EN

USE AND MAINTENANCE MANUAL

Rail Extraction System OVER/SSAK

for vertical exhaust systems

Contents:

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1. INTRODUCTION

The purpose of the present Use and Maintenance Manual is to supply User with directions within the range of application, assembly, start-up and operational use of the **OVER/SSAK** rail extraction system.

Prior to assembly at the place of operation and use, it is important to get thoroughly acquainted with the contents of the present instruction.

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 **OVER/SSAK** meets the requirements of the current state of technology as well as the safety and health assurances included in:
2006/42/EC Directive of the European Parliament and of the Council of the 17 May, 2006 on machinery, amending the 95/16/EC Directive (recast) / Official Journal EC L157 of the 09.06.2006, page 24);
Additionally, it is in accordance with the subsequent harmonised standards:
EN ISO-12100:2012 Safety of machinery – General principles of design – Assessment and reduction of hazard

2. PURPOSE

OVER/SSAK rail extraction system has been engineered for effective removal of the exhaust volume emitted by vehicles with vertical exhaust systems. Especially, the extractors are applied in garages for heavy vehicles of permanent stationing place i.e. fire department depots, and other rescue units, where absolute readiness for emergency action departure is required. Therefore the vehicle has to enter the garage backwards.

3. RESERVATIONS OF MANUFACTURER

- Operational use of the system with inefficiently functioning extraction fan is inadmissible, as this could lead to overheating and damage of the exhaust hose – suction duct.
- Maintenance and any repair can be carried out exclusively by an authorised person.
- During the operational use, proceed the rule – the served vehicle engine is allowed to run at maximum rotations for 60 seconds only.
- Pay attention that the entrance guide profiles of the extractor are right in the position providing convenient capture of the vertical exhaust pipe (outstanding above the carbody).
- Prior to installing – check the load carrying capacity of the ceiling / wall, in a place where the unit shall be installed; unsure setting of mounting bolts could result in uncontrolled device detachment, its damage and risk to the operator / people in the vicinity.
- Installing of any additional elements that are not belonging to the normal system structure (or accessory set) is not acceptable.
- Do not introduce any structural or constructional modifications of the system on one's own.
- Limit the departure velocity of the vehicle to 20 km/h.

4. TECHNICAL DATA

Table No.1

Type	unit of measure	OVER-SSAK-6	OVER -SSAK-9	OVER -SSAK-12	OVER -SSAK-15
recommended volume flow at the suction box	m^3/h	1600	1600	1600	1600
flow resistances	Pa	1200 – 1600	1500 – 1900	1800 – 2200	2100 – 2500
length of the guide beam "L"	m	6	9	12	15
range of the operational movement L_{1max}	m	4,2	6,5	8,7	11
weight	kg	59	74	89	104
thermal resistance of the hose	°C	200	200	200	200

5. STRUCTURE ADN FUNCTION

OVRT/SSAK exhaust extractor for vertical exhaust systems consists of a guide profile/beam with a flexible hose, suspended under the ceiling, along which a trolley with a suction box are displacing. Under the suction box is fastened exhaust hose. The well-constructed suction box captures the vertical vehicle exhaust pipe (upon approaching the suction system). While the vehicle is displacing/approaching, the suction box pushes the extraction trolley with the exhaust hose along the guide profile. The guide profile is displacing subsequently on the following transverse beams. Due to transverse beams, it is possible to adjust the suction inlet to the position of the vehicle exhaust pipe (at the moment of approaching the OVER/SSAK extraction system).
The on-drive tolerance is 150 mm to the right or to the left, measured at the guide profile axis. Due to the springs at the transverse beams, the guide profile is moving crosswise parallel. The suction box movement is damped by a gas spring located at the end of the guide profile. On the suction box, there is fastened a bumper with a magnetic gripper, which is holding the suction box at the limit position.

The fixed end of the flexible hose should be connected with the discharge installation. It is recommended to apply a roof fan or a flange-type fan for operation with the OVER/SSAK extraction system. The extraction fan can be switched on manually or via radio by means of a transmitter. Structure of the OVER/SSAK extraction system is illustrated Fig. No.1.

In order to select the extraction fan – first, measure the flow resistances of any elements of the discharge installation. The recommended values of the volume flows and flow resistances are represented in the Table No. 1 "Technical Data".

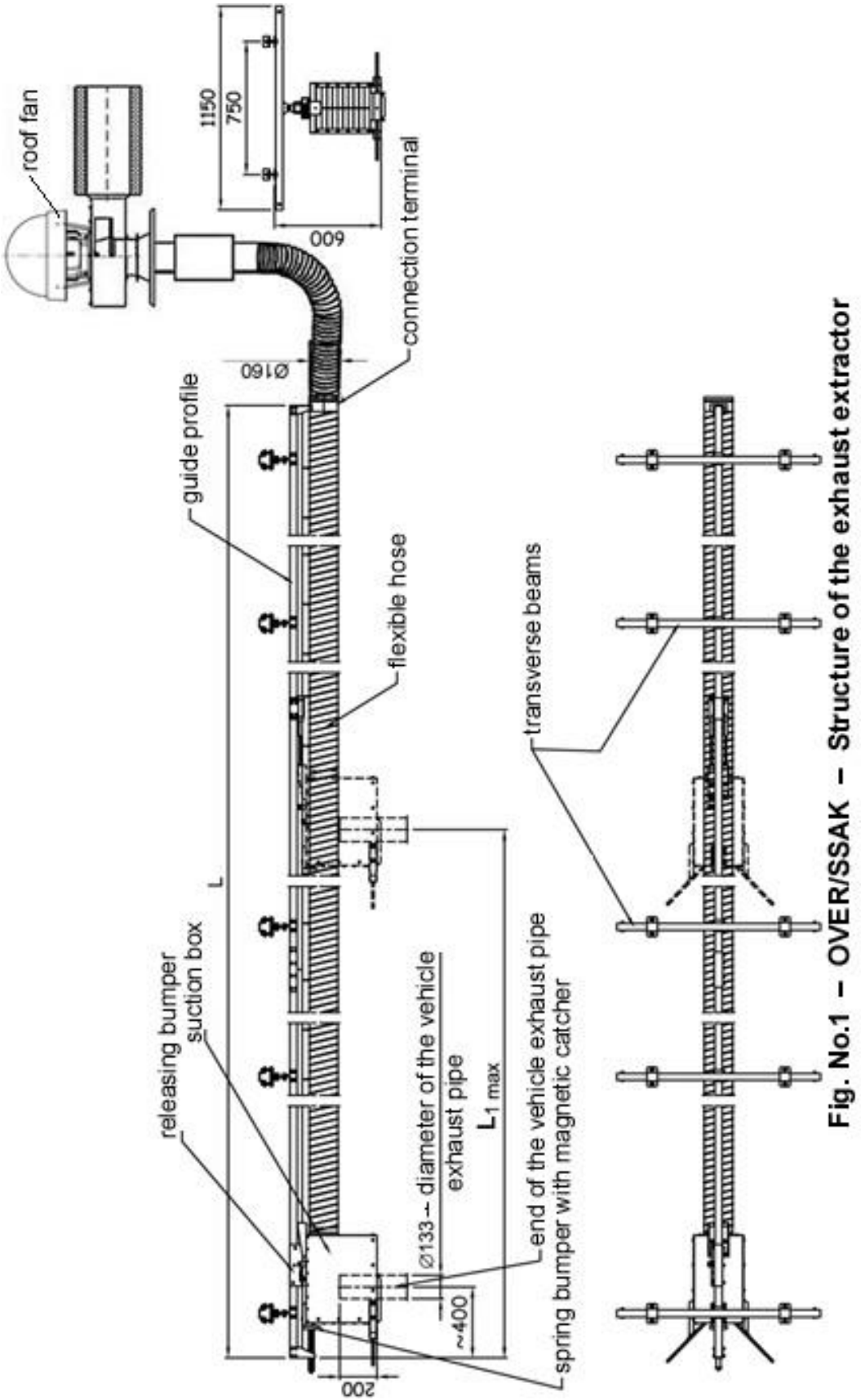

Fig. No.1 – OVER/SSAK – Structure of the exhaust extractor

5.1 Connection of the ventilation ducts with the extraction fan:
The connection ferrule of the flexible duct (Ø160 mm) ought to be connected with the suction ferrule of the extraction fan through the hoses and fittings type SPIRO (rigid spiral-seam). The diameter of the extraction installation elements depend on the adopted system, that is discharging the exhaust volume out of premises. Fan that should be suitable to the installation (depending on the type), must be installed on the roof (on a roof pedestal or on a roof base) – roof fans type WPA-D-N or on wall brackets inside the building – stand fans WPA-E-N.
Cross-section and length of the ventilation conduits for connection at the outlet ferrule of the fan, should be selected in such a way that the minimum volume flow at the inlet of the suction ferrule is not lower than the value given in the Table in Section 4 "Technical Data". To switch on the fan apply motor protective switches type WS with short-circuit- and overload protections. Motor switches are additional accessories and should be ordered separately.

5.2 Function
Basic version: the extraction system works as described above. The extraction fan ought to be operated manually. On demand of the Customer the system can be equipped with control units, as additional equipment.
The control system consists of subsequent elements:
– **ZE-SSAK** control unit – installed within the garage hall,
– **NR-1Ap** radio transmitter – remote control, mounted in the vehicle,
– **ON-1** radio receiver – installed close to the control unit,
– **ZP-1/24V**, **ZP-2/24V** supporting control units – for the cable remote control with the fan function.

6. ASSEMBLY AND STARTUP

