



Operating instructions

Cyclone separator

ZA-60/PRO

BA-04-000004-00-EN

Scope

These operating instructions apply only to the device specified on the cover page.

Check the device model using the device's type plate.

Original manual / Translation of the original manual

The English version of this operating manual is the original manual in accordance with the EU Machinery Directive.

Copies in other languages are translations of the original manual.

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The function of the machine is limited to the functions described in the accompanying technical documentation.

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1 Information and support

1.1 Thanks to the buyer

Thank you for purchasing a device from Kernlochbohrer GmbH.

Please read the operating instructions carefully and observe the safety instructions. By following the operating instructions, you will be able to take full advantage of the outstanding performance of our product.

If you have any questions about operating the device, please contact Kernlochbohrer GmbH directly. We are available to answer your questions at any time.

1.2 Use of the operating instructions

The device is intended for professional use and may only be operated by trained personnel. Strictly adhere to the instructions in the operating instructions.

Our company accepts no responsibility for any injuries or damage to property resulting from failure to observe the operating instructions.

The operating instructions are essential for using the device. The operating instructions must therefore always be kept near the device and be accessible to the designated personnel at all times.

In addition to the operating instructions, the generally applicable and local regulations on accident prevention and environmental protection must be provided; compliance with these regulations must be checked regularly.

1.3 Changes

Kernlochbohrer GmbH reserves the right to change the design and appearance of the products and their operating instructions. Future changes to the operating instructions will be made without prior notice.

1.4 Explanation of symbols



This symbol indicates hazards that you must be aware of when performing the following tasks in order to avoid injury to yourself, other persons or damage to property.



Cross-reference to another section in the operating instructions.



Prerequisite for an action.



Action to be performed.



Behaviour of the device that can be expected as a result of the preceding action.



Background information or reference to special features.

1.5 Warranty

In accordance with the general terms and conditions of delivery of Kernlochbohrer GmbH, a warranty period of 12 months applies to material defects in business transactions with companies (proof by invoice or delivery note).

Damage attributable to natural wear and tear, overloading or improper handling is excluded from this warranty.

Damage caused by material or manufacturing defects will be repaired or replaced free of charge. Complaints can only be accepted if the device is sent to Kernlochbohrer GmbH without being dismantled.

Wear parts are excluded from the warranty.

1.6 Environmental protection

1.6.1 Disposal of the product

Follow national regulations on environmentally friendly disposal and recycling of end-of-life machines and accessories.

1.6.2 Disposal of packaging

The packaging is made from recyclable materials. It must be disposed of in accordance with your local regulations.

1.7 Service

Precise information and specific questions enable faults to be rectified quickly, facilitate the ordering of spare parts and prevent incorrect deliveries.

Before contacting the service department, please collect the following information.

The model name must be provided for all questions and orders.

This information can be found on the type plate of the device or on the cover page of this operating manual.

In the event of faults, further information is required:

Type and extent of the fault, accompanying circumstances, suspected cause.

When ordering spare parts, please provide:

Quantity and item number in the exploded view in this operating manual or article number (if known).

- ① You are welcome to send us photos or videos of malfunctions when ordering spare parts.

Contact details:

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2 Security

2.1 General

The device has been constructed in accordance with the latest technology and in compliance with applicable laws, standards and safety regulations. Nevertheless, use of the device may pose a risk to the user or third parties and may result in damage to the device and other property.

The device may only be used in perfect condition and in accordance with its intended purpose, and with due regard for safety and potential hazards.

In the event of damage or malfunction, immediately take the device out of service, secure it against use and repair it or arrange for it to be repaired.

2.2 Intended use and mode of operation

The cyclone separator is designed for the pre-separation of dry, non-combustible dust. For this purpose, the cyclone separator must be connected to a vacuum cleaner with the appropriate suction power.

Do not vacuum any combustible or explosive dust (e.g. magnesium, aluminium, etc.) – explosion hazard!

Do not vacuum up sparks or hot parts (e.g. metal chips, ash, etc.) with a temperature above 60 °C – risk of fire and explosion!

Do not vacuum up any aggressive substances (e.g. acids, alkalis, solvents, etc.).

The device may only be used within its limits and technical data. This information, e.g. performance data and ambient conditions, can be found in the "Technical Data" chapter.

Any other or additional use is considered improper – risk of accident!
Kernlochbohrer GmbH is not liable for any damage resulting from this. The risk is borne solely by the operator.

Proper use also includes observing the operating instructions and adhering to the prescribed maintenance intervals.

2.3 Safety regulations for the operator

2.3.1 Organisational safety measures

The operating instructions must be available to operating and maintenance personnel at all times. They must therefore always be kept at the place of use of the device.

The regulations governing accident prevention and environmental protection applicable at the location where the device is used must also be available. The operator of the device must regularly check compliance with these regulations.

The use of noise-emitting devices may be restricted by national or local regulations.

The device must not be operated in potentially explosive atmospheres.

All safety and hazard warnings on the device must be legible and must not be removed.

The protective equipment required for operating the device must be provided by the operator. The operator must ensure that the protective equipment is used properly by the personnel.

Operating and auxiliary materials, such as lubricants or cleaning agents, must be selected in such a way that the limit values for hazardous substances applicable at the place of use are complied with. The regulations for environmental protection and disposal applicable at the place of use must be observed.

2.3.2 Modifications to the device

The operator may not make any modifications to the device without the written approval of Kernlochbohrer GmbH. If the operator makes modifications without approval, the warranty shall be void. Kernlochbohrer GmbH shall not be liable for damage caused by unauthorised modifications.

2.3.3 Spare parts

Spare parts must comply with the specifications defined by Kernlochbohrer GmbH. This is always guaranteed for spare parts supplied by Kernlochbohrer GmbH. Kernlochbohrer GmbH is not liable for damage caused by the use of unsuitable spare parts.

2.3.4 Personnel

All persons assigned to the commissioning, operation and maintenance of the device must have read and understood the operating instructions beforehand.

The device may only be operated by persons who have been adequately instructed beforehand.

Maintenance of the device may only be carried out by persons who have completed specialist training appropriate to this activity.

Minors are not permitted to work with the device. Young people over the age of 16 who are being trained under supervision are exempt from this rule.

2.4 Safety regulations for personnel

2.4.1 Safe behaviour

All persons responsible for commissioning, operating and maintaining the device must have read and understood the operating instructions beforehand.

The device may only be operated by persons who have been adequately instructed beforehand.

Maintenance of the device may only be carried out by persons who have completed specialist training appropriate to this activity.

Minors are not permitted to work with the device. Young people over the age of 16 who are being trained under supervision are exempt from this rule.

Any working method on and with the device that compromises safety must be avoided.

All safety and hazard warnings on the device must be legible and must not be removed.

2.4.2 Safe operation

Operation of the device requires the full concentration and performance of the personnel. Persons who are overtired, unfocused or under the influence of alcohol, drugs or medication must not work on or with the device.

Persons who are not directly involved in operating the device must maintain a sufficient safety distance from it.

Check that the device is in perfect condition before use.

If the device is damaged, it must not be used. Secure the device against use and repair it or arrange for it to be repaired.

To avoid compromising the functionality and safety of the device, covers or other components of the device must not be removed.

Before starting or putting the device into operation, ensure that no persons are endangered by the starting device.

Controls must not be operated carelessly or deliberately. This could result in personal injury or damage to property.

The device must not be left unattended during use.

Air intake and exhaust openings must not be covered during use.

The device must be cleaned regularly to prevent dirt from accumulating. All controls and handles must be kept clean, dry and free of grease.

When not in use, the device must be stored in such a way that no one is endangered. Secure the device against unauthorised use.

2.4.3 Protective equipment

If the noise emissions generated during use of the device exceed the limit values applicable to this workplace, suitable hearing protection must be worn.

There is a risk of harmful dust when disposing of dust and cleaning the machine! Therefore, personnel must wear suitable protective equipment when carrying out these activities:

- Safety goggles
- Protective gloves
- FFP3 protective respirator
- Disposable clothing

Persons performing maintenance work on the device are required to wear additional, suitable protective equipment necessary for this activity.

2.5 Safety during maintenance

2.5.1 General

Maintenance of the device may only be carried out by persons who have completed specialist training appropriate to this activity.

The maintenance activities and intervals specified in the operating instructions must be observed.

Workshop equipment appropriate to the type of activity is required to carry out maintenance activities.

The following safety precautions must be taken before starting maintenance work:

- Position the device so that the area to be worked on is easily accessible.
- Set the device to the appropriate operating mode.

After completing maintenance work:

- Assemble the device completely.
- If any operating elements or safety devices have been removed, they must be reinstalled and their function checked.
- Retighten any loose screw connections. Reattach screw locks.

2.5.2 Cleaning

Do not use any corrosive, hazardous or environmentally harmful substances to clean the device. Dispose of cleaning agents in an environmentally friendly manner.

3 Technical data

Item number	6451
Collection container: Volume	60 litres
Collection container: Material	Steel
Inlet diameter	Ø 70 mm
Outlet diameter	Ø 50 mm
Suction hose	Ø50 x 1000 mm
Width	450 mm
Depth	450 mm
Height	870 mm
Weight	16 kg
Ambient temperature	max. +40 °C
Relative humidity	max. 85%

4 Device description

4.1 Function

After starting the vacuum cleaner, the dust-laden air is sucked into the cyclone separator at high speed through the suction hose. There, the air is slowed down by the cyclone and coarse dust particles are separated by centrifugal force and gravity.

Air and finer particles are directed through the hose to the vacuum cleaner.

Separated dust collects in the cyclone separator until the vacuum cleaner is switched off, then it falls to the bottom of the container.

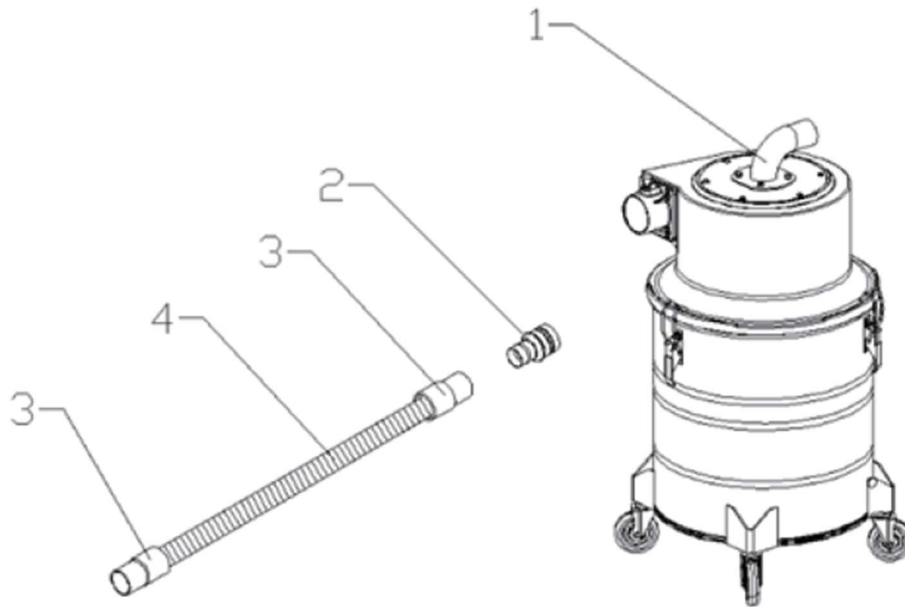
4.2 Device components



- 1 Outlet angle flange
- 2 Upper part
- 3 Inlet flange
- 4 Reducing piece
- 5 Quick release fasteners (3 pieces)
- 6 Carrying handle (2 pieces)
- 7 Collection container
- 8 Castors (4 pieces, 2 of which have locking brakes)
- 9 Suction hose with hose sleeves (2 pieces)

4.3 Scope of delivery

The scope of delivery includes the following components:



Item	Description	Number
1	Cyclone separator ZA-60/PRO	1
2	Reducing piece (Ø 70/50 mm)	1
3	Hose sleeve (Ø 50 mm)	2
4	Suction hose (Ø 50 mm length 1000 mm)	1

Not shown in the illustration:


Item	Designation	Quantity
-	Outlet angle flange	1
-	Carrying handle with 2 fixing screws	2

5 Using the cyclone separator

5.1 Preparing the cyclone separator

5.1.1 Unpacking the cyclone separator

When unpacking the cyclone separator, check that all accessories are present.


 See chapter 4.3 "Scope of delivery".

① If the scope of delivery is incomplete, please contact Kernlochbohrer GmbH.

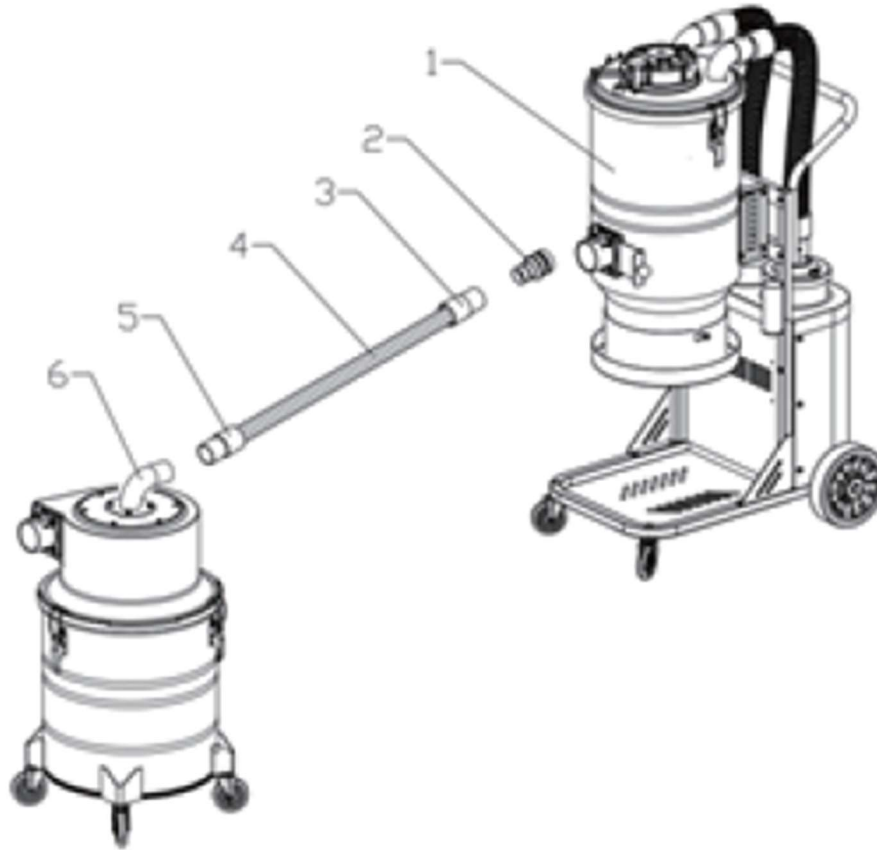
5.1.2 Assemble the cyclone separator

After unpacking the cyclone separator, the outlet angle flange and carrying handles must be attached.

Procedure:

- ☑ Unpack the cyclone separator and check that it is complete.
 -  See chapter 5.1.1 "Unpacking the cyclone separator".
- ☒ Attach the outlet angle flange to the top of the cyclone separator.
- ☒ Attach both carrying handles to the collection container of the cyclone separator.

5.1.3 Connect the cyclone separator to the vacuum cleaner



- 1 Vacuum cleaner
- 2 Reducing piece (Ø 70/50 mm)
- 3 Hose sleeve (Ø 50 mm)
- 4 Suction hose (Ø 50 mm | length 1000 mm)
- 5 Hose sleeve (Ø 50 mm)
- 6 Cyclone separator ZA-60/PRO

Procedure:

- Connect the outlet of the cyclone separator to the inlet of the vacuum cleaner using the accessories supplied.
- Attach the vacuum cleaner's suction set to the inlet of the cyclone separator. Use the reducer if necessary.

5.2 Working with the cyclone separator




5.2.1 Visual inspection of the cyclone separator

Before working with the cyclone separator, a visual inspection must be carried out:

- Check the general condition and cleanliness of the cyclone separator.
- Check that all covers and components of the cyclone separator are present.
- Check that all screws are tight.
- Air inlet and outlet openings must not be dirty or covered.

5.2.2 Using the cyclone separator

Procedure:

- Cyclone separator prepared.
 See chapter 5.1 "Preparing the cyclone separator".
- Visual inspection of the cyclone separator carried out.
 See chapter 5.2.1 "Visual inspection of the cyclone separator".
- Set up the cyclone separator so that it cannot tip over.
- If the cyclone separator needs to be secured against rolling away: Apply the locking brakes on the castors.
- Switch on the vacuum cleaner and start collecting dust.
- Check the fill level in the cyclone separator's collection container continuously during dust collection.
 See chapter 5.2.3 "Dust disposal".

5.2.3 Dust disposal



Harmful dust may be released during cleaning and maintenance of the cyclone separator!


Wear safety goggles, protective gloves, disposable protective clothing and an FFP3 respiratory mask!

Procedure:

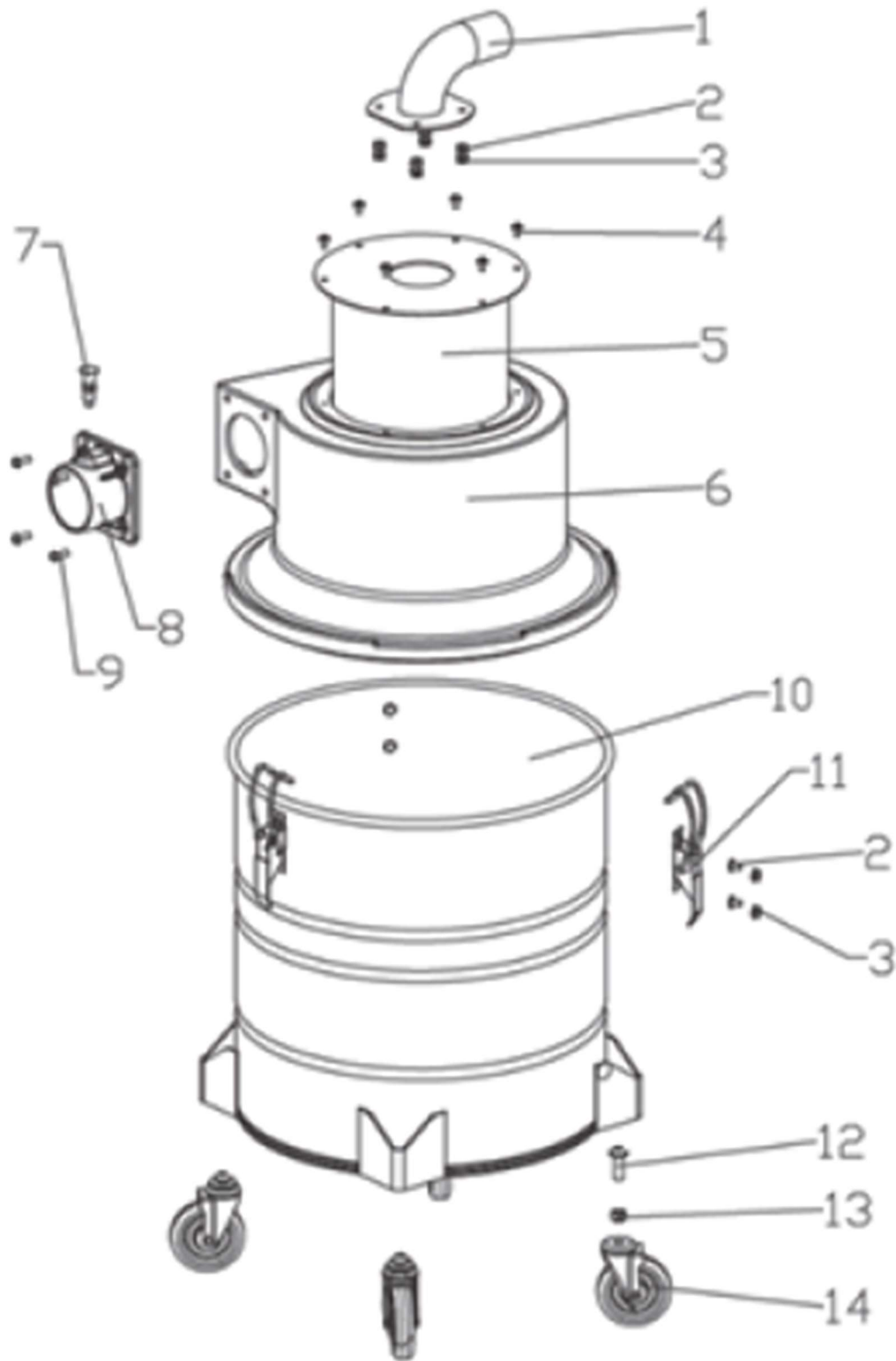
- ☒ Switch off the vacuum cleaner.
- ☒ Remove the vacuum cleaner's power plug from the socket.
- ☒ Position the cyclone separator so that it cannot tip over.
- ☒ Apply the locking brakes on the castors.
- ☒ Open the quick release fastener on the upper section.
- ☒ Remove the upper part of the cyclone separator.
- ☒ Empty the collection container of the cyclone separator and dispose of the collected material in an environmentally friendly manner in accordance with regional laws and guidelines.
- ☒ Clean the collection container and upper section. Dispose of residual material and cleaning agents in an environmentally friendly manner.
- ☒ If the cyclone separator is cleaned with water, the device must be dried thoroughly afterwards.
- ☒ Place the upper part on the collection container.
- ☒ Secure the upper part with quick-release clamps.

5.2.4 Finish work

Procedure:

- ☒ Switch off the vacuum cleaner.
- ☒ Remove the vacuum cleaner's power plug from the socket.
- ☒ Position the cyclone separator so that it cannot tip over.
- ☒ Apply the locking brakes on the castors.
- ☒ Remove the connecting hose from the outlet of the cyclone separator to the inlet of the vacuum cleaner.
- ☒ Remove the suction set from the inlet of the cyclone separator.
- ☒ Clean the dirty suction set, connecting hose and accessories.
- ☒ Empty and clean the collection container of the cyclone separator.
 See chapter 5.2.3 "Dust disposal".
- ☒ Clean the outside of the cyclone separator.
- ☒ If the cyclone separator is cleaned with water, the device must be dried thoroughly afterwards.
- ☒ Store the cyclone separator in a dry, cool place protected from moisture and direct sunlight.
- ☒ Secure the cyclone separator against unauthorised use.

6 Spare parts



No.	Description	Quantity
1	Outlet angle flange	1
2	Hexagon screw with lock M6x12	7
3	Hexagon nut with lock M6	7
4	Flat head Phillips screw M5x15	6
5	Separator inner tank	1
6	Upper part	1
7	Index pin on inlet flange	1
8	Inlet flange	1
9	Hexagon screw with pan head M6x20	4
10	Collection container	1
11	Quick release	3
12	Hexagon screw M10x40	4
13	Hexagon nut with lock M10	4
14	Roller (2 of which have a locking brake)	4