

Use and Maintenance Manual



Oil Mist Separator **MISTOL MIX-5000**

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1. Introductory Remarks

The purpose of the present User's Manual is to supply User with directions within the range of application, installation, start-up and the operational use of the **MISTOL MIX-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.

The construction of the **MISTOL MIX-5000 Oil Mist Separator** 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 17 May, 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 L285 of 31.10.2009/*
- **327/2011 (EU) Commission 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 L90 of 06.04.2011/*

The device has been constructed and produced on the basis of following harmonized standards:

- | | |
|-----------------------------------|--|
| • EN ISO-12100:2012 | – “Safety of machinery – Basic concepts, general principles for design. Risk assessment and risk reduction”. |
| • EN 60204-1:2010 | – “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)” |
| • EN 61439:2011 | – “Low-voltage switchgear and controlgear assemblies – Part 1: General resolutions”. |

2. Application

MISTOL MIX-5000 Oil Mist Separator is constructed for cleaning the air from oil mist, polluted with dust during various production processes.

Particularly, they are applied for extraction of oil particles from vapours of cooling-lubricant liquids used in metal machining, such as 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 not belonging to the normal device structure (or accessory set) is not acceptable.
- C. Any structural changes or modification of the Oil Mist Separator, carried out by User on one's own are not permitted.
- D. Protect the 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	Motor rate	Acoustic pressure level		Weight
					1m	5m	
	[m³/h]	[Pa]	[V/Hz]	[kW]	[dB(A)]		
MISTOL MIX-5000	8700	4200	3x400/50	7,5	75	69	660

Caution: Ingress protection IP44

FILTERS:

- 1. High-efficiency HEPA filter **H13 1200x545x150/U** – 2 pcs
- 2. Pocket filter **FK-8 /800/12k/1200x545x25/U** – 2 pcs
- 3. Cassette metal filter **FKM-G2/1200x545x48/U** – 2 pcs

Flow chart

Static pressure [Pa]

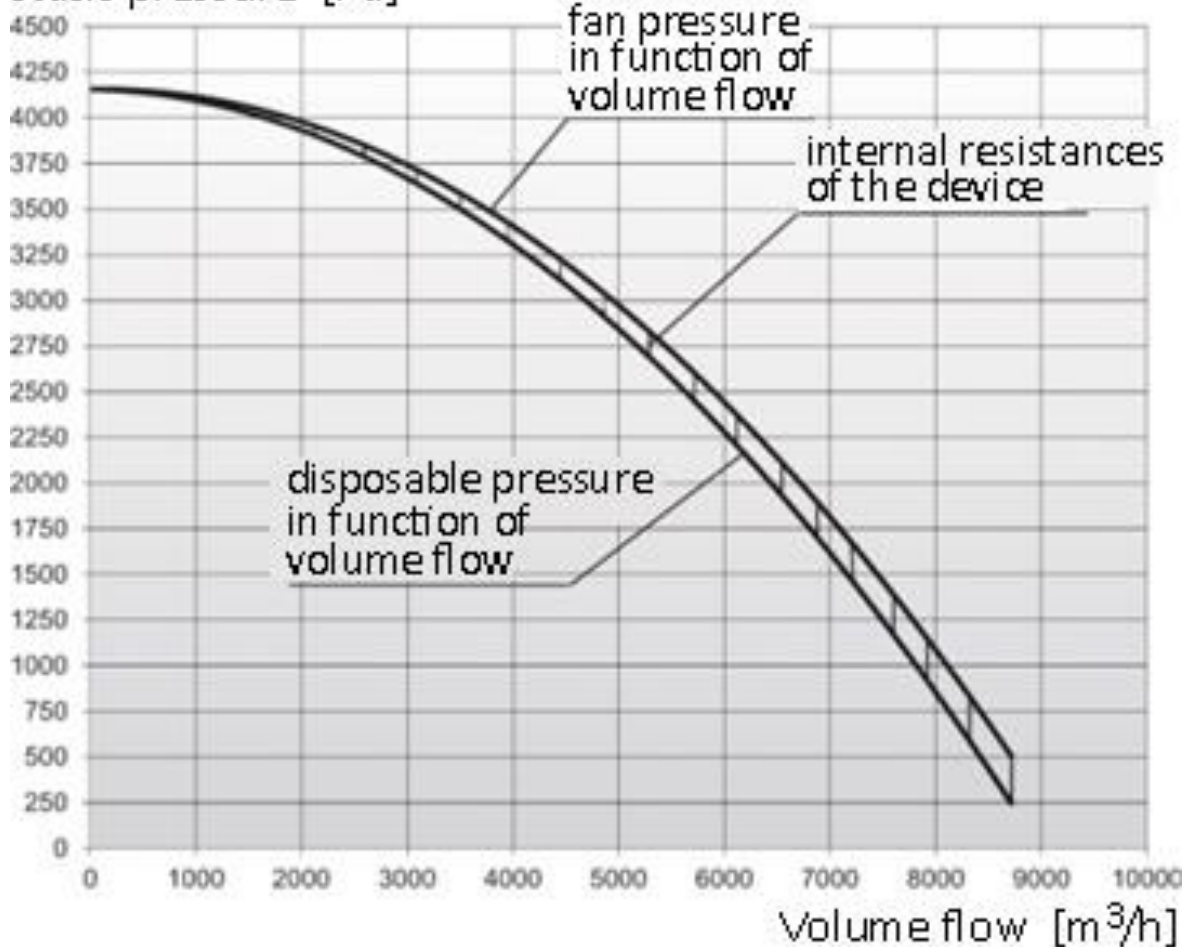


Fig. No.1 – Flow chart of the Oil Mist Separator MISTOL MIX-5000

5. Structure and Function

MISTOL MIX-5000 consists of subsequent elements:

- housing – steel sheet,
- radial fan – housing of cast aluminium,
- high-efficiency HEPA filters – 2 pieces,
- pocket filters – 2 pieces,
- metal filters – 2 pieces,
- sedimentation chamber with a screen,
- differential pressure control (pressostat) – to indicate pressure drop within the pocket filters and metal filters,
- differential pressure control (pressostat) – to indicate pressure drop within the HEPA filters,
- control unit,
- oil drainage valve,
- supporting construction,
- silencer – at the fan outlet.

Caution: As standard, MISTOL MIX-5000 is equipped with a reducer, silencer and an elbow (see Table No.2).

As a first stage, the polluted air flows into the sedimentation chamber, where the largest drops are depositing on a screen. Subsequently, through the metal filter, the air passes into the pocket filter (filtration medium – spunbond (nonwoven) which is resistant to oil / fatty pollutants).

The separated oil drains into the sedimentation chamber. The oil-free air flows through the HEPA high-efficiency filter. After the HEPA filter, the cleaned air is discharged outside through a silencer.

Underneath the chamber, there is an oil discharge valve to empty the sedimentation chamber from deposited oil. The oil drains into the container placed underneath the device. There is a revision door to clean the expansion chamber.

Control unit (in a plastic housing) is mounted on the device. Differential pressure controls (pressostats) are adjusted for **500 Pa** and indicate the pollution degree of the pocket filter, metal filter (red light **H4** – Fig No. 3, 4) and HEPA filter (red signalling light **H3** – Fig No. 3, 4).

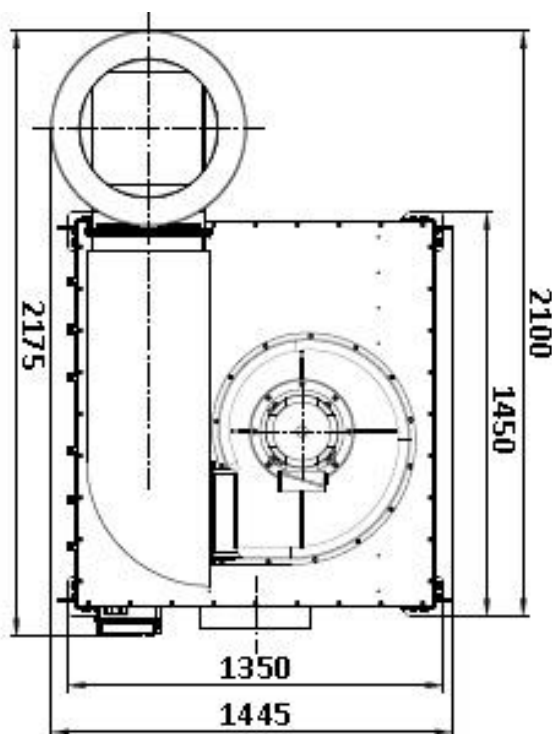


Fig. No.2a – Structure and dimensions of the Oil Mist Separator MISTOL MIX-5000

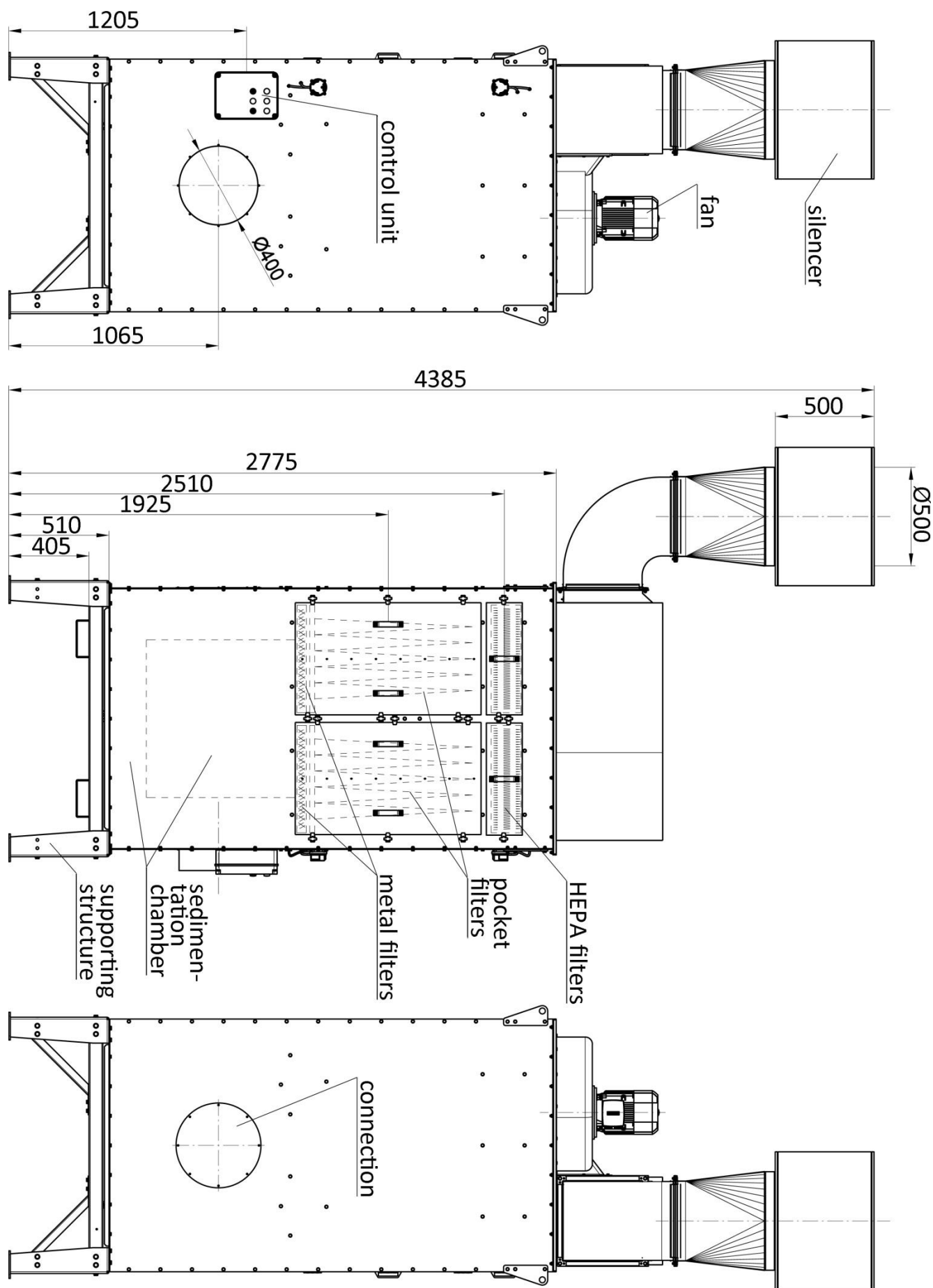
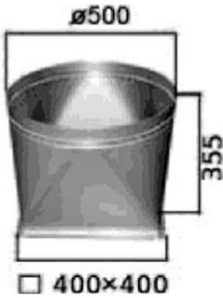
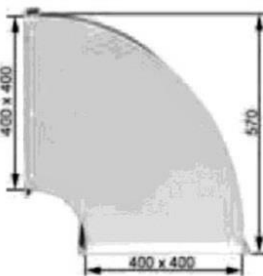


Fig. No.2b – Structure and dimensions of the Oil Mist Separator MISTOL MIX-5000

Table No.2 – Additional equipment

Reducer 400 / 400 / Ø500 [mm]		Silencer		Elbow 400 / 400 [mm]	
	Type		Type		Type
	ZR-UF		TK-UF		KL-UF

6. Assembly and Start-up

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

Prior to operation, User should connect the device to the ventilation discharge ductwork and to the power supply system. Additionally, it is important to put a container to collect the oil underneath the oil drainage valve.

Additionally, it is possible to change the outlet direction of the fan. Simply, turn the fan on the suction flange or turn the silencer on the outlet connection (of the fan).

The supply parameters should be according to the parameters of the existing supply system of the device (see Connection Diagram – Fig. No.3).

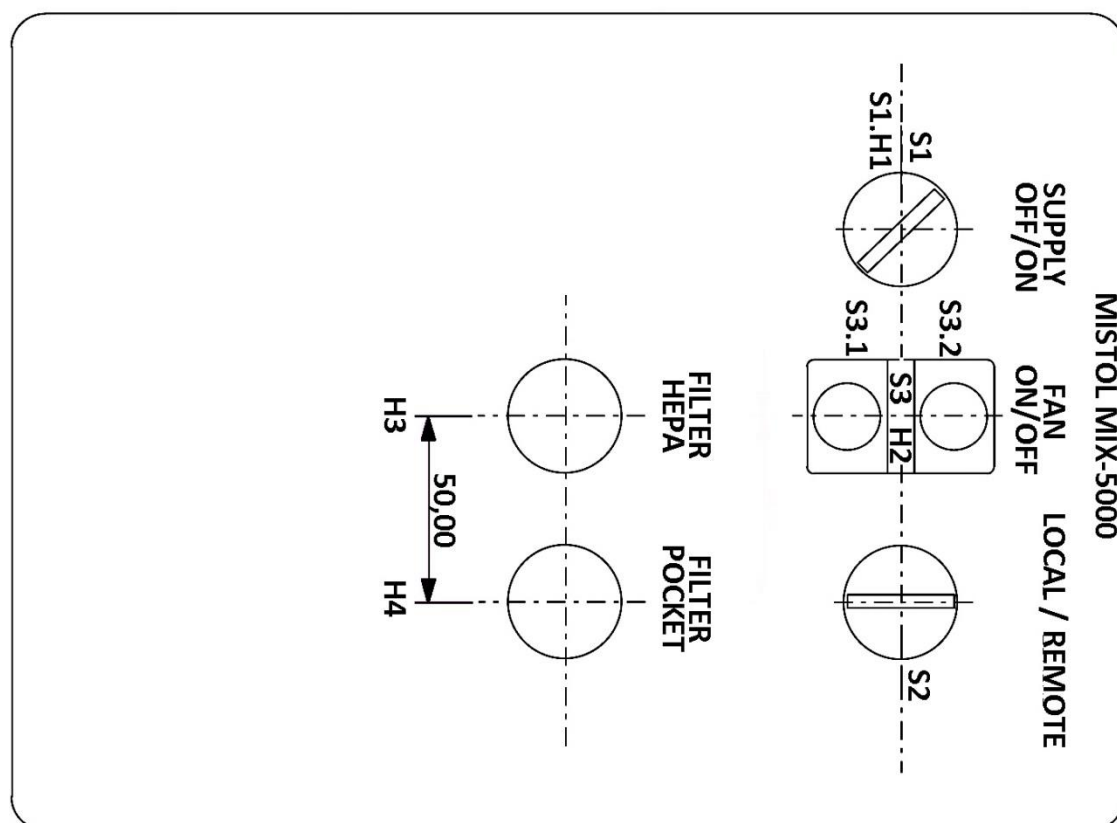
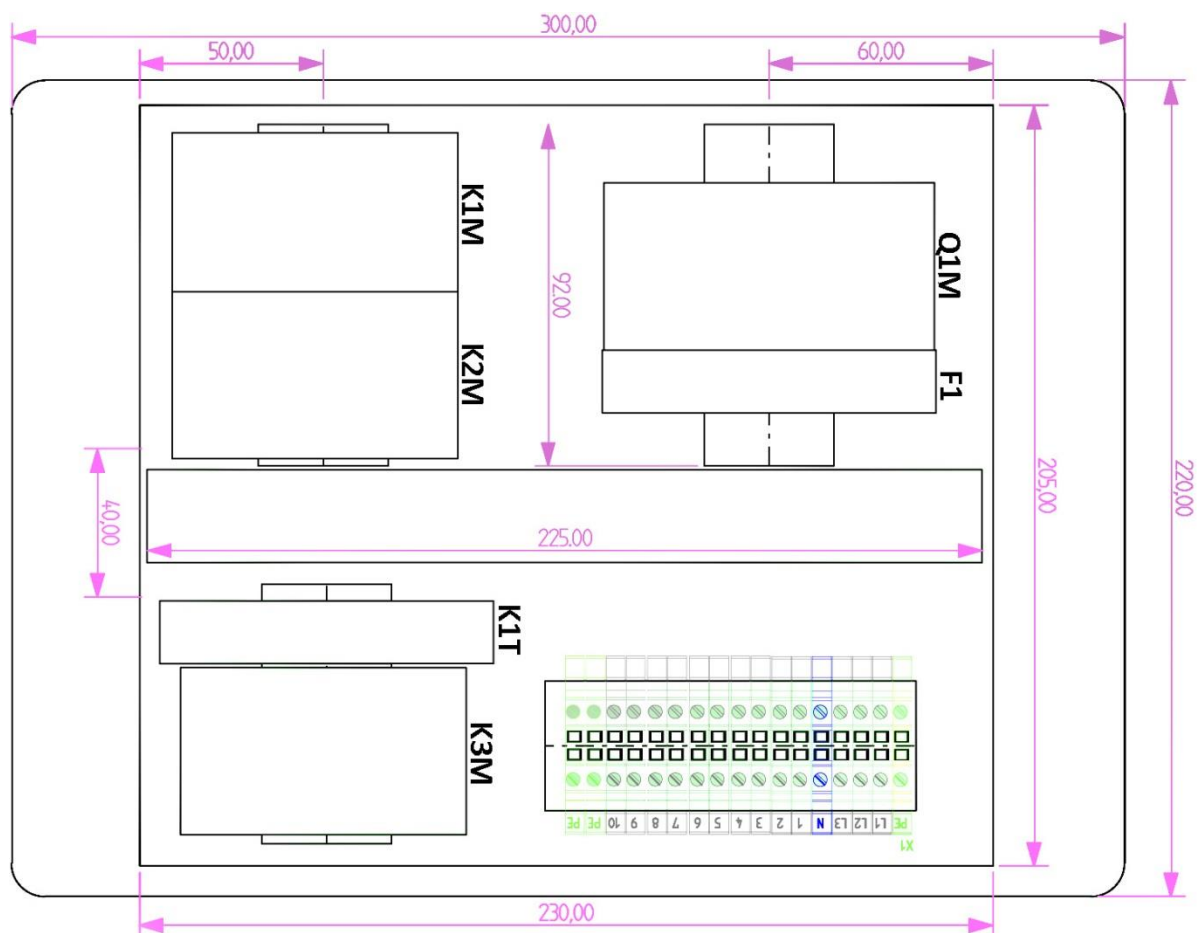


Fig. No.4 – Control unit – Oil Mist Separator MISTOL MIX-5000

7. Operational Use

Separators during operation do not need continuous, everyday technical supervision, it is sufficient to switch it ON / OFF.

Simply, the everyday maintenance consists in emptying the sedimentation chamber from the deposited oil. Before opening the oil drainage valve, put a suitable container underneath the device.

In the course of operational use, observe the replacement periods of the pocket filter, as indicated by the signalling light activated by the filter pressure control (pressostat).

As there is not enough time for the excessive oil to drip down (of the filter), the separator cannot work continuously – 24 hours (3shifts).

The appliance is operated by a control unit (see Fig. No.4). To switch ON and OFF (from the power supply) use the motor protective switch **Q1M**, protecting the motor from overload, short-circuit or fade of one phase.

The illuminated **S1** switch (ON/OFF) applies voltage onto the control system, as this is indicated by a lamp **S1.H1** (illuminated switch).

Select the work mode: "local" or "remote" with the **S2** switch.

The green **S3.2** pushbutton (START) applies a signal to control the coil of contactors – as a soft start-up of the fan motor. The fan is switched on and this is indicated by a green lamp **S3.H2** as a built in signalling in the pushbutton.

Whereas, the red **S3.1** (STOP) pushbutton interrupts the circuit of the contactors coil – in order to stop the fan. The system is further energized and in readiness for the fan to be switched on again.

Pressure controls (pressostats) with a setting of 500Pa monitor the pollution degree of the filters. The red lamp **H3** indicates the contamination of the HEPA filter. Whereas, the red lamp **H4** indicates the contamination of the pocket- and metal filter. This is the time to clean the pre-filter (of the contamination) and replace the pocket filter and HEPA filter.

8. Troubleshooting Guide

Table No.3

	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; or unclog the plastic hoses between the pressure control (pressostat) and pressure measurement points.
2.	Sudden vibrations of the device are occurring.	Failure of the impeller.	Replace the impeller with the motor for new.
3.	The fan does not switch on.	The Q1M , F1 , F2 protection is switched off.	Check the reasons, why the protections are activated; switch the above mentioned protections on.

9. Maintenance

The construction does not require continuous 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 should be disassembled, thoroughly cleaned and examined. The eventual failures ought to be fixed.

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 does not require additional protections for a safe operational use.



Any activity associated with repair/technical revision has to be executed exclusively after the device is switched off and disconnected from the power supply system. Additionally, activities connected with the electrical wiring must be executed by a person with adequate electrical 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 room and 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 dysfunctions caused by User,
- device failures caused during use which was in contradiction with the purpose of operational use and the present Use and Maintenance Manual,
- damages being effected during improper transport, storage or incorrect maintenance.

Infringement of the section 3 “Reservations of Producer” of the Use and Maintenance Manual and especially modifications undertaken by User on one’s own shall cause 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, ul. 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 MIX-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 17 May, 2006 on machinery – amending the 95/16/EC (recast) /*Journal of Laws EC L157 of 09.06.2006, page 24/*
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| • EN 61439:2011 | – “Low-voltage switchgear and controlgear assemblies – Part 1: General resolutions”. |

.....
place, date

.....
signature of authorised person

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

KLIMAWENT S.A.

Supported Employment Enterprise

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District Court Gdańsk-Północ

in Gdańsk, VII Wydział Gospodarczy

of the National Register of Court

KRS 0000308902 company stock

13.779.200 zł paid in total

NIP: 958 159 21 35

REGON: 220631262

Bank Account: **Santander Bank Polska S.A.**

56 1500 1025 1210 2007 8845 0000

NOTES:

NOTES:

**Producer:****KLIMAWENT S.A.****81-571 Gdynia, ul. Chwaszczyńska 194****tel. 058 629 64 80****fax 058 629 64 19****e-mail: klimawent@klimawent.com.pl****www.klimawent.com.pl****800S22 MISTOL MIX-5000 08.11.2018/EN**