To provide appropriate function of the system, it is important to install transverse beams of the duct at such height, so that the vehicle exhaust pipe enters straight the suction box into the depth of circa 200 mm (see Fig.No.1). Additionally, mind that the trolley and ventilation conduit movement does not collide with the carbody. Whereby, pay attention that the transverse beams are positioned parallel with each other and perpendicularly to the ventilation duct. The on-drive tolerance of the should be 150 mm to the left and to the right (measured from the guide profile).
Due to strict installing requirements, the system must be assembled and mounted by an installing team of the supplier (trained by manufacturer).

7. OPERATIONAL USE

Switching ON and OFF:
1. Set the **S1** switch into position "**ON**". This will be indicated by the white signalling lamp **S1.H1** integrated in switch **S1**.
2. Using the **S3** switch – select the mode of control:
   a) "**L**" – local – from the ZE-SSAK control unit
   b) "**Z**" – remote – by means of the supporting controllers or via radio;
3. To disconnect the system – set the **S1** switch into position "**OFF**".

The control unit, depending on the size of the extraction fan, is equipped with adequately selected motor protective switch and a contactor. The unit serves as a short-circuit- and thermal protection and is equipped with a time relay delaying the moment when the fan switches off. Manufacturers setting for the time delay is 2 minutes.

Table No.2 – Specification of the control units – applied in dependence of the size of the fan

Type	Part No.	Supply voltage [V]; 50 Hz	Current range [A]	Motor rate [kW]	Cooperating fans
ZE-SSAK-4-3	511Z50	3x400	2,5-4	1,5	WPA-8-E-3-N; WPA-8-D-3-N
ZE-SSAK-6,3-3	511Z51	3x400	4-6,3	2,2	WPA-9-E-3-N; WPA-9-D-3-N
ZE-SSAK-10-3	511Z52	3x400	6-10	3	WPA-10-E-3-N; WPA-10-D-3-N
ZE-SSAK-14-3	511Z53	3x400	9-13	5	WPA-11-E-3-N; WPA-11-D-3-N
ZE-SSAK-16-3	511Z54	3x400	13-18	7,5	WPA-13-E-3-N; WPA-13-D-3-N

Local control:
1. To start the fan press the green field in the double button **S4** (**S4.2** "**START**") – see Connection Diagram. The fan function will be indicated by the green **S2.H2** lamp in the double button **S4**.
2. To stop the fan – press the red field in the double switch **S4** (**S4.1** "**STOP**" – see Connection Diagram) When the fan is switched off – the green **S4.H2** goes off (or the lamp in the supporting controller goes off. The fan will stop after the delay time – as adjusted in the time relay **KT1** (manufacturers setting 2 minutes).

Fig. No.2 – ZE-SSAK control unit

The use of supporting controllers

Fig. No.3 ZP-2/24V

Fig. No.4 ZP-1/24V

1. Press the green field in the double button (of the **ZP-1/24V** supporting control unit) to start the fan. This will be indicated by the green lamp in the button;
2. Press the red field in the double button (of the **ZP-1/24V** supporting control unit) to stop the fan. The green lamp in the button goes off;
3. Set the switch in the double button (of the **ZP-2/24V** supporting control unit) into position **ON** to start the fan. This will be indicated by the green lamp in the button;
4. Set the switch in the double button (of the **ZP-2/24V** supporting control unit) into position **OFF** to stop the fan. The green lamp in the button goes off.

Remote control – via radio:

Fig. No.5 NR-1Ap radio transmitter

Fig. No.6 OR-1 radio receiver

1. The fan is switched on at the moment when the vehicle engine is started or when driver turns the ignition starter key. NR-1Ap radio transmitter sends a signal to the OR-1 radio receiver and the fan is automatically operated.
2. The fan will be automatically be switched off – after the vehicle leaves the garage / depot – and the radio contact between the transmitter and receiver is interrupted (approx. 200 metres – depending on the local conditions). After the signal is lost, the fan will switch off after the adjusted time delay.

CAUTION:
1. The fan will automatically start again, when the vehicle returns near the garage door.
2. If there is need for the vehicle to wait near the garage door for a longer time – it is possible to switch off the working fan by pressing the button in the transmitter.

How to switch off the whole system:
1. Set the **S1** switch (in the ZE-SSAK control unit) into position **OFF**. The built-in white lamp **S1.H1** goes off.

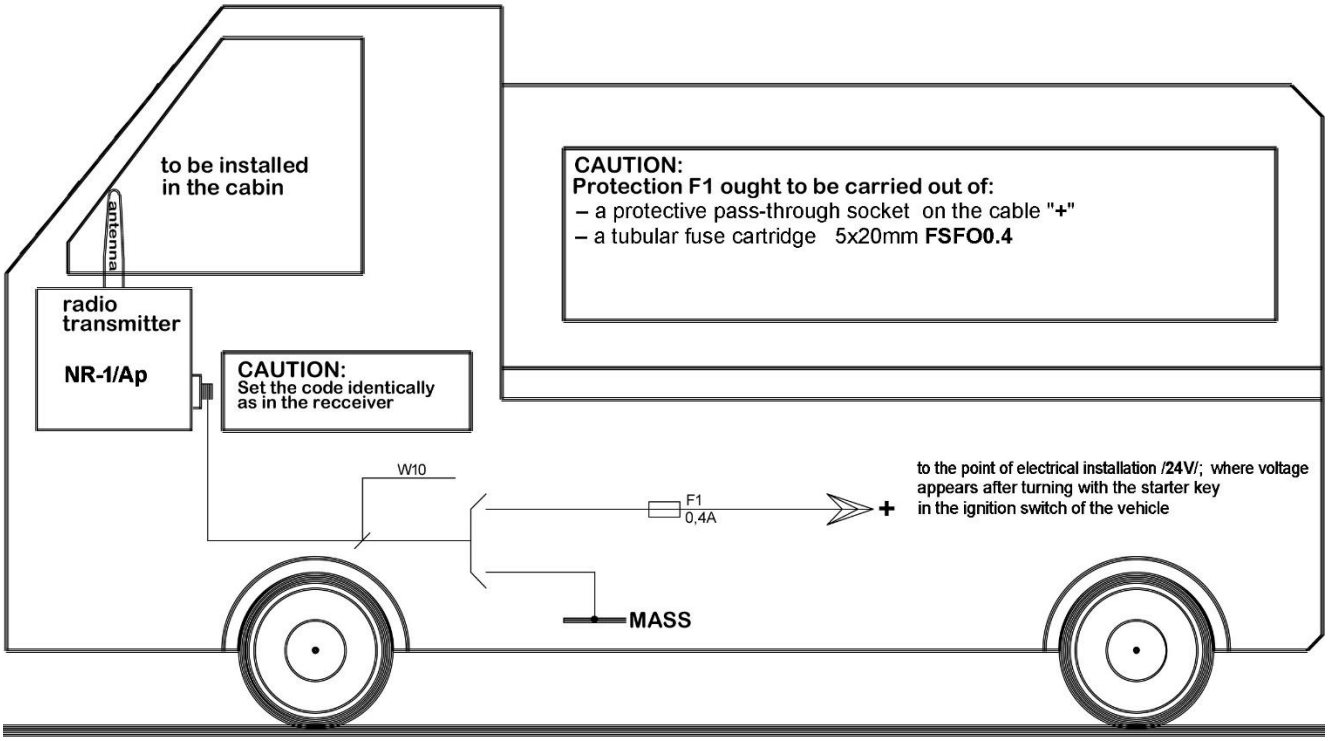

Fig. No.7 – OVER/SSAK – Connection of the radio transmitter

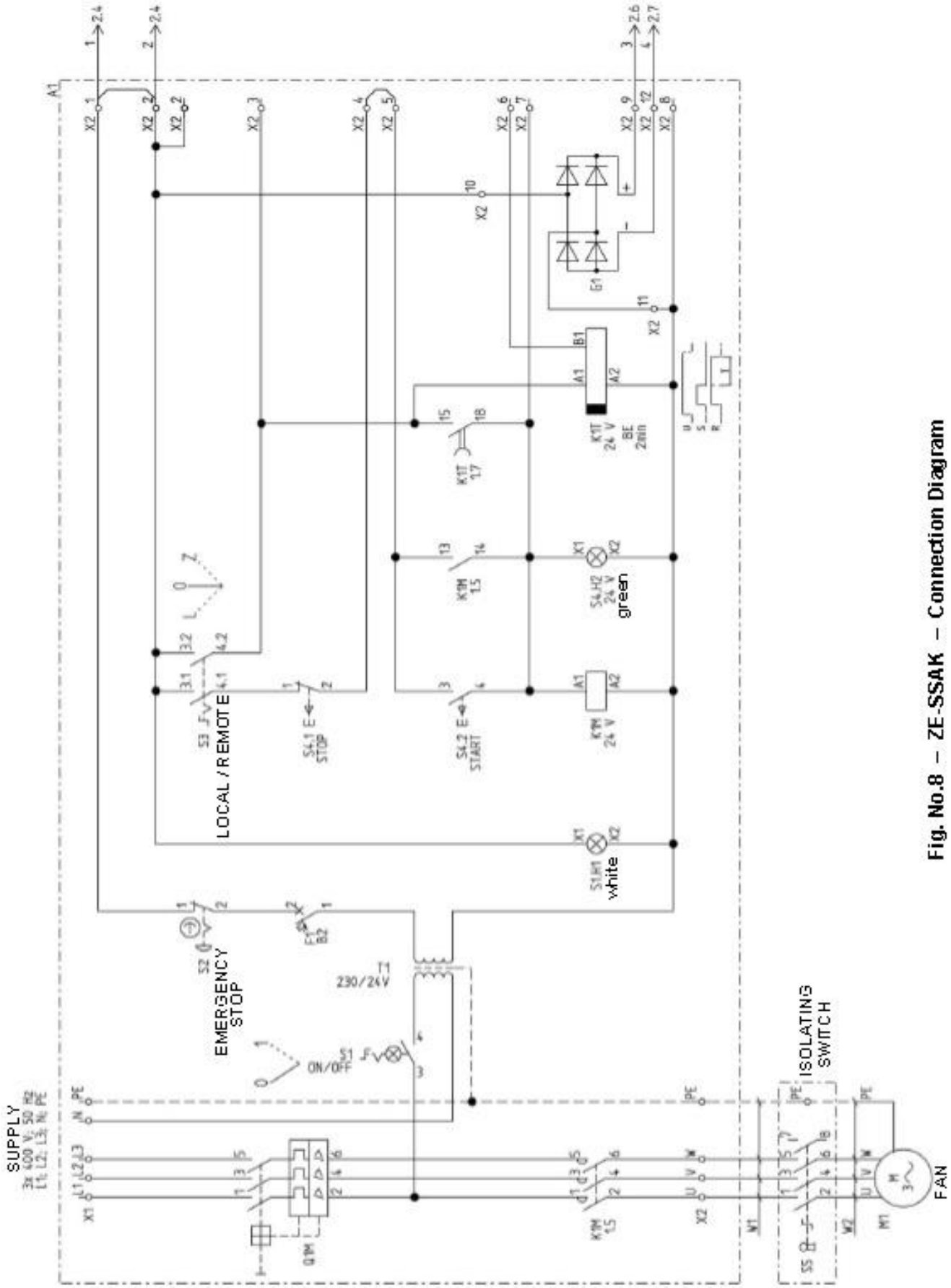

Fig. No.8 – ZE-SSAK – Connection Diagram

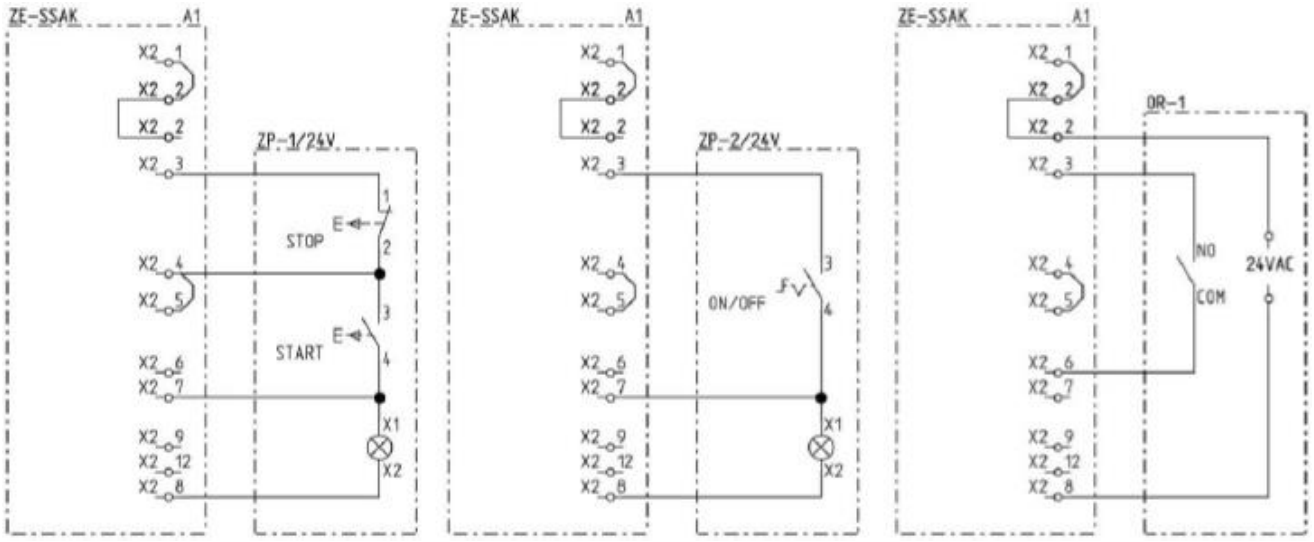

Fig. No.9 – Connection diagrams for the supporting controllers and the receiver with the control unit

8. TROUBLESHOOTING GUIDE

Table No.3

	Problem	Possible reason	Corrective action
1.	decrease of the intake air volume	incorrect impeller rotation sense	change the phase connection sense
2.	decrease of the intake air volume along with the increased noise	solid element, barrier object as an obstacle for the air flow got stack (clogging) in the suction box or in the installation	unclog the suction box or the suction hose

9. MAINTENANCE AND REPAIR

After one year of operational use, submit the extraction system to detailed technical revision. Any elements that are faulty or worn out (as noticed during the revision) repair or replace for new ones.

10. OCCUPATIONAL HEALTH AND SAFETY

Prior to start and use, it is important to get acquainted with the present Manual.

1. For the sake of safety, **connect the device to the power supply system according to the enclosed electrical diagram** and in compliance with the being in force regulations within the range of personal protection from electrical shock. Any activity related to connection to the electrical power system out to be carried out by an authorised person with testified qualification only;
2. The system will not cause any hazard, provided that it is stably installed under the ceiling or another structural element of the building;
3. It is not acceptable to charge the construction with additional load/forces;
4. During the operational use, operator should follow strictly the Occupational Health and Safety regulations.

The appliance meets the safety requirements as stated in the 2006/42/EC Directive and does not require any additional security measures for safe operational use.

11. TRANSPORT AND STORAGE

OVER/SSAK rail extraction system ought to be stored in a dry rooms and areas of efficient ventilation. Do not put one element on top of another element (do not stack). For the time of transport elements of the system ought to be protected from damages, indents and also protected from an uncontrolled displacement / slide or overturn. Transport position – vertically, with the extractor body upwards.

12. TERMS OF WARRANTY

The period of warranty for the purchased system 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,
- functional inefficiencies of the system being caused by normal operational wear / exhaustion.

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.

Stand Assembly instruction Rail Exhaust Extraction System KOS-L/SSAK

1. Energize the system – set the **S1** switch into position **ON**, this will be indicated by the white **S1.H1** lamp. Select the operational mode of control by **S3** switch:
2. Setting **L** – means local control
2.1 To start the fan – press the green field in the double button **S4**. This will be indicated by the green lamp **S4.H2** in the double button **S4**.
2.2 To stop the fan – press the red field in the double button **S4**. The green lamp **S4.H2** goes off.
3. Setting **Z** – means remote control – by means of supporting control units or via radio.
3.1 To switch on fan by means of the supporting control unit **ZP-1/24V** – press the green field in the double button. The fan function is indicated by the green lamp integrated in the button.
3.2 Switch off the fan by means of the supporting control unit **ZP-1/24V** – press the red field in the double button. The fan is disconnected - the green lamp integrated in the button goes off.
3.3 To switch on fan by means of the supporting control unit **ZP-2/24V** – set the switch into position **ON**. The fan function is indicated by the green lamp integrated in the button.
3.4 To switch on fan by means of the supporting control unit **ZP-2/24V** – set the switch into position **OFF**. The green lamp integrated in the button goes off.
3.5 Fan start via radio – at the moment when driver operates the engine of the vehicle or when turns the ignition starter key in the vehicle. A signal is being sent by the **NR-1Ap** radio transmitter to the **OR-1** radio receiver – and the fan is switched on.
3.6 The fan will be switched off automatically – after the vehicle leaves the garage and the radio wave is interrupted (between the radio transmitter and radio receiver (approx. 200 metres – depending on the local conditions). After the signal is interrupted – the fan will switch off after time delay.
4. Switch on the whole system – set the **S1** into position **OFF**. The built-in lamp **S1.H1** goes off.
5. **Mind that the vehicle departure velocity is not exceeding 10 km/h**.
6. **Protect the exhaust hose and suction box from mechanical damage.**

CAUTION:
Supporting control units, radio control and the safety button are additional equipment and are delivered on separate order. The safety button disconnects the system in case of emergency.

13. DECLARATION OF CONFORMITY

CE

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DECLARATION OF CONFORMITY EC No. _____

Manufacturer (eventually also the authorised representative / importer):
name: **KLIMAWENT S.A.**
address: **81-571 GDYNIA, ul. Chwaszczyńska 194**

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

hereby declares that the product: **Rail Extraction System**

type / model: **OVER/SSAK**

*serial number:*_____ *year of production:* _____

Meets the requirements of the subsequent European Directives:
2006/42/EC Directive of the European Parliament and of the Council of the 17 May, 2006 on machinery, amending the 95/16/EC Directive (recast) / Official Journal EC L157 of the 09.06.2006, page 24);

is in accordance with the requirements of the following harmonised standards:
EN ISO-12100:2012 Safety of machinery – General principles of design – Assessment and reduction of hazard

place, date	*signature of the authorised person*	*name, surname, function of the signatory*

NOTES: