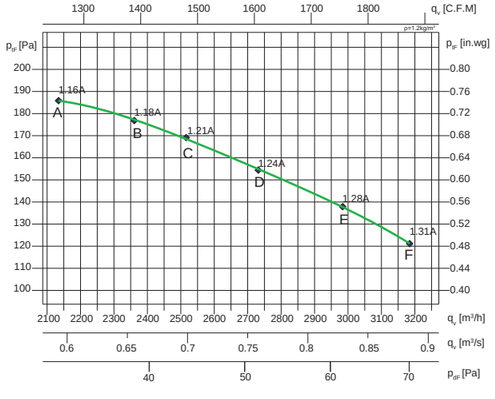
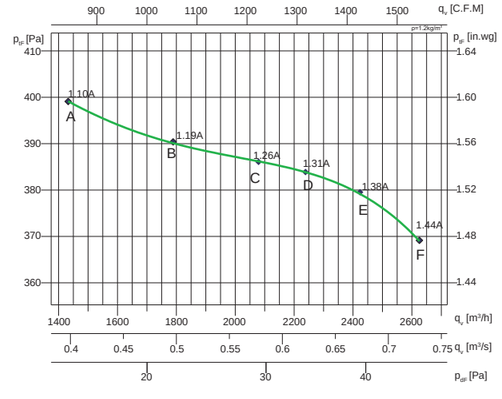


Type: SYB225 III	m: 18.4 kg	P_N: 0.37kW-6P
	U: 380 v	f_1: 50HZ
	I_N: 1.37 A	IP: IP44

	n(r/min)	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} dB (A)
A	948	56.9	60.5	62.5	68.8	59.5	57.9	59.6	71.3
B	939	56.4	63.1	64.6	71.3	63.9	62.3	60.5	73.8
C	933	57.4	64.4	66.2	74.2	66.0	64.7	60.3	76.2
D	926	59.8	66.5	68.7	73.8	69.2	68.6	62.6	77.3
E	915	60.2	67.7	70.0	74.7	70.9	70.5	64.3	78.6
F	907	61.1	68.6	71.6	76.3	73.0	72.6	66.5	80.4



Type: SYB225 III	m: 18.35 kg	P_N: 0.45kW-4P
	U: 380 v	f_1: 50HZ
	I_N: 1.44 A	IP: IP44

	n(r/min)	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} dB (A)
A	1405	65.4	68.5	67.3	70.3	70.2	67.3	58.0	76.3
B	1384	64.3	68.1	67.1	70.6	70.2	67.6	58.4	76.3
C	1367	63.2	68.6	67.8	71.2	71.3	68.7	59.7	77.0
D	1353	62.0	68.6	68.4	71.7	71.4	69.4	60.8	77.4
E	1346	62.2	69.1	69.1	72.9	72.2	70.4	62.2	78.2
F	1326	62.0	69.2	69.8	73.8	72.7	71.5	63.9	79.0

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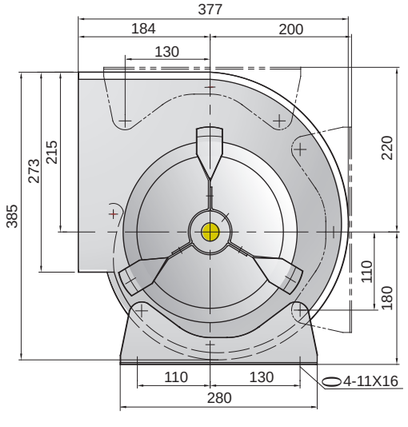

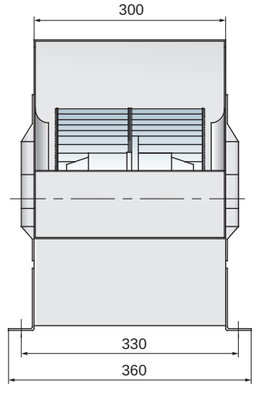

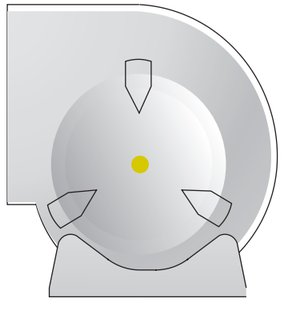

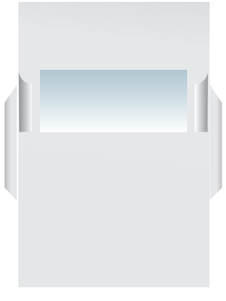

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N:IP:

SYB315 II42 kg P f_1 50HZ 1.8kW - 4P

N:

380 v WA

4.7 AType: IP44

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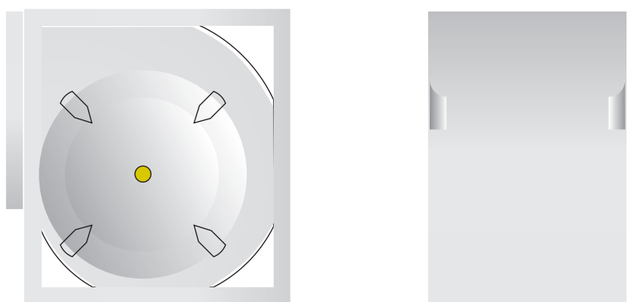

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SYB500 I	135 kg	7.5kW-6P
	380 v	

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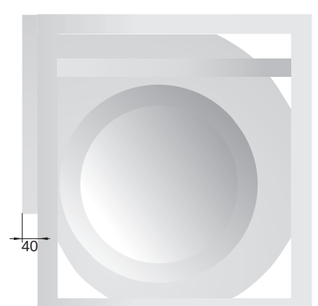

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1) The rated motor power as calculated herein might not be sufficient to drive the fan with an unrestricted discharge flow. Operating the fan with an unrestricted discharge outlet will result in flow rate that exceeds the specified fan capabilities. Such operation will quickly burn the motor and damage the fan. Great care must be taken in operating the fan to make sure that the maximum rated flows, as provided on the performance charts in this catalog, are not exceeded.

2) The fan performance in the catalog is tested under the motor rated speed, we can meet the actual requirement of the user by changing the motor speed.

3) Special care should be taken during transportation, load and unload.The fan is limited for use in areas where air substances are non-corrosive, non-toxics and non-erosive.

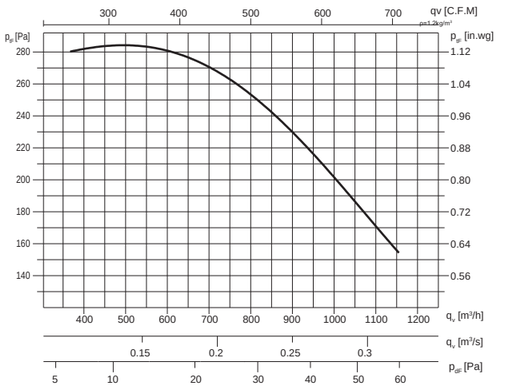
4) Following the installation, the Wheel should be turned by hand or with the use of a wrench to make sure that it turns freely without colliding with other parts of the fan. Once all this is done, the fan can be commissioned normally.

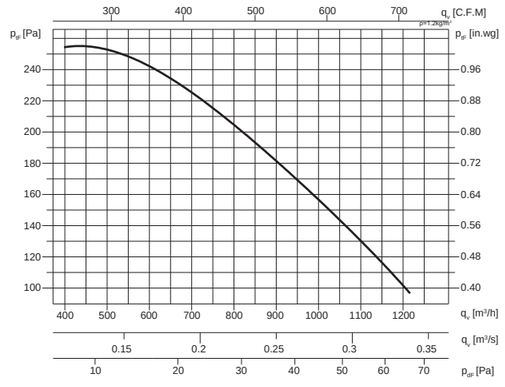
5) A flexible connector should be used between the fan out let flange and its mating ductwork. The flex connector should not be over-stretched.

6) The inside of the scroll and casing need to be checked to make sure that there are no foreign objects inside the housing, such as tools or loose parts.

7) The rotational directions of the motor and Wheel should be checked to ensure that they are in compliance with the specification and purchase orders.

8) During ordering it is necessary to state the type of fan, motor type, air flow, air pressure and other parameters.

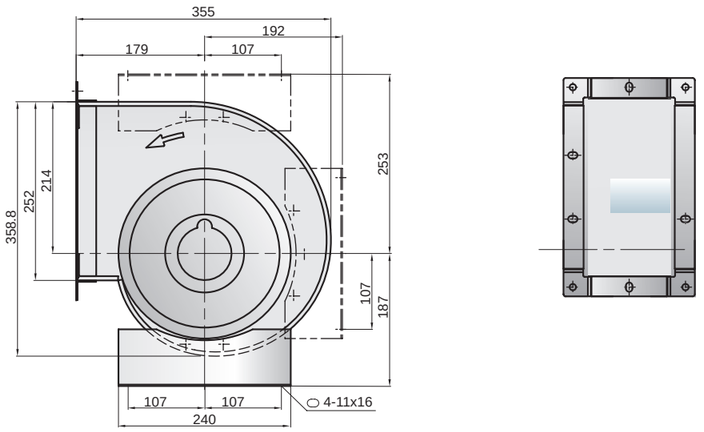




Type: SYBS 200E-4	m:	11 kg	P_N:	0.33kW-4P
	U:	230 v	N:	1280 r/min
	I_N:	1.5 A	IP:	IP54

Type: SYBS 200D-4	m:	11 kg	P_N:	0.33kW-4P
	U:	380 V	N:	1270r/min
	I_N:	0.63 A	IP:	IP54

Note: the overall size unit is mm.



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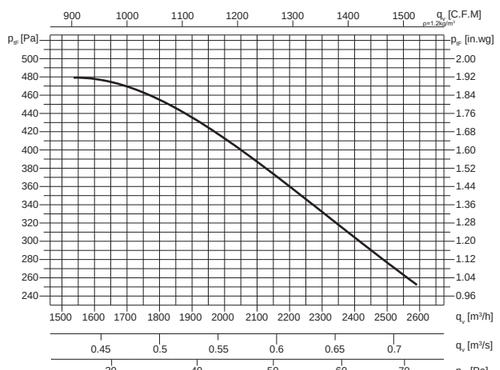
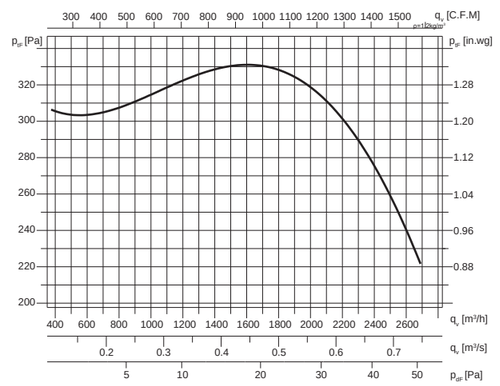
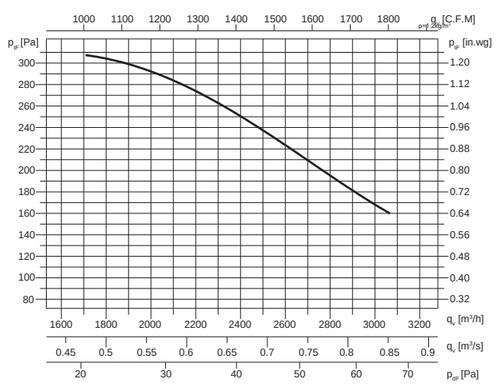


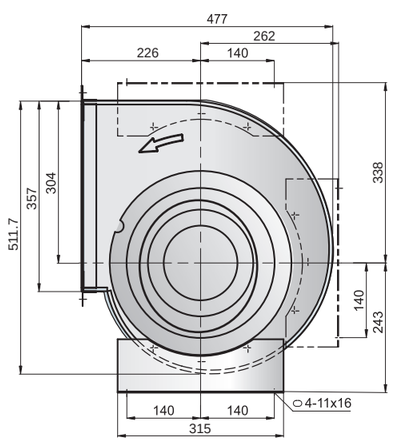
Type:	m:	26 kg	PN:	1kW-4P
SYBS 280D-4	U:	380 v	N:	1280 r/min
	IN:	1.7 A	IP:	IP54

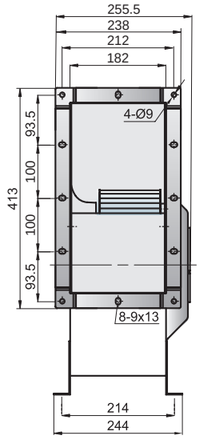


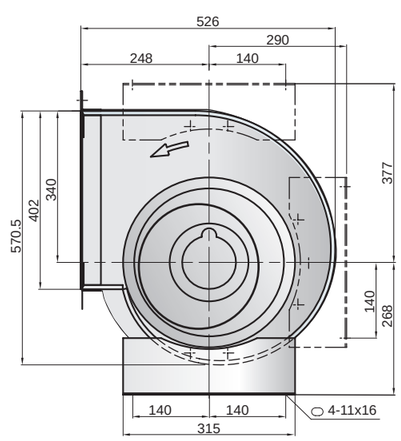
Type:	m:	29.5 kg	P_N:	0.75kW-6P
SYBS 315E-6	U:	230 v	N:	870 r/min
	I_N:	3.6 A	IP:	IP54

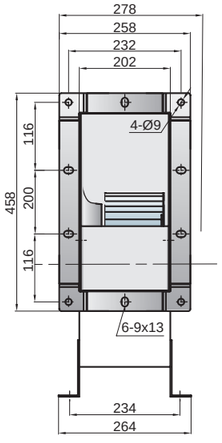


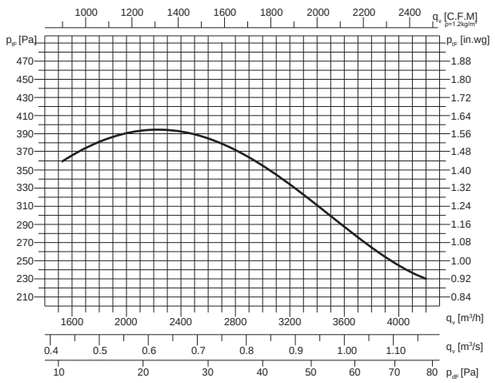
Type:	m:	29.5 kg	P_N:	0.78W-6P
SYBS 315D-6	U:	380 v	N:	840r/min
	I_N:	1.5 A	IP:	IP54



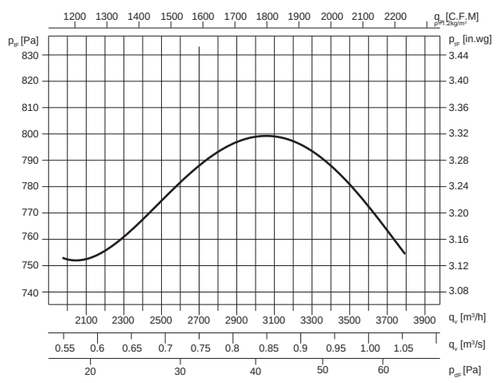
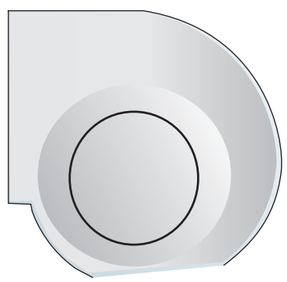








Type: SYBS 355D-6	m: 37 kg	P_N: 1.15W-6P
	U: 380 v	N: 810 r/min
	I_N: 2.2 A	IP: IP54



Type: SYBS 355D-4	m: 38 kg	P_N: 2kW-4P
	U: 380 v	N: 1360r/min
	I_N: 3.8 A	IP: IP54