cleanAIR

Exclusive International
Distribution & Service – ICA

OPERATING MANUAL

DUSTER 3000
Air Scrubber

The mobile recirculation air extraction unit with HEPA 14 particle filter captures 99.995% of particles, including aerosols, viruses and bacteria. Mobile, energy-efficient, ready for immediate use.



CE Ex II 3G

Language version: English

Importer

cleanAIR GmbH
Am Landhagen 16
59302 Oelde
P +49 2522 8309-717
F +49 2522 8309-718
Hotline +49 160 7881059
www.duster-3000.com/en
info@duster-3000.com

Service address Manufacturer

cleanAIR GmbH
Am Landhagen 16
59302 Oelde
P +49 2522 8309-717
F +49 2522 8309-718
Hotline +49 160 7881059
www.duster-3000.com/en
info@duster-3000.com

Spare parts orders

cleanAIR GmbH
Am Landhagen 16
59302 Oelde
P +49 2522 8309-717
F +49 2522 8309-718
Hotline +49 160 7881059
www.duster-3000.com/en
info@duster-3000.com

Information required for service:

Please have the machine designation and machine number ready.

Translation of the original operating manual

Keep this operating manual for future reference!

© 2019 by cleanAIR GmbH

Without our permission, these documents may not be made accessible to third parties, in particular competitors.

Contents

Notes on using this operating manual 5
General 5
Target groups 5
Copyright and property rights 5
Safety is important 5
Instructions for commissioning and repair 6
Supplementary documents 6
Symbols and terms used 6

1 Safety 7
1.1 Duties and responsibilities 7
1.2 Intended use 8
1.3 Foreseeable misuse 8
1.4 Prohibited actions 8
1.5 Qualification and authorization 9
1.6 Transport and packaging 10
1.7 Installation and commissioning 10
1.7.1 Preparation for initial commissioning 10
1.7.2 Installation 11
1.7.3 Initial commissioning 11
1.8 Test run 12
1.9 Safety instructions 13
1.10 Safety devices 14
1.11 Safety measures by the operator 15
1.12 Type plate 16
1.13 Pictograms 16
1.14 Residual risk 17

2 Description of the unit 18
2.1 Components / assemblies 18
2.2 Controls and displays 19

Contents (continued)

2.3 Mode of operation 19
2.4 Tasks of the operating personnel 19
3 Technical data 20
4 Operating the unit 21
4.1 Switching the machine on 21
4.2 Normal operation 22
4.3 Switching the machine off 22
5 Maintenance 23
5.1 Safety during inspection and maintenance 23
5.2 Before starting maintenance work 23
5.3 Maintenance work 24
5.3.1 Replacing the drive belt 24
5.3.2 Tensioning the drive belt 25
5.3.3 Cleaning the intake filters 27
5.4 After completing maintenance work 28
6 Decommissioning 29
6.1 Legal basis 29
6.2 Preventing environmental damage 29
6.3 Potentially environmentally harmful components 29
7 Technical overview drawing 30
8 Spare parts 31
8.1 Components 31
8.2 Replacement filter inserts 32
9 Declaration of conformity 33
10 Glossary 34
Appendix · Instruction and training aid 36
Examples of training topics 36
Confirmation of instruction 37

Notes on using this operating manual

General

The Duster 3000 “Air Scrubber” described here is referred to as the **“unit”** in the following text.

This operating manual has been prepared for the persons entrusted with the installation, commissioning and operation of the unit. The documentation must therefore always be kept accessible to these persons.

All safety and warning notices on the unit must be legible at all times and renewed if necessary.

Target groups

This operating manual is intended for:

- Decision-makers/safety officers of the operator
- Operating personnel
- Maintenance and service personnel (technicians)

Copyright and property rights

This operating manual must be treated confidentially. It may only be made accessible to authorized persons. It may only be passed on to third parties with the written consent of cleanAIR GmbH.

All documents are protected by copyright. Passing on and reproducing documents, even in part, as well as using and communicating their contents, is not permitted unless expressly granted in writing. Violations are punishable and oblige the offender to pay damages. All rights to exercise industrial property rights are reserved by cleanAIR GmbH.

Safety is important

The “Safety” chapter must be made accessible to operating, maintenance and service personnel before any work on the unit, or be part of an instruction session.

Instructions for commissioning and repair

Installation and commissioning of the unit are normally carried out by authorized commissioning personnel of cleanAIR GmbH. If, in exceptional cases, these tasks are carried out by the operator, corresponding instructions are supplied.

Information on repair work is supplied with the corresponding spare parts deliveries, unless this information is part of the usual qualification of maintenance specialists. Our service team will be happy to answer any questions about repairs.

Supplementary documents

Please also refer to the operating instructions and data sheets of the filter manufacturers.

Symbols and terms used



Danger!

Safety notice to avoid a **danger** to persons. Non-compliance can result in **life-threatening injuries**.



Caution!

Indicates impermissible modes of operation. Non-compliance can result in damage to property.



Information!

This symbol indicates important tips and information about the unit.

1 Safety

1.1 Duties and responsibilities

The operator is obliged to follow the operating manual. The general accident prevention regulations and VDE guidelines apply. Always observe the safety and warning notices contained in this documentation.

Compliance with the operating manual is a prerequisite for trouble-free operation and for any warranty claims. For this reason, read this documentation first, in particular the safety instructions, before working with the unit/assembly.

The operator must supplement the operating manual with work instructions based on national regulations on accident prevention and environmental protection, including information on supervisory and reporting obligations and on company-specific conditions, for example regarding work organization, work processes and the personnel deployed.

In addition to the operating manual and the binding accident prevention regulations applicable in the country of use and at the place of use, the recognized technical rules for safe and professional work must also be observed.

Without the approval of cleanAIR GmbH, the operator may not make any modifications, additions or conversions to the unit that could impair safety. This applies in particular to the installation and adjustment of safety devices and to welding work on load-bearing components.

Use only original spare parts and filters approved by the manufacturer. Only use trained or instructed personnel for operation, maintenance, repair and transport of the unit.

1.2 Intended use

The mobile filter unit Duster 3000 "Air Scrubber" is used to filter and treat the ambient air of cleanrooms and other facilities with the highest requirements for clean air and sterility.

- The Duster 3000 "Air Scrubber" may not be used for any purpose other than that for which it was designed.
- The general safety regulations must be followed while the unit is in operation.



Caution!

Intended use also includes observing all instructions and regulations in the operating manual and all accompanying documents.

1.3 Foreseeable misuse

The unit is not suitable only for filtering heavily contaminated air (soot, dust, etc.). Furthermore:

- The operator must avoid overloading. In particular, the supply points must not be changed and the flow rate must not be increased without prior written agreement with the planner.
- Protective devices such as covers or housing parts must not be removed during operation.
- Employees are prohibited from approaching points where parts of their body or clothing could be caught.
- Close-fitting work clothing must always be worn when working with the unit.

1.4 Prohibited actions

Modifying or disabling the integrated safety and protective devices is prohibited.

Cleaning the unit with water jets or compressed air is strictly prohibited. This also applies when the unit is disconnected from the power supply.

1.5 Qualification and authorization

Instructed operating personnel are authorized to carry out the following tasks on this unit:

- Activating and deactivating the unit for operation
- Checking the unit for safety and functionality
- Loading the unit
- Changing filters
- Eliminating malfunctions
- Non-safety-critical cleaning, care and maintenance work

The following tasks are reserved for customer service personnel or contractual partners authorized by the manufacturer:

- Commissioning and setting up new components (parameterization)
- Safety-critical maintenance and repair work, for example:
  - Replacing complete functional units
  - Maintenance work on safety components

Danger!

Work on the electrical installation may only be carried out by qualified electricians!

Work on pneumatic or hydraulic equipment may only be carried out by suitably qualified persons!



1.6 Transport and packaging

Note

The packaging must be disposed of in accordance with regional regulations.

- Transport and installation of the assemblies may only be carried out by specialist personnel instructed in these tasks.
- Onward transport to the installation site is carried out using a forklift, pallet truck or trolley with sufficient load capacity.
- All loose parts must be carefully secured to the assemblies.

1.7 Installation and commissioning

1.7.1 Preparation for initial commissioning

- Carefully remove the front panel of the shipping crate; you will need a size 3 Phillips screwdriver. Make sure to remove all screws from the top panel. (The top screws are located under the cardboard.)
- Keep all wood screws and washers.
- Remove the wooden spacers used for storage.
- Remove the two vertical supports (5 x 8 cm) and set them aside.
- Carefully roll the unit out of the box.
- Remove the plastic film and keep it.
- Insert the grey PVC support rod attached to the back of the unit into the holder at the front of the unit.
- Unroll the 15 m power cable and plug it into a 220 V socket rated for at least 6.5 A.
- Insert the three (3) intake filters located in the back of the crate into the unit and store the other three (3) in a safe place.
- Our recommendation: put all packaging materials back into the crate. Keep it in case the unit has to be returned for service or repair.

1.7.2 Installation

- The unit is only suitable for operation in weather-protected rooms.
- When setting up the unit, make sure that access routes are kept clear. Provide at least 1 m of space all around for operation and maintenance work.
- Also make sure that walkways are not obstructed by tripping hazards such as cables or similar.
- Before setting up the unit, check that the floor is level and has sufficient load-bearing capacity.

1.7.3 Initial commissioning

Assembly and initial commissioning of this unit may only be carried out by sufficiently qualified and authorized service personnel of the operator. Regular operating personnel must be instructed in the handling of the unit before starting work.

Recommendation

This instruction and the names of the persons instructed should be recorded in writing. This instruction record is an important part of the documentation and must be presented to the relevant supervisory authorities if required.

If the group of persons authorized to operate the unit changes during the period of use, the operator must also properly instruct these “new persons” in this area of responsibility. Their names should also be listed in the instruction record.

1.8 Test run



Caution!

The test run may only be carried out by trained specialist personnel.

The test run may only be carried out without load.

The test run is a test of the unit in the working process. The following tasks must be completed before the test run:

- assembly of the mechanical elements,
- assembly and connection of the electronics, and
- assembly and inspection of the safety-relevant elements and devices.

Procedure:

- Remove aids and tools from the unit
- Switch on the power supply
- Check the following:
  - direction of rotation of the fan motor
  - function of the sensors and displays
  - any noises that deviate from the “norm”

1.9 Safety instructions

Risk of injury!

- There are moving parts throughout the unit. Only use the unit when all protective doors are closed.
- Disabling the integrated safety and protective devices is prohibited.
- Operating the unit with removed or defective protective covers/protective glazing is prohibited.
- The unit must remain shut down until the protective cover has been fully repaired.

The air intake openings of the unit must not be obstructed. Do not use the unit if safety devices are missing, damaged or not functioning.

Tripping hazard! Workplaces and connecting routes must be freely accessible and must not be blocked, for example by objects placed there.

1.10 Safety devices

General notes. The safety of users and of operating, maintenance and service personnel is only guaranteed if all safety devices are complete and functional.

- The unit must not be used if safety devices are missing, damaged or out of order.
- The unit must not be operated in a potentially explosive atmosphere.
- The unit may only be operated on a level surface.

Emergency stop devices. An emergency stop is triggered in the following cases:

- after actuating an emergency stop device.

After actuating the emergency stop device, the unit is in the following state:

- The moving parts of the unit are at a standstill.
- All electrical voltages on the unit are switched off.
- The fault is indicated by optical signal devices.



Please note!

Do not use the emergency stop function to shut down the unit regularly! If an emergency stop is triggered during operation, rejects or damage to components of the unit may occur!

1.11 Safety measures by the operator

Behavior in the event of accidents

- In the event of an accident, give first aid immediately, call a doctor and report the type of injury,
- never leave the injured person unattended,
- observe all general and local regulations for emergency procedures.

Behavior in the event of fire. In the event of a fire caused by electricity, the unit must be disconnected from the power supply. This allows the fire to be fought effectively.

Danger!

Do not use water or foam fire extinguishers.



1.12 Type plate

The type plate is located on the side panel of the unit.

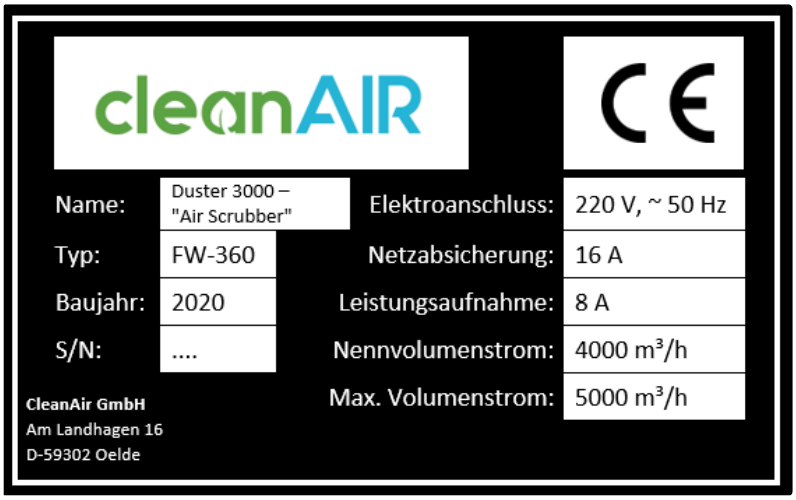


Figure 1 Type plate

1.13 Pictograms

List of additional markings attached to the unit at points that cannot be mechanically safeguarded.

NO.	PICTOGRAM	TITLE	LOCATION
1		Warning: electrical voltage	Clearly visible on the control cabinet.
2		"Check the locking clamps and the seating of the filter cassettes before switching on the unit."	Clearly visible on the controls of the unit.

1.14 Residual risk

The basic prerequisite for safe handling of the unit during operation and subsequent dismantling is compliance with the fundamental occupational safety regulations.

Although cleanAIR GmbH assumes liability for the design of the unit, certain residual risks arising from its operation cannot be avoided:

- possible crushing injuries and abrasions.

2 Description of the unit

2.1 Components / assemblies

The Duster 3000 “Air Scrubber” essentially consists of the following components:

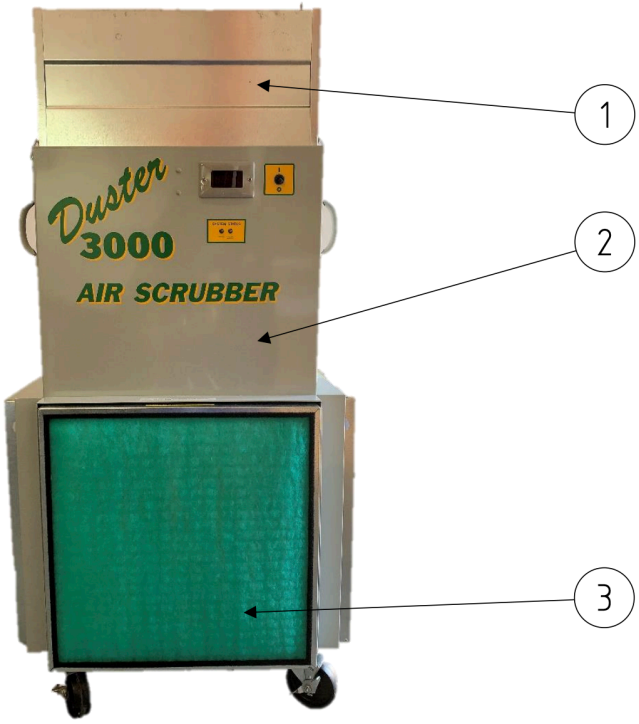


Figure 2 Components of the unit

POS.	DESCRIPTION
1	Viledon high-flow HEPA particle filter, filter class H14
2	Fan unit with electronic control
3	Prefilter units

2.2 Controls and displays

The front panel of the unit features a digital LED airflow display that shows the airflow in CFM (cubic feet per minute) and also indicates when the intake filters need cleaning. This airflow monitoring is factory-set and has a yellow warning lamp that flashes when the unit is not operating within operating tolerances and the filters need to be cleaned or replaced.

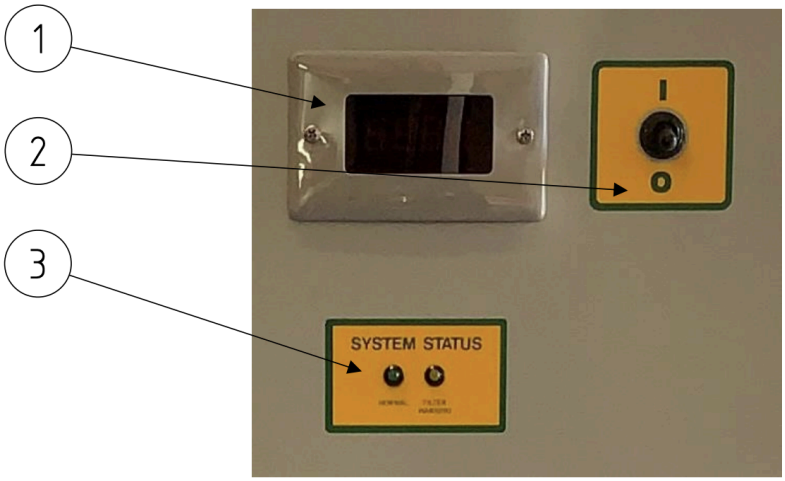


Figure 3 Controls and displays

POS.	DESCRIPTION
1	Display
2	Main switch
3	Signal lamp

2.3 Mode of operation

The air filter unit is transported to the place of use and switched on. The room air is drawn in, filtered and returned in a purified state.

2.4 Tasks of the operating personnel

- Switching the unit on and off
- Checking safety devices
- Cleaning the unit

3 Technical data

PARAMETER	VALUE
Model	**Duster 3000 “Air Scrubber”**
Type	Air filter system
Electrical connection	220 V, ~ 50 Hz
Power consumption	max. 8 A
On-site mains fuse	16 A
Weight	123.5 kg
Dimensions (W×H×D)	800 × 1,600 × 900 mm
Sound pressure level L_{pA} (3 m; acc. to DIN 45635-01-KL3)	67 dB (A)
Nominal volume flow	4,000 m³/h
Max. achievable volume flow	5,000 m³/h

4 Operating the unit

4.1 Switching the machine on

The Duster 3000 “Air Scrubber” is switched on exclusively via the main switch on the front of the unit. Readiness for operation is indicated by a green “NORMAL” lamp.



Figure 4 Controls

The digital display on the front of the unit shows the airflow volume in cubic feet per minute (ft³/min). When the unit is first commissioned, the display should show approx. 3,500 ft³/min. After about 15 minutes, the reading should stabilize at a value between 3,000 and 3,300 ft³/min.

4.2 Normal operation

In normal operation, the Duster 3000 “Air Scrubber” is set up in the desired area of use and switched on. The unit then automatically begins to filter and purify the room air. No further steps are required by the operator.

Information!

Try out different positions of the unit to achieve the best possible result. Try to place the unit as centrally in the room as possible.

4.3 Switching the machine off

The Duster 3000 “Air Scrubber” is switched off exclusively via the main switch on the front of the unit.

5 Maintenance

5.1 Safety during inspection and maintenance

Work carefully. Always observe the maintenance information from the manufacturer of the drive components used. Maintenance work may only be carried out by authorized and sufficiently qualified personnel.

Only carry out the procedures described if you understand the sequence of actions and the risks involved. For questions about repairs, please contact the manufacturer's service department.

5.2 Before starting maintenance work

For all work on the unit, including the control unit:

- Attach clearly visible, easily legible signs informing other persons of ongoing maintenance work.
- Disconnect the mains plug and secure the machine against being switched on again.

Caution!

Before starting maintenance work, check:

- that the unit is de-energized.



5.3 Maintenance work

5.3.1 Replacing the drive belt

- Switch off the unit.
- Disconnect the mains plug and secure the machine against being switched on again by third parties.
- Access to the drive belt is on the right-hand side, viewed from the operator side.
- The protective grille is now freely accessible and can be removed by loosening the six fastening screws.
- Remove the belt by pushing it over the edge of the large pulley.

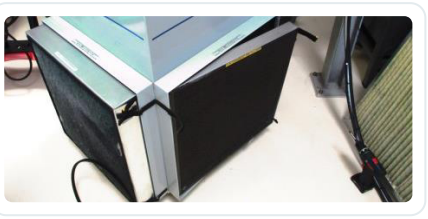


Warning!

There is a risk of **crushing your fingers**.

- Turning the pulley lifts the belt out of its guide on the pulley.

Install the new belt in reverse order.









5.3.2 Tensioning the drive belt

Checking the belt tension:

After a belt change or during a routine belt check, the belt may need to be retensioned.

The correct belt tension is reached when the belt, pressed together by hand with normal force midway between the two pulleys, leaves a gap of no less than 10 cm.

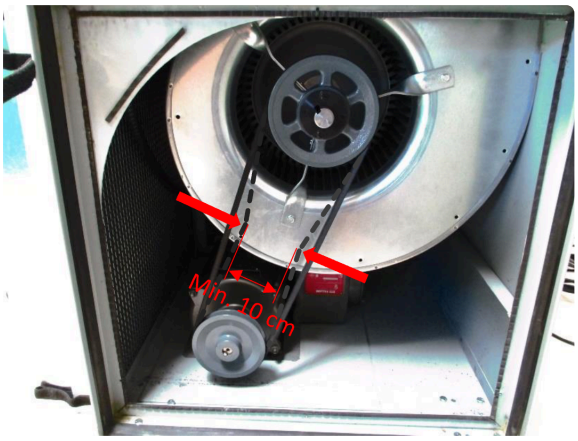
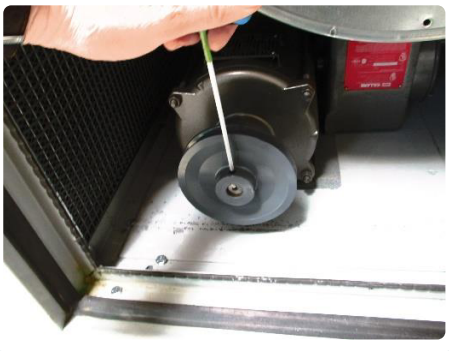
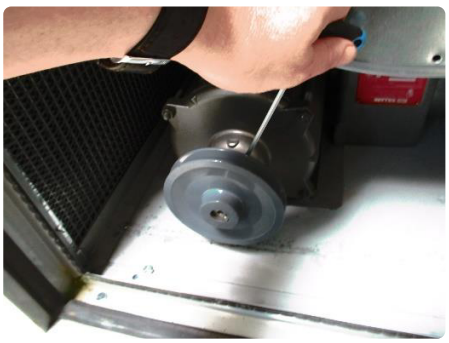


Figure 5 Drive belt tension

Tension the belt as follows:

- Remove the belt as described in the previous chapter.
- Remove the drive-side pulley by loosening the two set screws (on the front and rear pulley hub) with an Allen key.
- The pulley consists of two parts connected by a threaded hub. Screwing the two pulley flanges together or apart changes the distance between them so that the belt is tightened or loosened.





- On delivery, the gap between the two pulley halves is set to approx. 2 mm.
- When mounting the pulley, make sure that the keyways of the two pulley segments are aligned and that the pulleys can be pushed onto the motor drive shaft up to the shoulder without great effort.
- Tighten the two set screws firmly and fit the drive belt.
- Check the belt tension again and correct it if necessary as described above.
- Once the belt tension is correct, refit the protective grilles and filters in reverse order and carry out a test run.





5.3.3 Cleaning the intake filters

Depending on use, weekly cleaning is recommended. When the yellow warning lamp flashes, the intake filters must be cleaned. This is factory-set to 1,800–2,400 ft³/min. The yellow warning lamp only switches off once the filters have been cleaned.

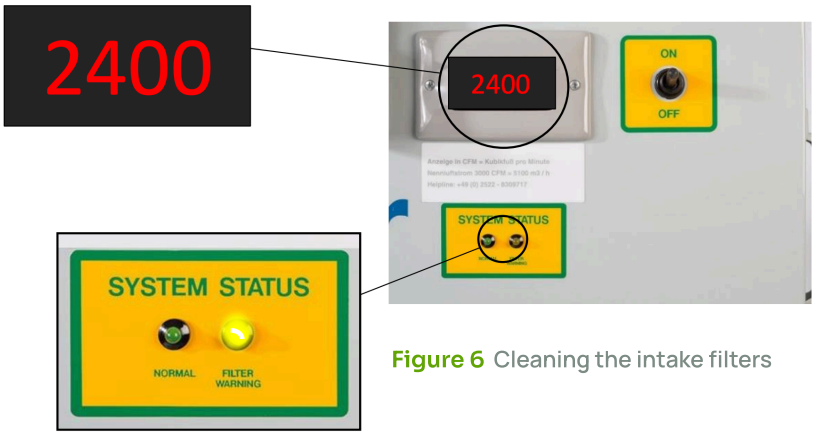


Figure 6 Cleaning the intake filters

Cleaning (green dust/paint mist filter inserts)

1. Switch off the unit,
2. remove the inserts from the intake filter frames and from the unit,
3. vacuum them or
4. blow them out with compressed air,
5. reinsert them into the intake filters.

Cleaning (pleated intake filters)

1. Switch off the unit,
2. remove the intake filters and dust filter inserts from the unit,
3. vacuum only the front side (the side facing away from the unit),
4. occasionally remove the intake filters and blow out the pleated filters to remove particles that could not be vacuumed. The filters can also be pressure-washed every 3 months (not more than 400 psi = 27 bar).

Note: If the dust filter inserts have been washed, wait 24 hours before reinserting them.

5. Reinsert the dust filter inserts into the clean intake filters,
6. reinsert the intake filters into the unit.

High-flow HEPA particle filter

1. Switch off the unit,
2. release the locking clamps and replace the filter.

5.4 After completing maintenance work

Before switching on again, make sure that:

- all maintenance equipment and aids (e.g. tools, cleaning materials, measuring and test equipment) have been removed from the unit,
- all protective covers have been correctly refitted,
- all safety devices are functional again,
- no persons are in danger zones.

6 Decommissioning

6.1 Legal basis

The unit must be disposed of in accordance with national and local regulations.

6.2 Preventing environmental damage

Caution!

During decommissioning and dismantling of this unit, substances may be released that damage or pollute the environment.

Avoid environmental damage through proper disposal! If necessary, have disposal carried out by an approved specialist company.

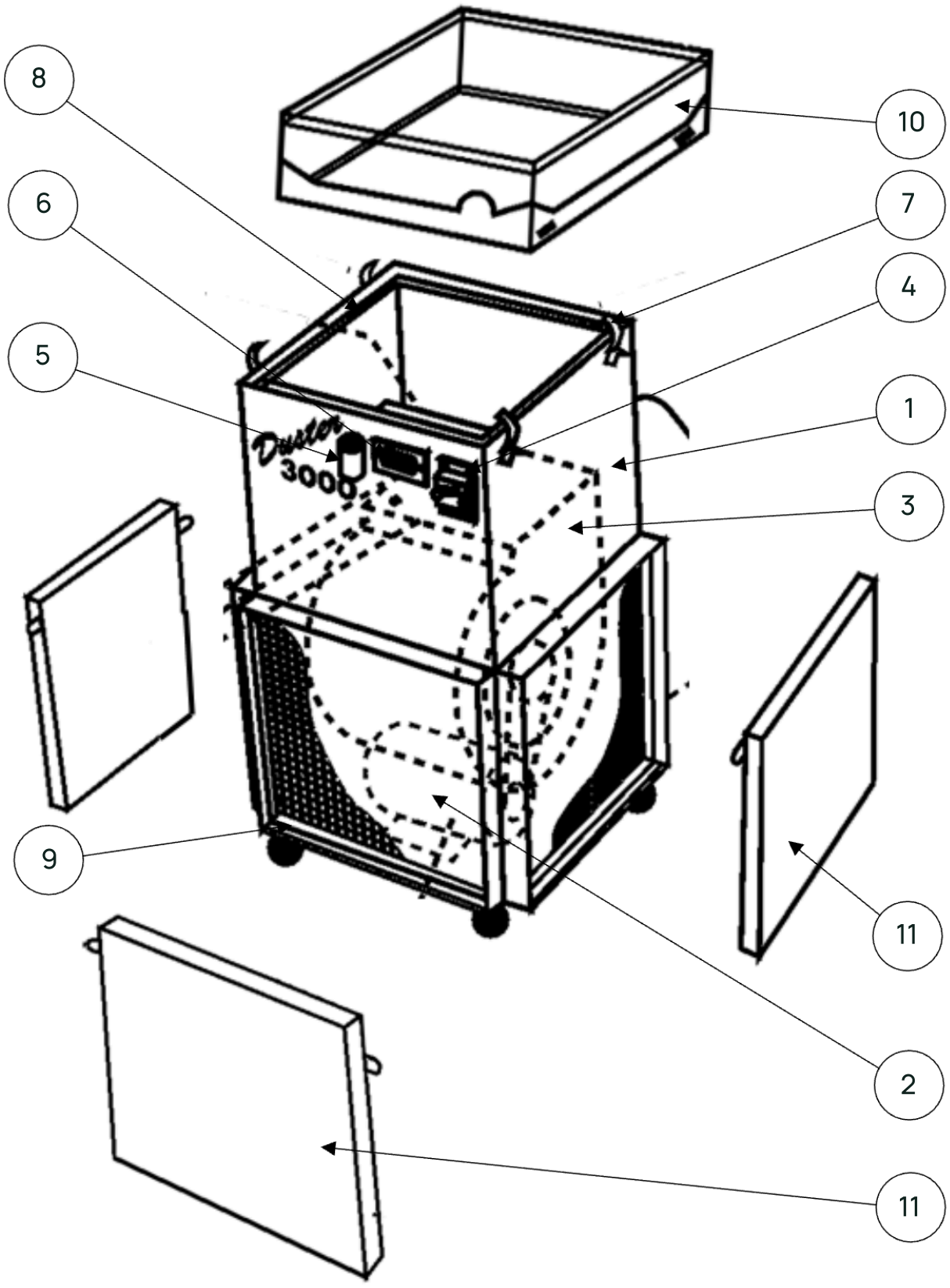


6.3 Potentially environmentally harmful components

The following auxiliary materials of the unit can cause environmental damage:

SUBSTANCE	POSSIBLE ENVIRONMENTAL DAMAGE
Lubricants	Contamination of groundwater/soil
Filter inserts	Hazardous waste containing solvents

7 Technical overview drawing



Exploded view of the assemblies with item numbers according to the spare parts list (chapter 8).

8 Spare parts

POS.	BEZEICHNUNG
1	Housing – galvanized sheet steel, powder-coated
2	Motor, 1-1/3 HP, 220 V ~50 Hz, 6.5 A
3	Squirrel-cage blower
4	Power switch cover
5	Yellow warning lamp
6	Digital airflow display
7	Locking clamps
8	Filter gaskets: top, neoprene
9	Filter gaskets: bottom (intake filter gaskets)
10	Viledon high-flow HEPA particle filter H14
11	Intake filter insert

8.2 Replacement filter inserts

Filter stage 1

Prefilter

3-layer fiberglass pre-filter mat for spray powder and coarse dust.

- Service life 3–6 months
- 1 set = 3 pieces (66 × 66 × 5 cm)

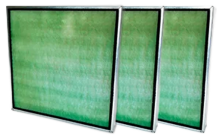


Filter stage 2

Dust Filter (HP90)

Pleated fiber material in a metal frame for fine dust. Extends the service life of the HEPA filter.

- Service life 6–12 months
- 1 set = 3 pieces (61 × 61 × 10 cm)



Filter stage 3

HEPA 14 Particle Filter

High-flow HEPA filter, 99.995% particle removal efficiency. Leak-tested in accordance with EN 1822, with an individual test certificate.

- Service life 12 months
- 1 piece (61 × 61 × 29.2 cm) · Item no. CA11212



9 Declaration of conformity

EG-Konformitätserklärung

im Sinne der RICHTLINIE 2006/42/EG DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 17. Mai 2006 über Maschinen und zur Änderung der Richtlinie 95/16/EG (Neufassung), Anhang II A.

Hersteller:

Name:	CleanAir GmbH	**Telefon:**	+49 2522 - 830 97 17
Straße:	Am Landhagen 16	**E-Mail:**	info@duster-3000.com
PLZ Stadt:	59302 Oelde	**Webseite:**	www.duster-3000.com

Beschreibung und Identifikation des Produktes:

Handelsname:	Duster 3000 "Air Scrubber"	**Art:**	Maschine
Typ:	Luft Filtersystem	**Baujahr:**	2020
Produkt-/Serien Nr.:	....		

Beschreibung: Mobiles Filtersystem zur Filterung und Aufbereitung der Umgebungsluft.

Es wird ausdrücklich erklärt, dass das Produkt allen einschlägigen Bestimmungen der folgenden EG-Richtlinien entspricht:

Nr.	Dokumenten-Nr.	Titel der Richtlinie
1	2006/42/EG	RICHTLINIE 2006/42/EG DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 17. Mai 2006 über Maschinen und zur Änderung der Richtlinie 95/16/EG
2	2014/30/EU	RICHTLINIE 2014/30/EU DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 26. Februar 2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit (Neufassung)

Die folgenden harmonisierten Normen nach Artikel 7 (2) wurden angewandt:

Nr.	Referenz der Norm	Titel der Norm
1	EN 12100	Sicherheit von Maschinen — Allgemeine Gestaltungsleitsätze — Risikobeurteilung und Risikominderung (ISO 12100:2010)
2	EN 60204-1:2006	Sicherheit von Maschinen — Elektrische Ausrüstung von Maschinen — Teil 1: Allgemeine Anforderungen IEC 60204-1:2005 (modifiziert)
3	EN 60335-1:2012	Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke — Teil 1: Allgemeine Anforderungen
4	EN 60335-2-65:2003	Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke — Teil 2-65: Besondere Anforderungen für Luftreinigungsgeräte
5	DIN EN 55014-1	Elektromagnetische Verträglichkeit – Anforderungen an Haushaltgeräte, Elektrowerkzeuge und ähnliche Elektrogeräte — Teil 1: Störaussendung (VDE 0875-14-1:2018-08)
6	EN 547-1:1996+A1:2008	Sicherheit von Maschinen — Körpermaße des Menschen — Teil 1: Grundlagen zur Bestimmung von Abmessungen für Ganzkörper-Zugänge an Maschinenarbeitsplätzen
7	EN 547-3:1996+A1:2008	Sicherheit von Maschinen — Körpermaße des Menschen — Teil 3: Körpermaßdaten
8	EN 894-1:1997+A1:2008	Sicherheit von Maschinen — Ergonomische Anforderungen an die Gestaltung von Anzeigen und Stellteilen — Teil 1: Allgemeine Leitsätze für Benutzer-Interaktion mit Anzeigen und Stellteilen

Die in der Gemeinschaft ansässige Person, die für die Zusammenstellung der technischen Unterlagen bevollmächtigt ist:

Name:	en:plan	**Telefon:**	+49 (0) 5921 – 8 50 44 66
Straße:	Porschestraße 25	**E-Mail:**	info@en-plan.org
PLZ Stadt:	D-48529 Nordhorn	**Webseite:**	www.en-plan.org

Oelde, 10.09.2020

Ort, Datum

Geschäftsführung CleanAir GmbH
Dirk Pöttker

10 Glossary

authorized
means that the person has been instructed by the operator or manufacturer to carry out the specified tasks. The operator/manufacturer must ensure that the person is sufficiently qualified to carry out the assigned work safely.

appointed
means that a person has been authorized in writing by the operator or manufacturer to carry out a task.

trained/instructed
means that the person has been instructed in carrying out the specified tasks in a training/instruction session. This instruction should be documented. A trained/instructed person is informed about existing residual risks.

qualified
means that, due to their training, studies, many years of professional experience or similar, the person is able to carry out the assigned task without endangering themselves or others. The person is familiar with existing residual risks and, due to their qualification, is able to assess and, where possible, prevent them.

safety-critical
means that the fault-free operation of the specified components is essential to ensure safe operation, maintenance etc. of the unit. If safety-critical components are defective or are operated/maintained by insufficiently qualified or trained personnel, serious injury or even death may result.

Operators
are trained persons who operate the unit in normal operation. Depending on the unit, operators may carry out simple, non-safety-critical tasks in troubleshooting, repair, inspection and maintenance. Which of these tasks operators may carry out themselves and which are reserved for service personnel is defined in the maintenance chapter of the operating manual.

Qualified electrician
is a person who is particularly familiar with handling electrical systems. They know and understand the specific risks associated with work on electrical installations and can carry out their work without endangering themselves or others.

Specialist
is a person who is sufficiently qualified to carry out the assigned task without endangering themselves or others. The person is familiar with existing residual risks and, due to their qualification, is able to assess and, where possible, prevent them.

Trained personnel

includes all employees of the operator who have been instructed in handling the unit concerned, the working environment and the safety devices. These persons are informed about existing residual risks.

Commissioning personnel

are service personnel specifically authorized to commission a unit. They may belong either to the operator or to the manufacturer.

Customer service personnel

are service personnel of the manufacturer. These employees are authorized by the manufacturer to work on safety-critical components. The manufacturer ensures that its employees are sufficiently trained and qualified to carry out the required tasks without endangering themselves or others.

Personnel

includes all employees of the operator, including persons from other areas of the company who are not familiar with the unit concerned, the working environment and the safety devices. These persons may therefore not be informed about existing residual risks and cannot avoid them. Such persons must be kept away from sources of danger and informed by warning or prohibition signs.

Service personnel

includes all trained and qualified employees of the operator or manufacturer who are authorized to carry out commissioning, maintenance, inspection, etc. on safety-critical components.

Contractual partners

are service personnel of a third-party company that has entered into a contract with the manufacturer. These contractual partners are authorized by the manufacturer to work on safety-critical components. The contractual partner ensures that its employees are sufficiently trained and qualified to carry out the required tasks without endangering themselves or others.

Maintenance personnel

are service personnel specifically authorized to maintain a unit. They may belong either to the operator or to the manufacturer.

APPENDIX

Instruction and training aid

As the company/operator, you are obliged to inform and instruct the operating personnel about existing legal and accident prevention regulations and about the safety devices of the unit.

This obligation also extends to safety devices that are used or installed in connection with the use of the unit. The different professional qualifications of the employees must be taken into account.

The operating personnel must have understood the instruction, and it must be ensured that the instruction is observed.

This is the only way to ensure that your personnel work in a safety- and hazard-conscious manner. Compliance with the instruction should be checked regularly. As the company/operator, you should therefore have each employee confirm their participation in an instruction session in writing.

The following pages contain examples of training topics and a copy template for confirming participation in the training/instruction.

Examples of training topics

1 · Safety

- Accident prevention regulations
- General legal regulations
- General safety instructions
- Emergency measures
- Safety instructions for operating the unit
- Safety devices in the vicinity of the unit
- Meaning of symbols and signs
- _____
- _____

2 · Handling the unit

- Using the controls
- Correct setup of the unit
- Ergonomically correct lifting and carrying of loads
- Explanation of the operating manual for operating personnel
- Particular experience of the operator in handling the unit
- Troubleshooting
- _____
- _____

3 · Servicing and maintenance regulations

- Proper handling of cleaning agents and lubricants
- Particular experience of the operator in maintenance, servicing, cleaning, care and correct setup of the unit
- _____
- _____

Confirmation of instruction

By signing this record, the signatories confirm the accuracy of the following information and data:

Trade name	Duster 3000 “Air Scrubber”
Type	Air filter system
Date placed on the market	2020
Product/serial number	....
Product type/category	Machine

I hereby confirm that I have understood the contents of this instruction.

TOPIC OF INSTRUCTION	DATE
DURATION OF INSTRUCTION	TRAINER / SIGNATURE

NO.	LAST NAME, FIRST NAME	SIGNATURE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		