

# USE AND MAINTENANCE MANUAL



## Stationary Balancing Extractor OBS/P

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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 **OBS/P** Reel Exhaust Extractor.



**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 **OBS/P** 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 standard:

**EN ISO-12100:2012** Safety of machinery – General principles of design – Assessment and reduction of hazard

## 2. PURPOSE

**OBS/P** stationary balancing extractor has been developed for effective removal the exhaust volume emitted by vehicles exhaust pipes, emitted during the engine tests, diagnostics, adjustment, etc. The unit can be applied in stationary stands in bus depots, vehicle diagnostic stations, garages and similar. The extractor provides clean air at workplace, therefore eliminates hazard, health risk of personnel and people in the vicinity.

They can be installed on a wall or supporting column. The extractor can work with a flange-type fan, or with a roof fan (mounted on a roof base). As another solution, it can be connected to the main discharge ductwork.

Additionally, the extractor is equipped with a shut-off damper, therefore it is possible to apply a smaller extraction fan – when at the same time, only a part of the extractors connected to the main ductwork are in operation.

## 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.
- Operational use with cooperation with an inefficiently functioning extraction fan, 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.**
- 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 device structure (or accessory set) is not acceptable.
- Do not introduce any structural or constructional modifications on the device on one's own.
- Manufacturer is not responsible for body lacerations, injuries, wounds – experienced by operator due to careless use or negligence.

## 4. TECHNICAL DATA

Table No.1

Type of the extractor	Hose diameter [mm]	Hose length	Thermal resistance [°C]	Recommended volume flow [m <sup>3</sup> /h]	Flow resistances [Pa]	Weight [kg]	Application*	Fans to be applied with
<b>OBS/P-100-6</b>	100	6	150 <sup>1)</sup>	400	800	21,9	SO	WPA-5-E-N WPA-5-D-N
<b>OBS/P-100-6/CF</b>			300/150 <sup>2)</sup>					
<b>OBS/P-125-6</b>	125	6	150 <sup>1)</sup>	700	1000	22,9	SO, SD	WPA-5-E-N WPA-5-D-N
<b>OBS/P-125-6/CF</b>			300/150 <sup>2)</sup>					
<b>OBS/P-150-6</b>	150	6	150 <sup>1)</sup>	1500	1200	24,3	SO, SD, SC	WPA-7-E-N WPA-7-D-N
<b>OBS/P-150-6/CF</b>			300/150 <sup>2)</sup>					
<b>OBS/P-125-9</b>	125	9	150 <sup>1)</sup>	700	1200	32,1	SO, SD	WPA-6-E-N WPA-6-D-N
<b>OBS/P-125-9/CF</b>			300/150 <sup>2)</sup>					
<b>OBS/P-150-9</b>	150	9	150 <sup>1)</sup>	1500	1500	34,3	SO, SD, SC	WPA-8-E-N WPA-8-D-N
<b>OBS/P-150-9/CF</b>			300/150 <sup>2)</sup>					

Connection of the connection fitting piece (D) – 160 mm

Upon selection of the appropriate extractor size – contact KLIMAWENT S.A.

**CAUTION:**

1. Thermal resistance of exhaust hoses +150°C (for short time – up to +200°C);
2. First hose section (length 2 metres near the nozzle) – thermal resistance 300°C (for a short time 350°C) further hose section – as described in the Point 1. above;
3. **SO** – cars; **SD** – medium size vehicles; **SC** – trucks.
4. Technical data of the extraction fans – see KLIMAWENT S.A. catalogue, Section “FANS”

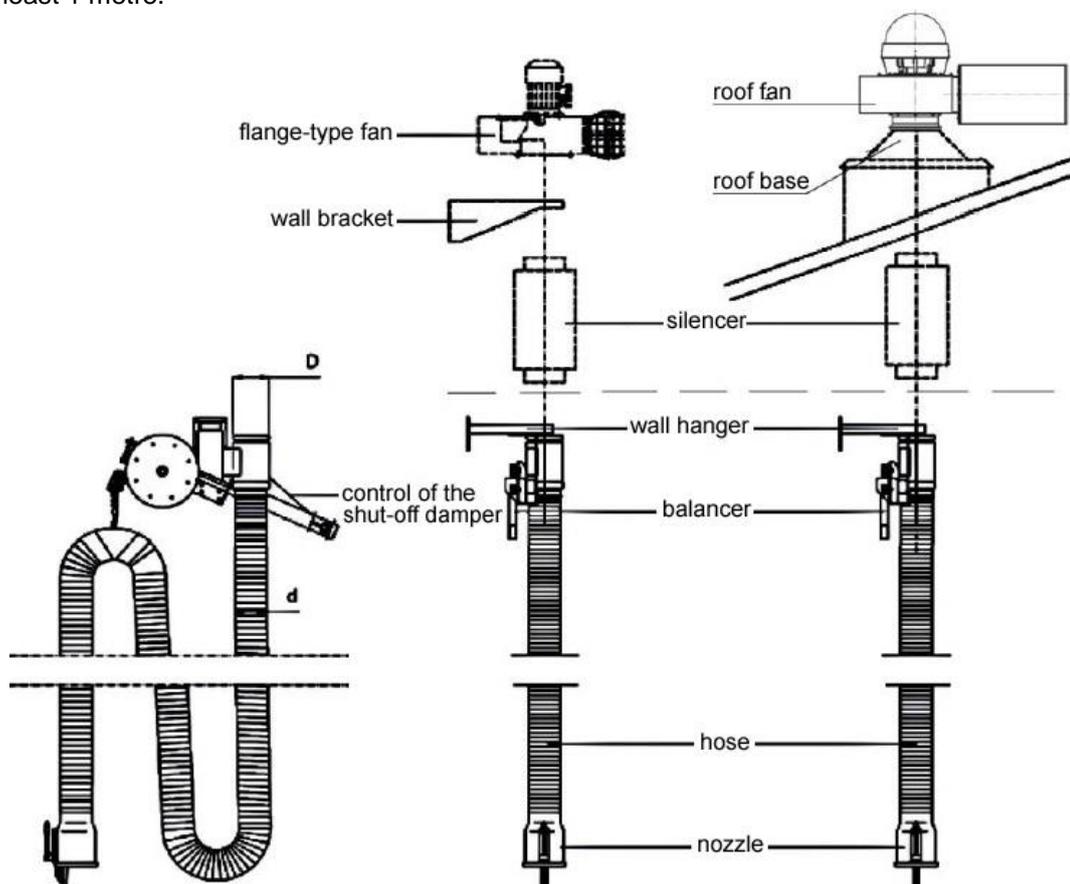
**5. STRUCTURE AND FUNCTION**

OBS/P consists of subsequent elements:

- balancing device
- ratchet gear (locking pawl)
- wall hanger for the hose
- tubular body – with a shut-off damper and connection fitting piece
- exhaust hose: Ø100, Ø125, Ø150 mm
- nozzle – for specification of exhaust nozzles see KLIMAWENT S.A. catalogue

OBS/P cooperates with a fan, which is installed on a wall bracket or with a roof fan, installed on a roof base. As another solution, it can be connected to the main ventilation ductwork. Due to the shut-off damper, it is possible to apply a smaller extraction fan – when, (at the same time), only a part of the extractors are connected to the main ductwork.

The shut-off damper opens itself, when the exhaust hose is being pulled down; whereby the shut-off damper is getting open completely do its total clearance, at the moment when the hose is lowering (protruding of the slinging rope) by at least 1 metre.



**CAUTION:** Walls, wall brackets, roof bases, silencers do not belong to the OBS/P system (delivery on separate order)

**Fig. No.1 – OBS/P – examples of application with the extraction fans**

The balancer enables recoiling down the hose using a small force only, and as well lifting the hose to the home position after the extraction is completed. Additionally, the ratchet device locks the hose in the requested position. After the nozzle is manually disconnected from the exhaust pipe of the serviced vehicle, the hose is being lifted to home position. At the same time, the shut-off closes automatically.

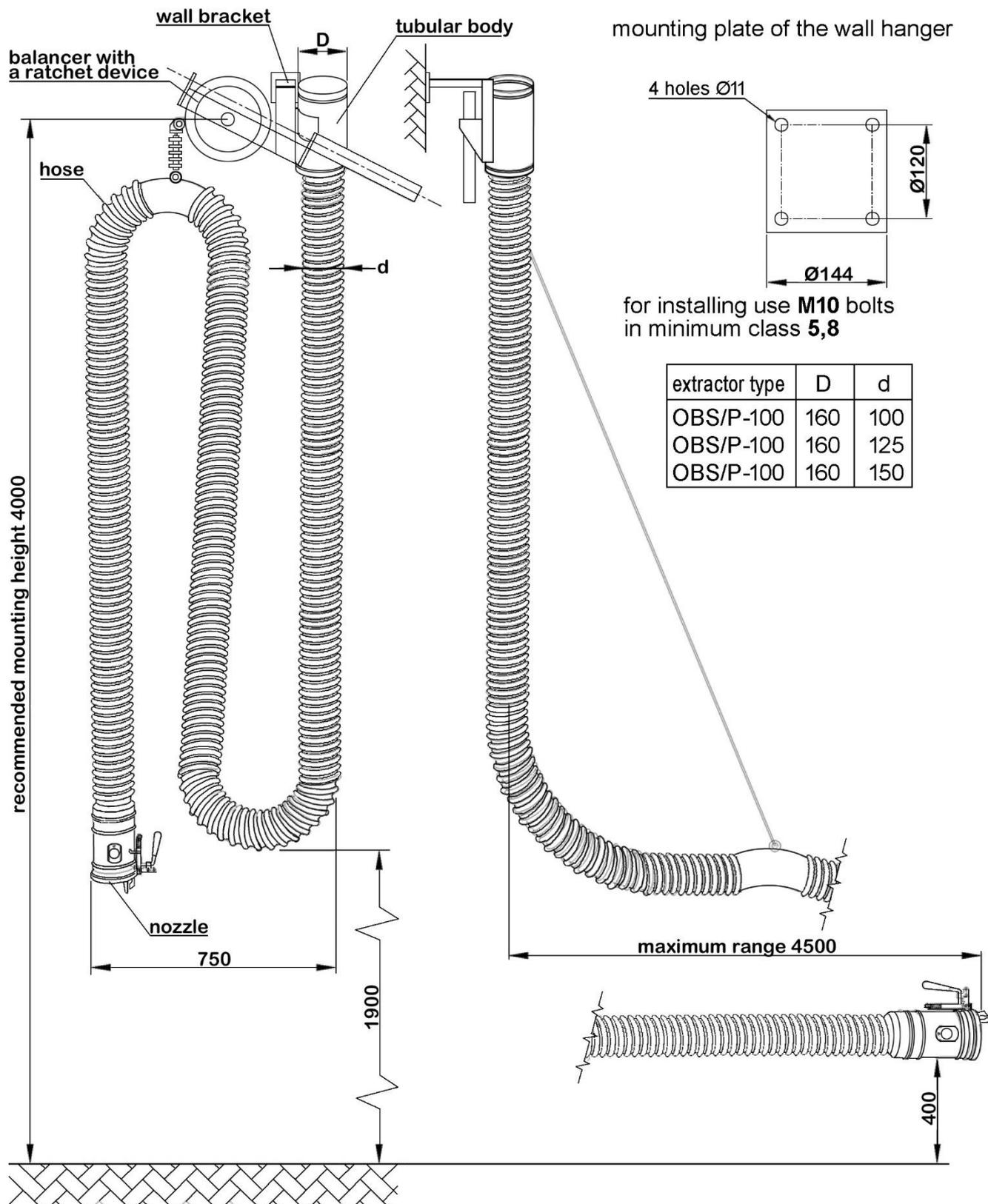


Fig. No.2 – OBS/P – Structure and dimensions

**CAUTION!**

Before the selection of the extraction fan, undertake a computational analysis of the flow resistances of all the sections of the foreseen ventilation / discharge system. Recommended values of the volume flow and flow resistances of the subsequent sets of ducts and extractors is specified in Table No.1. Assortment of the cooperating fans is represented in KLIMAWENT S.A. catalogue – Section FANS. For connection to the power supply system see Use and Maintenance Manual of the subsequent fans.

As standard applications, are recommended exhaust extractors equipped with hoses of thermal resistance 150°C (for a short time 200°C). In applications for vehicles with Diesel engines that are equipped with solid particles filter (Euro 5, Euro 6) – due to the foreseen high temperature of the exhaust volume – we suggest application of extractors with increased thermal resistance hoses (OBS/P-CF).

## 6. ASSEMBLY AND STARTUP

### 6.1 Installing

OBS/P ought to be installed in vertical position, in a height of approx. 4 metres (measured from the floor surface). It should be fastened to the wall, column or ceiling by means of a mounting plate of the wall hanger or a ceiling hanger – using four **M10 bolts (class 5.8)**. The spacing between the holes and their diameters are given in the Fig. No.2.

Fasten the connection fitting piece (of the extractor) to the suction connection / inlet of the fan. For this purpose use hoses and seam-spiral duct sections. Diameters of the ventilation elements depend on the accepted local solutions. It is recommended to install a silencer (of length not shorter than 500 mm) in front of the inlet connection of the fan.

The connections: inlet and outlet of the fan, should be connected to the ventilation system by means of flexible couplings. In this way the fan vibrations will not be transmitted to the ventilation system.

### 6.2 Start-up of the system

- switch on the extraction fan;
- pull down the nozzle and connect it to the exhaust pipe of the serviced vehicle by means of a nozzle clamp lever;
- in applications for exhaust fume analysis – insert the measuring probe into the vehicle exhaust pipe through an opening in the nozzle.

### 6.3 After the completed extraction

- remove the measuring probe from the nozzle opening;
- disconnect the nozzle from the exhaust pipe of the serviced vehicle;
- pull slightly the hose, until it gets unblocked, so the hose starts lifting to its home position;
- stop the extraction fan.

For a quick nozzle replacement it is suggested to use a quick-connector manufactured by KLIMAWENT S.A.

## 7. OPERATIONAL USE

Operational use of the device does not require any additional technical supervision routine. In cases where the location of use is changed – repeat the steps mentioned in Section 6 of the present Use and Maintenance Manual (regarding the assembly and adaptation of the ventilation system to new conditions).

**In the course of operational use, follow the rule, the vehicle engine must not run at maximum rotations for longer than 60 seconds.**

In case when defective function is by noise or visually noticed, follow the steps as mentioned in Section 8 below.

## 8. TROUBLESHOOTING GUIDE

Table No.2

	Problem	Possible reason	Corrective action
1.	Abrupt and significant drop in the intake air volume	Solid element, foreign object being obstacle / barrier for the flow got stuck in the suction nozzle	Localise the barrier object and remove it
		Permanent deformation of the hose	Replace the hose for new
2.	Abrupt and significant drop in the intake air volume along with increased noise of the fan	Improper impeller rotation sense	Change the phase connection sequence
3.	The exhaust hose became overheated and damaged	The nozzle was connected at the vehicle exhaust pipe while its engine was running but the fan was not switched on	Replace the damaged hose section for new. Do not connect the nozzle before the extraction fan is started
		The vehicle engine has too high parameters (cubic capacity or rotations)	Replace the damaged hose section; Engine tests should not be performed at too high rotations of the engine
4.	The exhaust hose is winding down with difficulties, not smoothly (too high pulling force)	The worm gear is defective or the rope is jammed	Contact the manufacturer
5.	The hose lifts to a certain height only, and does not reach its home position.	Damage of the gas spring	Replace the gas spring
		The rope fell out of the recoiling disk	Put the rope back onto the recoiling disk, or contact the manufacturer
6.	The hose lifts at too high speed	Damage of the gas spring	Replace the gas spring
7.	The hose does not lift at all	Damage of the gas spring	Replace the gas spring
		The rope of the gas spring is broken	Replace the rope for new or contact the manufacturer

## 9. MAINTENANCE

It is important to protect the exhaust hose from getting polluted with oil and lubrication grease and especially from squeezing with the vehicle wheels. After one year of operational use, submit the extractor to a detailed technical revision.

During the revision especially concentrate on following elements:

- exhaust hose
- lever mechanism – to release the nozzle
- rope / cord of the balancer

In case when any of the above mentioned elements are defective, contact the manufacturer to undertake repair or to replace the faulty part.

Requirements for technical revision of the extraction fan are in the Use and Maintenance Manual of the given fan.

**The fan can be submit to technical revision exclusively after it is disconnected from the power supply system.**

## 10. OCCUPATIONAL HEALTH AND SAFETY

Start up and the operational use of the Stationary Balancing Extractor are admissible after getting acquainted with the contents of the present Use and Maintenance Manual. The extractor will not cause hazard, under the condition it is firmly and correctly installed on the wall or other element of the building structure.

**For safety reasons, the extraction 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.**

**All repairs should be executed after the fan is switched off and the motor disconnected from the power supply (isolating switch).** Important is to examine the impeller rotation sense of the fan according to the arrow on the housing (three-phase motors only).

**Due to safety, while the hose-nozzle assembly is being lifted (after its disconnection from the vehicle), please guide manually the nozzle, until it reaches its home position.**

## 11. TRANSPORT AND STORAGE

Extractors ought to be placed in cardboard packages and in them they should be stored in packages in a dry rooms and areas of efficient ventilation. Do not put one device on top of another (no stacking). For the time of transport the elements of the system ought to be protected from overturn and displacement / slide.

## 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: **Stationary Balancing Extractor**

*type / model:* **OBS/P**

*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: