

Portable, Mobile & Compact Extractions Units Industrial Vacuum Cleaners

510E



Original Instruction Manual

Declaration of Conformity

EN English

Declaration of conformity

We, AB Ph. Nederman & Co., declare under our sole responsibility that the Nederman product:

Electrical vacuum cleaners from 500-series with part no. 46050xxx to which this declaration relates, is in conformity with all the relevant provisions of the following directives and standards:

Directives

2006/42/EC, 2014/30/EU, 2011/65/EU

Standards

EN 12100: 2010, EN 60335-2-69: 2012, EN60335-1: 2012, EN55014-1: 2021, EN55014-2: 2015, EN61000-3-2:2019/A1:2021, EN61000-3-3:2013

The name and signature at the end of this document is the person responsible for both the declaration of conformity and the technical file.

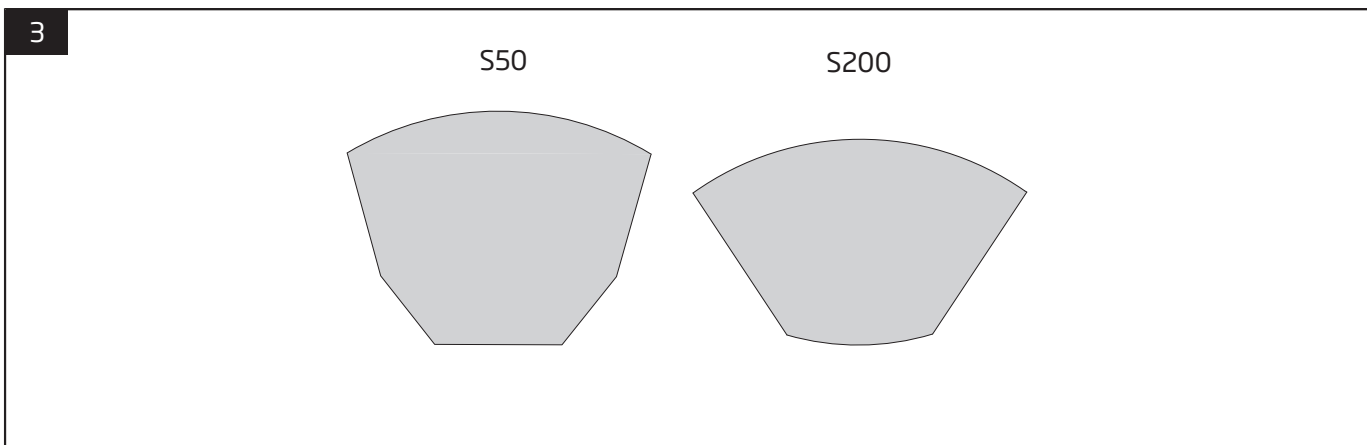
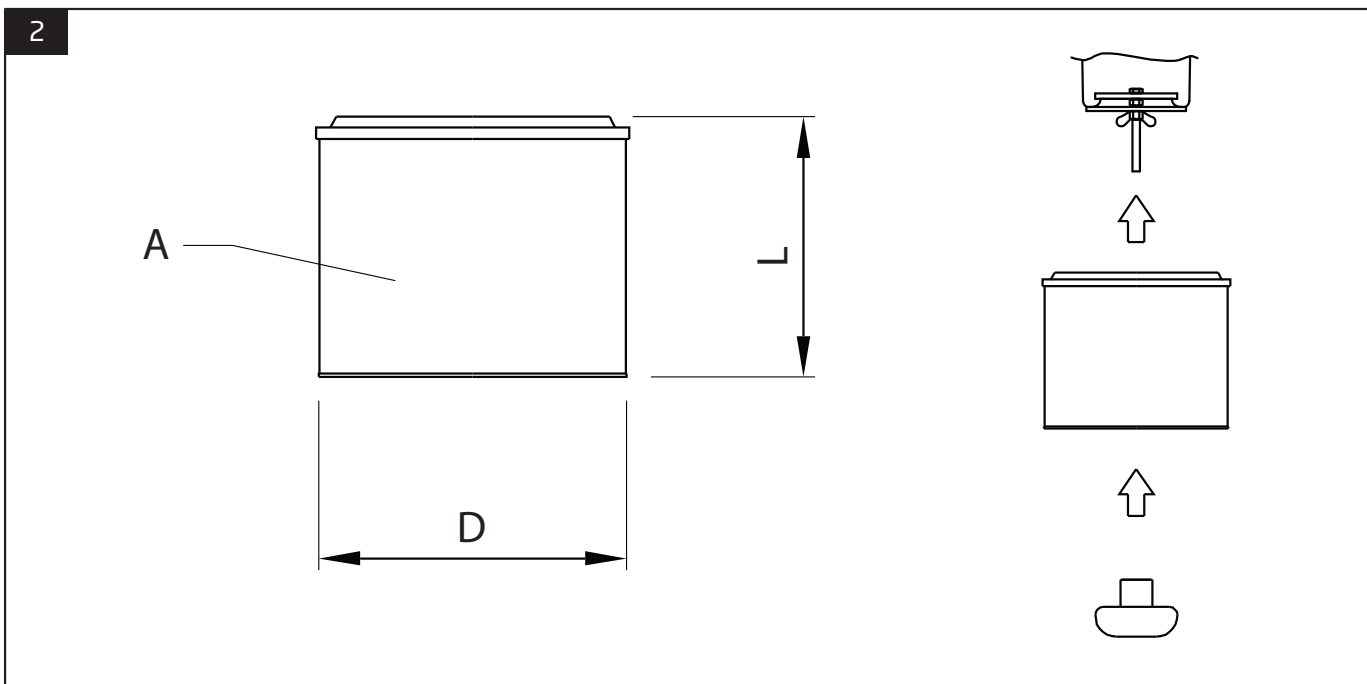
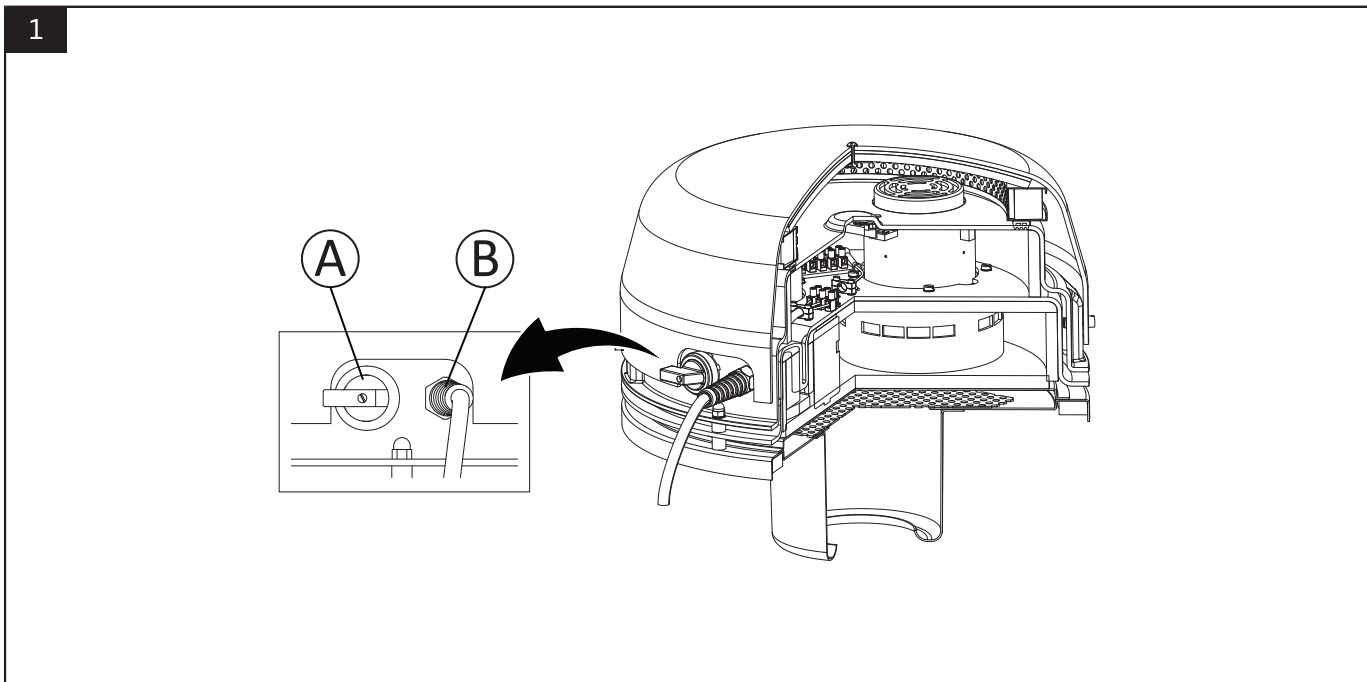


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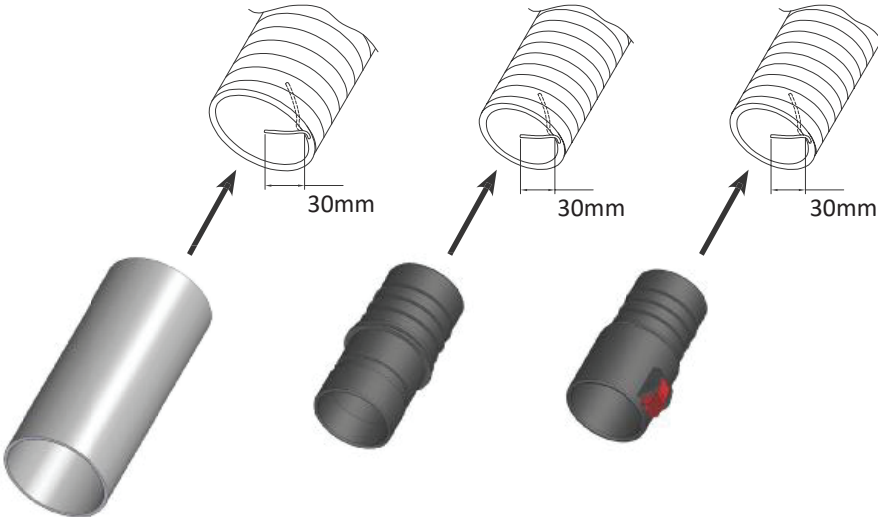
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2021-10-06



Figures

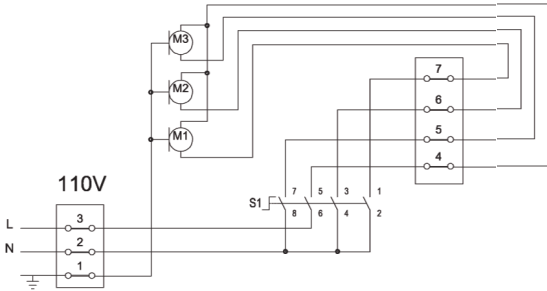


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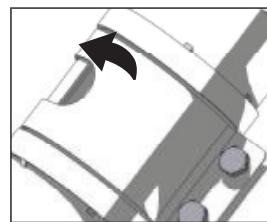
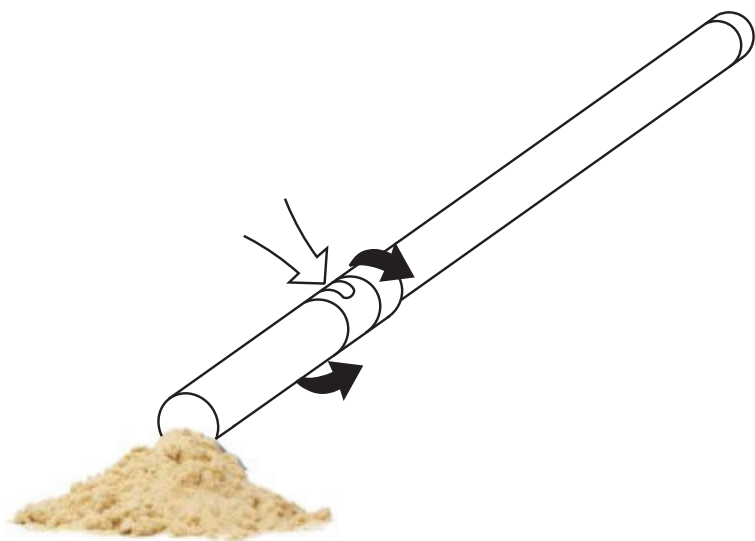


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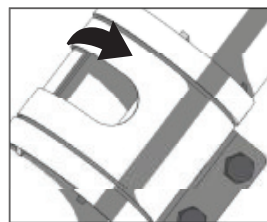
NEL3



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kg



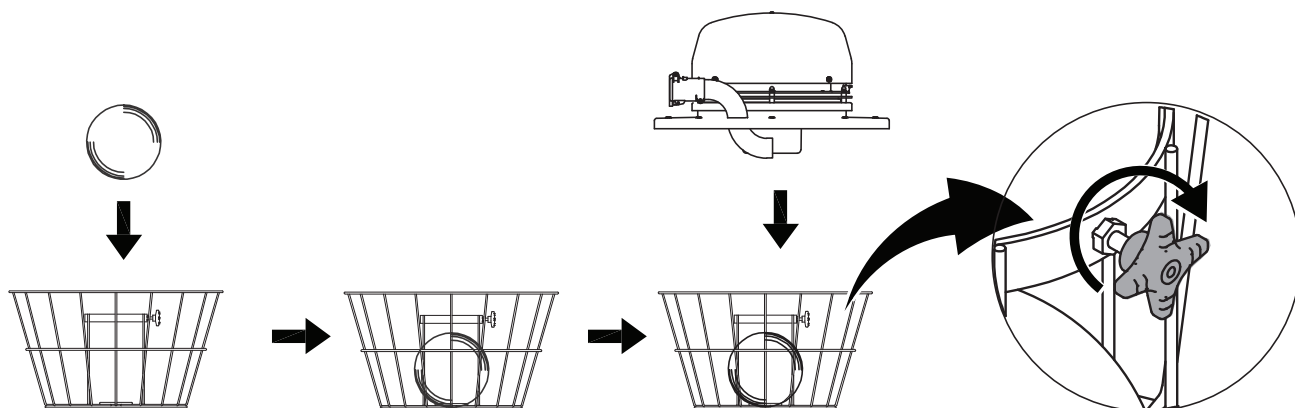
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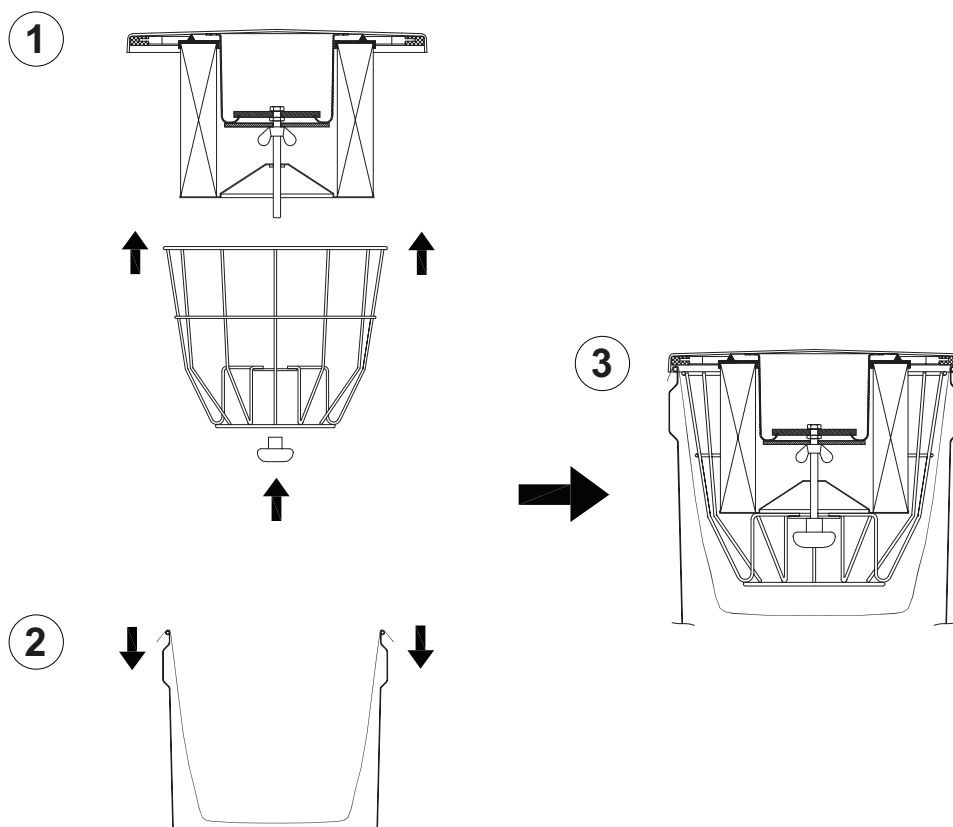
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10 A

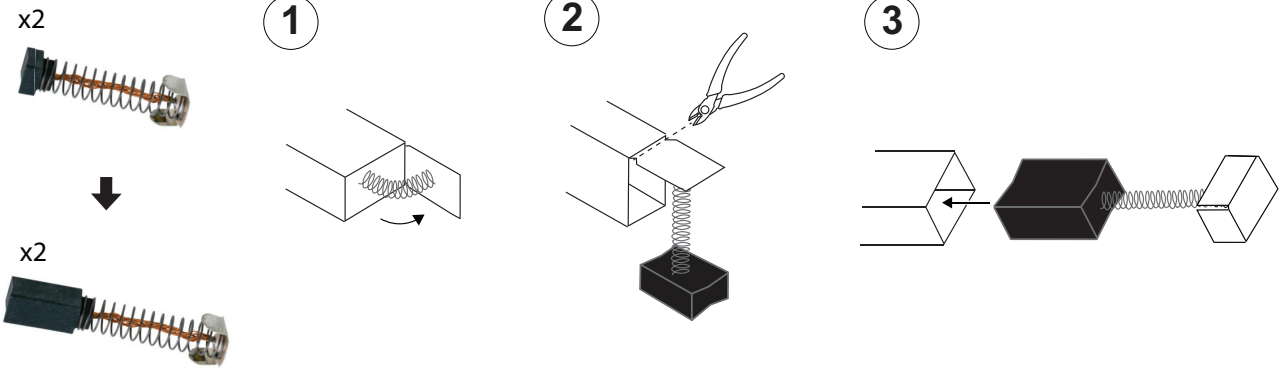
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x2

