



FAN MÜHENDİSLİĞİ

OPERATION MANUAL

AXIAL FRESH
AIR FAN
SERIES

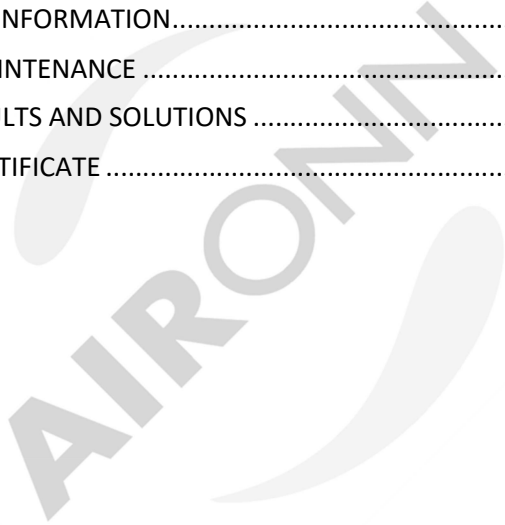
AIR-AU SERIES



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COMPANY INFORMATION

AIRONN HAVALANDIRMA SANAYİ ANONİM ŞİRKETİ

MAIN OFFICE : AIRONN PLAZA

**Çamlık Mah. Şenol Güneş Bulvarı No:28/A
Ümraniye / İstanbul**

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WARRANTY and SERVICE

Please comply with the following recommendations;

1. When you buy your product, do not forget to validate your Warranty Certificate to your dealer.
2. Follow the instructions in the user guide while using your product. This warranty provided by AIRONN Ventilation does not cover the elimination of malfunctions resulting from the use of the product other than as specified in the instruction manual. In addition, the following conditions are excluded from the warranty:
 1. Damages and malfunctions during transport, loading and unloading after the product has been delivered to the customer,
 2. Fire, earthquake, lightning etc. damage and malfunction caused by natural disasters such as,
 3. Damage and malfunctions caused by faulty electrical installation, voltage drop or surplus, if the voltage is different from the voltage indicated on the product label,
 4. Damage and malfunctions due to user errors.
3. Elimination of the above-mentioned damages and malfunctions is done by determining a fee according to the size of the damages and malfunctions. Transport and installation of the product to the place of use is excluded from the product price.
4. It is the responsibility of the seller, dealer, agent or representative from whom the consumer has purchased the product, and is responsible for approving this warranty.
5. In the event of any dispute during the warranty period of the product, the user must keep the invoice or a legible copy of the product together with the Warranty Document, as the invoice date will prevail.
6. If the Product Warranty Certificate is modified, the original serial number on the product is removed or replaced, the Product Warranty Certificate is void.

WARRANTY CONDITIONS

- The warranty period is 24 months from the date of delivery of the product.
- All parts on the product are covered by AIRONN Ventilation guarantee.
- Repair of the product in the event of a failure cannot exceed 20 working days and the repair period is added to the warranty period. The repair period starts when the user notifies the service station of the failure of the product to the service station, or, if there is no service station, to any of the product's vendor, dealer, agent, representative, importer or manufacturer. Failure notification, by the consumer phone, e-mail, fax, registered letter, etc. can be done by means. However, in the event of a dispute, the burden of proof rests with the consumer. If the failure of the product is not resolved within 10 working days, the manufacturer or importer company shall provide another product with similar characteristics to the consumer until the product is repaired.
- In the event that the product fails during the warranty period due to defects in material, workmanship and assembly, the product will be repaired without charge of labor cost, replacement part fee or any other cost.
- The warranty does not cover any defects caused by the use of the product other than those specified in the instruction manual.
- For any problems regarding the Warranty Certificate, the General Directorate of Consumer Protection and Market Surveillance of the Ministry of Customs and Trade can be applied.
- Consumers can submit their complaints and objections to consumer courts and consumer arbitration committees.
- Despite the consumer's right to repair;
 - If it fails at least 4 (four) times within one year or 6 (six) times within the warranty period specified by the manufacturer or importer from the time it is delivered to the consumer, within the specified warranty period

- If the maximum time specified for repair is exceeded,
- If the service station of the company is not available, if it is determined that it is not possible to repair the malfunction caused by the report prepared by any one of the seller, dealer, agent, representative, importer or manufacturer respectively,

The consumer may request the free replacement of the product, a refund or a discount at the rate of defect.

- If the product is found to be defective, the consumer;
 - I. Returning the contract by declaring that it will return the sold product,
 - II. Retain the product sold, at the rate of shame to ask for discounts on sales price,
 - III. In the event that the defect of the product does not require excessive costs, request the free repair of the product sold at the seller's expense,
 - IV. Possibility to request a replacement of the product sold with a non-defective amount,Use only one of the optional rights. The seller is obliged to fulfill this demand which is preferred by the consumer.

SPECIAL WARRANTY CONDITIONS

1. Our company is not responsible for any damage that may arise during the transportation of the customer.
2. Failures that may occur during the warranty period are only repaired by the service personnel of our company or the service personnel who have received the necessary training and authorized by us. The warranty is void if other persons interfere with the machine without our written agreement.
3. The warranty given by our company is valid if the machine is used as described in this manual, otherwise the warranty is void.
4. This warranty will be void if the warranty certificate is tampered with, the original serial number is removed or tampered with.
5. The warranty given is valid only if the customer's obligations and responsibilities are fulfilled in full in this manual and in the catalog.

RESPONSIBILITES OF USER and WARRANTY

AIRONN shall not be liable for any of the following, except as provided in this manual.

- Any use not permitted by law and norms
- Improper and unsuitable area and structure where the machine will be used
- Failure to comply or misuse of the issues specified in the booklet
- Use of electricity not suitable for the specified electrical installation
- Any modifications not made by authorized persons
- Use of the machine outside of its performance
- Lack of necessary maintenance
- Using trained personnel external machine
- Use of non-genuine spare parts not approved by the manufacturer



**NO MODIFICATION ON THE MACHINE IS
FORBIDDEN !!!**

PRODUCT INFORMATION

PRODUCT DESCRIPTION

Fans in Aironn Axial Type Fresh Air Fan Series are suitable to operate at maximum 55 °C. Adjustable edge angle of the series in the range of diameters between 400 mm and 1600 mm presents a broad performance range. It also provides an advantage by precisely ensuring the required flow. Performance of the fans in Roof Type Axial Smoke Exhaust Fan Series have been tested in accordance with AMCA 210-07 standard.



Figure – 1: Long Body Horizontal Axial Fresh Fan Series

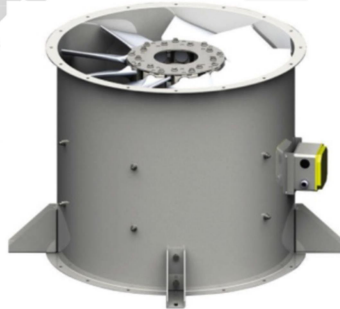


Figure – 2: Long Body Vertical Axial Fresh Fan Series



Figure – 3: Short Body Axial Fresh Fan Series

Body of Fan

The body of the fans are made of high quality sheet metal and coated with corrosion-resistant hot-dip galvanizing. Fan flanges are manufactured by bending from the body and thus the fans are self-flanged. All models are available in short and long body versions. Optionally, vertical or horizontal mounting may be preferred. Body are presented with maintenance bonnet option.

Blade

Aerodynamic blades are manufactured from ETIAL 171 by injection molding. Statically and dynamically balanced according to ISO 1940 / 1-2003.

Motor

IP55 motors with insulation class H are available in single speed or double speed. Single-speed motors are suitable for inverter use.

Electricity

IP 55 electrical junction box made of aluminum material is offered as standard.

Accessory

Horizontal Leg, Vertical Leg, Silencer (50), Silencer (100), Pod Silencer (50), Pod Silencer (100), Counter Flange, Reversible Damper, Wire Mesh, Spring Isolator, Suction Funnel, Flexible Connection, Pako Switch, Vibration Sensor, Inverter.

AIRONN AIR-AU SERIES FAN LABEL

	AIRONN HAVALANDIRMA VE KLİMA SİSTEMLERİ SAN. DIŞ TİC. LTD. ŞTİ.			
	Karatepe Mah. Cumhuriyet Cad. Mera Sok. No:13 Kartepe / Kocaeli Tel:0 216 594 56 96 Fax:0 216 594 57 17 www.aironn.com.tr - info@aironn.com.tr			
SİPARİŞ NO ORDER NO		HAVA DEBİSİ (m ³ /h) AIR VOLUME (m ³ /h)		
SERİ NO SERIAL NO				
CİHAZ KODU ITEM CODE	AIR-AU	STATİK BASINÇ (Pa) STATIC PRESSURE (Pa)		
CİHAZ MODELİ MODEL NO	AKSİYAL KOVANLI DUMAN EGZOZ FANI	MOTOR kW		
		DEVİR/SPEED rpm		
		NOMİNAL AKIM		
*** TEST EDİLMİŞTİR Made in Turkey		 TSE-K 453		

Figure – 4: Axial Fresh Fan Series Tag Example

AREA OF UTILIZATION

AIR-AU Series Axial Fresh fans, car park, tunnel, atrium, corridor, warehouse ventilation and so on. is used in exhaust systems to exhaust dirty air and fire smoke.



THE PURPOSE OF THE MACHINE IS PROVIDED IN THIS MANUAL. THE USE OF THE MACHINE FOR THE EXCEPT OF THIS PURPOSE IS ABSOLUTELY FORBIDDEN !!!

Any damage that may arise from the use of the machine beyond its intended use is not the responsibility of AIRONN.

The machine's operating capacity is limited by the channel dimensions on the label. AIRONN shall not be held liable for any damages that may arise from the use of the machine above the specified capacity.

The machine is not suitable for use in outdoor conditions (rain, snow, wind, etc.). Any responsibility that may arise from the use of the machine outdoors belongs to the user.

The AIR-AU Series Axial Fresh Fans are designed to exhaust dirty air and fire fumes only. AIRONN accepts no responsibility for any adverse events that may occur if the machine is operated differently from its function.

CONTENTS OF PACKAGE

- 1 pcs Axial Fresh Fan
- 1 pcs User Manual

GENERAL NOTES ABOUT MACHINE

Any modification work on the machine other than authorized personnel is prohibited. The manufacturer does not allow any misuse without permission.

No hazard, damage, or condition that may arise if the instructions specified in this manual is not complied with may constitute a binding reason for AIRONN HAVALANDIRMA VE SANAYİ ANONİM ŞİRKETİ. The employer is obliged to provide all training and information to the user personnel in accordance with CE norms. **It is therefore imperative that this user manual be read and understood by the user before using the machine.**



**THE MACHINE CAN BE USED
ONLY BY AUTHORIZED OPERATOR!**

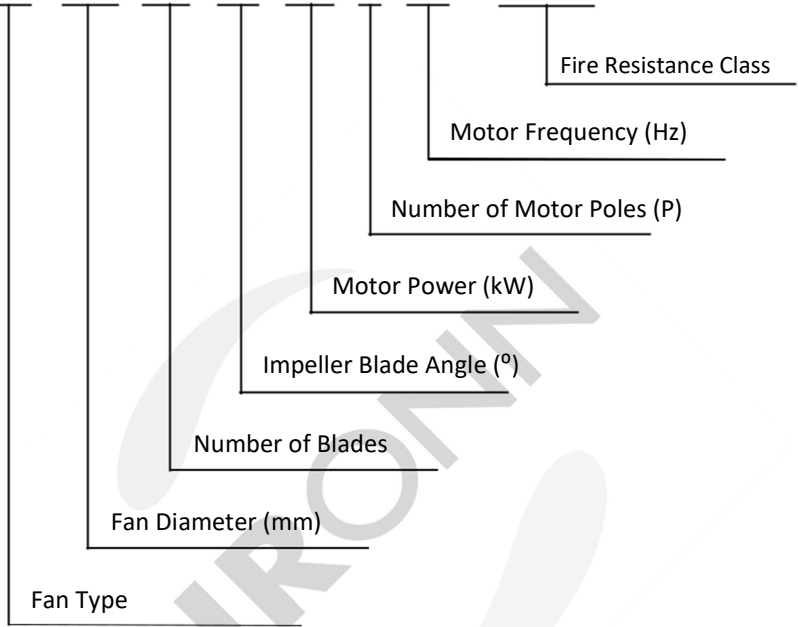
The machine always complies with the necessary safety measures if the instructions in the MAINTENANCE INFORMATION section are followed. These instructions are used as a precaution against any safety risks that may arise from personnel operating the machine. **The full capacity and efficient operation of the machine is ensured only if the instructions given in this manual are followed.** This booklet should be stored in an easily accessible place as long as the machine is in use, and any changes or warnings made by the manufacturer should be indicated on the booklet. If the machine is sold to another user, the corresponding manual must be submitted.

The manufacturer does not allow any reproduction or copying of this manual for any reason and all rights are reserved. All pictures and drawings in the booklet are guide. The manufacturer reserves the right to remove, delete and modify them.

The machine is delivered to the customer with a label with the machine and identification information on the machine.

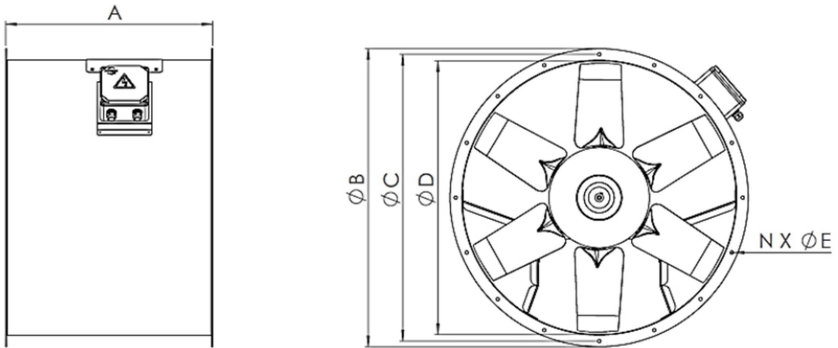
ABBREVIATIONS

AIR-XX/XXX-XX-XX/XX-X-XX/-XXX-X



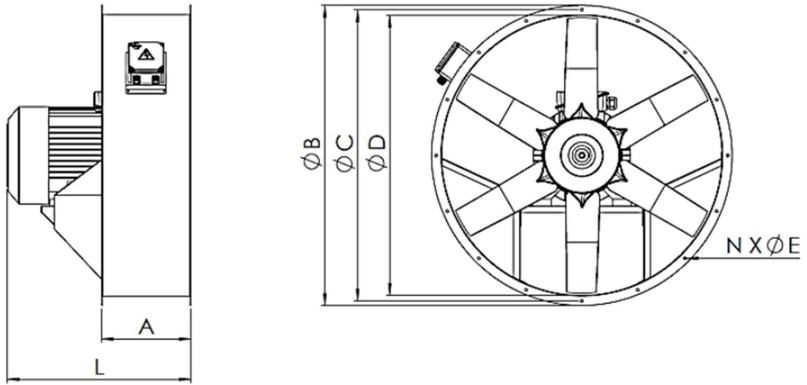
AU – Axial Fan

GENERAL DIMENSIONS



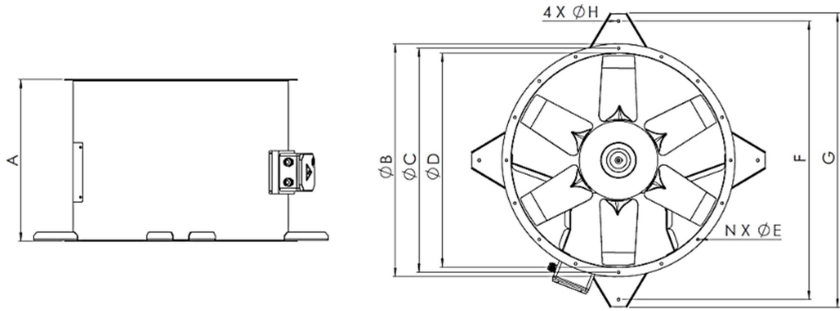
	A	B	C	D	NXØE
400	420	460	430	400	8 x11
450	420	510	484	450	8 x11
500	420	560	537	500	8 x11
560	420	620	597	560	8 x11
630	470	590	667	630	8 x11
710	500	770	747	710	8 x11
800	580	880	844	800	16 x 11
900	700	980	944	900	16 x13
1000	775	1080	1044	1000	16 x 13
1250	775	1330	1294	1250	16 x 13

Figure – 5: Long Body Axial Fresh Fan Series
General Dimensions



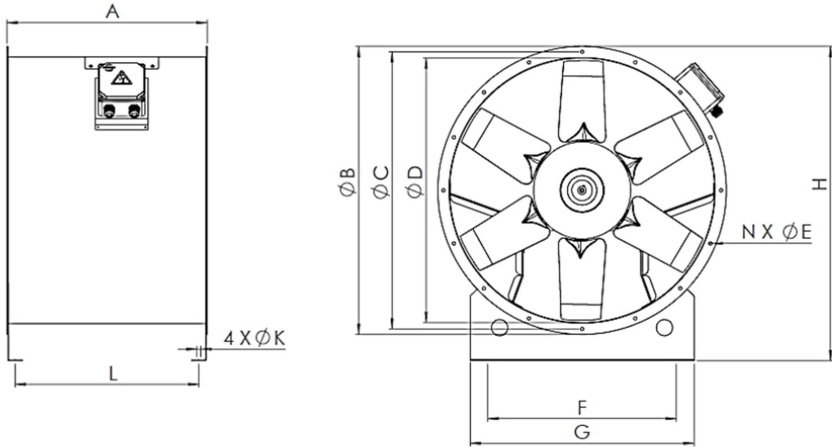
	A	B	C	D	L_{max}	NXØE
400	400	460	430	400	420	8 x11
450	400	510	484	450	420	8 x11
500	400	560	537	500	420	8 x11
560	400	620	597	560	420	8 x11
630	400	590	667	630	470	8 x11
710	400	770	747	710	500	8 x11
800	400	880	844	800	580	16 x 11
900	400	980	944	900	700	16 x13
1000	400	1080	1044	1000	775	16 x 13
1250	400	1330	1294	1250	775	16 x 13

Figure – 6: Short Body Axial Fresh Fan Series
General Dimensions



	A	B	C	D	F	G	H	NXØE
400	420	460	430	400	573	632	11	8 x11
450	420	510	484	450	628	687	11	8 x11
500	420	560	537	500	782	830	12	8 x11
560	420	620	597	560	842	890	12	8 x11
630	470	590	667	630	908	956	12	8 x11
710	500	770	747	710	994	1042	12	8 x11
800	580	880	844	800	1077	1132	12	16 x 11
900	700	980	944	900	1172	1234	12	16 x13
1000	775	1080	1044	1000	1284	1334	12	16 x 13
1250	775	1330	1294	1250	1552	1620	12	16 x 13

Figure – 7: Long Body Vertical Axial Fresh Fan Series
General Dimensions



	A	B	C	D	F	G	L	H	NXØE	ØK
400	420	460	430	400	300	360	378	500	8 x11	11
450	420	510	484	450	320	400	378	550	8 x11	11
500	420	560	537	500	370	450	378	600	8 x11	11
560	420	620	597	560	420	500	378	670	8 x11	11
630	470	590	667	630	460	540	428	790	8 x11	11
710	500	770	747	710	500	600	458	870	8 x11	11
800	580	880	844	800	580	680	538	970	16 x 11	11
900	700	980	944	900	660	760	644	1070	16 x13	13
1000	775	1080	1044	1000	750	850	717	1167	16 x 13	13
1250	775	1330	1294	1250	960	1060	717	1417	16 x 13	13

Figure – 8: Long Body Horizontal Axial Fresh Fan Series
General Dimensions

GENERAL SAFETY INSTRUCTIONS

**** This section provides safety instructions that must be followed when transporting, installing, operating the machine, performing maintenance and scrapping.**

WARNING TAGS OVER THE MACHINE



Electricity



Caution



Rotating Machine
Warning



Danger of
Hand Pinching



Grounding



Do not Stand
Under Load

Figure – 9: Warning tags over the machine

**** These pictures and stickers are for idea purposes. It may not match the labels on the delivered machine.**

DURING TRANSPORTATION AND SHIPPING

To prevent any damage to your product during transportation;

- When packaging the product, care has been taken to ensure that it complies with normal transportation conditions. It should always be transported in its original packaging in order to avoid possible damage and damage.
- Lifting and loading must only be carried out by authorized and qualified personnel.
- It should not be kept in the rain or in wet environments.
- The products should be placed in such a way that they remain completely immobilized in the vehicle to be transported in order to avoid possible tipping or falling.
- The product must be stored in its own packaging so that it is not exposed to any vibration, dust, abrasives or chemicals until it reaches the place of installation. Do not accept products that are not in their original package or that have been opened when you receive them.
- Appropriate lifting devices must be used to prevent damage to the product and its transporters during transport of heavy products.
- All necessary measures should be taken to prevent damage caused by unintentional, rapid lifting and lowering.

After unpacking the product;

- Check the accuracy of the product you received.
- During transportation, the product must be checked for damage. If there are any missing or damaged parts (s), the transport company and the Aironn Logistics Department official must be informed immediately orally and in writing.
- When receiving the devices in the field, check that the parts shipped separately from the device (vibration mounts, counter flanges, etc.) are shipped in a separate box. Keep these materials in a safe place.
- If any damage has occurred during transportation, photograph the damaged products and report them immediately to the Aironn Logistics Department official and the shipping company.
- The product must not be lifted by grasping the power cord or junction box. Avoid damaging the blades during transport.
- Personnel should wear helmets, gloves and shoes with steel toe cap during transport.

Observe the following instructions during transport and transportation;

- 1- Make sure the products are packaged correctly and securely before placing them in the transport vehicle.
- 2- Before lifting and transporting the fan or its accessories, determine the following points:
 - Total weight and center of gravity
 - Largest external dimensions
 - Location of lifting points
- 3- The load-bearing capacity of the vehicle used must correspond to the weight of the fan and its accessories.
- 4- Lifting must be started after all safety requirements have been met.
- 5- Never stand under or near the lifted load.
- 6- In order to carry the device to the platform, any outwardly extending part on the device should not be used as the fulcrum. To transport the device to the platform, only eyebolts or large holes in the base pedestal must be used for the purpose of specially transporting the device.
- 7- The appliance must not be tilted or tilted during transport or lifting.
- 8- When picking up the units from the truck and the truck, make sure that the load is evenly distributed across the forks and that the forks do not strike the body and the base frame.
- 9- If the units are taken from the truck by crane, make sure that the load is evenly distributed and no steel rope should be used as lifting equipment. The contact points of the device with the rope must be protected.
- 10- If another lifting method is used, suitable lifting wedges must be placed under the device to perform lifting.
- 11- Care should be taken to avoid severe impacts during lifting and placement of the devices and necessary precautions must be taken.
- 12- Products must be transported by fixing them to the transport vehicle.

- 13- The unloading of the products from the vehicle must be done at the accuracy specified for the loading process.

NO MATERIALS, TOOLS OR LOADS ARE PROHIBITED ON THE PRODUCTS !



**** *AIRONN cannot be held responsible for any adverse events that may arise during the transportation of the product.***

AIRONN

DURING INSTALLATION AND POSITIONING

Observe the following safety instructions during installation and positioning;

- The products should be transported to the place where they will be used in the enterprise with appropriate tools and safely.
- The products should be lowered to the floor slowly and in the correct position.
- During the installation process of the products, the system must be free of electricity.
- Before making the product connections, it must be ensured that the product is mounted securely on the wall, floor or the places specified in the project. If the product is to be mounted on a wall, use mounting brackets or clamps.
- Fans are not ready-to-use products when unpacked. The product must be connected and operated as specified in the project and installed after the protection grilles.
- Gloves should be worn during transport and assembly.
- Fans should not be used in environments where explosive dust may be present in the duct.
- Necessary measures should be taken to prevent the backflow of a possible gas leak (open gas pipes, other fuel combustion devices, etc.) inside the room.
- Before connecting the fan to the mains, check the housing for any damage. In addition, the fan impeller and suction section should be checked for foreign objects, if any, should be removed.
- There must be no obstacles in the air flow path.
- The fans are supplied with three-phase 380 V / 50 Hz alternating current. Before electrical power is supplied, it must be checked on its label.
- When the machine is out of service, it must be transported in accordance with the transport and transport instructions when transported to another location.

DURING OPERATION

The machine described in this manual is manufactured according to the applicable principles in accordance with the applicable law. The machine is equipped with the necessary technical solutions and devices to prevent any accident risk.

Observe the following safety instructions during operation:

- When the machine is running, there must be no personnel on the machine for any reason.
- The machine may only be operated by trained and authorized operators.
- Make sure that the protection grilles are connected before operation.
- Never reach into the fan during operation.



THE STAFF IS ABSOLUTELY FORBIDDEN WHEN THE MACHINE IS WORKING !

***** These prohibitions may in part be breached by trained maintenance engineers in the investigation to detect faults on the machine and to verify the causes of abnormalities.***

DURING MAINTENANCE

During the periodical maintenance of the machine, signs should be placed on the machine and in the area where the maintenance is performed, with the warning statement 'the machine is in service'. Maintenance should only be carried out by trained and qualified personnel.

Observe the following safety instructions during maintenance:

- Never clean the machine with water / pressurized water.
- Maintenance with the machine in the air is dangerous and prohibited. Maintenance work must be carried out after the machine is lowered to the ground.
- The electrical connection must be disconnected from the main line before any maintenance is performed on the machine.
- Maintenance should be carried out after the machine has come to a complete stop to prevent maintenance personnel from experiencing limb jamming or crushing.
- Hand tools to be used during maintenance must be robust and safe, and equipment that is defective or damaged should not be used.
- Personal protective equipment must be worn when working with power tools (grinding, drill, etc.).
- During electrical maintenance, live electrical cables must be replaced or repaired in a way that does not pose a danger to life safety.
- The work area to be serviced should be bright enough to avoid any occupational accidents and to facilitate the work of the maintenance personnel.
- If flammable explosives are present around the area to be maintained, it must be removed.



THE ELECTRICAL CONNECTION OF THE MACHINE MUST BE FULLY DISCONNECTED BEFORE STARTING MAINTENANCE !



MAINTENANCE OR REPAIRING SHOULD NOT BE PERFORMED WHEN THE MACHINE IS OPERATING !

**** When performing routine inspection and maintenance of some parts of the machine, the machine may need to be in operation. In this case, if the engineer, maintenance personnel or technician leaves the machine, the machine must be switched off.**

DURING SCRAP

All parts of the machine are made of recyclable materials. Thus, all parts can be reused as raw materials. No material which could harm human health was used in the production of the machine. When the machine has reached the end of its service life, it can be separated to the smallest component and safely sent to the relevant recycling facilities.

Follow the instructions below for scrapping:

- The cutting and drilling tools to be used when dismantling the machine should be used in accordance with the occupational safety rules.
- During dismantling, personnel should take precautions against limb pinching.
- Disassembled and cut-edged parts should be stored and stored in a way that does not cause work accidents.
- Oil from the machine components containing mineral oil such as reducer should be collected in a closed container in a way that does not harm human and environmental health and should be sent to recycling facility.
- The scrap parts should be classified according to their type (iron, copper, aluminum, plastic etc.) and sent to recycling facilities.
- No parts that make up the machine have radioactive properties. Therefore, scrapped machinery parts do not need to be stored in a special area.



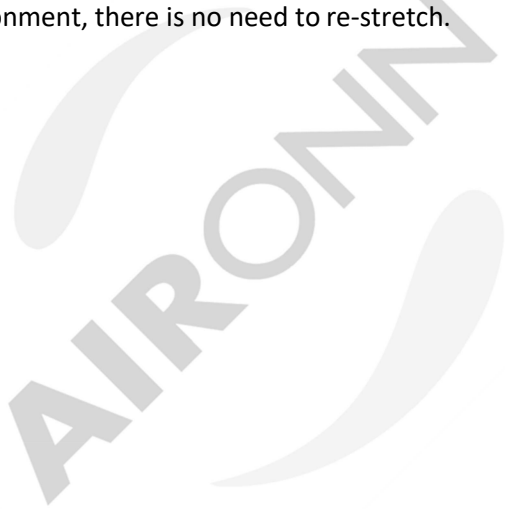
PRODUCT STORAGE

When storing the product after delivery, follow the instructions below.

- Cover the product with tarpaulin and make sure that it is protected against all weather conditions.
- The product should be stored in a closed area without unpacking until the time of installation..
- When moving the product from the storage area to the installation site, the general rules must be followed.
- It should be ensured that the products transported to the construction site or assembly area are not exposed to weather conditions during the storage and there should not be excessive dust and dirt in the environment.
- Products should not be stacked on top of each other. Do not step on the products or put weight on them.
- Panel, profile, etc. that may damage the product. materials should not rest on the product.
- The product should not be placed in places with high pedestrian / vehicle traffic.
- The product should be placed on the wedge in the storage area of the construction site.
- The product must be stored on the pallets shipped until installation.

General warning;

The product is shipped from our factory on pallet with stretch film or shipped in box. If water enters the stretch film on the product delivered to the customer or stored at the installation site, the product is exposed to corrosion. Since the water remaining between the product and the stretch film will have a corrosive effect on the product with the effect of sun, the stretch film should be removed quickly; the product should be dried under natural weather conditions and stretched again. In case the box gets wet; the product should be immediately removed from the box and dried in natural weather conditions. If the dried product can be stored in a safe and clean environment, there is no need to re-stretch.



INSTALLATION INSTRUCTIONS

Observe the following instructions when installing the products;

- *Check that the weight and dimensions of the fan are suitable for the mounting base.*
- *Only qualified personnel should install and install the fan on site. Incorrect installation or fan base may cause malfunctions. In such cases, products are not commissioned by Aironn authorized personnel and products are excluded from the warranty.*
- *In the air duct connection of axial fans, it is recommended to use flexible connection elements (connectors) on the suction and blowing sides in order to prevent transmission of vibration during ventilation operation to the ventilation duct. Air duct connections can be made easily by using holes of suitable diameter which are spaced apart on the flanges. After installation, the flexible connector must not be taut to prevent the air ducts from being affected by vibration; should be left flexible enough to absorb the vibration. If the axial fan is to be used as a smoke exhaust fan, the material to be used as the connector must be selected with high temperature resistance.*
- *Automatic control elements mounted on the device should be installed using appropriate material in order to prevent air leakage from the body. The controls must be installed in such a way that they do not impair the mechanical operation of the device.*

AXIAL FAN ASSEMBLY

- Care must be taken in preparing the foundation on which the fan will sit and when installing the fan in place. Incorrect and sloppy installation will adversely affect fan performance and cause fan failures.
- The fan base must be heavy enough to absorb vibrations and firm enough to prevent twisting and misalignment. Before mounting the fan, the concrete base must be completely solidified and gained resistance (completed the set time).
- The base on which the axial fan will sit must be 10 to 20 cm above the ground concrete.
- After placing the fan on the base, it should be measured horizontally along the shaft axis and placed horizontally or vertically depending on the type of installation.
- Make sure the installation location is clean. During operation, the impeller may attract foreign materials.
- Assembly; bolts, nuts and washers should be made using. The vibration mounts must be properly connected between the mounting legs of the device and the surface to be mounted. The device weight must be mounted on the vibration mount in such a way that it exerts force in the direction of discharge.
- There should be enough space to move around and maintain the fan easily and to clear the fan and accessories if necessary.
- The fan must be installed in accordance with the air flow direction label.

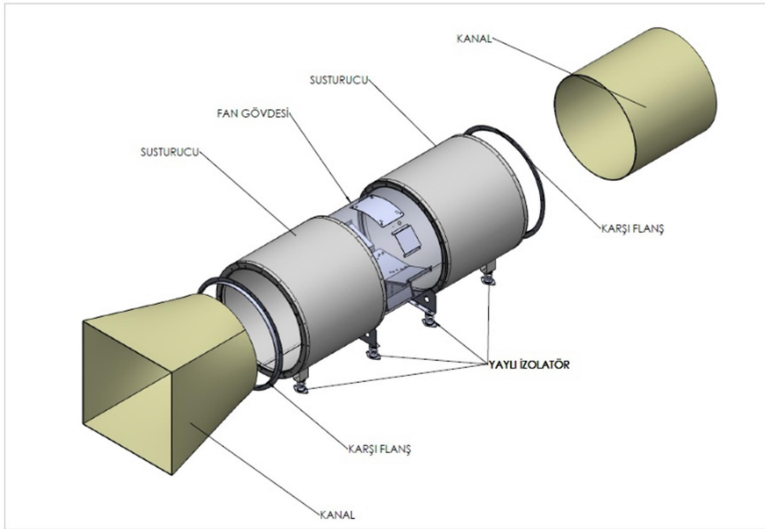


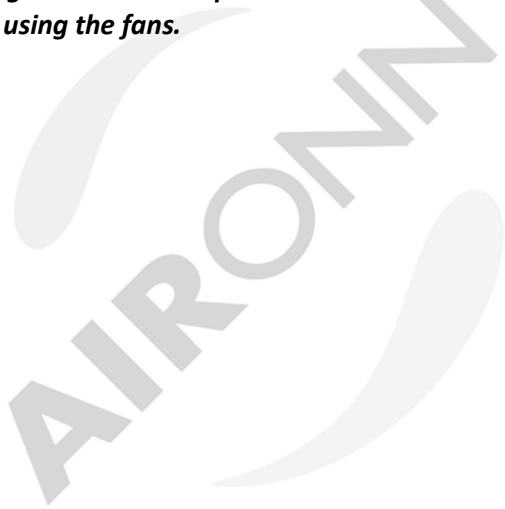
Figure – 10: Horizontal Mounting detail of Axial Fan and Accessories in shaft – 1

ELECTRICAL CONNECTION INSTRUCTIONS

- Before connecting the power cables, the existing power must be disconnected directly from the source.
- When mounting the apparatus, ensure that the mounting elements are capable of supporting the weight of the product and that all connections are made correctly.
- Hot-dip galvanized cable trays should be used for electrical cables and the cables must be routed in this channel regularly.
- Data cables should not be laid in the same conduit as energy carrying cables. Energy cables affect the data transmitted through data cables negatively.
- All cables must be systematically addressed and labeled with a durable material.
- Cables must be selected in accordance with the conditions specified in the fire regulations.
- The cables must be in one piece from the feed point to the receiver and must not be spliced.
- The mechanical assembly of the panel modules should be assembled and assembled on the ground on a supporting base to be prepared.
- All kinds of supply, power, control and measurement cables up to the panel and the bridge cables between the panel modules must be securely and tightly connected to the panel.
- Fan motor cables should be connected to motor terminal boxes and end connections should be made using flexible cable end connections, ferrule and cable lug.
- Close the motor terminal box covers and tighten the screws and union nuts sufficiently.
- Before connecting the apparatus, it must be checked that the main power supply is turned off even if the product is not working.
- The electrical connection information (frequency, voltage, power, etc.) indicated on the product must match the electrical connection information at the place of installation.
- For safety reasons, make sure that the grounding terminal on the terminal is connected to the building ground.

- Check that the overload relay and motor thermal are properly connected.
- If the thermal circuit opens in case of a problem (the product does not work), the system must be reset and re-commissioned from the mains.
- The product wiring must be as shown in the wiring diagram.
- It must be connected to a fixed installation in accordance with the installation rules, with a switch with contact disconnection at all poles.

**** Users are obliged to read the operation and maintenance manual carefully before using the fans.**



The first time you run your product;

- Make sure that the electrical connections of the product are safe and correct after disconnecting the power from the source.
- Carefully check that the safety equipment is properly connected.
- Make sure that the earth connections are correctly connected.
- Ensure that the electrical connection box and the cable are correctly, securely and watertight.
- Check that there are no obstacles in the air flow path and that the air outlet direction is in the direction indicated by the label on the body.
- Make sure that the blades are turning in the right direction.
- When the product is running, make sure that there is no vibration and vibration sound caused by the rotation of the fan or aspirator.
- The current and frequency values of the electrical supply must comply with the product label.
- In the event of an electrical safety device burning, immediately disconnect the power supply from the mains supply. Check the entire installation carefully before operating the product.
- If you encounter any problems, please contact the authorized persons.

***** When the product is used continuously, the type of fault should be determined in case of a possible failure. In order to repair the fault, the technical service department should be contacted.***

***** Never intervene by persons other than technical service.***

Way of Starting	Motor Power	
	$PN \leq 3 \text{ kW}$	$PN > 3 \text{ kW}$
	3.400 V	3.400 V
Direct Connection	Y - Connection (15b)	Δ - Connection (15a)
Y / Δ - Connection	Impossible	Remove the bridges (15c)

Table – 1: Electrical connection table according to power

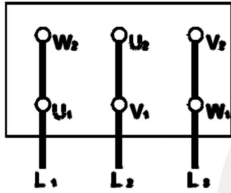


Figure – 12: Δ Connection

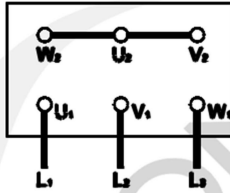


Figure – 13: Y Connection

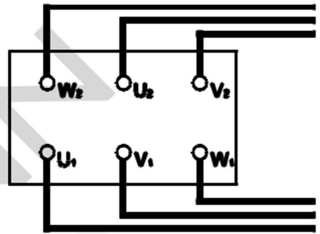


Figure – 14: Y/ Δ Connection

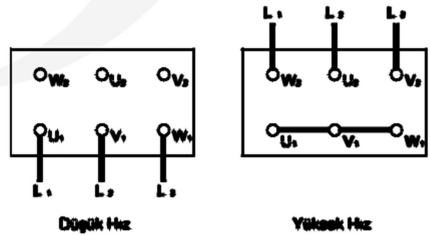
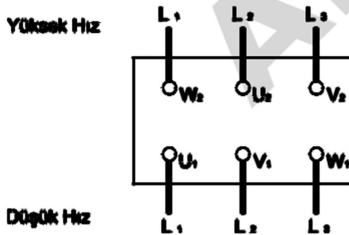
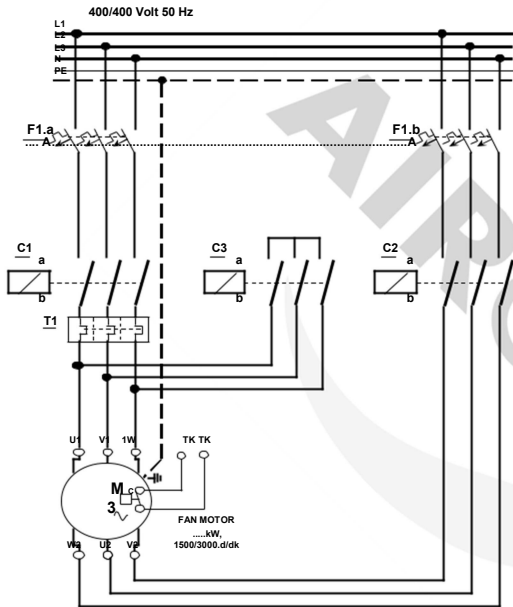


Figure – 15: Terminal for Double Speed Dahlander Winding Motor Connection Diagram



F1.a LOW SPEED / POWER FUSES

F1.b HIGH SPEED / POWER FUSES

C1 LOW SPEED / POWER CONTACTOR

M FAN MOTOR

1U-1V-1W FAN ENGINE WINDING TIPS (Low rpm)

2U-2V-2W FAN MOTOR WINDING TIPS (High rpm)

C3 HIGH SPEED / POWER BRIDGE CONTACTOR

C2 HIGH SPEED / POWER CONTACTOR

T1 LOW SPEED / OVER CURRENT RELAY FOR POWER

Connection Terms:

- 1- Low RPM operation:
Only works with C1 pull.
C1 in pulling condition;
C1 should be able to start if C2 and C3 are low.
- 2- High RPM operation:
Works with C2 and C3 pulling together.
Pulling condition of C2 and C3;
C1 must first drop (can be dropped by the fire alarm system)
After C1 falls, C3 must pull. (Start by the fire alarm system circuit.)
After C3 pull, C2 must pull.

ELEC. CONNECTION DIAGRAM

USE OF PRODUCT

Axial fans are easy to use. These usage features vary according to the wishes of the users. These;

- 1- Manual Use
- 2- Use with Automation

1-MANUAL USE

With manual operation, the product can be operated by operating the pako switch or fuse. According to the product model, it can be used easily and safely with 0-1 switch logic by connecting pako switch or fuse between electrical energy and junction box connection on the product.

2-USE WITH AUTOMATION

It is possible to control the product with a PLC. This application varies according to the project the user will use the product. User can use sensors, timer, wireless module, internet of objects, etc. use the product efficiently. If this application is preferred, it is recommended to add the "Manual operation" method externally as it will be needed during maintenance.

MAINTENANCE INFORMATION

PERIODIC MAINTENANCE

Simple abnormalities during machine start-up may require simple maintenance interventions. These interventions are simple but can be performed by the operator. More complex interventions should be performed by trained caregivers. Other complex interventions should be carried out by the manufacturer's technical service..

Detailed visual and functional checks should be carried out by a qualified technician at least twice a year according to the working year and the working environment in which the machine is located and the remaining life of the machine should be observed. The operator can take notes at regular intervals to determine the basic parameters of the machine's life. However, the maintenance technician should ask the operator about the general service:

- When functional abnormalities increase.
- There may be structural or mechanical failure during maintenance.
- When will the machine reach the theoretical usage limit (or has it been 10 years since the initial installation?).

All maintenance, warning abnormalities, or breakdowns require a prolonged period of use between the operator and the machine. This is an unsalable feature of maintenance, which refers to risks according to model and machine production.

Traditionally, maintenance operators are more educated and skilled than other operators. Ultimately, the safety of the person is the most important of all installations and procedures.

The following section lists the points that should be considered during ordinary maintenance;

- Before starting maintenance; signs regarding maintenance, warning and electrical connection ban should be put in place.
- Before maintenance or cleaning, check that the power supply has been disconnected from the mains supply, even if the product has been switched off.
- Maintenance should not be performed while the mechanical parts are moving.
- All electrical equipment must be checked regularly, connections checked, and damaged or worn cables and equipment replaced.
- Maintenance should be carried out taking into account the operating conditions of the product to prevent contamination or debris on the blades and the engine. Failure to do so may shorten the product life or cause danger.
- When cleaning the product, care should be taken not to disturb the balance in the blade and turbine.
- Check the tightness of the bolts that may come loose during maintenance.
- Any non-conforming parts must be replaced immediately.
- Flammable and combustible cleaners should not be used while cleaning the product.
- The product must never come into direct contact with water or pressurized water.

***** AIRONN does not assume any responsibility for malfunctions and personnel safety caused by any reason contrary to this manual.***

***** The electrical maintenance of the machine should be carried out regularly by trained personnel on a daily, weekly and monthly and six-month basis.***

POSSIBLE FAULTS AND SOLUTIONS

MECHANICAL FAULTS

FAULT	REASON	SOLUTION
Bolt and nut loosening	Vibration exposure	Torque tightening of bolts, and nuts using self-flanged bolts, nuts and vibration mounts
Vibration breaks the chock heads, if not fixed, the machine moves.	The vibration mounts are under a two-year warranty. If it works under bad conditions, it may break after about 3-4 years.	Replacing the vibration mount heads
Rubbing of the wire mesh to the fan	Exposure to external factors such as beating	Replacing the wireframe
Fan rubbing against fan housing	Shear of the body as a result of the application of force from the top or side surfaces of the device	Elimination of external factors, Fan blades shortening (turning), Removing material trapped in the fan (nails, gloves, helmets, etc.)
Failure to reattach the service door after removal	Exposure of the device to moisture, water	Closing the service door
Malfunction of parts such as loosening, breakage or breakage of motor connection screw, fan breakage	Impairment of the fan as a result of impact	Balancing the fan, If the motor connection screw is loose, it must be tightened. If the motor connection screw is broken, it must be replaced. If the fan is damaged, the fan blade or fan must be replaced.
Friction, jamming, deformation as a result of the balance of the fan. If the fan is operating at high speed, the fan may warp the propeller break, or the engine may burn	Removing the fan guard cover	Regular inspection and maintenance of the fan and all mechanical parts
Friction, breakage and unbalance of the fan, combustion engine. If the thermal relay does not close, the motor windings may be damaged. If the connection is broken and the screw is stuck in the fan, the motor base may slip.	Loosening and displacement of motor feet, excessive balance.	Tightening or replacing screws, Tightening or replacing bolts
The junction box comes out and shakes	External factors such as forcing, dislocation due to vibration	Regular inspection of fans and other mechanical components

Table – 2: Possible mechanical failures and their elimination

ELECTRICAL FAILURES

FAULT	REASON	SOLUTION
Voltage failure	Irregular electricity, lack of desired amplitude. Loosening of motor electrical terminal connections, irregularity in the panel and the lines following the panel	The operator must regulate the power transmission line or evenly distribute the phase distribution
Failure of motor	No star or triangular connections	Making star triangle connections
Loosening, displacement and rupture of the motor terminal connection shoes	Exposure of the cable to mechanical stress from the outside, corrosion due to loosening of the bolts, use of non-quality material	Check and connect.
Short circuit due to breakage of terminal of terminal connection screws	Exposure or excessive tightening of the cable during installation due to external mechanical stress	Replacement of terminal screws
Short circuit	Inverted or loosely connected cables between motor and junction box, Disconnection of delta terminal of motor to external junction box	Inspection and maintenance of fans
Fault in current-voltage relationship, thermal relay in the circuit	Irregular rated current due to outside temperature	Checking cables with current meter
Motor shutdown due to overheating of motor windings	Low voltage due to corrosion at cable ends	Replacement of bearings, elimination of harmful external influences
Cracking and breakage of the plastic blades of the engine rear cover cooling fan	Corrosion, impact exposure	Replacing the fan blades
Cable burning	Loosening and ingress of fittings	Tightening or renewing of fittings
Electric leakage to the housing during re-grounding during maintenance	Inadequate grounding	Checking whether the earthing is connected and functional
Burning of motor winding	Over current	Changing the engine
Engine combustion, noise from engine	Irregular current, irregular phase, change of phase sequence	Control of motor, notification to operation, correction of current or phase
The engine does not start due to opening the control switch on the service door. (If control key is present) Fault in the control key on the service cover.	Corrosion, arc formation, breakage of end connections, or exposure to impact.	Check whether the key on the service cover and the engine are running.

Table – 3: Possible electrical failures and their elimination

WARRANTY CERTIFICATE

MANUFACTURER OR IMPORT COMPANY	
TITLE	AIRONN HAVALANDIRMA SANAYİ ANONİM ŞİRKETİ
ADDRESS	AIRONN PLAZA - Çamlık Mah. Şenol Güneş Bulvarı No:28/A Ümraniye / İstanbul
TEL / FAX	(0216) 594 5696 / (0216) 594 5717
SIGNATURE AND CASE OF COMPANY AUTHORITY	
SELLER COMPANY	
TITLE	
ADDRESS	
TEL / FAX	
INVOICE DATE and NO	
SIGNATURE AND CASE OF COMPANY AUTHORITY	
PRODUCT 'S	
SPECIES	FAN
BRAND	AIRONN
MODEL	
BANDROL and SERIAL NO	
DELIVERY DATE and PLACE	
MAXIMUM REPAIR TIME	20 WORKING DAYS
WARRANTY PERIOD	2 YEARS
CUSTOMER	
NAME AND SURNAME	
ADDRESS	
TELEPHONE	