



## EXTRACTION UNIT MD-350 RV



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The information and recommendations given in this instruction manual are based on the latest information that was available at the time of printing. The manufacturer maintains the right to make changes or include additional information in this user manual without giving a reason to do so.

This instruction manual has been compiled with the greatest of care. If, in spite of this, the instruction manual contains incorrect information, then you are kindly requested to inform the manufacturer of this.

The manufacturer rejects all liability for damage resulting from the use of the extraction unit or the information given in this instruction manual.

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## 1.0 USER MANUAL

### LAYOUT

This user manual contains information for users of the extraction unit. The manual is divided into various sections, the titles of which are stated at the top of each page.

### USERS

The term 'user' is defined as anyone who operates, maintains, adjusts, cleans, repairs or performs any other work on or with the extraction unit.

This user manual on the use of the extraction unit must be handed to the user, taking their level of education into consideration.

Work with or on the extraction unit may only be performed by personnel who:

- Are capable of performing the work independently and safely;
- Are under the supervision of someone who is familiar with the work and who has given them instructions;
- Is qualified in terms of training and/or experience.

### LIABILITY

All information and instructions in this user manual have been compiled in line with current legislation and technological developments. Read this manual carefully before commencing work on or with this machine. Neither the manufacturer nor its representatives can be held liable for damage and technical faults arising from non-compliance with this technical manual. The actual product may differ from the texts and illustrations. The actual unit supplied may vary from the illustrations due to special designs, the use of additional order options, or as a consequence of the latest technical modifications. The manufacturer reserves the right to make technical modifications to do with developing or improving the product's performance characteristics.

### WARRANTY

Free replacement of parts damaged by manufacturing or assembly defects for two years after delivery. Only original manufacturer's parts may be used.

## 1.1 DESCRIPTION OF THE SYMBOLS

The following warnings and symbols are used in this manual:



### TIP

Gives suggestions and advice so as to make certain tasks easier or more convenient.



### NOTE

A comment with additional information alerts you to potential problems.



### WARNING

If the work is not carried out carefully, then this may result in (serious) injury or even death.



### DANGER

If these regulations are not observed, then this may result in death.

The warnings contain important information. Make sure everybody who uses the extraction unit clearly understands this information.

## 1.2 ABOUT THIS USER MANUAL



### NOTE

Read this instruction manual carefully! Follow the instructions before using the extraction unit.



### NOTE

Also read the instruction manuals for the other machines, components and equipment that are used with the extraction unit.



Contact the manufacturer if anything is not included in the instruction manual or if anything in the instruction manual is unclear.



### NOTE

Any other use of the extraction unit than the one given above is prohibited!

This instruction manual describes the installation, operation, use and maintenance of the extraction unit. In some instances, the diagrams and drawings that have been used may deviate from the actual situation.

This instruction manual has been produced in accordance with the legal regulations as determined in the Machinery Directive, which has been included in the Dutch Machinery decree.

This instruction manual must be made available to anybody who works with or carries out work on the extraction unit. The instruction manual must be kept in a location where it is easily available.

The manufacturer of the extraction unit has done everything possible to manufacture a safe product. Remember that the extraction unit can only be used safely if it is used correctly. Therefore, read this instruction manual carefully and ensure that everybody who uses the extraction unit does so too.

## 2.0 SAFETY



### NOTE

Accidents are often caused by a sequence of particular circumstances that deviate from the normal situation. If an unusual, unsafe or particular situation arises, then rectify it immediately.

The extraction unit meets all the relevant safety regulations and has, therefore, been awarded the CE mark.

Various technical measures have been taken in accordance with the CE guidelines and harmonized standards so that the extraction unit meets the safety requirements based on the current state of technology.

The manufacturer has carried out a risk analysis in accordance with NEN EN 1050 and produced a technical construction file for the extraction unit.

Mounted on the unit is a CE-marked type plate with technical specifications (see figure 1.).



Type	MD-350 RV		
Serialnr.	XXX		
Year	XXX		
Air flow	9000 m <sup>3</sup> /h	At 2300 Pa	
Power	8,6 kW	400 V	17,5 A
Filter class	M/H3		
 <b>RIEDEX</b> Dust extraction systems		RIEDEX BV Dust Extraction Systems NL 8811 HD 17 RIED	

Figure 1. Type plate.

## 2.1 GENERAL SAFETY REGULATIONS



### DANGER

#### RISK OF FIRE AND EXPLOSION

Prevent sparks, a naked flame and other ignition sources from being drawn into the extraction unit at all times.

#### INSTRUCTION MANUAL

Read the instruction manual before using the extraction unit. The users of the extraction unit must be instructed in its use. In particular, the safety measures and the risks related to using this extraction unit must be known.

#### WORK AREA

Keep the work area clean and tidy. Do not place any inflammable materials against the extraction unit.

#### UNINTENDED START-UP

Always disconnect the power to the extraction unit and lock the main switch before carrying out work on it.

#### PERSONAL PROTECTIVE EQUIPMENT

Use a respirator mask when opening the extraction unit or when inspecting the filter bags. Always use a respirator mask offering at least FFP2 class protection and a P2 class dust filter. Always use protective equipment that bears CE marking. Refer to normative EN149 for further information.

#### CAPACITY OF THE EXTRACTION UNIT

Only use the extraction unit within the predefined limits with regard to the capacity, the negative pressure and the use.



### WARNING

Observe the general safety regulations.

#### GUARDS

Before using the extraction unit, fit all the doors and hatches to the machine and secure them using the correct attachment aids.

#### VISITORS AND CHILDREN

Keep visitors and, in particular, children, who are not aware of the dangers, away from the extraction unit's work area.

#### ALERTNESS

Remain alert to unusual situations, such as a strange noise (rattling, hissing or whistling) or dust escaping from the extraction unit.

#### WORK AREA

Ensure the work area is safe when the extraction unit is in use. Keep a safe distance from the suction openings.

#### TOOLS

Always use the correct tools for the job at hand.

#### ACCESS

Do not climb into the extraction unit when it is in use.



## 2.2 SAFETY REGULATIONS FOR MAINTENANCE, REPAIRS AND ADJUSTMENTS



### WARNING

Always observe the safety regulations for maintenance, repairs and adjustments.

#### REPAIR OF THE EXTRACTION UNIT

Never repair the extraction unit yourself; always contact the supplier. Repairs to the extraction unit may only be performed by a qualified technical service or by repairers approved by the manufacturer.

#### COMPONENTS

Only use original components or components that have the same specifications and properties.

#### DAMAGED COMPONENTS

Always trace the cause of damaged components or guards. Only use the extraction unit again once the component has been repaired and the cause of the problem has been rectified.

#### DIRECTION OF ROTATION

After completing work that may have an effect on the extraction unit's direction of rotation, check the direction of rotation when starting the extraction unit. Examples of such work include work on the plant's electrical installation.



### DANGER

#### ELECTRICITY

An electric shock can cause serious injury or even death. Always disconnect the extraction unit from the power supply before carrying out work on the extraction unit. Do not carry out work on the electrical components. Only qualified personnel from an authorized technical services company or the manufacturer may carry out work on these components under certain conditions.

#### HOISTING

Always take the weight of components into consideration whenever they are hoisted. Use the correct tools and employ a safe hoisting method. Never stand or walk under hoisted components. Falling objects may cause serious injury.

#### RESTARTING

Pay extra attention when starting the extraction unit for the first time after carrying out work such as maintenance, repairs or adjustments. When doing so, pay attention to unusual situations and strange noises.



### WARNING

#### FIRE RISK

Pay attention to the fire risk when working on the extraction unit. Smoking and a naked flame are prohibited.

## 2.3 SAFE WORK METHOD



### WARNING

Observe the following safety regulations to ensure the work is carried out safely.



### NOTE

To avoid the risk of an explosion, keep the area around the extraction unit clean and free of dust.

#### GENERAL INFORMATION

Always start the extraction unit first before using the machines. This will avoid the machines being used without the wood being extracted. Once the work has been completed, turn off the machines before turning off the extraction unit.

#### OPERATORS

The machine operators must read this instruction manual so that they can use the extraction unit safely and correctly.

#### SOUND PRESSURE LEVEL

The extraction unit's sound pressure level is less than 70 dB(A). In combination with other machines in the workshop, the use of ear protection may be recommended or even obligatory. See the risk inventory and evaluation for the workshop.

#### ENTRAPMENT HAZARD

Never insert your hand or arm in the suction opening or other parts of the extraction unit.

#### RESTARTING AFTER A POWER CUT

The extraction unit will restart automatically when the power supply returns after a power cut. This can cause a dangerous situation. If you do not want the extraction unit to restart automatically, the switch can be turned off manually (see figure 2). If necessary, also turn off any machines that may be connected to the extraction unit.

#### SUPERVISION

Always pay attention to the extraction unit when it is in use.

#### FILTER PROBLEM

Do not use the extraction unit if there is a filter problem. This will prevent dust from getting into the fan compartment and around the extraction unit. If this does happen, then there may be a risk of exposure, a fire risk or a risk of an explosion.



Figure 2. Main switch.

## 3.0 DISPOSAL

If, after many years of use, the extraction unit reaches the end of its lifecycle, then remove it and dispose of it appropriately. Disconnect the extraction unit from the power supply by disconnecting the power from the machinery. Remove the fuses from the machinery. Remove any dust and chips. Disconnect the cables and the suction duct from the extraction unit.

The extraction unit is mostly made of steel and can be recycled in the usual manner where the various materials are separated as much as possible so that they can be reused. Pay attention to the applicable regulations when disposing of the unit.



### WARNING

Pay attention to the risk of being cut by sharp edges and wear a dust mask to prevent exposure to wood dust.



### WASTE

Waste, used materials and other substances must be disposed of in accordance with the applicable regulations.

The following materials are used on the extraction unit:

- Galvanized steel
- Copper (cables)
- Plastic (cables, etc)
- Polyester (filter hoses)
- Glass wool (insulation)

## 4.0 DESCRIPTION OF THE MACHINE

### 4.1 DESCRIPTION OF THE MACHINE AND TECHNICAL SPECIFICATIONS

The MD-350 RV is an extraction unit that can be used for the following:

#### THE EXTRACTION OF WOOD DUST FROM WOODWORKING MACHINES

The extraction unit has a filter compartment with a switched fan compartment after it. The extraction unit features a filter compartment with an automatic filter cleaning system and is connected to a fan compartment. The waste falls, unpressurised, through a rotary valve into a collection bin.

The extraction unit operates under the underpressure principle. The standard version can be installed outdoors; see figure 3. Main components of the extraction unit.

When being used indoors, special requirements regarding fire and explosion hazards apply. Refer to your supplier for details.

#### Technical specifications

Capacity	9000 m <sup>3</sup> /h
Pressure	2300 Pa (higher or lower pressure optional)
Power	8,6 kW 400 Volt IE2
Suction opening	Ø 400 mm
Filter surface	75 m <sup>2</sup>
Filter material	Polyester needled felt, BGIA-tested
Filter class	M/H3 (less than 0,1 mg/m <sup>3</sup> )
Filter cleaning	Electrical (automatic, discontinuous)
Noise level	69 dB (A)
Protection	20 Ampere
Return duct connection	600 x 600 mm (position as agreed)
Dimensions L x D x H	2970 x 1370 x 4015 mm
Weight	900 kg

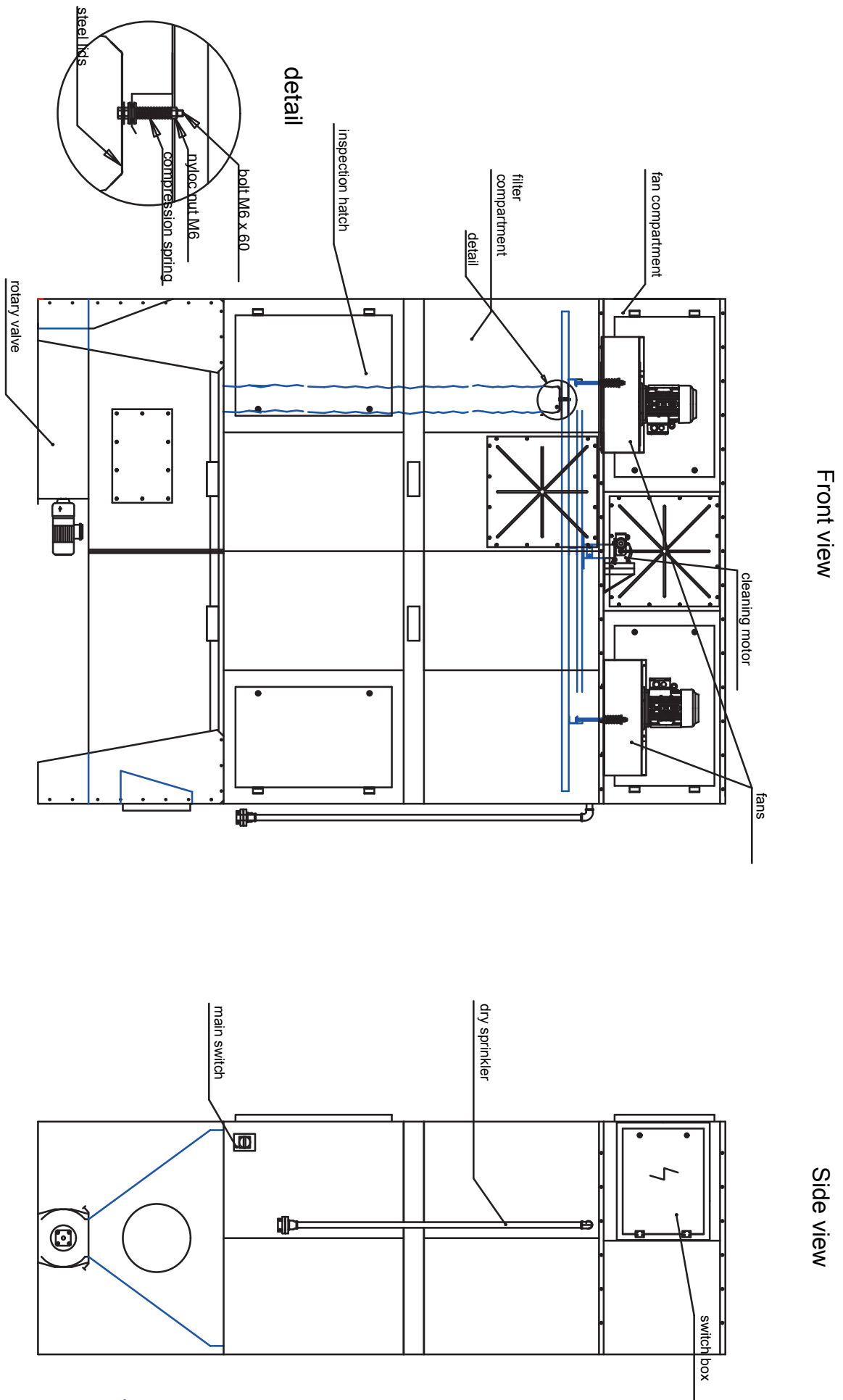


Figure 3. Main machine components.

## 4.2 INSTALLATION

### TRANSPORT

The extraction unit is delivered in two sections with accessories. One part is the upper section including a few small parts; the other part is the lower section and additional accessories.

A forklift is required to move the sections and there are special holes in the extraction unit's panels for this purpose (see figure 4.). In some cases, wooden supporting beams have been used.

### SCOPE OF DELIVERY

#### The delivery consists of the following:

- 1 lower section (weight 350 kilogrammes)
- 1 upper section (weight 550 kilogrammes)
- 60 filter bags
- 4 covers for forklift holes
- 1 box/bag of fixing materials
- 1 tube of clear silicone sealant
- 1 door key
- 1 instruction manual

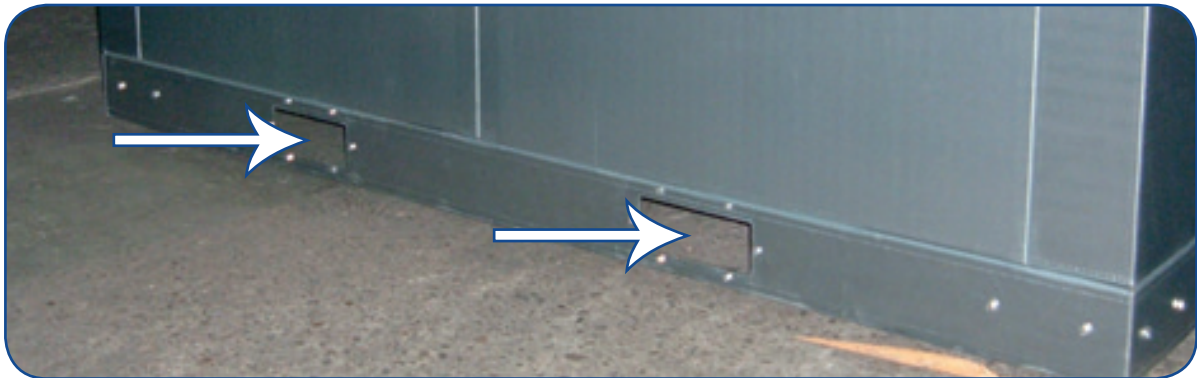


Figure 4.

## POSITIONING

Sequence:

- Position the extraction unit on a solid, flat, non-settling surface that is level in all directions. When installing outdoors, it is preferable to place the unit on a poured concrete floor, although concrete floor slabs are also suitable, provided their load-bearing capacity is enough to support the extraction unit.
- The lower section on extended legs and braces is assembled first. Make sure there is enough space beneath the rotary valve to accommodate the collection bin.
- The extraction unit must be installed at the right location and the legs must be fastened to the substrate using the expansion bolts provided. Make sure that the extraction unit is positioned completely horizontally to prevent problems when mounting the upper section.
- Then place the upper section on top of the lower section using a forklift. Fasten the upper section to the lower section using the self-tapping screws. To prevent leaks, the gap between the sections must be caulked with silicone sealant. The joint seam must be completely air and watertight. Make the openings for the forklift airtight with the covers supplied (4x).

See figure 5. for the correct attachment of the upper section to the lower section.

- After joining the upper and lower sections, attach the filter bags in the filter compartment. The bolts that protrude from the upper side of the filter bags must be pushed into the slotted holes of the suspension frame (between both conical rings).
- Then click the underside of the filter bag into the perforated plate by gently pressing the snap collar inwards. The collar will then snap into the round opening in the perforated plate. Make sure that the snap collar is properly secured in the perforated plate to prevent any leakage of dust.

See figures 6. and 7. for the correct installation of the filter bags.

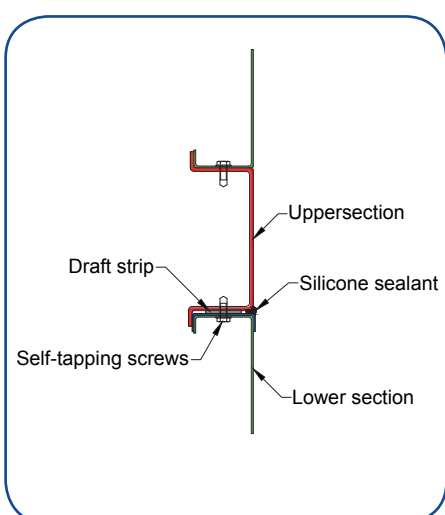


Figure 5.



Figure 6.



Figure 7.

## ELECTRICAL CONNECTION

1

Connect the air lock to the junction box on the exterior of the upper section.

2

Switch on the electrical power at the main switch.

3

Place the receiver box in the room in which the extraction unit will be controlled.

4

In the event of a remote control malfunction, the unit can still be controlled by means of a potential-free switch on terminals 1 and 2 of the X1 terminal strip. This is located in the receiver box.

### CONNECTING THE SUCTION DUCT

Connect the suction duct for the machine(s) concerned to the extraction unit's extraction opening. When doing so, make sure the connections are airtight and the duct or hose is the correct size.



### NOTE

Only use the extraction unit when the suction duct is connected. This will prevent overloading and, therefore, also avoid the unit cutting out due to overheating.



### WARNING

To prevent damage, do not operate the diverter valve while the unit is running.

### RETURN AIR

A return duct is often supplied for outdoor use. This duct is connected to the free outlet on top of the extraction unit. The diverter valve between both outlets can be used to select whether the filtered air is returned (winter setting) or blown outside (summer setting). Intermediate positions are also possible. Please note that the diverter valve cannot be operated while the unit is running. The air flow in the duct causes an additional mechanical load during operation of the diverter valve.



## 5.0 Use

### 5.1 FIRST USE

- When using for the first time, check the rotational direction of the two fans and the rotary valve. If the fans are turning in the wrong direction, the suction force will be much too low. The rotational direction must match the arrow sticker on the fan or the rotary valve.
- If all motors are turning in the wrong direction, it is wise to switch the position of the extraction unit's power feed in the main switch, e.g. T2 and T3. The rotational direction of a single motor can be reversed by swapping two of the motor wires on the terminal strip in the switch box, e.g. V and W. In the case of star/delta switching, it is preferable to swap the wires on the underside of the motor protection switch, e.g. T2 and T3.
- The operation of the cleaning motor does not depend upon the rotational direction and therefore does not need to be checked. The operation can be checked by putting the extraction unit through a test run.
- Check that there are no unwanted leaks. (A leak may be identified by a whistle).

REMARK: Do not run the extraction unit for an extended period if the inspection door in the filter compartment is open, because this will cause the fans to become overloaded and trip the thermal protector. The doors of the fan compartment may only be opened for inspection purposes during operation, but must be kept closed during normal use.



#### TIP

Do not run the extraction unit for an extended period if the inspection door in the filter compartment is open, because this will cause the fans to become overloaded and trip the thermal protector.



#### NOTE

To prevent overloading of the fans, only start the extraction unit with the suction hose attached.

## 5.2 STARTING

To start the extraction unit, press the wireless push button or use an external potential-free contact. The rotary valve and fan 1 will start up at the same time. Fan 2 will switch on after 3-7 seconds, depending on the power of the motors. Full suction power will be available approx 3-10 seconds after starting the extraction unit, depending on the power of the motors.

## 5.3 STOPPING

The extraction unit will stop immediately after pressing the wireless push button again or by disconnecting the external potential-free contact. When the extraction unit is switched off, the filter cleaning system will be actuated.

## 5.4 FILTER CLEANING

After stopping the extraction unit, the automatic filter cleaning system will run for approx one minute. The rotary valve will remain switched on so that the dust released by the cleaning can be removed. To guarantee sufficient flow of air through the filter, the filter must be cleaned at least once every four operating hours. The maximum uninterrupted operating time is therefore four hours.

## 5.5 MANUAL GATES

If the extraction unit is connected to multiple machines, each machine must be closed with a manually operated (or automatic) gate. If machines are not being used, ensure that their gates are closed to prevent loss of extraction capacity. However, always leave one or two gates open, preferably at the end of the suction hose, so the pipelines continue to be flushed and therefore prevent any build-up of chips in the extraction unit.



### TIP

Always keep one or two gates open to prevent blockages in the pipelines and a build-up of material in the extraction unit.

## 5.6 LIMITATIONS OF USE

The extraction unit cannot be used for the extraction of:

- Sticky substances, such as glue residue and paint mist.
- Welding fumes, smoke, etc.
- Sparks produced by machines such as a metal lathe.

## 5.7 LIMITATIONS OF THE DESIGN

Use of the extraction unit in ATEX zones is prohibited.

## 6.0 MAINTENANCE/REPAIRS



### TIP

If necessary, carry out maintenance work more frequently, such as in the case of intensive use of the extraction unit. Inform the technical services of any faults or errors. If in doubt, do not turn on the extraction unit.



### NOTE

Only use original components for repair work.



### WARNING

The extraction unit must only be repaired by authorized and qualified personnel who have had sufficient training and have sufficient experience to carry out the maintenance or repair work.

The extraction unit does not require a great deal of maintenance. The bearings for the fans have lifelong lubrication.



### WARNING

Always switch off the extraction unit and lock the main switch during maintenance!

## 6.1 PERIODIC MAINTENANCE

The following checks need to be performed:

Every six months:

- Check the clean side of the filter compartment and the fan compartment for dust accumulation. If you find any dust, inform your supplier. It is possible that there has been some leakage from the filter.
- Check the rubber seals on the rotary valve.
- Check any screw connections in the switch box.

Once a year:

- Replace the post filters on the return duct blower unit or clean them using a vacuum cleaner.

## 7.0 FAULTS

Possible faults are given below.

### 1 The extraction unit will not start

- Check that there is power in all three phases.
- The main switch on the switch box is in the 0/Off position.
- A fire damper has shut.

### 2 The red 'thermal overload' lamp is on

The red light will light up if one of the motors trips because it is overloaded. This happens when one of the motors shuts down through overload. Check the switch box first to see which motor has stopped. A tripped thermal switch can be recognised by the position (0 instead of 1) of the black knob or the black/red push buttons at the top of the switch box. It could be one of the following motors:

#### EXTRACTOR FANS

Possible causes:

- The inspection door of the filter compartment is open.
- An extractor hose has not yet been connected to the unit.
- A fuse has blown in the sub-distributor so the extraction unit is only getting power from two of the three phases.

#### ROTARY VALVE

Possible causes:

- There is a blockage under the valve, for instance because the outlet to the container is blocked due to the container being over-filled.
- The rotor in the rotary valve is stuck because large blocks of wood have been sucked up by the extractor.
- A fuse has blown in the sub-distributor so the extraction unit is only getting power from two of the three phases.

#### FILTER CLEANING

Possible causes:

- Chips have accumulated in the unit, causing the motor to become overloaded. If this is the case, the filter bags must be emptied by hand before the extraction unit may be restarted.
- The filter cleaner's spring mechanism needs adjustment. This should be done by a qualified technician.
- A fuse has blown in the sub-distributor so the extraction unit is only getting power from two of the three phases.

### **3** The extraction unit's suction power has decreased or is insufficient

Possible causes:

- The directional rotation of the fans is incorrect (see page 17).
- An accumulation of chips has occurred in the extraction unit because not enough gates were open. There is too little movement of air in the trough-shaped inlet section. If this is the case, the inlet section and the filter bags need to be emptied by hand before the unit can be restarted.

NB: Always leave at least one or two gates open to keep transport air in the suction pipeline.

- Too many gates are open (when several machines are connected), so the required suction capacity is greater than the available capacity.
- The filter has become saturated from extracting very fine dust and needs to be cleaned (see page 18).

### **4** Dust is coming from the fan compartment

Possible cause:

- A filter bag in the filter compartment has come loose or has torn. If so, contact your supplier.

## 8.0 SPARE PARTS

Article number	Description
C410.090	HR fan 4 kW
C410.092	Percussion motor 0,18 kW
B115.100	Rotary valve, including motor 0,55 kW
B115.101	Set of rubber seals for rotary valve
C471.050	Door key
B134.050	Filter bag Ø205 x 2000mm PB
C493.000	Post filter element 592 x 592 x 360mm
C493.300	Explosion panel 650 x 650mm

### 8.1 ACCESSORIES

Article number	Description
B160.020	Extra start/stop button (wireless and no battery)
B160.017	Machine recognition basic module
B160.018	Detection coil
B160.019	Automatic activation via external 400 V
C490.030	Electronic 'container full' alert

## 9.0 OVERVIEW OF THE DIFFERENT START-UP METHODS

### MANUAL

1

#### **Start/stop with wireless and battery-less push buttons.**

The unit is fitted with a wireless and battery-less push button as standard to switch the extraction unit on and off. The push button converts mechanical energy into electrical energy the moment the operator presses it. The push button then transmits a radio message to the receiver. This battery-less solution means the switch is always available and it also reduces the impact on the environment.

### AUTOMATIC

2

#### **Using current detection, including overrun and manual/automatic switch.**

A current sensing coil placed on the power feed to the machine connected to the extractor detects when it is switched on. The extraction unit is then switched on at the same time. An adjustable overrun time prevents the extraction unit from constantly switching on and off.

3

#### **Using external 400V supply (branched off from the machine switch, maximum 4 machines).**

When the machine connected to the extraction unit is switched on, a relay on the extraction unit is simultaneously switched on by 400V supply. This relay on the extraction unit switches on the fan. This switching method makes it easy to have the extraction unit operate in parallel with the machinery connected to it.

4

#### **Using an external potential-free contact.**

There is a standard output on the extraction unit that can be used to switch the extractor on and off with the aid of an external potential-free contact; for instance an auxiliary contact in an existing switch box or on an automatic gate.

5

#### **Using wireless and battery-less limit switches.**

By using wireless and battery-less limit switches, it is possible to use automatic gates to switch the extraction unit on or off. These limit switches work on the same principles as the wireless and battery-less push buttons that come with the extraction unit as standard.



## 10.0 APPENDIXES

APPENDIX 1	CE-Declaration of Conformity
APPENDIX 2	BIA-Certificate
APPENDIX 3	Explosion panel certificate

**DECLARATION OF CONFORMITY - CE**  
**DECLARATION DE CONFORMITE - CE**  
**VERKLARING VAN OVEREENSTEMMING - CE**

conformément à l'annexe II A de la directive 98/37/CE

**Riedex BV**

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Fax: +31 (0)517 26 93 66

Declares that / déclare par la présente que / verklaart dat:

**Extraction unit / Le filtre / Afzuigunit: MD-350**



**II 2D T6**

est conforme aux directives suivantes :

Directive relative aux machines 2006/42/CE avec les modifications correspondantes

Directive relative aux basses tensions 73/23/CEE avec les modifications correspondantes

Directive relative à la compatibilité électromagnétique 89/336/CEE avec les modifications correspondantes

Sont appliquées à la machine les normes suivantes :

- |  |                     |
|--|---------------------|
| • Sécurité des machines (Terminologie de base)             | NEN EN ISO 12100-1  |
| • Sécurité des machines (Principes généraux de conception) | NEN EN ISO 12100-2  |
| • Sécurité des machines (Équipement électrique)            | NEN-EN 60204-1:2001 |
| • Sécurité des machines (Installations d'extraction)       | NEN-EN 12779:2004   |
| • Sécurité des machines (Appréciation des risques)         | NEN-EN 1050: 1997   |
| • Sécurité des machines (Risque d'explosion de poussières) | NPR 7910-2          |
| • Sécurité des machines (Atmosphères explosives)           | NEN-EN 1127-1       |
| • Sécurité des machines (Atmosphères explosives)           | NEN-EN 14986        |

etc.

Ried, 25 september, 2015

Fait à Ried, le 25 septembre 2015

Henk Sloots, Technichal manager /

Responsable technique /

Technisch manager



Datum/Date: 21.06.2011 Tob/Sol

## PRÜFZEUGNIS TEST CERTIFICATE

Nr./No.: 201122158/6210

- |     |  |  |
|-----|--|--|
| 1   | <b>Auftraggeber/<br/>Customer</b>  |  |
| 2   | <b>Prüfmuster/<br/>Test specimen</b>                                       | Filtermaterial   |
| 2.1 | Hersteller/<br>Manufacturer  |  |
| 2.2 | Bauart, Bezeichnung/<br>Type, designation<br><br>Kennzeichnung/<br>Marking | Filtermaterial 1-lagig   |
| 2.3 | Bestimmungsgemäße<br>Verwendung/<br>Intended use                           | Entsprechend den IFA-Grundsätzen zur Prüfung von Filtern für die Verwendung in staubbeseitigenden Maschinen und Geräten (Ausgabe 01/2010). |
| 2.4 | Datum der Herstellung/<br>Date of fabrication                              | 11/2010  |
| 2.5 | Weitere Angaben/<br>Further details  | s. Prüfprotokoll   |

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**IFA**

Institut für Arbeitsschutz der  
 Deutschen Gesetzlichen Unfallversicherung  
 Prüf- und Zertifikatsinstitut für DGUV Test

### 3 Prüfung/ Testing

- 3.1 Art der Prüfung/  
 Type of test Typprüfung
- 3.2 Datum der Prüfung/  
 Date of testing Februar 2011 u. Juni 2011
- 3.3 Prüfverfahren, -grundlagen/  
 Test method, requirements DIN EN 60335-2-69:2008; IFA-Grundsätze zur Prüfung von Filtern für die Verwendung in staubbeseitigenden Maschinen und Geräten (Ausgabe 01/2010).

### 4 Beurteilung, Eignung/ Assessment, suitability (Besondere Hinweise/ Special remarks)

Das Filtermaterial erfüllt bei einer Filterflächenbelastung von 300 m<sup>3</sup>/m<sup>2</sup>·h entsprechend einer Filteranströmgeschwindigkeit von 0,083 m/s die Anforderungen der DIN EN 60335-2-69 an Filter zum Einsatz in staubbeseitigenden Maschinen und Geräten der Staubklasse "M".

#### Besondere Hinweise:

Dieses Prüfzeugnis gilt nur für das Filtermaterial mit der Anströmseite: etikettierte Seite.

Eine Beurteilung der Arbeitssicherheit der gesamten Staubabscheideeinrichtung ist auf Grund dieses Prüfzeugnisses nicht zulässig.

### 5 Gültigkeit des Prüfzeugnisses/ Validity of Test Certificate

Dieses Prüfzeugnis gilt, solange die zugrundeliegenden sicherheitstechnischen Anforderungen (3.3) gelten, für alle mit dem Prüfmuster identischen Erzeugnisse, die gefertigt werden bis zum:

*As long as the underlying safety-technical requirements (3.3) are in force, the present Test Certificate applies to all products equal to the test specimen and manufactured at the latest on:*

20.06.2014

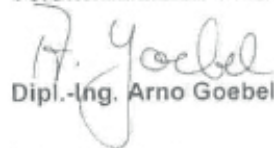
Die Identität der Erzeugnisse mit dem Prüfmuster wird von der Prüfstelle nicht überwacht.  
*Conformity with the test specimen will not be verified by the testing institute.*

Eine Verlängerung der Gültigkeitsdauer ist auf Antrag möglich (*bis zu zweimal*).  
*Period of validity may be extended upon request.*

Verlängerung der Gültigkeit bis: 20.06.2017

E.Nr. 201422365/6210 /St., Augustin, 11.07.2014

Verantwortlicher Prüfer

  
 Dipl.-Ing. Arno Goebel

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**6 Allgemeine Hinweise/  
 General remarks**

Dieses Prüfzeugnis besteht aus  
 The present Test Certificate consists of

5

Seiten  
 Pages.

Die Seiten 1 bis 3 enthalten das Gesamtergebnis der Prüfung, sie dürfen nur ungekürzt veröffentlicht werden. Zum vollständigen Prüfzeugnis gehört das Prüfprotokoll, aus dem die Einzelangaben ersichtlich sind.

*Pages 1 to 3 indicate the overall test result; they shall only be published with the full wording being quoted. The complete Test Certificate also includes the test protocol containing all pertinent details.*

Dieses Prüfzeugnis berechtigt **n i c h t** zur Verwendung des GS-Zeichens, BG-Zeichens oder CE-Zeichens.

*The present Test Certificate does **n o t** warrant the use of the GS-label, BG-label or CE-mark.*

Im übrigen gilt die Prüf- und Zertifizierungsordnung der Prüf- und Zertifizierungsstellen im BG-PRÜFZERT in Verbindung mit den Allgemeinen Geschäftsbedingungen der Deutschen Gesetzlichen Unfallversicherung e.V.

*In all other respects the Rules of Procedure for Testing and Certification carried out by the Test and Certification Bodies in BG-PRÜFZERT shall apply in conjunction with the General Business Conditions of the Deutsche Gesetzliche Unfallversicherung e.V.*

Für die Beurteilung:  
 For the assessment:

Für die Prüfung:  
 For the testing:

Dipl.-Ing. Hans-Ulrich Tobias

Fachzertifizierer(in)  
 Certification officer

Christian Sollik

Leiter(in) des Prüflabors  
 Head of Testlaboratory



## Prüfprotokoll Test protocol

1. **Prüfgrundlage:** DIN EN 60335-2-69:2008; IFA-Grundsätze zur Prüfung von Filtern für die Verwendung in staubbeseitigenden Maschinen und Geräten (Ausgabe 01/2010).
2. **Art der Prüfung:** Typprüfung
3. **Antragsteller:**
4. **Prüfmuster:** Filtermaterial
  - 4.1 Bauart: Filtermaterial 1-lagig
  - 4.2 Bezeichnung:
  - 4.3 Kennzeichnung:
5. **Staubklasse:** "M"
6. **Herstellerangaben Filtermaterial**
  - 6.1 Material und Art: Spinnvliesstoff, PES+PA
  - 6.2 Flächengewicht: 240 g/m<sup>2</sup>
  - 6.3 Luftdurchlässigkeit: 500 m<sup>3</sup>/m<sup>2</sup>·h bei 200 Pa
  - 6.4 Anströmseite: etikettierte Seite
  - 6.5 Farbe: grau
7. **Durchlassgradprüfung Filtermaterial**
  - 7.1 Filterflächenbelastung: 300 m<sup>3</sup>/m<sup>2</sup>·h
  - 7.2 Anströmgeschwindigkeit: 0,083 m/s
  - 7.3 Anforderung Staubklasse "M"  
 Maximal zulässiger Durchlassgrad: < 0,10 %

Dieses Prüfprotokoll darf nur vollständig und zusammen mit den Seiten 1 bis 3 des Prüfzeugnisses veröffentlicht werden.  
 This Test Protocol must only be published in full wording and in connection with pages 1 to 3 of the Test Certificate.

Die ermittelten Ergebnisse gelten nur für die geprüften Objekte.  
 The test results apply to the tested object only.



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**IFA**  
 Institut für Arbeitsschutz der  
 Deutschen Gesetzlichen Unfallversicherung  
 Postfach 25 45 50, 10541 Berlin, DE, Tel. +49 30 2603-1

#### 7.4 Prüfergebnisse

Mittlerer Durchlassgrad: 0,05 % (sechs Messungen)  
 Standardabweichung: 0,02 %

Bei einer Filterflächenbelastung von  $300 \text{ m}^3/\text{m}^2 \cdot \text{h}$  entsprechend einer Filteranströmgeschwindigkeit von  $0,083 \text{ m/s}$  ist der Durchlassgrad sicher  $< 0,10 \%$  (s. Pkt. 5 der Grundsätze zur Prüfung).

Die Anforderungen an die Filtermaterialabscheideleistung der Staubklasse "M" werden erfüllt.

#### 8. Durchflusswiderstand

Der Durchflusswiderstand des Filtermaterials wird vor der Quarzstaubprüfung ermittelt.

8.1 Filterflächenbelastung:  $300 \text{ m}^3/\text{m}^2 \cdot \text{h}$

8.2 Anströmgeschwindigkeit:  $0,083 \text{ m/s}$

#### 8.3 Prüfergebnis

Mittlerer Durchflusswiderstand: 160 Pa (6 Messungen)

9. **Luftdurchlässigkeitsprüfung:**  $390 \text{ m}^3/\text{m}^2 \cdot \text{h}$

Die Luftdurchlässigkeit des Filtermaterials wird bei einem Differenzdruck von 200 Pa vor der Quarzstaubprüfung ermittelt.

10. **Flächengewichtsprüfung:**  $250 \text{ g/m}^2$

#### 11. Kennzeichnung

Die Anforderungen werden erfüllt.

Institut für Arbeitsschutz – BGIA –  
 Im Auftrag

Christian Sollik

Dieses Prüfprotokoll darf nur vollständig und zusammen mit den Seiten 1 bis 3 des Prüfzeugnisses veröffentlicht werden.  
 This Test Protocol must only be published in full wording and in connection with pages 1 to 3 of the Test Certificate.

Die ermittelten Ergebnisse gelten nur für die geprüften Objekte.  
 The test results apply to the tested object only.



## EC Declaration of Conformity

BRILEX Gesellschaft für Explosionsschutz mbH, Hinterm Gallberg 15 – 17, D-59929 Brilon, Deutschland  
Tel. +49 (0) 2961– 96629-0 Fax. +49 (0) 2961– 96629-99 Email: Info@brilex.de Url: www.brilex.de

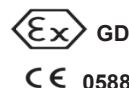
We declare that the BRILEX Explosion Vents of type GE, KE and KER conform and are applicable to the following guidelines and standards in terms of design and manufacture.

EC Guideline: 94/9/EC (ATEX 95)  
Harmonized Standards and Guidelines: VDI 3673: Pressure venting of dust explosions  
DIN EN 14491: Dust explosion venting protective systems  
DIN EN 14994: Gas explosion venting protective systems  
DIN EN 10204: Metallic products - Types of inspection documents  
DIN EN 14797: Explosion venting devices

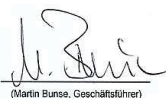
This statement certifies compliance with the abovementioned guidelines, but does not imply any assurances of characteristics. The notes on safety in the supplied product documentation should be taken into account.

### ATEX-Certification:

Notified Body: FSA GmbH  
Dynamostraße 7 – 11  
D – 68165 Mannheim  
Notified Body Registration No.: 0588  
ATEX Certificate No.: FSA 03 ATEX 1508X  
ATEX Quality Assurance No.: FSA 15 ATEX QS 21 / 1508 X / 1532 X / 1574 X / 1644 X



Brilon, 01.10.2011

  
(Martin Bunse, Geschäftsführer)

## Works Test Certificate in accordance with EN 10204 3.1

### Materials utilised

Explosion vent: 1.4301  
Gasket: EPDM

Tested in accordance with DIN EN 10204  
by the authorised works inspector



Martin Bunse

Supply complies with the inspection requirements.

### Test Results and

#### Marking in accordance with DIN EN 14797

Lot Size: 36  
No. of Burst Tests: 6  
Temperature in Test (in °C): 20

Results of Burst Tests (in bar g):	0,107	0,106
	0,098	0,108
	0,101	0,104

The explosion vents are marked as follows.

Type:	KER
Dimensions:	600 x 600
Serial Number:	1512104
Vent Area:	3600 cm <sup>2</sup>
Burst Overpressure Pstat:	0,1bar @ 20°C
Tolerance +/-:	0,01 bar
Vacuum Resistance:	50 mbar
Max. Temperature:	120°C
Material:	304
Torque:	30 Nm
Options:	



