REMAIR

High Volume Low Speed Fan Systems

www.remairfan.com

HVLS Type Helicopter Ceiling Fan

Assembly & User Manual

CE

CERTIFIED ISO 9001:2015 COMPANY

YERLİ ÜRETİM

CONTENTS

USER MANUAL DESCRIPTION

User manual REMAir Industrial type HVLS Helicopter fans is a part of Remak Reduktor Makina Sanayi Tic. Ltd. Sti. by has been prepared. The main purpose of the User's Guide is; To ensure that the machine is operated in accordance with the rules specified in the manual for the user to recognize the machine and its safety.

All applications other than the instructions of the user manual will void the warranty of the device. For this reason, users should keep the "Operating Guide" for the life of the machine.

POINTS TO BE CONSIDERED DURING PREPARING FOR DELIVERY, LOADING AND SHIPPING

Care must be taken while loading and transporting the machine. Attention should be paid to impacts, friction and scratches. Shipping of machines Appropriate equipment should be used for loading and unloading the vehicle.

POINTS TO BE CONSIDERED DURING THE MACHINE INSTALLATION

The assembly of the machine must be carried out by technically competent persons, in accordance with the instructions given in the User's Manual. Otherwise The manufacturer does not accept any responsibility as a result of the problems to be experienced.

CAUTION AND SAFETY

All operations performed during the assembly of the machine must be carried out in a way that Occupational Safety measures are taken. Putting the machine into operation must be carried out by authorized persons with appropriate equipment. It is delivered ready on the entire electrical installation of the machine. Any change or intervention in the system carries the risk of harming the person or the machine as it will disrupt the existing system.

FEATURES

Gearbox: Remak Gearbox Rm10 Monoblock Body
n1: 110 rpm Shaft Diameter: 30mm

Motor: 1.1KW Three Phase (Industry) Energy in accordance with IE3 Standards high efficiency
engine n1: 1400 rpm 90B14 Voltage: 380V

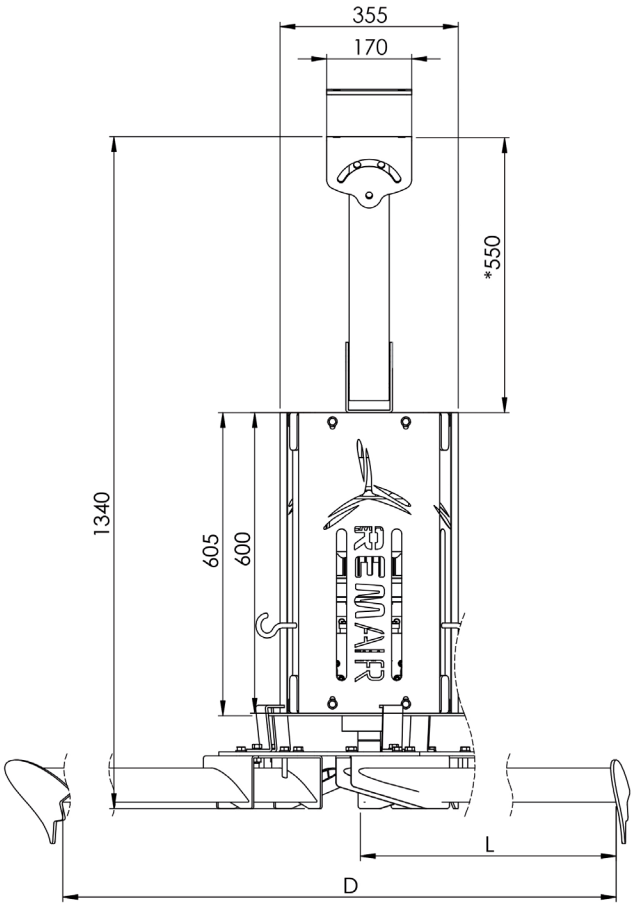
Chassis: Special laser cut sheet metal selected according to the load capacity. It was applied as one coat of epoxy paint, anticorrosion and oven paint.

Wing: Aerodynamics providing maximum air displacement Profiled Aluminum Blade Technology.

Motor Drive: For long life and maximum performance programmed inverter.

Automatic Air Conditioning: An automatic system operating at the desired temperature that does not require human.

TECHNICAL DIMENSIONS



MODEL	DIAMETER (D)	WING LENGTH (L)
REM-4	4 METER	1855 mm
REM-5	5 METER	2342 mm
REM-6	6 METER	2841 mm
REM-7	7 METER	3341 mm

* Profile size is adjusted according to the ceiling mounting height.

INSTALLATION STAGES

Before installation, please review the following steps.

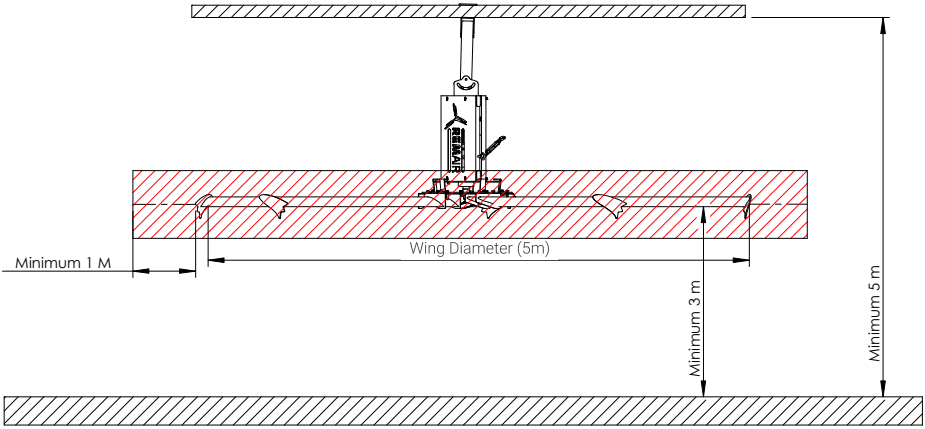
To eliminate unforeseen risks during installation and for a quick installation, please complete the checklist below completely.

Detailed examination of the place where the ceiling fan will be installed.

- The height of the point where the fan will be connected to the ceiling should be at least 5 meters.
- The distance between the fan blades and the ground should be at least 3 meters.
- During the operation of the fan, there should not be any element that will block the blades near the fan blades.
- If there is an object around the fan, it should be located at least 1 meter away from the point where the blade ends, depending on the diameter of the fan.
- For safety anchor ropes, 3 main solid points should be selected and the angle between the steel ropes should be kept equal.
- At the installation point, “Basket Crane” or “Lift” should definitely be used in order for the device to reach the ceiling. Otherwise, serious work accidents may be caused.

Considering all the above-mentioned items, the assembly phase can be started.

SAMPLE SITE EXPLORATION



Field not to be entered

1) The location where the REMAir HVLS Ceiling Fan will be installed must be at least 5 meters above the ground.

2) The height of the wings from the ground should be at least 3 meters.

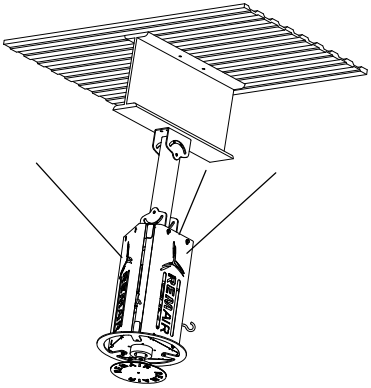
3) Wing diameter may vary depending on the model.

While the ceiling fan is operating, there should be no objects within 1 meter of the blades in the section where the blades are located. Otherwise, the device and blades may be damaged.

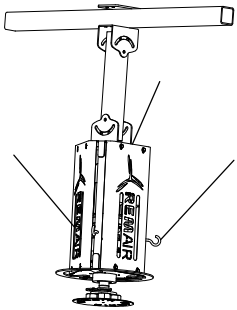
ASSEMBLY SECTION

REMAir systems come with the main body ready to eliminate confusion and extra effort in the field. The end user only needs to determine the place where the fan will be installed. Then the following assembly steps should be followed.

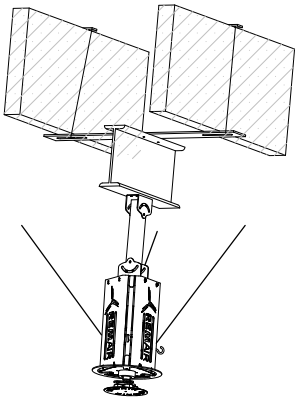
1) CEILING MOUNT



NPI (I Profile) Connection



Mounting with Connector

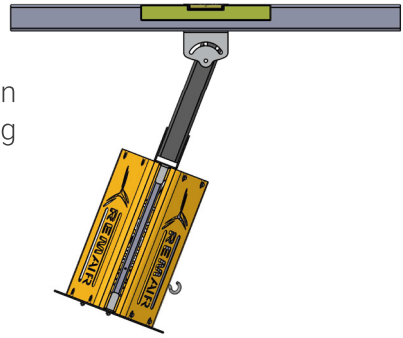


Concrete Block Application

BALANCE APPLICATION

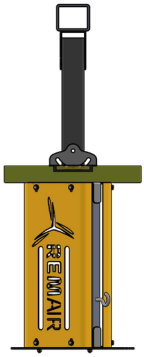
Step 1 :

Balancing the upper profile connection with the help of a spirit level and fixing it by tightening the bolts.



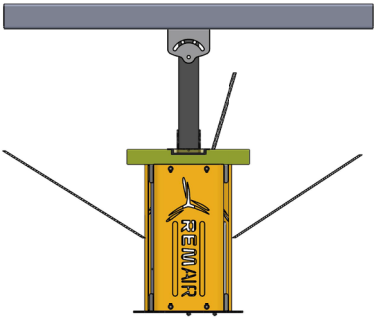
Step 2 :

Balancing the lower profile connection with the help of a spirit level and fixing it by tightening the bolts.



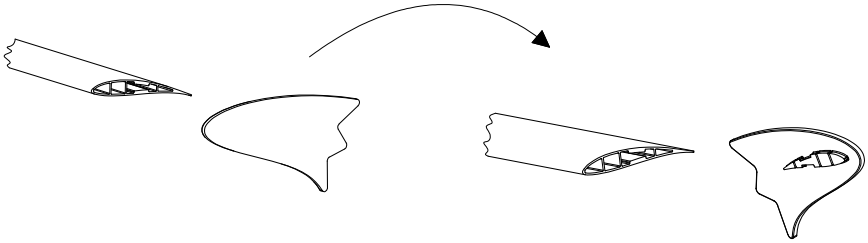
Step 3 :

Fixing the body, which is fixed together with the help of both connecting bearings, to stable and solid places with steel ropes from three sides. Finally tightening the steel ropes on the spirit level in balance.

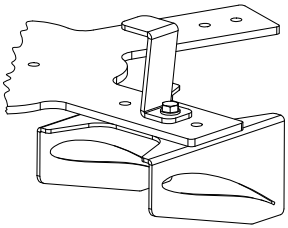


2) WING CONNECTIONS

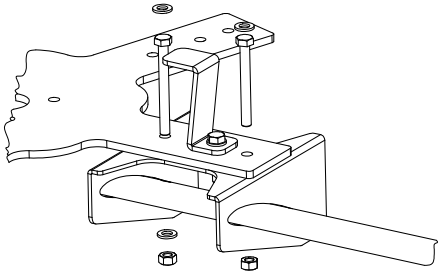
1) Assembling the wing and wing flap.



2) Assembling the rotor and wing profile sheet with the safety sheet.



3) Mounting the wings to the wing profile sheet with bolts, washers and fiber nuts.



3) ELECTRICAL CONNECTION DIAGRAMS

General considerations

Making an motor driver board.

The electrical panel, where all cable connections are connected and which will house the inverter, is made by the relevant authorized electrician.

Laying the cables going from the inverter to the motors.

All cables going to the motors must be pulled separately from the panel. Otherwise, attachments reproduced from a single cable have the possibility of burning all the cables on the system.

Pulling the cables that will go from the main transformer to the inverter board. Cable specification: 4x6 TTR**

In order for the electricity from the main transformer not to damage the inverter, a fuse of the selected inverter value should be installed.

While connecting the motor and inverter, thermals of "4A" should be added to protect the motors from sudden current fluctuations.

***Recommendation:** In order to prevent the motors from burning, the motor and inverter 1.1KW motor protection switches, which are widely used in such systems, should be added to the connection between.

All motors used in the system are delivered as tested. Motor burns are not covered by the warranty.

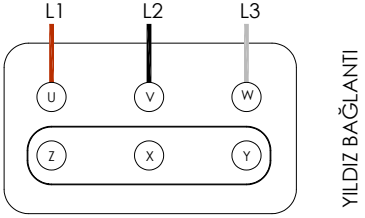
Faults occurring in the inverter are subject to the warranty processes of the relevant inverter brand. REMAir company is not a decision maker regarding the product of a different company. Inverter supplies can be resolved with the inverter manufacturer.

a) Motor Connections

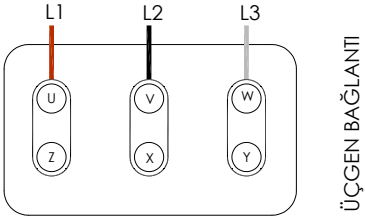
Motor connections vary according to the inverter output voltage you will use. There are two options as 220V and 380V voltages taken from the inverter output.

The motor connections in REMAir systems come in the form of 380V (Star Connection) in ready systems. The motor pole connections below can be adjusted according to the voltage to be selected.

A1) 380V Motor Terminal Connection



A2) 220V Motor Terminal Connection



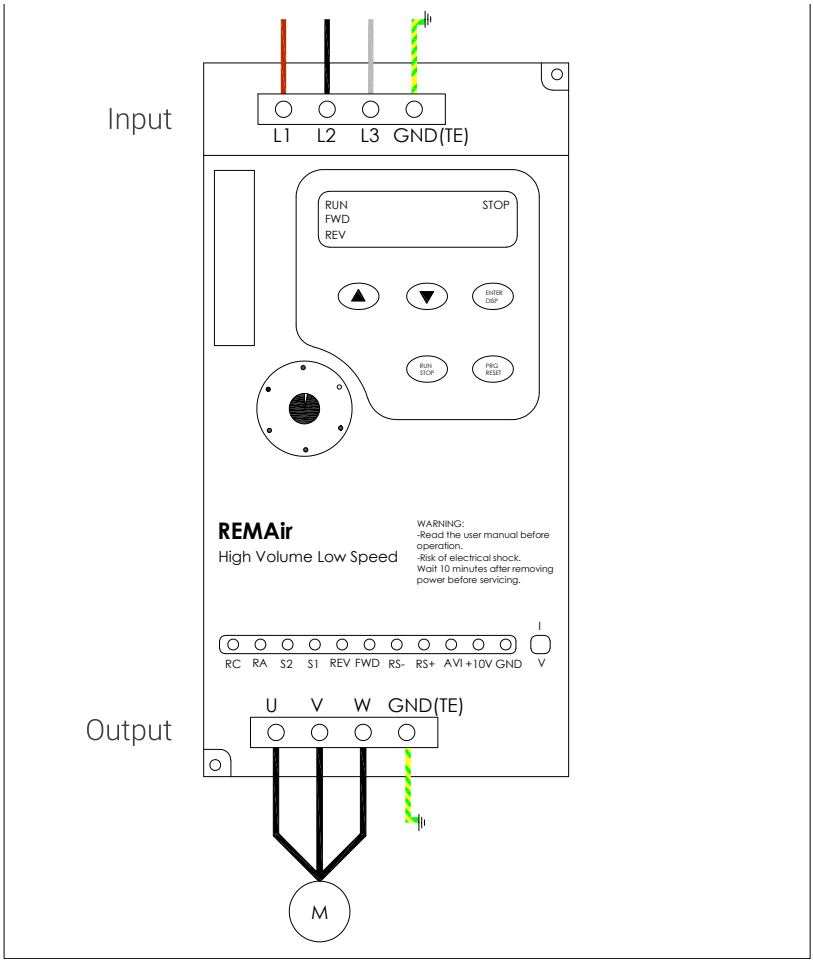
EU ELECTRICAL CABLE COLOR CODE		
FUNCTION	LABEL	COLOR
PHASE 1	L1	
PHASE 2	L2	
PHASE 3	L3	
PROTECTIVE EARTH	TE	

b) Inverter Connections

Faults related to the inverter are subject to the warranty processes of the relevant manufacturer that produces the inverter.

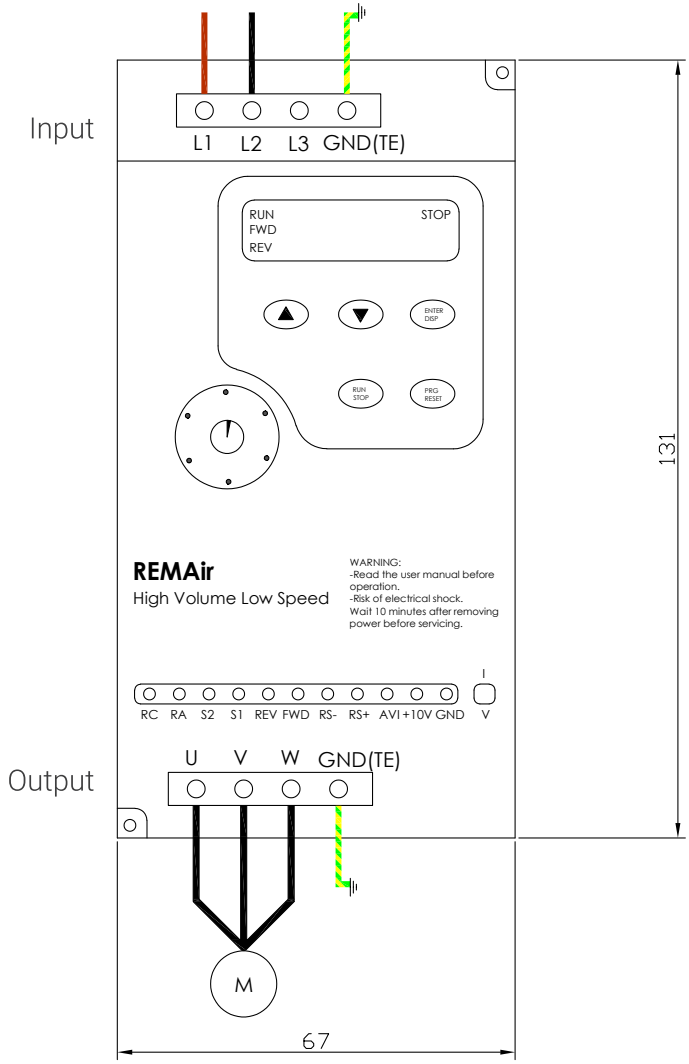
Your motor and main line connections must be made in accordance with the inverter connection diagram below.

b1) Three Phase 3880V Connection Diagram



b2) Single Phase 220V Connection Diagram

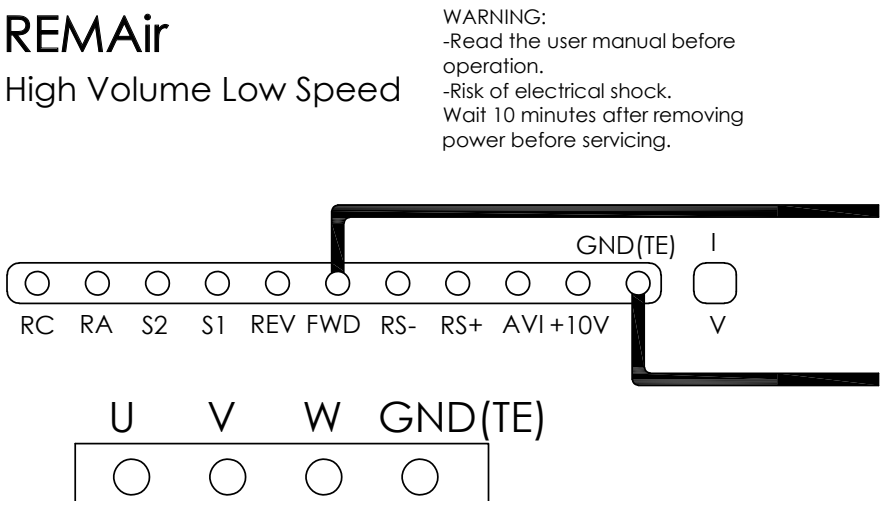
In general, 220V inverter is used in ready-made REMAir systems where a single fan is controlled. Please check the label on your inverter.



b3) Off Board Switch Wiring Diagram

If the inverter is to be controlled from outside the panel with an internal key, Invertor Terminal connections should be made as follows.

Then, “P101 = 0” and “P102 = 1” commands must be entered into the inverter.



Important Considerations:

REMAir HVLS Fans must be installed as a result of the above-mentioned issues. Otherwise, mechanical and electronic systems may be damaged as a result of an application other than the specified conditions. Any application other than the user manual instructions will void your device’s warranty as a result of user error.

Important Warning

The system should never be operated without an inverter. Otherwise, the electronic and mechanical system may be seriously damaged and your device will be out of warranty as a result of user error.

Electrical connections must be made by experts who are fully authorized in the field of electricity.

Powering off the system while the fans are running causes serious damage and causes your device to be out of warranty as a result of user error.

Incorrect motor and inverter connections cause damage to motors or inverter and cause your device to be out of warranty as a result of user error.

INTERVENTION WITH THE SYSTEM IN ANY WAY WHILE THE FANS ARE WORKING AND SEVERE STOP/START ACTION CAN CAUSE SERIOUS DAMAGES TO THE GEARBOX IN THE SYSTEM.

OPERATIONS RESULTING FROM MISUSE OF THE SYSTEM, INCLUDING USER FAULT, VOID THE WARRANTY.

MOTOR BURNINGS ARE CAUSED BY USER FAULT AND ARE NOT COVERED BY THE WARRANTY.

DEFECTS THAT OCCUR IN THE INVERTOR ARE SUBJECT TO THE WARRANTY PROCESSES OF THE INVERTOR BRAND.

FAULT (FAQ)		
FAULT	**CAUSE**	**SOLUTION**
CONTINUOUS SOUND	The bearings or gears inside the gearbox may be damaged. If it is the sound coming from the mechanical system, any mechanical parts on the fan may have loosened.	For the noises coming from the gearbox, apply to Remak Gearbox. For any noise from the mechanical system, check the contacting surfaces and tighten the screws.
FAN BLADES TURN IN THE WRONG DIRECTION	Motors determine the direction of rotation according to the way the cables on their poles are attached. Incorrectly installed motor poles cause reverse rotation.	The motor pole connections in the motor terminal box or on the control panel have not been moved.
FAN DOES NOT PRODUCE ENOUGH AIR	REMAir fan blades are made to provide maximum air circulation and mounting in different positions may prevent air circulation.	If the assembly stages of the whole system have not been reviewed and the wings are connected in reverse, it should be applied as in the assembly diagram.
THE SYSTEM LOOKS WORKING BUT THE WINGS DO NOT TURN	If the motor is running but the fans are not turning after the inverter gives the command to the motor to run, the gear reducer gears or the bearing system may be damaged.	First of all, reducer should be disassembled and gears and keyways should be checked. Then, if the reducer is sound, the bearing rollers and wedges were not checked.
FAN STOPPING AFTER OPERATING	Motors are devices that draw too much current at startup. Excess current is always cut off by the inverter to protect the motor, or the thermals inside the panel may prevent excessive current draw and shut down the system.	As the first step, the motor that draws excessive current should be found. Then the motor connections (Delta/Star) should be checked for compatibility with your system. The thermals in the panel should be increased up to a maximum of 4A. (High-set thermals always run the risk of burning the engine.)
WARNING CODES GIVEN BY THE INVERTOR	It indicates that there is some voltage and amperage fluctuation in the main system and the inverter puts itself into protection mode in off state.	The inverter manufacturer's technical service should be contacted.

FAULT (FAQ)		
FAULT	**CAUSE**	**SOLUTION**
OIL LEAK	It is understood that the oil in the reducer system inside the main fan body is leaking.	The GEARBOX must be disassembled and the factors causing oil leakage must be eliminated.
MUCH SHAKING OF THE FAN WHEN OPERATION	Indicates that the fan is not properly installed evenly.	It is necessary to take the balance again from the main holder profile and pull the tension ropes evenly.
UNBALANCED ROTATION	Since any wing connection on the system will create an imbalance in the system, rotation occurs by wobbling.	All blade connections and rotor connections should be checked, then the necessary bolts should be tightened.
INVERTOR WORKS BUT THE SYSTEM DOES NOT WORK	Electronic systems are based on the logic that the entire circuit is ideally correct. If a wrong connection has been made in your system, the circuit will not work.	All electrical connection Starting from the motor, the inverter, then the panel connections, and finally the energy drawn from the main line were not checked.
SOME FANS STOPPING IN SYSTEMS WITH MORE THAN ONE FAN	The thermals in the electrical panel may have tripped due to the force of some motors and drawing too much current.	First of all, if there is windy weather at the moment of operation, the motor may be forced and draw more current due to the reverse air flow, so the thermals throw and stop the fans. The fans should be stopped in a controlled way when it gets difficult.
OVERCURRENT DRAWING OF THE MOTOR	It is known that electric motors draw more current during takeoff. In addition, excessive current draw after starting indicates that the motor is stalled or about to burn out.	The system may be struggling. Check the mechanical parts. The motor may be burnt out, the motor needs to be disassembled and checked.
FAN STARTING UP IMMEDIATELY	Fan systems have slow start and stop features in order not to be exposed to high torques. Based on this, the inverter software may not be working in the system that provides fast start-up or the inverter is disabled on the main panel.	The system must be turned off and on via the inverter. If the inverter is disabled, it must be activated. If the inverter starts and stops very suddenly even though it is running, the system program should be checked. The inverter must be reprogrammed.

Control Chart		
Control Section	**Cleaning / Maintenance**	**Control**
Main Board	**Air/wipe cleaning after 1 month visual inspection**	**Every day *Especially inverter operation check and fan cleaning***
Electric Cables	**-**	**Every day *Especially inverter operation check and fan cleaning***
Electric Motor	**-**	**6 months**
Gearbox	**12 months (Oil Change)**	**6 months**
Mechanical Bearing	**Air/wipe cleaning after 1 month visual inspection**	**6 months *Especially bearing cleaning***
Rotor	**Air/wipe cleaning after 1 month visual inspection**	**1 week *Especially the bolted connection on the pass shaft***
Wings	**Air/wipe cleaning after 1 month visual inspection**	**3 months *Tightening the bolts holding the wings***

WARRANTY CONDITIONS

Provided that the principles, warnings and standards specified in the user manual are followed, REMAir branded products have a 2 (two) year warranty against manufacturing defects*.

- The time spent on repairs to be made within the warranty period is added to the warranty period.
- The warranty period of the goods replaced during the warranty application is limited to the remaining warranty period of the purchased goods.
- Faults occurring in the inverter are included in the warranty processes of the related inverter manufacturer. Although the REMAir brand is not a decision maker, it follows the warranty processes of the company that produces the inverter. The costs to be made in repairs and maintenance will be communicated to the user.
- Warranty period; It starts from the date of delivery of the goods to the company and the warranty period is 2 (two) years from the date of delivery.
- Delivery costs and performance are the responsibility of the buyer requesting warranty coverage.
- Pursuant to the Law on the Protection of the Consumer No. 4077 and the Communiqué on the Implementation Principles of the Warranty Certificate, which was put into effect on the basis of this Law, the use of this Warranty Certificate, T.R. Approved by the Ministry of Science, Industry and Technology, General Directorate of Consumer and Competition Protection.

**CONDITIONS WITHOUT WARRANTY:

- Reducer gears stripping as a result of the fans being turned off suddenly and working without inverter. **
- Sudden shutdown of the inverter by the main switch while the system is running and damage to the whole system. **
- Malfunctions occurring in the inverter are subject to the warranty period of the related company that produces the inverter. In case of any malfunction or repair, the conditions of the inverter manufacturer are taken as basis and communicated to the user. The REMAir brand is not involved in any process.
- Any physical impact on the system
- Burning of fan motors due to forced or incorrect connection
- Non-product faults caused by the existing electrical system.
- Damages and malfunctions caused by the wrong type selection.
- The device is not installed with equipment in accordance with the assembly picture in the user manual, low voltage or excess voltage; using ungrounded sockets; damage and malfunctions from faulty electrical installations.
- Damages and malfunctions caused by transportation, unloading, loading, storage, external physical (collision, collapse, breaking) and chemical factors after the delivery of the device
- Damages and malfunctions caused by environmental factors (earthquake, fire, flood, flooding, lightning strike, humidity, exposure of the device to frost, oilfree operation).

*The end user who purchased the device has accepted all the warranty terms and general issues that are not covered by the warranty. *

Our product, the information of which is given below, is under warranty for at least 2 (two) years and/or according to the value determined by the measurement unit determined by the Ministry.

Warranty Statement

Warranty Statement

Name of Manufacturer Company: Remak Reduktor Mak. San. Ltd. Sti.

Main Factory Address: Kemalpaşa Organized Industrial Zone / Kuyucak Yolu No: 211 Kemalpasa / Izmir

Telephone: +90 (232) 479 68 48 / +90 (232) 479 68 49

Product Name: REMAir HVLS Fans

Brand: REMAir

Origin: Turkey / Izmir

Model Type:

Year of manufacture:

Serial number:

Delivery date:

Optimal Repair Time: 15 Business Days

Seller Company Stamp:	Manufacturer Company Stamp: