

# Use and Maintenance Manual



## Oil Mist Separator **MISTOL DUST-5000**

Manufacturer:

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## 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 **MISTOL DUST-5000 oil mist separator**.

**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 **MISTOL DUST-5000** oil mist separator meets the requirements of the current state 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 17<sup>th</sup>, 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 21<sup>th</sup>, 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 30<sup>th</sup>, 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:

- |                                   |  |
|-----------------------------------|--|
| • <b>EN ISO-12100:2012</b>        | – “Safety of machinery – Basic concepts, general principles for design. Risk assessment and risk reduction”  |
| • <b>EN 60204-1:2018-12</b>       | – “Safety of machinery – Electrical equipment of machines Part 1: General requirements”                      |
| • <b>EN ISO 13857:2010</b>        | – “Safety of machinery – Safe distances to prevent hazard zones from being reached by upper and lower limbs” |
| • <b>EN 60529:2003/A2:2014-07</b> | – “Degrees of protection provided by enclosures (IP Code)”   |
| • <b>EN 61439-1:2011</b>          | – “Low-voltage switchgear and controlgear assemblies Part 1: General resolutions”                            |

## 2. Application

MISTOL DUST-5000 Oil Mist Separators are designed for cleaning the air of oil mist, contaminated with dust, arising during various production processes. Particularly, they are applied for extraction of oil particles from vapours of cooling-lubricant liquids used in machining (i.e. grinding, milling, etc.).

## 3. Reservations of Producer

- A. Manufacturer accepts no liability for any consequences following from the operational use that is in contradiction to the purpose of application.
- B. Installing of any additional elements that are not belonging to the normal device structure (or accessory set) is not acceptable.
- C. Do not introduce any structural or constructional modifications on the device on one's own.
- D. Protect device housing from mechanical damage.
- E. Prior to installing, check the load-carrying capacity of the building structure where the appliance shall be placed.
- F. The device is inappropriate for conveying the air containing mixture of flammable substances in a form of gases, vapours and mists, that (in contact the air) create explosive mixtures.

**G.** Do not use the Oil Mist Separator for cleaning the air polluted with aggressive substances which could exert destructive effect on the device.

## 4. Technical Data

Table No.1

Type	Maximum volume flow	Maximum vacuum	Supply voltage / frequency	Motor rate	Acoustic pressure level		Weight
					1m	5m	
	[m <sup>3</sup> /h]	[Pa]	[V/Hz]	[kW]	[dB(A)]		[kg]
<b>MISTOL DUST-5000</b>	8700	4200	3x400 / 50	<b>5,5</b>	75	69	563

**CAUTION:** ingress protection IP44

The appliance is equipped with an S1 isolating switch (Fig. No.7)

Pressure control (pressostat) with 500Pa setting indicates the pollution state of the filter (H3 lamp lights)

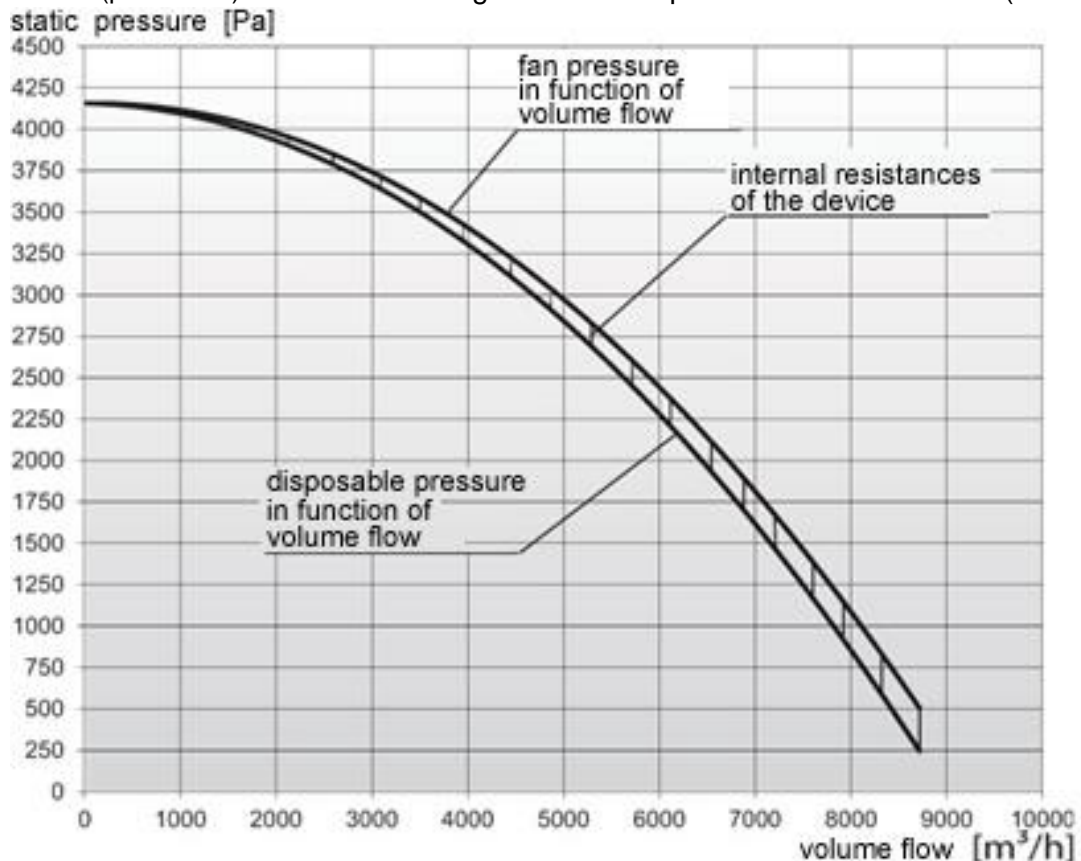
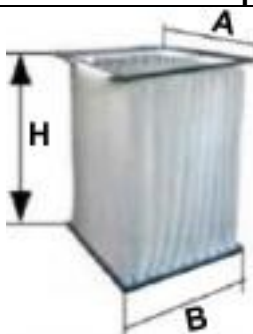


Fig. No.1 – MISTOL DUST-5000 – Flow chart

Table No.2 – Replaceable filter

	Type	Weight [kg]	Dimensions A x B x H [mm]	Quantity	Class	Filtration material
	FK-MISTOL DUST-5000	9,4	1200x545x1000	2	F8	polypropylene nonwoven (spunbond), oil resistant

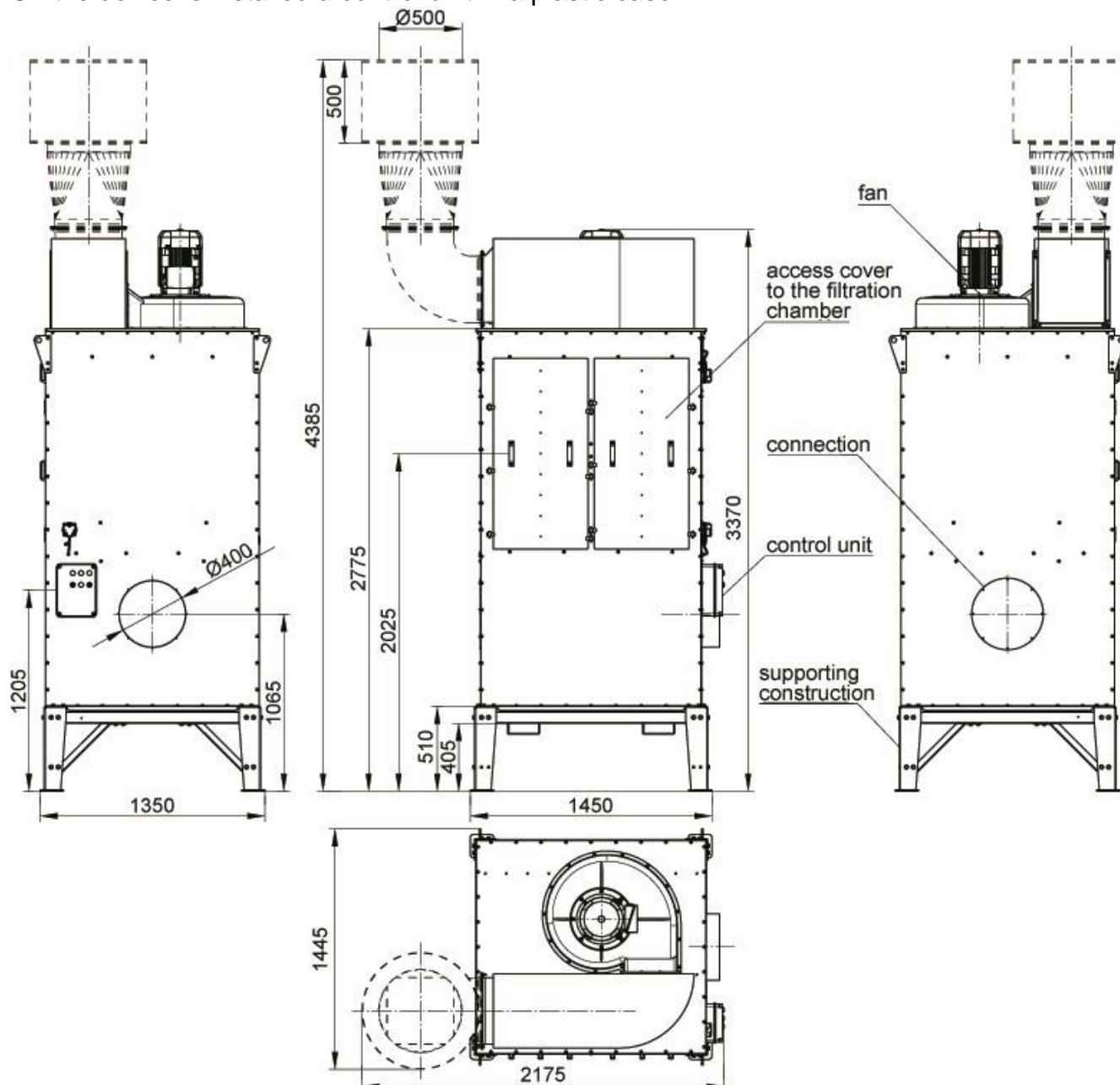
## 5. Structure and Function

MISTOL DUST-5000 oil mist separator consists of subsequent elements

- steel housing,
- radial fan – housing and impeller of cast aluminium
- pre-filter – net filter,
- pocket-filter – class F8,



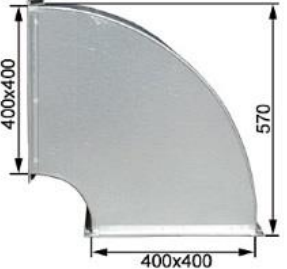
- sedimentation chamber (for oil drippings),
- decompression chamber with a screen,
- pressure control (pressostat) – signalling for excessive flow resistances of the pocket-filter,
- control unit,
- oil drainage valve,
- supporting structure,
- silencer at the fan outlet.

**CAUTION:** MISTOL DUST-5000 is fitted additionally with a reducer, silencer, elbow (Table No.3). As a first stage, the polluted air is drawn into the decompression chamber, where the largest oil drops are captured on the screen. Subsequently (as a second stage) the air stream passes through the net filter into the pocket-filter. The pocket-filter is made of nonwoven that is resistant to oil pollution (fatty contamination). The separated oil drops into the sedimentation chamber. Underneath the sedimentation chamber is installed an oil drainage valve to empty the sedimentation chamber from the accumulated oil (into the container/bucket placed underneath the device). The appliance is equipped with a revision cover to clean the decompression chamber. On the device is installed a control unit in a plastic case.



**Fig. No.2 – MISTOL DUST-5000 – Structure and dimensions**

**Table No.3 – Additional equipment**

Reducer 400 x 400 / Ø500 mm		Silencer		Elbow 400x400 mm	
	Type		Type		Type
	ZR-UF		TK-UF		KL-UF

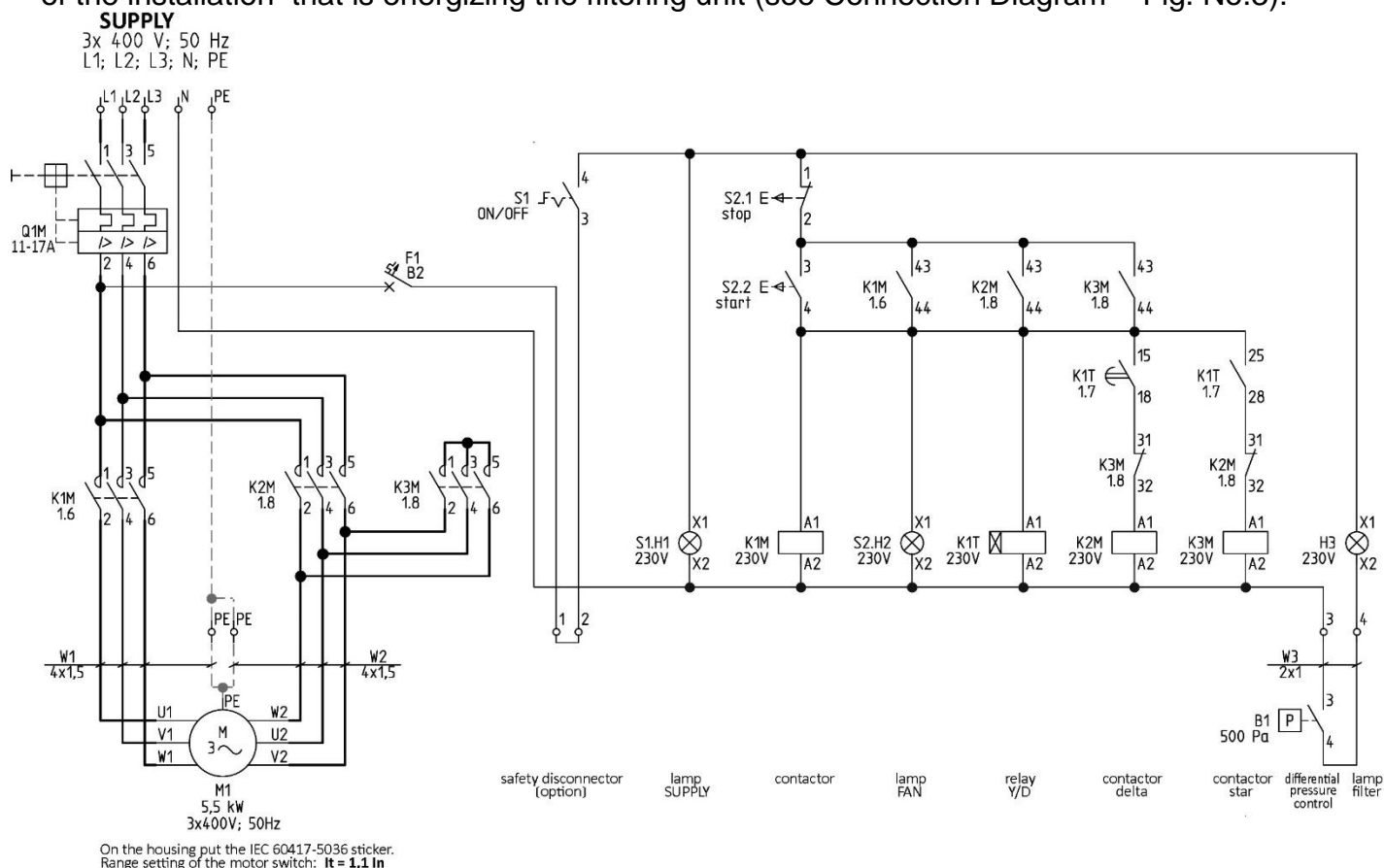
## 6. Assembly and Start-up

The separator is delivered in a completely assembled state, ready for use. The appliance is designed for operation in closed rooms. It is important to put the device stably on the even, hardened, levelled floor surface.

Prior to operation, User should connect the device to the ventilation discharge ductwork and to the power supply system as well as put a container underneath the oil drainage valve.

It is possible to change the outlet direction of the fan. Simply, turn the silencer on the outlet connection of the fan.

It is important, the parameters of the power supply system are compatible to the parameters of the installation that is energizing the filtering unit (see Connection Diagram – Fig. No.3).


**Fig. No.3 – MISTOL DUST-5000 – Connection diagram**

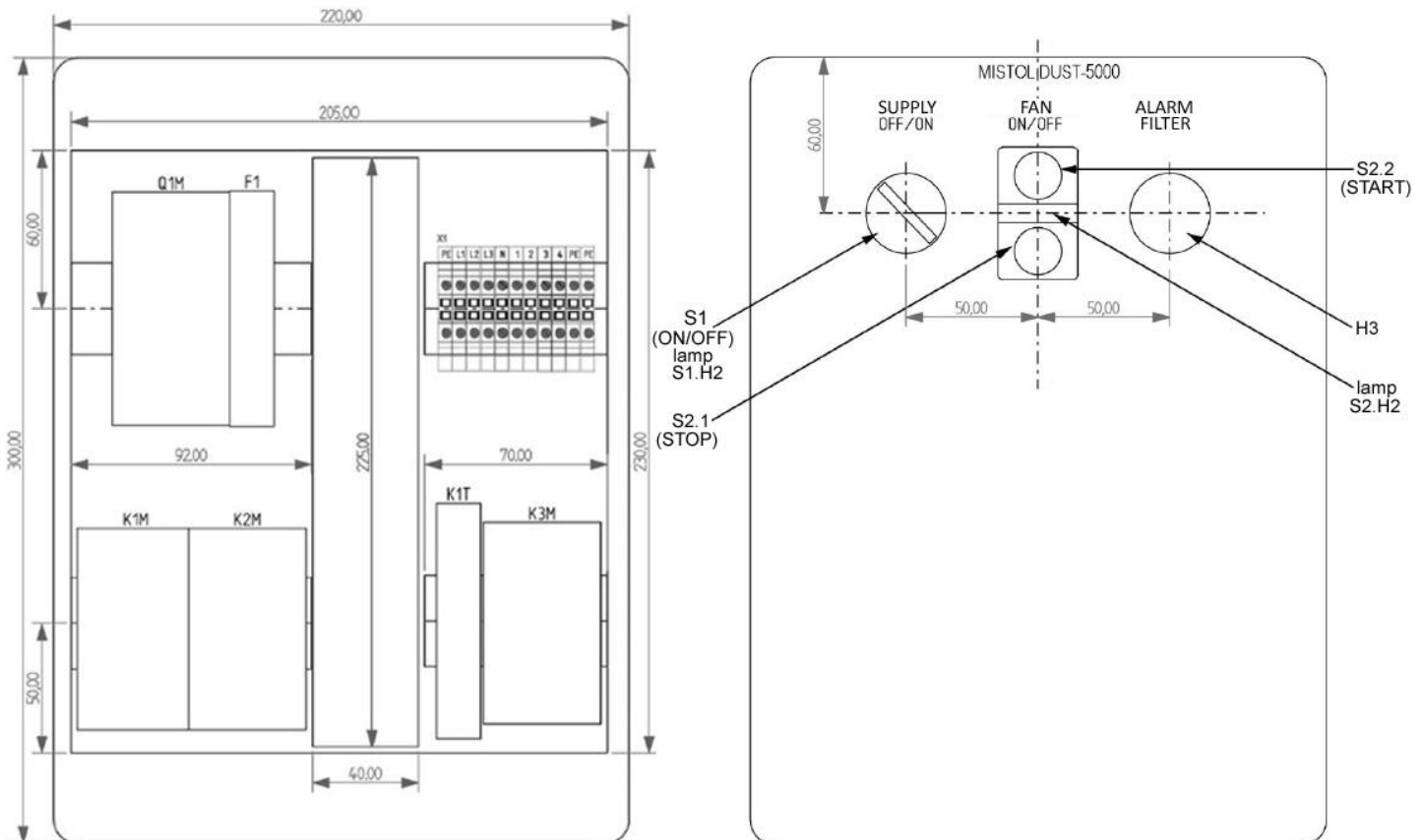


## 7. Operational Use

Separators during operation do not need continuous, routine technical supervision, it is sufficient to switch it ON / OFF. Within the everyday routine, empty the sedimentation chamber from the accumulated oil (after opening the oil drainage valve underneath). Necessarily, put a container underneath the oil mist separator to collect the drained oil.

During the operational use, control the replacement time of the pocket-filter by observing the signalling lamp (which is activated by the pressure control of the filter).

**The appliance cannot work continuously day and night, as there is not enough time for the excessive oil to drip down into the sedimentation chamber.**



**Fig. No.4 – MISTOL DUST-5000 – Control unit (inside, front cover)**

The filtering unit is operated by the control unit (see Fig. No.4). To switch ON and OFF, use the motor protective switch **Q1M**, protecting the motor from damage of overload, short-circuit and fade of one phase. The illuminated switch with the highlighted **S1** (ON/OFF) applies the voltage to the control system, which is indicated by the **S1.H1** lamp (illuminated switch). The green button **S2.2** (START) applies the control signal onto the contactors coil – soft start-up of the fan motor – this is indicated by the green **S2.H2** lamp integrated in the button. To switch off the fan, press the **S2.1** (STOP) button to interrupt the contactors coil circuit – the fan motor is switched off. The system is further energised and in readiness for the next restart of the fan. Differential pressure control (pressostat) with its setting 500 Pa indicates the pollution state of the filters and this is indicated by the **H3** lamp. In this case, clean the pre-filter and replace the pocket filter.

## 8. Troubleshooting Guide

Table No.4

	Problem	Possible reason	Corrective action
1.	The intake air volume decreases gradually	The pocket filter is polluted; the pressure control (pressostat) is damaged or polluted	Replace the pocket filter or the pressure control (pressostat); unclog/clean the flexible PVC hoses connecting the pressure control with the pressure measurement points
2.	Sudden vibrations of the device occur	Failure of the impeller	Replace the impeller with the motor for new
3.	The fan do not switch on	Protection <b>Q1M, F1, F2</b> are switched off	Check the reasons, why the protections got activated. Switch on the mentioned protections

## 9. Maintenance

The construction does not require continuous routine maintenance, except revisions of the mechanical and electrical connections, **especially the grounding and the protective cable (every several years)**. After one year of operational use, the fan ought to be thoroughly cleaned and examined. Fix eventual failures / malfunctions.

## 10. Occupational Health and Safety

The Oil Mist Separator can exclusively be operated after getting acquainted with the contents of the present Use and Maintenance Manual. The appliance shall not cause any risk, provided that it is correctly installed – according to the present Use and Maintenance Manual. The appliance meets the requirements of the 2006/42/EC Directive and do not require additional protections for a safe operational use.



Repair / technical revision has to be carried out after the device is disconnected from the power supply system. Additionally, activities pertaining to the electrical wiring system ought to be performed by an authorised person with qualifications.

## 11. Transport and Storage

The device ought to be transported on a pallet in foil. During the transport, it is important to protect the device from damages, uncontrolled slide (displacement), indentations and from atmospheric factors. Store the Oil Mist Separator in a dry rooms and in areas of efficient ventilation.

## 12. Terms of warranty

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

- mechanical damage and malfunctions caused by User,
- device failures caused during the use which is in contradiction with the purpose of application and with the present Use and Maintenance Manual,
- malfunctions resulting from the improper transport, storage or incorrect maintenance.

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: **Oil mist separator**

type/model: **MISTOL DUST-5000**

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 17<sup>th</sup>, 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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.....  
place, date

.....  
signature of authorised person

.....  
name, surname, function  
of the signatory

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