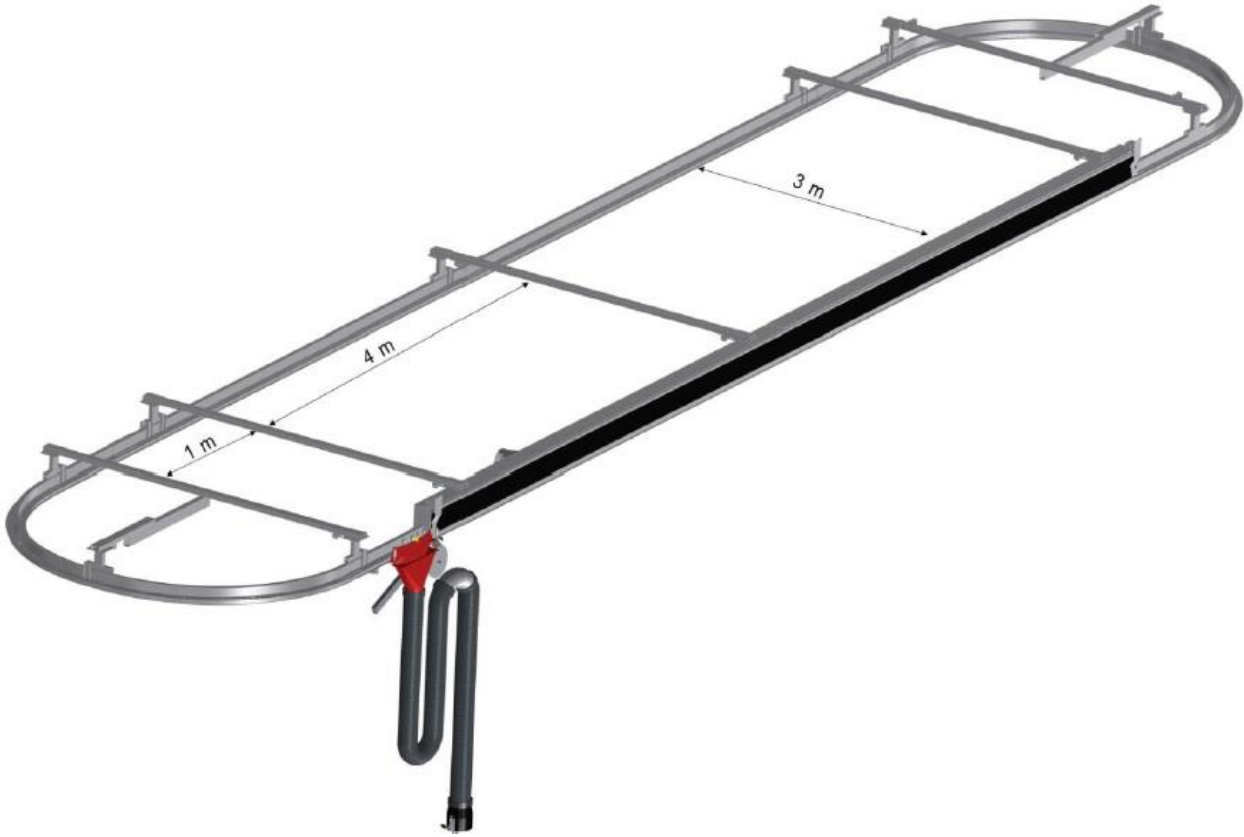


USE AND MAINTENANCE MANUAL



Return Rail Extraction System KOS-L-N

Contents:

1. INTRODUCTION	2
2. PURPOSE	2
3. RESERVATIONS OF MANUFACTURER	2
4. TECHNICAL DATA	2
5. ASSEMBLY AND STARTUP	3
6. ASSEMBLY AND STARTUP	7
7. OPERATIONAL USE	7
8. TROUBLESHOOTING GUIDE.....	8
9. MAINTENANCE	8
10. OCCUPATIONAL HEALTH AND SAFETY	8
11. TRANSPORT AND STORAGE	9
12. TERMS OF WARRANTY	9
13. DECLARATION OF CONFORMITY	10

Producer: **KLIMAWENT S.A.**
 81-571 Gdynia, ul. Chwaszczyńska 194
 tel. 58 629 64 80, 58 771 43 40
 fax 58 629 64 19
 email: klimawent@klimawent.com.pl



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 **KOS-L-N** Return 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 **KOS-L-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

KOS-L-N return rail extraction system has been engineered for extraction of vehicle exhaust extraction by means of the OBP/P balancing mobile extractor, displacing along the suction duct. Extraction proceeds through a hose ended with a nozzle that is clamped at the exhaust pipe of the serviced vehicle. The system is designed for cars and trucks.

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 on the device on one's own.
- Protect the system from mechanical damage.
- 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.
- Do not use the system for other purposes than it is specified in the range of application.

4. TECHNICAL DATA

Table No.1 – Self-tightening return suction duct

Type		Dimensions of the segment [mm]	Weight of the segment [kg]	Remarks
return rail	TP	length 2,5 m	30	quantity of segments: depends on the length of the KOS-L duct
arc of the return rail 90°	TL-90	radius 1,5 m	37	the set consists of 4 arcs
spacing beam	BD	length 3m	21	spacing between the beams: approx. 4m

Table No.2 – Self-tightening suction duct



	Type	Segment length	Cross-sectional dimension	Cross-sectional area	Unit weight	Segment weight
		[m]	[mm]	[cm ²]	[kg]	[kg]
	KOS-L	1,25	160 x 240	384	14,2	17,75
2,5		35,5				

Table No.3 – Mobile balancing extractors

	Type ¹⁾	Hose diameter	Hose length	Recom- mended volume flow	Flow resistances	Thermal resistance	Appli- cation	Weight
		[mm]	[m]	[m ³ /h]	[Pa]	[°C]		
	OBP/P-100-6	100	6	400	1200	150 ²⁾	SO	26,7
	OBP/P-100-6/CF					300/150 ³⁾		
	OBP/P-125-6	125	6	700	1300	150 ²⁾	SD	28,7
	OBP/P-125-6/CF					300/150 ³⁾		
	OBP/P-150-6	150	6	1500	2000	150 ²⁾	SC	29,8
	OBP/P-150-6/CF					300/150 ³⁾		
	OBP/P-125-9	125	9	700	1600	150 ²⁾	SD	35,7
	OBP/P-125-9/CF					300/150 ³⁾		
	OBP/P-150-9	150	9	1500	2200	150 ²⁾	SC	38,3
	OBP/P-150-9/CF					300/150 ³⁾		

REMARKS:

1. For selecting the suitable size of the extractor contact KLIMAWENT S.A.
2. Hose of thermal resistance 150°C (short time 200°C)
3. First hose section of length (near the nozzle) 2m of thermal resistance 300°C (short time 350°C), further hose section – as in Clause 2. above.
4. **SO** – cars; **SD** – medium size vehicles; **SC** – trucks

CAUTION: For connection fitting piece, segment joints, hangers – see catalogue card KOS-L
 Fans should be selected according to separated catalogue cards – with reference to volume flow and flow resistances
 Nozzles for exhaust extractors are specified in separate catalogue cards

5. ASSEMBLY AND STARTUP

The system consists of the standard self-tightening **KOS-L** suction duct, return rail (consisting of 2 **TL** arcs) and straight rails **TP**. Along the suction duct displaces the mobile balancing extractor **OBP-P**. After the nozzle is manually or automatically disconnected (depending on the sort of the nozzle type) – the extractor trolley is being released and it stays on the rail arc. From there it should be pulled along the return rail manually, up to its home position. Now it is ready for extraction of the next vehicle. The trolley is from both sides equipped with springs that are ended with an arc. In configuration where several extractors are applied, these springs protects the units from bumping one against another and damage (also during the displacement on the rail arc).

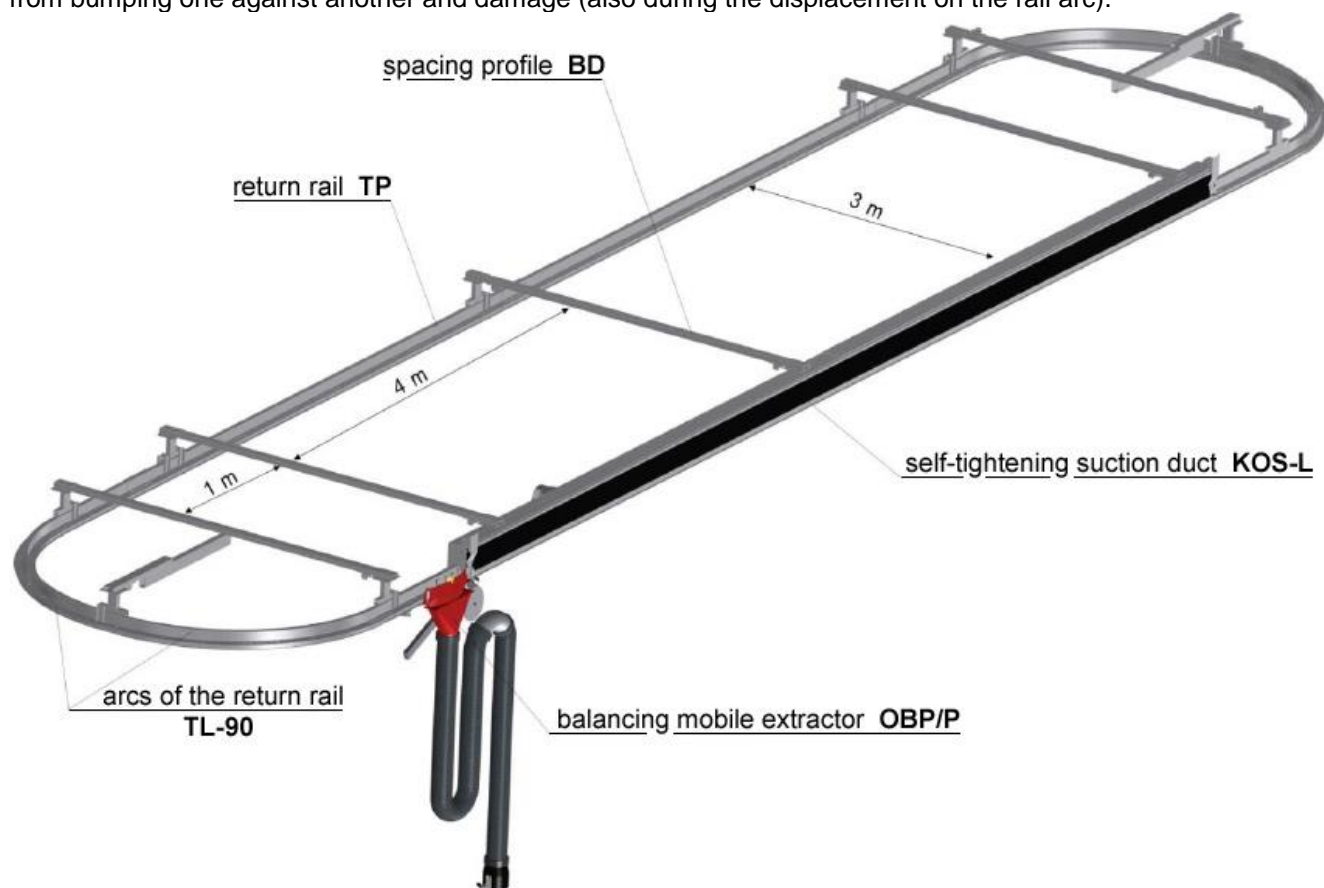


Fig. No.1 – KOS-L-N return rail extraction system – Structure

The system is installed by means of hangers or columns. Self-tightening suction duct **KOS-L** is partially illustrated in Fig. No.2. **OBP/P** balancing extractor on the KOS-L suction duct is shown in Fig. No.3, whereas nozzles are specified in Table No.4. In configurations where the Bowden cable release nozzles are applied, it is required to install a cam on the KOS-L duct. The cam lifts the Bowden cable and disconnects the nozzle from the vehicle.

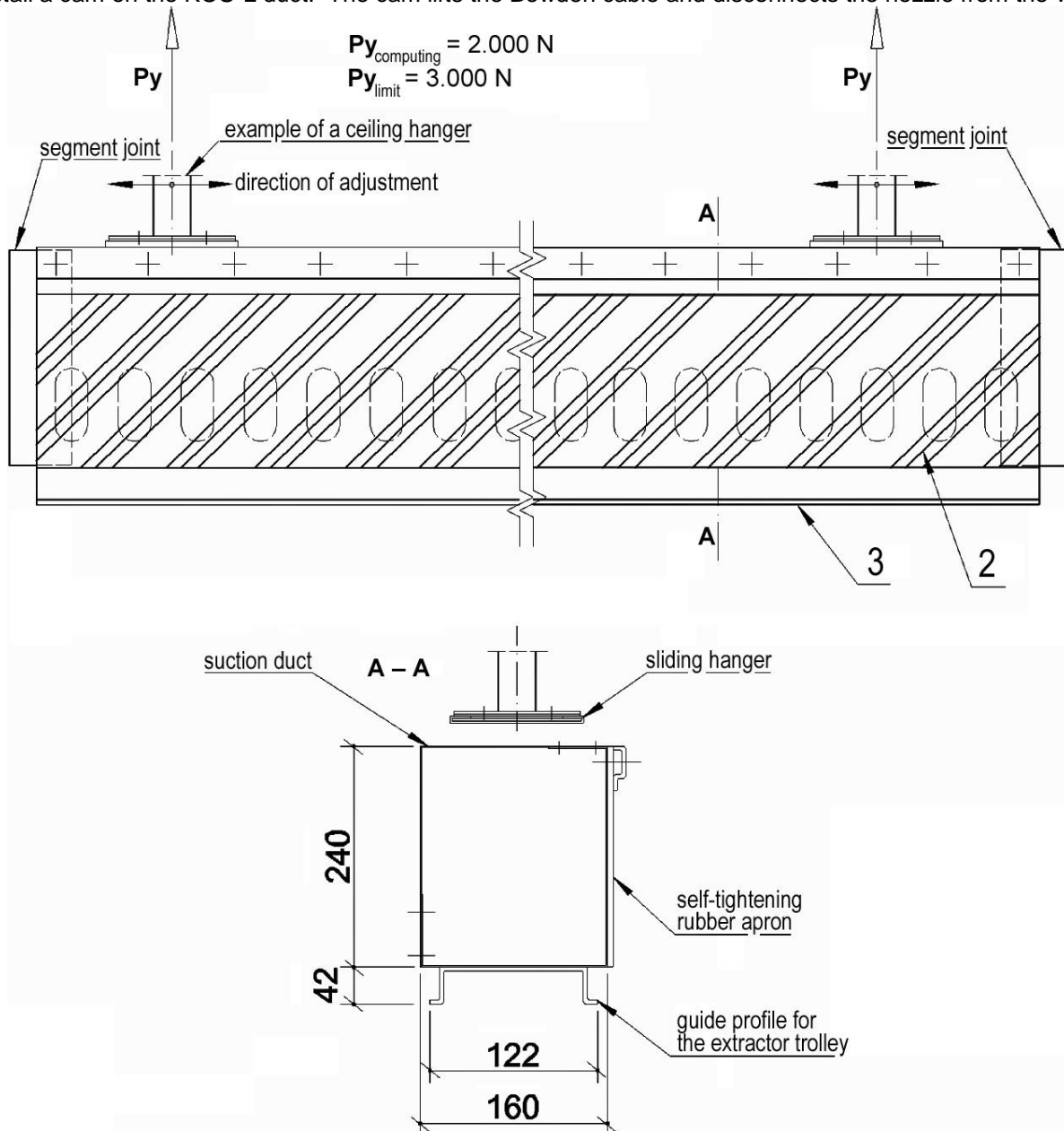


Fig. No.2 – KOS-L self-tightening suction duct

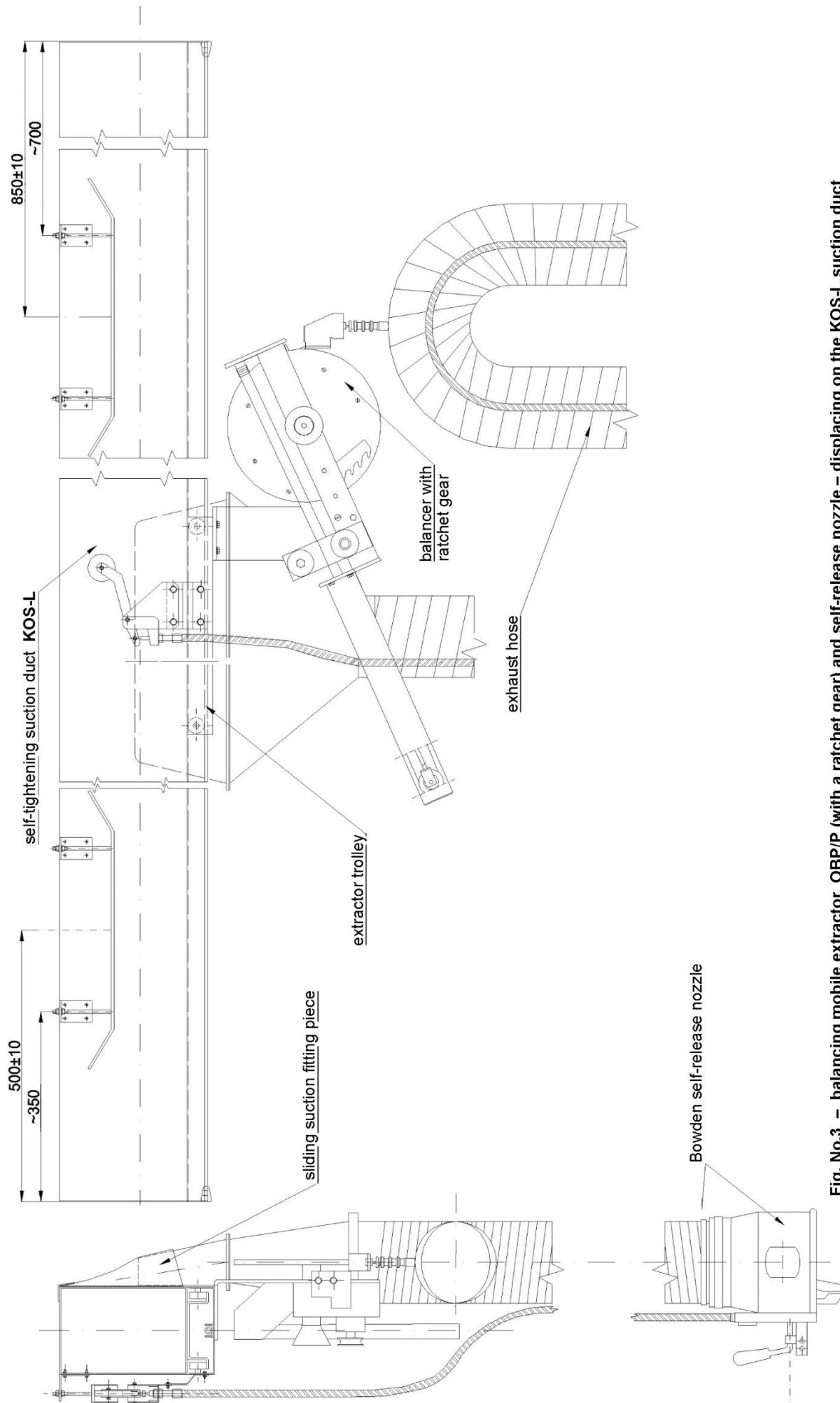


Fig. No.3 – balancing mobile extractor OBP/P (with a ratchet gear) and self-release nozzle – displacing on the KOS-L suction duct

Table No.4 – Specification of nozzles for exhaust extractors

Sort of the extractor	Type	Connection diameter [mm]	Inlet dimension [mm]	Weight [kg]	Remarks
	SZGO-125 SZGO-150	125 150	150 170	2,5 3,2	round rubber nozzle with lever clamp for manual disconnection
	SZGP-100 SZGP-125	100 125	180 x 100	2,1 3,2	oval rubber nozzle with lever clamp for manual disconnection
	SZGO-125/S SZGO-150/S	125 150	150 170	2,5 3,2	round rubber nozzle with lever clamp and steel cable for automatic disconnection
	SZGP-100/S SZGP-125/S	100 125	180 x 100	2,1 3,2	oval rubber nozzle with lever clamp and steel cable for automatic disconnection
	SZGO-125/B SZGO-150/B	125 150	150 170	2,5 3,2	round rubber nozzle with lever clamp and Bowden cable for automatic disconnection
	SZGP-100/B SZGP-125/B	100 125	180 x 100	2,1 3,2	oval rubber nozzle with lever clamp and Bowden cable for automatic disconnection
	SRGO-100 SRGP-125	100 125	180 x 100	2,4	oval rubber nozzle for built-in and covered exhaust pipes, for manual disconnection, (the clamp is inside the exhaust pipe)

Extraction fan (extraction fans) can be installed on a roof on a roof base or a roof pedestal (**WPA-D-N** roof fans) or on a wall bracket inside the process room (**WPA-E-N** flange type fans).

The above mentioned fans are of KLIMAWENT S.A. production and they ought to be selected from our catalogue with reference to the volume flow and flow resistances. Technical data are specified in the KLIMAWENT S.A. catalogue and Use and Maintenance Manuals.

Connection to the power supply system execute with reference to the Connection Diagram next page – Fig. No.4.

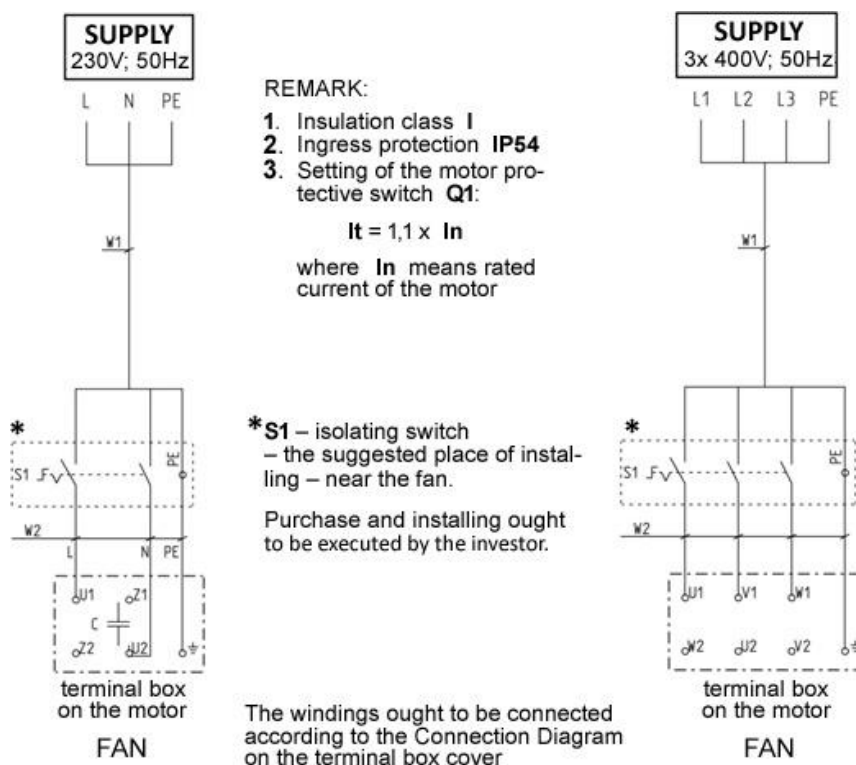


Fig. No.4 – Connection Diagram of the fans

Cross-section and length of the ventilation conduits that will be applied for connection with the fan outlet – should be selected in such a configuration that provides the minimum volume flow at the suction nozzle, in comparison with the value specified in the Table No.3 in Section “TECHNICAL DATA” .

6. ASSEMBLY AND STARTUP

As there are strict requirements for the installing precision of the KOS-L-N system, its assembly must be carried out by the authorised assembly team of manufacturer. It is recommended to install the system in a height 4,3 metres measured from the upper surface of the duct, whereby the distance from the building wall is 0,5 m (measured from the axle of the KOS-L suction duct).

Start-up of the system:

- switch on the extraction fan;
- pull down the exhaust hose – to the requested operational length, until it gets blocked automatically, so it is easy to clamp the nozzle at the vehicle exhaust pipe;

CAUTION! to obtain full opening of the shut-off damper – necessarily it is important to lower the suspensions of the hose (the suspension cord is pulled out) by at least 1 metre.

- connect the nozzle to the exhaust pipe by means of a lever clamp

After the completed extraction

- disconnect the nozzle from the exhaust pipe
- pull gently the exhaust hose – until it gets unblocked – the hose starts lifting to its home position
- guide the extractor trolley to its starting position
- switch off the extraction fan.

CAUTION! In application with a self-release nozzle – at the moment when the vehicle moves – the extraction trolley displaces on the suction duct and operates the release mechanism of the nozzle automatically. The nozzle disconnects itself from the exhaust pipe.

7. OPERATIONAL USE

The system does not require any additional routine technical supervision after its start-up. In case when the place of application is changed – repeat the steps from Section 6 referring the assembly and adaptation of the ventilation system to new configuration. If any unusual symptoms of malfunction (not typical noise or visually) are observed – proceed as in Section 8.

8. TROUBLESHOOTING GUIDE

Table No.5

	Problem	Possible reason	Corrective action
1.	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
2.	Decrease in the intake air volume along with the increased noise	Improper fan impeller rotation sense	Change the phase connection sequence (three-phase motors only)
3.	Sudden vibrations of the fan are occurring	Solid element, foreign object being obstacle / barrier for the flow got stuck in the impeller; The fan impeller is faulty	Disconnect the extraction fan and remove the barrier object Replace it for new
4.	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. The engine of the serviced vehicle is running at full rotations for too long time, or the engine cubic capacity is too high	Replace the damaged exhaust hose for new. Do not connect the nozzle before the fan is switched on. Do not exceed 60 seconds of continuous work at maximum rotations; Replace the damaged exhaust hose for new
5.	The hose cannot be pulled down smoothly	The worm gear got damaged or its rope got clenched	Contact the manufacturer

9. MAINTENANCE

Protect the exhaust hose from getting polluted with oils or lubricating grease. During the maintenance take into account especially subsequent elements:

- exhaust hose
- tensioning rope – stretching the hose
- lever mechanism of the self-release nozzle
- rope of the balancer
- guide profiles of the trolley
- self-tightening rubber apron – as a sealing element of the duct

In situations when any of the above mentioned elements got damaged – necessarily contact the manufacturer for repair or replacement of the faulty part. Requirements regarding the technical supervision of the fan are included in the Use and Maintenance Manual of the given fan. **Any repair / maintenance can be exclusively executed after the system is disconnected from the power supply system.**

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 the sake of safety, connection of the fan to the power system ought to be carried out according to the enclosed Connection Diagram and in compliance with the valid regulations of personnel protection against the short-circuit- and overload effects.

Any activities referring the connection to the power supply system, must be performed by an authorized person with electrical qualifications. Any repair / maintenance should be carried out after the fan is switched off and its motor disconnected from the power supply system. Important is the fan impeller rotation sense (with reference to the arrow on the fan housing) – if this is not the case – change the phase connection sequence – this refers three phase motors only.

CAUTION!

1. In a situation when the serviced vehicle must leave suddenly the process hall, handle with care and mind that any person is within reach of the exhaust hose (with nozzle) movements – at the moment when the nozzle is being disconnected automatically;
2. Protect the exhaust hose from squeezing;
3. 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;
4. In the course of operational use, strictly follow the rule: the vehicle engine should not run at maximum rotations for longer time than 60 seconds;
5. **Maximum vehicle velocity (while leaving the measuring area) should not exceed 10 km/h;**
6. 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 homes position.

11. TRANSPORT AND STORAGE

For the transport time – all the duct elements are in packages to protect them from damage. The balancing extractor should be transported and stored in a cardboard package.

Balancing extractor and the self-tightening suction duct must be stored in a dry room and in areas 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 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.

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: **Return Rail Extraction System**

type / model: **KOS-L-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*

NOTES:

NOTES: