

USE AND MAINTENANCE MANUAL



Filtering unit TENDER VAC 200

Contents:

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

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 **TENDER VAC 200** filtering unit.



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 **TENDER VAC 200** 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);

2014/35/EC Directive of the European Parliament and of the Council of the 26 February, 2014 on the harmonisation of the laws of the Member States, relating to the making available on the market of electrical equipment designed for use within certain voltage limits / Official Journal EC L96 of the 29.03.2014;

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 60204-1:2018-12 Safety of machinery – Electrical equipment of machines – Part 1: General requirements

EN ISO 13857:2010 Safety of machinery – Safe distances to prevent hazard zones from being reached by upper and lower limbs

2. PURPOSE

As a high-pressure category **TENDER VAC 200** filtering unit efficiently removes dust-gaseous impurities and provides a perfect capture of any contamination directly at the place of emission. The appliance is irreplaceable in extraction during laser rubber cutting, processing of plywood, plexi, acryl and other materials, as well as during various processes emitting the irritating smell, i.e. in chemical- and pharmaceutical labs.

It is a perfect solution for capturing the pollutants directly from extraction hoods of manual tools during the cutting or grinding the rubber or other materials, where unpleasant smell is arising. The filtering unit is designed for dry impurities, without aggressive properties and without substances creating explosion hazard.

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 appliance from mechanical damage.
- Maintenance can be carried out exclusively by an authorised person.
- The filtering unit cannot be used for extraction of the air containing viscous and aggressive contaminants that would damage the filters, or for dusts creating explosion hazard.
- **In the course of operational use, any ignition sources, i.e. cigarettebutts / embers must not get drawn into the filtration chamber.**

4. TECHNICAL DATA

Table No.1

Type	Maximum vacuum of the suction turbine	Suction efficiency	Motor rate	Supply voltage	Acoustic pressure level	Weight
	[Pa]	[m ³ /h]	[kW]	[V; Hz]	[dB(A)]	[kg]
TENDER VAC 200-S	30000	225	1,6	230; 50	72	55
TENDER VAC 200-A	30000	225	1,6	230; 50	72	55

Spare parts

Table No.2 – Cartridge filter

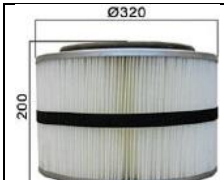
	Type	Weight [kg]	Filtration efficiency [%]	Remarks
	PN032032U	4,2	99,9	replacement frequency 1 – 2 years

Table No.3 – Absolute filter


	Type	Weight [kg]	Class	Filtration efficiency [%]	Remarks
	FA-13/50	4,2	H14	99,995	filtration material – glass nonwoven (spunbond), formed into a pack obtained by mini-pleat technology; replacement – after reaching the limit resistance 500Pa

Table No.4 – Activated carbon


	Type	Weight [kg/m ³]	Remarks
	ORGANOSORB 10CO	500	Weight of the activated carbon in the device: 15kg; Replacement frequency of the carbon bed ought to be evaluated in organoleptic way; in average the carbon longevity can be assumed within limits of 200 hours of the device use

Table No.5 – Turbine

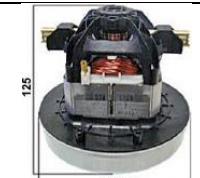
	Type	Weight [kg]	Remarks
	AS 309,5	1,4	replacement frequency approximately after 1000 hours of use

Table No.6 – Additional equipment

Name	Type	Remarks
dust collecting nozzle	SC-50	–
pipe	S-50	–
connector	Z50/44	–
hose	PCV FLEX-44	an extraction hose – standard length 15 metres

5. STRUCTURE AND FUNCTION

TENDER VAC 200 consists of subsequent elements:

- cylindrical steel housing
- high-vacuum suction turbine
- cartridge polyester filter – filtration efficiency 99,9%
- rotary nozzle – for regeneration of the cartridge filter
- suction socket – to connect the hose $\varnothing 44$ mm
- HEPA absolute filter – class H14
- absorber with granulated activated carbon – to absorb the gaseous fraction
- compressed air valve at the connection to the rotary nozzle – manual or electromagnetic, depending on the control mode
- control unit (version for manual- or automatic control)
- waste container – with a set of castor wheels to displace the filtering unit

