

Use and Maintenance Manual



Chem-proof Ex roof fans

SPARK-CHEM/Ex

ATEX marking:  II 2 G c Ex e II T3

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808W18 SPARK-CHEM-160/1500/Ex 04.06.2019/EN
808W19 SPARK-CHEM-200/1500/Ex 04.06.2019/EN
808W20 SPARK-CHEM-250/1500/Ex 04.06.2019/EN
808W21 SPARK-CHEM-315/1500/Ex 04.06.2019/EN

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 **SPARK-CHEM/Ex chem-explosion-proof stand fans**.

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 **WPA-E-N/Ex chem explosion-proof stand fans** 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 February 26th, 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/
- **2014/34/EC ATEX Directive** of the European Parliament and of the Council of February 26th, 2014 on the harmonisation of the laws of Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres.
/ Journal of Laws EC L96 of 29.03.2014 /

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 80079-0:2013/A11:2014 | – “Electrical appliances in areas of gas explosion risk. Part 0: General requirements”. |
| • EN 60079-7:2016-02 | – “Electrical appliances for areas of gas explosion hazard. Part 7: Increased safety construction “e”. |
| • EN 1127-1:2011 | – “Explosive atmospheres. Explosion prevention and protection. Basic terminology and methodology”. |
| • EN ISO 80079-36:2016-07 | – “Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres. Methodology and requirements. |
| • EN ISO 80079-37:2016-07 | – “Explosive atmospheres – Part 37: Non-electrical equipment for explosive atmospheres. Non-electrical types of protection. Constructional safety “c”, supervised ignition “b”, immersion in a liquid “k”. |
| • EN 14986:2017-02 | – “Designing of fans applied in areas of explosion hazard” |
| • ISO 14694:2003+AMD1:2010 | – “Industrial fans – Guidelines on the quality of balancing and the vibration level. |
| • ISO 14695:2008/AC:2017-10 | – “Industrial fans – Methods of measurements of vibration of fans. |

2. Application

SPARK-CHEM/Ex chem-explosion proof stand fans are intended for use in areas of explosion risk, where explosive atmosphere, (i.e. mixture of flammable substances in form of gas and vapour with the air, whereby after ignition – in atmospheric conditions – the burning mass would expand within the whole non-burning mixture) is likely to occur. Additionally, the appliance is designed for transporting the air, contaminated with chemically aggressive media, (see Table of chemical resistance on pages: 11 – 14).

The forwarded air must be dry, of dustiness not exceeding $0,3 \text{ g/m}^3$, without viscous contaminants and of maximum temperature up to 40°C .

According to the ATEX 94/9/EC Directive and EN ISO 80079-36 the device carries the level of protection: "HIGH" – as a device classified for Group II, Category 2, and it can work in areas where explosive atmospheres are possible to occur. The fan can be applied in zones 1, 2 (G).

The appliance is marked on the nominal data plate:  **II 2 G c Ex e II T3**

Marking of the operational conditions of the device: group / category / hazard / class.

-  marking for explosion proof properties of the appliance,
- **group II** – the device is designed for on-ground work, in factories, in areas of explosion hazard, **but this cannot be methane hazard (firedamp)** neither carbon dust occurrence,
- **category 2** – the device is designed for application in areas where **explosive atmospheres are likely to occur**,
- **gas hazard G**,
- **"c"** – refers the protection from ignition – **constructional protection**,
- **"b"** – protection by means of controlling the ignition sources,
- **Ex** – mark of the electrical device – constructed and tested according to the European Standards for work in areas of explosion hazard,
- **execution "e"** – type of construction of the motor (a motor of increased safety)
- **gas explosion group II** – occurring in on-ground factories – the fans are constructed according to the PN-EN 14986:2009, whereby they can be applied for gases in explosion groups **IIA** and **IIB** and **hydrogen**,
- **temperature class T3** – the surface temperature of any part of the appliance should not exceed **200°C** (during the normal operation). The device can be used safely in explosive atmospheres belonging to temperature classes **T1, T2, T3**.

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. Do not undertake any structural changes or constructional modifications on the device on one's own.
- D. Protect the appliance's housing from mechanical damage.
- E. Prior to installing check the load carrying capacity of the building structure where the device will be mounted. Unsure mounting could cause hazard to personnel/people in vicinity and effect in damage of the device.

- F.  Do not use the fan for conveying the air containing **viscous impurities** that could deposit (build up) on the device surface, especially on the impeller.

G. During operation, the maximum impeller rotations should not exceed the nominal rotations.

H. Manufacturer is not responsible for wounds, injuries, body laceration experienced by User or personnel during the improper operational use.

4. Technical Data

Table No.1

Type of the fan	Synchronous rotations [1/min]	Supply voltage [V]	Motor rate [kW]	Maximum volume flow [m³/h]	Maximum vacuum [Pa]	Acoustic pressure level from distance		Weight [kg]
						1 m	5 m	
						[dB(A)]		
SPARK-CHEM-160/1500/Ex	1500	3 x 400	0,12	670	110	57	48	10,6
SPARK-CHEM-200/1500/Ex	1500	3 x 400	0,18	1330	180	59	50	14,2
SPARK-CHEM-250/1500/Ex	1500	3 x 400	0,37	2500	280	66	57	18,3
SPARK-CHEM-315/1500/Ex	1500	3 x 400	0,75	5000	440	69	60	27,0

1. Ingress protection: **IP56**; insulation class: **F**
2. Maximum temperature of the conveyed air: **+40°C**
3. Maximum dustiness of the conveyed air: **0,3 g/m³**

Fan pressure [Pa]

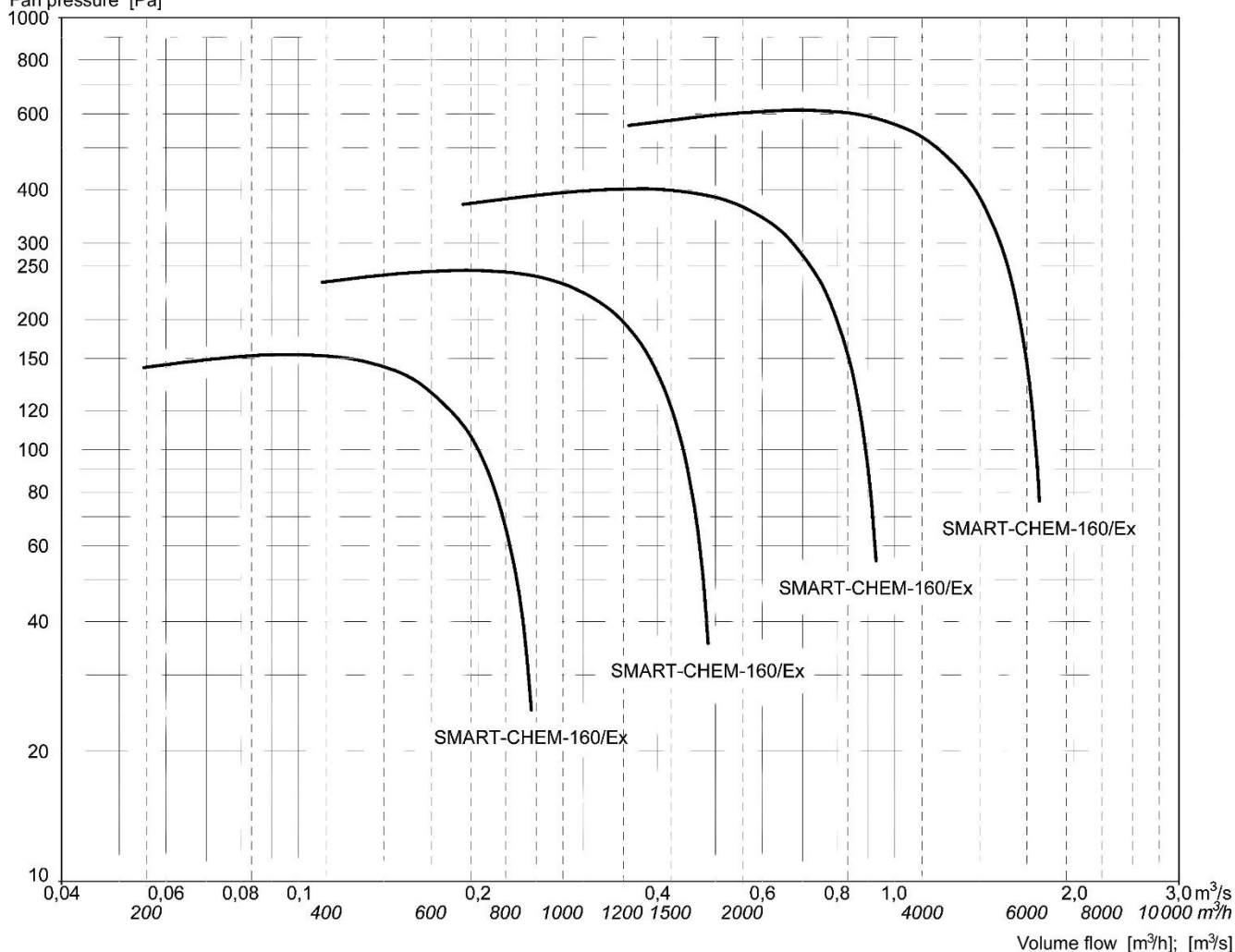


Fig. No.1 – Flow charts of the fans type SPARK-CHEM/Ex

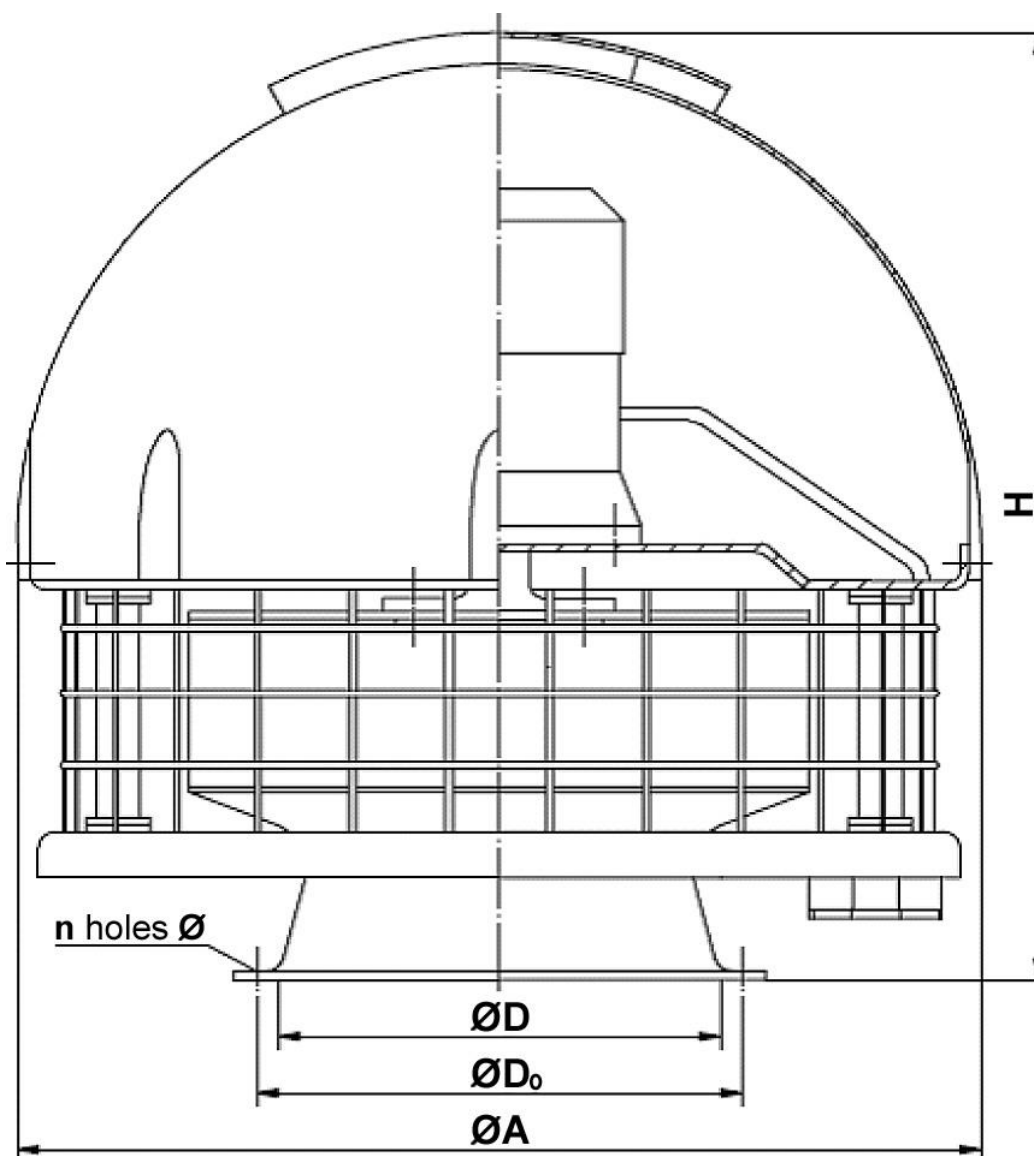


Fig. No.2 – Dimensional drawing of the fans type SPARK-CHEM/Ex

Table No.2 – Dimensions of the fans type SPARK-CHEM/Ex

Type of the fan	D [mm]	D ₀ [mm]	A [mm]	H [mm]	n [mm]	Ø [mm]
SPARK-CHEM-160/1500/Ex	160	184	420	429	8	7
SPARK-CHEM-200/1500/Ex	200	224	476	471	8	7
SPARK-CHEM-250/1500/Ex	250	274	550	523	8	7
SPARK-CHEM-315/1500/Ex	315	339	660	622	8	7

5. Structure and Function

Structure of the fan is illustrated on Fig. No.3. The subsequent constructional elements of the fan (except the impeller) are of antistatic plastic (PE EL). The impeller is made of stainless steel, therefore it is possible to forward the chemically aggressive and flammable gases and vapours as a mixture with the air. In the course of constructing there were selected materials that prevents from ignition caused by hot surfaces or sparks caused by friction between the rotary elements of the fan (constructional safety "c").

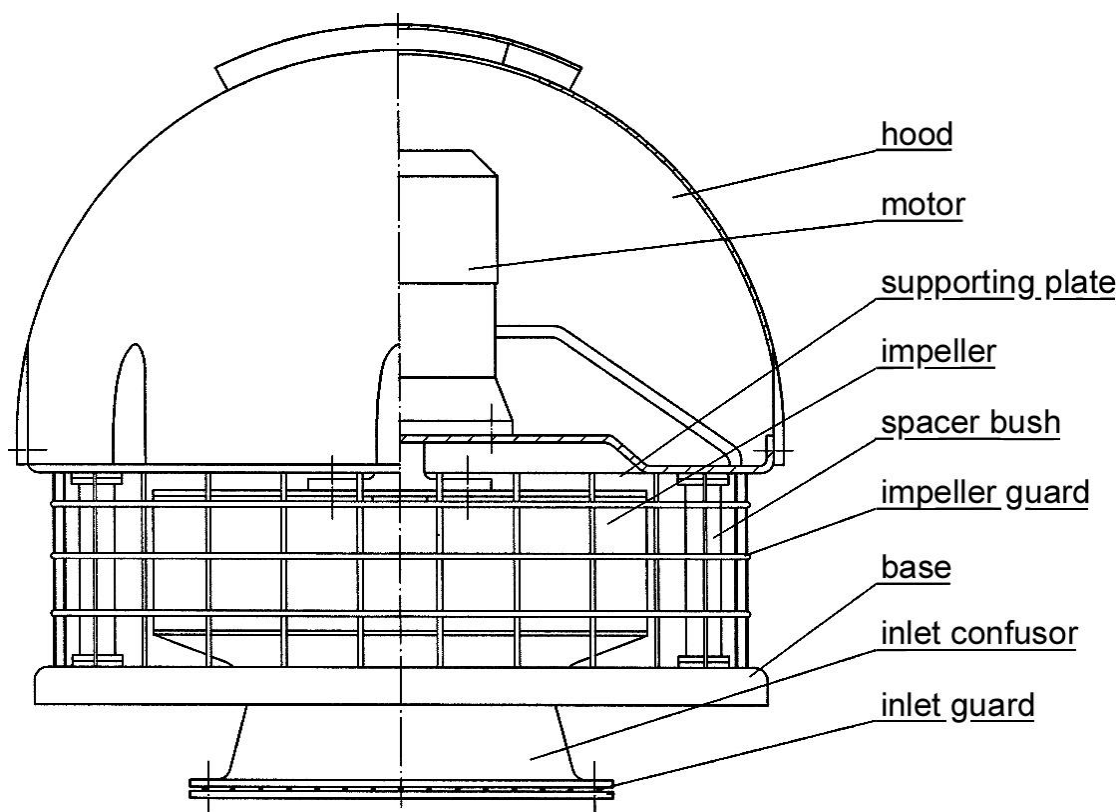


Fig. No.3 – Structure of the fans type SPARK-CHEM/Ex

To the impeller is fastened a cast iron hub. The hub along with the impeller is mounted at the motor journal. The motor (in Ex execution) is installed on a supporting plate. The supporting plate is formed of antistatic plastic (PE EL) and is of round shape with the bent outwards flange. The supporting plate is connected with the fan base by means of spacing bushes.

Both, the base and the spacing bushes are of antistatic plastic (PE EL). To the supporting plate is fixed the spherical hood of antistatic plastic (PE EL) to protect the motor from weather conditions.

The fan is surrounded with a circumferential protective steel wire grid that prevents from contact with rotary elements of the fan. To the fan base is welded up an inlet confusor of antistatic plastic (PE EL). The fan inlet is protected with perforated plate that no external objects / debris would not get into the impeller space.

On demand we deliver isolating switches (safety switches) to cut off the power supply during the installing- and servicing activities (see catalogue card "Electrical Accessories").

6. Assembly and Start-up

Prior to installing examine the delivered fan for damages and impurities occurred during the transport. The device is designed for work outside the industrial rooms. Manufacturer suggest its installing on a roof base (delivery on separate order).

The roof base must be constructed exclusively of metal or of a material that do not conduct electrostatic charges. It is important to provide grounding for the fan.

Before the connection to the power supply, make sure whether the parameters of the existing electrical installation are in uniformity with the data on the nominal plate. In case of inconsistency the connection cannot be executed.

User who executed the installing is responsible for the complete observing of the resolution of the EN ISO 13857 standard.

6.1. Guidelines of installing:



- a/ **VENTILATION INSTALLATION** – to which SMART-CHEM/Ex fans are installed, should be designed and carried out in accordance with the being in force valid regulations and standards, with reference to the local explosion hazard.
- b/ **ELECTRICAL INSTALLATION** – where SMART-CHEM/Ex fans shall be connected – ought to be designed and executed according to the being in force valid regulations and standards – with reference to the local explosion hazard.

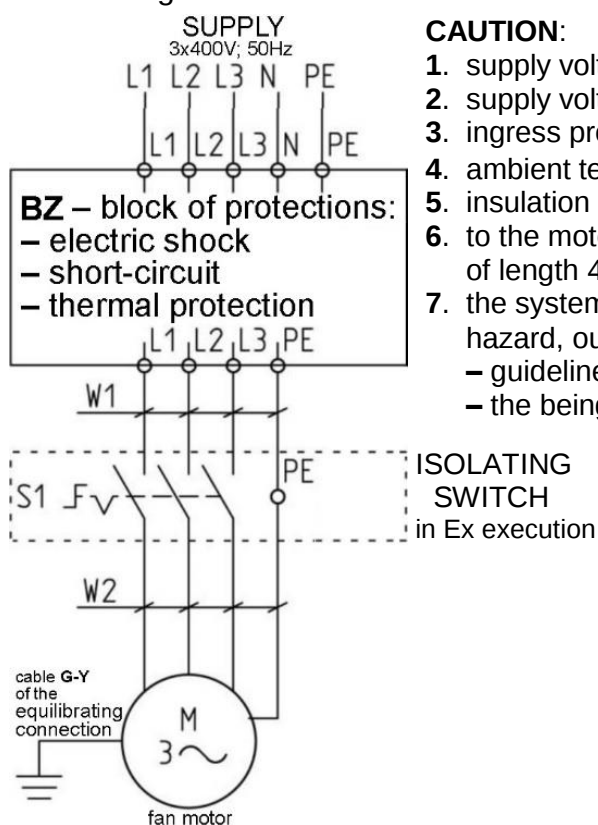
Any activities referring the connection to the power supply have to be carried out by an authorised person with electrical qualifications and according to the valid regulation and standards. It is important to provide the whole ventilation system with correctly executed installation to dissipate the electrostatic charges. All connections between the ventilation ducts must be provided with electrostatic joints (protective cables). Examine if the metal ducts are grounded properly. Additionally, the motor housing must be grounded too. Connect the grounding to the clamp on the motor housing by means of a protective cable.

The motor ought to be connected to the power supply system, strictly according to the Connection Diagram located in the inner side of the terminal box cover.

6.2 Safety inspection before the start up:

- a/ Examine if all the mechanical connections are performed correctly,
- b/ Examine the correctness of the electrical connections, phases sequence,
- c/ Check the correctness of the connection of the motor and the fan housing with the PE protective cable.
- d/ The motor should be protected from the short-circuit- overload and overvoltage effects and additionally it ought to be protected from non-complete phase work and from lightning.

After the start up, check the impeller rotation sense which should be according to the arrow on the housing.



CAUTION:

1. supply voltage **3 x 400V; 50Hz**
2. supply voltage **S1**
3. ingress protection **IP56**
4. ambient temperature from **-20 up to +40°C**
5. insulation class **F**
6. to the motor housing connect a grounding cable of length 400 mm, ended with terminal **KOI**
7. the systems and devices used in area of explosion hazard, ought to be constructed according to:
 - guidelines of the **ATEX 2014/34/EC Directive**
 - the being in force regulations and standards

CAUTION: Connect the windings according to the data on the nominal plate of the motor and with the connection diagram placed on the cover of the terminal box of the motor.

Fig. No.4 – Connection Diagram of the fans SPARK-CHEM/Ex

CAUTION: Isolating switch ought to be installed beyond the explosion risk area, near the fan.

7. Operational Use

Construction and reliable execution of the fan provide longevity of operational use without the everyday routine technical supervision. **Periodically, examine the mechanical and electrical connections, the state of grounding, and additionally provide efficient cooling to the motor.**

During the use check subsequent aspects:

- operational quality of the motor
- occurrence of eventual vibrations
- width of the circumferential clearance between the impeller and the inlet confusor (funnel)
- the state of the fan grounding
- the state of the hood, shielding

Stop the fan in case of:

- excessive vibrations and noise
- motor overheating
- smoke emerging in the motor
- damage of the fan elements

In case when symptoms of incorrect function (increased noise level, vibrations, reduced volume flow efficiency) of the device are noticed, disconnect the fan from the power supply system and undertake technical revision in order to spot the causes of the faulty function.

WARNING In case of every repair or the spare part replacement (according to ATEX 2014/34 Directive) it is important to apply the adequate information on an additional plate or in the enclosed documentation (a register log of repair activities, etc.). This is the duty of User!

A list of most frequent functional malfunctions and their corrective measures is listed below.

8. Troubleshooting Guide

Table No.3

	Problem	Possible reason	Corrective action
1.	Sudden drop of the intake flow efficiency.	Obstacle objects, pollutants reducing the air flow got stuck at the inlet guard.	Clean the inlet guard.
2.	Sudden vibrations of the fan occur.	Obstacle objects reducing the air flow got stuck in the impeller.	Disconnect the fan from the power system, and remove the obstacle.
		Impeller is defective.	Replace the impeller and the motor for new.
3.	It is not possible to start the fan.	Fade of one of the phases or the voltage is too low.	Adjust to gain the correct supply voltage.
		The block of protections got activated.	Adjust the correct settings of protections.

9. Maintenance

In the aspect of operational use, the fan construction guarantees its efficient function without continuous everyday technical supervision. It is recommended to perform technical inspections in regular terms, to obtain efficient functional performances of the fan and to meet the rules of Occupational Health and Safety.



Technical revisions on the fan must be performed exclusively by an authorised person with qualifications. Additionally, the fan should necessarily be disconnected from the power supply system.

During the technical revisions, follow the instructions included in the User's Manual of the motor, that constitute integral part of the main Use and Maintenance Manual of the fan.

Within the scope of the technical revision:

- keep clean the inlet grill;
- periodically, check the mechanical- and electrical connections. Moreover, in case of faulty function of the unit – undertake its technical revision;
- carry out the inspection of the fan (the motor – according to the instructions of its manufacturer). Within the scope of the revision, clean the fan of the deposited impurities/pollutants.



Before the activities undertaken on the fan, follow the subsequent steps:
– disconnect the fan from the power supply. Exemption from this are activities carried out on the running fan, e.g. measuring of the vibrations. In this case especially it is important to follow the regulations of the Occupational Health and Safety.
– Wait until the impeller stops rotating.

The fan can be restarted after the control steps are carried out, strictly as described in Section 6 “Assembly and Start-up”.

10. Occupational Health and Safety

Start-up and the operational use of the fan are admissible after getting acquainted with the contents of the present Use and Maintenance Manual. The fan shall not cause any hazard under the condition it is correctly and firmly installed within the ventilation system or to the supporting structure.

Any installation activities related to the power supply system, have to be carried out strictly according to the enclosed Connection Diagram and in accordance with the instructions given in Section 6 of the present Use and Maintenance Manual.



Connection to the power supply system ought to be carried out by an authorised person with qualifications, according to the being in force regulations. The fan motor must be protected from the short-circuit and overload effects.

In the course of operational use, examine the fan connection to the PE protective cable.



Any revision activity and repair must be executed after the fan is disconnected from the power supply system.

Approaching with “loose garment/clothing” or putting the hand towards the open inlet of the running fan can cause hazard of accident and severe disability.

11. Transport and Storage

The fans are wrapped in foil and placed in cardboard packages. Larger fans can be transported on pallets, protected from displacement / slide and overturn. To lift the fan use the special transport handles (located on the motor housing). During the transport, protect the fan from damage of its components, whereby that would result in reduction of the circumferential gap between the impeller and the inlet confusor (funnel).

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 damages and malfunctions caused by User,
- device failures caused during use which was in contradiction with the purpose of operational use and with the present Use and Maintenance Manual,
- any damages being caused during improper transport, storage or incorrect maintenance.

Infringement of the Clause G 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. Table of resistance of PVC against various substances

Environment	Concentration %	40°C	60°C
Acetone	10	--	--
Pure amyl alcohol		++	0
Ethyl alcohol (ethanol)	10	++	+
Non-fermentative isopropyl alcohol	70 - 99	+	
Methyl alcohol (methanol)	96	++	-
Methyl alcohol (aqueous solution)	100	++	+
Ammonia, aqueous solution	50	++	+
Potassium nitrate, aqueous solution	saturated	++	++
Sodium nitrate, aqueous solution	saturated	++	++
Calcium nitrate, aqueous solution	saturated	++	++
Benzene	100	--	--
Painter's naphtha, mineral spirit		++	+
Liquid butane	100	++	
n-butanol (butyl alcohol)	100	++	0
Liquid chlorine	100	--	
Dry gaseous chlorine	100	--	
Potassium chlorate	7,3	++	0
Sodium chlorate, aqueous solution	25	++	++
Ammonium chloride, aqueous solution	all	++	++
Zinc chloride		++	++
Ethylene chloride	100	--	--
Methyl chloride	100	--	--
Potassium chloride, aqueous solution	saturated	++	++
Sodium chloride, (domestic salt) aqueous solution	saturated	++	++
Sodium chloride, aqueous solution	5	++	++
Chlorobenzene	100	--	--
Cadmium cyanide		+	+
Copper cyanide		+	+
Potassium cyanide		+	+
Mercuric cyanide		+	+
Sodium cyanide		+	+
Silver cyanide		+	+
Cyclohexane	100	++	0
Cyclohexanol	100	++	-
Cyclohexanon	100	--	--
Carbon tetrachloride	100	--	--
1,4-dioxane	100	--	--
Carbon disulphide	100	--	--
Sulphur dioxide	saturated	++	++
Ethyl ether	100	--	
Petroleum ether	100	++	+
2-etylohexanole	100	++	+
Phenol, aqueous solution	approx. 9	0	--
Formaldehyde	40	++	
Formalin	10	++	

Environment	Concentration %	40°C	60°C
Ammonia phosphate	all	++	++
Glycerine	100	++	++
Glycol	100	++	++
Heptane	100	++	
Izopropanol	100	++	
Chromium bath, technical		++	o
Methyl-ethyl ketone	100	--	--
Cresols	100	--	--
Accumulator acid (H ₂ SO ₄)		++	++
Nitric acid	10 / 50	++ / ++	++ / ++
Boric acid	100	++	++
Hydrocyanic acid		+	
Citric acid	saturated	++	++
Hydrofluoric acid	8 - 50	+	--
Phosphoric acid	50 / 85	++ / ++	++ / ++
Lactic acid, aqueous solution	90	++	++
Formic acid	10 / 50	++ / ++	+ / +
Formic acid	98	+	
Acetic acid, icy	100	o	--
Acetic acid, aqueous solution	50	++	-
Oleic acid	100	++	o
Sulphuric acid	3-50 / 96	+ / o	+ / --
Sulphuric acid	50 / 10	++ / ++	++ / ++
Hydrochloric acid	35	++	+
Stearic acid	100	++	+
Oxalic acid	saturated	++	++
Acidic sodium carbonate, aqueous solution	saturated	++	++
Acidic sodium sulphate, aqueous solution	saturated	++	++
Nail lacquer		o	
Lysol		-	--
White liquor (12,5% of the active chlorine)		++	o
Potassium lye	10 / 50	++ / ++	++ / ++
Potassium permanganate, aqueous solution	saturated	++	+
Hydrogen peroxide	30	++	
Naphthalene	100	o	--
Nitrobenzene	25 / 100	++ / --	++ / --
Table vinegar		++	++
Butyl acetate	100	--	--
Ethyl acetate	100	--	--
2-butoxyethyl acetate		+	
Edible vegetable oil		++	++
Edible animal oil		++	++
Coconut oil		++	++
Linseed oil		++	+
Olive oil		++	++
Paraffin oil	100	++	++

Environment	Concentration %	40°C	60°C
Soybean oil		++	++
Turpentine oil		++	0
Transformer oil		++	
Mineral oils (without aromatic hydrocarbons)		++	+
Furnace oils		++	0
Silicone oils		++	
Engine oils, car oils		++	+
Pine oil	100	++	
Vapours of ethoxyl amines		--	--
Vapours of chlorides		+	
Vapours of ferrous chloride FeCl ₂	20	+	
Vapours of acetic acid		++	
Vapours of hydrochloric acid	30	+	
Vapours of oxy-oxygen fatty alcohols		+	
Vapours of orange oils		--	--
Vapours of poly-glycols		+	
Vapours of ammonia soda (soda ash) and of caustic soda		++	
Vapours of tio-urea		+	
Vapours of aliphatic hydrocarbons		+	
Gaseous ozone		++	
Automotive fuel (normal petrol)		++	+
Automotive fuel (petrol super)		-	--
Automotive fuel (diesel oil)		++	+
Paraffin	100	++	--
Beer		++	++
Brake fluid		++	++
Anti-freeze fluid (di-ethylene glycol)		++	++
Sodium hypochlorite, aqueous solution	5	++	
Liquid propane	100	++	
Cresol solution		-	--
Soap solution	saturated	++	++
Mercury	100	++	++
Rum	40	++	++
Potassium sulphate, aqueous solution	saturated	++	++
Sodium sulphate, aqueous solution	saturated	++	++
Sodium sulphide, aqueous solution	saturated	++	++
Sodium sulphite, aqueous solution	saturated	++	++
Hydrogen sulphide	saturated	++	++
Pitch (tar)		++	++
Lemon juice		++	++
Brine (leach)	saturated	++	++
Dry salt		++	++
Agent for dishwashing, liquid		++	++
Tetra-chlor-ethane	100	--	--
Tetra-chlorethylene (per-chlorethylene)	100	--	--
Tetra-hydrofurane	100	--	--

Environment	Concentration %	40°C	60°C
Sodium tio-sulphate (fixative)	saturated	++	++
Toluene	100	--	--
Chlorinated lime		+	
Potassium carbonate, aqueous solution	saturated	++	
Sodium carbonate, aqueous solution	saturated	++	++
Water	100	++	++
Chlorinated water	saturated	+	
Aqua regia (nitro-hydrochloric acid)		+	
Seawater		++	++
Sodium hydroxide	50	+	+
Sodium hydroxide (caustic soda)	100	++	++

++	resistant
+	conditionally resistant with the occurrence hazard of tensioning stress cracks
0	conditionally resistant
-	low resistant
--	not resistant

14. 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: **chem-proof Ex roof fans**

type/model: **SPARK-CHEM/Ex**

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/*
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The appliance meets following harmonized standard:

- | | |
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| ● EN ISO-12100:2012 | – “Safety of machinery – Basic concepts, general principles for design. Hazard assessment and risk reduction”. |
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| ● EN 1127-1:2011 | – “Explosive atmospheres – Explosion prevention and protection. Basic terminology and methodology”. |
| ● EN ISO 80079-36:2016-07 | – “Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres. Methodology and requirements. |
| ● EN ISO 80079-37:2016-07 | – “Explosive atmospheres – Part 37: Non-electrical equipment for explosive atmospheres. Non-electrical types of protection. Constructional safety “c”, supervised ignition “b”, immersion in a liquid “k”. |
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.....
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

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NOTES: