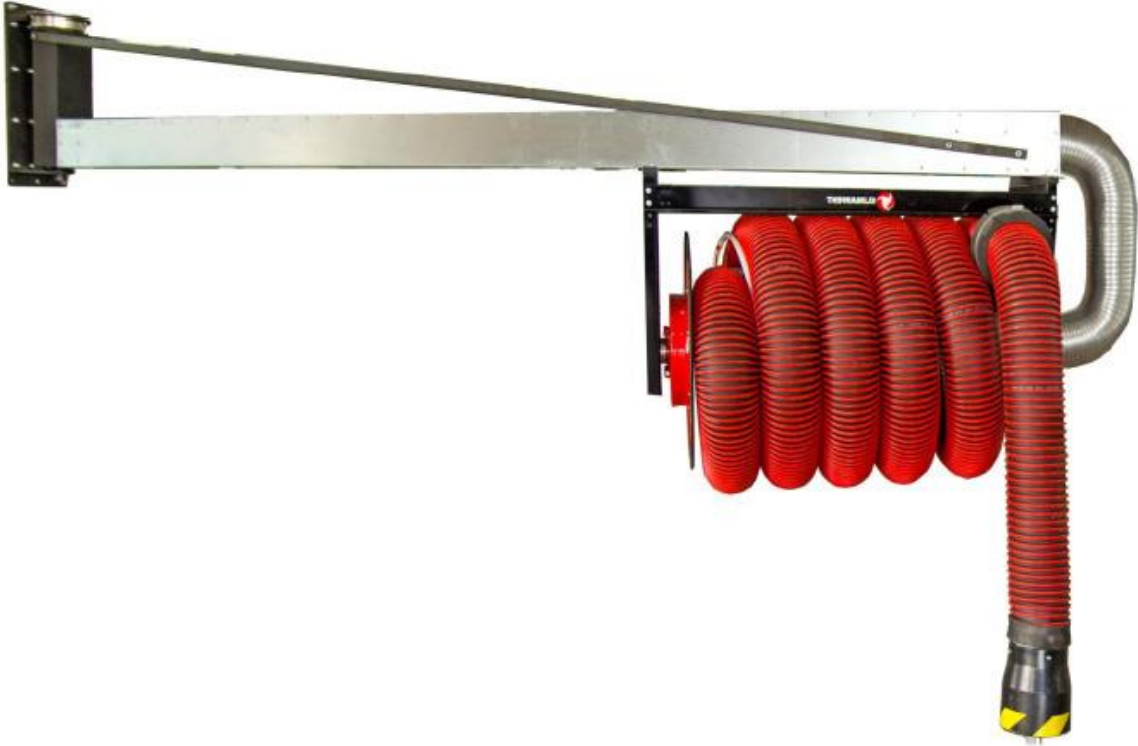


USE AND MAINTENANCE MANUAL



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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 **RO-4-ALAN-N** 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 **RO-4-ALAN-N** 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

RO-4-ALAN-N extraction system has been engineered for effective removal of harmful and noxious for health chemical compounds contained in exhaust fumes, emitted through exhaust pipes of the serviced vehicles, during diagnostics, adjustment, engine tests, etc. The system eliminates health hazards and risk of life of the operating personnel, provides clean air at the workplace, thereby ensuring more safety and comfort. They are used in bus depots, garages and car service stations.

Simple use, ergonomic and economic solution as well as high capture efficiency – are their basic advantages.

The appliance works with extraction fans manufactured by KLIMAWENT S.A.; for technical data see catalogue cards – Section FANS.

3. RESERVATIONS OF MANUFACTURER

- Operational use with cooperation with an inefficiently functioning extraction fan is forbidden, as this would result in overheating and damage of the exhaust hose.
- Protect the exhaust hose from mechanical damage and pollution with oils and solid lubricating grease.
- Maintenance and any repair can be executed exclusively by an authorised person.
- During the use, the vehicle engine can work at maximum rotations for not longer time than 60 seconds.**
- During hose winding – observe that the hose is distributing on the reel evenly, regularly to avoid clenching.
- 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.
- 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 on the device system one's own.

4. TECHNICAL DATA

Table No.1 – Extraction system – **RO-4-ALAN-N**

Type	Connection diameter [mm]	Maximum range [m]	Maximum torque [Nm]	Weight [kg]
RO-4-ALAN-U/C-8-N	160	3850	3100	145
RO-4-ALAN-U/C-12-N				150

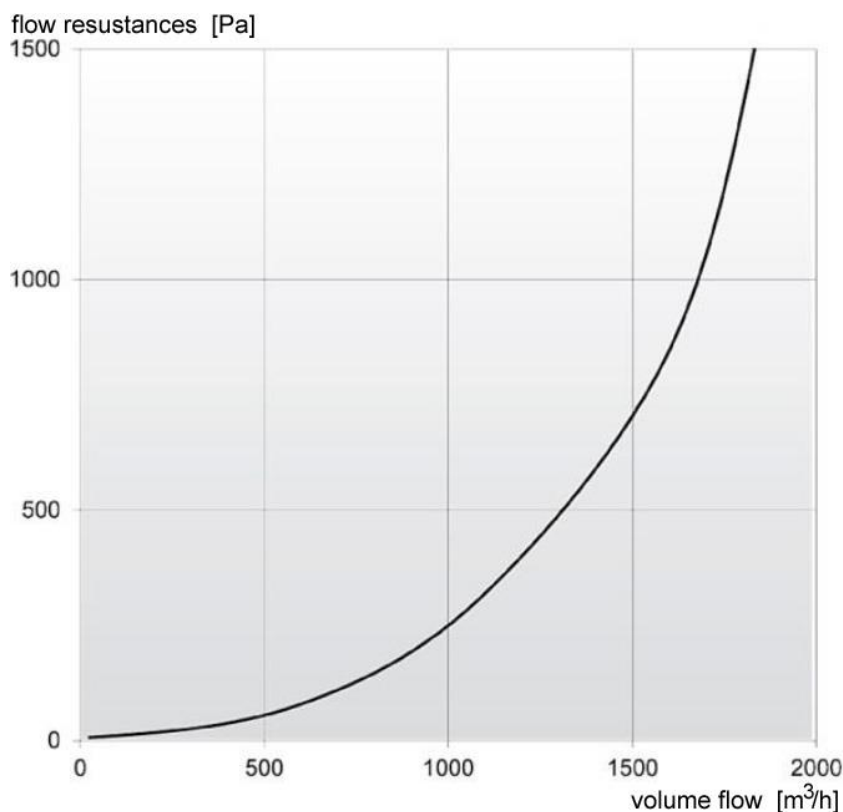


Fig. No.1 – RO-4-ALAN-N – Flow chart

Reel Exhaust Extractors type ALAN-U/C-N

Table No.2

Extractor type ¹⁾	Equipped with a shut-off damper	Maximum torque	Maximum length of the exhaust hose	Exhaust hose	Weight ²⁾
		[Nm]	[m]		[kg]
ALAN-U/C-8-N	no	50	8	Each hose reel is suitable to be equipped with hose assemblies: Ø100, Ø125, Ø150 mm; For hose selection see catalogue card ALAN-N	44,5
ALAN/P-U/C-8-N	yes				
ALAN-U/C-12-N	no		12		46,5
ALAN/P-U/C-12-N	yes				

CAUTION:

1) upon selection of the extractor size – contact KLIMAWENT S.A.

2) weight of the extractor is specified without the installed hose

Technical data of the WPA-N type extraction fans, their installing and maintenance are included in separate Use and Maintenance Manuals of the fans.