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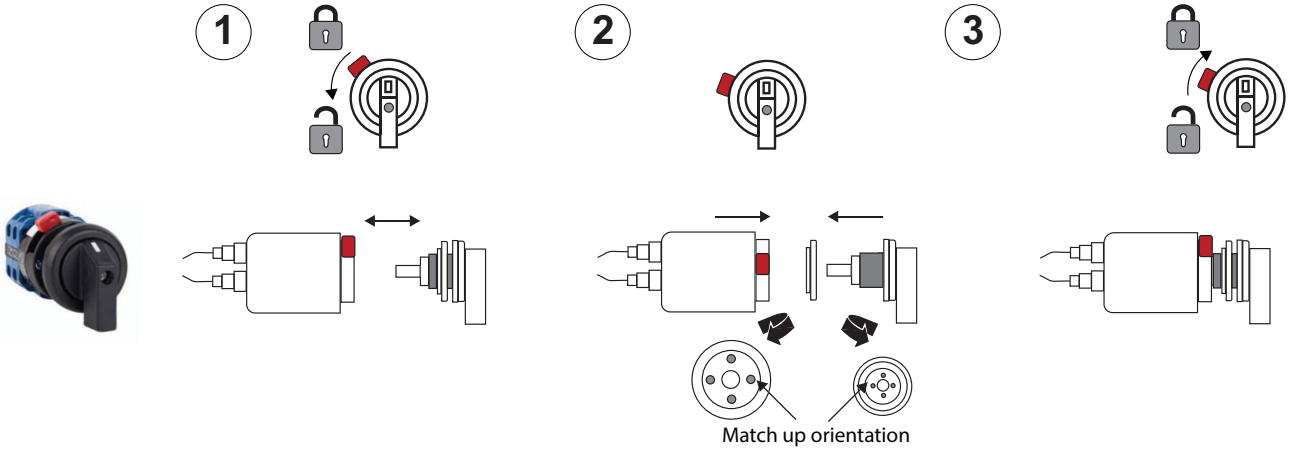


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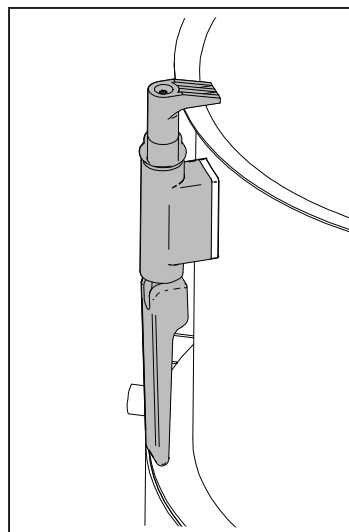
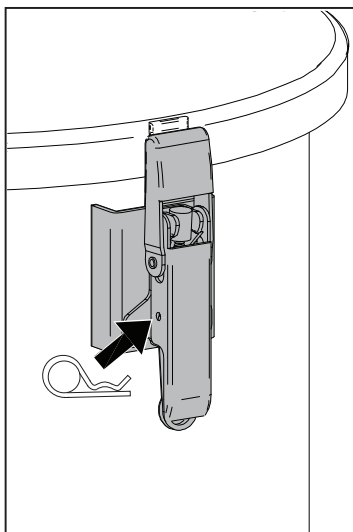
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11



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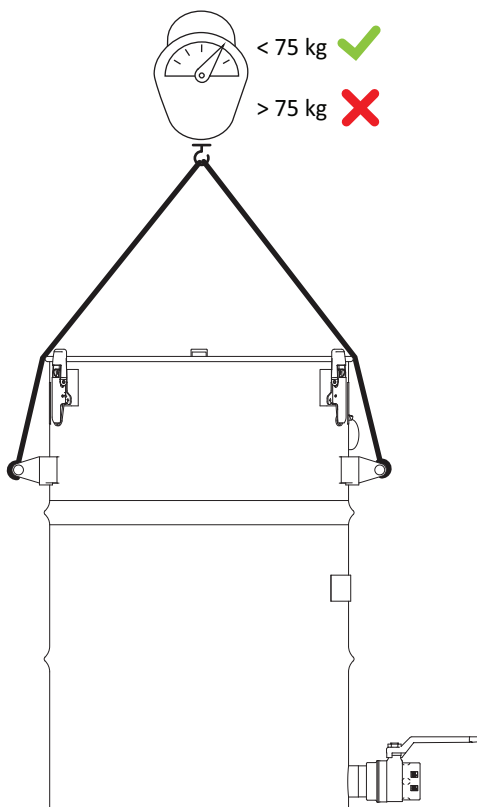


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1 Preface

Thank you for using a Nederman product!

The Nederman Group is a world-leading supplier and developer of products and solutions for the environmental technology sector. Our innovative products will filter, clean and recycle in the most demanding of environments. Nederman's products and solutions will help you improve your productivity, reduce costs and also reduce the impact on the environment from industrial processes.

Read all product documentation and the product identification plate carefully before installation, use, and service of this product. Replace documentation immediately if lost. Nederman reserves the right, without previous notice, to modify and improve its products including documentation.

This product is designed to meet the requirements of relevant EC directives. To maintain this status, all installation, maintenance, and repair is to be done by qualified personnel using only Nederman original spare parts and accessories. Contact the nearest authorized distributor or Nederman for advice on technical service and obtaining spare parts. If there are any damaged or missing parts when the product is delivered, notify the carrier and the local Nederman representative immediately.

2 Safety

This document contains important information that is presented either as a warning, caution or note, according to the following examples:



WARNING! Risk of personal injury

Warnings indicate a potential hazard to the health and safety of personnel, and how that hazard may be avoided.



CAUTION! Risk of equipment damage

Cautions indicate a potential hazard to the product but not to personnel, and how that hazard may be avoided.



NOTE!

Notes contain other information that is important for personnel.















2.1 General safety instructions



WARNING! Explosion risk

- Do not collect items that may cause ignition or blocking. It is strictly prohibited to collect material that can undergo dangerous chemical or thermal reactions and/or self-ignite.
- If this unit is used to collect hazardous material or is located where such material is present, contact your nearest authorized distributor or Nederman for technical advice.
- Do not use the vacuum cleaner to collect material that is caustic, hot, explosive, highly flammable, chemically unstable, spontaneously ignitable, or which can release sparks.

Table 2.1 Explanation of sign and sticker symbols used on vacuum cleaner components or with documentation.

Sign	Description	Sign	Description
	Pressure, 120psi.		Ambient temperature, max 104F (40°C)
	Alternating current.		Moving pneumatic cylinder.
	High noise level. Use hearing protection.		Crush risk.
	Easily tipping over.		Use a cotter pin.
	Do not vacuum hazardous material.		Do not place on an uneven surface.
	Do not vacuum explosive material.		Do not use a crane.
	Do not vacuum caustics.		Do not weld.

3 Description

3.1 Intended use

This vacuum cleaner is designed for the collection of dust and granulated material. It can also be configured for the collection of wet material. For use with wet material, the vacuum cleaner is delivered with a float ball.

The float ball can be removed when collecting dry material. See [Figure 8](#).

NOTE!
The figures above are only basic design schematics for vacuum cleaners. Individual parts of the different models may vary.

3.2 Technical data

See [Table 3.1](#), [Table 3.2](#) and [Table 3.3](#) below, and the chapter Figures.

Table 3.1 Vacuum cleaner

Material description	Powder-coated steel
Material recycling (approximate weight)	95%
Ambient temperature	14F to 105F / -10°C to +40°C
Process air (dry) temperature	32 to 140F / 0 to 60°C

Table 3.2 Electric vacuum unit data, see also [Figure 1](#)

Vacuum producer	IP class	Power	Voltage	Fre- quency	Max. va- cuum	Max. air flow	Noise level*
		[hp]	[V]	[Hz]	[inWg]	[cfm]	dB(A)
NEL3	IP 44	3.2	110	60	80	270	75

Table 3.3 Cartridge filter data*. See [Figure 2](#)

Part number	Area (A)	Dia-meter (D)	Length (L)	Material	Filter class (according to EN 60335-2-69/ EN 1822)	Max. temp.	Wash-able**
	[m ²]	[mm]	[mm]			[°C]	
43120100	2,38	264	220	Cellulose	M	70	No
43120200	1,56	264	220	Cellulose	H13	70	No
43120300	2,38	264	220	Polyester	M	110	OK
43130001	2,38	264	220	Cellulose	M	70	No
43130500	1,56	264	220	Cellulose/Fiber-glass	H13	70	No
43120304	2,38	264	220	Polyester	M	110	OK
40377234	2,38	264	220	Cellulose (antistatic)	M	70	No
40377235	1,56	264	220	Cellulose (antistatic)	H13	70	No
40377236	2,38	264	220	Polyester (antistatic)	M	110	OK
40377237	2,38	264	220	Polyester (antistatic)	M	110	OK
40377238	2,38	264	220	Cellulose (antistatic)	M	70	No
40377239	1,56	264	220	Cellulose (antistatic)	H13	70	No

* See the label on the filter for the part number.

** Replace the cartridge filter after it has been washed twice.

Table 3.4 Filter bags* , see also [Figure 3](#)

Part number	Area (A)	Material	Filter class (according to EN 60335-2-69)	Max. temp.
	ft2 [m2]			[°C]
43110100 (S50)	3.75 / 0.35	Polyester (Antafin®)	M	150
43110200 (S50)	3.75 / 0.35	Polyester (Antafin®) antistatic	M	150
43110101 (S50)	3.75 / 0.35	Polyamide	N/A	80
43110300 (S200)	6.35 / 0.59	Polyester (Antafin®)	M	150
43110400 (S200)	6.35 / 0.59	Polyester (Antafin®) antistatic	M	150
43110301 (S200)	6.35 / 0.59	Polyamide	N/A	80

* See the label on the filter for the part number.

4 Installation



WARNING! Risk of personal injury

- Bolt non-mobile vacuum cleaners firmly to a hard flat surface.
- Do not place the vacuum cleaner on an uneven or sloping surface.
- Always use proper lifting equipment and protective gear when assembling your configured product.
- Always use proper lifting equipment when using lifting lugs to lift vacuum cleaners.
- Use a forklift to transport vacuum cleaners with a stand or trolley, unless the vacuum cleaner is equipped with eye bolts.
- Make sure hoses are properly grounded when connected, see [Figure 4](#).



NOTE!

Follow local rules and regulations for all steps in the installation process.

5 Use



WARNING! Risk of personal injury

- Vacuuming activities can result in static electricity. Consult local authorities or your supplier for suitable measures to avoid any risks.
- Only properly trained personnel are allowed to use this vacuum cleaner.
- Do not use the power cable to pull the vacuum cleaner.
- Make sure all modules, hoses, and cables are securely fastened before use. See [Figure 11](#).
- Do not use if the ambient temperature exceeds 40°C.
- Do not expose the body to vacuum inlets when operating the unit.
- Always use proper protective equipment such as safety shoes and hearing protection.
- Always use proper protective equipment where there is a risk for exposure to dust. See [Figure 7](#).



CAUTION! Risk of equipment damage

- Use the correct filter for collecting wet material.
- Turn off the vacuum cleaner if liquid or foam escapes from it.
- If wet material is to be vacuumed, use a float ball and filter designed for that purpose.
- Make sure to correctly assemble the filter bag when changing from wet to dry collection.
- Do not load the handles with more than 75 kg. See [Figure 12](#).
- Do not use the vacuum cleaner if there is restricted or no airflow. The fan motor can become overheated.
- 110V units can affect other electrical equipment.



- Clean the filter after each use.
- If the suction power is reduced, the filter may be clogged. See [Chapter 6 Maintenance](#).
- When the container is full, the suction flow is shut off by the float ball for vacuuming wet material. Turn off the vacuum cleaner before emptying the container.
- For best results, adjust the gulper head depending on the type and weight of material to be vacuumed. See [Figure 6](#).

Turn on the vacuum cleaner as follows:

- 1 Connect the power supply.
- 2 Turn on the switch to start the vacuum cleaner. See [Figure 1\(A\)](#).

6 Maintenance



WARNING! Risk of personal injury

- Always disable the control system before disconnecting power to the vacuum cleaner.
- Disconnect the vacuum cleaner from the electrical supply before any type of service or transportation. See [Figure 1\(B\)](#).
- Always use proper lifting equipment when using lifting lugs to lift vacuum cleaners.
- Do not place the vacuum cleaner on an uneven or sloping surface.
- Use a forklift to transport vacuum cleaners with a stand or trolley, unless the vacuum cleaner is equipped with eye bolts.
- Lock the vacuum cleaner's wheels before service.
- Always use proper protective equipment where there is a risk for exposure to dust, and do not spread dust when cleaning or replacing filters. See [Figure 7](#).
- Empty dust into a container or dust bag. See [Figure 7](#).



CAUTION! Risk of equipment damage

- Use only Nederman original spare parts and accessories.
- Store the vacuum cleaner in a standing position.

6.1 Clean the cartridge filter/filter bag



NOTE!

- Clean the filter after each use.
- If using a washable filter, it can be washed with water and detergent. Let it air dry.
- Replace the cartridge filter after it has been washed twice.
- If the cartridge filter is placed into a dust bag for disposal, tie off the dust bag. See [Figure 7](#).

- 1 Turn off the vacuum cleaner.
- 2 Empty dust from the filter into a container or dust bag.
- 3 Clean the cartridge filter by tapping it lightly on a hard surface.
- 4 Shake the filter bag.

6.2 Replace the cartridge filter

NOTE!

- If the filter is placed into a dust bag for disposal, tie off the dust bag. See [Figure 7](#).
- When using a cartridge filter and filter bag. See [Figure 9](#).

- 1 Turn off the vacuum cleaner.
- 2 Remove the filter and place it into a box or dust bag for disposal.
- 3 Put in the new filter.

6.3 Replace the filter bag

NOTE!

If the filter bag is placed into a dust bag for disposal, tie off the dust bag, see [Figure 7](#).

- 1 Turn off the vacuum cleaner.
- 2 Remove the filter basket and filter bag.
- 3 Replace the filter bag.

6.4 Clean the float ball

NOTE!

To put back the float ball after cleaning, see [Figure 8](#).




If the vacuum cleaner is used for wet material, clean the float ball once a month.

6.5 Routine inspection and service

Follow the list below to routinely inspect, and repair or replace worn and damaged parts on the inside and outside of the vacuum cleaner. See also [Chapter 10 Appendix A: Service form](#). Contact your nearest authorized distributor or Nederman for advice on technical service or if you require help with spare parts.

Items to inspect	What to look for	Service
VACUUM OFF		
Suction hoses, couplings	Leaking suction hoses and couplings.	Replace. For grounding guide, see Figure 4 .
Gaskets	Worn out, aged and leaking gaskets.	Replace.
Cartridge filter	Worn out filters.	Replace.
Filter bag	Full or torn filter bag.	Clean or replace a full filter bag. Replace a torn filter bag.
Float ball	Dirty float ball.	Clean the float ball at least once a month.
VACUUM ON		
Main switch	The motors do not start using the main switch.	Replace the main switch. See Figure 10 B .
Motor	Resistance in the bearings.	Replace the motor.
If specified vacuum is not reached	See Chapter 7 Troubleshooting .	
Abnormal noise level.		

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Items to inspect	What to look for	Service
VACUUM ON (TOP COVER REMOVED)		
 WARNING! Risk of personal injury Do not touch the motor with any tool during this operation.		
Motors	Check that the motors are running clockwise as seen from above.	See Chapter 7 Troubleshooting .
Thermal function	Control the thermal function by blocking the cooling air inlets with sheets of paper. The motors should be switched off by the thermal function when the temperature exceeds approximately 75°C/167°F.	
VACUUM OFF (TOP AND SECONDARY COVERS REMOVED)		
 WARNING! Risk of personal injury Unplug the power cable before removing the covers.		
Cable connections and screws	Loose cable connections and screws.	Secure cable connections, and tighten screws.
Carbon brushes	Worn-out carbon brushes.	Replace.  Brushes shall be replaced after 900 hours of use. See Figure 10 A .
Commutator	Contaminated commutator	Clean the commutator.

7 Troubleshooting

Problem	Fault	Solution
The motor will not start	Electrical supply not connected.	Connect the electrical supply.
	Thermo switch not reset or defect (T-mod).	Dismantle top cover and clean or exchange cooling air filter. Reset the thermo switch. If the thermo switch is defective, please contact the distributor.
	Power switch or cable defect.	Contact the distributor.
	Radio noise suppression card defect.	Contact the distributor.
None or bad suction capacity.	Motor not connected correctly.	Check connection and wiring.
	The switch is not completely turned on.	Turn the switch on.
	Clogged suction hose or inlet.	Disconnect the suction hose. Turn and suck in the opposite direction. If still clogged, unplug it with a rod.
	One or two motors defect.	Dismantle the top cover, check the brushes and commutators. Replace the brushes if they are worn out. Contact the distributor if the commutators are burnt.
	Clogged filter.	For filter bag and cartridge filter cleaning, see Chapter 6 Maintenance .
	Leaking suction hose.	Replace the suction hose.
	Leaking gaskets.	Remove and replace damaged gaskets.
Dust in exhaust air.	Filter wrongly or not installed.	Check the filter and replace it if necessary.
	Filter defect.	Replace filter.
Water in the exhaust air.	Filter basket or float ball wrongly or not installed.	Reattach filter basket or float ball.
	Filter basket or float ball defect.	Replace.
Abnormal noise level.	Leaking gaskets.	Remove and replace damaged gaskets.
	Sound absorbing material defect.	Dismantle the top cover and remove dirt. Replace damaged silencing material, if necessary.
The vacuum unit is overheated.	Defect thermo switch (T-mod).	Dismantle the top cover and clean or exchange the cooling air filter. Reset the thermo switch. If the thermo switch is defective, please contact the distributor.

8 Spare Parts

**CAUTION! Risk of equipment damage**

Use only Nederman original spare parts and accessories.

Contact your nearest authorized distributor or Nederman for advice on technical service or if you require help with spare parts. See also www.nederman.com.

8.1 Ordering spare parts

When ordering spare parts always state the following:

- The part number and control number (see the product identification plate on the machine).
- Detail number and name of the spare part (see www.nederman.com/en/service/spare-part-search).
- Quantity of the parts required.

9 Recycling

The product has been designed for component materials to be recycled. Different material types must be handled according to relevant local regulations. Contact the distributor or Nederman if uncertainties arise when scrapping the product at the end of its service life.

10 Appendix A: Service form



NOTE!

If an inspection result (for example, a measured value) differs significantly from a previous result, find the cause for the difference.

Copy the maintenance checklist, fill it in and save it as a service record.

For values, note the value in the result column, otherwise, a tick will suffice if the item has been performed or considered.

Customer	
Vacuum Type/Model	
Service date	
Serviced by	

Items to inspect	Result	Repaired	Replaced	Replaced part number
VACUUM OFF				
Vacuum unit				
Filters				
Float ball				
Gaskets				
Containers				
Trolley				
Suction hoses, couplings				
Accessories				
Other items, specify				
VACUUM ON				
Vacuum unit				
Lid, vacuum unit				
Suction hoses, couplings				
On/Off function				
Vacuum				
Noise level				
VACUUM ON (TOP COVER REMOVED)				
Rotation motors				

Electrical vacuum cleaners

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Items to inspect	Result	Repaired	Replaced	Replaced part number
Thermo switch function				
VACUUM OFF (TOP AND SECONDARY COVERS REMOVED)				
Electric cable connections				
Carbon brushes				
Commutator wear				
Motor wear				
Silencer material				
OTHER ITEMS (SPECIFY)				

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