Each of the models of TENDER VAC 200 includes two options of control

- standard control (manual) TENDER VAC 200-S
- automatic control TENDER VAC 200-A

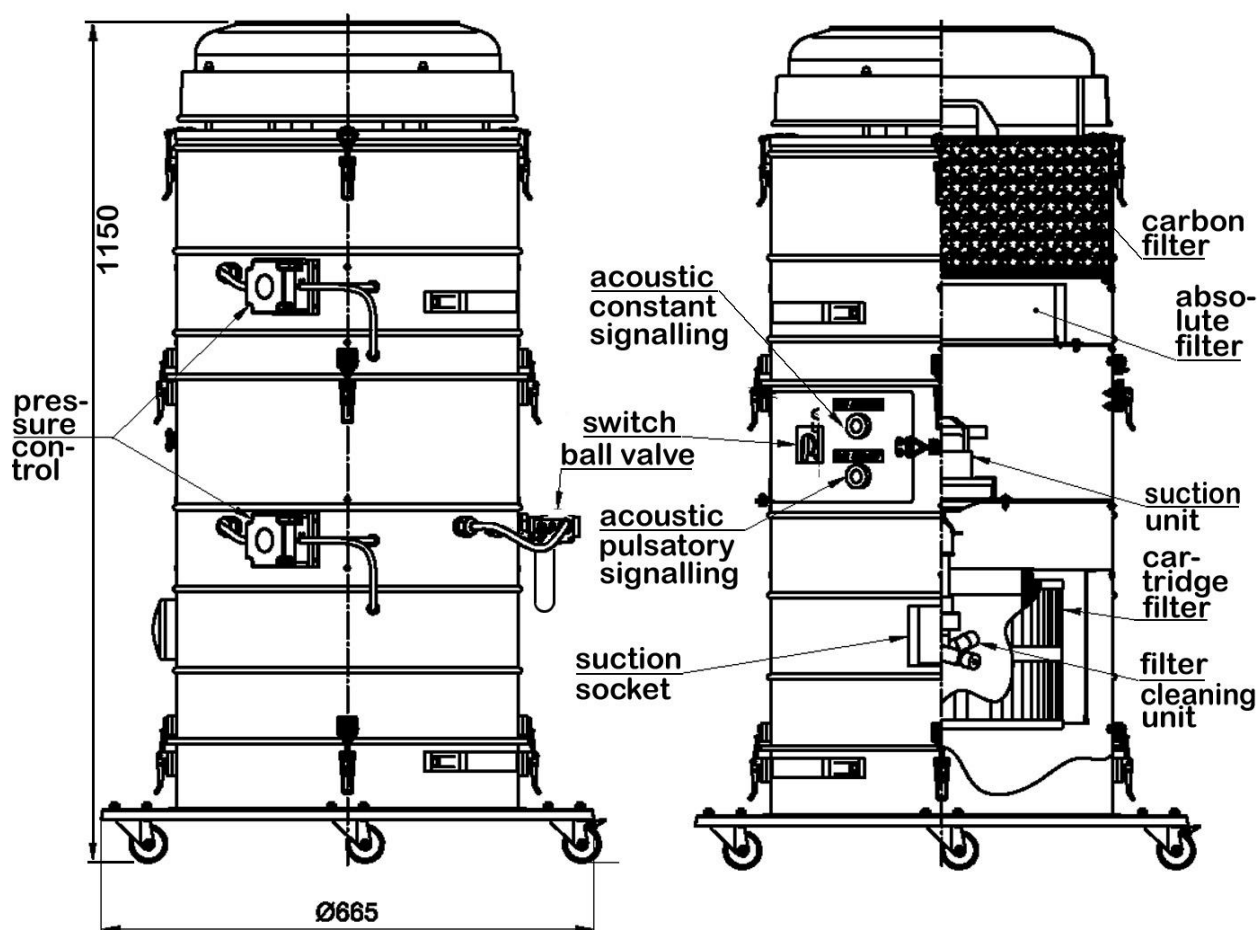


Fig. No.1 – TENDER VAC 200-S – Structure, dimensions

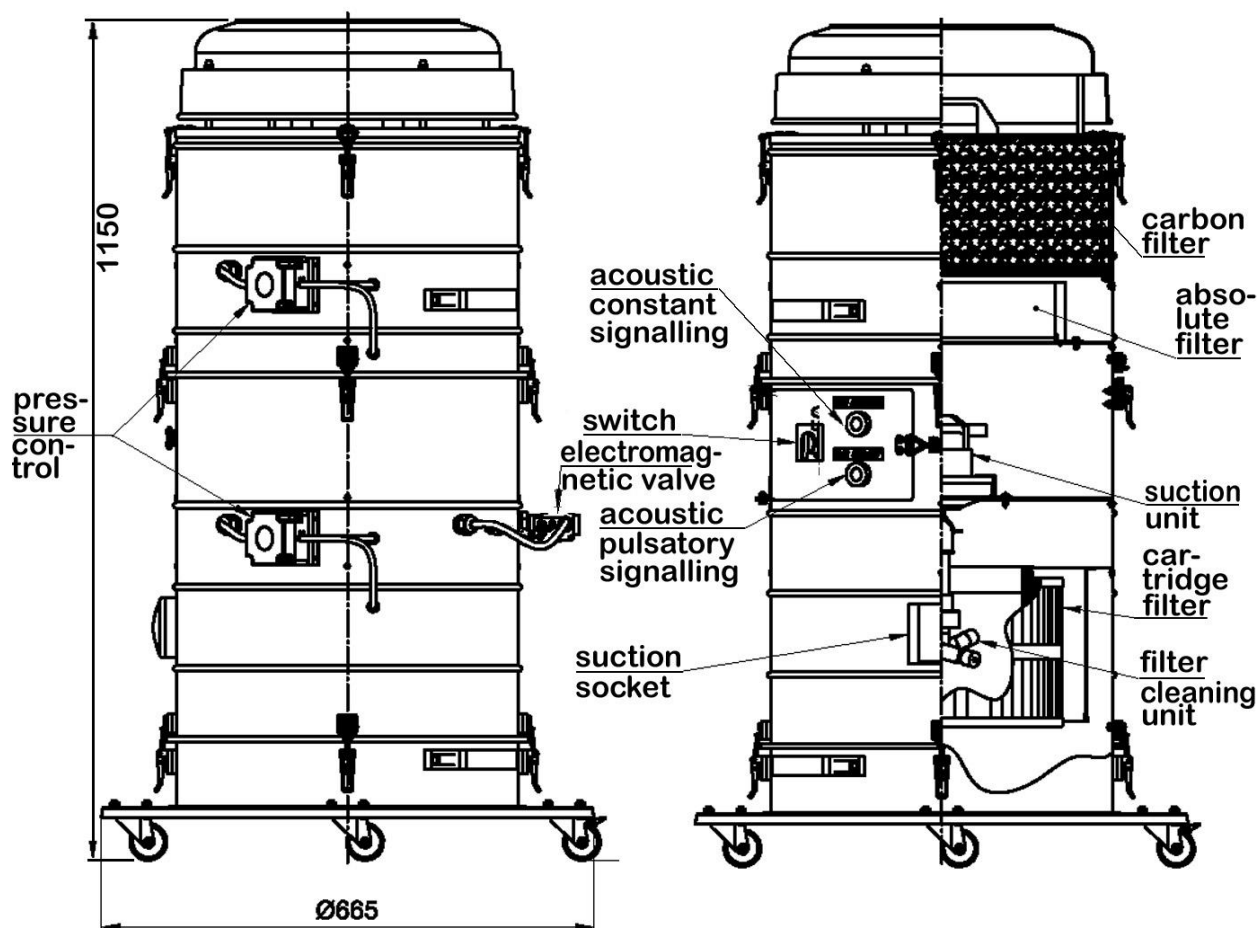


Fig. No.2 – TENDER VAC 200-A – Structure, dimensions

6. ASSEMBLY AND STARTUP

TENDER VAC 200 requires connection to the external compressed air system of pressure at least 0,6 MPa. The device is energised by a 5 metres length power supply cable with a plug 230V; 50Hz.

The appliance is manufactured in two versions varying in control mode:

TENDER VAC 200-S is operated manually by a motor switch – before that the compressed air valve should be opened for several seconds.

TENDER VAC 200-A is started by means of a switch – first the electromagnetic valve opens automatically for 3 seconds – subsequently the turbine is operated automatically.

7. OPERATIONAL USE

The appliance has to be connected with a local exhaust by means of a Ø44 mm hose. Depending on the process, it can be a processing machine, suction housing or ERGO-MINI extraction arms. Dust contamination is captured by the cartridge filter and absolute filter, whereas the activated carbon bed absorbs the majority of chemical compounds, such as: styrene, toluene, alcohols, phenol, petrol and many others.

During the filter regeneration, the dust is struck off and falls into the waste container.

CAUTION:

Activated carbon ought to be submit to disposal in accordance with the valid regulations of the country.



Photo No.1 – TENDER VAC 200 – Example of application

In case when any of the filters reaches the limit pollution degree, pressure controls (pressostats) activated the acoustic signals, subordinated to the subsequent filters. Cartridge filter ought to be regenerated by opening the compressed air valve, whereas the absolute filter should be replaced for a new one.

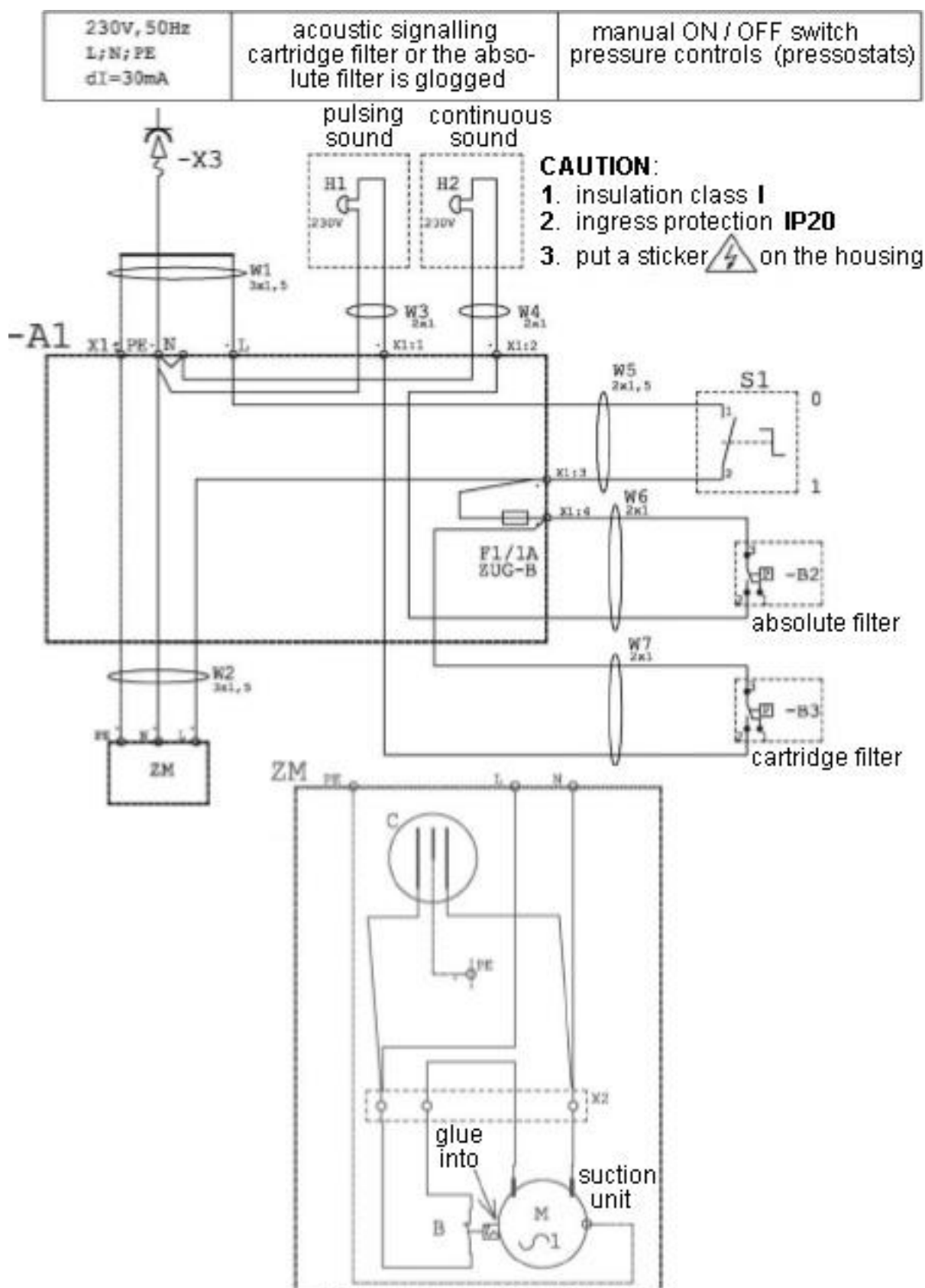


Fig. No.3 – TENDER VAC 200-S – Connection Diagram

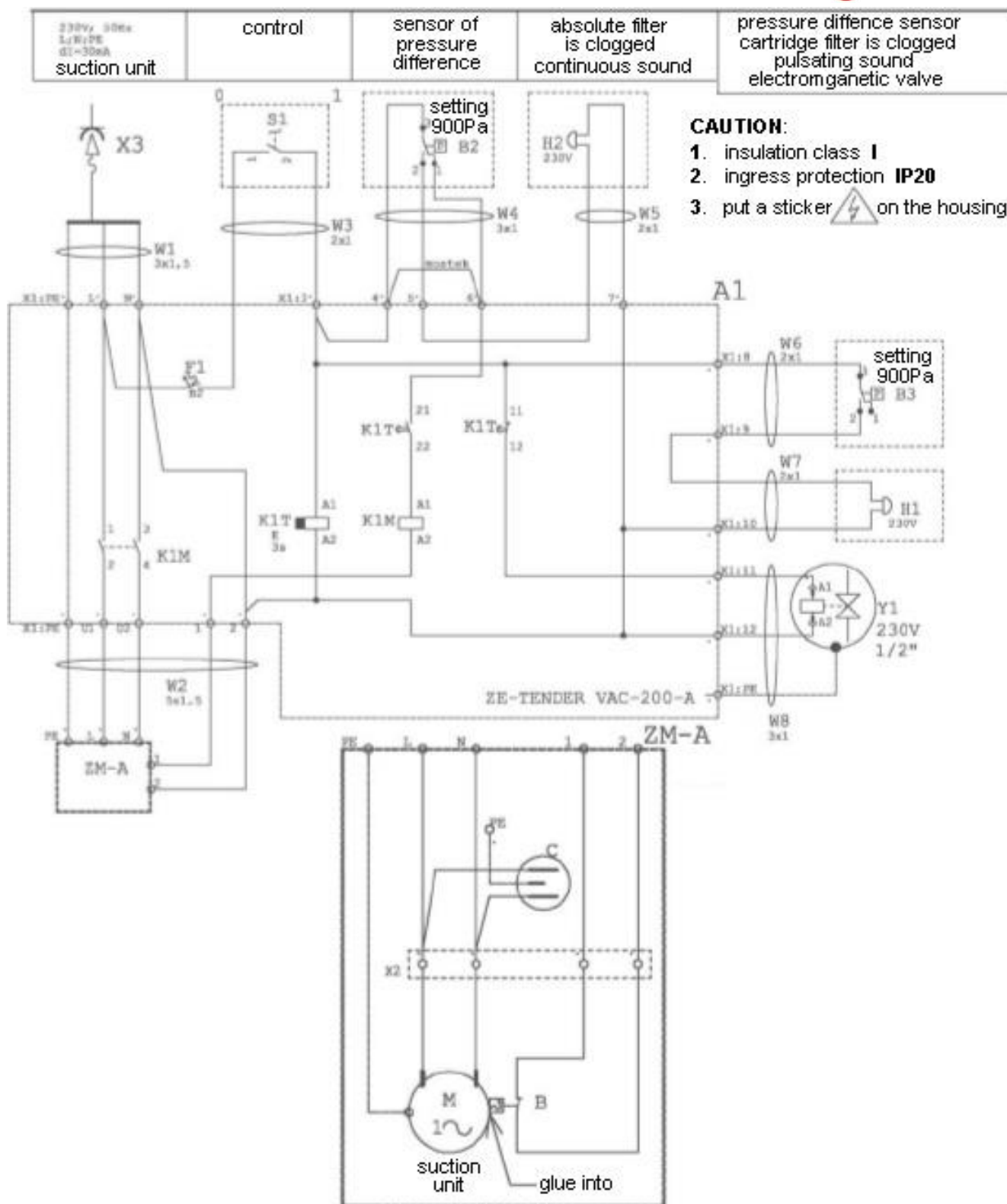


Fig. No.4 – TENDER VAC 200-A – Connection Diagram

8. TROUBLESHOOTING GUIDE

Table No.7

	Problem	Possible reason	Corrective action
1.	the suction capacity decreases along with the increased noise level	an obstacle element / barrier throttling the air flow got stuck in the nozzle or suction hose	unclog the nozzle / hose
2.	impurities are emerging outside the device	the filter is faulty the waste container is not covered tightly	replace the filter close correctly the waste container
3.	unpleasant irritating smell is perceptible near the device	the absorber with activated carbon is polluted	replace the activated carbon bed

9. MAINTENANCE

In the course of operational use, maintenance consists in periodical emptying the waste container, systematic filter cleaning and replacement of the cartridge filter. The cartridge filter ought to be replaced every 12 – 24 months, depending on the intensity of use. The construction of the device ensure its operational use without continuous everyday technical supervision. In case when defective function is by noise or visually noticed – undertake its revision. During the revision check: the state of the filter, technical state of the suction turbine – according to the appropriate rules of operational use of electrical drive devices, as well as check the electrical and pneumatic connections.

Revisions ought to be carried out exclusively at the device disconnected (unplugged) from the power supply system and from the external pneumatic installation.

10. OCCUPATIONAL HEALTH AND SAFETY

For the safety reasons, connect the device to the power supply according to the being in force regulations within the range of personal protection against the electrical shock and the short-circuit- and overload effects.

Any connection activities ought to be executed by a person of adequate qualifications. **Circuits of the sockets ought to be equipped with short-circuit- and differential-current protections (see Connection Diagram).** The appliance meets the requirements of the 2006/42/EC Directive and do not require additional protections for a safe operational use.

CAUTION: Any repair ought to be performed after the fan is switched off and disconnected from the power supply system. In overall, follow strictly the general rules of Occupational Health and Safety.

11. TRANSPORT AND STORAGE

The appliance ought to be stored in a dry and well ventilated room. The area should be free from aggressive substances. During the transport protect the device from overturn and an uncontrolled slide / displacement. The transport / reloading ought to eliminate the hazard of damage, scratching, indents of the housing. Pay attention that the packages would not get damaged, and the markings on the surface would not get obliterated or detached.

12. TERMS OF WARRANTY

The period of warranty for the purchased device is indicated in the **Card of Warranty**. The warranty does not comprise:

- device failures caused during the use which is in contradiction with the purpose of application and with the present Use and Maintenance Manual,
- mechanical damage and malfunctions caused by User,
- changes / structural modifications undertaken by User on one's own,
- malfunctions resulting from the improper transport, storage or incorrect maintenance.
- inefficiency following from the normal operational exhaustion,
- suction units – as they have restricted operational life; **their longevity is estimated for 1000 hours of continuous work.**

Infringement of the instructions of the present Use and Maintenance Manual 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: **Filtering unit**

type / model: **TENDER VAC 200**

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);

2014/35/EC Directive of the European Parliament and of the Council of the 26 February, 2014 on the harmonisation of the laws of the Member States, relating to the making available on the market of electrical equipment designed for use within certain voltage limits / Official Journal EC L96 of the 29.03.2014;

The appliance meets the requirements included in:

Meets the requirements of the following harmonised standards:

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

EN 60204-1:2018-12 Safety of machinery – Electrical equipment of machines – Part 1: General requirements

EN ISO 13857:2010 Safety of machinery – Safe distances to prevent hazard zones from being reached by upper and lower limbs

place, date

*signature of the
authorised person*

*name, surname,
function of the signatory*

NOTES:

NOTES:

NOTES: