# Use and Maintenance Manual

## Filtering unit ROBUST-1000
## ROBUST-2000

Manufacturer:
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800O87 ROBUST-1000 28.10.2019/EN
800O89 ROBUST-2000 28.10.2019/EN

## Contents:

# 1. Introductory Remarks

The purpose of the present Use and Maintenance Manual is to supply User with directions within the range of application, installation, start-up and the use of the **ROBUST-1000**; **ROBUST-2000 filtering units**.

**Installing, start up and operational use are exclusively admissible after getting acquainted with the contents of the Use and Maintenance Manual**.

With regard to continuity of work carried on improvement of our products, we reserve for ourselves the revision possibility of the draft and technological changes improving their functional features and safety.

Construction of the **ROBUST-1000**; **ROBUST- 2000** filtering units meets the requirements of the current state of technology as well as the safety and health assurances included in:

– **2006/42/EC Machinery Directive** of the European Parliament and of the Council of May 17th, 2006 on machinery – amending the 95/16/EC (recast) /*Journal of Laws EC L157 of 09.06.2006, page 24*/

– **2014/35/EC Directive** of the European Parliament and of the Council of 26 February, 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits. /*Journal of Laws EC L96 of 29.03.2014*/

The appliance meets the requirements included in:

– **2009/125/EC (ErP) Directive** of the European Parliament and of the Council of October 21th, 2009 establishing a framework for the setting of ecodesign requirements for energy-related products / *Journal of Laws L 285 of 31.10.2009* /

**327/2011** (**EU**) **Regulation** of March 30th, 2011 on implementing the **2009/125/EC Directive** of the European Parliament and of the Council with regard to ecodesign requirements for fans driven by motors with an electric input power between 125W and 500 kW
/ *Journal of Laws L No. 90 of 06.04.2011* /

Additionally, the appliance meets following harmonized standard:

- **EN ISO-12100:2012** – "Safety of machinery – Basic concepts, general principles for design. Risk assessment and risk reduction"
- **EN 60204-1:2018-12** – "Safety of machinery – Electrical equipment of machines Part 1: General requirements"
- **EN ISO 13857:2010** – "Safety of machinery – Safe distances to prevent hazard zones being reached by upper and lower limbs"
- **EN 60529:2003/A2:2014-07** – "Degrees of protection provided by enclosures (IP Code)"

# 2. Application

ROBUST appliance has been engineered for air cleaning (filtration) of **dry**- and **coarse** dusts, of particle size above 5µm, arising during various production processes. Especially, it is applicable for filtration during the grinding, reloading the powdery materials as well as other dust emitting processes in such industries as chemical-, pharmaceutical-, plastic processing, etc.

# 3. Reservations of Producer

1. Manufacturer accepts no liability for any consequences following from the operational use that is in contradiction to the purpose of application.
2. Installing of any additional elements that are not belonging to the normal device structure (or accessory set) is not acceptable.
3. Do not undertake any structural changes or constructional modifications on the device on one's own.
4. Mainenance and any repair can be performed exclusively by an authorised person.
5. Do not apply the device for conveying the air containing aggressive compounds / substances that would have destructive effect on the filters, and dusts creating explosion hazard.
6. **In the course of operational use, pay attention that any sources of ignition, i.e. glowing cigarette butts / embers do not get into the filtration chamber**.

# 4. Technical Data

**Table No.1**

| Type | Volume flow | Maximum vacuum | Supply voltage | Motor rate | Acoustic pressure level measured from distance | | Waste drawer capacity | Weight |
|---|---|---|---|---|---|---|---|---|
| | | | | | 1m | 5m | | |
| | [m³/h] | [Pa] | [V] | [kW] | [dB(A)] | | [dm³] | [kg] |
| **ROBUST-1000** | 1100 | 1700 | 230/50Hz | 0,75 | 70 | 61,5 | 39 | 100 |
| **ROBUST-2000** | 2000 | 2000 | 230/50Hz | 1,50 | 73 | 66,5 | 80 | 152 |

**Caution**:

1. Volume flow has been measured at the clean filters
2. Suction connections: **ROBUST-1000** – 1 x Ø125 mm, 1 x Ø160 mm
   **ROBUST-2000** – 1 x Ø165 mm, 1 x Ø200 mm
3. Assortment of the ERGO LUX extraction arms is represented on separate catalogue cards

**Table No.2 – Cartridge filters**

| | Type | Weight [kg] | Class | Filtration efficiency [%] | Quantity of filters [pieces] | Application |
|---|---|---|---|---|---|---|
|  | CP163868U | 9,6 | F9 | 95 | 1 | ROBUST-1000 |
| | CP165768U | 13,2 | F9 | 95 | 1 | ROBUST-2000 |

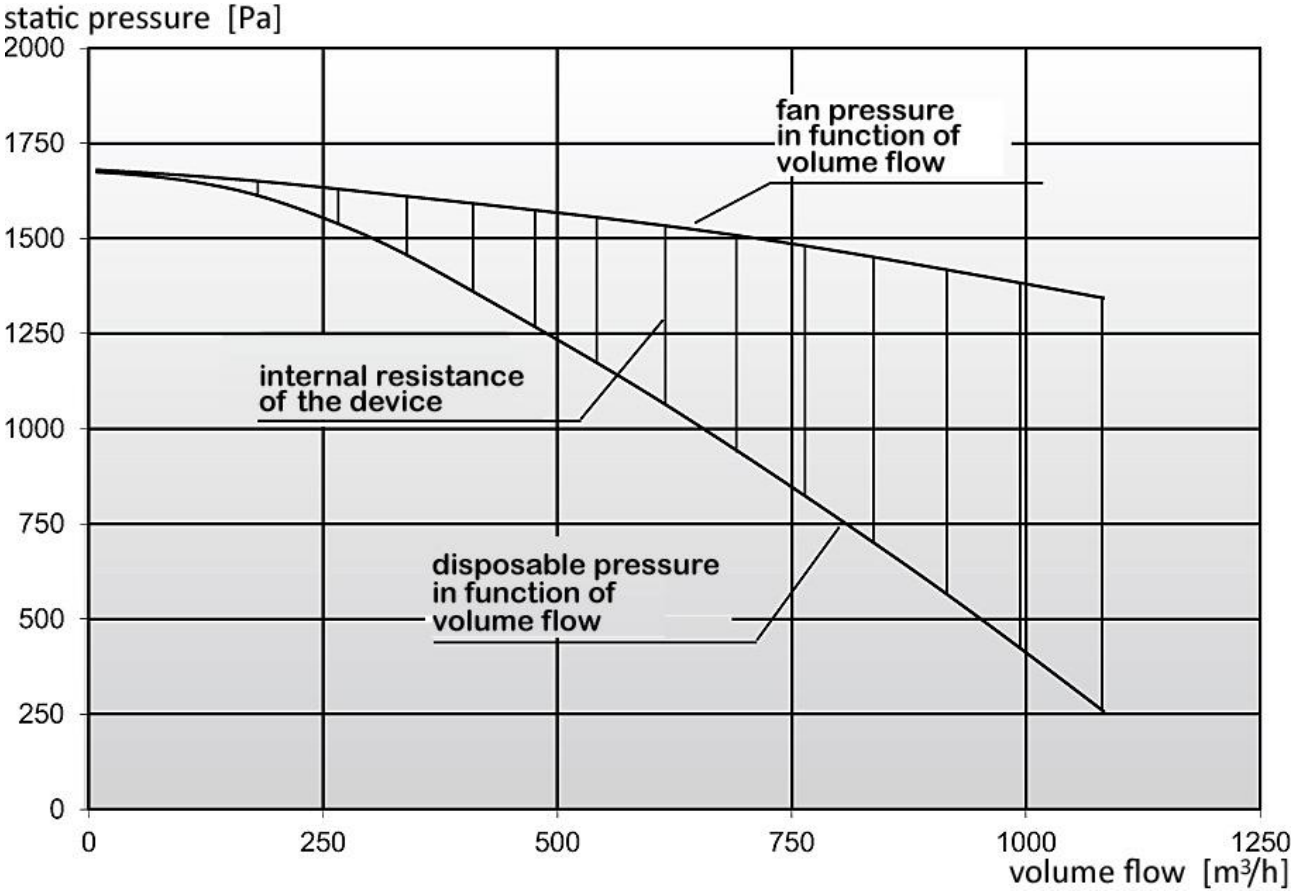


**Fig. No.1 – ROBUST-1000 – Flow chart**

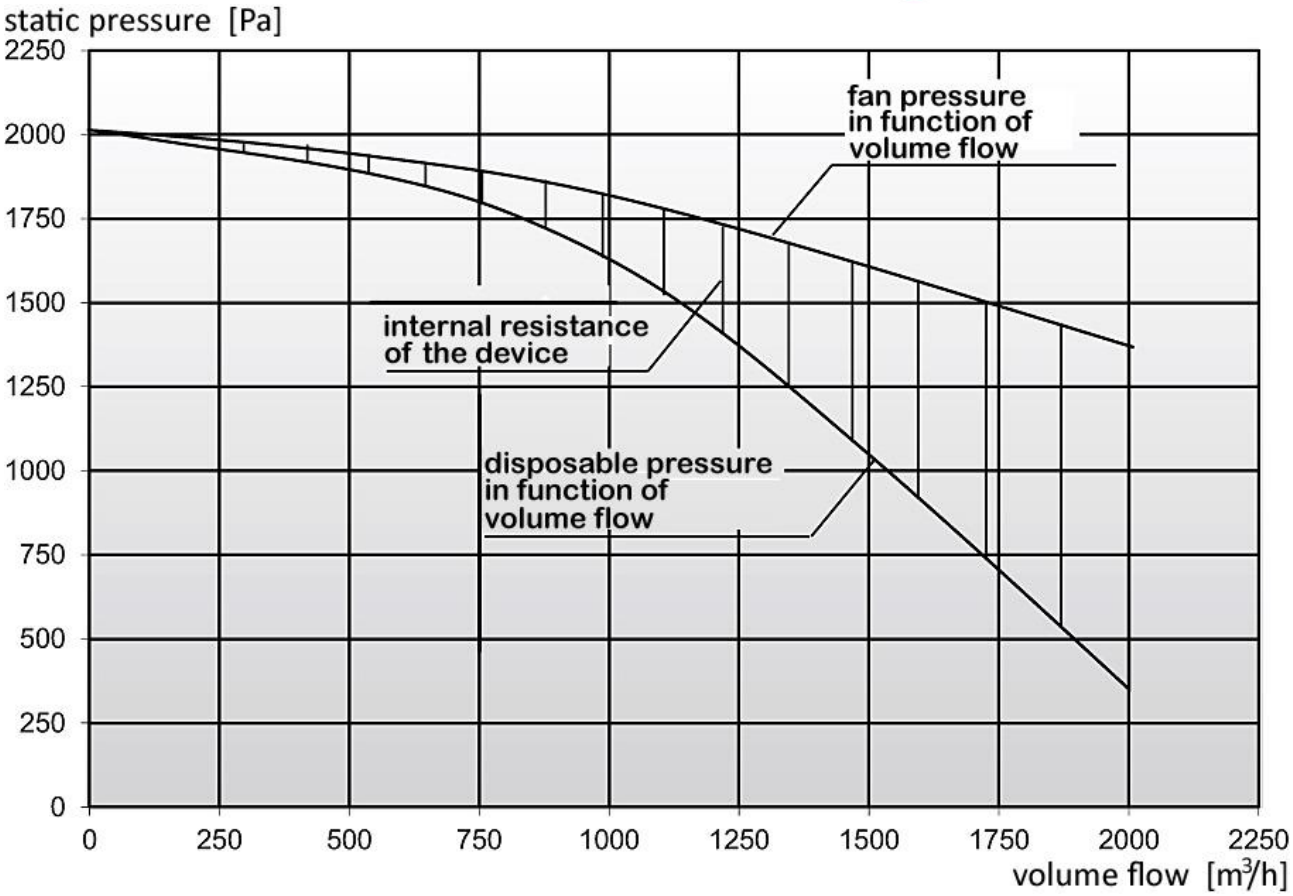


**Fig. No.2 – ROBUST-2000 – Flow chart**

## 5. Structure and Function

ROBUST filtering unit consists of subsequent assemblies:

- steel sheet housing
- radial fan – cast aluminium
- cartridge filter – cellulose-polyester fabric – class F9
- manual filter cleaning assembly – removes the dust deposited on the pleats surface of the cartridge filter
- steel dividers – functioning as a spark catcher
- waste drawer (container) – to collect the extracted dusts
- connections on the suction side
- silencer at the fan outlet
- motor protective switch – short-circuit- and overload protection

On the connection fitting pieces can be installed ERGO extraction arms or hoses that are connected with the contamination emission source. The dust laden air is drawn (through the inlets) into the device.
Subsequently the air is cleaned within the cartridge filter – dust accumulates on the pleat surface of the filters. Periodically, clean the filter manually, by turning the knob of the cleaning assembly. The struck off dust particles fall into the waste drawer that has to be emptied systematically. The cleaned air is expelled upright from the silencer.
ROBUST is manufactured in two sizes:

- ROBUST-1000 – volume flow 1000 m³/h
- ROBUST-2000 – volume flow 2000 m³/h.

ROBUST-1000 is fitted with one connection ∅125 mm and one ∅160, and additionally a reducer collar provides the possibility of adaptation of the ∅160 connection for diameter ∅125.
ROBUST-2000 is equipped with one connection ∅160 mm and one ∅200, whereby the additional reducer collar adapts the ∅200 connection for diameter ∅160.

In manufacturer's execution, both these connections are plugged with a plate. User decides how to use the connections on one's own. By means of reducers it is easy to adapt both these devices most conveniently to the required connection configuration.

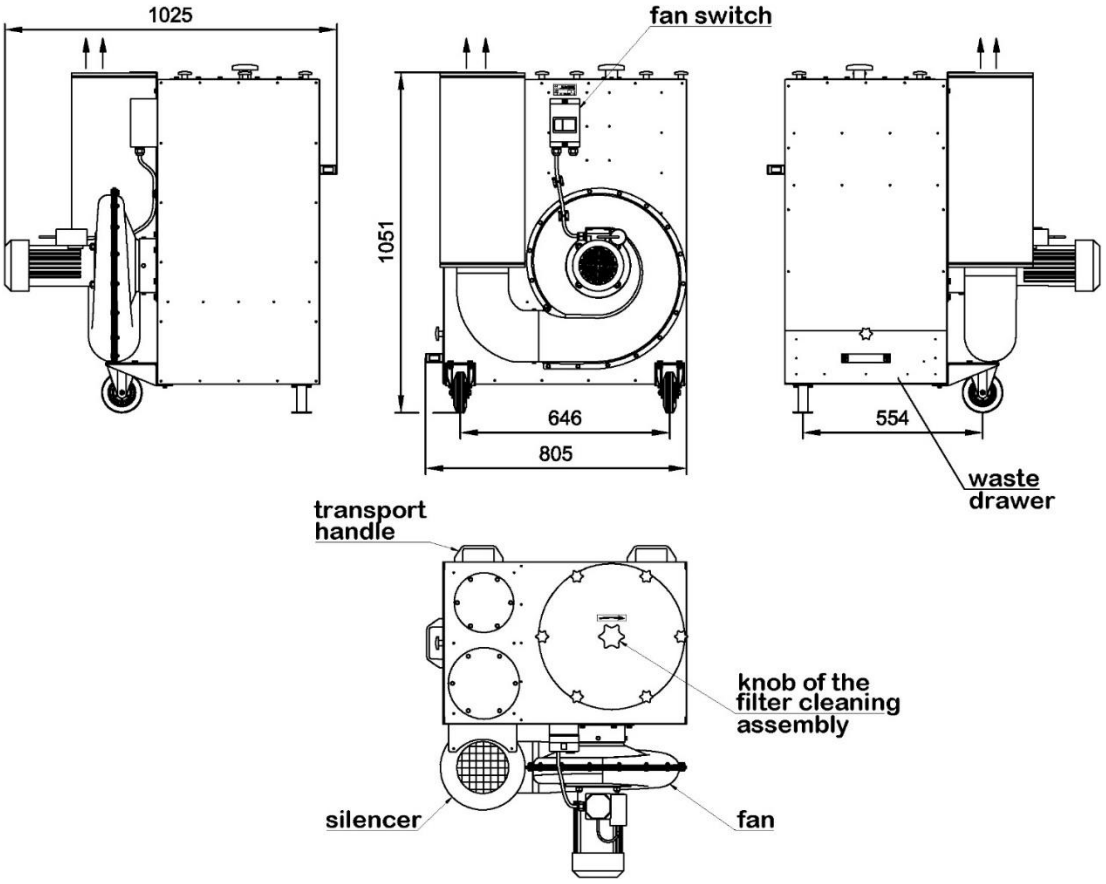


**Fig. No.3 – ROBUST-1000 – Structure and dimensions**

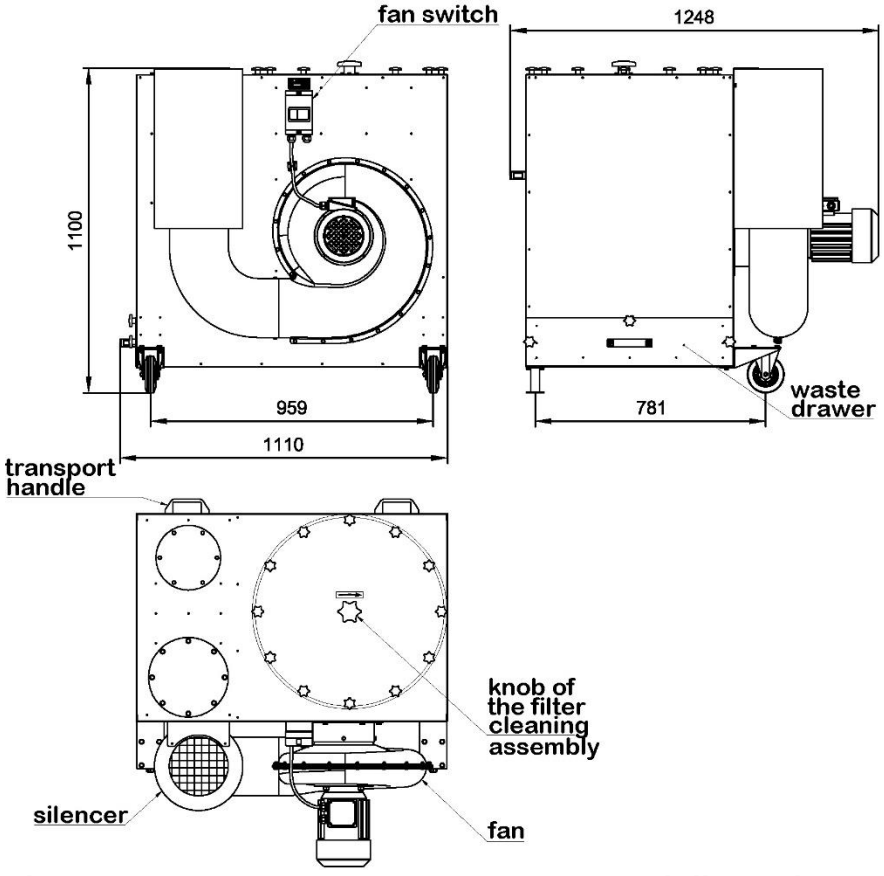


**Fig. No.4 – ROBUST-2000 – Structure and dimensions**

# 6. Assembly and Start-up

Installing: put the filtering unit simply on a floor surface in a convenient place for operational use. Mind the appropriate localisation of the intake elements (connections), with reference to the contamination emission source.

To energize the device, simply plug into 230V/50Hz and turn on the motor protective switch (see Fig. No.1 – “Fan switch”).

The filtering unit ought to be equipped with adequate local exhausts. This can be ERGO LUX extraction arms or flexible hoses connecting the inlets with appropriate pollution emission sources.

**ROBUST-1000** – adapted for installing one ERGO LUX-L extraction arm (workrange 2 or 3 metres) of diameter ∅160 mm (see Phot. 1) or flexible hose of the same diameter by means of a DC flange connector (see Phot. 2).

Having installed a flange reducer, it is possible to mount two ERGO LUX-K extraction arms of diameter ∅125 mm (see Phot. 3) or two flexible hoses of the same diameter.

In the Photos No.1 and No.2 are illustrated configurations of applications of ROBUST.

**ROBUST-2000** – the appliance is adapted for installing of one ERGO LUX-D extraction arm (workrange 2 or 3 metres) of diameter ∅200 mm (see Phot. No.1) or flexible hose of the same diameter – (by means of a DC connector).

Having installed a flange reducer, it is possible to mount two ERGO LUX-L extraction arms (workrange 2 or 3 metres) of diameter ∅160 mm or two flexible hoses of the same diameter.

Energising is shown in Fig. No.5


**Photo No.1**

**Photo No.2**

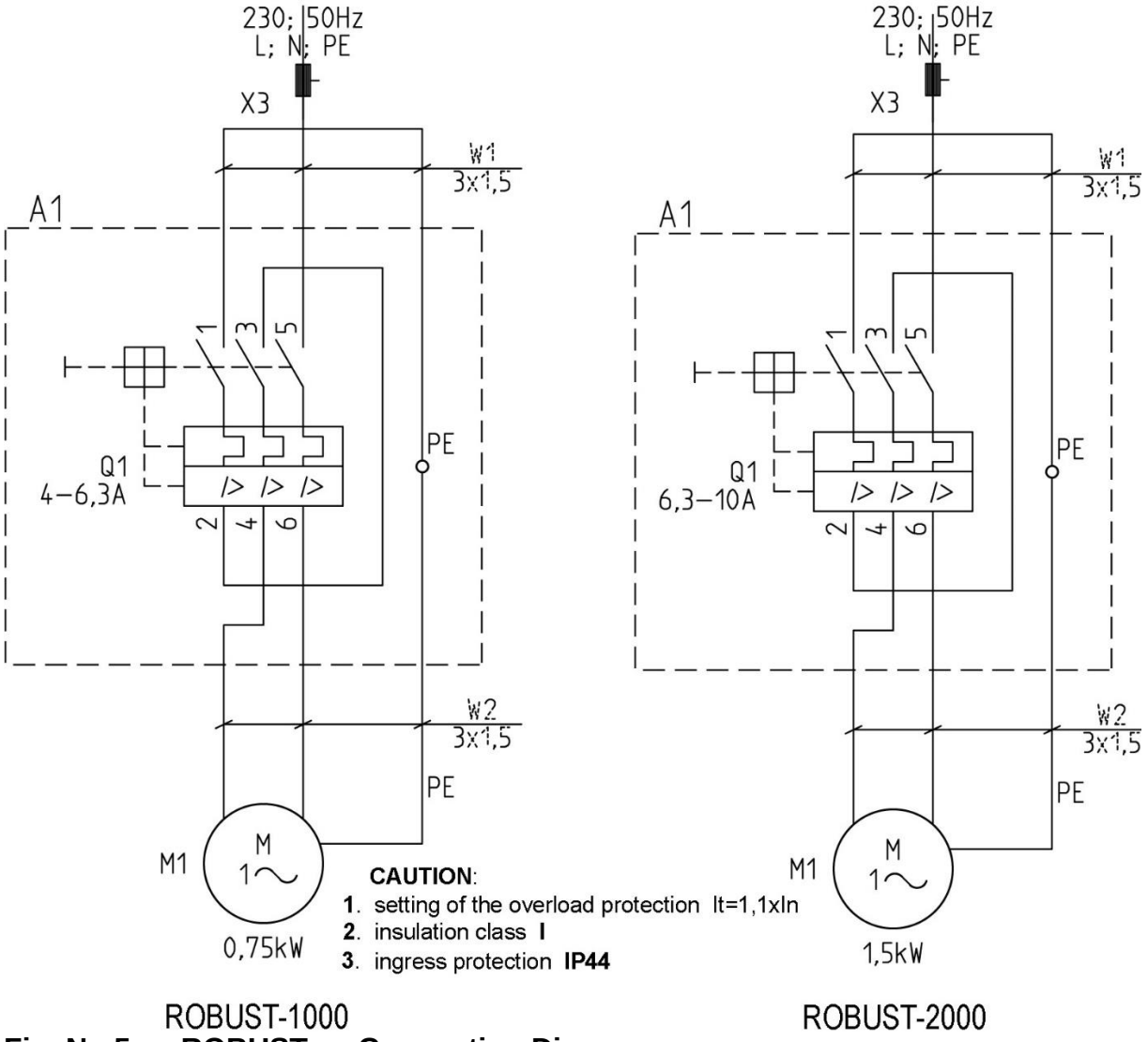


**Fig. No.5 – ROBUST – Connection Diagram**

# 7. Operational Use

During the use, remember to clean the dusts using periodically the filter cleaning assembly, especially when the volume flow decreases) – simply turn the knob by hand. The struck off impurities fall into the waste drawer. It is important to empty the waste drawer systematically. **Once a week withdraw the filters from the device and clean them from the deposited dust / impurities – using a stream of compressed air**. ROBUST is fitted with two castor wheels for easy displacement, and with two legs as braking elements. On the side of legs, there are handles to lift and displace the whole appliance.

# 8. Troubleshooting Guide

**Table No.3**

| | problem | possible reason | corrective action |
|---|---|---|---|
| **1.** | The intake air volume decreases gradually | Large amount of dusts deposited on the filter surface | Clean the filter. In case when filtration efficiency is decreasing further, replace the filter a new one |
| | | The filter cleaning assembly is faulty | Repair or replace the filter cleaning assembly for a new |
| **2.** | Dust is emerging outside the filtering unit | The elements are not tight to each other, between the sealing of the cartridge filter and housing | Screw up the cover tight against the housing |
| | | Failure of the filter | Replace the filter for a new |

# 9. Maintenance

Examine the extraction efficiency – if the efficiency decreases, replace the filter for new one. Once a year of operational use, check thoroughly the technical state of the fan. Submit the fan motor to periodical inspection – according to the regulations for the operational use of electrical appliances.

# 10. Occupational Health and Safety

The use of the filtering unit is exclusively possible after getting acquainted with the con-tents of the present Use and Maintenance Manual. The fan motor ought to be connected to the po-wer supply system in accordance with the being in force regulations within the range of per-sonal protection against the electrical shock and the short-circuit- and overload effects.


**The appliance cannot be used for extraction of dust creating explosion hazard**.

Producer bears no liability for any consequences following from the operational use that is in contradiction to the purpose of this application.

# 11. Transport and Storage

The appliance ought to be stored in closed rooms and of proper ventilation, in areas free from aggressive substances. For the transport time, the device ought to be placed on a pallet and protected from overturn and slide (displacement). It ought to be protected with foil against the atmospheric factors / weather conditions.

# 12. Terms of warranty

The period of warranty for the purchased device is indicated in the “Card of Warranty”. The warranty does not comprise:

- device failures caused during the use which is in contradiction with the purpose of appli-cation and with the present Use and Maintenance Manual
- mechanical damage and malfunctions caused by User
- changes, modifications and adaptations carried out on the device on one’s own
- malfunctions resulting from the improper transport, storage or incorrect maintenance
- inefficiencies and wear out resulting from the normal routine operational use

Infringement of the Section 3 “Reservations of Producer” of the present Use and Maintenance Manual and, especially modifications undertaken by User on one’s own or use in contradiction with the purpose of application – shall result in the loss of warranty validity.

# 13. Sample of the Declaration of Conformity

**Declaration of conformity EC No. ……..**

Manufacturer (eventually the authorized representative / importer):
name: **KLIMAWENT S.A.**
address: **81-571 Gdynia, Chwaszczyńska 194**

A person, authorized for issuing the technical documentation: Teodor Świrbutowicz, KLIMAWENT S.A. hereby declares that the appliance:
name: **filtering unit**
type/model: **ROBUST-1000**; **ROBUST-2000**
serial number: …….. year of production: ……..
meets the requirements of the subsequent European Directives:

- **2006/42/EC Machinery Directive** of the European Parliament and of the Council of May 17th, 2006 on machinery – amending the 95/16/EC (recast) /*Journal of Laws EC L157 of 09.06.2006, page 24*/
- **2014/35/EC Directive** of the European Parliament and of the Council of 26 February, 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits. /*Journal of Laws EC L96 of 29.03.2014*/

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The appliance meets following harmonized standard:

| | |
|---|---|
| ● **EN ISO-12100:2012** | – "Safety of machinery – Basic concepts, general principles for design. Risk assessment and risk reduction" |
| ● **EN 60204-1:2018-12** | – "Safety of machinery – Electrical equipment of machines Part 1: General requirements" |
| ● **EN ISO 13857:2010** | – "Safety of machinery – Safe distances to prevent hazard zones being reached by upper and lower limbs" |
| ● **EN 60529:2003/A2:2014-07** | – "Degrees of protection provided by enclosures (IP Code)" |

| | | |
|---|---|---|
| …… | …… | …… |
| place, date | signature of authorised person | name, surname, function of the signatory |
| **KLIMAWENT S.A.**<br>**Supported Employment Enterprise**<br>81-571 Gdynia, ul. Chwaszczyńska 194<br>phone: +49 58 829 64 80<br>email: klimawent@klimawent.com.pl<br>www.klimawent.com.pl | District Court Gdańsk-Północ<br>in Gdańsk, VII Wydział Gospodarczy<br>of the National Register of Court<br>KRS 0000308902 company stock<br>13.779.200 zł paid in total | NIP: 958 159 21 35<br>REGON: 220631262<br>Bank Account: **Santander Bank Polska S.A.**<br>56 1500 1025 1210 2007 8845 0000 |

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