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EN

USER MANUAL 801009

Filtering unit SPLENDID VAC-200-EC

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SPLENDID VAC-200-EC
EN 2021-05-28

CONTENTS

1. INTRODUCTION

This user's manual is intended for the users of the **SPLENDID VAC-200-EC** device. Its purpose is to provide the users with instructions on the use, assembly, commissioning, and operation of the device.

CAUTION
 Carefully read this manual before installing the device at the workplace and using it.
 Due to the continuous improvement of its products, the manufacturer reserves the right to introduce construction changes to increase the utility values and safety of use.

The design of the **SPLENDID VAC-200-EC** device considers the current state of knowledge and technology level and is following normative principles and regulations, and above all with the principles of safety and health protection set out in the following legal acts and meets the requirements of the following harmonized standards:

2006/42/EC	Machinery Directive
2014/35/EU	Directive on electromagnetic compatibility
EN ISO 12100:2010	Machine safety -- General design principles -- Risk assessment and risk reduction
EN 60204-1:2018	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
EN 60947-1:2007, EN 60947-1:2007/A1:2011, EN 60947-1:2007/A2:2014	Low-voltage switchgear and controlgear - Part 1: General rules
EN ISO 13857:2019	Safety of machinery — Safety distances to prevent hazard zones from being reached by upper and lower limbs
EN 61310-3:2008	Safety of machinery - Indication, marking and actuation - Part 3: Requirements for the location and operation of actuators

2. APPLICATION

The **SPLENDID VAC-200-EC** filtering unit belongs to the group of high-vacuum filtration devices and is intended for cleaning the air from dust contamination. In particular, it is suitable for extracting welding fumes at mobile workstations, for extracting fumes from welding holders with an integrated exhaust system (automatic gas-shielded welding machines). In addition, the device can also be connected to welding masks with hood or other miniature workplace hoods.

The device enables automatic switching on of the ventilation exhaust during welding as a result of the detection of the current flow in the mass cable of the welder. To do this, use the sensor listed in the table "Additional equipment" - Table 3.

! DANGER
 The **SPLENDID VAC-200-EC** device **CANNOT** be used for air filtration with viscous, caustic or explosive substances!

3. MANUFACTURER'S DISCLAIMER

! CAUTION

Protect all components of the device from mechanical damage

The manufacturer shall not be liable for injuries resulting from improper use, in particular:

- Incorrect connection of electricity supply or compressed air system.
- Use of the device inconsistent with this manual or with applicable regulations.
- Installing additional elements on the device not included in its composition.
- Unauthorized alterations and modifications to the device or the use of non-original spare parts.
- Failure to follow the rules of inspection and maintenance of the device following this manual.

! WARNING – Possible damage to the device

During the operation of the device, avoid the penetration of ignition sources, e.g. **sparks**, **cigarette butts** and other **hot particles** into the device, which could cause a **fire** or **explosion**.

The device **MUST NOT** be used for forcing air containing sticky contaminants that may settle on the filter and inside, or get into the turbine impeller.

The device **MUST NOT** be used for forcing air containing caustic contaminants that may adversely affect the device.

The device **MUST NOT** be used for forcing air with a temperature **higher than +60°C**.

The device **MUST NOT** be used in an environment where the ambient air temperature is **lower than -10ºC** or **higher than +40°C**.

The device **MUST NOT** be used in an environment where the **relative humidity exceeds 85%**.

! DANGER – Possible ignition or explosion

The device **MUST NOT** be used for forcing a mixture with air of flammable substances in the form of gas, vapour, mist or dust, which can create an **explosive atmosphere**.

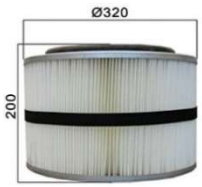
4. TECHNICAL DATA

Table 1 Technical data of SPLENDID VAC-200-EC unit

Type	Product no.:	Maximum air-low [m^3/h]	Maximum negative pressure [Pa]	Sound pressure level [dB(A)]	Motor power [kW]	Rated current [A]	Supply voltage [V, Hz]	Mass [kg]
SPLENDID VAC-200-EC	**801O05**	240	23 500	**70**	**1.1**	**5**	230V, 50Hz	31

4.1. CONSUMABLE PARTS

Table 2 Cartridge filter

	Type	Part no.:	Mass [kg]	Filtration efficiency [%]	Comments
	**PN032032U**	**800F01**	4.2	99.9	Replacement intervals from 1 to 2 years. Initial pressure resistance: ~50 Pa.

4.2. ACCESSORIES

Table 3 Additional equipment

Name	Type	Part no.	Comments
Magnetic slotted nozzle	**SMS-44-500**	**819S68**	It is used to draw welding fumes during longitudinal welding.
	SMS-44-650	**819S69**	It is used to draw welding fumes during spot welding.
Magnetic point nozzle	**SMS-44-400**	**819S67**	
Dust collection nozzle	**SC-50**	**856S05**	
Extraction pipe	**S-50**	**801Z02**	
Connector	**Z50/44**	**832Z00**	Standard length 15 m
Dust container	**P-SPLENDID-200**	**801O12**	
Hose	**PCV FLEX-44**	**821P29**	
Cable with a reed switch sensor	**PCK-1**	**840P51**	It is used to automatically start the device as a result of the current flow is detected

5. STRUCTURE AND FUNCTION

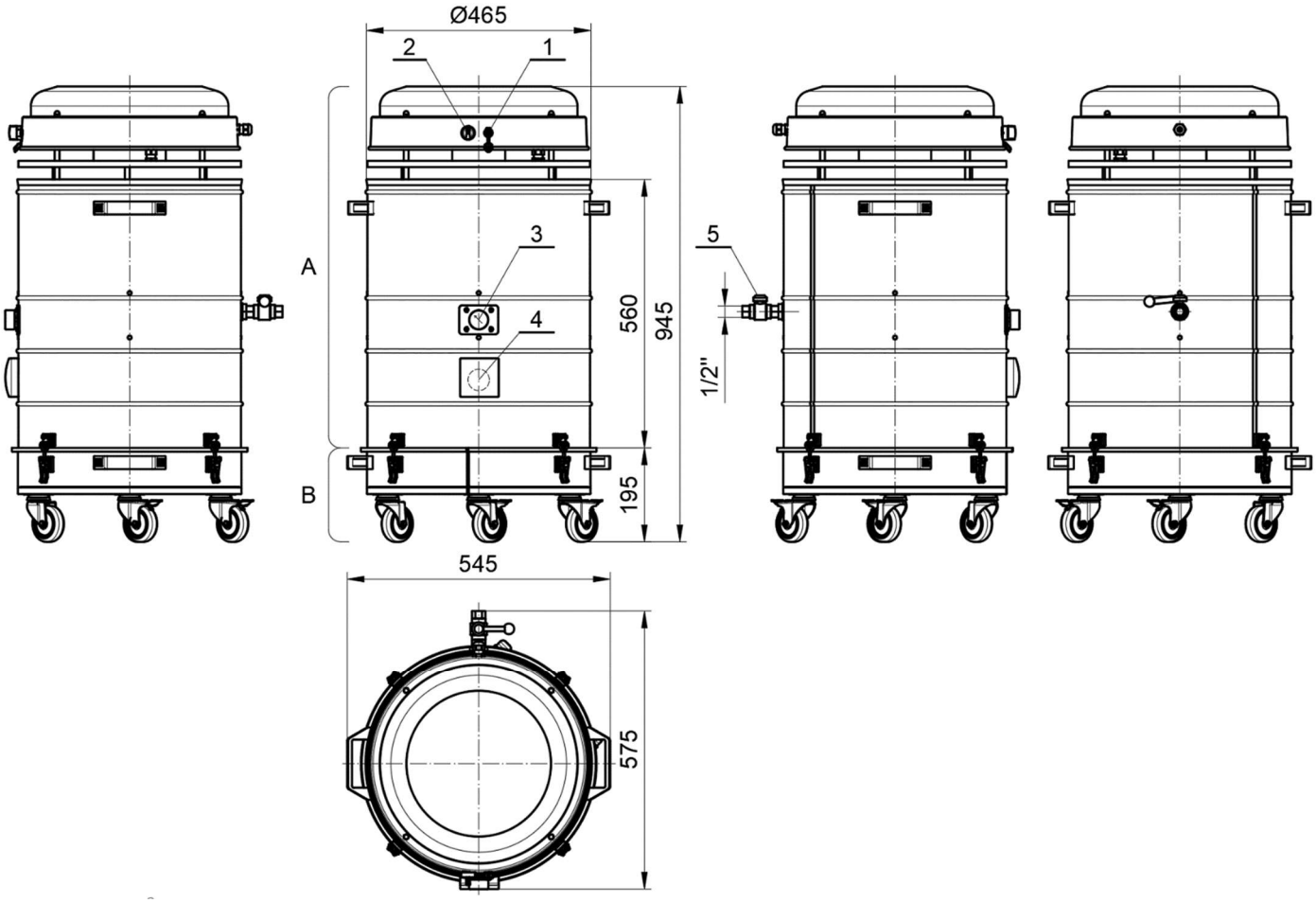
5.1. STRUCTURE

Filtering unit **SPLENDID VAC-200-EC** is shown below in the picture - see Picture 1. The device consists of 2 main detachable segments:

A. **The upper segment** (filter unit), in which there are located: the suction unit, the filter cartridge with the cleaning unit and the control unit.

B. **The lower segment**, in which there is located the dust container with wheels.

Segments **A** and **B** are connected by snap locks. When replacing the turbine or emptying the dust container, unhook the catches and remove the upper segment. When assembling the segments, pay special attention to the accuracy of the connection to obtain the proper tightness.



Picture 1 Structure and dimension of SPLENDID VAC-200-EC unit

***A** – Filter and ventilation unit; **B** – Dust container;*
***1** – Cable socket with reed switch sensor; **2** – 3-position switch (**ON / 0 / AUTO**);*
***3** – Vacuum gauge; **4** – Suction socket; **5** – Compressed air connection valve*

Filtering unit **SPLENDID VAC-200-EC** consists of the following parts:

- cylindrical metal housing,
- EC suction unit with a power of 1100W and powered by 230V-50Hz,
- cartridge filter with dimensions D×H = Ø320×200 mm with a gasket
- rotary nozzle for cartridge filter regeneration,
- a suction socket with a Ø44 mm stub for connecting a suction hose,
- dust container with wheels detachable from the body with a capacity of 14 dm3,
- compressed air connection with a cut-off valve 1/2 in,
- an electric unit controlling the operation of the device and a 5-meter power cord with a plug (male industrial plug; 16A; 230VAC; IEC 60309; IP44),
- 5 m cable with a clamp and a reed switch sensor – see Table 3.

5.2. PRINCIPLE OF OPERATION

During normal operation, the device sucks air through the suction nozzle slot which passes through the filter cartridge. Dust pollutants are trapped by the cartridge filters and the purified air flows through the top cover into the room.

The device works in 2 modes: **manual** or **automatic**.

I. **The manual mode** (switch in the **ON** position) consists of manually switching the device on with the use of a switch located on the device housing.

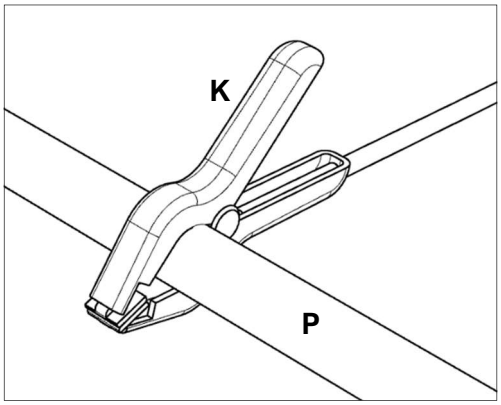
II. **The automatic mode** (switch in the **AUTO** position) consists of the automatic activation of the device as a result of the detection of the current flow in the welding cable using the reed switch **PCK-1** – see Table 3.

As soon as the mode switch is set to the **AUTO** position when welding starts, the control will turn on the machine without having to approach it.

After the current flow is detected by the reed switch sensor, the device will turn on and off **1 minute** after the current flow ceases.

To enable the device to work in **automatic mode**, attach the clamp with the sensor on the ground cable of the welder and connect it to the socket on the device's panel. – see item **1** – Picture 1.

The clamp with the sensor can be mounted anywhere on the ground cable, but it is recommended to protect its components against thermal damage by keeping a distance of **at least 1.5 m** from the welding point.



Picture 2

***K** – Cable clamp with the sensor;*
***P** – Welder ground cable*

! CAUTION

The cable with the sensor is used to automatically start the device. It should be protected against damage by placing it on the ground cable of the welder at a distance of at **least 1.5 m** from the welding site.

5.3. CLEANING THE FILTER

Filter cleaning can be performed every time the device is started. This will ensure the stable operation of the filter and its long life. A vacuum gauge is used to indirectly check the filter contamination – see item 3 – Picture 1. The initial pressure drop across the clean filter is approx. 50 Pa. When the vacuum indicated by the vacuum gauge exceeds 900 Pa or the suction force is too low, the filter should be cleaned, but it is recommended to clean the filter immediately after finishing work and before each start.

In the case of the **SPLENDID VAC-200-EC** device, the regeneration of the filter is performed manually by opening the airflow with a valve installed on the side of the housing during the downtime of the device. To do this, connect compressed air to valve no. 5 – see Picture 1.

The air supplied to the filter cleaning system must be prepared by an appropriate filtering and reduction unit ensuring stable parameters and the absence of moisture and oil. The air pressure must be in the range of **0.6 – 0.8 MPa**.

! CAUTION

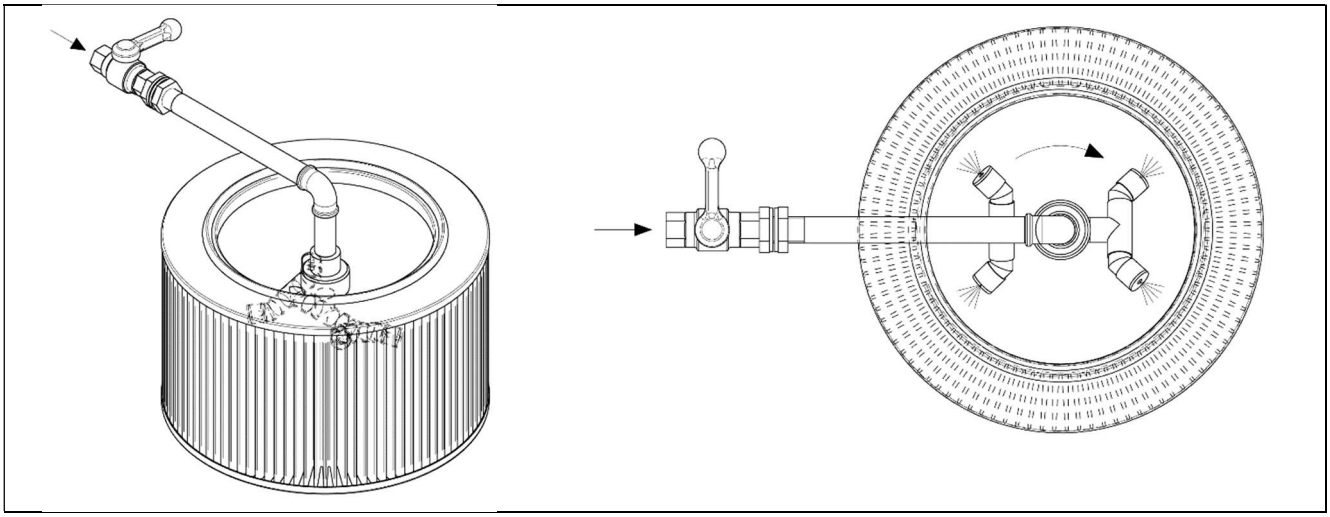
Moisture or oil in the air used to clean the filter can damage the filter! Connect the devices to the process network of compressed air, free from any impurities, oil and moisture and prepared by an appropriate filtering and reduction unit ensuring stable parameters.

When cleaning the filter, under the influence of compressed air escaping from the nozzles placed in the filter, the nozzles rotate the lance and blow the filter away dust accumulated on the outer surface of the filter – see Picture 3. The dust falls and accumulates in the container. After cleaning the filter, close the valve.

The compressed air valve opening time during filter cleaning depends on the filter contamination. After each cleaning of the filter, check the indications on the vacuum gauge during normal operation. If the suction power after the cleaning is satisfactory and the indication of the vacuum gauge is below 900 Pa, you can start using the device.

! CAUTION
The cartridge filter should be replaced with a new one after a service life of **1** to **2 years** or when cleaning the filter in the device does not give the expected result in the form of a constant return to the required output of the device or a sufficient length of operation between regeneration cycles.

! CAUTION
The process of cleaning the cartridge filter is recommended to be performed **each time before** using the device **and immediately after use**, which will **extend the life of the cartridge filter** and ensure stable operating parameters of the device.



Picture 3

! WARNING – Possible damage to the device
The device **MUST NOT** be used for forcing air containing sticky contaminants that may settle on the filter and inside, or get into the turbine impeller.
The device **MUST NOT** be used for forcing air containing caustic contaminants that may adversely affect the device.
The device **MUST NOT** be used for forcing air with a temperature **higher than +60°C**.
The device **MUST NOT** be used in an environment where the ambient air temperature is **lower than -10ºC** or **higher than +40°C**.
The device MUST NOT be used in an environment where the **relative humidity exceeds 85%**.

6. INSTALLATION AND STARTUP

The **SPLENDID VAC-200-EC** device should be placed in a convenient place for use, but so that the suction hose is not bent, crimped or excessively bent, which may reduce the suction power.

The device is mobile and has wheels with the possibility of blocking.

The device requires connection to a compressed air installation with a pressure of 0.6 - 0.8 MPa and prepared by appropriate filtering and reducing unit providing clean air.

The device is powered by a 5-meter cable with an industrial plug (male industrial plug; 16A; 230VAC; IEC 60309; IP44).

! CAUTION

Moisture or oil in the air used to clean the filter can damage the filter! Connect the devices to the process network of compressed air, free from any impurities, oil and moisture and prepared by an appropriate filtering and reduction unit ensuring stable parameters.

6.1. STARTUP

The device works in 2 modes: **manual** or **automatic**.

MANUAL MODE

A. Set the switch to the **ON** position.
B. The device will turn on and will work as long as the switch is in the **ON** position.

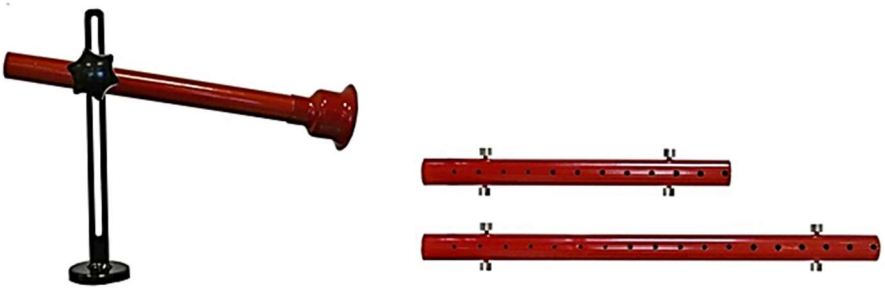
AUTOMATIC MODE

A. Set the switch to the **AUTO** position.
B. Connect the cable with the reed switch to socket 1 (see Picture 1) and put the clamp on the ground cable. Keep the rules described in point 5.2.
C. When welding starts, the device will turn on automatically and turn off **1 minute** after welding has finished.

7. OPERATION

The device should be connected to the local exhaust with the use of a flexible hose with a diameter of Ø44 mm. Depending on the supported process, the device can work with various types of local nozzles – see Table 3.

Picture 1 Example of application of SPLENDID VAC-200-EC unit



Picture 2 Suction cups for local extraction during welding

There is a vacuum gauge on the housing of the device, which measures the vacuum pressure generated by the turbine. In the event of a vacuum of 900 Pa or reduced suction power, it is recommended to clean the filter - see section 5.3 - CLEANING THE FILTER.

7.1. EMPTYING THE DUST CONTAINER AND CHANGE THE FILTER

Before replacing the filter, switch off the device, disconnect the electrical power and the compressed air supply.

! CAUTION

When opening the device and emptying the container, there is a possibility of creating a cloud of potentially hazardous dust.

Use personal protective equipment during maintenance work and emptying the dust container.

! WARNING – The device under voltage

Before opening and accessing the interior, turn off the device and disconnect the power supply.

! WARNING – Hot parts and surfaces inside the device

During maintenance, be careful of hot surfaces and parts near the suction turbine. Use protective gloves. It is recommended to wait at least 5 minutes after switching off before opening the device. Possibility of getting burned!

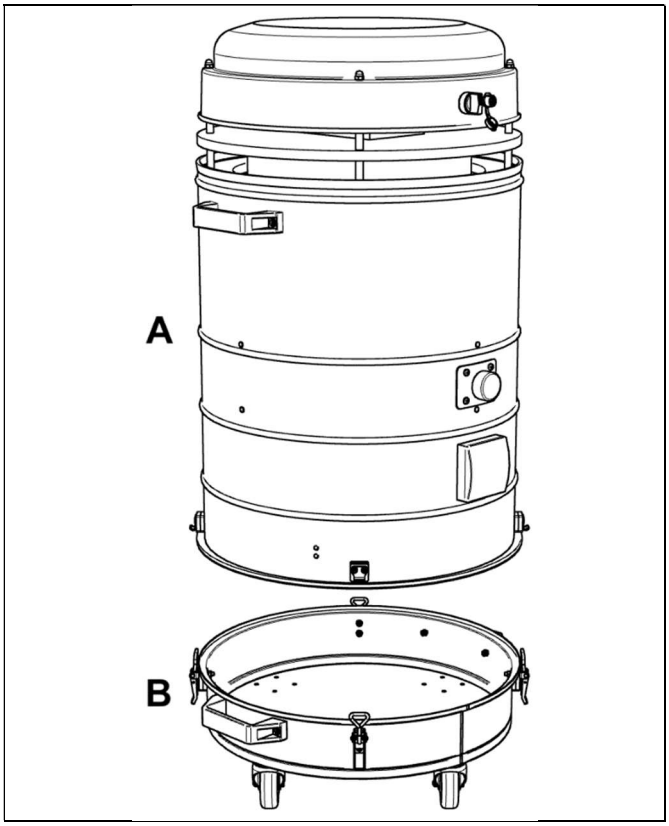
A. EMPTYING THE DUST CONTAINER

In the case of emptying the container, proceed according to point from 1 to 2.

1) Unhook the segments **A** and **B** from each other by removing the clamps.

2) When emptying the bin, put segment **A** down next to the container and empty the container.

CAUTION: HIGH WEIGHT – 30 kg



Picture 4

B. CHANGE FILTER

In the case of filter replacement, proceed according to point 1 and 3 to 7.

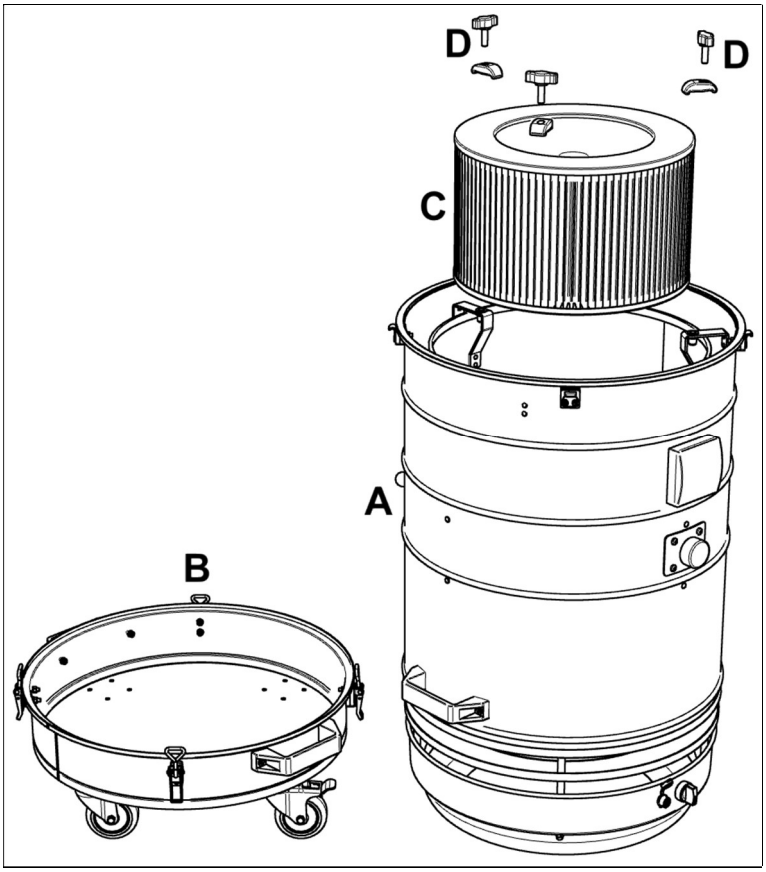
3) When replacing the filter, lift segment **A** upside down and place it on the top cover.
CAUTION: HIGH WEIGHT – 30 kg

4) Detach the filter C. Foldback or remove the clamps D and carefully lift the filter upright.
CAUTION: DUST SLIPPING!

5) Clean or replace the filter with a new one.

6) Install the filter in the opposite way to the above steps and press the filter tightly.

7) Assemble the **A** and **B** segments of the device.
ATTENTION: Pay attention to the fit of the elements, the accuracy of positioning, cleanliness of the gasket and tightness of the connection.



Picture 5

8. TROUBLESHOOTING GUIDE

! WARNING

In the event of signs of improper operation of the device (e.g. increased turbine noise, vibrations, reduced suction power), immediately turn off the device and disconnect it from the power supply, perform an inspection to find the cause of the disturbances in operation.

Using a defective device may lead to damage to the suction unit, loss of balance of the rotating elements, excessive vibrations, deformation of the impeller, frictional damage, and ultimately destruction of the suction unit.

Table 4 Typical disturbances and remedies

Disturbances	Possible causes	Remedies
Reduction of the amount of air (reduction of air-flow) sucked in combined with an increase in noise	There is something stuck in the nozzle or suction hose and it is obstructing the airflow	Unblock the suction cup or suction hose
	Filter excessively dirty	Clean the filter or replace it with a new one
Getting out of the dirt	Damaged and/or poorly attached filter	Replace the filter and/or correct the filter fitting
	Poorly closed dust container	Close the dust container properly
	Defective suction hose	Replace the hose with a new one

9. MAINTENANCE AND RECYCLING INSTRUCTIONS

9.1. GENERAL THOUGHTS

The **SPLENDID VAC-200-EC** device enables failure-free operation provided that it is properly used and carried out periodically. The operation of the device consists of regenerating (cleaning) the filter or replacing it with a new one, emptying the container from contaminants and cleaning it from solid residues, as well as controlling the condition of the turbine.

! WARNING – Possible damage to the turbine

Continuous operation of the device is not recommended due to the limited lifetime of the suction unit.

! WARNING – The device under voltage

Before opening and accessing the interior, turn off the device and disconnect the power supply.

! WARNING – Hot parts and surfaces inside the device

During maintenance, be careful of hot surfaces and parts near the suction turbine. Use protective gloves. It is recommended to wait at least 5 minutes after switching off before opening the device. Possibility of getting burned!

9.2. MAINTENANCE RECOMMENDATIONS

A. At least every **12 months**, check the technical condition of the suction unit following the rules of operation of electric drive devices.

B. The cartridge filter should be replaced with a new one after a service life of **1 to 2 years** or when the regeneration in the device does not give the expected result in the form of a constant return to the required output of the device or a sufficient length of operation between regeneration cycles.

C. The turbine must be replaced after approx. **1000 operating hours**.

The safety regulations must be strictly adhered to during maintenance work, as non-compliance may result in danger to health and life – see section 10 – OHS MANUAL.

9.3. RECYCLING AND WITHDRAWAL

! NOTICE

At the time of handing over the product for withdrawal, comply with the provisions on withdrawal from use of machines and/or recycling of waste. The parts of the device belonging to the group of hazardous waste are used cartridge filters.

PARTS THAT ARE A HAZARDOUS WASTE SHOULD BE DISPOSED OF FOLLOWING THE GENERAL REGULATIONS FOR THE DISPOSAL OF HAZARDOUS WASTE.

10. OHS MANUAL

! CAUTION

Start-up and operation of the device may only take place after reading this manual. The device is not dangerous, provided that the provisions of this manual are followed!

! CAUTION	
	The machine meets the safety requirements of **Directive 2006/42/EC** and does not require any additional safeguards for safe use!
	All inspections and repairs should be performed only after disconnecting the device from the power supply. Work-related to the electrical installation may only be carried out by an employee with appropriate qualifications!
	During operation, installation, electrical connection, first start-up and service repairs, follow the safety regulations, standards and generally accepted technical rules!
 	When opening the device and emptying the container, there is a possibility of creating a cloud of potentially hazardous dust. Use personal protective equipment during maintenance work and emptying the dust container.

! WARNING – Possible damage to the device	
	During the operation of the device, avoid the penetration of ignition sources, e.g. **sparks**, **cigarette butts** and other **hot particles** into the device, which could cause a **fire** or **explosion**.
	The device **MUST NOT** be used for forcing air containing sticky contaminants that may settle on the filter and inside, or get into the turbine impeller.
	The device **MUST NOT** be used for forcing air containing caustic contaminants that may adversely affect the device.
	The device **MUST NOT** be used for forcing air with a temperature **higher than +60°C**.
	The device **MUST NOT** be used in an environment where the ambient air temperature is **lower than -10ºC** or **higher than +40°C**.
	The device **MUST NOT** be used in an environment where the **relative humidity exceeds 85%**.

! DANGER – Possible ignition or explosion	
	The device **MUST NOT** be used for forcing a mixture with air of flammable substances in the form of gas, vapour, mist or dust, which can create an **explosive atmosphere**.

11. TRANSPORT AND STORAGE

The device is transported wrapped in foil. During transport, protect the device from damage, displacement, dents, and precipitation.

The device should be stored in a dry and airy room. Transport and handling shall be carried out in such a way as to eliminate damage or dents to the appliance, as well as to destroy the packaging or obliterate the markings on it.

Storage should be carried out in accordance with the following rules:

A. Store the appliance in a transport package to prevent external influences.
B. The storage area should be dry and dust-safe at: **-10°C** to **+ 40°C**.

12. TERMS OF WARRANTY

The warranty period is specified in the **WARRANTY CARD** of the device.

The warranty does not cover:

- mechanical and electrical damage to the device at fault by the user,
- damage resulting from misuse or non-compliance with this user's manual,
- damage caused by improper transport, storage, or improper maintenance,
- failure to limit the operating length of the suction unit due to its limited service life, which is estimated at approximately 1000 continuous operating hours.

! CAUTION

Failure to comply with section 3 – MANUFACTURER'S DISCLAIMER misuse voids the warranty!

13. EXAMPLE OF THE EC DECLARATION OF CONFORMITY

CE

KLIMAWENT

EC DECLARATION OF CONFORMITY

NO. _____

Manufacturer (e.g. also his authorized representative /importer):
name: **KLIMAWENT S.A.**
address: **Polska, 81-571 GDYNIA, ul. Chwaszczyńska 194**

A person authorised to prepare the technical documentation:
name and address: Teodor Świrbutowicz, **KLIMAWENT S.A.**

hereby declares that the product: **Filtering unit**

Type / model: **SPLENDID VAC-200-EC**

serial number: _____ *year of manufacture:* _____

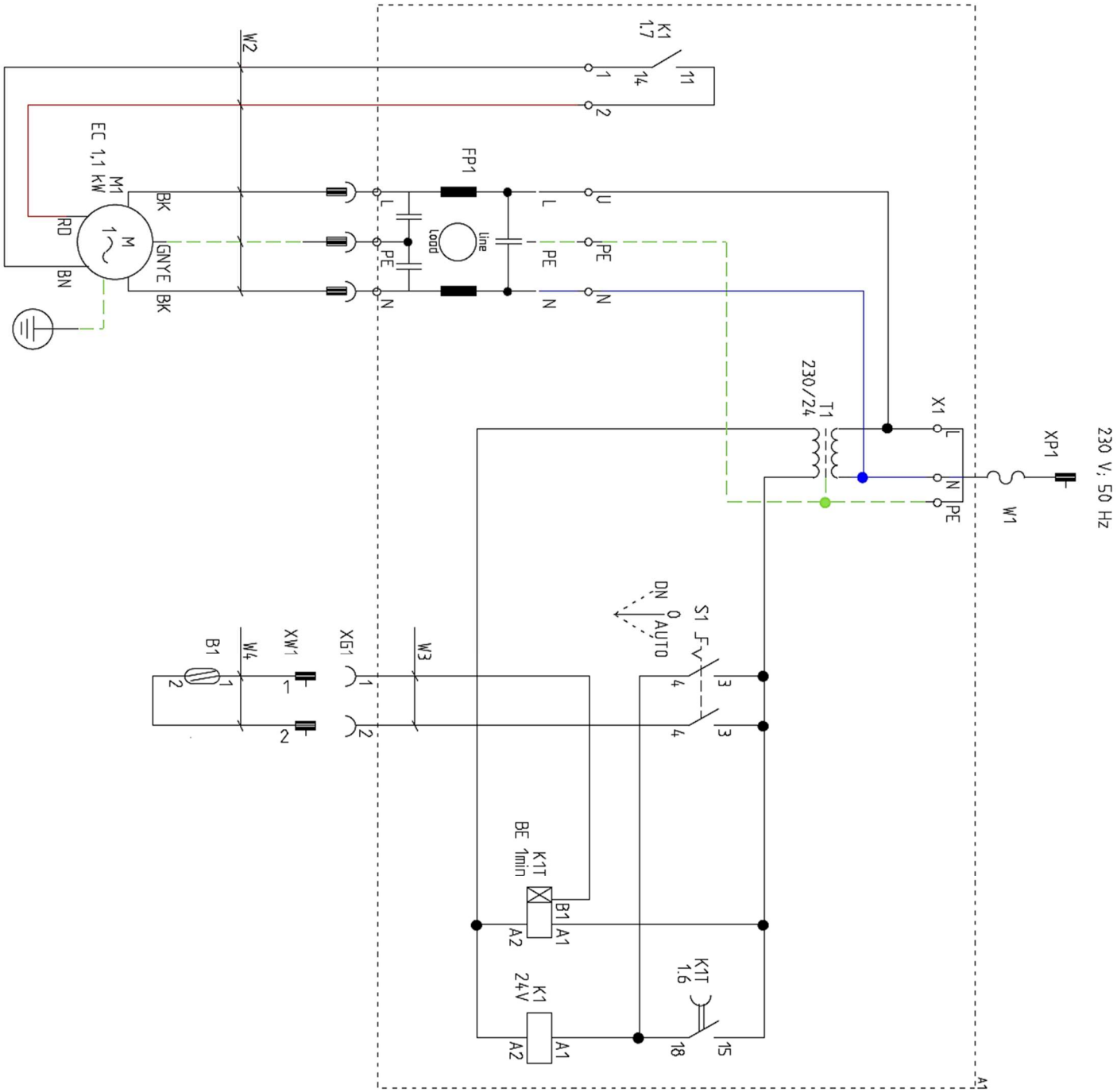
Meets the requirements of the following European Directives:
2006/42/EC Machinery Directive
2014/35/EU Directive on electromagnetic compatibility

Also meets the requirements of the following harmonised standards:

EN ISO 12100:2010
EN 60204-1:2018
EN 60947-1:2007
EN 60947-1:2007/A1:2011
EN 60947-1:2007/A2:2014
EN ISO 13857:2019
EN 61310-3:2008

place, date	*signature of the authorised person*	*first name, last name, signer function*

14. WIRING DIAGRAMS



Schema 1

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