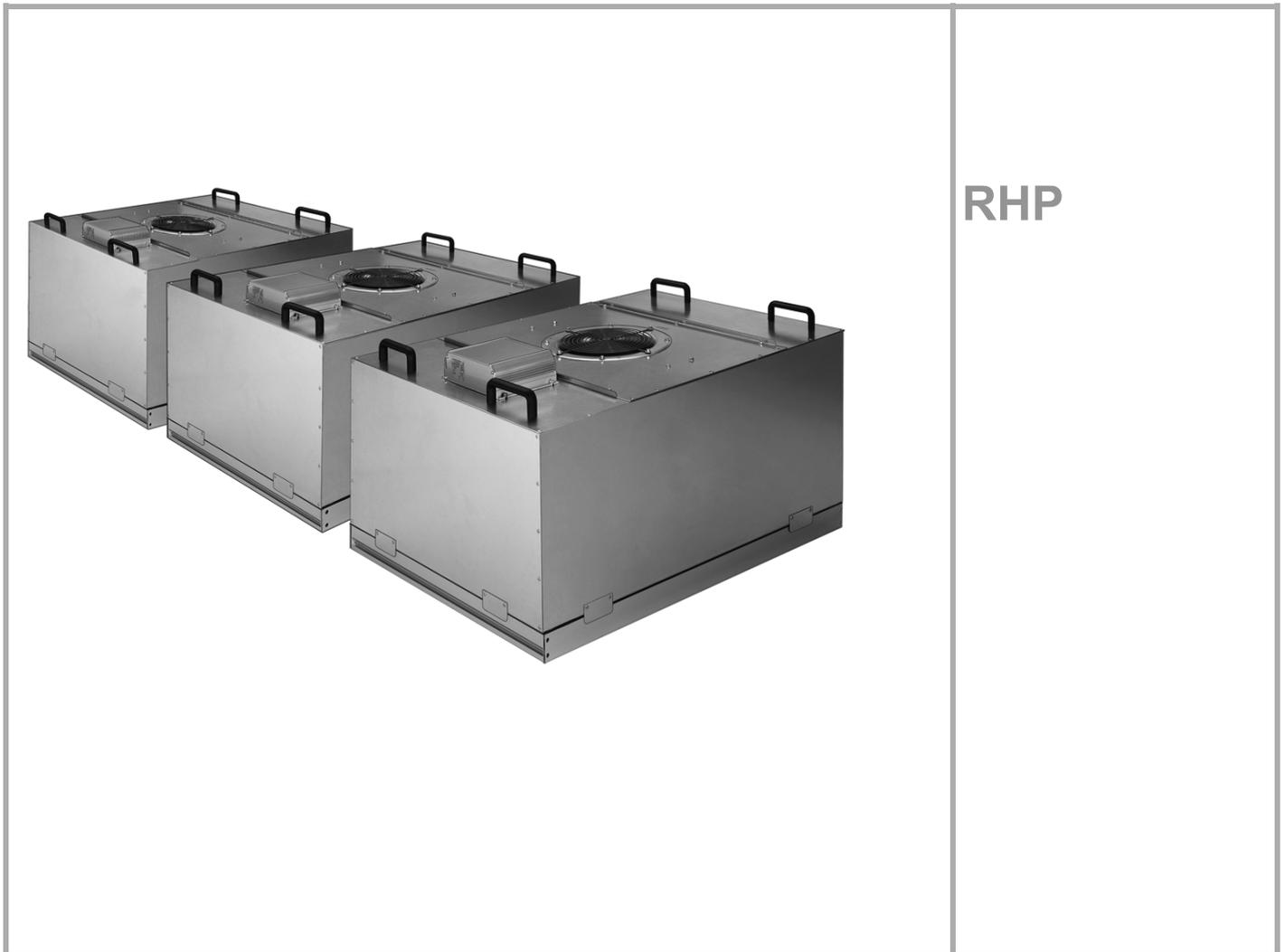


BA-FFU-RHP 7.1 – 02/2015



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1. Important information

Nicotra Gebhardt Fans are of state of the art design and comply with the requirements for health and safety of the EU Machinery Directive.

Nicotra Gebhardt Fans offer a high level of operational safety and a high standard of quality which is guaranteed through a certified Quality Assurance System (EN ISO 9001).

All fans leave the factory after being subjected to testing and are provided with a test seal.

All fans however can be dangerous,

- if they are not installed, operated and maintained by trained personnel
- if they are not used for approved applications.

This can endanger the life and limbs of personnel, provoke material damage to buildings and equipment and influence the use of the product.

1.1 Cautionary Markings:



CAUTION

Automatically Operated Device – To Reduce The Risk Of Injury Disconnect From Power Supply Before Servicing.

CAUTION

For installation by qualified professional only.

The manual of FFU Control Unit EKE 05-0018-5E will be provided with each EC-Fan Filter Unit. The installation instruction is referenced in the Fan filter manual.



Warning:

Risk of Electric Shock. Can Cause Injury or Death: Disconnect all remote Electric Power Supplies Before Servicing.

If connected to a circuit protected by fuses, use time-delay fuses with this appliance.

1.2 Important Safety Instructions **“READ AND SAVE THESE INSTRUCTIONS”**

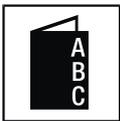
1.2.1 WARNING – TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

- Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
- Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

1.2.2 WARNING – TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

1.2.3 WARNING - "To Reduce The Risk Of Fire, Electric Shock, Do Not Use the RHP-Fan With Any Solid State Speed Control Device."



Attention!

These Operating Instructions must be read and observed by all personnel engaged on works involving fans!

The Operating Instructions

- describe the approved applications for the fans and protect against misuse.
- contain safety notes which must be closely observed.
- warn of dangers which can exist even with correct applications.
- give important information on safety and the economic use of the fan while ensuring the full benefits of the product are available.
- are to be complemented with the trade and national Standards, Regulations and Directives.

Nicotra Gebhardt accepts no responsibility for damage or breakdowns which can be traced back to non-observance of the Operating Instructions.

The manufacturer's guarantee does not apply following damage, unauthorised and unacceptable conversions and alterations to the fan.

There is no responsibility accepted for resultant damages!

2. Safety Notes



This danger symbol identifies all safety and danger information concerning danger to life and limbs of personnel.



This draws attention to all information at all points in the Operating Instructions which must be particularly well observed in order to ensure the correct procedures for the work as well as helping to prevent damage and the destruction of the fan.



3. Technical Description

3.1 Product description RHP

See in our FFU catalogue and the manual FFU Control Unit EKE 05-0018-5E-.. / EKE 06-0018-5E-...

3.2 Technical Data

Technical data and the permissible limits are to be taken from the type plate, the technical datasheets or the appropriate technical catalogue and must be adhered to.

3.3 Authorised use

The fans are intended for the transport of dust-free air and other non-aggressive gases. The RHP fans are not approved for the use in explosive areas

Permissible transport media temperatures:

Model	Temperature
RHP	-20°C ... +40°C



Any installation deviating from the above shall be considered unauthorised. Nicotra Gebhardt will not be responsible for any injury to personnel and/or material damage resulting from any deviations from the above!

RHP The RHP-fans must only be operated by the Nicotra Gebhardt EC-Controller delivered.

3.4 Improper use

An improper installation would be e.g. the transporting of :

- the utilization of other EC-Controllers
- media with unacceptable high or low temperatures
- aggressive media.
- very dusty media.

The results are:

damage of motor and controller, bearings damage, corrosion damage, loss of balance, vibration, deformation, abrasion damage.

Unauthorised operation

- No operation above the indicated rpm (see type plate, data sheet)!
- No operation at rpm ranges with increased vibration (resonance)!
- No operation at rpm ranges out of permitted fan curve area (unstability of flow pattern)!
- No operation if fan becomes polluted!



Danger points:

There can be injury to personnel and material damage through impeller breakage, shaft breakage, fatigue failure, fire from spark creation.



4. Transport

4.1 Transport damage

Deliveries are to be immediately checked in the presence of the carrier as being intact and complete. In the event of transport damage the attached instruction leaflet is to be observed.



Fans must be carefully transported!

Improper transport as e.g. unyielding, tilted positioning can lead to:

- the impeller becoming jammed
- the shaft becoming deformed
- the occurrence of bearing damage

4.2 Transport safety

- The transport material is to be selected according to the weight and packaging of the fan (type plate, data sheet)
- Ensure that loading is done in accordance with the instructions
- Four-point lifting is to be provided when transporting by crane (2 slings)

Attachment points on the fans:

- carrying unit

Not attachment points:

- bearing supports
- spacers

4.3 Intermediate storage

For intermediate storage of the fans the following points must be observed:

- The fan is to be stored in its transport packaging or this can be added to in accordance with external influences.
- The place of storage must be dry and dust free and must not have high humidity (<70%)
- Max. permissible storage temperature: -20°C to +40°C.



5. Mounting / Installation

5.1 Safety notes



- Mounting may only be carried out by trained personnel in accordance with these Operating Instructions and with regard to the regulations in force.
- Safety devices that have been removed for mounting work must be replaced immediately afterwards, and before the electrical connection is made.
- The fans must be mounted such that secure fixing is guaranteed at all times during operation.



Shoring up the weight at other points leads to fan damage and is dangerous

5.2 Installation site

- The installation site must be suitable for each fan with regard to type, composition, ambient temperature and ambient medium (points 3.3 and 3.4 are to be observed).
 - The supporting construction must be level and have sufficient bearing strength.
-

5.3 Installing / Fixing

- The fan must be fixed without stresses to the supporting structure.
- The gap between impeller wheel and inlet cone has to be even.



Stresses can lead to bearing damage and fatigue failures! They also affect the functioning of the fan.

- No forces should be transferred from other parts of the plant.
 - Use flexible connecting supports for duct connection.
-

5.4 Electrical connections

5.4.1 Safety notes



- The electrical installation of the fans and components may only be carried out by trained personnel in observance of these Operating Instructions and the regulations in force.
- The following Standards and guidelines are to be observed:
 - IEC 60364 / DIN VDE 0100; DIN EN 60204- 1
 - site regulations of the Electricity Supply Companies
- Equipment in accordance with EN 60204-1 is to be installed as protection during unexpected events (e.g. an isolation switch for inspections).

- RHP**
- **The inverter must always be grounded.** If the inverter is not grounded correctly, extremely dangerous conditions may arise within the inverter, which could prove potentially fatal.
 - The mains input and motor terminals can carry dangerous voltages even if the inverter is inoperative; **wait 15 minutes** to allow the unit to discharge after switching off before carrying out any installation work.
- Note the references of the operating instructions to the drive unit EKE

5.4.2 Motor / Motor connections

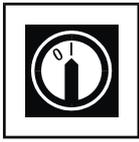
- RHP**
- Contact the motor directly to the Nicotra Gebhardt EC-Controller.
Note the references of the operating instructions to the drive unit EKE
Keep the motor cable separately from other cables (mains, information)

5.4.3 Motor protection

- RHP**
- The maximum current will be limited directly by the EC-Controller, thus no overloading can occur.

5.4.4 EMC

The RHP fulfils the EN 55011 in class B. Further requests must be tested and guaranteed in the individual case.



6. Commissioning

6.1 Safety checking



- It is to be checked whether all mechanical and electrical safety devices have been fitted and connected.
- According to the type of installation of the fan the inlet and discharge openings as well as the drive shafts must be fitted with protection devices in accordance with DIN EN ISO 13857!

Before commissioning the following checks must be carried out:

- The ducts and the fan must be checked for foreign bodies (tools, small components, building debris, etc.)
- The free running of the impeller must be checked by hand.
- The power setting, voltage and frequency for the mains connections must be checked against the fan or motor type plate.
- Connected control devices must be checked for functioning.



The fan may only be commissioned if all the safety devices have been fitted and if it is ensured that the impeller has been safeguarded according to DIN EN ISO 13857!



The suitability of protection devices and their fixtures to the fan have to be evaluated within the complete security concept of the installation.

6.2 Test run

The fan should be switched on briefly to check that the direction of rotation of the impeller agrees with that indicated by the arrow.

6.3 Check the current consumption



On reaching the operating speed of the fan immediately measure the current consumption and compare it with the nominal current on the type plate. In the event of a substantial overcurrent switch off immediately.

6.4 Check for quiet running



Check on the quiet running of the fan. There should be no unusual rocking or vibration. Check for untypical bearing noises. (max. vibration velocity 2.8 mm/sec)



7. Upkeep / Maintenance

7.1 Safety notes



Before working on the fan it is imperative to ensure:

- The drive motor is separated from the mains on all poles!

-
- **The impeller has come to rest!**
 - **The surface temperature has been checked to prevent burning!**
 - **There is no possibility of an uncontrolled running of the fan during the maintenance work!**
 - Any debris or dangerous materials which have arrived in the fan with the transported medium must be removed using a suitable method.
 - Fan operation may resume after the safety checks of Section 6 “Commissioning / Safety checks” have been carried out.
- Only limited work may be carried out while in the operating condition and in observance of the safety and accident prevention regulations:
e.g. measurement of vibration



Non-observance of these points endangers life and limb for the maintenance personnel.



If the state of the fan does not allow adapted action for repair it has to be put out of order immediately and to be replaced if required!

7.2 Maintenance intervals

The bearings are greased lifelong.

During periods of longer lasting stand stills the fan may be operated shortly in regular intervals. This is to prevent the bearings from mechanical load and the avoid ingress of humidity. If fans have been hold on stock for a longer period the bearings of fan and motor have to be checked prior to installation.



Respect the maintenance instructions of the filter supplier.

Check the fan regularly whether vibrations may occur. A deposit of dust and solids can cause unbalancing and consecutive damages. In order to prevent this danger regular inspection and cleaning operations are to be scheduled.



No high pressure cleaners (steam rod cleaners) are to be used!

7.3 Intake and pressure side accessories

Flexible sleeving (compensators) between the fan and plant parts are to be checked at regular intervals.



Unsealed sleeving leads to breakdowns and danger from escaping transported medium and must be replaced.

7.4 Spare parts

Only original Nicotra Gebhardt spare parts are to be used.



Nicotra Gebhardt accepts no responsibility for damages resulting from the use of other parts!



8. Faults

Deviations from normal operating conditions always lead to functional breakdowns and should be looked for immediately by maintenance personnel.



Longer lasting faults can result in the destruction of the fan and give rise to damage in plant parts and injuries to personnel!

In the event that the maintenance personnel cannot eliminate the fault, please make contact with our mobile customer service.



9. Service

Kundendienst

Telefon +49 (0)7942 101 258

E-Mail service@nicotra-gebhardt.com

EC-Declaration of incorporation

The manufacturer: **Nicotra-Gebhardt, Gebhardtstr. 19-25, D-74638 Waldenburg, Germany**
herewith declares, that the following product:

Product designation: Fan Filter Units (FFU)
Type nomination: **RHP**
Serial n°: see type plate
Year of production: see type plate

qualifies as a partly-completed machine, according to Article 2, clause "g" and does comply to the following basic requirements of the Machine Directive (2006/42/EC): Annex I, Article 1.1.2; 1.3.7; 1.5.1

This partly-completed machine must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machine Directive (2006/42/EC).

The following harmonised standards ¹⁾ have been applied:

DIN EN ISO 12100-1	Safety of machines – Fundamental terms, general design principles, Part 1: Basic terminology, methods
DIN EN ISO 12100-2	Safety of machines – Fundamental terms, general design principles, Part 2: Technical principles and specifications
DIN EN ISO 13857	Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
DIN EN 60204-1	Safety of machinery - Electrical equipment of machines - Part 1: General requirements

Applied, national standards and technical specifications ²⁾ particularly:

VDMA 24167 Fans – Safety requirements

The manufacturer is committing himself to make the special documents of partly-completed machine available to any state authority if required.

Waldenburg, 23. Februar 2015



Head of Production
i.V. I. Stöbe



Head of Research and Development
i.V. Dr. J. Anschütz

- 1) The complete listing of applied standards and technical specifications see manufacturer's documentation
2) As far as harmonised standards are not existing

EC-declaration of conformity

to EC-Low Voltage Directive (2006/95/EC)

o EC- Directive of Electromagnetic Compatibility (2004/108/EC)

Herewith we declare that the machinery designated below, on the basis of its design and construction in the form brought onto the market by us is in accordance with the relevant safety and health requirements of the EC Council Directive as mentioned below.

If alterations are made to the machinery without prior consultations with us, this declaration becomes invalid.

Designation: Fan Filter Unit (FFU)

Machinery type: RHP

Year of production/Type: see type plate

Relevant EC- Council Directive: EC-Low Voltage Directive (2006/95/EC)

EC- Directive of Electromagnetic Compatibility (2004/108/EC)

Applied harmonized standards, in particular: EN 60034-1, EN 60204-1, EN 61800-3

Waldenburg, 23. Februar 2015



Head of Production
i.V. I. Stöbe



Head of Research and Development
i.V. Dr. J. Anschütz

For the complete List of applied standards and technical specifications see the manufacturer's documentation.

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