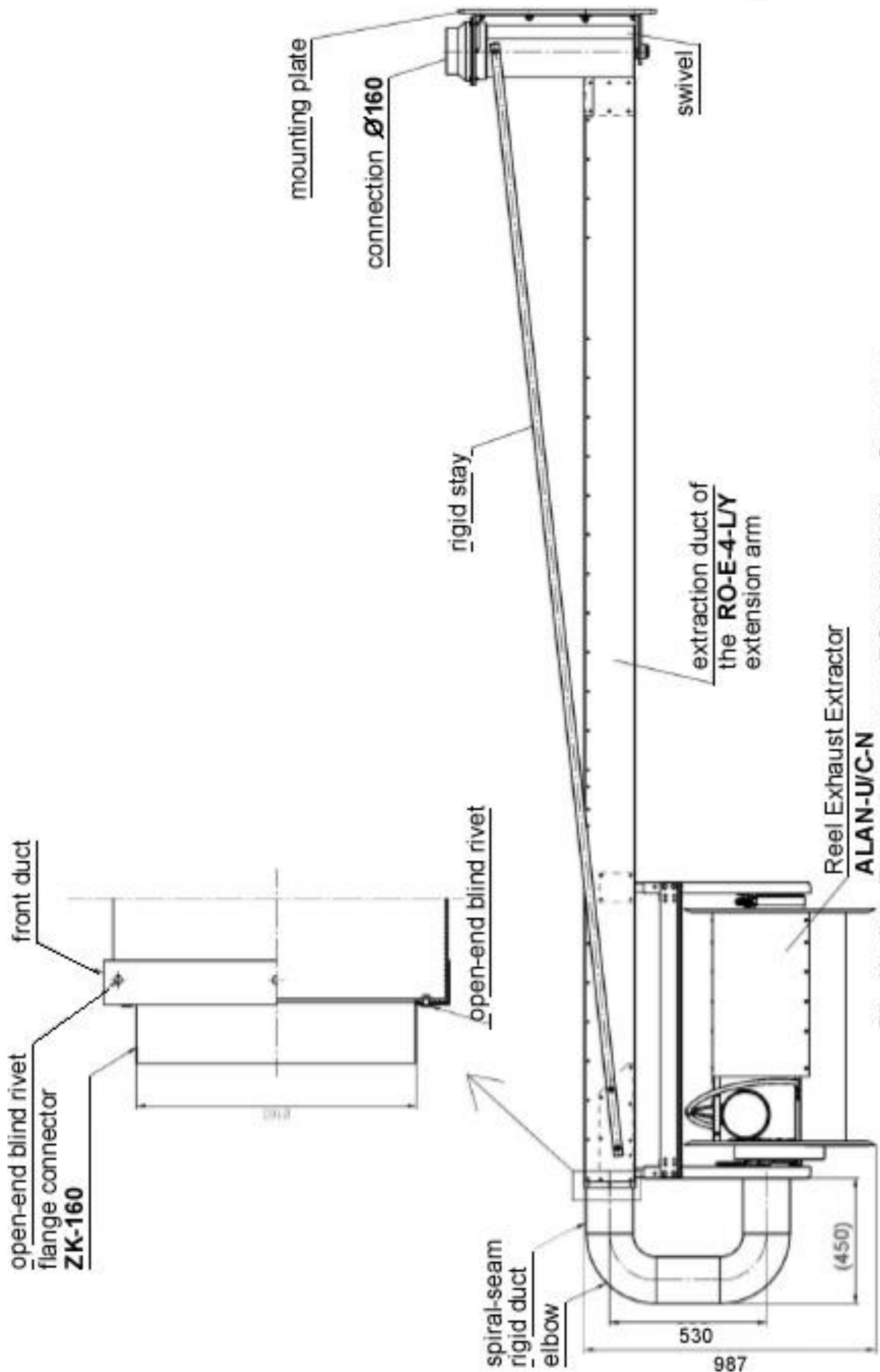


Fig. No.2 – Extraction system RO-4-ALAN-N – Structure

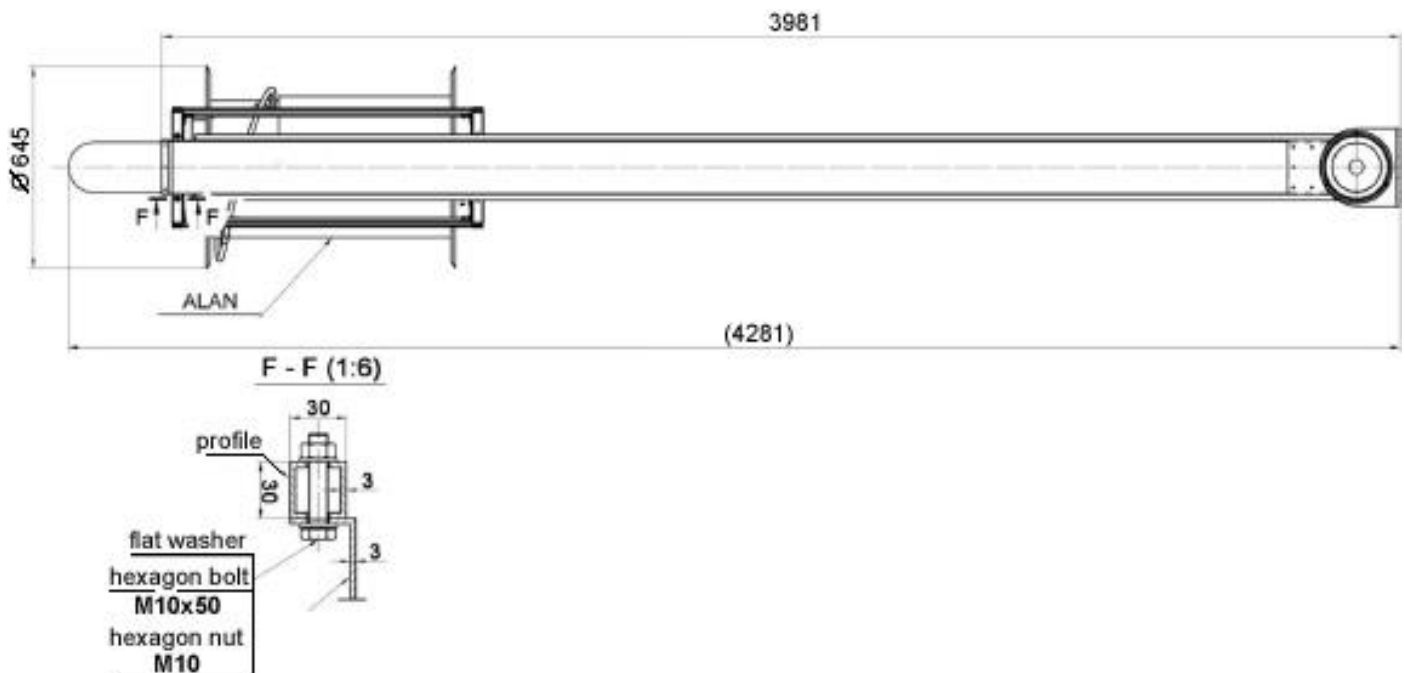


Fig. No.3 – Extraction system RO-4-ALAN-N – Dimensions

5. STRUCTURE AND FUNCTION

Extraction system consists of an **RO-4-E-L-Y** extension arm and Reel Exhaust Extractor **ALAN-U/C-N**. The reel extractor is equipped with a hose of length 8 or 12 metres (see Table No.2). The extractor is suspended under the extension arm and is connected to it by means of seam-spiral rigid ducts and elbows (see Fig. No.2). Swivel is integrated with the connection fitting piece – that joins the ventilation ducting integrating the swivel and the extraction fan. Here can be applied a **WPA-E-N** stand extraction fan or **WPA-D-N** roof fan.

6. ASSEMBLY AND STARTUP

The extraction system consists of subsequent assemblies:

- mounting plate
- swivel
- extraction duct
- connection fitting piece $\varnothing 160$, spiral-seam rigid ducts, elbows
- Reel Exhaust Extractor **ALAN-U/C-N** along with the frame
- hose assembly

Prior to installing – specify the load carrying capacity of the wall or other frame carrying structure within the building. The supporting structure must bear the total weight of all assemblies of the system.

First install the mounting plate, to which shall be mounted the swivel (of the extension arm). The mounting plate should be positioned exactly vertically, otherwise the swivel will not be vertical and the **RO** extension arm will not turn horizontally smoothly. Having installed the mounting plate, attach to it the swivel. Further, install the **RO** extension arm with its rigid stay (to the swivel) – see Fig. No.2.

Subsequently, install the framework of the reel extractor to the extension arm – according to the Fig. No.2. The outlet of the Reel Exhaust Extractor should be connected with the inlet of the **RO** extension arm – by means of sections of the spiral-seam rigid duct and 2 elbows. The extraction fan should be mounted at the extraction stand or on the roof (depending on the fan type).

Any activities of connection to the power supply system should be performed by an authorised person with testified electrical qualifications and in accordance with the valid regulations.

Before the extraction fan is operated – check if it is connected to the PE protective cable and examine the correctness of the electrical connections. **Impeller rotation sense ought to be with reference to the arrow on the fan housing – if this is not the case – change the phase connection sequence (three-phase motors only).**

To operate the extraction fans is applied a **ZE-Z** control unit, **WS** motor protective switches or **RS** motor starters.

7. OPERATION USE

Before the work, check if the extension arm turns smoothly (without rotational resistance), if it keeps the required operational position and does not turn automatically into another unrequested position.

OPERATIONAL REMARKS

- it is not admissible to use the system when the extraction fan is functioning inefficiently – this could result in overheating and damage of the hose assembly;
- maintenance and any repair should be executed by an authorised person;
- For safety reason, during winding the hose onto the reel, operator has to guide manually the hose and nozzle
- Protect the hose from mechanical damage and from getting polluted with oil and solid lubricants.

If any unusual symptoms of malfunction (not typical noise or visually) are observed – proceed as in Section 8. After the completed work, wind up the hose onto the reel and set the RO extension arm into home position or in position that does not cause barrier to other system. The system should be disconnected from the power supply system.

Further details about the ALAN-N Reel Exhaust Extractor can be found in the Use and Maintenance Manual of these exhaust extractors.

8. TROUBLESHOOTING GUIDE

Table No.3

	Problem	Possible reason	Corrective action
1.	Extension arm sets always in the same unrequested position	The mounting of the swivel is not positioned vertically	Set the swivel axle into vertical position by levelling its mounting plate
2.	The extension arm is turning with too high- or too low rotational resistances	The swivel is adjusted incorrectly	Tighten up or release the adjustment nuts
3.	Significant and sudden decrease in the intake air volume	Solid element, foreign object being obstacle / barrier for the flow got stuck in the suction nozzle or in the exhaust hose	Localise the obstacle object and remove it
4.	Sudden vibrations of the fan occur	The fan impeller is faulty	Replace the impeller and motor for new
5.	The exhaust hose got overheated and damaged	The nozzle was connected at the exhaust pipe of the running vehicle engine, when the fan has not been switched on; or it was connected to the vehicle running at maximum rotations longer than 60 seconds	Replace the damaged exhaust hose section for new. Do not connect the nozzle before the fan is switched on. Do not exceed full vehicle rotations for longer than 60 seconds
6.	The flow capacity of the fan drops	Improper fan impeller rotation sense	Change the phase connection sequence (three-phase motors only)

9. MAINTENANCE

Maintenance and any repair ought to be executed by an authorised person. Construction of the system and the extraction fan provides its operational use without the routine continuous technical supervision. In case when not typical symptoms of malfunction of the system are observed (by noise or visually) – undertake technical revision. During the maintenance check mechanical- and electrical connections.

Protect the exhaust hose from getting polluted with oils or lubricating grease and, first of all, from squeezing by vehicle wheels. **Technical revisions on the extraction fan should be performed after disconnection from the power supply system.** For requirements referring the extraction fans – see individual Use and Maintenance Manual of the given fan. **Use of the system in cooperation with inefficiently functioning extraction fan is not admissible, as this could result in overheating and damage of the exhaust hose.** Maintenance of the extraction fan should be carried out in accordance with the Use and Maintenance Manual of the given fan.

10. OCCUPATIONAL HEALTH AND SAFETY

Start up and the operational use of the rail extraction system are admissible after getting acquainted with the contents of the present Use and Maintenance Manual. For safety reasons, connection of the fan to the power supply system ought to be executed according to the enclosed Connection Diagram and in compliance with the indications in Section 6 of the present Use and Maintenance Manual.

Any activities referring the connection to the power supply system, must be performed by an authorized person with electrical qualifications, according the valid regulations and after the fan is disconnected from the supply system. Prior to installing, necessarily check the load carrying capacity of the constructional elements of the building, in points where the system shall be installed. Unsure mounting could result in uncontrolled device detachment, system damage or hazard to personnel / people in the vicinity.

CAUTION!

1. Protect the exhaust hose from squeezing;
2. The vehicle engine can be started after the extraction fan is switched on. Otherwise (at the engaged nozzle) the hose might get overheated and damaged;
3. During the use, strictly proceed the rule: the vehicle engine should not run at its maximum rotations for longer time than 60 seconds;
4. For safety reasons, while the exhaust hose is lifted – the operator should guide the hose and nozzle manually – i.e. hold the hose end until it gets completely lifted to its home position on the reel.

11. TRANSPORT AND STORAGE

RO-4-ALAN-N is transported in assemblies: extension arm, connection elements (between the extension arm and the Reel Exhaust Extractor), Reel Exhaust Extractor, hose assembly, extraction fan (if there was ordered one). The extraction fan should be in foil and placed in a cardboard package. During loading, re-loading and transport – do not throw the packages and do not charge them from the top with other loads. Do not put one package on top of another (no stacking). During the transport protect the packages from weather conditions and damage.

RO extension arms should be stored and transported in packages. Necessarily, store the devices in dry rooms and in areas of efficient ventilation. While transporting, loading, re-loading – mind that any element would get damaged, indented, scratched. Packages should not get damaged, and the names / descriptions on their surfaces must not get wiped out / get detached.

ALAN-N Reel Exhaust Extractor should be placed on 2 wooden beams 60x60x500 mm vertically, in foil and placed in cardboard package – protected from displacement and overturn (also not stacking). For the transport time, and storing – the extractor equipment (hose assembly, etc.) should be in foil and placed in a cardboard package.

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.

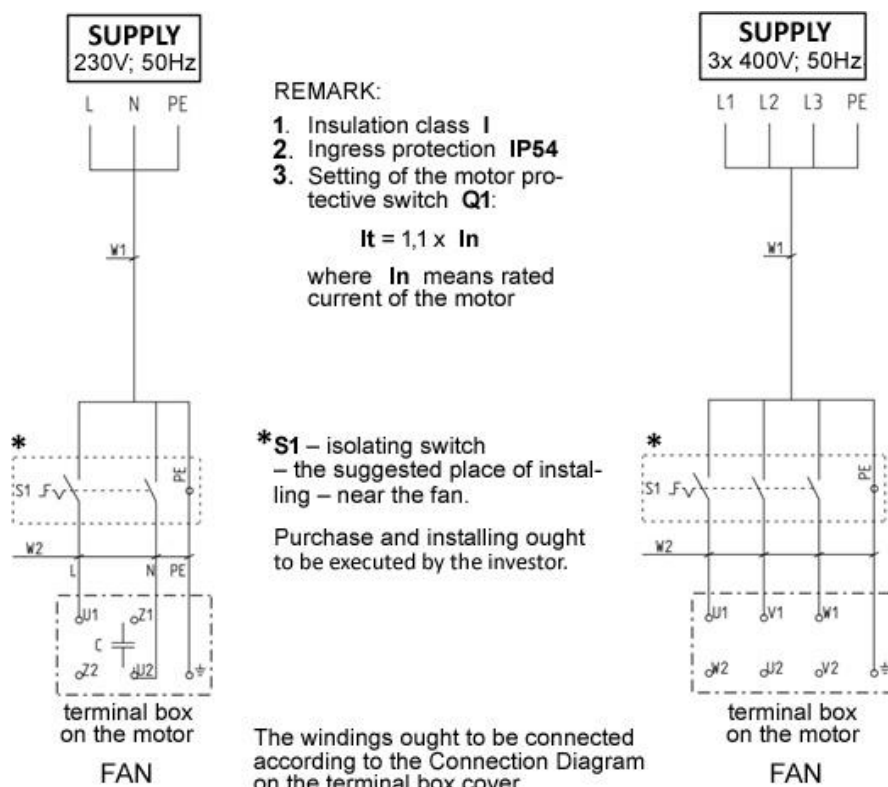


Fig. No.4 – Connection Diagram of the fans

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: **Extraction System**

type / model: **RO-4-ALAN-N**

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*