

INFINAIR™

ISQ

Inline Square Centrifugal Fan



- Operating range: Airflow up to 50,000 m³/h, static pressure up to 900 Pa
- Duct supply and exhaust, explosion-proof ventilation, smoke exhaust for fire protection
- Square housing design, scroll-less impeller, easy installation
- "Xiangxin"™ series fifth-generation backward-curved centrifugal impeller
- High static pressure fan without the need for a silencer

INFINAIR™



Company Profile

Yingfei Tongren Fan Co., Ltd. was established in September 2003. It is a high-end system solution and service provider integrating R&D, manufacturing, and sales in the fields of building ventilation, industrial ventilation, heating, and air treatment.

Upholding the future development concepts of “Green Environmental Protection” and “Intelligent Interconnection,” Yingfei Tongren continuously invests in ventilation technology research and development, adheres to the core value of being “customer-centered,” and consistently provides customers with reliable, convenient, energy-efficient, environmentally friendly, and smart-connected products and services.

Shanghai Headquarters:

Yingfei Tongren Fan Co., Ltd.
Building Area: 31,865 m²
Address: No. 55 Jiade Road, Jiading District, Shanghai

Haimen Production Base (Wholly-owned Subsidiary):

Yingfei Tongren (Jiangsu) Fan Co., Ltd.
Building Area: 67,841 m²
Address: No. 1833 Guangzhou Road, Economic Development Zone, Haimen District, Nantong City, Jiangsu Province

Service Network:

The company's sales and service network covers major regions across China and worldwide, including Shanghai, Beijing, Guangzhou, Shenzhen, Guangxi, Anhui, Shaanxi, Henan, Hunan, Hubei, Fujian, Chengdu, Qingdao, Tianjin, Chongqing, Nanjing, Suzhou, Xinjiang, as well as Asia, North America, Europe, and the Middle East, providing customers with timely technical support and reliable after-sales service.

(Note: The company was previously known as Shanghai Tongren General Equipment Manufacturing Co., Ltd.)



Yingfei Vision:

To become a trusted professional brand in air transportation, control, and regulation.

Yingfei Mission:

To provide reliable and convenient air transportation, control, and regulation services.

Yingfei Dream:

Exceptional customer experience, a happy life for employees' families, and an entrepreneurial platform for partners.

Honors & Qualifications:

- National-level “Little Giant” Enterprise (Specialized and Innovative SME)
- National High-Tech Enterprise
- Shanghai Famous Trademark: INFINAIR®
- Shanghai Brand Product
- Shanghai Technology-Based SME
- Shanghai “Specialized and Innovative” Enterprise
- Shanghai Enterprise Technology Center
- SGS ISO9001, ISO14001, ISO45001 Management System Certifications

Haimen Production Base (Wholly-owned Subsidiary):

National High-Tech Enterprise



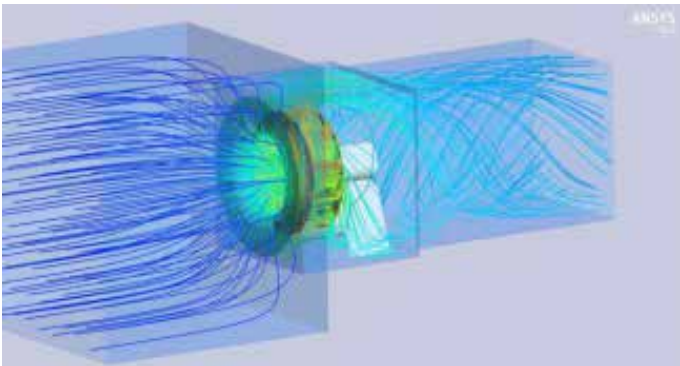
5G Wind-surfer backward inclined centrifugal wheel

5G Wind-surfer backward inclined centrifugal wheel

- Excellent sound and air performance
- Wide performance range of high efficiency and non-overloading
- The balance quality grade as high as G2.5 (Just G6.3 for general products)



Air Performance Design



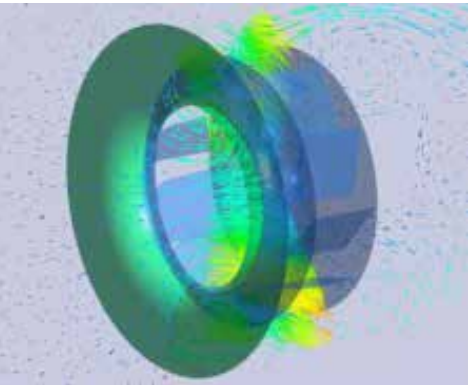
- Optimized design through CFD flow field simulation and repeated tests
- Flow passages control: airflow regulated well through precise synergy
- Wheel cone and inlet cone in conformity with flow field characteristics
- Optimized mounting angle for blades

Structural Design

- Stress analysis by FEA method for better performance
- Various additional strengthening for different specifications for greater reliability
- Riveting technology used to avoid stress

Advanced Process

- Wheel cone and inlet cone formed by spinning to ensure good air performance
- Inlet Cone: replacing the inlet bell to ensure smooth airflow
- Blades: formed by punching to ensure quality
- Tooling: dedicated fixtures to ensure the precise mounting position of blades



Wheel Improved

- Continuous Improvement: upgraded to the 5G generation of wheel
- Compared with the 4th generation: overall performance improved by 5-10 %
- Compared with the 4th generation: overall sound level reduced by 2-3 dB(A)

Product Features

Wide Performance Range and More Economical

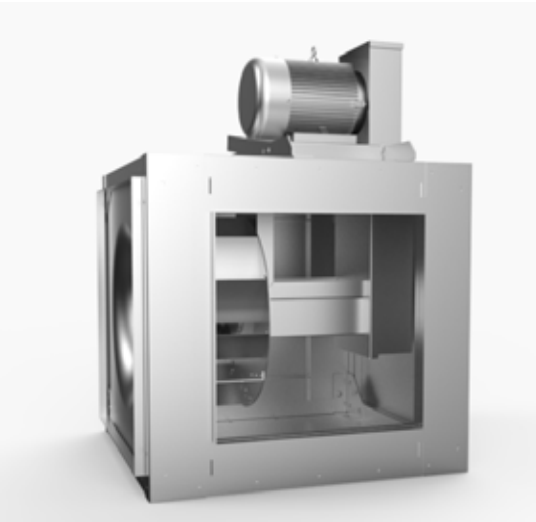
- 5G Wind-surfer backward inclined centrifugal wheel possessing a wider pressure scope and lower sound compared with the 4th generation
- The wheel diameter as long as one meter, requiring fewer fans and lower primary investment
- No scroll needed and the fan size reduced, making installation easier

No Scroll

- Air directly pressurized in wheel and airflow pattern improved
- Direct drive and dust-free: suitable for clean rooms in microelectronics, food and medical industries

Square Design with Different Discharge Direction Options: Mounting Costs Reduced

- Square inlet/outlet flanged sleeve: connector and ring flange now not used
- Lower air duct connection costs and faster installation
- Different mounting positions available for the motor
- Different discharge positions: ease of design and installation



Sound Solution: Centrifugal Inline Type

- Fundamental difference from axial/mixed flow types: speed reduced by 20-30%
- Range of sound pressure level down by 10-15 dB(A)
- A fundamental solution to sound

AMCA Seal: for Sound and Air Performance

- Fan certified by AMCA for Sound and Air Performance
- AMCA Seal for Sound and Air Performance tagged on fans



Optional Accessories

Gravity Backdraft Damper

The professionally designed gravity backdraft damper comprises inlet/outlet flanged sleeves and a box that ensures damper blades start normally. The damper is installed independent of the fan body.

45 Degrees Rain Cover (With Bird Screen)

When the fan is installed outside, the rain cover can effectively prevent rain infiltration through the inlet or outlet.

Motor Cover (only for belt drive type)

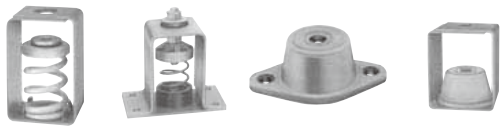
The equipped air window helps to dissipate heat, extend motor life and reduce sound.

Soundproofing Egg Crate Foam Wall Tiles

Premium-grade acoustical materials are placed on the inner shell of the fan, reducing sound pressure level by 6~8 dB(A).

Vibration Isolators

Vibration isolators can be hung or floor-mounted. Neoprene or spring isolators are available.



ISQ — 300(D4) — 0.25 — SR — (MTDH)

① ② ③

④

⑤

⑥

Product Name

Inline Square Centrifugal Fan

Wheel Diameter

Unit:mm

Drive Type

D:Direct Drive,4: 4-pole motor

Belt Drive: (omitted by default)

(Motor Location/Discharge)

MTDH:Motor Location Top, Discharge
Horizontal at 180 degrees

Function Setting

GT:General Type

SR: Smoke Removal

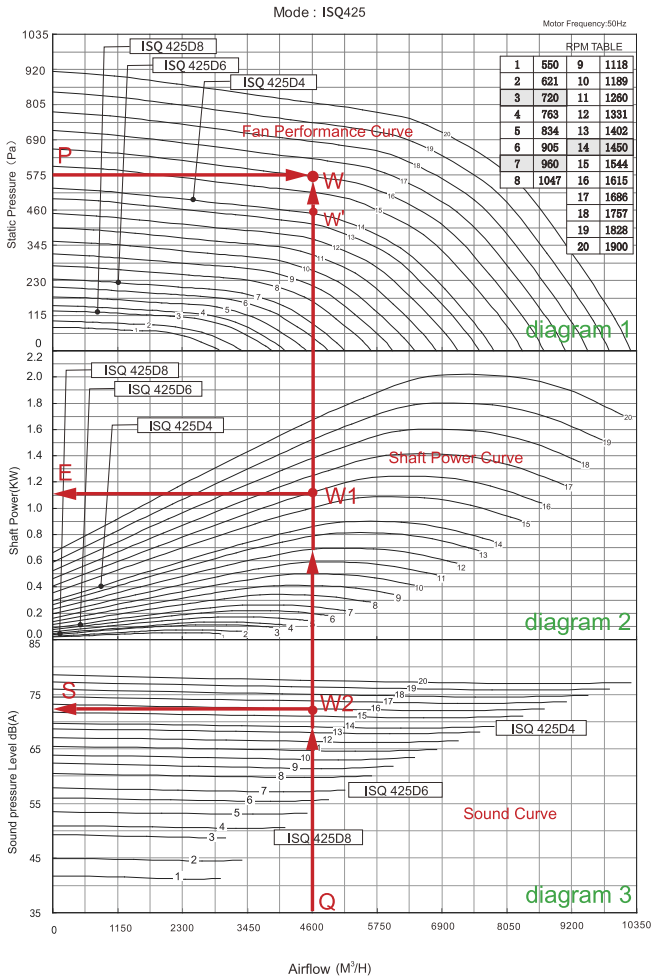
EX: Explosion-proof

Motor Power

Unit: kW

Catalog Introduction

- Fans of each model have performances at different speeds described by curves.
- Curves shown in boldface represent fans of direct drive type which means the wheel is directly driven by the motor (models of these fans are shown in arrows). A letter D and the number of motor poles are added to the wheel diameter of all the direct drive fans.
- Curves shown in lightface represent fans of belt drive type. The required wheel RPM is reached through using two pulleys of different diameter ratios. The motor is of two, four and six poles.
- Shaft Power Curve shows the actual power consumption of fans.
- Sound Pressure Level curve shows the sound level 1.5meters from the fan.



Example: Airflow: 4,600 m³/h Static Pressure: 575Pa

Step One: A vertical line is drawn from the given air airflow (Point Q: 4,600 m³/h) and a horizontal line from the given static pressure (Point P: 575 Pa). The intersection point (Point W) is the operating point. Then find a performance curve closest to Point W (in this case, it is curve 16 at 1,615 RPM as shown). If the operating point is far from the performance curve, please choose other models and repeat the same procedure as above until the right performance curve can be found.

Step Two: From the intersection point (Point W1) between the vertical line and Shaft Power Curve is drawn a horizontal line. Its intersection point with the Shaft Power axis (Point E: about 1.1 kW) represents the actual power consumption. Based on the coefficient of power reserve (1.15), the required power of 1.5 kW is figured out.

Step Three: From the intersection point (Point W2) between the vertical line and Sound Pressure Level curve is drawn a horizontal line. Its intersection point with the Sound Pressure Level axis (Point S: about 73 dB (A)) represents the sound level for the operating point of W.

Step Four: From the above steps, the model of the fan is identified as YFISQ -425-1.5 of belt drive type at 1,615 RPM. If fans of lower shaft power are preferred, please refer to larger fans for further comparison. It should be noted that the primary investments for larger fans would increase.

Step Five: If a fan of 4,600 m³/h at 575Pa static pressure is needed, it is easy to know that Point W' is very close to curve 14 shown in boldface (indicating a direct drive fan of 4poles at 1,450 RPM). Then as is shown by the arrow, the YFISQ -425D4 fan equipped with a 1.1 KW motor is finally identified, which is a much more cost-effective choice.

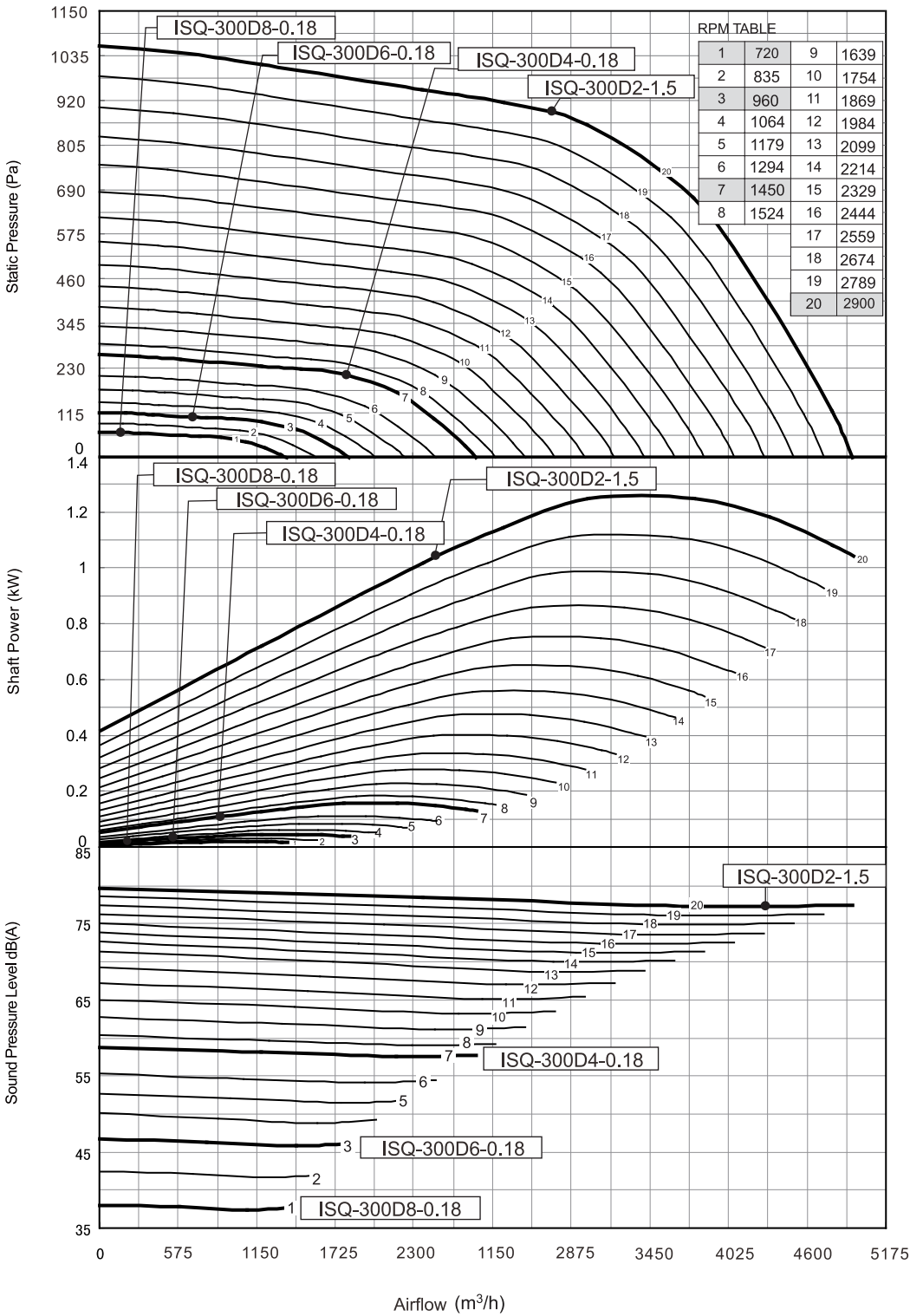
Note: The coefficient of power reserve is determined by model selection staff based on actual needs (typically 1.15).

Certified performance based on AMCA Installation Type B: free inlet, ducted outlet.
Rated power includes transmission (drive) losses.
All performance ratings do not include the effects of accessories.
dB(A) sound pressure levels are based on measurements taken 1.5 times the impeller diameter from the fan outlet, tested in accordance with AMCA 11.5 standards.
Sound level ratings in dB(A) are licensed by AMCA International.

Performance Curve

Model: ISQ-300

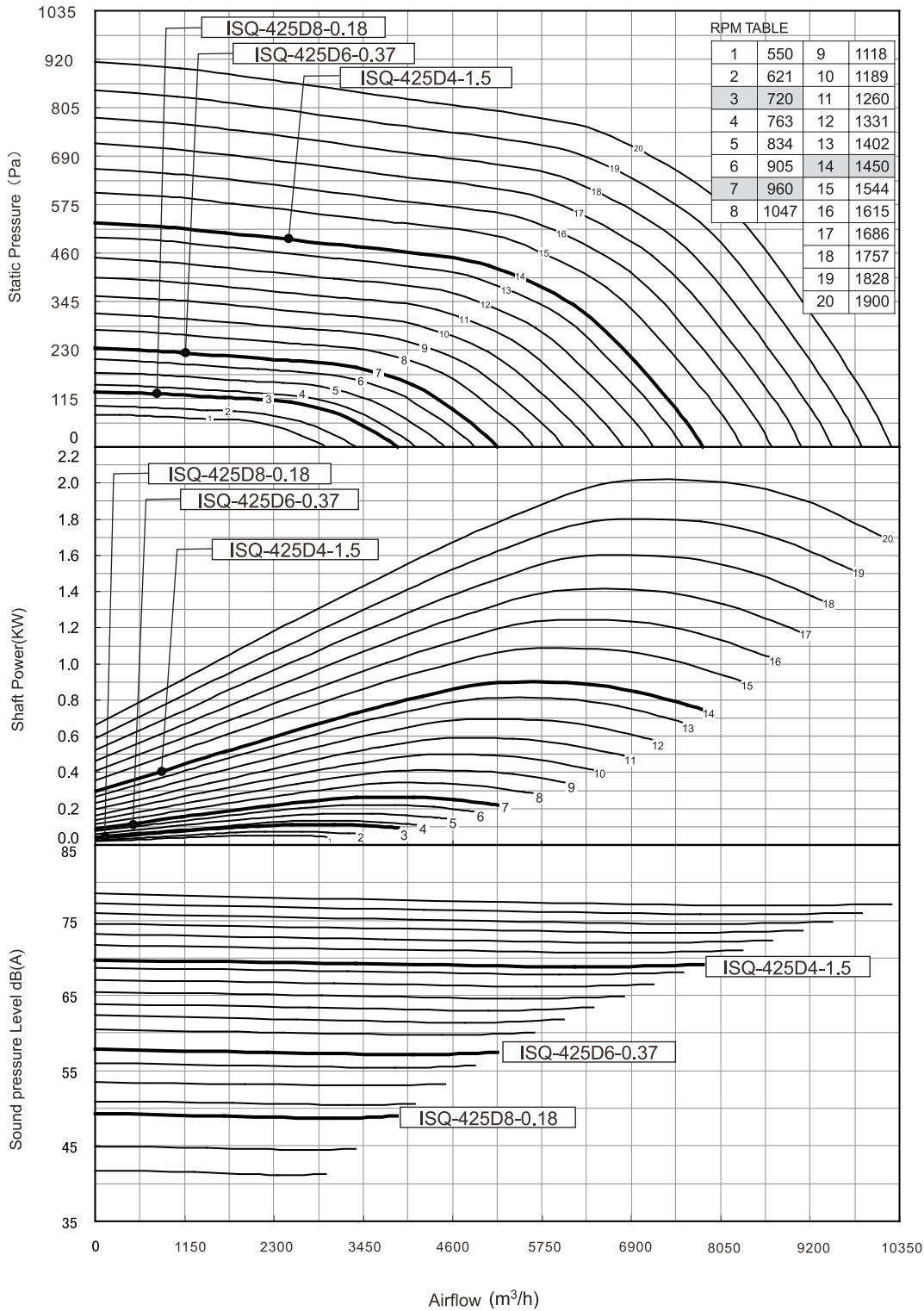
Motor Frequency:50Hz



Performance certified is for installation type B-free inlet, ducted outlet. Power rating (kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). dB(A)A-weighted sound pressure level is based on 11.5 dB sound attenuation per octave band at 1.5 m. Note that LpA-dB(A) levels are not licensed by AMCA International.

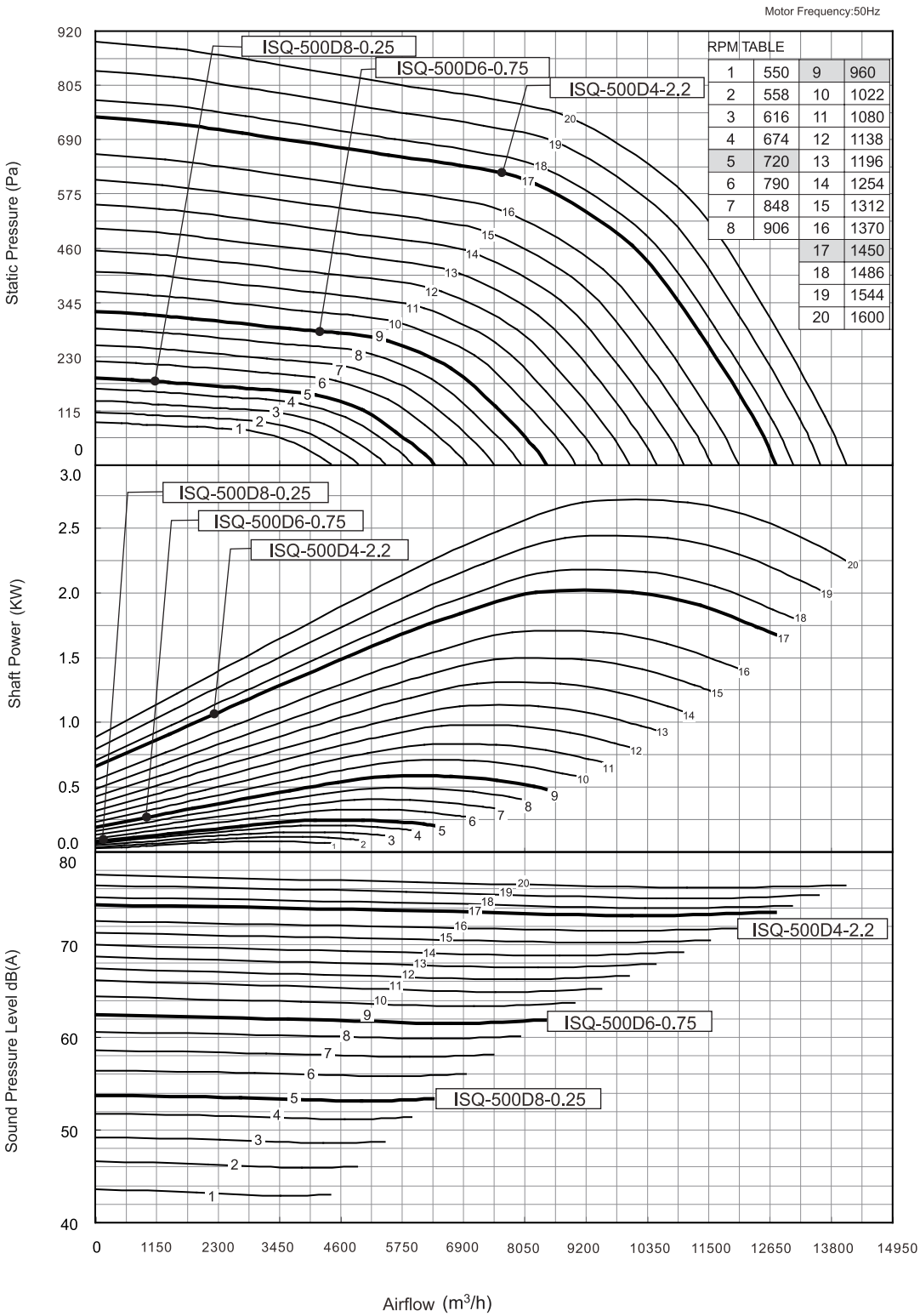
Model: ISQ-425

Motor Frequency:50Hz



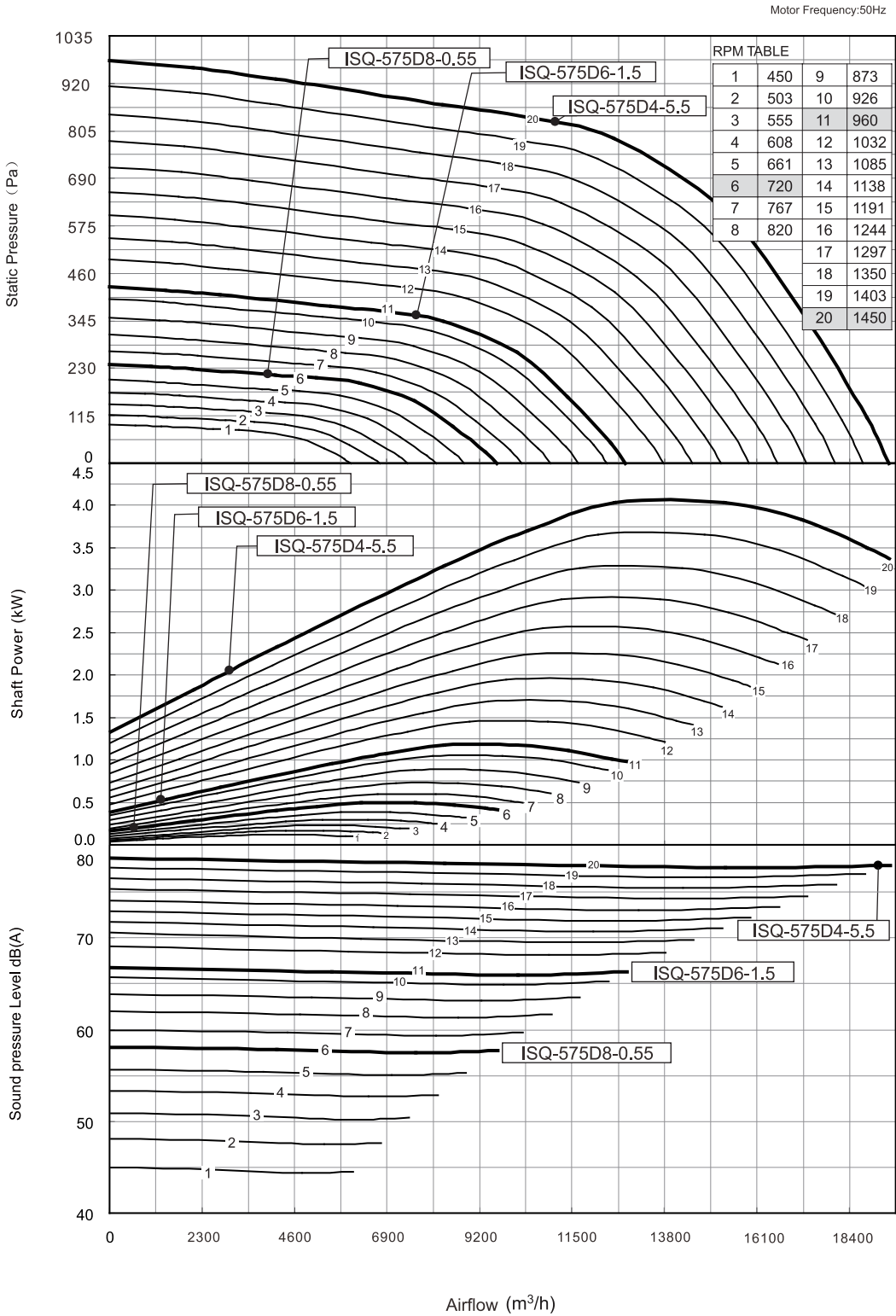
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Model: ISQ-500

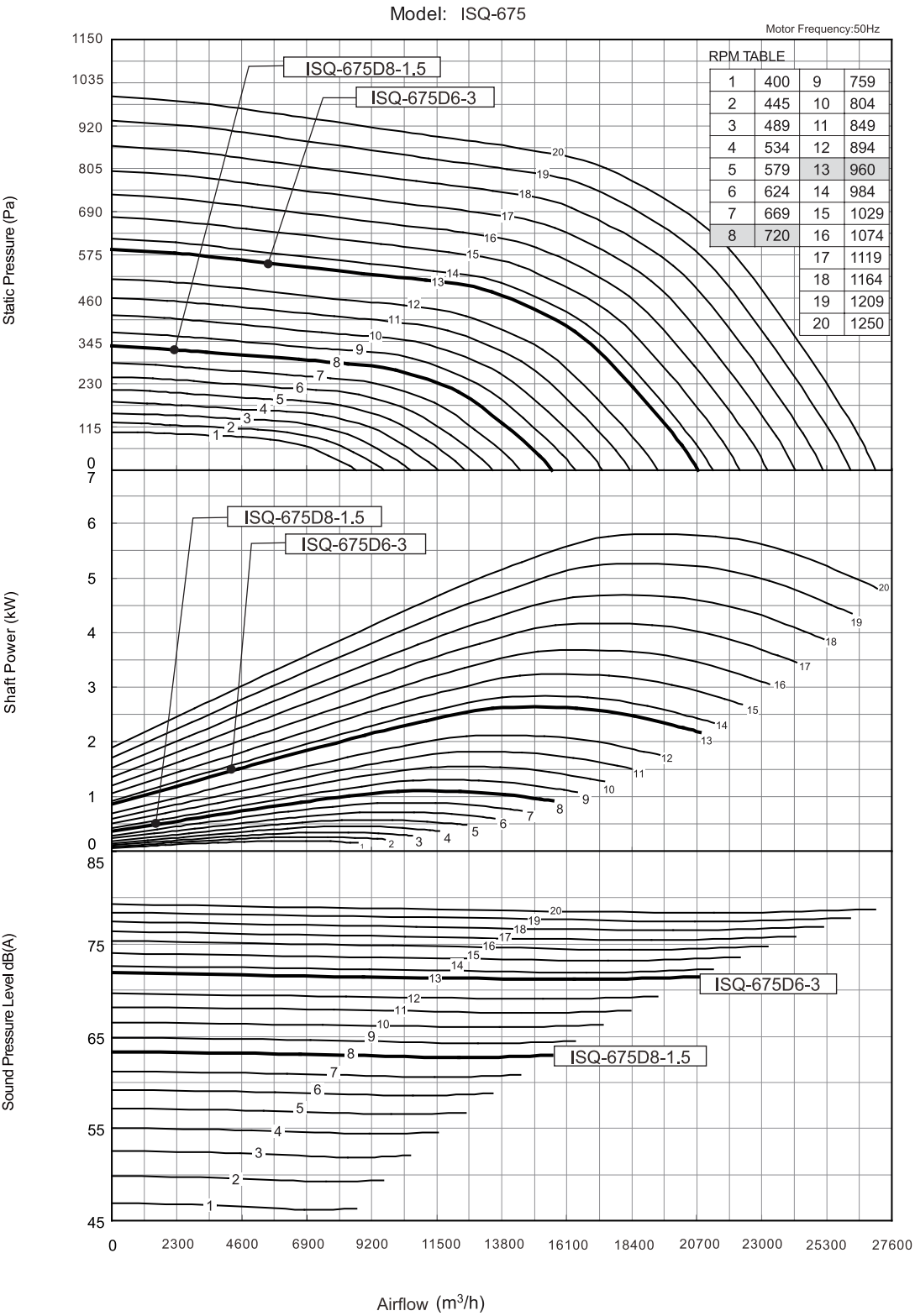


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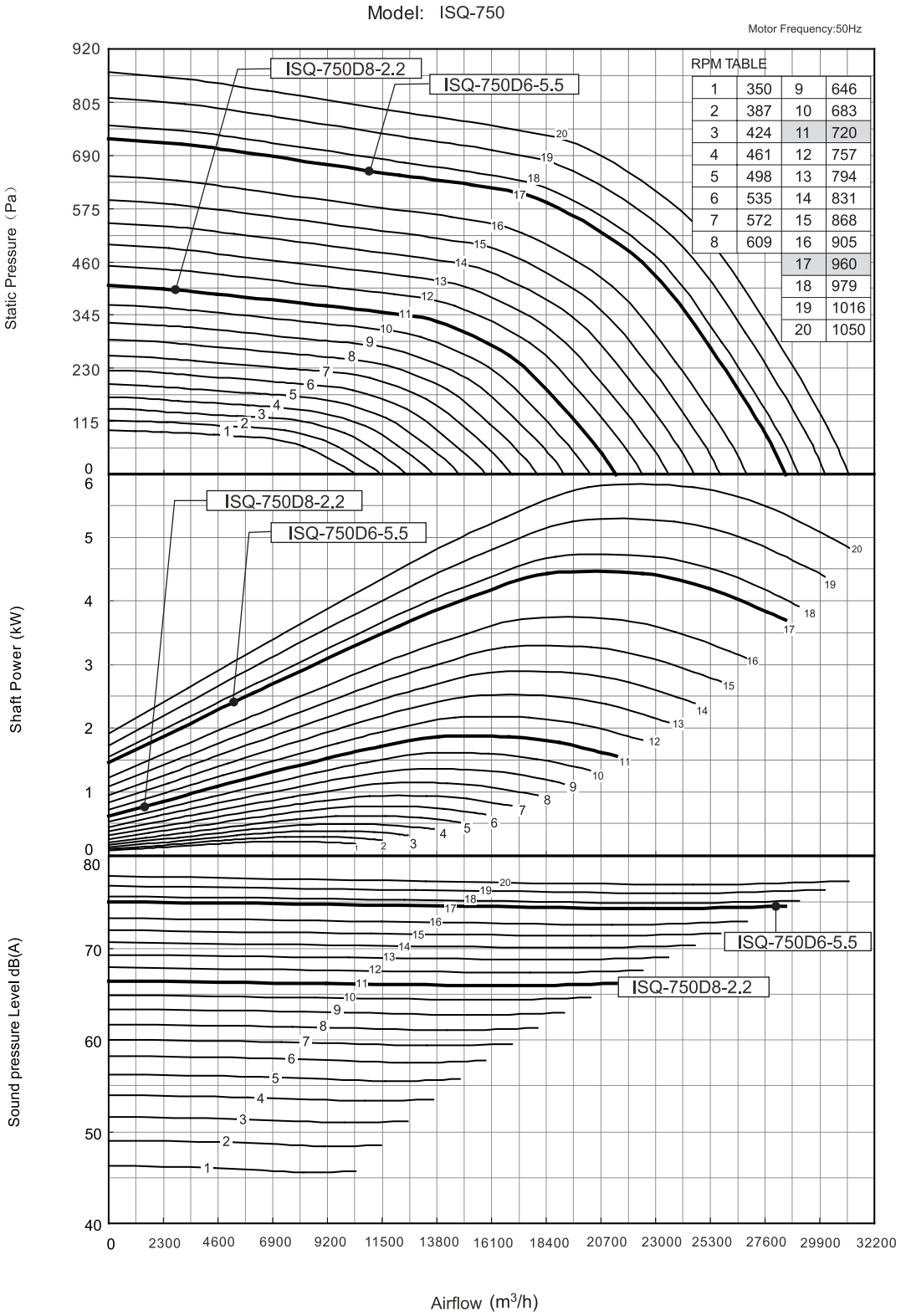
Model: ISQ-575



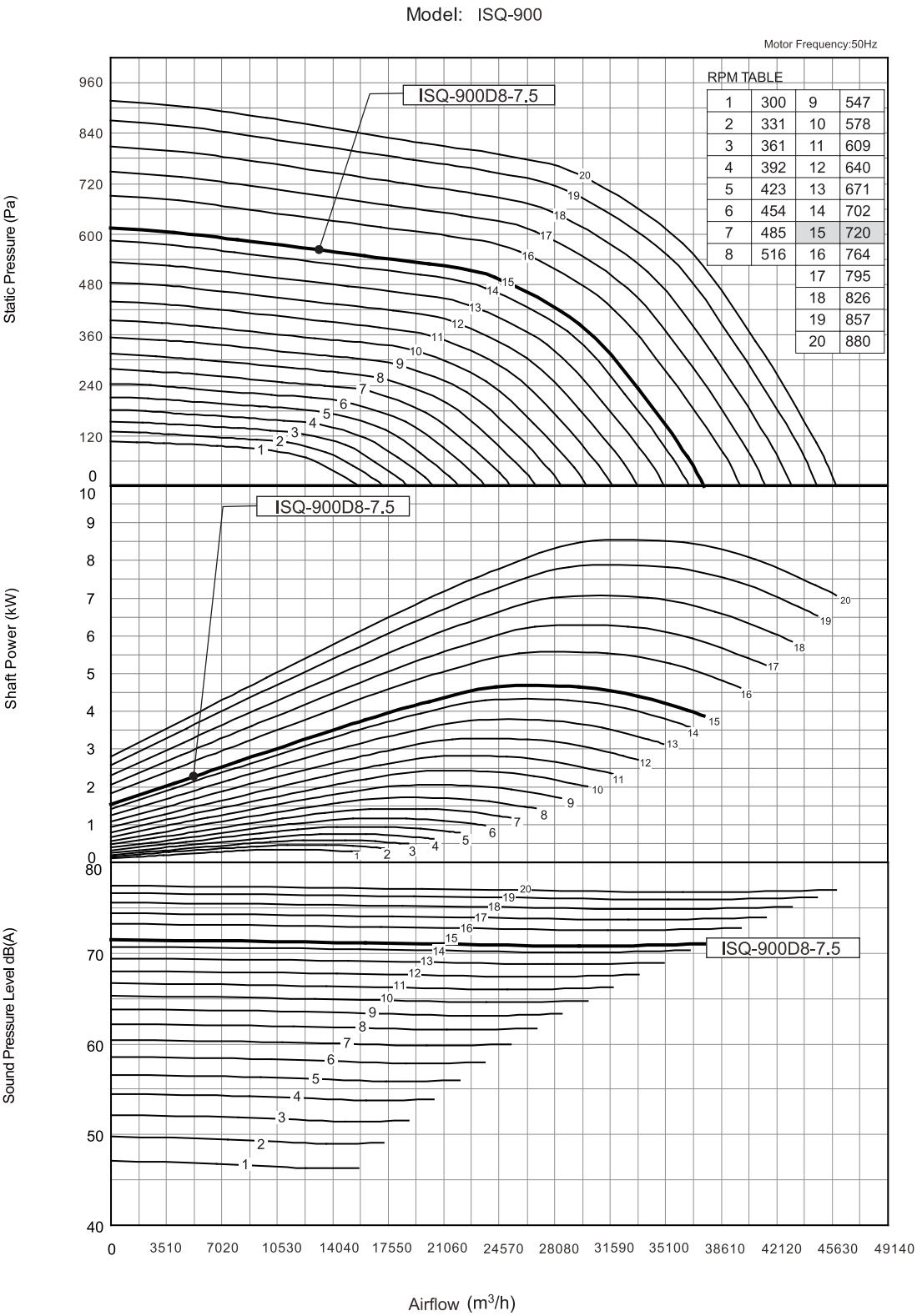
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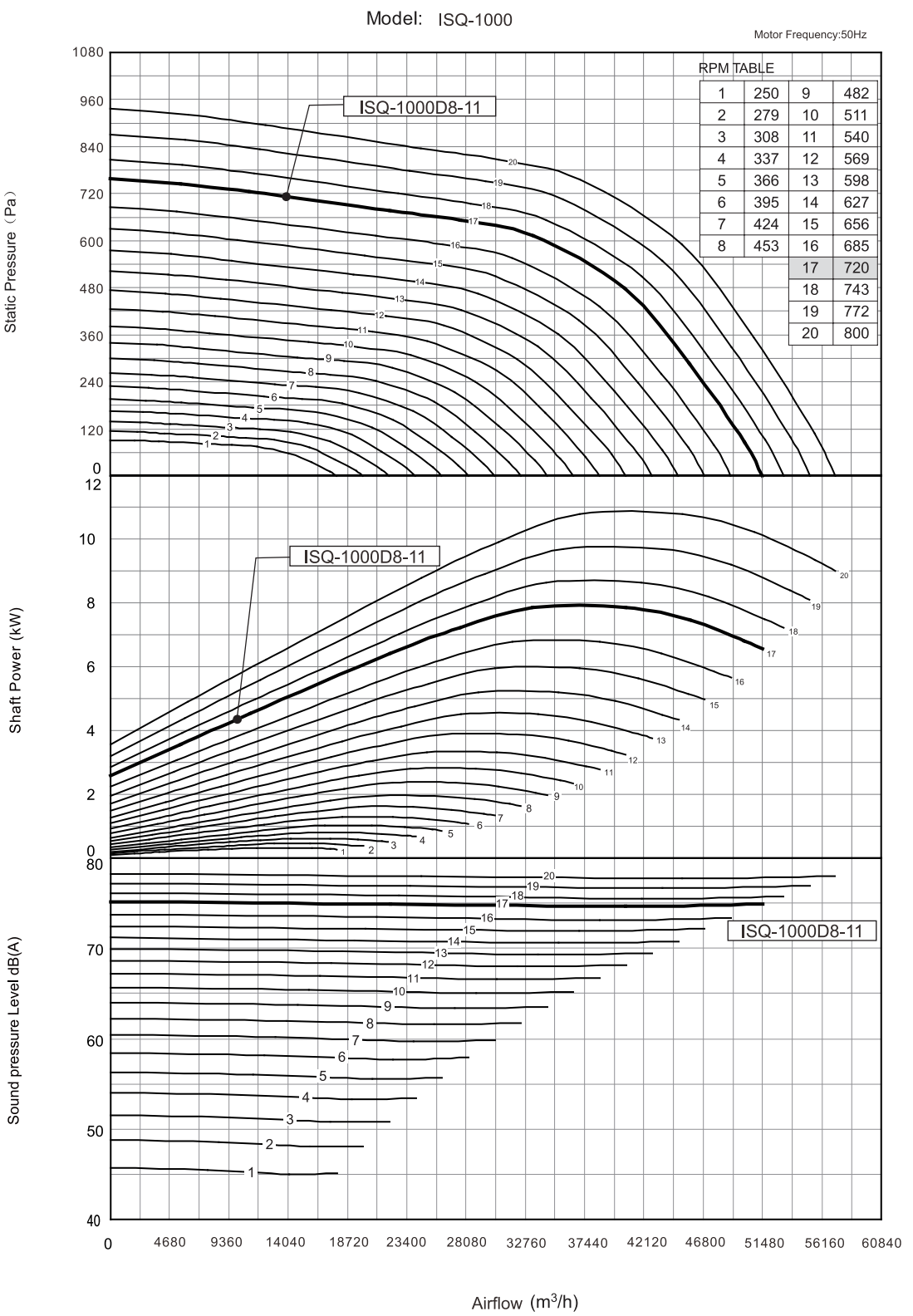
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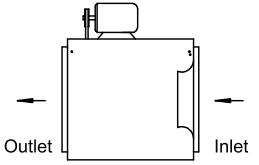
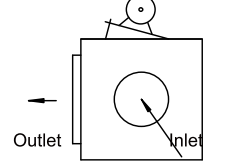
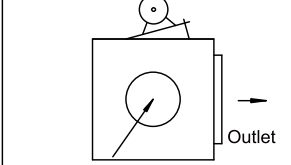
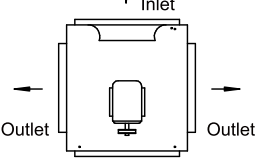
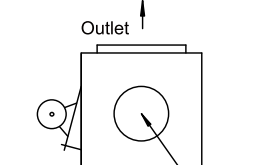
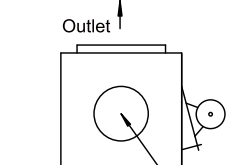
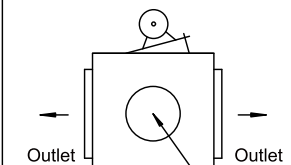
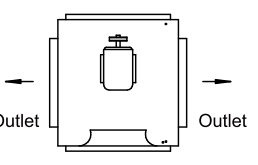
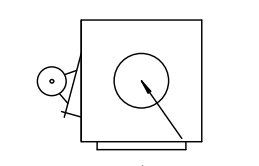
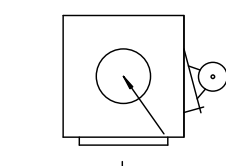
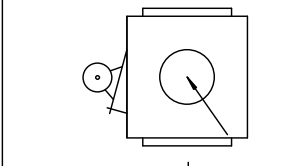
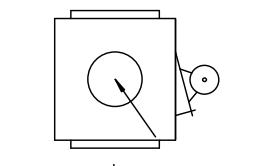
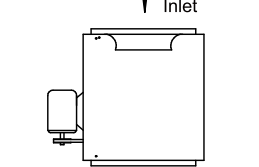
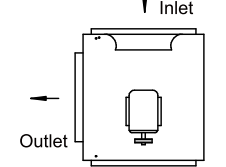
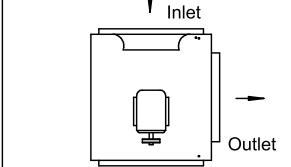
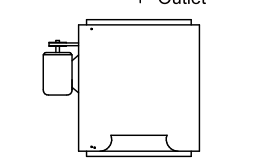
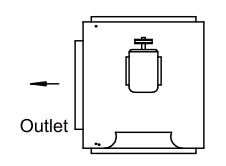
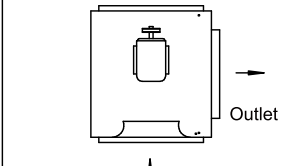
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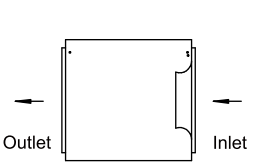
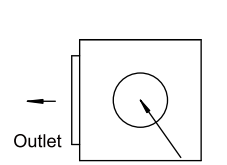
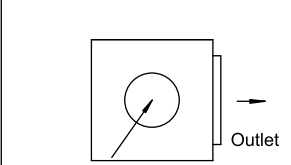
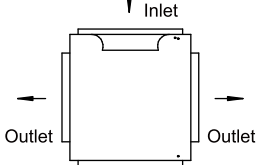
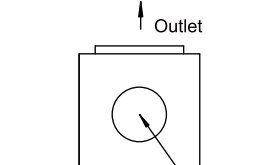
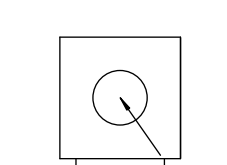
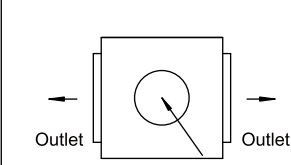
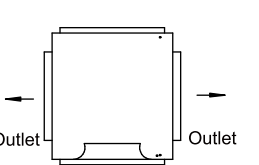
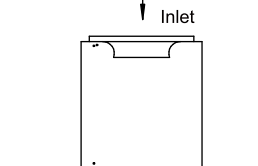
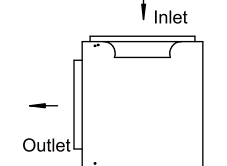
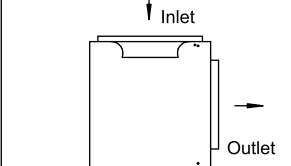
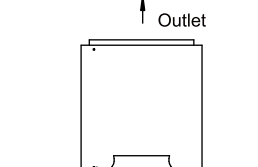
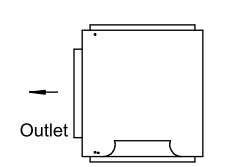
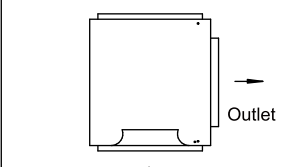
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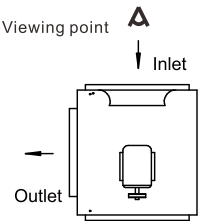
Different Discharge Direction Options

Belt Drive

MTDH  Horizontal Discharge	MTDL  Left Discharge	MTDR  Right Discharge	MTVTDLR  Top Intake,L&R Discharge
MLDT  Top Discharge,Motor Location Left Side	MRDT  Top Discharge,Motor Location Right Side	MTDLR  L & R Discharge	MTVTDLR  Bottom Intake,L&R Discharge
MLDB  Bottom Discharge,Motor Location Left Side	MRDB  Bottom Discharge,Motor Location Right Side	MLDTB  Top&Bottom Discharge, Motor Location Left Side	MRDTB  Top&Bottom Discharge, Motor Location Right Side
MRVTDB  Top Intake,Bottom Discharge	MTVTDR  Top Intake,Right Discharge	MTVTDL  Top Intake,Left Discharge	MTDLRH Motor Location Top,Left,Right and Horizontal discharge Letter Specification M:Motor T:Top D:Discharge L:Left R:Right H:Horizontal B:Bottom
MLVBDT  Bottom Intake,Top Discharge	MTVBDL  Bottom Intake,Left Discharge	MTVBDR  Bottom Intake,Right Discharge	

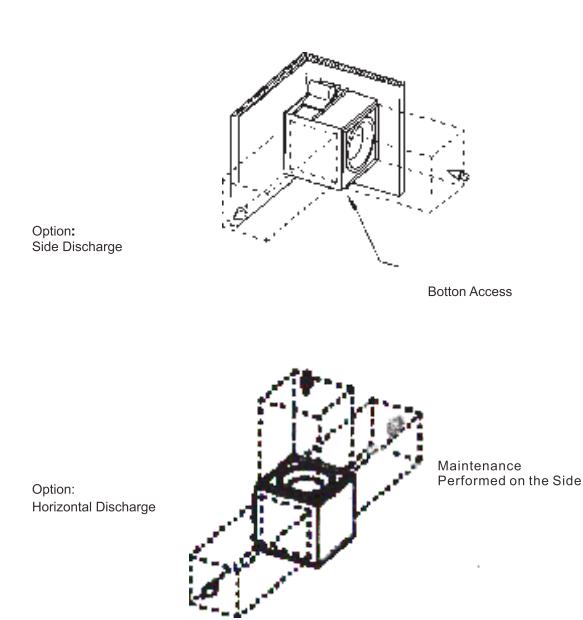
Direct Drive

DDH  Horizontal Discharge	DDL  Left Discharge	DDR  Right Discharge	DVTDLR  Top Intake L&R Discharge
DDT  Top Discharge	ddb  Bottom Discharge	DDLr  L & R Discharge	DVBDLR  Bottom Intake,L&R Discharge
DVTDB  Top Intake,Bottom Discharge	DVTDL  Top Intake,Left Discharge	DVTDR  Top Intake,Right Discharge	
DVBBDT  Bottom Intake,Top Discharge	DVBBDL  Bottom Intake,Left Discharge	DVBBDR  Bottom Intake,Right Discharge	DDLr Direct Drive,Left and Right Discharge Letter Specification D:Direct Drive D:Discharge L:Left R:Right H:Horizontal B:Bottom



Example: Top Intake, Right Discharge(MTVTDR)
Mounting style: Vertical (Erect/Upright)
Motor location:Motor Location Top
Intake:Top
Discharge:Right
Note:The motor location and discharge direction are determined by viewing from the fan inlet end (as shown).

Unit Size and Installation



Motor Weight Table

Power (kW)	Motor Weight (kg)			
	2P	4P	6P	8P
0.18	14	13.5	14	16
0.25	14.5	14	14.5	17
0.37	15	14.5	16	24
0.55	15.5	15	17	28
0.75	15	16	22	30
1.1	16	21	24	32
1.5	21	23	32	40
2.2	24	33	41	64
3	33	35	63	78
4	41	41	72	105
5.5	63	65	81	115
7.5	70	76	118	145
11	110	118	145	160
15	122	137	180	235
18.5	142	170	231	290

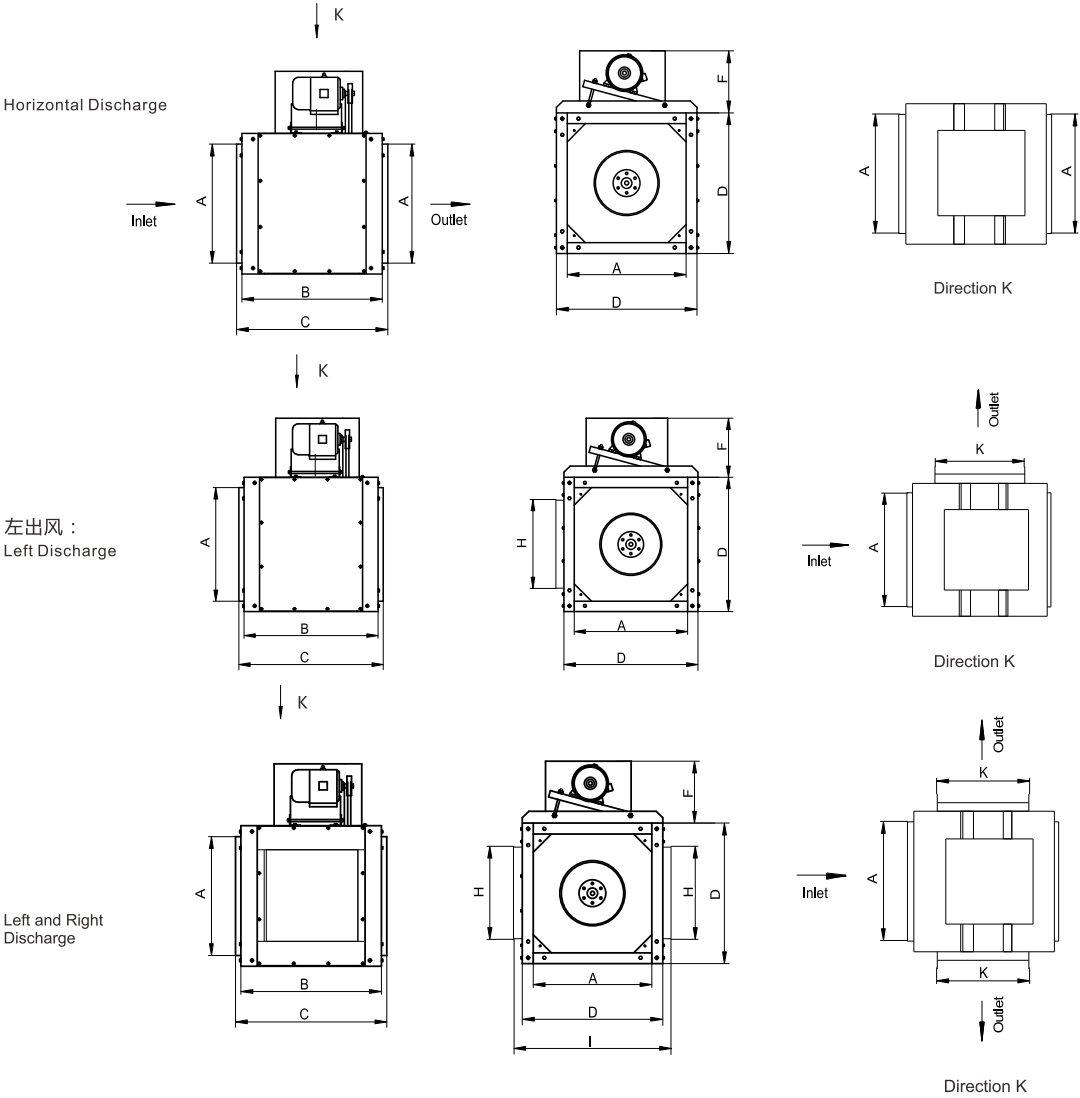
Fan Fastening

The ISQ fan can be installed horizontally or vertically. The motor can be mounted atop, on the sides or at the bottom of the fan. The ISQ fan comes with supporting feet that can be fixed atop the fan and connected with the hanging isolators through screw rods. Also, they can be fixed at the bottom and connected with base isolators. (Users are to supply vibration isolators and screw rods).

Chang in discharge directions
The ISQ fan has discharge positions on any sides except the motor side and its opposite side and the opposite side of the inlet. The discharge directions can be changed onsite. To do this, the access panel of the new desired discharge direction is removed for an added flange and the original discharge flange is sealed (This can be done onsite).



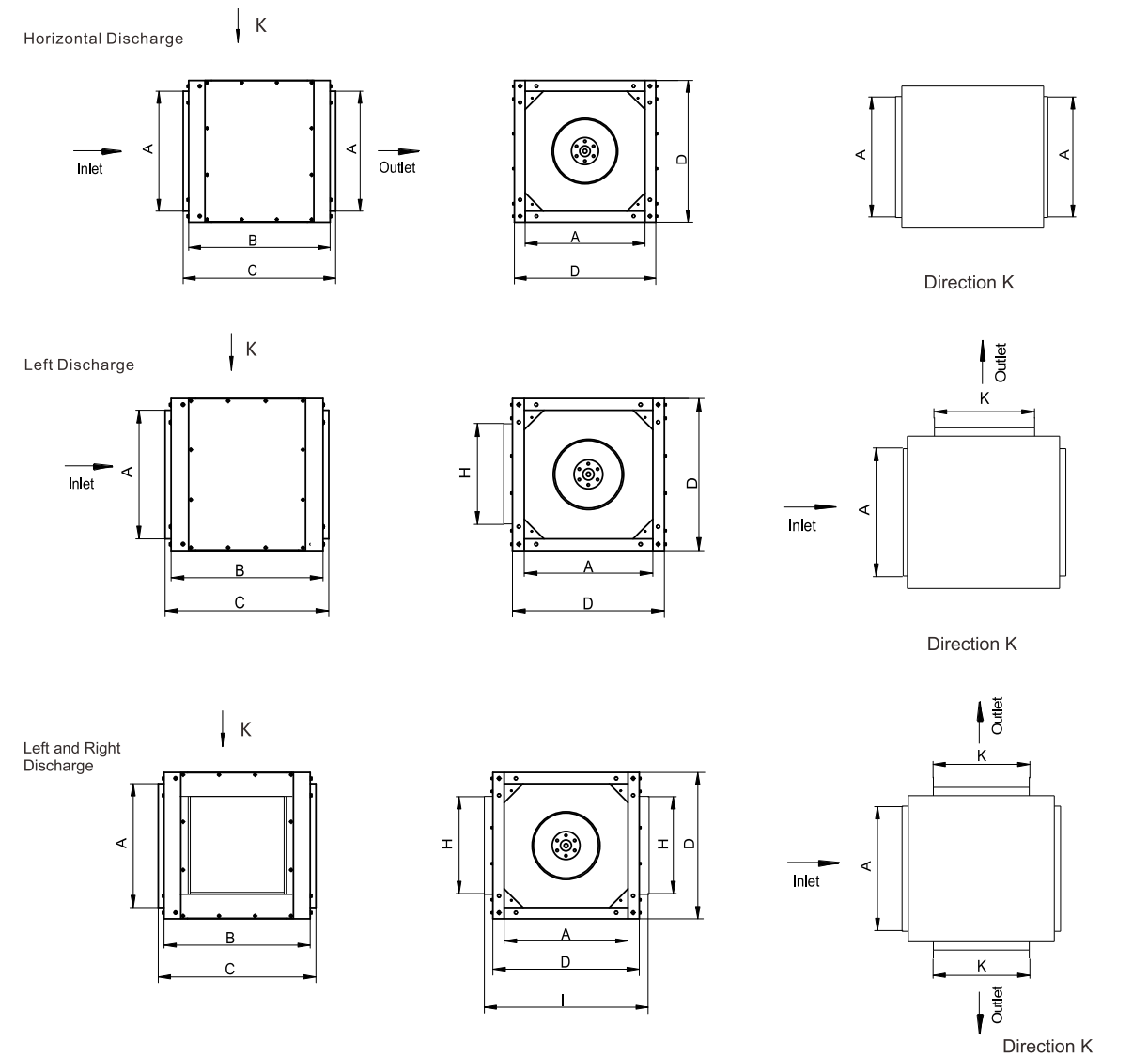
Fan Size(Belt-Drive)



(Unit):mm	A	B	C	D	F	H	K	G	I	(Weight)
ISQ300	403	500	550	470	530(max)	325	325	495	520	37
ISQ425	553	650	700	650	530(max)	455	455	675	700	61
ISQ500	654	780	830	750	530(max)	505	505	775	800	89
ISQ575	754	880	950	850	635(max)	555	555	885	920	112
ISQ675	904	950	1020	1000	700(max)	605	605	1035	1070	145
ISQ750	1004	980	1050	1100	700(max)	605	605	1135	1170	165
ISQ900	1174	1070	1170	1270	700(max)	705	705	1320	1370	225
ISQ1000	1304	1175	1275	1400	700(max)	805	805	1450	1500	261

- 1.Motor is not included in the Weight above.
- 2.The dimensions of Top Intake, Bottom Discharge/Bottom Intake and Top Discharge refer to **Dimensions of Horizontal Discharge**.
- 3.The dimensions of Right Discharge /Top Discharge, Motor Location Left / Top Discharge, Motor Location Right / Bottom Discharge, Motor Location Left/ Bottom Discharge, Motor Location Right /Top Intake, Left Discharge / Top Intake, Right Discharge/ Bottom Intake, Right Discharge/ Bottom Intake, Left Discharge refer to **Dimensions of Left Discharge**.
- 4.The dimensions of Top and Bottom Discharge, Motor Location Left / Top and Bottom Discharge, Motor Location Right / Top Intake, Left and Right Discharge/Bottom Intake, Left and Right Discharge refer to **Dimensions of Left and Right Discharge**.

Fan Size(Direct-drive)



(Unit):mm	A	B	C	D	H	K	G	I	(Weight)
ISQ300D	403	580	630	470	325	405	495	520	32
ISQ425D	553	710	760	650	455	515	675	700	55
ISQ500D	654	780	830	750	505	505	775	800	75
ISQ575D	754	880	950	850	555	555	885	920	101
ISQ675D	904	950	1020	1000	605	605	1035	1070	122
ISQ750D	1004	1030	1100	1100	605	655	1135	1170	150
ISQ900D	1174	1230	1330	1270	705	865	1320	1370	224
ISQ1000D	1304	1309	1409	1400	805	940	1450	1500	310

1.Motor is not included in the Weight above.
2.The dimensions of Top Intake, Bottom Discharge/Bottom Intake, Top Discharge refer to **Dimensions of Horizontal Discharge**.
3.The dimensions of Right Discharge/ Top Discharge/ Bottom Discharge / Bottom Intake, Left Discharge/ Bottom Intake, Right Discharge/Top Intake, Left Discharge/Top Intake, Right Discharge refer to **Dimensions of Left Discharge**.
4.The dimensions of Top Intake, Left and Right Discharge/ Bottom Intake, Left and Right Discharge refer to **Dimensions of Left and Right Discharge**.

Product Specifications

Section 4: Drive Mechanism (For belt drive type only)
Shaft: The shaft shall be heat treated through homogenizing furnace to the hardness level of HB370, and the hard film shall be applied on the surface to avoid corrosion. The shaft shall also be subject to balancing tests together with the wheel. The design speed of the shaft shall be at least 25% more than the maximum running speed of the fan.
Pulley: Fan pulleys shall be sized for a minimum of 150% of the driving power. Pulleys shall be cast iron, keyed and securely attached to the wheel and motor shaft. Conical type bushings shall be equipped for easy removal of the pulleys.
Bearing: Two bearings shall be used to support the shaft to avoid vibrations directly coming onto the motor. The bearing L10 rating life shall be 80, 000 hours at the maximum operating speed specified in the catalog. The bearing shall be of permanently sealed type and metal pedestal ball bearing that can be lubricated.
Drive Support: Drive mechanism shall be supported by thick steel sheet finished with powder coatings to avoid corrosion. The belt tension can be adjusted through the adjusting bolt at the motor base. The design shall make sure the fan shaft and motor shaft is always parallel.

Section 5: Motor
The motor shall match the fan load precisely. It shall be IP55 rated with Class F Insulation. The motor bearing shall be lubrication-free ball type.

Section 6: Nameplate
A permanently fixed aluminum nameplate shall clearly display the fan number, product model and serial number (a unique ID for each fan) so that the parts used can be traceable by customers.

Section 7: Qualified Suppliers
Qualified suppliers shall be assigned a credit rating of “AAA”. **INFINAIR®** or similar products supplied are designed based on Model ISQ of **INFINAIR®**

INFINAIR Intelligent Ventilation Technology

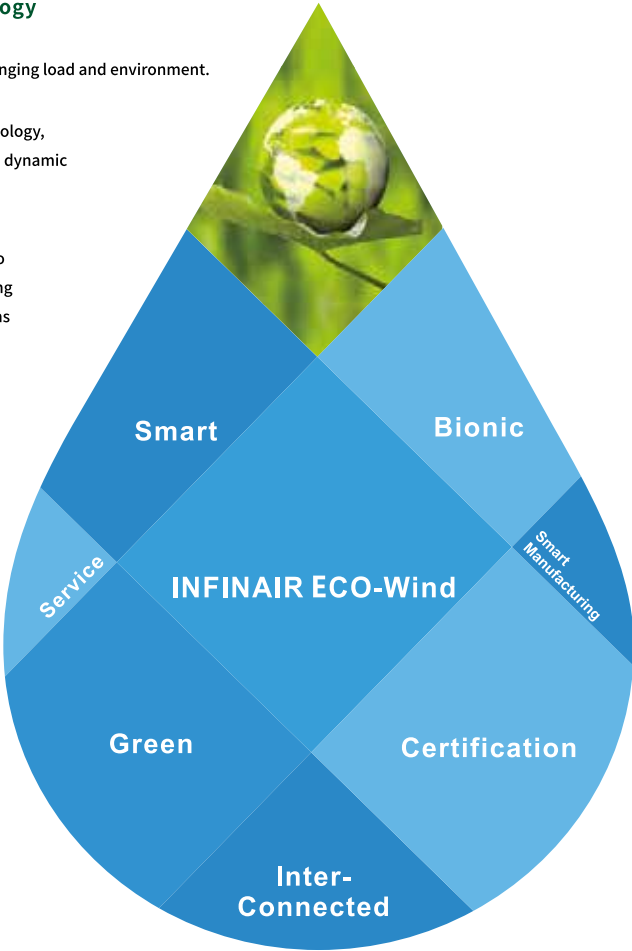
- Smart Needs Identification
Dynamically adjusting the operation target to the changing load and environment.
- Intelligent Adjustment
Utilizing variable frequency or EC smart control technology, performance is finely tuned to actual needs under the dynamic control of intelligent speed regulation software.
- Intelligent Real-time Information
Employing a variety of communication technologies to connect to the Internet or local area networks, enabling intelligent communication with central control systems and mobile devices.
- Intelligent Detection System
Reliable sensors can detect early symptoms and notify the user, ensuring stable operation

Green Smart Simulation Technology

- CFD Simulation & Analysis
Simulated calculations are performed for the performance (airflow, air pressure, power consumption, and noise) prediction of the wheel aerodynamic model, enabling the anticipation of performance without the need to construct physical prototypes, thus facilitating rapid optimization.
- Finite Element Analysis Technology
To analyze and provide accurate prediction of how material is likely to respond when subjected to structural and/or thermal loads.

Certifications and Tests

- Most of the products are certificated by: CCCf, AMCA, TUV, CE, ATEX, UL, RoHS and ErP2015
- Performance and Reliability Tests:
Air flow, air pressure, power, sound level, temperature durability, salt spray and water proof test, etc



Interconnected

- Matrix Connection
- Central Connection
- Terminal Connection

INFINAIR's Bionic Technology

- INFINAIR's Bionic Energy Conservation
Why can nautilus float and swim effortlessly?
How do birds soar thousands of miles with extremely low energy consumption?
For owls' silent flight, why are even sensitive mice unaware of it?
Over millions of years of evolution, how have creatures in nature conserved energy for migration or remained silent while hunting prey?
INFINAIR has gained inspiration in the research and development of its products by using the bionic technologies.

INFINAIR's Intelligent Manufacturing

- Intelligent production process
- Power test, dynamic balancing test and communication test performed on the production line
- Robotic welding technology
- Lean production
- 6 Σ system

Eagle Service

- Joint R&D
By collaborating with clients in co-development and implementing quality planning from the outset, we swiftly deliver genuinely effective solutions.
- Tailored Solutions
Our customized services guide you through a progressive clarification process to pinpoint your exact needs precisely.
- Agile Services
With an extensive network of INFINAIR after-sale service engineers, we promptly offer professional services wherever you are.

Eagle Service

