

USE AND MAINTENANCE MANUAL



Exhaust Extraction System SSAK-07

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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 **SSAK-07** Exhaust 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 **SSAK-07** 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

EN 60204-1:2010 Safety of machinery – Electrical equipment of machines – Part 1: General requirements

2. PURPOSE

SSAK-07 exhaust extraction system is designed for removal the exhaust volume emitted by vehicles of permanent stationing place i.e. fire department depots, where absolute instant readiness for emergency action departure is required. The extractor is applicable for vehicles with exhaust pipe at the side or at the back of the carbody.

3. RESERVATIONS OF MANUFACTURER

- Manufacturer accepts no liability for any consequences following from the operational use that is in contradiction to the purpose of application.
- Installing of any additional elements that are not belonging to the normal device structure (or accessory set) is not acceptable.
- Do not introduce any structural or constructional modifications of the system on one's own.
- Protect the system (exhaust hoses) from mechanical damage.
- Maintenance and any repair can be executed exclusively by an authorised person.
- Manufacturer is not responsible for injuries / body lacerations experienced by operator during careless use of the extraction system.
- 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.
- While the served vehicle leaves the depot garage, its velocity must not exceed 10 km/h.

4. TECHNICAL DATA

Table No.1

Type	Range of volume flows [m ³ /h]	Flow resistances [Pa]	Exhaust hose		Inlet diameter of the suction funnel [mm]	Length of the guide profile [m]	Weight [kg]
			internal diameter [mm]	length [m]			
SSAK-07	1000 – 1500	1000 – 1500	150	5	170	6	16

CAUTION: Weight of the system does not include the guide profile

5. STRUCTURE AND FUNCTION

SSAK-07 system consists of following elements (see Fig. No.1):

- guide profile
- exhaust hose – connected to the discharge ducting
- trolley
- vertical hose – suspended under the balancing mechanism
- electromagnet assembly
- suction funnel
- ZE-SSAK-07 control unit (additional equipment).

The trolley is displacing along the guide beam, which is suspended under the ceiling. Along with the trolley, displaces the suspended vertical suction hose (ended with a suction funnel). Funnel is equipped with a handle with a built-in electromagnet. Inside the hose, there is a supply cable providing current to the electromagnet. At the end of the hose, under the electromagnet, is fastened an “L” shape suction funnel.

After the vehicle has entered the depot, connect the hose and funnel (through the electromagnet) to the electromagnet gripper plate on the carbody wall (at a side or at the back of the vehicle), depending on the position of the exhaust pipe.

While connecting, the funnel inlet has to be located right opposite the vehicle exhaust pipe, with a small distance only, securing safe funnel disconnection. The S4 pushbutton, on the funnel, (see Connection Diagram), is designed for manual funnel disconnection, when necessary.

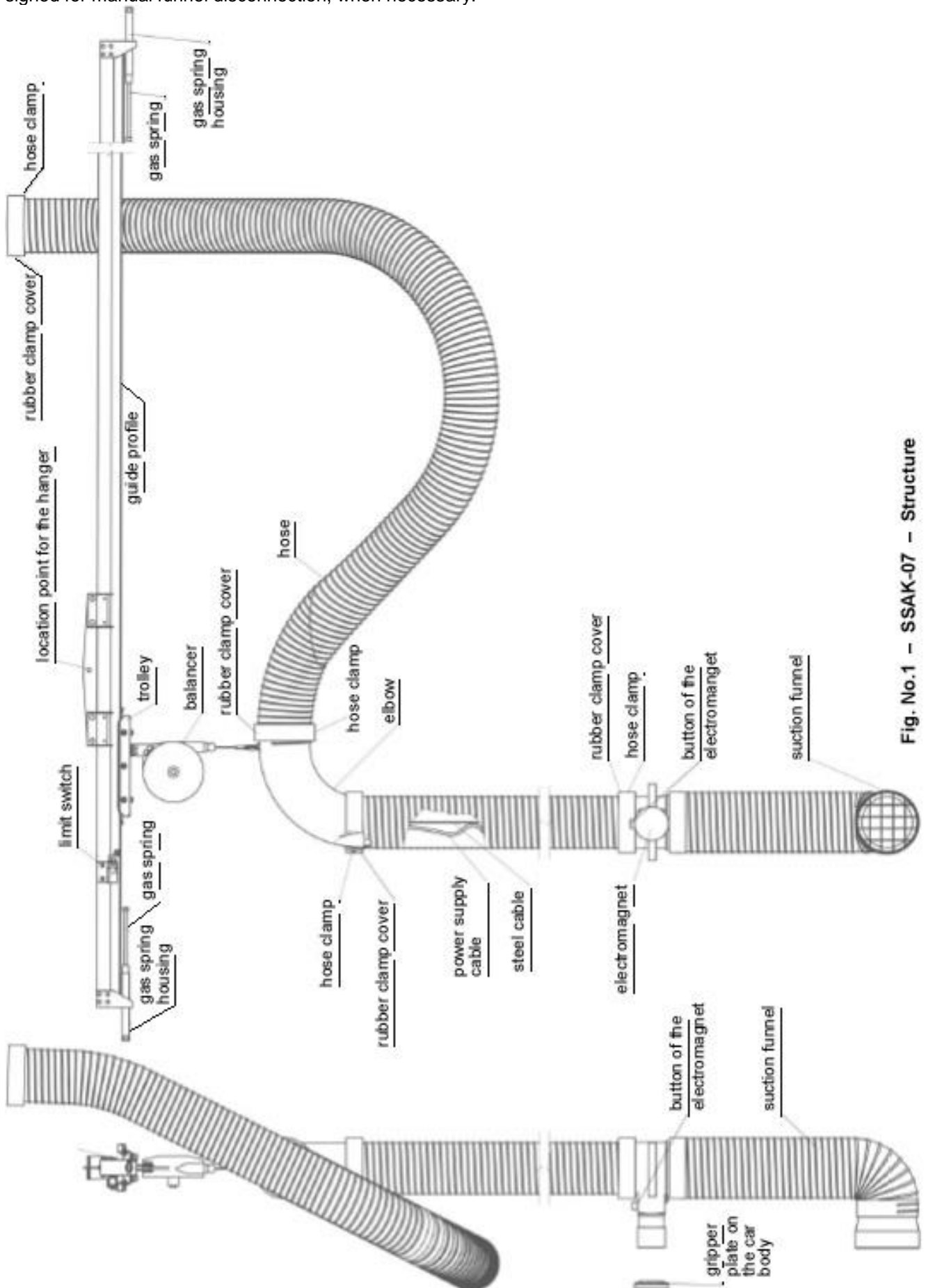


Fig. No.1 – SS AK-07 – Structure

At the moment, the vehicle leaves the depot, the trolley displaces along guide profile (track). On the guide profile, (from the side of the garage exit), there is a limit switch, that disconnects the current from the electromagnet, and the suction funnel will be lifted by the balancer to home position. At the end of the guide beam, there are gas springs, slowing down smoothly the trolley movements.

It is important to connect the flexible hose to the discharge ventilation installation. It is recommended to apply a roof fan or a flange-type fan (see Catalogue pages “Fans – WPA-N). The fan can be started manually or (on special Customer request) we deliver a radio control unit by a transmitter.

6. ASSEMBLY AND STARTUP

The extractor must be installed to the supporting beam by means of hangers. The guide beam is attached directly to the ceiling or indirectly (by wall brackets) to the wall of the process room. It is recommended to install the guide profile in a height of 4 metres above the floor.

At the side wall or at the back of the carbody, (depending on the position of the exhaust pipe), install the electromagnet gripper plate, at a height providing proper exhaust fume capture (through the funnel). The vehicle exhaust pipe must have its termination (not protruding), i.e. even with the carbody outline surface – whereby the distance from the vehicle wheel must be 25 cm.

In case, when the vehicle exhaust pipe is ended underneath the carbody, it is important to introduce appropriate extension.

Power supply has to be executed by User on one’s own, by selecting the sort and cross-section of the supply cable and correct short-circuit- and overload protection. The exhaust extraction system is operated by a control unit ZE-SSAK-07, installed in the garage room.

7. OPERATIONAL USE

The extraction system is energised by a control unit ZE-SSAK-07.

How to switch on and off the fan

Switch on the motor switch **Q1M** and the overcurrent disconnectors **F1** and **F2**, protecting the main bus and the control unit. Set the **S1** into position “ON”, the control unit is switched on, this is indicated by the signalling lamp **S1.H1** in the switch.

Start the fan, by pressing the **S3.1** pushbutton “START”, this is indicated by the green signalling lamp **S3.H2** in the button **S3**. To stop the fan, press the red pushbutton **S3.2** “STOP”, or it will be stopped automatically, after the preselected delay time runs off, as adjusted on the time relay **K1T**. After time delay, the time relay disconnects the coil circuit of the contactor **K1M**, that controls the fan motor. The time for fan disconnection, must be adjusted by User on one’s own. The way of adjustment of the time delay is described on Fig. No.3. The control system is further under supply, and is in readiness for future fan start. In case of a sudden disconnection of the control system, press the failure pushbutton **S2** “EMERGENCY STOP”, in this way the control unit will be disconnected.

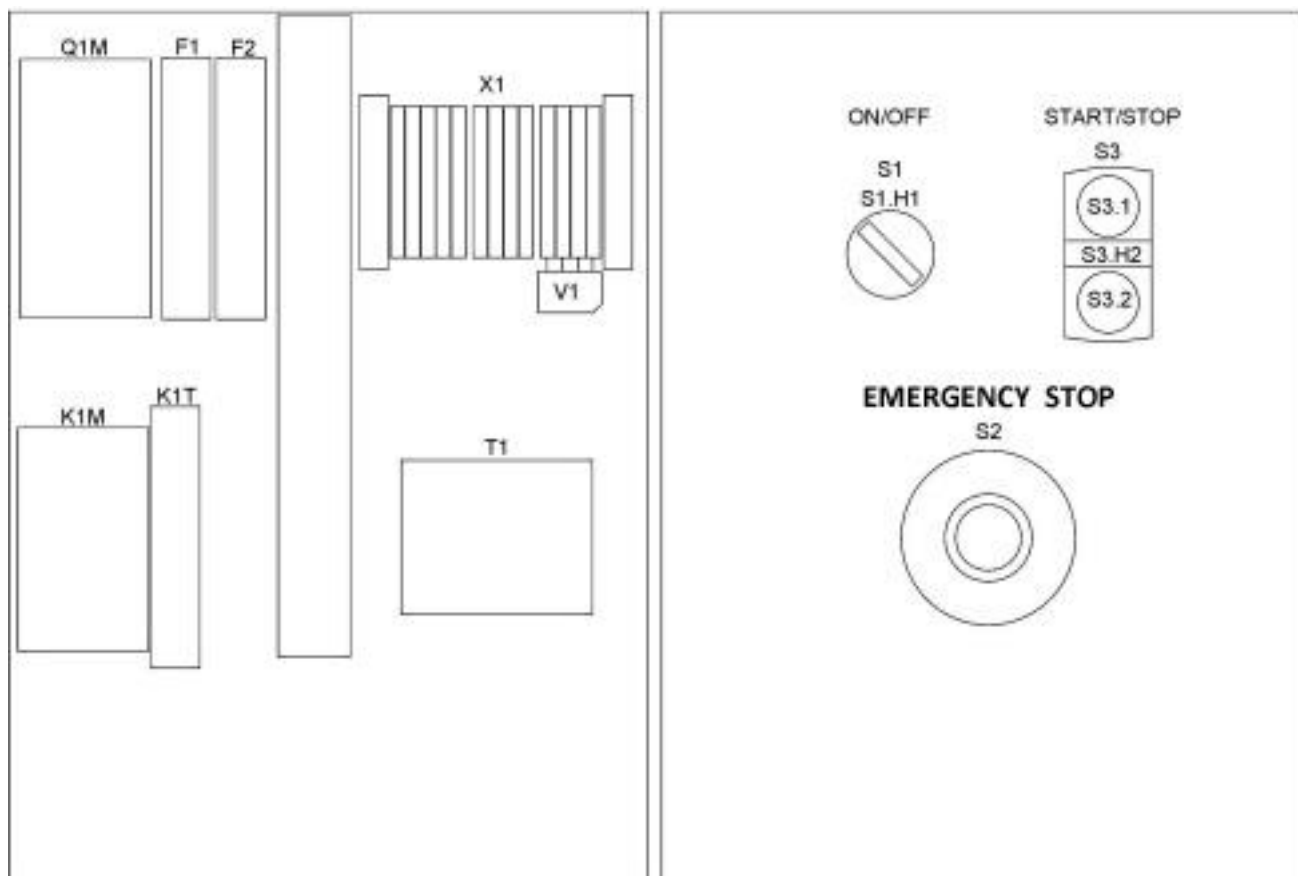


Fig. No.2 – ZE-SSAK-07 control unit

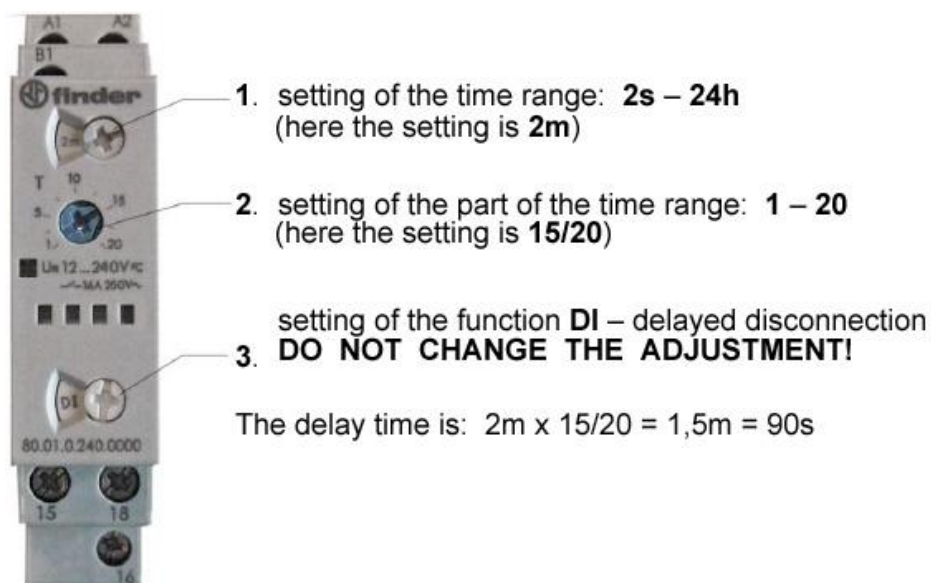


Fig. No.3 – Settings description of the time delay of the K1T time relay

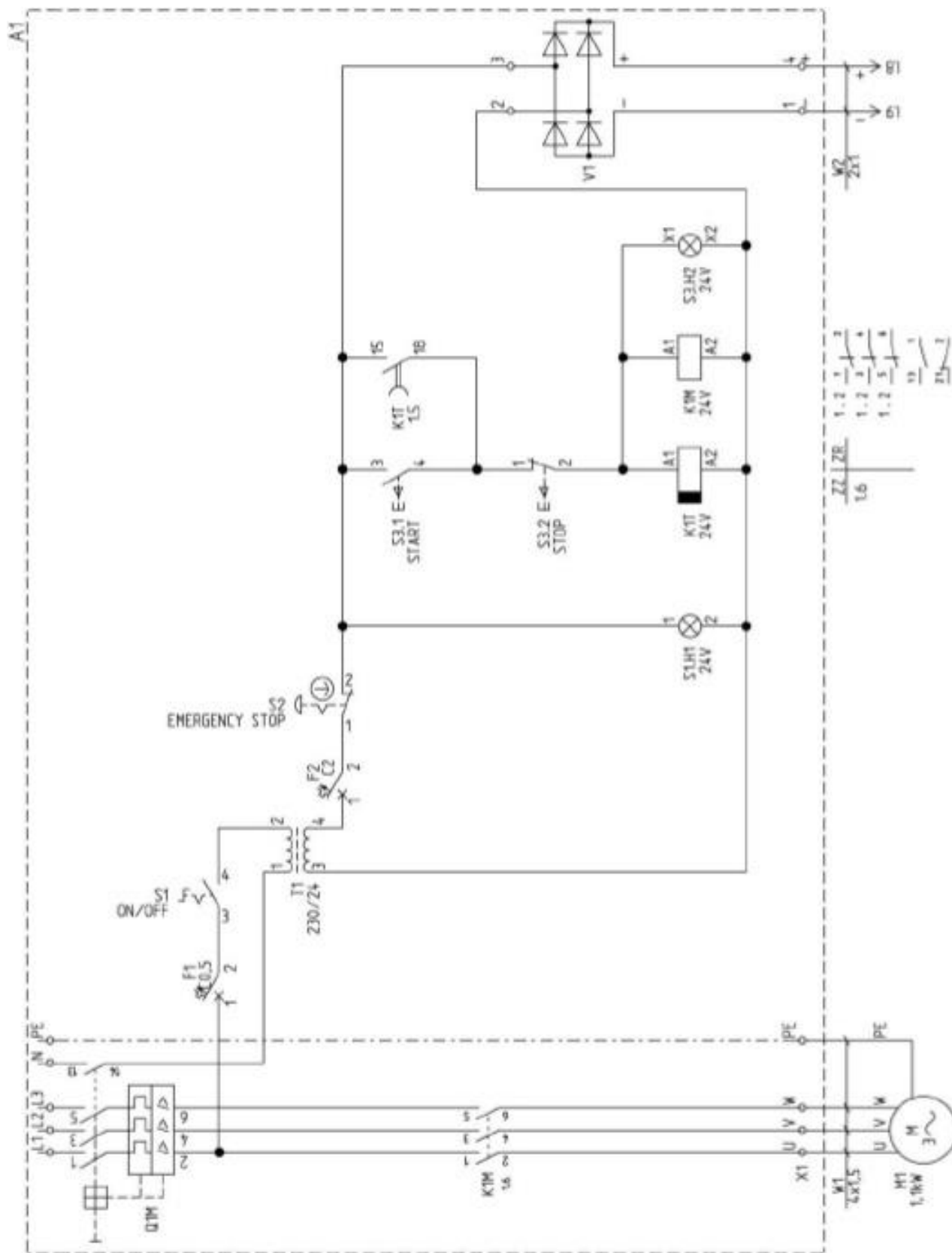


Fig. No.4 – ZE-SSAK-07 – Connection Diagram

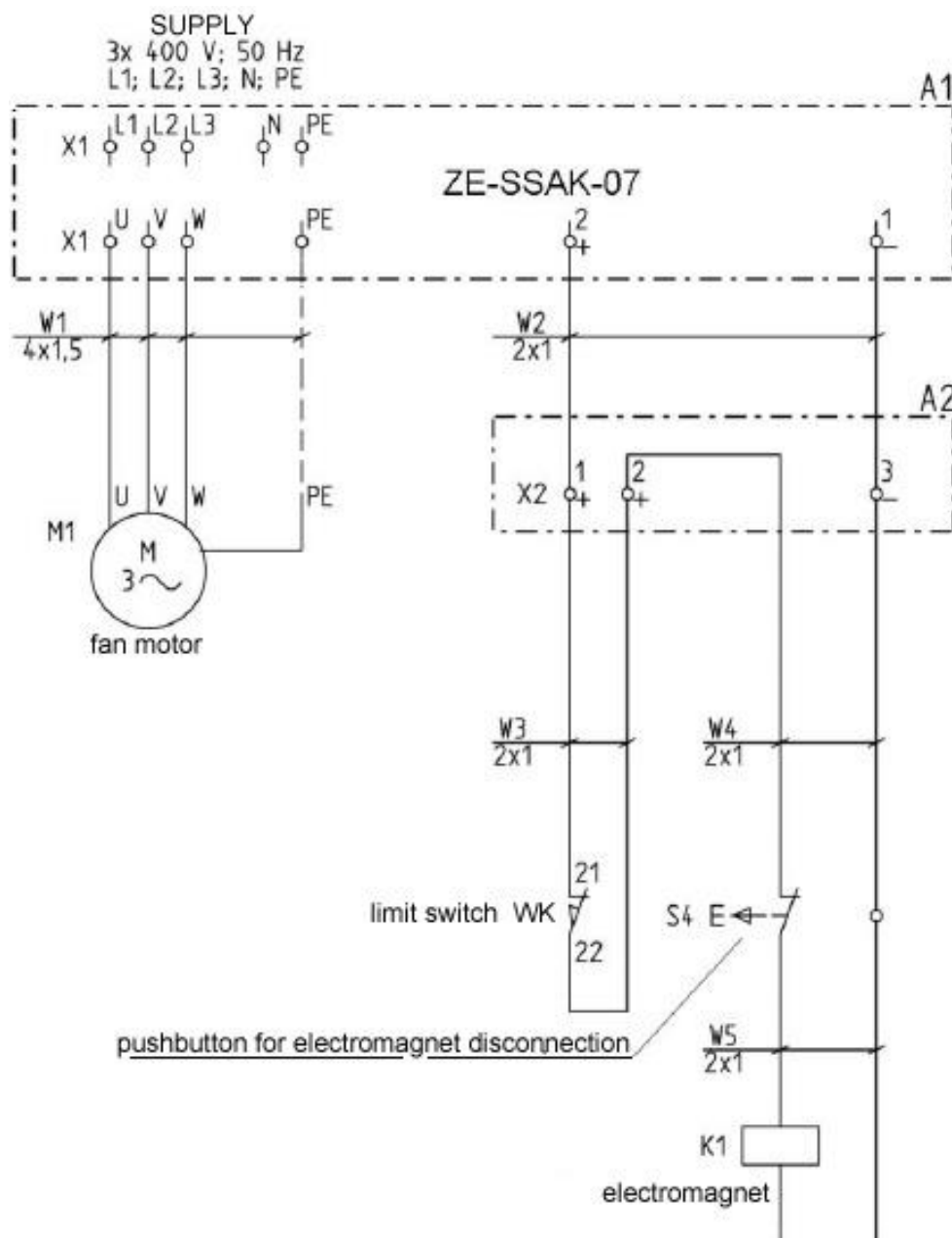


Fig. No.5 – Connection of the electromagnet and the limit switch

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 being obstacle for the air flow got stuck (clogged) in the suction funnel or in the installation	unclog the suction funnel or the exhaust hose
3.	electromagnet failure	A. electromagnet coil is burnt through	localise the failure reason and fix it
B. interruption of the electrical circuit			
C. transformer or the rectifier system is faulty			
D. the contact surface of the electromagnet anchor is polluted		clean the surface with a brass brush	
E. protections Q1M, F1, F2 disconnected		find the reasons of disconnection and switch on the mentioned protections	

Table No.3 – Continuation

	Problem	Possible reason	Corrective action
4.	the fan cannot be switched on	protections Q1M, F1, F2 disconnected	find the reasons of the protections activation; switch on the mentioned protections

9. MAINTENANCE AND REPAIR

Start up and the operational use are only admissible after getting acquainted with the contents of the present Use and Maintenance Manual. In case when defective function is by noise or visually spotted, undertake technical revision of the system. Within the scope of periodical revisions check: the technical state of the extraction fan, according to the detailed regulations of operational use of electrical driving devices.

To improve the contacting efficiency of the electromagnetic gripper, clean the contact surface (if necessary). Carry out technical revisions exclusively after device disconnection from the power supply.

10. OCCUPATIONAL HEALTH AND SAFETY

Start up and the operational use are only admissible after getting acquainted with the contents of the present Use and Maintenance Manual. For safety reasons, the fan ought to be connected to the electrical power system according to the valid regulations in range of personal protection from electrical shock and protection from short-circuit- and overload effects.

Any activities related to connection of the fan with the power system ought to be carried out only by a qualified person – according to the instructions in Section 6 of the present Use and Maintenance Manual (which is confirmed by a stamp and signature of the authorized person on the Warranty Card).

Important is the correct impeller rotation sense of the fan with reference to the arrow on the fan housing. **Any maintenance / repair should be carried out after the device is disconnected from the power supply.**

Manufacturer is not responsible for the results when the system is used in contradiction with the purpose of application and when some changes were introduced by User, without written commitment with Manufacturer.

While the exhaust extractor is suddenly leaving the garage, be careful, and take into account if within the operational area of the hose are no people especially at the moment of suction funnel disconnection. Protect the exhaust hose from squeezing. **Admissible vehicle departure velocity (while leaving the depot) is 10 km/h.**

11. TRANSPORT AND STORAGE

The extraction system ought to be stored in a dry room and areas of efficient ventilation. For the time of transport the device ought to be protected from damages, indents and also protected from an uncontrolled displacement or overturn.

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,
- 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.

13. DECLARATION OF CONFORMITY**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: **Exhaust Extraction System**

type / model: **SSAK-07**

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

EN 60204-1:2010 Safety of machinery – Electrical equipment of machines – Part 1: General requirements

place, date

*signature of the
authorised person*

*name, surname,
function of the signatory*

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