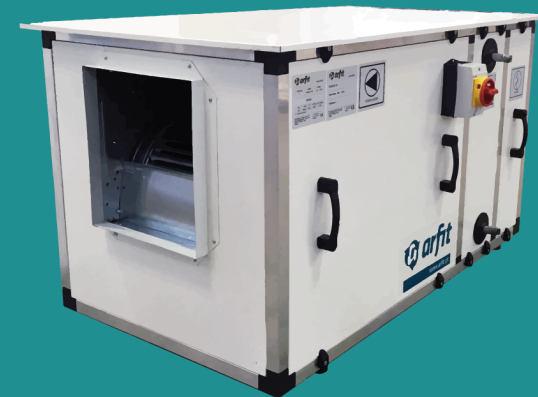


your
COMPLETE SOLUTIONS



 **arfit**

SEDE
Zona Industrial da Maia I, Sector VIII
R. Domingos Ferreira da Costa, 280
4475-297 Maia - Portugal

T. +351 223 797 631

FÁBRICA
Rua José Cabral, 150
4470 - 637 Maia
Portugal

comercial@arfit.pt



www.arfit.pt

ECOAIR
MODULAR AIR CONDITIONING UNITS
INSTRUCTIONS MANUAL [EN]



Quality Management System certified according to the Norm ISO 9001:2008 by TÜV Rheinland Portugal.

ASSEMBLY AND MAINTENANCE

Like any equipment, ECOAIR modular air conditioning units must be installed correctly and maintained in order to guarantee their proper functioning throughout the equipment's life cycle. The following recommendations should be followed if they are valid to the equipment acquired.

Warnings

- The power supply system to which the appliance is connected must comply with current standards.
- The appliance must be correctly connected to an efficient ground connection, as stated in current electricity safety regulations. If you have any doubts, please request ask a qualified professional to perform a network control.
- The appliance should only be installed and used according to current regulations and to the purpose for which it was designed. Install it or use it for different purposes or unrecognised accessories may be dangerous.
- The manufacturer is not liable for damages resulting from improper assembly, use or maintenance of the products nor for repairs carried out by non-qualified persons.
- Never use the unit to support other equipment.
- Before opening the unit door, make sure all electric parts have been switched off. Be specially careful to check if the ventilator is switched off and cannot be accidentally activated.
- Watch for sharp edges inside the unit.
- Never climb nor walk on the unit.
- It is mandatory to have a local switch-disconnector in the unit.
- Electric resistances must be interconnected to control devices that should prevent them from working when the ventilator is not functioning, stop them if the security thermostat is activated and guarantee a post-ventilation period when they are switched off to allow them to cool down.
- Movable parts - Before conducting any intervention, make sure the ventilator is not functioning.

Start the equipment

- Make sure there are no unrecognised parts inside the module.
- Check if the turbine is turning freely and is not touching the volute of the ventilator or any other parts.
- Check the belt tension. After the first working hours, check all these items again and adjust them if necessary.
- Check if the power supply characteristics are right for the engine used and make sure the equipment is connected to an efficient ground connection.
- The power supply of the engine should be that indicated in the engine instructions. Check if the turbine is turning in the right direction.
- After closing the access covers, check if engine's energy consumption matches that indicated in the type plate. Warning: the absorbed intensity should never be higher than that indicated in the type plate.
- Check if there are no strange vibrations or noises.
- In belt driven ventilators, the size of the motor pulley is variable, which allows the rotation speed of the ventilator to be adjusted. **Warning:** any time there is a change in the ventilator's rotation speed, check the engine's electric consumption.

CE DECLARATION OF CONFORMITY



PORTUGAL
Zona Industrial da Maia I, Sector VIII
R. Domingos Ferreira da Costa, 280
4475-297 Maia

T. +351 223 797 631
F. +351 223 720 231

info@arfit.pt
www.arfit.pt

N 41° 15' 37" 48
W 8° 38' 5" 23

Declaração de Conformidade CE (PT)

A Feio & Comp. S.A. c/ sede na Rua Domingos Ferreira da Costa, 280, Zona Industrial da Maia I, sector VIII, 4475-297 Maia, Portugal, declara que o produto **Unidades Modulares de Climatização ECOAIR com os modelos ECOAIR 15, ECOAIR 20, ECOAIR 24, ECOAIR 35, ECOAIR 47, ECOAIR 59, ECOAIR 69, ECOAIR 88** está em conformidade com as seguintes diretivas e normas em vigor aplicáveis.

A Feio & Comp. S.A. salienta que o domínio da declaração da conformidade é extensível apenas e só ao produto acima referido e desde que sejam respeitados os requisitos inerentes à instalação e utilização do bem em causa. A Feio & Comp. S.A. não se responsabiliza pela junção/integração deste produto com outro equipamento, ou máquina que não tenha sido referenciado/previsto nas instruções. A pessoa responsável pela compilação do processo técnico é : Pedro Miguel Guimarães de Sousa e Silva, na morada acima indicada

Declaration of Conformity CE (EN)

Feio & Comp. S.A. with headquarters in Rua Domingos Ferreira da Costa, 280, Zona Industrial da Maia I, sector VIII, 4475-297 Maia, Portugal, declares that the product **Modular Air Handling Unit ECOAIR with the models ECOAIR 15, ECOAIR 20, ECOAIR 24, ECOAIR 35, ECOAIR 47, ECOAIR 59, ECOAIR 69, ECOAIR 88** fully in conformity with the following directives and standards.

Feio & Comp. S.A. declares that the declaration of conformity is regarding the above mentioned product as long as the installation and user rules are respected. Feio & Comp. S.A. can not be responsible when this product is integrated or connected to any other equipment not mentioned of the instruction manual. The person responsible for compiling the technical file is: Pedro Miguel Guimarães de Sousa e Silva, at the address above.

Declaración de Conformidad CE (ES)

Feio & Comp. S.A. establecida en Rua Domingos Ferreira da Costa, 280, Zona Industrial da Maia I, sector VIII, 4475-297 Maia, Portugal, declara que el producto **Unidades Modulares de Climatización ECOAIR con modelos ECOAIR 15, ECOAIR 20, ECOAIR 24, ECOAIR 35, ECOAIR 47, ECOAIR 59, ECOAIR 69, ECOAIR 88** esta en conformidad con las siguientes directivas y normas en vigor aplicables.

Feio & Comp. S.A. establece que el dominio de la declaración de conformidad es extensible sólo y únicamente para el producto mencionado anteriormente sujetos al cumplimiento de las exigencias inherentes a la instalación y el uso de los bienes en cuestión. El Feio & Comp. S.A. no se hace responsable de fusión / integración de este producto con otros equipos o maquinaria que no ha sido referenciada / provista con las instrucciones. La persona responsable de la elaboración del expediente técnico es: Pedro Miguel Guimarães de Sousa e Silva, a la dirección precitada

Déclaration de Conformité CE (FR)

Feio & Comp. S.A. basée a Rua Domingos Ferreira da Costa, 280, Zona Industrial da Maia I, sector VIII, 4475-297 Maia, Portugal, déclare que le produit **Unités Modulaires de Climatisation ECOAIR avec des modèles ECOAIR 15, ECOAIR 20, ECOAIR 24, ECOAIR 35, ECOAIR 47, ECOAIR 59, ECOAIR 69, ECOAIR 88** est conforme aux directives et normes en vigueur indiquées.

Feio & Comp. S.A. déclare que le domaine de la déclaration de conformité est extensible uniquement pour le produit mentionné plus haut sous et sous réserve de conformité avec les exigences inhérentes à l'installation et à l'utilisation des biens concernés. The Feio & Comp. S.A. n'est pas responsable de fusion / intégration de ce produit avec d'autres appareils ou machines qui n'a pas été référencé / prévue dans les instructions. La personne responsable de la constitution du dossier technique est: Pedro Miguel Guimarães de Sousa e Silva, à l'adresse ci-dessus.

Diretivas/Directives/Diretivas/Directives:	Normas/Standards/Normas/Normes:
<ul style="list-style-type: none"> • Machine Directive 2006/42/CE • Low Voltage Directive 2006/95/CE • EMC Directive 2004/108/CE 	<ul style="list-style-type: none"> • EN 60335-1:2010 • EN 60947-3:2009 • EN 60947-5-1:2004+AC:2005+A1:2009 • EN 13857:2006 • EN 12100-1:2003 • EN 12100-2:2003 • EN 60204-1:2006

Maia, 08 de Abril de 2013

Direção Técnica

Pedro Silva



Feio&Comp, S.A
C.S. E300.000.00 • NIF 500 110 409

TROUBLESHOOTING

Issue	Possible Cause	Check	Possible Solution
The consumption of the engine is too high	Point of operation is not the same as predicted;	Check flow and load loss;	Reduce rotation speed;
	Excessive flow;	Ventilator speed;	Create load loss in the equipment;
Excessive air flow	Air distribution system, underestimated load loss in the equipment;	Check flow and load loss;	Reduce rotation speed;
		Ventilator speed;	Create load loss in the equipment;
Insufficient air flow	Air distribution system, underestimated load loss in the equipment;	Check flow and load loss;	Increase rotation speed (according to the engine's available power and the ventilator's maximum speed);
Excessive noise	Too much flow, flow speed too high;	Check flow and load loss;	Decrease flow;
	Load loss is too high;		Avoid unstable working areas in the ventilator;
	Damaged bearings, damaged metal parts;	Bearings, state of beatings;	Replace bearings, damaged parts;
Belt excessively worn out;	Unbalanced moving parts;	Strange vibrations;	Calibrate ventilator;
	Incorrect tension in the belts;	Check tension in the belts;	Adjust tension in the belts;
	Pulleys lined incorrectly;	Check pulleys alignment;	Align pulleys;

Note:

Please keep in mind that the air conditioning units are integrated into a general system. Because of this, malfunctions may be caused by other parts of the system, there may be a wrong interaction between the unit and the system or the environmental conditions may not be the same specified in the unit project.

ASSEMBLY AND MAINTENANCE

Air purification equipments need to be maintained periodically in order to perform their function correctly. The time in which such maintenance should be performed depends on the environment in which the equipment is inserted as well as the hours of operation. Thus, what is indicated bellow are mere guidelines.

Ventilator

Operations to carry out:

- Make sure there are no unrecognised parts inside the module.
- Check if all screws are bolted to avoid unnecessary vibrations.
- Check the anti-vibratory supports.
- If necessary, check if the bearings are clean and lubricated.
- Check if the driving and motor pulley are aligned.
- Check the tension and wear of the drive belts.
- General interior cleaning

Maintenance frequency: Biannual

Filters

Operations to carry out:

- Make sure there are no unrecognised parts inside the module.
- Check if all screws are bolted to avoid unnecessary vibrations.
- Check if there are cuts in the filter mat.
- Check the state and sludging of the filters (clean and replace them if necessary)
- General interior cleaning

Maintenance frequency: Every month

Heat exchanger

Operations to carry out:

- Make sure there are no unrecognised parts inside the module.
- Check if all screws are bolted to avoid unnecessary vibrations.
- Check the state and cleaning of the exchanging element.
- General interior cleaning

Maintenance frequency: Biannual

ASSEMBLY AND MAINTENANCE

Water and direct expansion battery

Operations to carry out:

- Make sure there are no unrecognised parts inside the module.
- Check if all screws are bolted to avoid unnecessary vibrations.
- Check battery connections.
- If necessary, check and carefully clean the battery fins in order not to damage them.
- If there are deformed fins, these should be placed into their correct position with an adequate tool.
- General interior cleaning

Maintenance frequency: Annual

Electric resistance battery

Operations to carry out:

- Make sure there are no unrecognised parts inside the module.
- Check if all screws are bolted to avoid unnecessary vibrations.
- Check the connections. Replace cables and retrace connections if necessary.
- General interior cleaning

Maintenance frequency: Biannual

Noise Attenuators

Operations to carry out:

- Make sure there are no unrecognised parts inside the module.
- Check if all screws are bolted to avoid unnecessary vibrations.
- Check the state and fixation of the acoustic baffles.
- General interior cleaning

Maintenance frequency: Annual

EQUIPMENT WARRANTY

ARFIT offers a 2 (TWO) year warranty period against all manufacturing defects starting after the product is bought.

Technical assistance during the warranty period will only be provided if a purchasing document proving that the equipment is still under a warranty period is shown.

If, during the warranty period, there are issues caused by manufacturing defects, ARFIT or its Authorized Technical Services will repair the product, replace it or replace any defective parts in their own facilities (at ARFIT's discretion) without charges, according to the following conditions.

ARFIT is entitled (at its own discretion) to replace parts from defective or nominal value products by new parts or products as well as recycled parts or products. This warranty only includes equipments and does not undertake possible charges and losses resulting from the fact that the equipment does not function. Thus, these cases are expressly excluded.

Warranty Exclusions

- Normal wear parts.
- Parts subjected to wear and tear or that may break. For instances, belts, filters, fuses, etc.
- Failures caused by improper use, carelessness, neglect, atmospheric discharges, floods, humidity, falls, shocks, accidents and transport.
- Failures caused when using the equipment for purposes other than those for which it was designed.
- Failures caused by unauthorized people or technical services while handling, altering or repairing equipments or by the use of wrong parts or accessories.
- Failures caused by an incorrect or illegal assemblage (voltage, water pressure or others), power supply malfunctions, instructions not followed correctly.
- Aesthetic wear and tear caused by use, tone changes, oxidation or corrosion in the appliance and its parts.
- Possible reparations do not extend the warranty period nor give the right to ask for a compensation.
- Damages and losses suffered by the user as a consequence of a failure.
- Possible reparations do not extend the warranty period nor give the right to ask for a compensation.

Warranty won't be valid when...

- The type plate is tampered or adulterated.
- False information is provided.
- The equipment does not have a purchase document.
- If the equipment is handled, altered or repaired by unauthorized persons or technical services.
- If the verification/maintenance operations are not carried out or are carried out by unauthorized technicians.