



AUDION ELEKTRO®

Audionvac Digital

VMS 123-153-153V(C)-163-163B



MANUAL

VMS 123 t-m 163B ENG. Rev.07



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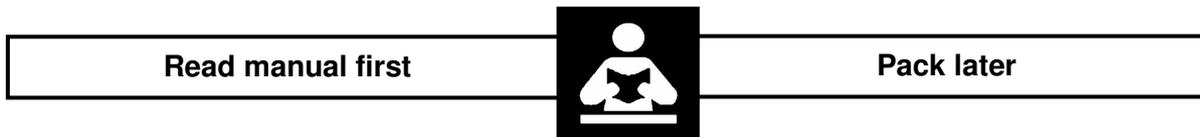
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INTRODUCTION

With the purchase of this vacuum chamber machine you will be able to pack a great variety of products. To use the vacuum chamber machines Audion made sure that all the machines, from the smallest to the biggest model, fulfill the greatest demands. Besides the superior quality of the machines they are all very easy to handle.

The machines are qualified for sealing Polyethylene (PE), Polypropylene (PP), Polyethylene/Polyamide (PEPA) or combinations of all the above. We recommend to use the proper materials for the Audionvac machines only.



The manual consists of two parts. In the first part, the user manual, all important information will be discussed like safety precautions or programming the machine. Also maintenance and possible solutions for eventual problems are discussed. The final section of the first part will discuss the guarantee and liability. In the second part, the technical part, all technical data, the pneumatic diagram, the electrical diagram and the exploded views will be discussed.

Make sure, during unpacking, all data on the identification plate are right (Fig. 1.1) and record the information you found on the identification plate in figure 1.1

	AUDION ELEKTRO® P.O.BOX 389, 1380 AJ WEESP, HOLLAND		
TYPE	<input type="text"/>	VOLT	<input type="text"/>
SERIE	<input type="text"/>	WATT	<input type="text"/>
JAAR	<input type="text"/>	HERTZ	<input type="text"/>

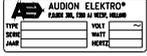
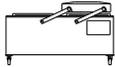
Fig. 1.1: identification plate

The Audionvac is packed in a box. We advise you to store the box so you can transport the Audionvac, if necessary, safely in the future.

PART I: USER MANUAL

1 Precautions

1.1 Explanation of the clip arts

	Break contact between plug and socket
	The socket
	Identification plate with Voltage(V), Frequency(Hz) and Consumption(W)
OK	O.K.
	Fluid
	Long period
	Do not continue, this is dangerous
	Contact Audion Elektro BV or your dealer
	Watch out!
	Reparation/ Maintenance
	Audion Elektro BV
	Symbol for your Audionvac machine
	Temperature meter with boundary conditions
	Empty
	Oil replacement
	Gas-spring of the lid
	The oil level
	Vacuum meter
	Tension of the springs

1.2 Prohibitions

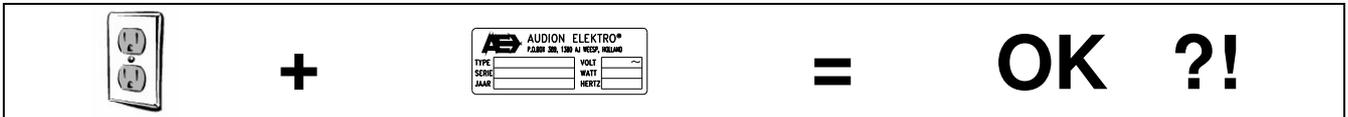


2 Installation

2.1 Description of the workplace

Whenever the model is a table model place it on a firm and stable table. Place the model on the ground in a well ventilated and luminated space when you're dealing with a floor model. Make sure the Audionvac isn't exposed to sunshine, extreme temperatures, humidity, dust or sand.

The Audionvac mustn't be exposed to mechanical shocks and vibrations. Always leave room free around the machine.



Make sure the voltage, consumption and frequency of the power supply are the same as on the identification panel

2.2 Checking the oil level

Make sure the Audionvac is in the OFF position. If necessary switch the main switch to the OFF position (see fig. 3.1) before one can start with the process of connecting the power supply.

In order to be able to check the oil level the machine must be at a flat underground, well leveled.

The oil level glass (figure 2.2b) has been mounted in one of the sides of the machine, or in the backside of the machine. The oil level must lie between the signs: "MIN" and "MAX". For the machines the rule is that the oil reservoir must be filled until **80%**. An exception is the VMS43 from which the oil reservoir must be filled only until **60%**. A little less oil is better than a bit more.

In practice this means that the oil in the oil reservoir mustn't be higher than 2mm above the measurement point in the middle of the measurement-glass.



When the oil reservoir is empty it must be filled with oil first

To replace the oil or to fill the oil reservoir you do the following:

Replacing the oil

- Turn off the machine.
- Loosen the oil drain plug (figure 2.2c) and drain the oil.
- In case the oil drain plug is behind the back plate, remove the back plate.
- When there is no oil drain plug present, the oil level glass functions as drain plug (figure 2.2b).
- Mount the oil drain plug again.
- For further instructions see: "filling oil reservoir"

Filling oil reservoir

- Turn off the machine.
- Unscrew oil filling plug (figure 2.2a) above the oil level glass.
- In case the oil-filling plug is behind the back plate, remove the back plate.
- Pour in new oil and let the oil level stabilize after every little bit.
- Repeat this until the oil level has reached the right level (look at the oil level glass).
- Screw the oil-filling plug back on.
- Mount the back plate again.

Machine with corresponding oil:

VMS43

Shell Vitrea 22
Aral Motanol GM 22
BP Energol CS 22
Texaco Regal R+O 22

VMS53/ VMS113/ VMS123/ VMS133/
VMS153/ VMS 153V/ VMS163/
VMS163B/ VMS153FH/ VMS163FH/
VMS173

Shell Vitrea 32
Aral Motanol GM 32
BP Energol CS 32
Texaco Regal R+O 32

VMS193/ VMS223/ VMS233/ VMS253/
VMS263/ VMS283/ VMS333/ VMS503/
VMS883/ VM203/ VM243/ VM273/
VM303

Shell Vitrea 100
Aral Motanol GM 100
BP Energol CS 100

Hint: It is easier to drain the oil when it is warm. When possible keep the machine running for a few minutes before the draining of the oil. The oil will become warm then.

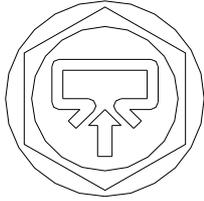


Figure 2.2a: oil filling plug

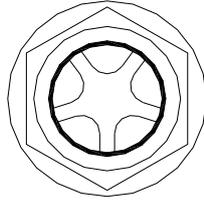


Figure 2.2b: oil level glass

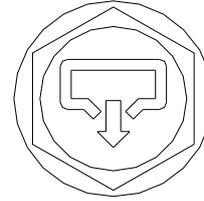
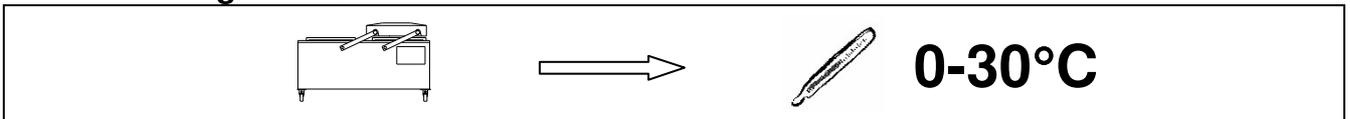


Figure 2.2c: oil draining plug

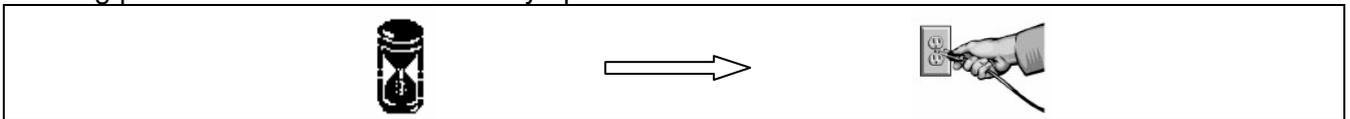
2.3 Taking into use



The surrounding temperature must lie between 0-30 degrees Celsius

Put the plug in a socket which has an earth connection and is fused max. 16 Amp. After the Audionvac has been connected to the mains voltage the machine can be taken into use. Turn on the main switch. With the insert plates the product can be placed on right level (see figure 2.3).

The insert plates reduce the volume of the vacuum chamber; which means a shorter vacuuming time. Now the proper amount of insert plates is in the machine you can put the bag in the chamber. Put the opening of the bag over the seal bar (see figure 2.3 for an explanation of the proper way). Adjust the vacuuming and sealing time. (see chapter 3). Close the lid. After the vacuuming and sealing process the lid will automatically open.



When the machine is not being used for a longer period, shut off the power supply

Check the vacuum and the produced seal. Adjust the vacuuming time into a longer period when the vacuum is too low; and vice versa. When the seal is not strong enough adjust the sealing time into a longer period. When the seal looks melted or when the bag tears where the seal is the sealing time has been too long. The right sealing time has to be found by trial and error. The material and the thickness of the material determine the sealing time.

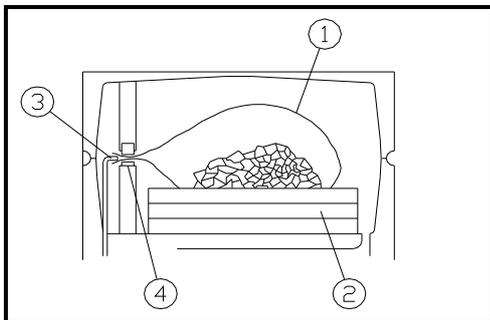
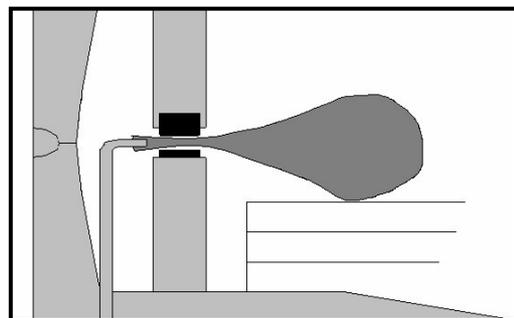


Figure 2.3: drawing and details of bag in chamber

- 1: Vacuum bag
- 2: Insert plates
- 3: Gas nozzle
- 4: Seal bar



3 Programming

The programming can be done in two ways. The first way is with an open lid. This way is being explained in § 3.1 (normal) and in § 3.2 (for the sensor option). The second way is with a closed lid. During the process. This way is being explained in § 3.3 (normal) and in § 3.4 (with a sensor option). After all the in § 3.5 the possibility of switching on or off the gas option will be explained. In figure 3.1 you can see the control panel. Every part or switch has got a number. All of them will be explained in further detail.

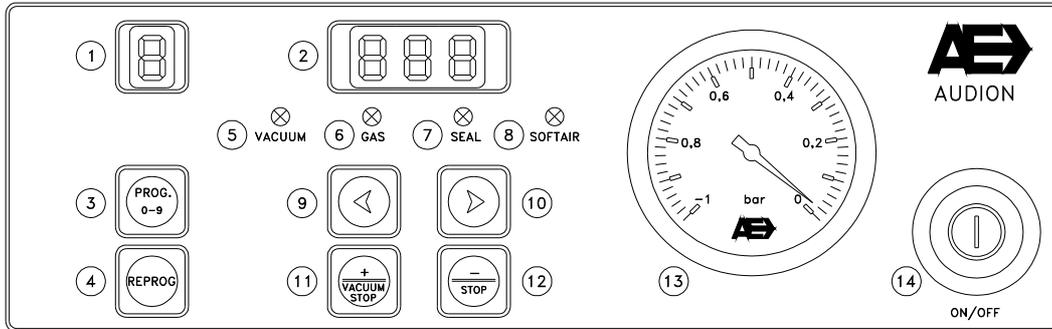
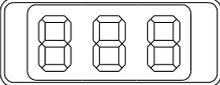


Figure 3.1: Control panel

	<p>Display (1): This display shows the program number of the active program.</p>
	<p>Display (2): In this display you can see the process times. When there is a built in gas sensor the pressure is on the right side, in a percentage.</p>
	<p>Programming button (3): With this button you can select the right button.</p>
	<p>Re-Programming button (4): This button is being used to determine the settings of a program; or to fix new settings.</p>
<p>VACUUM GAS SEAL SOFT AIR</p>	<p>Process display (5,6,7 en 8): During the setting of programs or during the actual use of the machine this display shows what process is active at the moment.</p>
 	<p>Process determination button (9 en 10): These buttons are being used to choose the wanted process in a program (vacuum, gas, seal or soft-air). When the process is active it shows in the display.</p>

	<p>Combination button [+]/ en [vacuüm stop] (11): This button has to be used to increase a setting during the programming. For instance a longer vacuuming time. During operational use of the machine this button has the function of immediate stop button of the vacuuming process. The process will stop and automatically continue with the next process.</p>
	<p>Combination button [-]/ en [stop] (12): This button has to be used to decrease a setting during the programming. For instance a shorter vacuuming time. During operational use of the machine this button has the function of immediate stop button of the whole cycle of processes. The process will automatically start flushing air into the room and the lid will open.</p>
	<p>Vacuum meter (13): The vacuum meter shows the percentage of vacuum inside the chamber. The maximum level of vacuum is about 99.95 percent. The vacuum meter will show '1' The minimum level of vacuum will be when the pressure outside the chamber is the same as inside the chamber. The vacuum meter will show '0'</p>
	<p>ON/OFF switch (14):</p>

3.1 Programming with open lid

- 1) Open the lid and turn on the machine (button 14 fig. 3.1)
- 2) Select the program that has to be (re) –programmed (button 3 fig. 3.1).
- 3) Press **[REPROG]** (button 4 fig. 3.1) until the number in the display (display 1 fig. 3.1) starts flashing.
- 4) Select the vacuum, gas-, seal- or soft air process (LED nr. 5,6,7, or 8) that has to be programmed (button 9/10 fig. 3.1).
- 5) With the **[+]** or **[-]** (button 11+12 fig. 3.1) the desired time can be set; one can see the time in the display (display 2, fig. 3.1).
- 6) When desired step 4 and 5 can be repeated for the other processes. So first setting the vacuum time after that the gassing time and finally the sealing.
- 7) By pressing the **[REPROG]** button again (button 4 fig. 3.1) the newly set values are being stored.
- 8) The program number in the display is still flashing. At the moment the display stops flashing, the machine is ready for use again.

Gas and Soft air are options. When they haven't been installed they can't be selected

3.2 Programming with open lid in case of a sensor option

- 1) Open the lid and turn on the machine (button 14 fig. 3.1)
- 2) Select the program that has to be (re) –programmed (button 3 fig. 3.1).
- 3) Press **[REPROG]** (button 4 fig. 3.1) until the number in the display (display 1 fig. 3.1) starts flashing.
- 4) Select the vacuum (Vac= nr 5 fig. 3.1), gas- (Gas= nr 6 fig. 3.1), seal- (Seal=nr 7 fig. 3.1) or soft air- (Soft air= nr 8 fig. 3.1) process that has to be programmed (button 9/10 fig. 3.1). The LED of the concerning process is lit. (When the vacuuming process has been chosen the following goes: After one push on the button of the process-choice one can adjust the desired percentage of vacuum. When the level of 99% is being selected (see next step), the Vacuum Plus Time appears (the extra time the machine will vacuum after the 99% has been reached) in the display after the second push on the button. This time can also be set with the following step. A third push on the button initiates the next process. When a value of less than 99% has been set the following text: “OFF” will appear on the display after a second push on the button. This means it is not possible to adjust the Vacuum Plus time.
- 5) With the **[+]** or **[-]** button (button 11+12 fig. 3.1) the desired percentage- and time value can be set. The values can be seen in the display (display 2, fig. 3.1).
- 6) When desired step 4 and 5 can be repeated for the other processes.
- 7) By pressing the **[REPROG]** button again (button 4 fig. 3.1) the newly set values are being stored.

Gas and Soft air are options. When they haven't been installed they can't be selected

3.3 Programming with closed lid

- 1) Select the program that has to be (re) –programmed (button 3 fig. 3.1).
- 2) Press **[REPROG]** (button 4 fig. 3.1) until the number in the display (display 1 fig. 3.1) starts flashing.
- 3) Close the lid. The machine will automatically start with the first process; the vacuuming.
- 4) The vacuum meter will start turning to '-1' (meter 13 fig. 3.1). When the desired vacuum has been reached you can push the 'Stop Vacuum' (button 11 fig. 3.1). When a the maximum vacuum is desired the meter has to be at least 5 seconds on '-1' before pushing the 'Stop Vacuum' button. The next process automatically starts. In the meantime the desired time for the desired percentage vacuum has been stored.
- 5) The gassing process has begun. The vacuum meter is turning to '0' again. When the desired gas pressure has been reached you can push 'Stop (button 11 fig. 3.1). Watch out! The gas pressure mustn't lie between 0 and 0.3. A minimum difference in pressure between the inner chamber and the outer air must be bigger than 0.3 (or 30%). Otherwise there is a big chance that there will be a very bad or no seal at all. The next process will automatically start.
- 6) The next process is the sealing time. However, this one cannot be programmed. It is only adjustable with an open lid. After the automatic seal time there is the next process.
- 7) The time in the soft air process is increasing while the vacuum meter turns back to 0. After reaching the right time one has to push the 'Stop Vacuum' (button 11 fig. 3.1). Now automatically the air will flush in.
- 8) The lid will open; while the other values have been set in the program.

The Gas and Soft air process can only be terminated while programming with an open lid.

Gas and Soft air are options. When they haven't been installed they can't be selected

3.4 Programming with closed lid in case of a sensor option

- 1) Select the program that has to be (re) programmed (button 3 fig 3.1)
- 2) Push **[REPROG]** (button 4 fig 3.1) until the number in the display (display 1 fig 3.1) starts flashing.
- 3) Close the lid. The machine automatically starts in the first cycle; the vacuuming cycle.
- 4) The vacuuming will proceed until 99%. After reaching 99% the Vacuum Plus Time will start. When a maximum vacuum is desired the pointer has had to be for at least five seconds on the '-1' sign. After the desired time has passed one has to push the "Stop vacuum" button (button 11 fig 3.1). The next process automatically starts. The desired time for the vacuuming process has been stored.
- 5) The gas process has begun. The vacuum meter starts moving back to '0'. When the desired pressure has been reached one can push the "Stop vacuum" button. (button 11 fig 3.1) Watch out! The pressure inside the chamber mustn't be between 0 and 0.3 because this leads to a bad seal, or not a seal at all. The next process will automatically start.
- 6) The next process is the sealing time. This cannot be programmed. Sealing time can only be set with an open lid. After the automatic sealing time the next process will start.
- 7) The soft air time will pass by while the vacuum meter moves back to '0'. After the desired time has passed one has to push the "Stop vacuum" button (button 11 fig 3.1). The air will automatically flush in now.
- 8) The lid will open again; while all desired values have been stored in the program.

The gas process and the Soft air process can only be terminated while programming with an open lid

The gas process and the Soft air process are both options. When these options haven't been installed it's not possible to select them

3.5 Programming service time after replacing the oil

After switching to the operation mode the display could read [Oil]. This means that the operating hours counter is turned on and the set number of operating hours has elapsed. The hour counter is turned off by default but the client or supplier can activate it as a reminder for regular maintenance activities.

When [Oil] is displayed the machine can be still be used as usual but it is advisable to either turn off the hour counter or to reset it.

The following steps can be followed to activate the operation hours counter or to reset it:



Press the "FUNCTION SELECT" Key for at least 3 seconds. After 3 seconds the number of operating hours (per 10 hours) will be displayed for about 2 seconds.

After 2 seconds the originally set number of hours will be displayed (per 10 hours).



When the operation hours counter is turned off, the number of operating hours will not be displayed, instead the message [OFF] will immediately appear after pressing the key for 3 seconds.

The original setting can be modified using the + and – keys (between 0 and 990 hours).

If set to 0 then the next time [OFF] will automatically be displayed. The new settings are stored by using the **[REPROG]** Key. The actual operation hours are then also reset to zero.

After pressing the **[REPROG]** key, the control panel automatically switches over to operation mode.

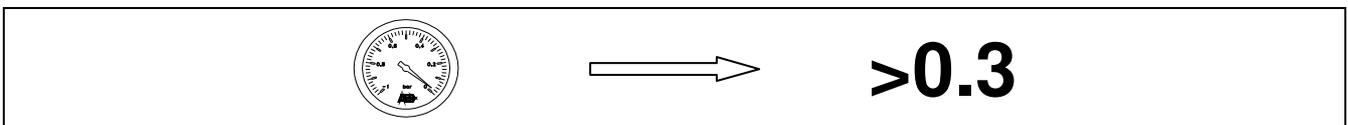
3.6 Programming the gas option

It is not possible to flush gas before the vacuuming process. The vacuuming would take the gas away. Besides this it is not possible to flush gas into chamber when there is no vacuum. During the gas process the vacuum meter mustn't be between the 0 and 0.3. Otherwise there will be a bad seal due to the low difference in pressure between the chamber and the normal atmosphere. Flushing gas after the vacuuming process makes sure that there is no mixture between air and gas. This results in an ideal modified atmosphere packaging (MAP). MAP is the perfect solution for products that can't stand a complete vacuum or for products that have to be preserved very well.



Don't use gas mixes containing over 25% of Oxygen

When there is a possibility to flush gas into the machine the option can be shut off



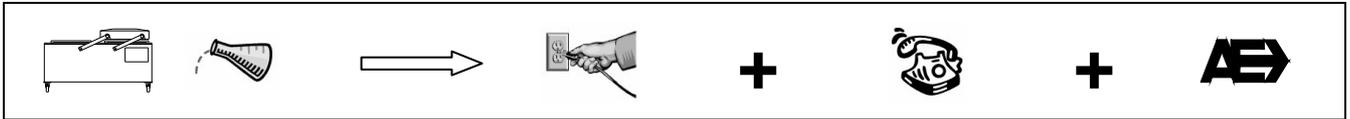
The percentage of vacuum has to be at least 30%

To turn On or OFF the gas function do the following:

- 1 Open the lid and turn on the machine.
- 2 Choose the program you wish to alter and press **[REPROG]** (button 4 fig 3.1)
- 3 Select the "gas" process (button 12 fig 3.1). Choose the process where you normally adjust the gas time or the percentage.
- 4 Push the "-" button (button 12 figure 3.1) until "OFF" appears in the display.
- 5 When the gas function has to be enabled the same has to be done until instead of "OFF" the time or the percentage can be entered.
- 6 To push **[REPROG]** the changes will be stored.

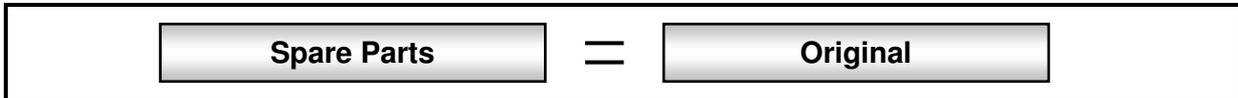
4 Maintenance

The Audionvac is a relatively simple machine which needs very little maintenance. There are a few reparations you can do by yourself. For all the other reparations please contact your dealer or Audion Elektro BV. The schedule mentioned in § 4.1 is for normal use of the machine. When the machine is being used intensively or under extreme circumstances it is necessary to do more frequent maintenance.



When fluid enters the machine take socket out and call Audion Elektro BV.

To keep the machine in optimal condition there is a fully automatic conditioning program. This program makes sure the oil doesn't get contaminated with moisture or other watery liquids. Also corrosion as a result of too much water is being prevented by the program. It is recommended to use the program for at least one time a week.



Only use original parts recommended by Audion Elektro BV.



4.1 Regular maintenance

Daily maintenance	
Vacuum chamber and insert plates	Clean the lid, insert plates and chamber with a damp cloth. Treat the rubber strip in the lid with talk powder. Warning! The transparent lid should never be treated with synthetic cleaner as it weakens the material
Vacuum pump	Run the conditioning program "C" after you cleaned the machine
Weekly maintenance	
Seal bar	Check the condition. Repair if necessary
Rubber strip on the lid	Check the condition; replace if necessary
Oil reservoir	Check the oil level; replenish if necessary (see § 2.2)
Half year maintenance	
Oil reservoir and oil filter	Change the oil and, when it is there, the oil filter (see § 2.2)
One year maintenance	
Vacuum hose and pipes	Check the condition. Repair if necessary because a leak means vacuum loss
Silicone rubber of the press bar	Check the condition. A bad rubber can lead to a bad seal. Replace if necessary
Oil exhaust filter in the pump	Check the condition. Replace if necessary. Warning: If oil spray is at any time visible, replace the oil exhaust filter immediately. Do not wait until the 5-year maintenance check. This prevents damage to the pump.
Springs on the lid	Check the condition. Look for corrosion. Replace if necessary
Five year maintenance	
Gas springs on the lid	If these have not been replaced, they should be now. If the machine has been exposed to aggressive materials, then the spring should be replaced more often.
Oil filter in the vacuum pump	If these have not been replaced, they should be now.
Electrical wiring	Let you dealer check these and repair if necessary

4.2 Maintenance of the seal bar

The maintenance of the seal bar consists of:

- Cleaning the Teflon and controlling the Teflon for burned places.
- Check the seal wire and replace when necessary

4.2.1 Removing the seal bar

- Switch off the machine.
- Pull the seal bar out of the machine.

4.2.2 Replacing the Teflon

When the Teflon is worn out, has burned marks or wrinkled it must be replaced.

- Remove the seal bar (as in § 4.2.1) and carefully remove the Teflon.
- Check the seal wire. When it is damaged directly replace it (see § 4.2.3)
- Remove all grease from the seal bar.
- Cut a piece of Teflon tape to length and place it evenly on the sealing bar. Rub the Teflon tape until the sealing wire can be seen clearly through the tape. Cut off the ends of tape.

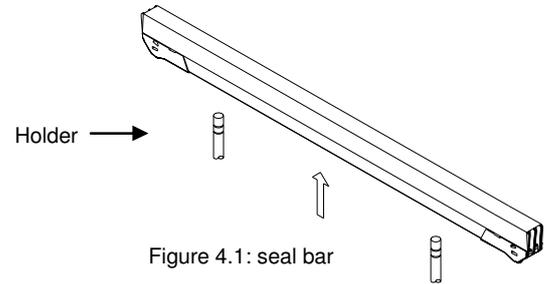


Figure 4.1: seal bar

4.2.3 Replacing the seal wire



Figure 4.2.1

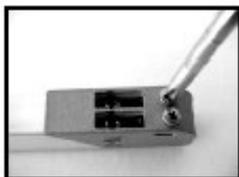


Figure 4.2.2



Figure 4.2.3

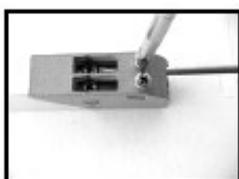


Figure 4.2.4



Figure 4.2.5



Figure 4.2.6

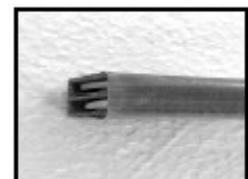


Figure 4.2.7

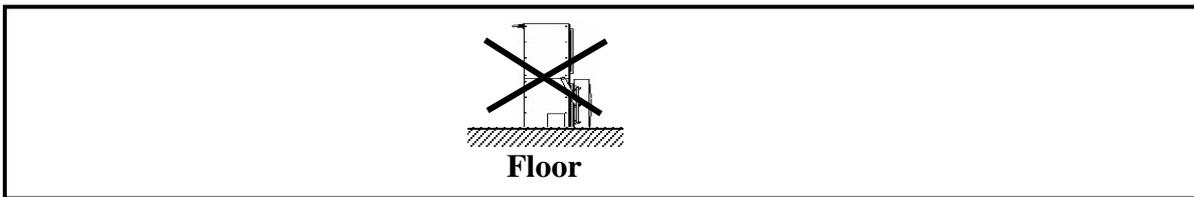
- Remove the seal bar and Teflon (fig. 4.2.1).
- Loosen the screws at both sides of the seal bar (fig. 4.2.2) and remove the seal wire(s).
- Remove the old Teflon and clean the seal bar (fig. 4.2.3).
- Cut the new seal wire with an extra 15 cm length.
- Place the seal wire in the clamp on the sealing bar and tighten the screws (fig. 4.2.4).
- Put the sealing bar in a bench vice, with the sealing wire facing down and tighten the sealing wire (fig. 4.2.5).
- Stick the other end of the sealing wire into the clamp and tighten the clamp enough to hold the wire. First, use pliers to tighten the sealing wire, then use a wrench to tighten the screws of the clamp. The end of the sealing wire that stick out must be cut off (fig. 4.2.6).
- Cut a piece of Teflon tape with a length of the seal bar + 5 cm.
- Place the new Teflon over the seal bar (fig. 4.2.7).
- Put the seal bar back into the machine.

4.3 Maintenance of the vacuum pump

In case of irregular or intensive operating there is a conditioning program. When a vacuum pump doesn't reach the ideal temperature there is a chance the vacuumed air contains water which leads to condensation inside the pump. Water in the pump can lead to corrosion, which can be very harmful for then pump. In case of intensive use there is a chance of too much humidity in the pump too.

To start the program do the following:

Push the "Prog" button until you see "C". The machine is now ready for the conditioning program. By closing the lid the program will start. During 15 minutes the program will successively vacuum and flush air. In the display you can see how far the program has come. After 15 minutes the program will end. In the display you can see the "C" again. With the "Prog" button you can select another program.



Never turn over the machine. This can damage the pump.

4.4 Silicone rubber of the pressing bar

When the silicone rubber has been damaged it has to be replaced. A damaged rubber results in a bad seal.

- Take the rubber out of the pressing bar.
- Cut the new rubber as long as the old rubber.
- Push the new rubber into the pressure.

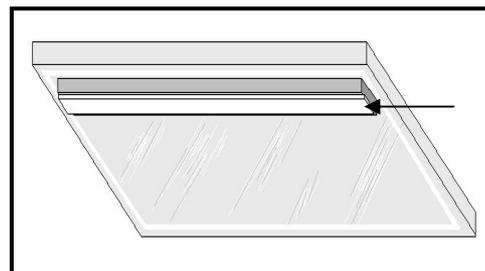


Figure 4.3: Silicone rubber of the pressing bar

4.5 Lid rubber

The lid rubber prevents leaking of the chamber. The rubber should only be cleaned with a damp towel. Synthetic detergents could have the rubber being dried out. Regularly treat the rubber with talcum powder. When the lid rubber is in a bad condition it should be replaced.

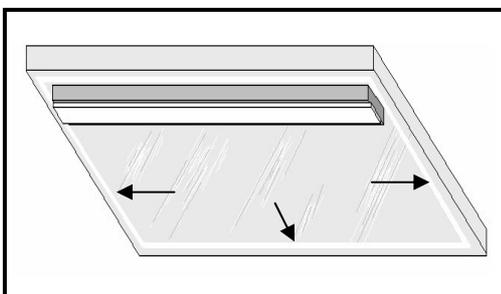
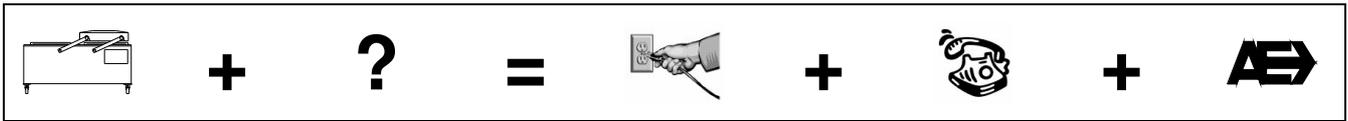


Figure 4.4: Lid rubber

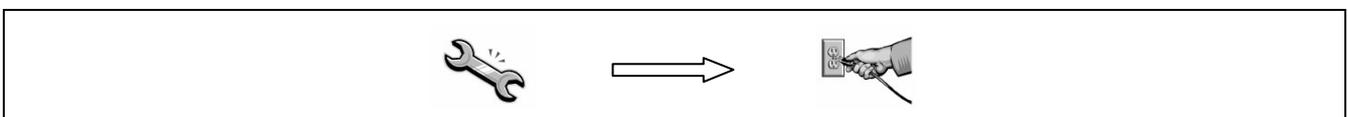
- Pull the rubber out of the lid.
- Cut the new rubber as long as the old rubber. Cutting straight prevents leaking.
- Push the new rubber into the lid (start in the middle of the backside).

5 Problem solving



For questions please disconnect the power and contact your dealer or Audion Elektro BV.

Problem	Possible cause	Solution
The machine does not work.	<ul style="list-style-type: none"> The plug is not inserted in the wall socket. The fuse in the wall socket is melted. Internal error 	<ul style="list-style-type: none"> Insert the plug in the socket. Replace the melted cartridge. <p>WARNING:</p> <ul style="list-style-type: none"> To prevent fire and/or other irreparable damage, replace fuses with fuses of the same type and ampere.
The vacuum bag has not sealed correctly.	<ul style="list-style-type: none"> The vacuum bag has not been placed correctly over the sealing beam. The sealing time is too high or too low. The silicone rubber in the counter beam is damaged or worn out. The Teflon tape is damaged. The opening of the vacuum bag is obstructed. 	<ul style="list-style-type: none"> Place the vacuum bag tightly and evenly over the sealing beam. Make sure the opening of the vacuum bag is always inside the vacuum chamber. Adjust the sealing time higher or lower as needed. Replace the silicone rubber. Replace the Teflon tape. Clear the opening of the vacuum bag of any obstructions and make sure it remains clear when filling.
The lid does not open automatically.	<ul style="list-style-type: none"> The gas damper is not working. 	<ul style="list-style-type: none"> Contact your dealer or Audion Elektro B.V.
Vacuum pump makes a lot of noise	<ul style="list-style-type: none"> Pump rotates the wrong way No oil in the pump Pump is defect 	<ul style="list-style-type: none"> Please connect the pump according to schedule Fill the pump with oil Contact your dealer or Audion Elektro B.V.
The vacuum is insufficient.	<ul style="list-style-type: none"> The vacuum time is too short. There is not enough oil in the vacuum pump. The ventilation opening on the back of the vacuum chamber is sealed off by a vacuum bag. The lid rubber strip is worn out. The oil is dirty and needs replacing. 	<ul style="list-style-type: none"> Lengthen the vacuum time Check the oil level and replenish oil as needed. In order for the vacuum pump to work correctly, the pump must be filled with the right type of oil. Contact your dealer. Place the vacuum bag closer to the sealing beam. Replace the lid rubber strip. Replace the oil with the prescribed oil type.
Insufficient vacuum in the package.	<ul style="list-style-type: none"> Vacuum bag is of a substandard quality. The product has hard protuberances. The space between the sealing beam and the counter beam is too small (this space should be at least 5 mm). 	<ul style="list-style-type: none"> Use a higher quality vacuum bag. Inspect the product and remove any parts sticking out. Loosen the safety screws on the sealing beam and push the sealing beam into the lowest position. Retighten the screws.
Machine vacuums too slowly	<ul style="list-style-type: none"> The suction filter of the pump is clogged. 	<ul style="list-style-type: none"> Contact your dealer or Audion Elektro B.V.



6 To discard the AUDIONVAC

In accordance with the directive 2002/96/CE, the logo below indicates that the equipment concerned is not to be disposed of as ordinary waste at the end of its useable life.

The equipment is to be delivered to a suitable depot that will dispose of the equipment in a proper way in accordance with the legislation on this subject, or to the supplier of new equipment in case of replacement.

The owner of the equipment is responsible for proper disposal of the equipment.

For further information we advise you to contact your local waste facility.



Appropriate disposal of Waste of Electric and Electronic Equipment prevents unnecessary pollution of the environment and negative influence on general health.

7 Conditions of guarantee

For official conditions, we refer to Dutch version.

7.1 Liability

- 1) We exclude any liability as far as it has not been arranged by law.
- 2) Our liability will never exceed the amount of the order.
- 3) Subject to the general valid regulations of the law, we are not obliged to any compensation of damage of which kind ever, directly or indirectly, under which company damage, to movables and immovables or to persons, both to the opposite party as to third parties.
- 4) In no way we are liable for damage arisen from or caused by the supplied or by the unsuitability of this for the purpose for which the opposite party has purchased the machine.

7.2 Guarantee

- 1) With due observance of the restrictions stated hereafter, we allow 12 months of guarantee to the products supplied by us. This guarantee is restricted to the occurring manufacture errors and does not imply interruptions caused by any form of wear spare parts subject to use.
- 2) To spare parts or enclosures obtained from third persons we do not give longer guarantee than this third supplier does.
- 3) Guarantee expires if the opposite party and/or third parties associated make improper use of the supplied.
- 4) Guarantee also expires if the opposite party and/or third parties associated execute activities and/or modifications to the supplied.
- 5) In case we replace spare parts to fulfill our guarantee engagement, the spare parts replaced become property of AUDION ELEKTRO
- 6) In case the opposite party does not come up completely, partially or does not come up in time to the obligations arisen from the engagement closed between the parties, we are not obliged to guarantee as long as the situation continues



PART 2: TECHNICAL MANUAL

8 Recommended spare parts

2006 Spare parts list for VMS123

Description	Size / Specification	Part numbers	Quantity per machine
Teflon tape	0.40 m	160-1416621	-
Seal wire (3.5mm width)	0.50 m	160-1416111	-
Silicone rubber	0.35 m	160-1431311	-
Lid rubber (lip 5.5mm)	1.75 m	160-1431326	-
Seal bar (double seal)	net seal length 340mm	160-1411227	1
Seal bar (cut-off seal)	net seal length 340mm	160-1411237	1
Seal bar (8mm seal)	net seal length 340mm	160-1411726	1
Seal cylinder		160-1397119	2
Membrane for seal cylinder	80mm dia.	160-2042516	2
Gas spring	370N	160-1921311	2
Micro switch		160-2011576	1
Valve block (seal & de-vac)		160-1391140	1
Soft air valve		160-1391181	1
Gas valve (option)		160-1391132	(1)
Panel complete (consists of parts with *)		160-2011357	1
PCB *	digital 10 programs	160-1341181	1
Sensor PCB (option)		160-1341191	(1)
Panel holder *		160-1441241	1
Membrane panel *		160-1921199	1
On/Off switch *		160-1331116	1
Vacuum meter *		160-1921217	1
Panel opening tool		160-1441228	2
Magnetic switch	BG09	160-1332116	2
Control transformer		160-1334122	1
Exhaust filter		160-2050114	1

		110V-1P-60Hz	230V-1P-50Hz	
Main fuse	16A	160-1343146	-	1
	10A	-	160-1343125	2
Seal transformer	pr 0-115 sec. 18V 500VA	160-1334134	-	1
	pr 0-220 sec. 18V 500VA	-	160-1334132	1
Vacuum pump	16m3/h 5.5kw 110V	160-1542716	-	1
	16m3/h 5.5kw 230V	-	160-1542711	1

Seal bar configuration



standard

2006 Spare parts list for VMS153

Description	Size / Specification	Part numbers	Quantity per machine
Teflon tape	0.47 m	160-1416621	-
Seal wire (3.5mm width)	0.57 m	160-1416111	-
Silicone rubber	0.42 m	160-1431311	-
Lid rubber (lip 5.5mm)	1.90 m	160-1431326	-
Seal bar (double seal)	net seal length 410mm	160-1411321	1 / (2)
Seal bar (cut-off seal)	net seal length 410mm	160-1411326	1 / (2)
Seal bar (8mm seal)	net seal length 410mm	160-1411731	1 / (2)
Seal cylinder		160-1397121	2 / (4)
Membrane for seal cylinder	80mm dia.	160-2042516	2 / (4)
Gas spring	370N	160-1921311	2
Micro switch		160-2011576	1
Valve block (seal & de-vac)		160-1391140	1
Soft air valve		160-1391181	1
Gas valve (option)		160-1391132	(1)
Panel complete (consists of parts with *)		160-2011357	1
PCB *	digital 10 programs	160-1341181	1
Sensor PCB (option)		160-1341191	(1)
Panel holder *		160-1441241	1
Membrane panel *		160-1921199	1
On/Off switch *		160-1331116	1
Vacuum meter *		160-1921217	1
Panel opening tool		160-1441228	2
Magnetic switch	BG09	160-1332116	2
Control transformer		160-1334122	1
Exhaust filter		160-2050116	1

		110V-1P-60Hz	230V-1P-50Hz	
Main fuse	16A	160-1343146	-	1
	10A	-	160-1343125	2
Seal transformer	pr 0-115 sec. 18V 500VA	160-1334134	-	1 / (2)
	pr 0-220 sec. 18V 500VA	-	160-1334132	1 / (2)
Vacuum pump	21m3/h 0.95KW	160-1543221	-	1
	21m3/h 0.75KW	-	160-1543111	1

Seal bar configuration


standard



option

2006 Spare parts list for VMS153V

Description	Size / Specification	Part numbers	Quantity per machine
Teflon tape	0.47 m	160-1416621	-
Seal wire (3.5mm width)	0.57 m	160-1416111	-
Silicone rubber	0.42 m	160-1431311	-
Lid rubber (lip 5.5mm)	1.90 m	160-1431326	-
Seal bar (double seal)	net seal length 410mm	160-1411321	1
Seal bar (cut-off seal)	net seal length 410mm	160-1411326	1
Seal bar (8mm seal)	net seal length 410mm	160-1411731	1
Seal cylinder		160-1397121	2
Membrane for seal cylinder	80mm dia.	160-2042516	2
Micro switch		160-2011576	1
Valve block (seal & de-vac)		160-1391140	1
Soft air valve		160-1391181	1
Gas valve (option)		160-1391132	(1)
Panel complete (consists of parts with *)		160-2011357	1
PCB *	digital 10 programs	160-1341181	1
Sensor PCB (option)		160-1341191	(1)
Panel holder *		160-1441241	1
Membrane panel *		160-1921199	1
On/Off switch *		160-1331116	1
Vacuum meter *		160-1921217	1
Panel opening tool		160-1441228	2
Magnetic switch	BG09	160-1332116	2
Control transformer		160-1334122	1
Exhaust filter		160-2050116	1

		110V-1P-60Hz	230V-1P-50Hz	
Main fuse	16A	160-1343146	-	1
	10A	-	160-1343125	2
Seal transformer		160-1334134 (18V 500VA)	160-1334132 (18V 500VA)	1
Seal transformer	pr 0-115 sec. 18V 500VA	160-1334134	-	1
	pr 0-220 sec. 18V 500VA	-	160-1334132	1
Vacuum pump	21m3/h 0.95KW	160-1543221	-	1
	21m3/h 0.75KW	-	160-1543111	1

Seal bar configuration



standard

2006 Spare parts list for VMS153VC

Description	Size / Specification	Part numbers	Quantity per machine
Teflon tape	0.47 m	160-1416621	-
Seal wire (5mm width)	0.57 m	160-1416131	-
Lid rubber (lip 5.5mm)	1.90 m	160-1431326	-
Seal bar (bi-active lid side)	net seal length 410mm	160-1411343	1
Seal bar (bi-active chamber side)	net seal length 410mm	160-1411346	1
Seal cylinder		160-1397128	2
Membrane for seal cylinder	110mm dia.	160-2042521	2
Micro switch		160-2011576	1
Valve block (seal & de-vac)		160-1391140	1
Soft air valve		160-1391181	1
Panel complete (consists of parts with *)		160-2011357	1
PCB *	digital 10 programs	160-1341181	1
Sensor PCB (option)		160-1341191	(1)
Panel holder *		160-1441241	1
Membrane panel *		160-1921199	1
On/Off switch *		160-1331116	1
Vacuum meter *		160-1921217	1
Panel opening tool		160-1441228	2
Magnetic switch	BG09	160-1332116	2
Control transformer		160-1334122	1
Exhaust filter		160-2050116	1

		110V-1P-60Hz	230V-1P-50Hz	
Main fuse	16A	160-1343146	-	1
	10A	-	160-1343125	2
Seal transformer	pr 0-115 sec. 18V 500VA	160-1334134	-	2
	pr 0-220 sec. 18V 500VA	-	160-1334132	2
Vacuum pump	21m3/h 0.95KW	160-1543221	-	1
	21m3/h 0.75KW	-	160-1543111	1

Seal bar configuration



standard

2006 Spare parts list for VMS163

Description	Size / Specification	Part numbers	Quantity per machine
Teflon tape	0.47 m	160-1416621	-
Seal wire (3.5mm width)	0.57 m	160-1416111	-
Silicone rubber	0.42 m	160-1431311	-
Lid rubber (lip 5.5mm)	2.10 m	160-1431326	-
Seal bar (double seal)	net seal length 410mm	160-1411321	1 / (2)
Seal bar (cut-off seal)	net seal length 410mm	160-1411326	1 / (2)
Seal bar (8mm seal)	net seal length 410mm	160-1411731	1 / (2)
Seal cylinder		160-1397121	2 / (4)
Membrane for seal cylinder	80mm dia.	160-2042516	2 / (4)
Gas spring	500N	160-1921326	2
Micro switch		160-2011576	1
Valve block (seal & de-vac)		160-1391140	1
Soft air valve		160-1391181	1
Gas valve (option)		160-1391132	(1)
Panel complete (consists of parts with *)		160-2011357	1
PCB *	digital 10 programs	160-1341181	1
Sensor PCB (option)		160-1341191	(1)
Panel holder *		160-1441241	1
Membrane panel *		160-1921199	1
On/Off switch *		160-1331116	1
Vacuum meter *		160-1921217	1
Panel opening tool		160-1441228	2
Magnetic switch	BG09	160-1332116	2
Control transformer		160-1334122	1
Exhaust filter		160-2050116	1

		110V-1P-60Hz	230V-1P-50Hz	
Main fuse	16A	160-1343146	-	1
	10A	-	160-1343125	2
Seal transformer	pr 0-115 sec. 18V 500VA	160-1334134	-	1 / (2)
	pr 0-220 sec. 18V 500VA	-	160-1334132	1 / (2)
Vacuum pump	21m3/h 0.95KW	160-1543221	-	1
	21m3/h 0.75KW	-	160-1543111	1

Seal bar configuration


standard



option

2006 Spare parts list for VMS163B

Description	Size / Specification	Part numbers	Quantity per machine
Teflon tape	0.47 m	160-1416621	-
Seal wire (5mm width)	0.57 m	160-1416131	-
Lid rubber (lip 5.5mm)	2.10 m	160-1431326	-
Seal bar (upper)	net seal length 410mm	160-1411341	1
Seal bar (lower)	net seal length 410mm	160-1411346	1
Seal cylinder		160-1397128	2
Membrane for seal cylinder	110mm dia.	160-2042521	2
Gas spring	500N	160-1921331	2
Micro switch		160-2011576	1
Valve block (seal & de-vac)		160-1391140	1
Soft air valve		160-1391181	1
Gas valve (option)		160-1391132	(1)
Panel complete (consists of parts with *)		160-2011357	1
PCB *	digital 10 programs	160-1341181	1
Sensor PCB (option)		160-1341191	(1)
Panel holder *		160-1441241	1
Membrane panel *		160-1921199	1
On/Off switch *		160-1331116	1
Vacuum meter *		160-1921217	1
Panel opening tool		160-1441228	2
Magnetic switch	BG09	160-1332116	2
Control transformer		160-1334122	1
Exhaust filter		160-2050116	1

		110V-1P-60Hz	230V-1P-50Hz	
Main fuse	16A	160-1343146	-	1
	10A	-	160-1343125	2
Seal transformer	pr 0-115 sec. 18V 500VA	160-1334134	-	2
	pr 0-220 sec. 18V 500VA	-	160-1334132	2
Vacuum pump	21m3/h 0.95KW	160-1543221	-	1
	21m3/h 0.75KW	-	160-1543111	1

Seal bar configuration

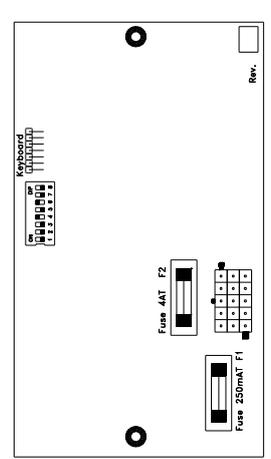
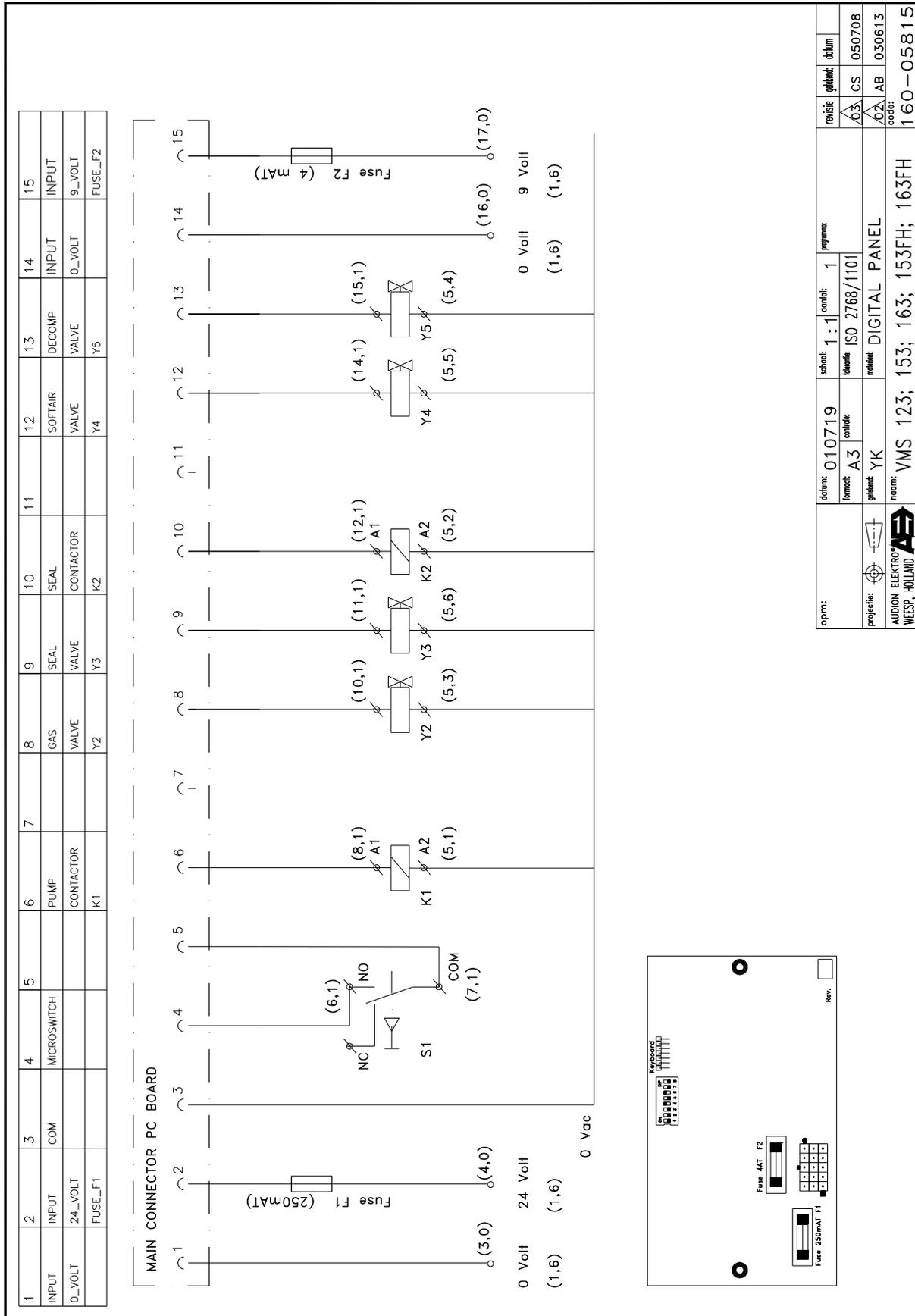


standard

9 Technical specifications

Type	VMS 123	VMS 153	VMS 153V	VMS 153VC	VMS 163	VMS 163B
Machine size (L x W x H) in mm.	450x525x385	490x525x445	490x650x750	490x650x750	490x610x445	490x610x445
Effective chamber size in mm.	340x370	410x370 410x320			410x460 410x410	410x460 410x410
Net. Sealing bar length in mm.	1x 340	1x 410 2x 410	1x 380	1x 380	1x 410 2x 410	1x 410 2x 410
Chamber height in mm.						
Absolute chamber size in mm.	350x420x150	420x420x180			420x460x180	420x500x180
Tabletop model	X	X	X	X	X	X
Floor model						
Double chamber						
Stainless steel housing	X	X	X	X	X	X
Stainless steel chamber	X	X	X	X	X	X
Transparent lid	X	X	X	X	X	
High transparent lid						
Pump capacity in m ³ /h	16 m ³ /h	21 m ³ /h				
Max. product size (WxDxH) mm.			380x80x330	380x80x270		
Capacity / min.	Ca. 2					
Voltage, phase and frequency	230V-1-50Hz.	230V-1-50Hz.	230V-1-50Hz.	230V-1-50Hz.	230V-1-50Hz.	230V-1-50Hz.
Power	0.55 kW	0.75/1.0 kW	0.75/1.0 kW	0.75/1.0 kW	0.75/1.0 kW	0.75/1.0 kW
Control	Digital	Digital	Digital	Digital	Digital	Digital
Packed size (L x W x H)						
Number of gas pipes (optional)	2	2	2	2	2	2

10 Electrical diagram

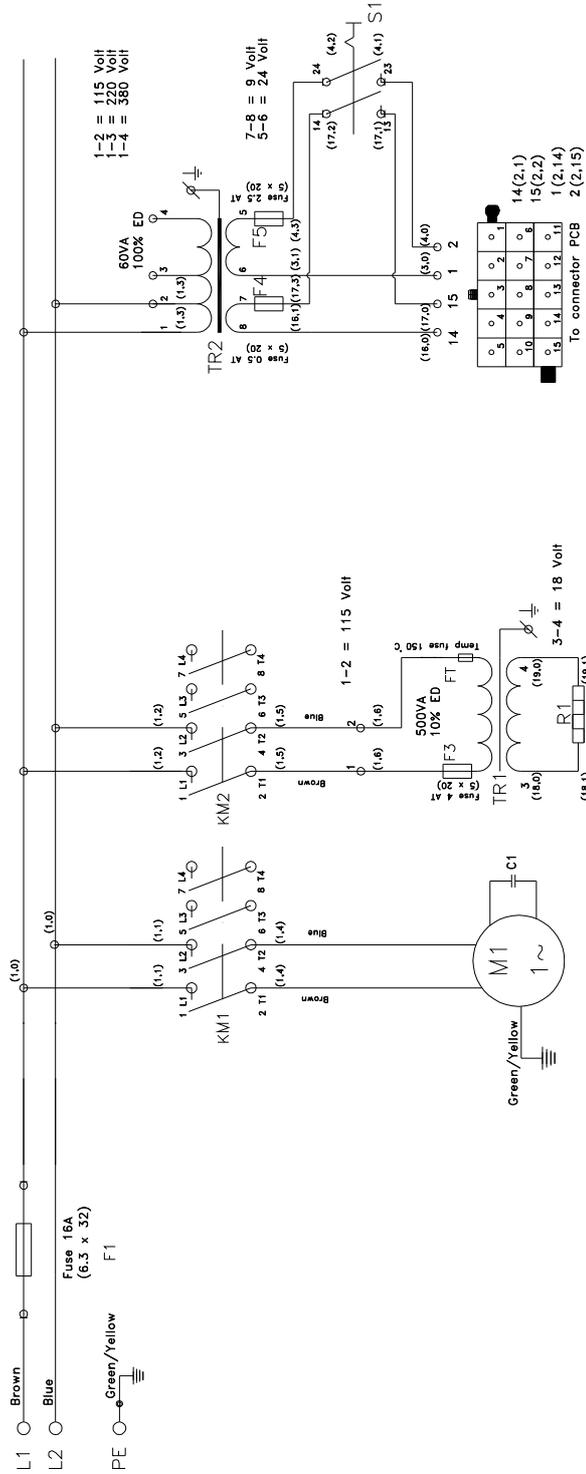


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	gibmet: YK	method: DIGITAL PANEL			AB	030613
	naam: VMS 123; 153; 163; 153FH; 163FH				code:	160-05815

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1	2	3	4	5	6	7	8
MAIN_SUPPLY	MAIN_FUSE	CONTACTOR_PUMP	CONTACTOR_PUMP	CONTACTOR_SEAL	CONTACTOR_SEAL	CONTROLE_TRANSFORMER	POWER_SWITCH
L1_L2	F1	K1	MOTOR	K2	K2	TR2	S1
		M1	M1	TR1	TR1	MAIN_CONNECTOR_PC_BOARD	

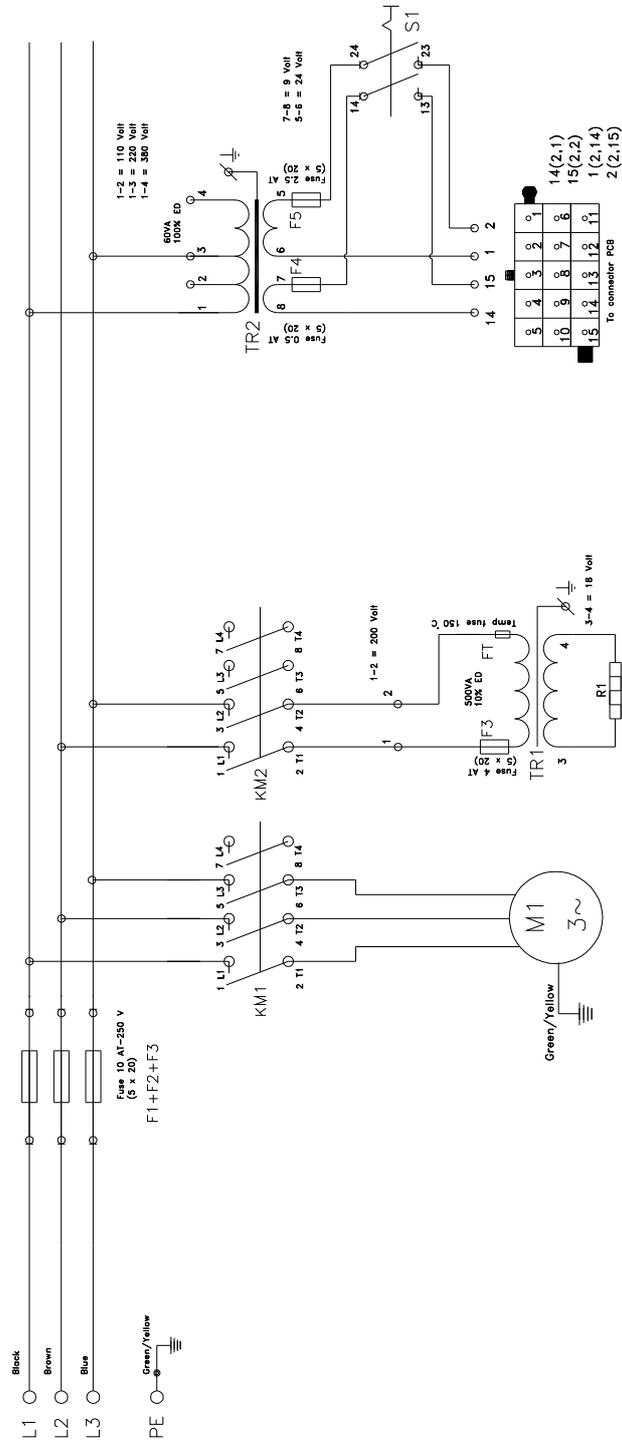


VMS 123; 153; 163; 153FH; 163FH 115V.

opm:	datum: 010719	school: 1: 1	ontel: 1	projectie: datum
projectie:	formaat: A3	titel: ISO 2768/1101	revisie: CS	datum: 050708
	plaat: YK	metode:	revisie: CS	datum: 031202
	naam: MAIN POWER SUPPLY		code: 160-05115	

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1	2	3	4	5	6	7	8
MAIN_SUPPLY		MAIN_FUSES	CONTACTOR_PUMP	CONTACTOR_SEAL		CONTROLE_TRANSFORMER	POWER_SWITCH
L1_L2_L3		F1+F2+F3	K1	K2		TR2	S1
			MOTOR	SEALTRANSFORMER		MAIN_CONNECTOR_PC_BOARD	
			M1	TR1			

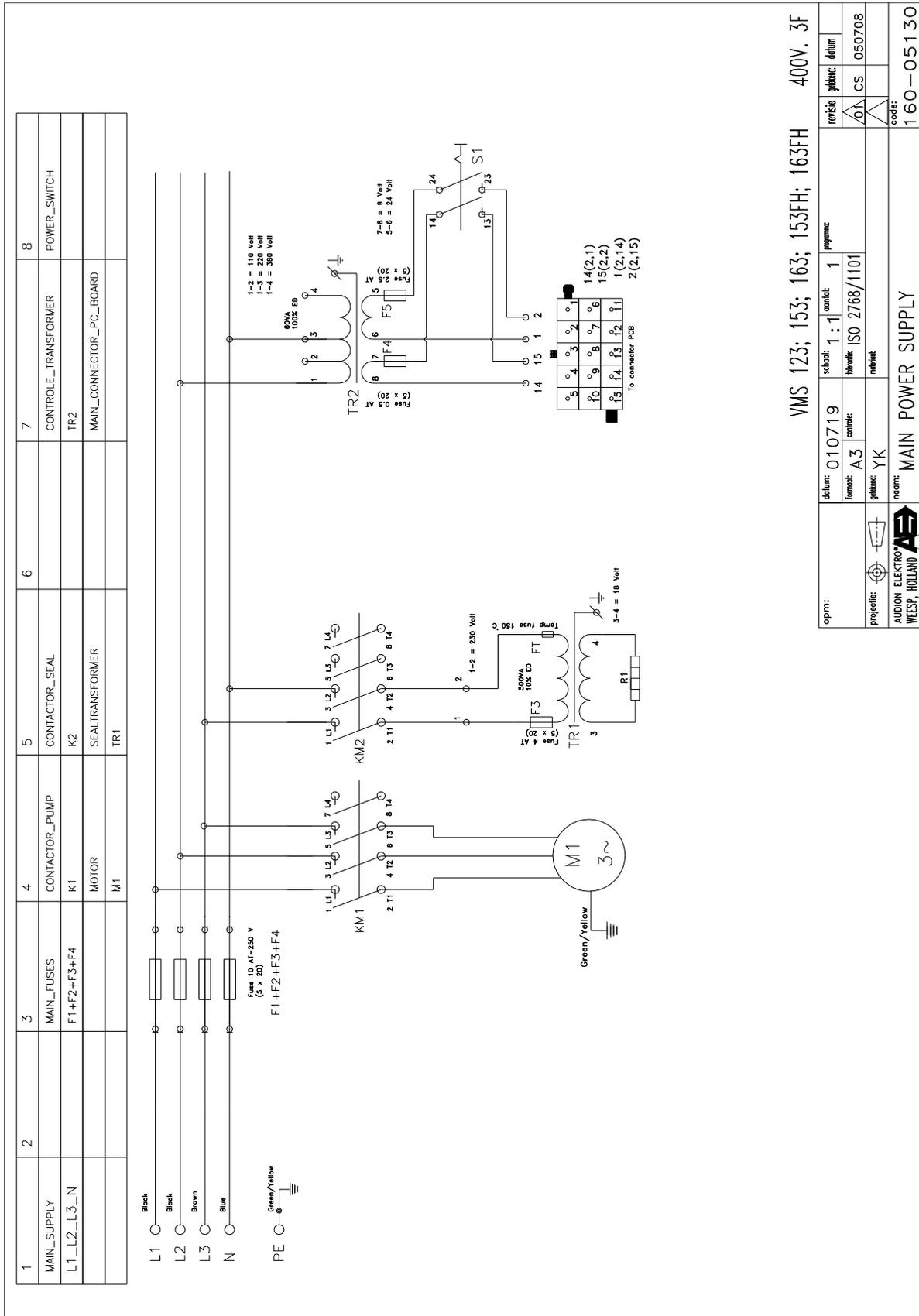


VMS 123; 153; 163; 153FH; 163FH 200V. 3F

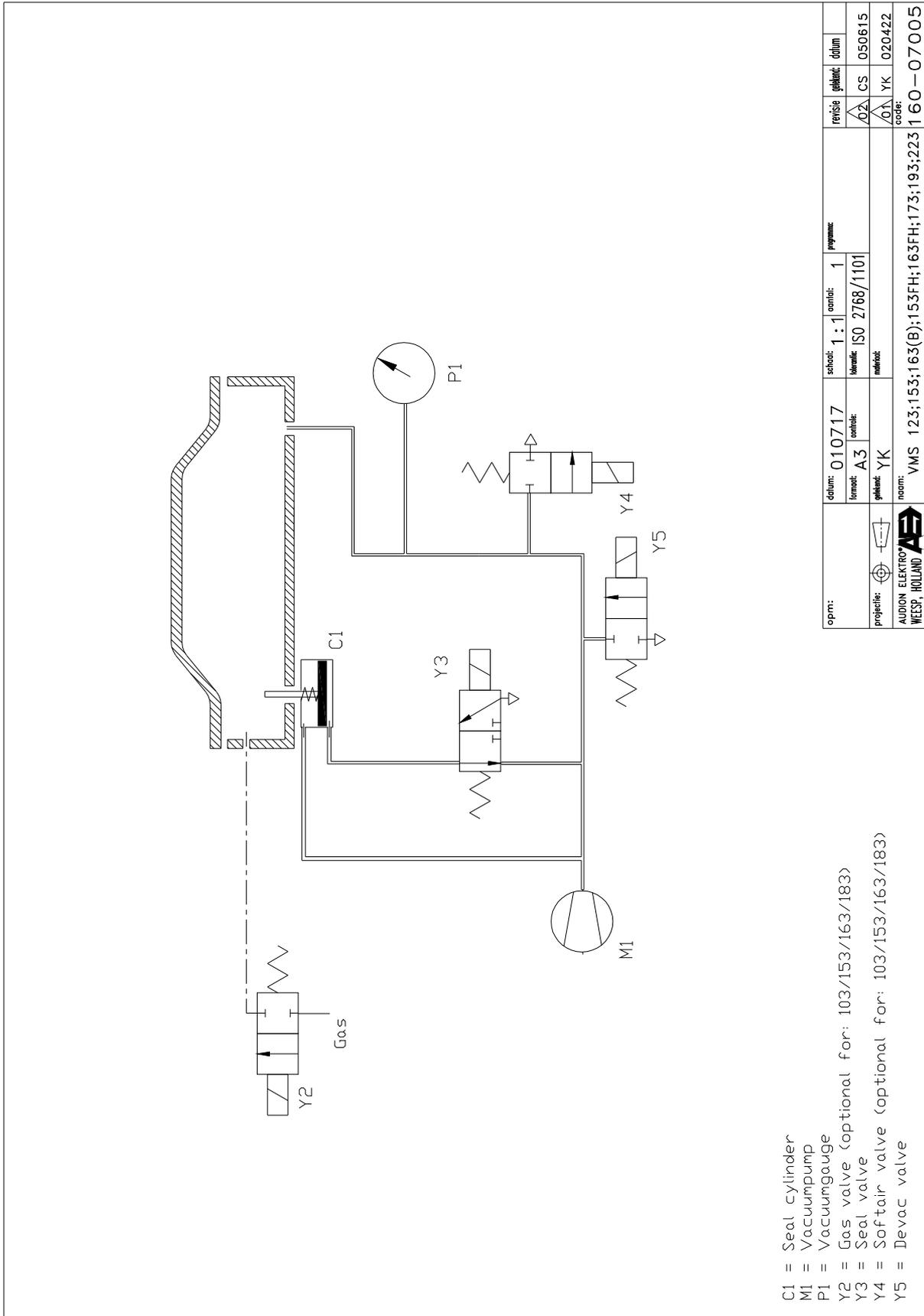
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projectie:	formaat: A3	constat: ISO 2768/1101	metriest: YK	revisie: datum
				CS 050708
				code:
				160-05120

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11 Pneumatic diagram



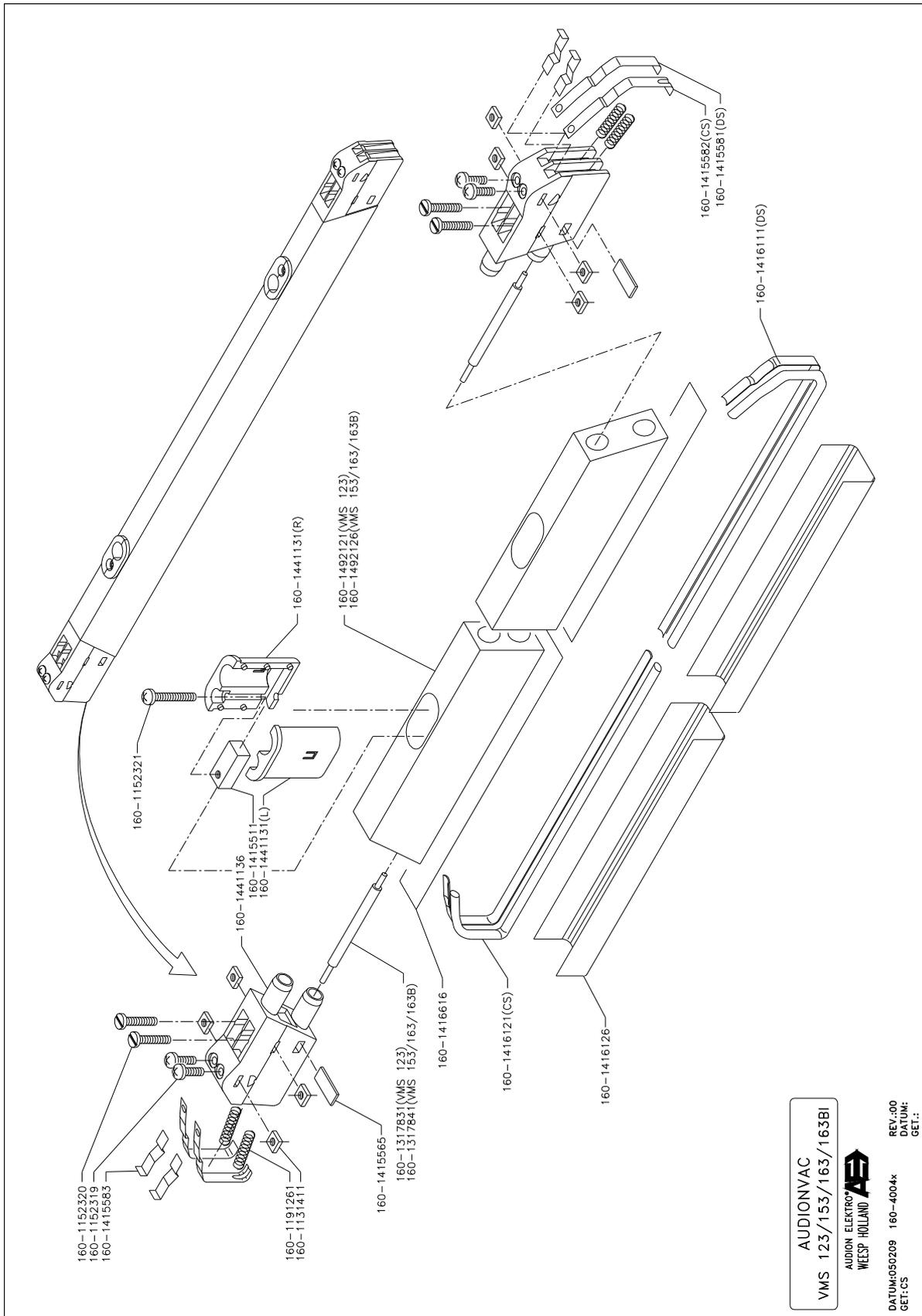
- C1 = Seal cylinder
- M1 = Vacuum pump
- P1 = Vacuum gauge
- Y2 = Gas valve (optional for: 103/153/163/183)
- Y3 = Seal valve
- Y4 = Softair valve (optional for: 103/153/163/183)
- Y5 = Devac valve

opm:	datum: 010717	schaal: 1 : 1	omvang: 1	programma:	revisie	geplaatst:	datum
	format: A3	controle:	literatuur: ISO 2768/1101		02	CS	050615
projectie:	geplaatst: YK	method:			01	YK	020422
	nomm: VMS 123;153;163(B);153FH;163FH;173;193;223	160-07005			code		

AUDION ELEKTRO
WEESP, HOLLAND

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13 Exploded view seal bar



AUDIONVAC
VMS 123/153/163/163BI

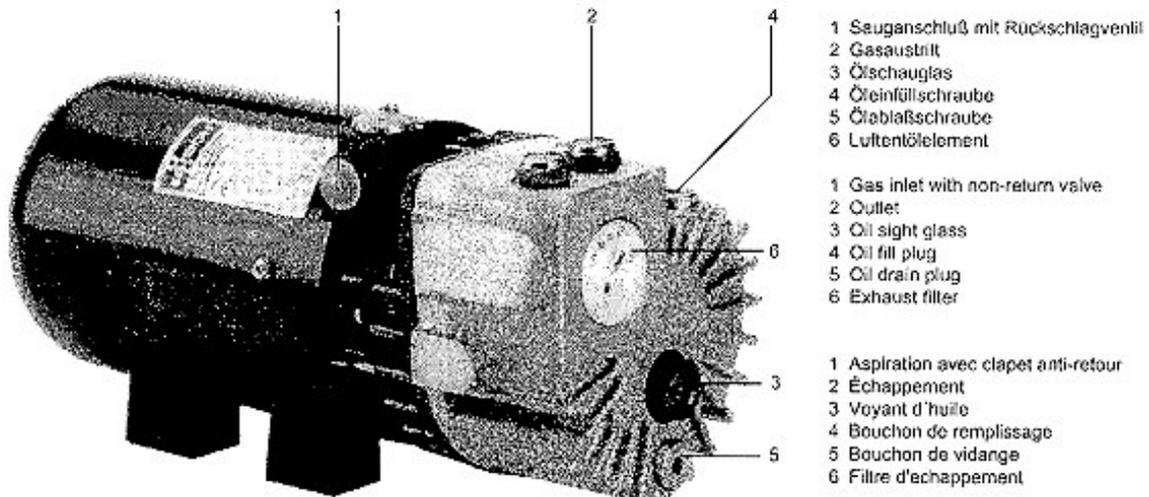


AUDION ELEKTRO
WEST-HOLLAND

DATUM: 050209 160-4004x
REV.: 00
GET.: CS

14 Exploded view pump

KB 0008 D, KC 0008 D



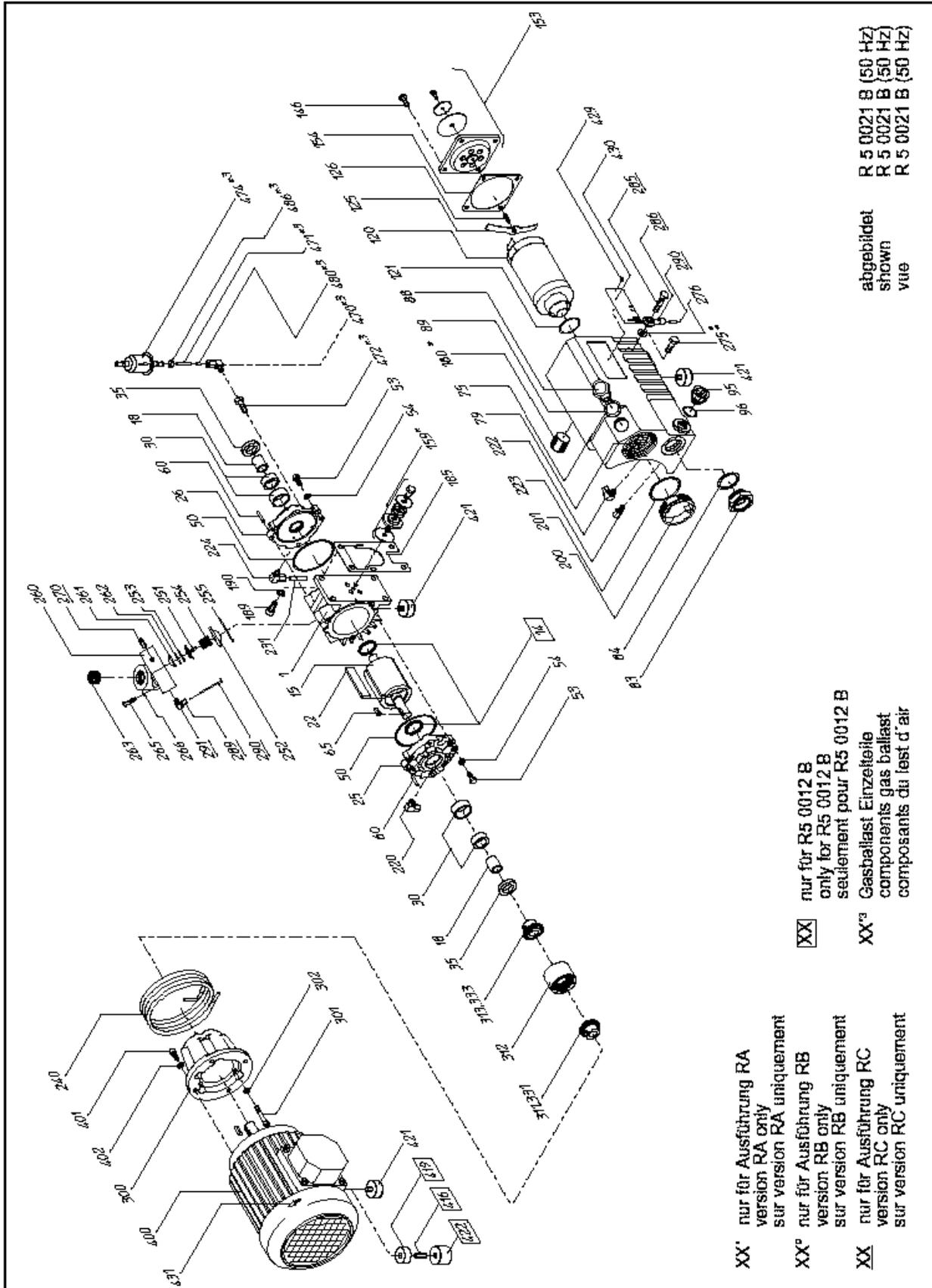
- 1 Sauganschluß mit Rückschlagventil
- 2 Gasaustritt
- 3 Ölschauglas
- 4 Öleinfüllschraube
- 5 Ölableßschraube
- 6 Luftentölelement

- 1 Gas inlet with non-return valve
- 2 Outlet
- 3 Oil sight glass
- 4 Oil fill plug
- 5 Oil drain plug
- 6 Exhaust filter

- 1 Aspiration avec clapet anti-retour
- 2 Échappement
- 3 Voyant d'huile
- 4 Bouchon de remplissage
- 5 Bouchon de vidange
- 6 Filtre d'échappement

Busch vacuum pumps	Audion Elektro models
016 m ³ /h	VMS 123
021 m ³ /h	VMS 153; 153V(C); 163; 163B; 153FH; 163FH
040 m ³ /h	VMS 173
063 m ³ /h – 50Hz.	VM 203; 243 / VMS 193; 223; 233; 253
100 m ³ /h	VM 273; 303 / VMS 263; 333
160 m ³ /h	VMS 283
250 m ³ /h	VMS 503; 883

BUSCH	Standard oil			Oil filter		Oil mist filter		
	Type	Audion Elektro Reference	Liters	Type	Audion Elektro Reference	Type	Audion Elektro Reference	#
016 m ³ /h	VG 32	160-1550621	0.40	-	-	50-60 Hz.	160-2050114	1
021 m ³ /h	VG 32	160-1550621	0.40	-	-	50-60 Hz.	160-2050116	1
040 m ³ /h	VG 100	160-1550631	1.0	040-063-100	160-2050201	50-60 Hz.	160-2050122	1
063 m ³ /h – 50Hz.	VG 100	160-1550631	1.0	040-063-100	160-2050201	50 Hz.	160-2050122	1
063 m ³ /h – 60Hz.	VG 100	160-1550631	2.0	040-063-100	160-2050201	60 Hz.	160-2050121	2
100 m ³ /h	VG 100	160-1550631	2.0	040-063-100	160-2050201	50-60 Hz.	160-2050121	2
160 m ³ /h	VG 100	160-1550631	5.0	160-300	160-2050202	50-60 Hz.	160-2050126	2
250 m ³ /h	VG 100	160-1550631	7.0	160-300	160-2050202	50-60 Hz.	160-2050126	3





AUDION ELEKTRO®



EC-DECLARATION OF CONFORMITY

AUDION ELEKTRO B.V., located at the Hogeweyselaan 235 in Weesp,
The Netherlands

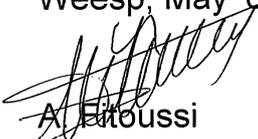
herewith declares that the

AUDIONVAC

Type: VMS 123-2; 153-2; 153V-2; 153VC-2; 163-2; 163B-2

- is in conformity with the provisions of the following EEC directives:
73/23/EEC Low Voltage Directive
89/336/EEC EMC-Directive
98/37/EEC Machinery Directive
- and that the following (parts/clauses of) harmonized standards have been applied:
EN-ISO 12100-1/2; EN 294; EN 563; NEN 5509; EN 60204-1;
NEN 60742

Weesp; May '06


A. Entoussi
Director

CD 040F1062: 04

BANKS: Rabobank: account no. 34.31.00.045 Postbank: 108897 ABN-AMRO Bank n.v.: account no. 54.81.11.669
Trade reg. Hilversum no. 32057820. VAT no. NL803873104B01.

Our terms and conditions are deposited at the Chamber of Commerce in Hilversum.

Op alle overeenkomsten zijn van toepassing onze algemene leverings- en betalingsvoorwaarden, zoals gedeponeerd bij de Kamer van Koophandel te Hilversum

AUDION ELEKTRO

Hogeweyselaan 235,
1382 JL Weesp, Holland
Tel : +31(0)294 491717
Fax: +31(0)294 491761
E-mail: export@audion.nl
E-mail: holland@audion.nl
Website: www.audion.com

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