

*Vac pump  
Type RA 250 C4Z1 QM22  
No. 0000360102*

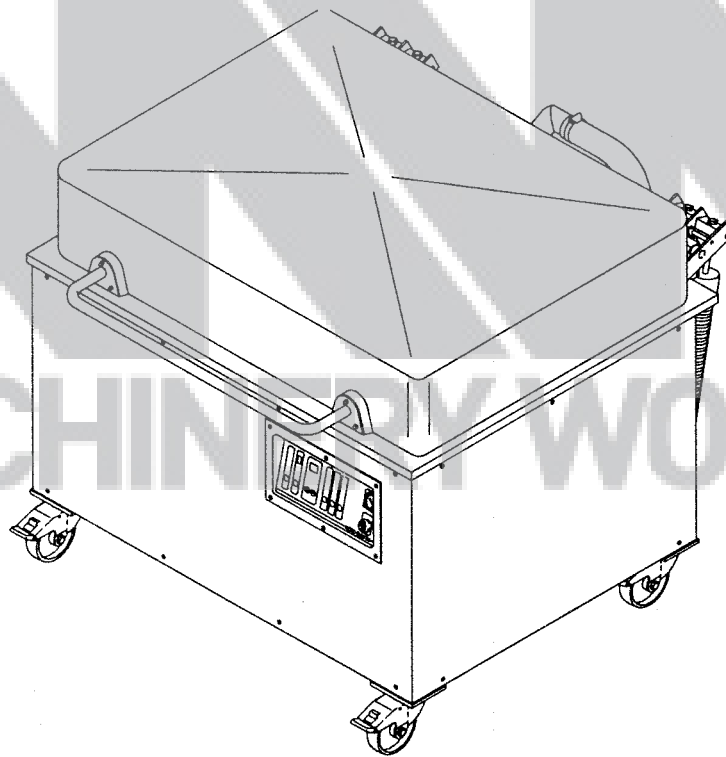
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**AUDION ELEKTRO** ®

# AUDIONVAC

*401 H Cheese room*



*(A/N 34662)*

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**MANUAL**

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## 1 To unpack the Audionvac

Check during the unpacking of the Audionvac whether all parts mentioned below are present:

- Audionvac
- manual
- spareparts

Check the data on the identification plate (fig. 1) on the Audionvac and write these down in the identification plate copied below.


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

fig. 1

The Audionvac has been packed in a crate. We recommend to stock the packing for eventual transport in future.

## 2 Safety instructions

**Read the manual carefully before any operation on the Audionvac !**

- Check, before the Audionvac is put into operation, whether the data on the Audionvac identification plate correspond with the voltage (V), the consumption (W) and the frequency (Hz) of the local power supply.
- In case the Audionvac is not used for a longer period of time, disconnect the power by pulling the plug out of the socket.
- Always switch off the power to the Audionvac if any maintenance should take place. Be aware of the possibility of an electrical shock.
- Do not use water, abrasives, chemicals or other liquids for cleaning the Audionvac. See chapter 8 .
- In case there is any doubt about the correct operation of the Audionvac you should immediately disconnect the power and consult a mechanic.
- To prevent any danger of electrical shocks, never open the housing of the Audionvac. Have repairs done by skilled maintenance staff only.
- Should liquid or an object fall into the Audionvac, immediately take the plug out of the socket and have the machine checked by a skilled person before using it again.
- In case some spareparts should be replaced, only spareparts recommended by the manufacturer should be used.
- To seal, only use materials that are suitable for the Audionvac ( see chapter 3).
- If the gas packaging option is installed, it is strictly forbidden to use mixtures containing oxygen O<sub>2</sub> due to danger of explosion.
- Do not apply pressures over 1 Bar onto the machine

### 3 General description

The Audionvac is a vacuum packaging machine which is operated by closing the lid

The VM 401 can be equipped with a gas packaging system. This option can be applied if delicate products must be packaged

The Audionvac is suitable for sealing Polyethylene (PE), Polypropylene (PP) and Polyamide/Polyethylene (PA/PE).

### 4 Dimensions

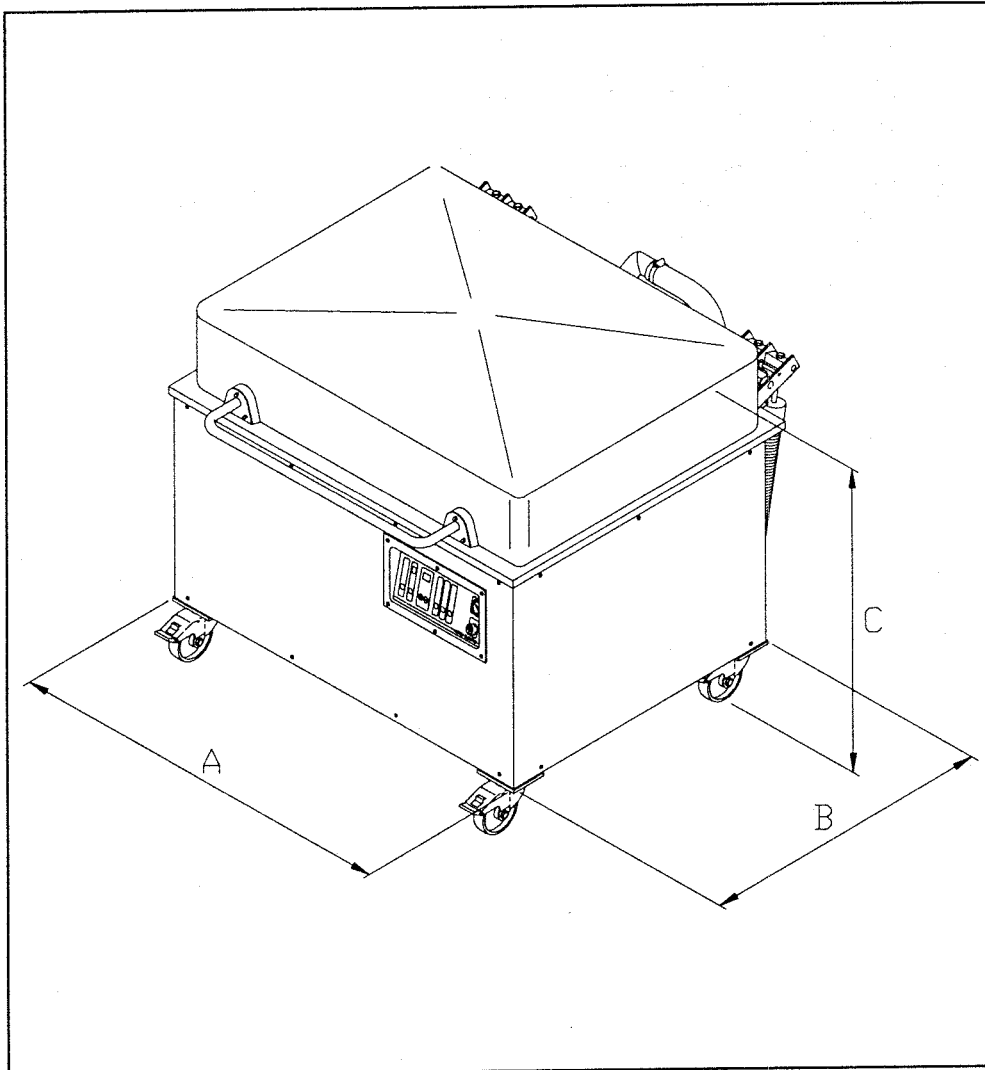


fig. 2

Type	OUTSIDE			SEALBAR
	A	B	C	L
VM 401	144	139	121	105

Dimensions in CM

## 5 Operation panel

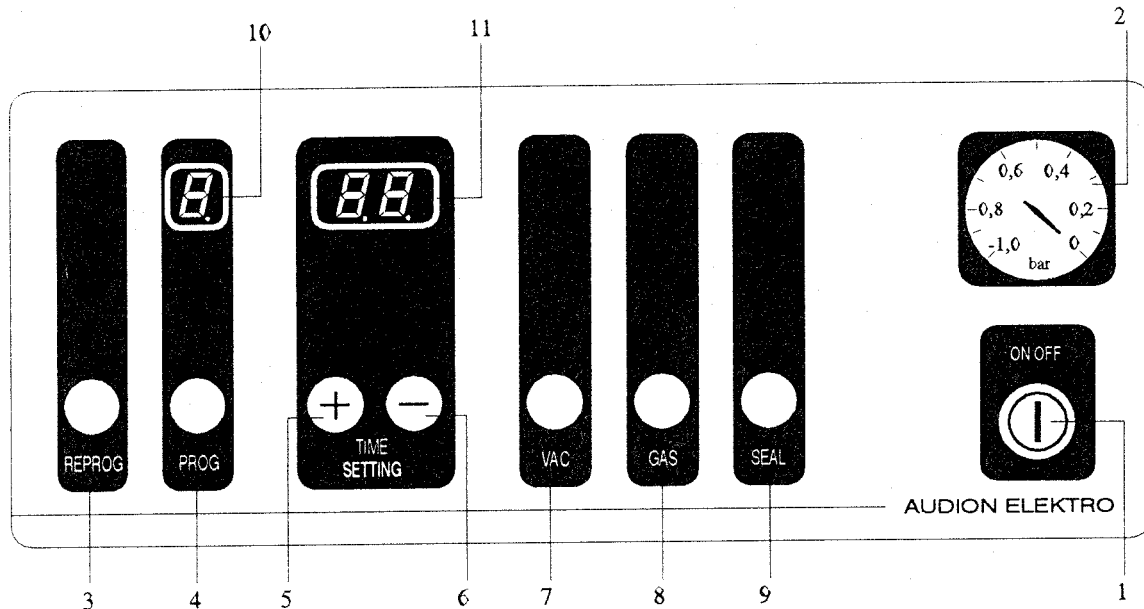


fig. 3

- |       |  |                  |   |
|-------|--|------------------|---|
| 1     |  | ON/OFF switch    | Main switch   |
| 2     |  | Vacuummeter      | 0 = no vacuum , -1,0 = High vacuum                            |
| 3     |  | key              | (Re-) programming the machine                                 |
| 4     |  | key              | For selecting a desired program (1 t/m 9)                     |
| 5 / 6 |  | key              | For adjusting the time of sealing-, gas flushing- , or vacuum |
| 7     |  | Key              | For calling and adjusting the vacuumtime                      |
| 8     |  | Key              | For calling and adjusting the gas flush time                  |
| 9     |  | Key              | For calling and adjusting the sealing time                    |
| 10    |  | Display 1 digit  | Programnumber   |
| 11    |  | Display 2 digits | Programtimes  |

## 6 Installation

### 6.1 Description of working place

Install the Audionvac in a ventilated, well illuminated space. Mind that the Audionvac is not exposed to direct sun light, extreme temperatures, damp, dust or sand. The Audionvac is not allowed to be exposed to mechanical shocks or vibrations.

### 6.2 Connection to power supply

- Check whether the Audionvac is switched off, The mainswitch (fig. 3 pos. 1) should be at O/OFF
- Check the oil level see chapter 8.4

Put the plug into the wall socket. The wall socket must have an earth connection and must be fused max. 32 Amp.

### 6.3 Take into use

Before you take the Audionvac into use, The machine should be well placed .

Global working:

1. Adjust the vacuum time
2. Adjust the gas flush time (option)
3. Adjust the sealing time
4. Place the product in the Audionvac
5. Close the lid
6. After vacuuming, (gas flushing), and sealing and decompressing the lid opens automatically.
7. Take the product out of the Audionvac and check the result.

#### 6.3.1 Model VM 401

1. Switch on the machine by pressing the mainswitch (fig. 3 pos 1).
2. Choose the desired program , key *PROG* (fig. 3 pos 4)
3. Place the produkt into the vacuum chamber. Put the opening of the bag over the sealbar (fig. 4)
4. Close the lid. (The program will begin operating)
5. After vacuuming, (gas flushing), and sealing and decompressing the lid opens automatically.

During decompressing (fig. 3 pos 10)



and two beams will flash on the two digit

display (fig. 3 pos 11)



## 6.4 Placing the bag into the machine

1. The bag must not be filled more the 3/4 full.
  2. Adjust the right height for bag by removing or placing insert plates in the vacuum chamber (fig. 4 pos 1).
  3. Be sure the opening of the bag is:
    - Clean.
    - Wrinkle-free placed over the sealbar (fig. 4 pos 4) \*.
- \* If the machine has a gas flushing system, then insert the gas nozzle into the opening of the bag (fig. 4 pos 3).

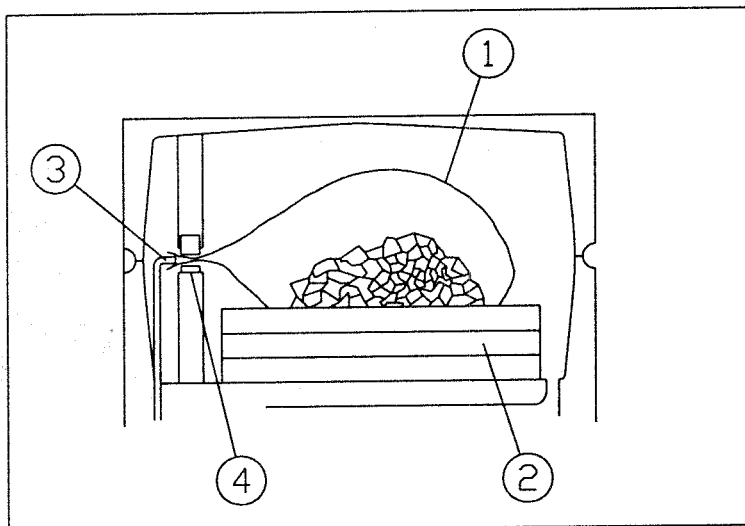


fig. 4

Removal of the insert plates increases the capacity of the vacuum chamber, requiring a longer vacuum time to ensure proper results.

In general:  
each plate removed extends the vacuum time by approx. 5 seconds.

## 6.5 Programming VM 401

You can save 9 programs.

- |               |   |
|---------------|---|
| prog. 1 t/m 9 | free for programming.                   |
| prog. 0       | Test program (not possible to program). |











After switching on the machine ca. 2 sec. display (fig. 3 pos 11) shows a number (software version). Hereafter the last used program number appears on display (fig. 3 pos 10).

Programming is possible in two ways:

1. With open lid
2. With closed lid (during pulling vacuum)



## 6.5.1 Programming with open lid

1. Open the lid and switch on the machine.
2.  Select the program which has to be reprogrammed (1-9).
3.  Press "REPROG" until the number in the display (fig. 3 pos 10) flashes 
4.   or  Select the function ( for gas flushing see also chapter 6.6) which has to be adjust
5.  Adjust the right time. Time setting is given in display (fig. 3 pos 11)
6. If necessary repeat step 3 & 4 for the other functions. When all functions have been adjusted to your satisfaction then goto step 7.
7.  Store the new values to the memory by pressing "REPROG".  
The number in display (fig. 3 pos 10) is still flashing.   
On display (fig. 3 pos 11) appears a "•" in token of the program is stored in the memory. 
8. After the display (fig. 3 pos 10) stops flashing the machine is ready for use.







### 6.5.1.1 Interrupting programming with open lid

Interrupt programming by pressing  . No (new) values are stored in the memory.

Previous values remain in the memory !!




## 6.5.2 Programming with a closed lid

1. Open the lid and switch on the machine.
2.  Select the program which has to be reprogrammed (1-9).
3.  Press "REPROG" until the number in the display (fig. 3 pos 10) flashes 
4. Close the lid. Pulling vacuum is started. You can see time counting up in display (fig. 3 pos 11).
5.  If vacuum pulling is enough press "VAC". The machine starts gas flushing ( if the gas function is installed see point 6) otherwise the machine starts sealing point 7.
6.  The gas flush time is running in display (fig. 3 pos 11). If you are satisfied about the gas flush time then press "GAS". The machine starts sealing.
7. Don't press the key "SEAL" ! After sealing and decompressing the lid opens automatically. It is not possible to adjust the sealing time when the lid is closed.
8. The number in display (fig. 3 pos 10) is flashing. 

On display (fig. 3 pos 11) appears a "•" in token of the program is stored in the memory.




### 6.5.2.1 Interrupting programming with closed lid

Press  to interrupt programming with closed lid. No (new) values are stored in the memory. Previous values remain in the memory !!

## 6.6 Programming gas flushing







If the gas installation is installed. Then the gas function can be activated if necessary.

Display (fig. 3 pos 10) shows is the gas function is active for a certain program.

- Gas function switched on > point "•" in the right lower corner 
- Gas function switched off > point is switched off.

See chapter 6.5 for general programming instructions

## 6.6.1 Switch on or off the gas function

1. Open the lid and switch on the machine.
2.  Choose the program (1-9) by pressing.
3.  Press "REPROG" until the number in the display (fig. 3 pos 10) flashes 
4.  and  Press together.      Point on > Gasfunction active  
Point off > Gasfunction is switched off
5.  Store the new values to the memory



## 6.7 A loss of vacuum owing to introduction of gas

Owing to the introduction of gas the vacuum level will decrease in the chamber (the manometer shows a decrease of vacuum). The level of vacuum should not become above 0,2 Bar. When the pressure has this value it may appear that the packing is not well sealed (not enough seal pressure).

### 6.7.1 Time of gas introduction, amount of gas

The time of gas introduction depends on the products to be packed with gas.

- Porous and delicate products → Much gas needed (manometer ca. 0,3 Bar)
- Solid products → Little gas needed (manometer ca. 0,6 Bar)

Through trials you should experience the best suitable time of gas introduction for your products.

As the gas bottle empties, the gas packaging process will slow down. Therefore, close attention to the manometer should be paid. After some time a program with a longer gas time should be chosen.

NOTE. By using the insert plates gas consumption can be reduced to the minimum (See chapter 6.4).

### 6.7.2 To replace the gas bottle

1. Switch off the machine.
2. Replace the gas bottle according the instructions of your gas supplier.
3. Turn on the gas bottle and adjust the pressure (max. 1 Bar).
4. Switch on the machine and choose the right programm.

Gas bottles should always be fixed, f.i. by means of a chain onto the wall.

#### Warning

Gas mixtures containing oxygen (O<sub>2</sub>) are strictly forbidden to use. Any oxygen mixtures could cause serious explosions.

Only when a special oxygen safety device has been installed gas mixtures containing oxygen could be used, but this only under the strictest conditions and with written permission.

### 6.7.3 Gas pression


The pressure regulator of the gas bottle is maximum allowed to be adjusted to 1 Bar. A higher pressure could damage the machine. Consult your gas supplier for the correct pressure regulator !!

## 6.8 Interrupting the cycle

Any function during a cycle can be interrupted in order to continue on to the next function in the cycle.


Push the soft touch button of the function which is active at that moment. The program will immediately switch to the next function.

example:

During the vacuum function you could push  so that the program switches to the next function (gas or seal). The program value remains unchanged.

## 6.9 To stop the cycle

The soft touch button  is also the "STOP" button.

When you push  during the vacuum or gas function the program will end its cycle. The vacuum chamber will be decompressed and the lid opens automatically.

The packing is not sealed.  
The cycles programmed remain unchanged.

## 6.10 Oil interval





The program unit count the the amount of cycles made by the machine.  
Standard the oil should be changed after:

- 2000 cycles in case the pump runs only during the vacuum cycle
- 9000 cycles when the pump runs continuous.

After 2000 or 9000 cycles the text "oil" appears in the display (fig. 3 pos 11) which means that it should be changed.

In case the conditions under which the machine is running are changed or less favourable than in an average situation, it may be necessary to change the oil more frequently.

### 6.10.1 To program the oil-interval

-  and  Push " - " and "VAC" at the same time for 5 sec.
- In display (fig. 3 pos 11) a number in between 00 and 99 appears  
(= number of cycles in hundreds ; 20 = 2000 cycles)
-  Change the oil-interval by means of the + of - button
-  Push "Reprog", the value just set will be programmed now.

In case the interval is "00" the oil-interval indication has been switched off.

## 6.10.2 To reset the oil-interval counter

After having changed the oil the oil-interval counter should be set to "0".



Push the + for 5 seconds.

The text "oil" appears in the display (fig. 3 pos 11). Now the counter of the oil-interval is at zero again.

## 7 Specifications

Technical data like weight and dimensions of the Audionvac can be found in Chapter 9.

### 7.1 Operational specifications

- operation speed : ca 2 cycles per minute (depending on the vacuum time)
- sealing length : See chapter 9
- sealing width : See chapter 9
- ambient temperature : +5° . . . +40° Celsius
- humidity : 30% . . . 95% rel. (non condensing)
- fastening / fixing : casters
- explosion safety : not to be used in explosive surroundings
- extraction, ventilation : to be used in ventilated spaces

### 7.2 Applications not allowed

- Packaging of pharmaceutical and therapeutical products
- Packaging in medical, sterile environment
- use in an explosive surrounding
- Packaging of poisonous, corrosive, irritating substances
- Packaging of explosive materials
- Packaging of poisonous, suffocating or irritating gasses
- Packaging of (dangerous) dusty products
- using gas mixtures containing oxygen O<sub>2</sub> (danger of explosion)

Contact your dealer or AUDION ELEKTRO for working with gas mixtures containing oxygen O<sub>2</sub>

## 8 Maintenance

The Audionvac is a relatively simple machine which needs very little maintenance.

In general

- **Always pull the power cord out of the main supply socket in case of maintenance or repair activities (see chapter 2- safety instructions).**
- Never use a water jet to clean the Audionvac
- The gas springs on the lid must not be damaged. To prevent accidents, replace the springs immediately if there is any sign of corrosion.
- Maintenance and repairs should never be carried out by unauthorized persons.



ATM 1000

Daily maintenance	
Vacuum chamber and insert plates	Clean the lid, insert plates en vacuum chamber with a damp cloth, not forgetting the rubber strip in the lid. After cleaning, treat the rubber strip with talcum powder WARNING : A transparent lid should never be cleaned with a synthetic cleaner as it weakens the material.
Vacuum pump	Run the pump for approx 15 minutes after cleaning or using the Audionvac to prevent rust. See chapter 8.6 . This allows condensed water in the oil to evaporate.

Weekly maintenance	
Sealbar	Check the condition. repair if necessary. See chapter 8.1
Rubber strip on the lid	Check the condition; replace if necessary
Oil reservoir	Check the oil level; replenish if necessary See chapter 8.4.

Half year maintenance	
Oil reservoir and oil filter	Change the oil see chapter 8.4.1 and replace the oil filter.

Yearly maintenance	
Vacuum hose and pipes	Check the condition; replace if necessary.
Silicone rubber in the press bar	Check the condition; replace if necessary.
Oil reservoir and oil filter	Check the condition; replace if necessary.
Oil-exhaust filters in the pump	Check the condition; replace if necessary.
Springs and gas-spring on the lid	Check the condition; replace if necessary.

2 Year maintenance	
Springs (4pcs) on the lid	If these have not been replaced, they should now be replaced . Contact your dealer. If the machine has been exposed to aggressive materials, then the springs should be replaced more often.





5 Year maintenance	
Gas spring on the lid	If these have not been replaced, they should now be replaced . Contact your dealer. If the machine has been exposed to aggressive materials, then the gas springs should be replaced more often.
Oil exhaust filter in the vacuum pump	Replace these parts now. Contact your dealer. Warning: If oil spray is at any time visible, replace the oil exhaust filters immediately; do not wait until the 5-year maintenance check. This prevents damage to the pump.
Electrical wiring	Let your dealer check and repair these if necessary

## 8.1 Maintenance of the seal bar

Maintenance of the seal bar .

1. Clean the teflon and check if the teflon is not damaged.
2. Check the sealwire and trenn-wire .

### 8.1.1 Removing the seal bar

1. Switch off the machine
2. Disconnect the connector on both sides (fig. 5 pos 1)
3. Take out the seal bar.

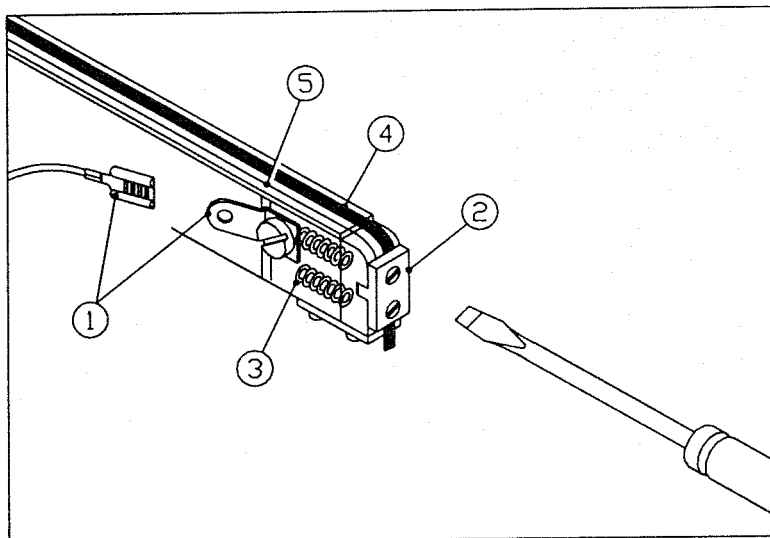
### 8.1.2 Replacing the teflon

If the teflon is worn out it must be replaced.

1. Remove the sealbar as described in chapter 8.1.1
2. Remove the old teflon
3. Check the sealing wire: Replace if necessary see chapter 8.1.3
4. Remove the protective paper strip and press the teflon evenl onto the seal bar.

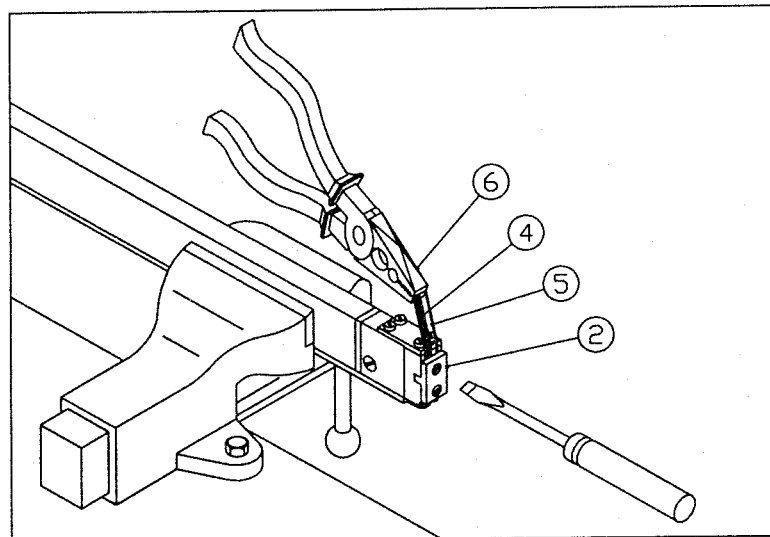
The teflon must be wrinkle free. wrinkles in the teflon will give a bad seal.

### 8.1.3 Replacing the seal wire



1. Remove the sealbar as described in chapter 8.1.1
2. Loosen the assembly plates at both sides of the sealbar (fig. 5 pos 2)
3. Remove the seal wires (fig. 5 pos 4 & 5)

Watch out for the springs (fig. 5 pos 3)



4. Check the lower teflon; if it is damaged replace it.
5. Mount the springs (fig. 5 pos 3)
6. Mount the new sealwires and / or bag-cut-off wire at one end of the seal bar.

- Mount the sealwire and the bag-cut-off wire behind the assembly plate (fig. 5 pos 2)

- Sealwire and bag-cut-off wire should be even to the lower side of the sealing bar.

Attention:

Mount the bag-cut-off wire in the special groove.

- Fasten the assembly plate

Attention:

Have the cock springs been mounted?

- Stretch the sealwire and the bag-cut-off wire on the sealbar.

- Mount the assembly plate at the other end of the sealbar.

- Clamp the sealbar (carefully) into a bench-vice. Tighten the sealwire and bag-cut-off wire thoroughly. The terminal sockets should be against the sealbar. (fig 6).

- Cut off the excess wire even with the bottom of the sealbar.

7. Stick new teflon onto the sealbar
8. Place the sealbar into the machines.

fig. 5

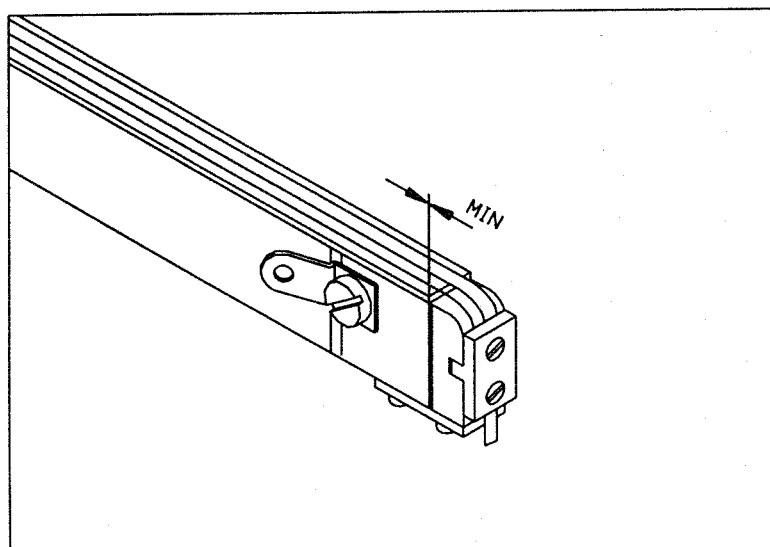


fig. 6

## 8.2 Silicone rubber of the pressure bar

In case the silicon has been damaged it should be replaced. Damaged silicon rubber results into a bad seal.

1. Pull the rubber out of the pressure bar
2. Take over or measure the length of this old rubber
3. Cut the new rubber on the correct length
4. Push the new rubber into the pressure bar

## 8.3 Lid rubber

The lid rubber prevents leakage of the vacuum chamber.

The rubber should only be cleaned by means of a damp towel. Synthetic detergents could have the rubber being dried out.

Treat the rubber with talcum powder regularly.

In case the lid rubber is in a bad condition it should be replaced.

1. Pull the rubber out of the lid
2. Cut the new lid rubber at the same length as the old lid rubber (cut straightly, this prevents leakage)
3. Push the new rubber into the lid (start in the middle of the backside)

N.B. Make sure the end of the rubber are tightly closed to each other in order to prevent leakage.

## 8.4 To check the oil level

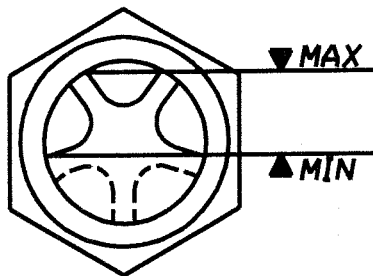


fig. 7

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

The oil level glass has been mounted in pump housing. You can see the oil level glass at the back side of the machine.

The level of oil should be in between the signs "▼ MAX" and "▲ MIN" (fig. 7)

### 8.4.1 To replace the oil

1. Switch of the machine
2. Loosen the oil drain plug (pos 5210 , Enclosure D2) and drain the oil for 5 minutes. (Take care the oil can be hot)
3. Pour new oil into the vacuum pump by means of a funnel. Mind the oil level!  
Oil filling approx. 6 ltr

After having replaced the oil, the interval-oil counter should be reset at zero. (See chapter 6.10.2)

NOTE. Drain the oil when it is warm. If possible, have the pump running for some minutes to warm the oil, see chapter 8.6.



## 8.5 To restore the auto fuse

The fuse has been mounted on the backside of the machine. When the fuse has been switched off it can be switched on by pushing the button. In case the machine switches off regularly the machine should be checked, see chapter 10

## 8.6 To have the pump running

1. Switch on the machine.
2. Program the maximum vacuum time (99 sec) and minimum sealing time (see chapter 6.5 ).
3. Close the lid.
4. After having run through the cycle operation no. 3 should be repeated some times.

## 9 Technical data

	VM 401 standard
Dimensions	See chapter 4
Weight	697 kg.
Sealing length	105 cm.
Seal width	3,5 mm.
Consumption	7300 Watt
Voltage	230V 3Phase / 50 Hz
Gas pressure	Max. 100kPa (1 Bar)
<b>Options*</b>	
Single-seal	X
Double-seal	X
Bag-cut-off seal	X
Bi-active	X
8 mm seal	X
Gas flushing	X
<b>SEALBAR POSITION (fig. 8)</b>	
1	X
2	X
3	X
4	X

\* For technical details about options ask your supplier

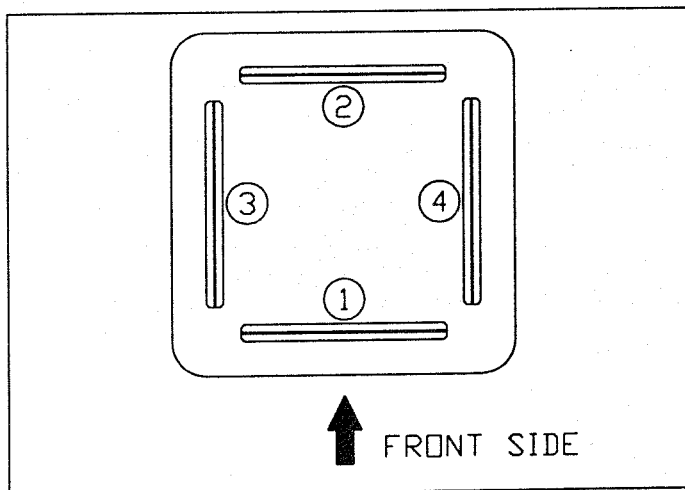


fig. 8

## 10 Problems and solutions

Problem	Cause	Solution
The Audionvac does not work at all.	<ul style="list-style-type: none"> <li>- Plug is not correctly in the mains supply.</li> <li>- Fuse has switched off</li> <li>- An internal interruption</li> </ul>	<ul style="list-style-type: none"> <li>- Insert the plug correctly into the mains plug.</li> <li>- See chapter 8.5</li> <li>- Contact your dealer or AUDION ELEKTRO</li> </ul>
The main fuse switches off frequently	<ul style="list-style-type: none"> <li>- An internal interruption</li> </ul>	<ul style="list-style-type: none"> <li>- Contact your dealer or AUDION ELEKTRO</li> </ul>
Displays are lightened up but the machine does not work	<ul style="list-style-type: none"> <li>- Thermal safety has switched off the machine</li> <li>- Fuse has been blown</li> <li>- Internal interruption</li> </ul>	<ul style="list-style-type: none"> <li>- Have the ventilation openings been closed? Is the machine close to a wall? * Let the machine cool down and switch on the safety switch</li> <li>- Replace the fuse</li> <li>- Contact your dealer or AUDION ELEKTRO</li> </ul>
The Audionvac makes a bad seal	<ul style="list-style-type: none"> <li>- Seal time is not correctly.</li> <li>- Sealbar is not clean.</li> <li>- Wrong bag material.</li> <li>- Gasflush time is set to long</li> </ul>	<ul style="list-style-type: none"> <li>- Adjust the sealing time (See chapter 6.5).</li> <li>- Clean the sealbar (See chapter 8.1).</li> <li>- Use the correct bags (See chapter 3).</li> <li>- Adjust the gas flush time (See chapter 6.6)</li> </ul>
Vacuum pump makes a lot of noise	<ul style="list-style-type: none"> <li>- The pump is rotating in the wrong direction.</li> <li>- There is not enough oil in the pump</li> <li>- Pump has broken</li> </ul>	<ul style="list-style-type: none"> <li>- Change the position of the phase wires</li> <li>- Replenish the oil (See chapter 8.4.1)</li> <li>- Contact your dealer or AUDION ELEKTRO</li> </ul>



Problem	Cause	Solution
Vacuum in the chamber is not enough.	<ul style="list-style-type: none"> <li>- Incorrect vacuum setting.</li> <li>- There is not enough oil in the pump</li> <li>- The oil is dirty</li> <li>- The rubber strip on the lid is damaged</li> <li>- The gas flush time is set too long.</li> <li>- Vacuum filter is contaminated</li> </ul>	<ul style="list-style-type: none"> <li>- Adjust the vacuum setting (See chapter 6.5)</li> <li>- Replenish the oil (See chapter 8.4.1)</li> <li>- Replace the oil (See chapter 8.4.1)</li> <li>- Replace the rubber strip (See chapter 8.3)</li> <li>- Adjust the gas flush time (See chapter 6.5) or turn off the gas function (See chapter 6.6).</li> <li>- Contact your dealer or AUDION ELEKTRO</li> </ul>
Insufficient vacuum in the package.	<ul style="list-style-type: none"> <li>- The product has damaged the bag</li> <li>- The gas flush time is set too long.</li> <li>- Wrong bag material.</li> </ul>	<ul style="list-style-type: none"> <li>- Watch out for sharp edges, re-arrange the product in the bag</li> <li>- Adjust the gas flush time (See chapter 6.5) or turn off the gas function (See chapter 6.6).</li> <li>- Use the correct bags (See chapter 3).</li> </ul>
Insufficient gas flushing	<ul style="list-style-type: none"> <li>- The gas bottle is not open</li> <li>- The gas bottle is empty</li> <li>- Incorrect gas settings</li> </ul>	<ul style="list-style-type: none"> <li>- Check the regulator on the gas bottle.</li> <li>- Switch off the machine and replace the gas bottle (see chapter 6.7.2)</li> <li>- Adjust the gas settings. (See chapter 6.6.1 and 6.7.1)</li> </ul>

## Partnumbers

Description	Drw.posnr	Order number
Teflon 10mtr	3480	6045001
Sealwire 3,5mm standard 10 mtr	3440	6045015
Lower teflon	3460	6045025
Lid rubber 10 mtr	0030	6040071
Silicone strip 10 mtr	3490	6040040
Spring for low (ca 12 cm) lid	4090	6062040
Spring for high (ca 20cm) lid	4100	60620410
Gas spring	1190	6087027
Oil for vacuumpump 3 phase bottle 1 ltr		6095415
Oil filter		6060904

## 11 To discard the Audionvac

AUDION ELEKTRO requests you to return the discarded Audionvac to the supplier.

## 12 Conditions of guarantee

### 12.1 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 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 persons.
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 Audionvac.

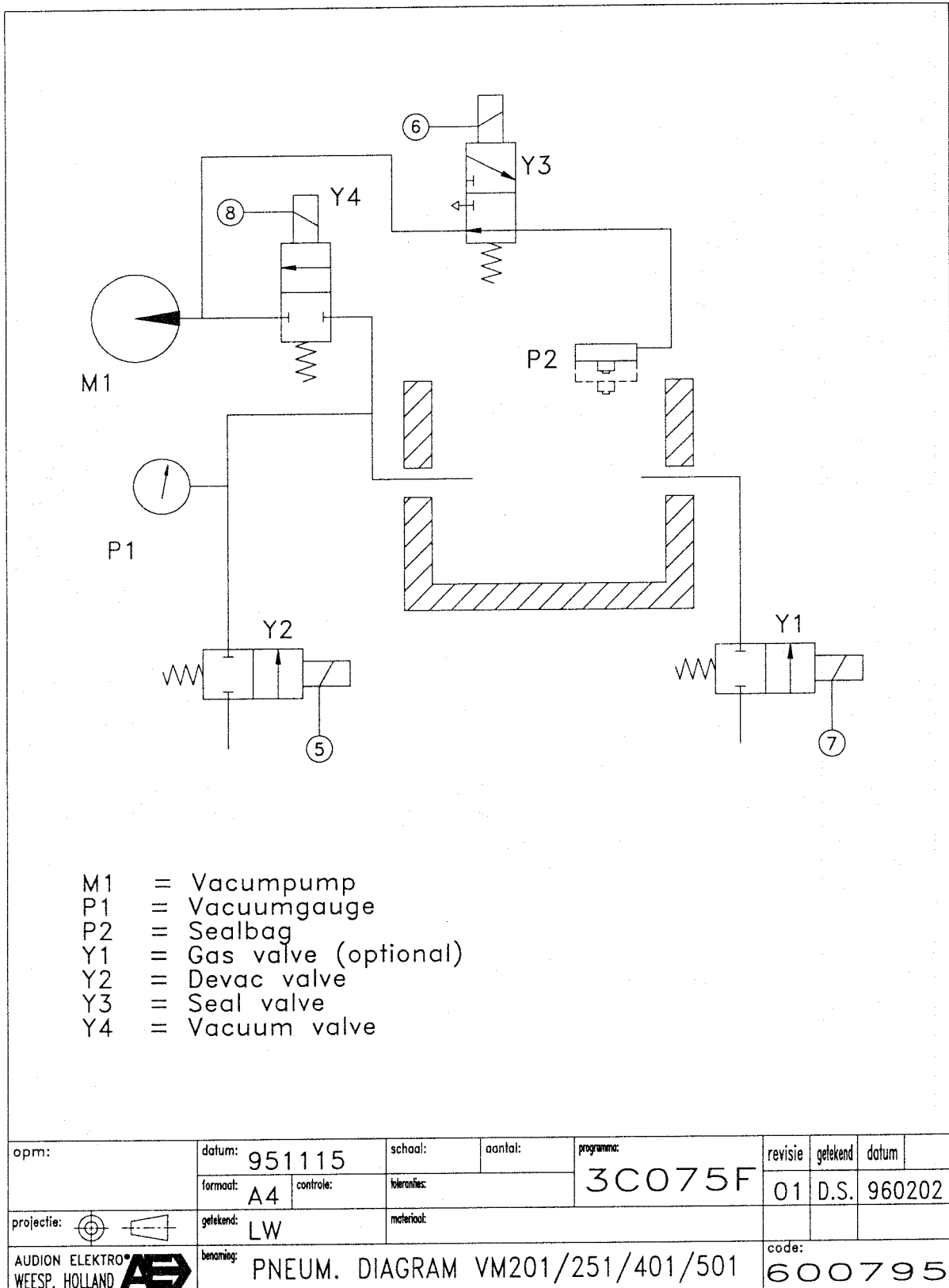
### 12.2 Guarantee

1. With due observance of the restrictions stated hereafter, we allow 6 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 spareparts subject to use.
2. To spareparts 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 spareparts to fulfill our guarantee engagement, the spareparts replaced become property of AUDION ELEKTRO B.V.
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.





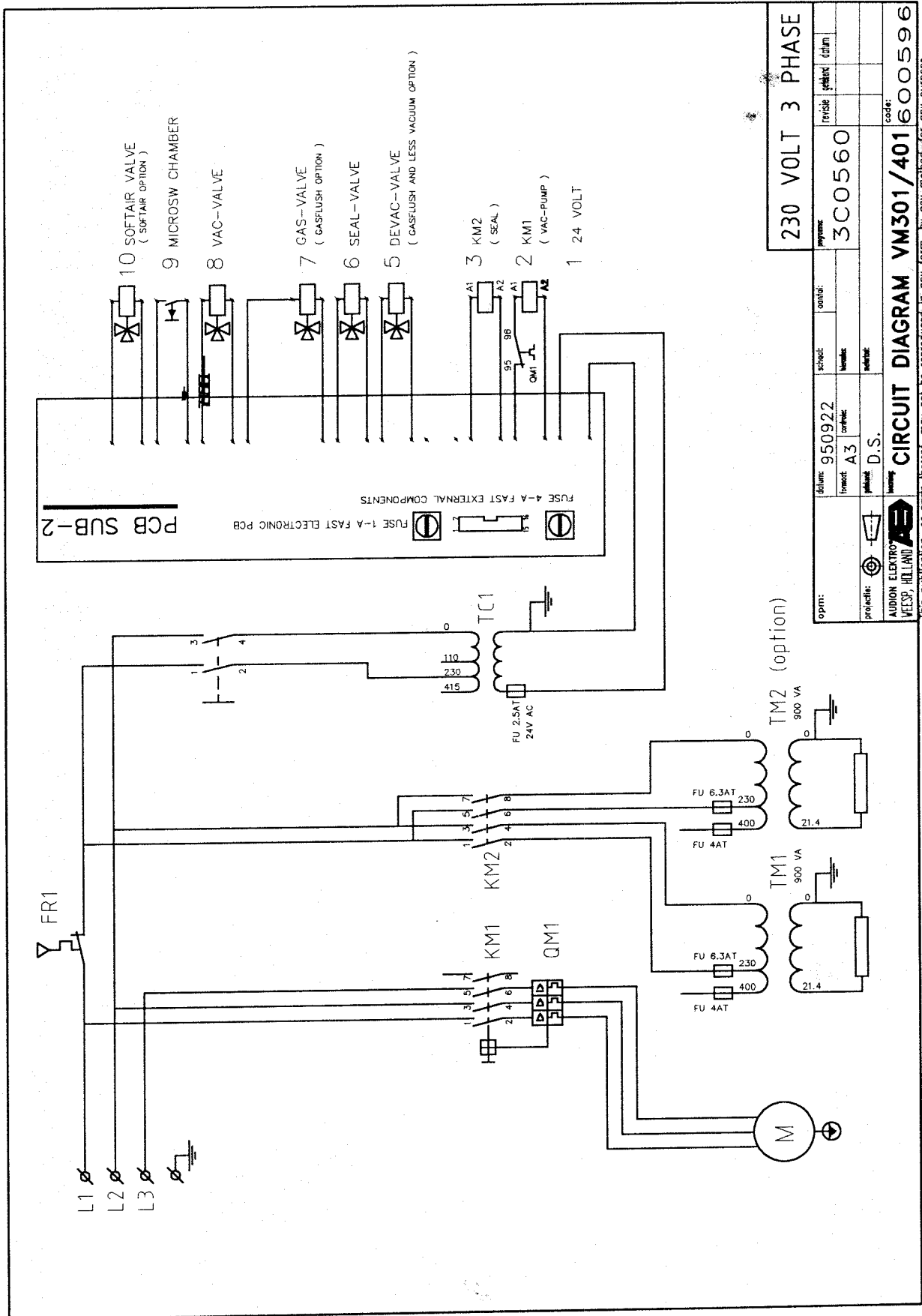
## 13 VM 401 Pneumatic diagram



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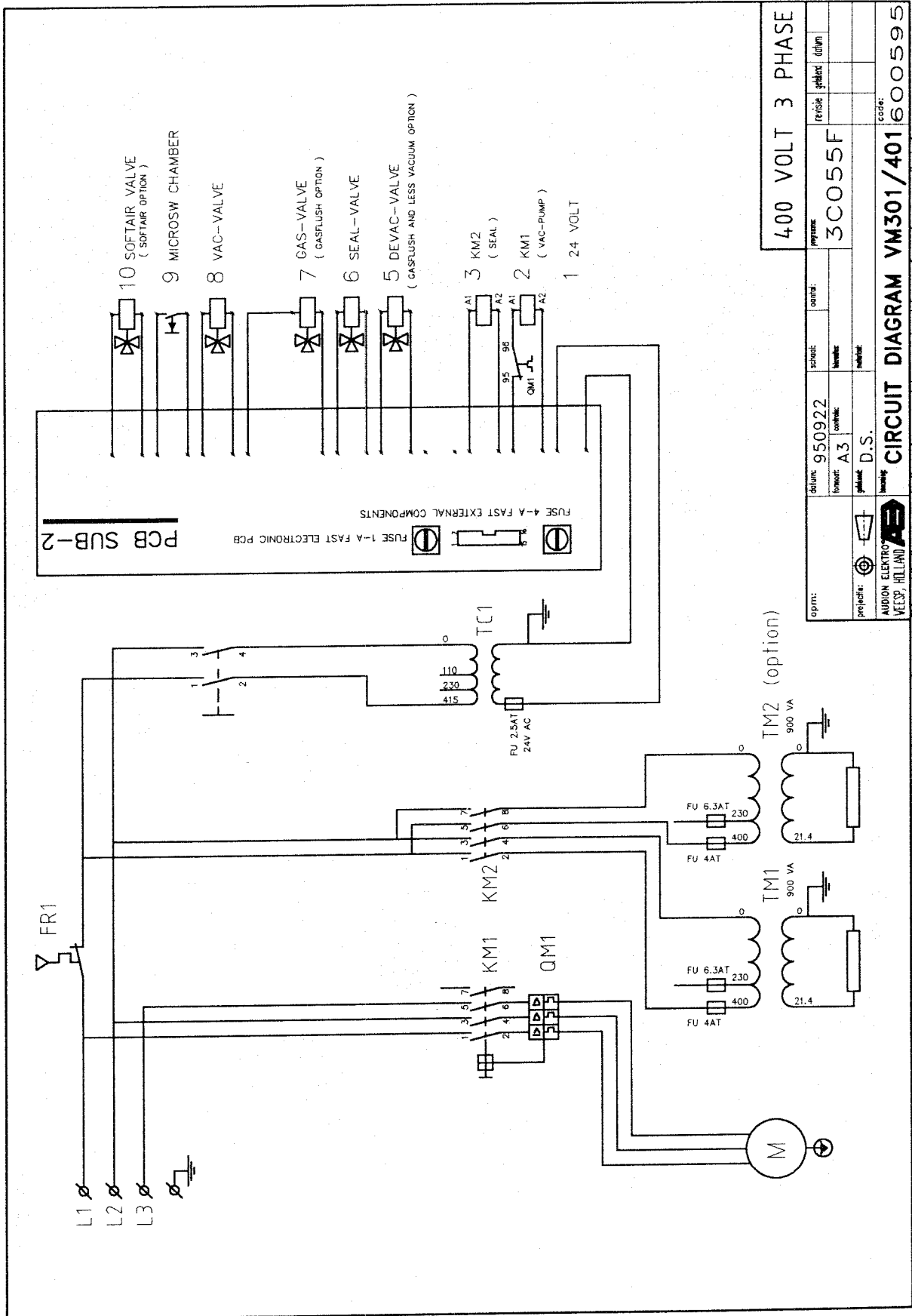
# 14 VM 401 electrical diagram 230V 3Phase



230 VOLT 3 PHASE			
opm:	dokument: 950922	schicht:	datum:
projekte:	format: A3	name:	revisie: 01
audion elektro	plaat: D.S.	nr:	datum:
<b>CIRCUIT DIAGRAM VM301/401 600596</b> <small>This publication, or parts thereof, may not be reproduced in any form, by any method, for any purpose.</small>			



# 15 VM 401 electrical diagram 400V 3Phase

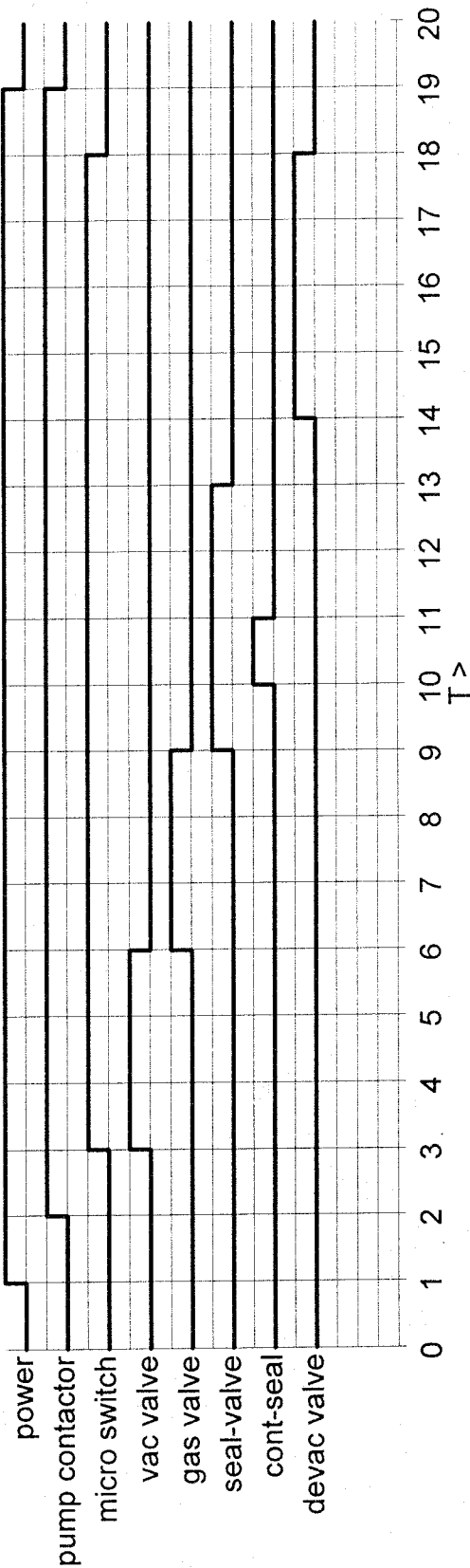


400 VOLT 3 PHASE		project:	date:	scale:	author:
3C055F		revision:	950922	sheet:	950922
		part:	A3	number:	
		plant:	D.S.	name:	
		<b>CIRCUIT DIAGRAM VM301/401</b>			
code: 600595		AUDION ELECTRONICS VEESP. HOLLAND			

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# 17 VM 401 Time diagram "Gasflush"



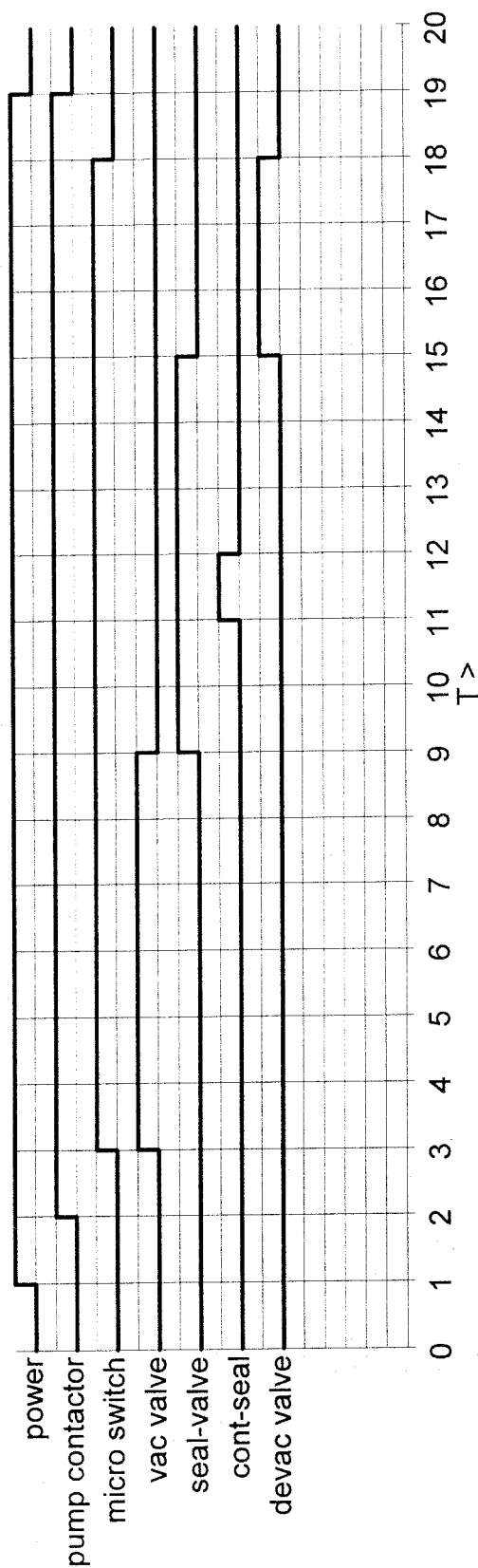
- T1-T2 = 2 sec.
- T3-T6 = Vac-time (0 - 99 sec)
- T6-T9 = Gasflush time (0 - 99 sec)
- T9-T10 = Pre sealtime
- T10-T11 = Seal-time (0- 6,3 sec)
- T11-T13 = Cooling time
- T13-T14 = 2 sec.
- T14-T18 = Decompress time (till lid opens)

Details GASFLUSH	Date	06-11-1995	Programma:	rev	drawn	date
	format	A4	3C2005M			
	Drawn by	PSP				
 AUDION ELEKTRO WEESP, HOLLAND			TIMEDIA. VM 201 / 251 / 301 / 401 / 501			code 602005M

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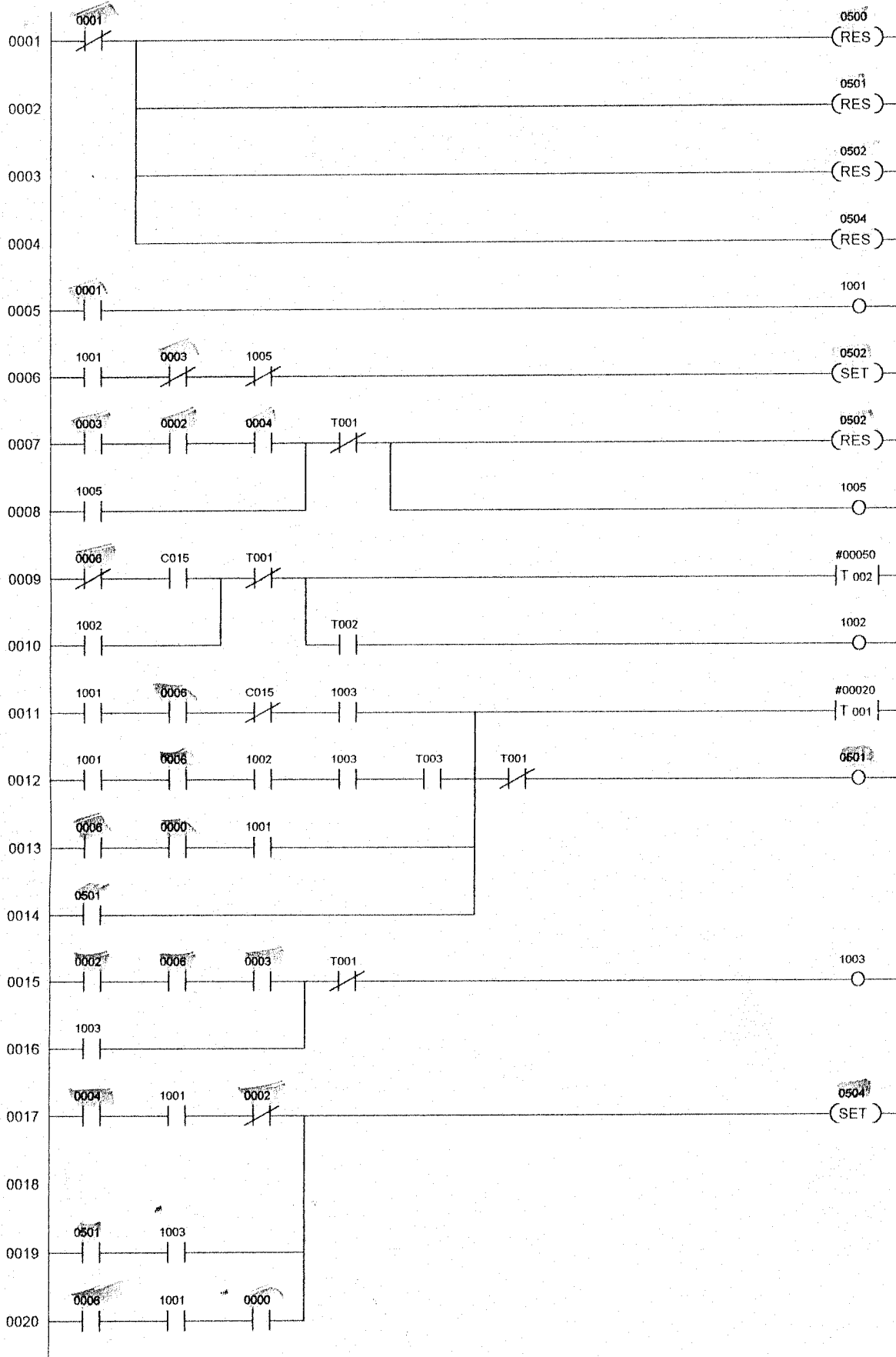
# 16 VM 401 Time diagram "Less vacuum"



- T1-T2 = 2 sec.
- T3-T9 = Vac-time (0 - 99 sec)
- T9-T11 = Pre sealtime
- T11-T12 = Seal-time (0- 6,3 sec)
- T12-T15 = Cooling time
- T15-T18 = Decompress time (till lid opens)

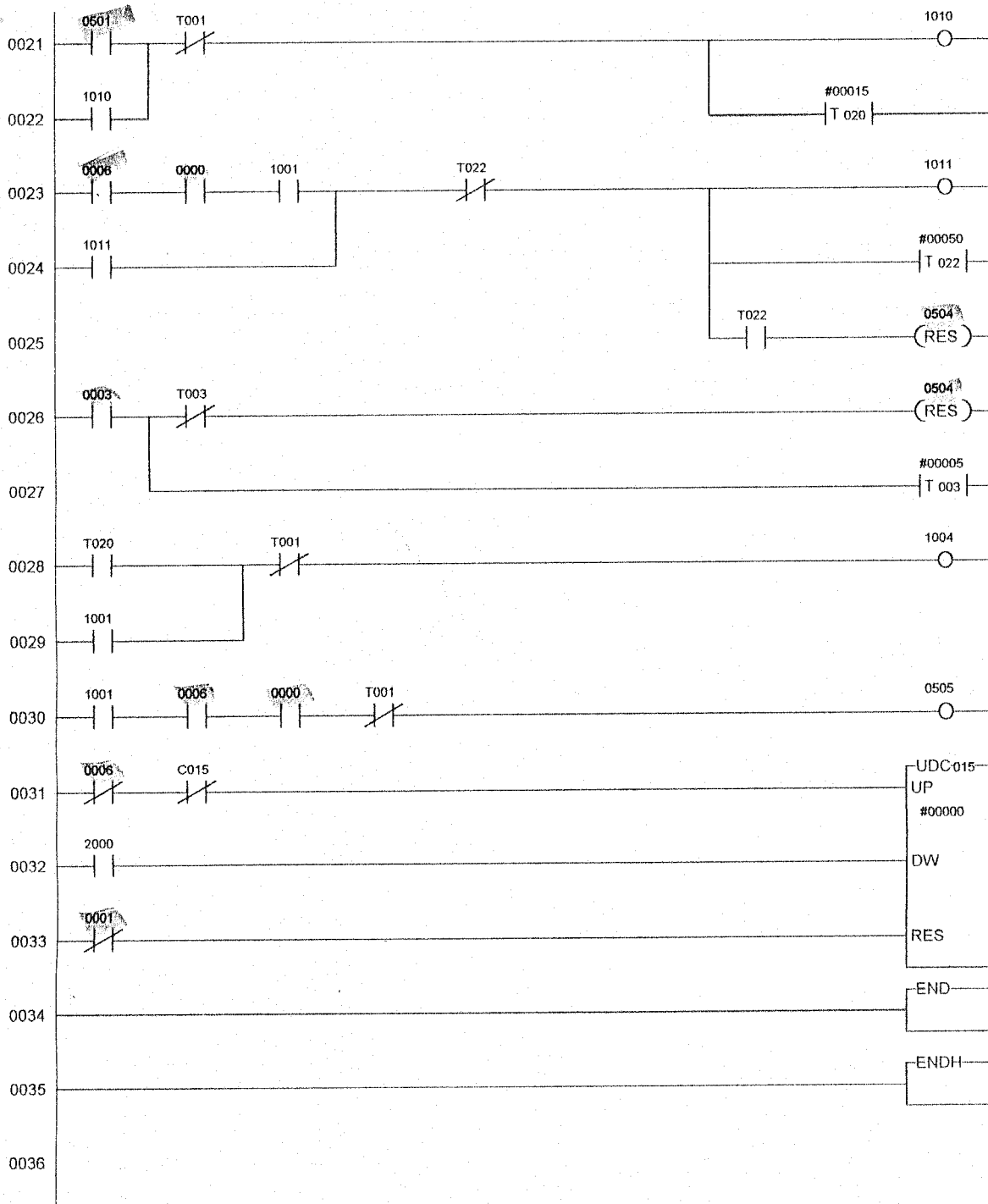
Details LESS VACUUM	Date	06-11-1995	Programma:		rev	drawn	date
	format	A4		3C2004M			
	Drawn by	PSP					
 AUDION ELEKTRO WEESP, HOLLAND		<b>TIMEDIA.</b> <b>VM 201 / 251 / 301 / 401 / 501</b>		code		602004M	

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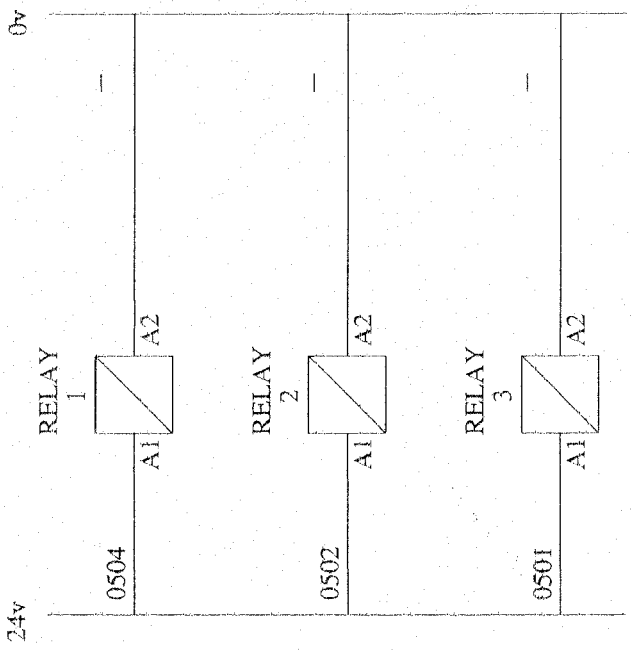
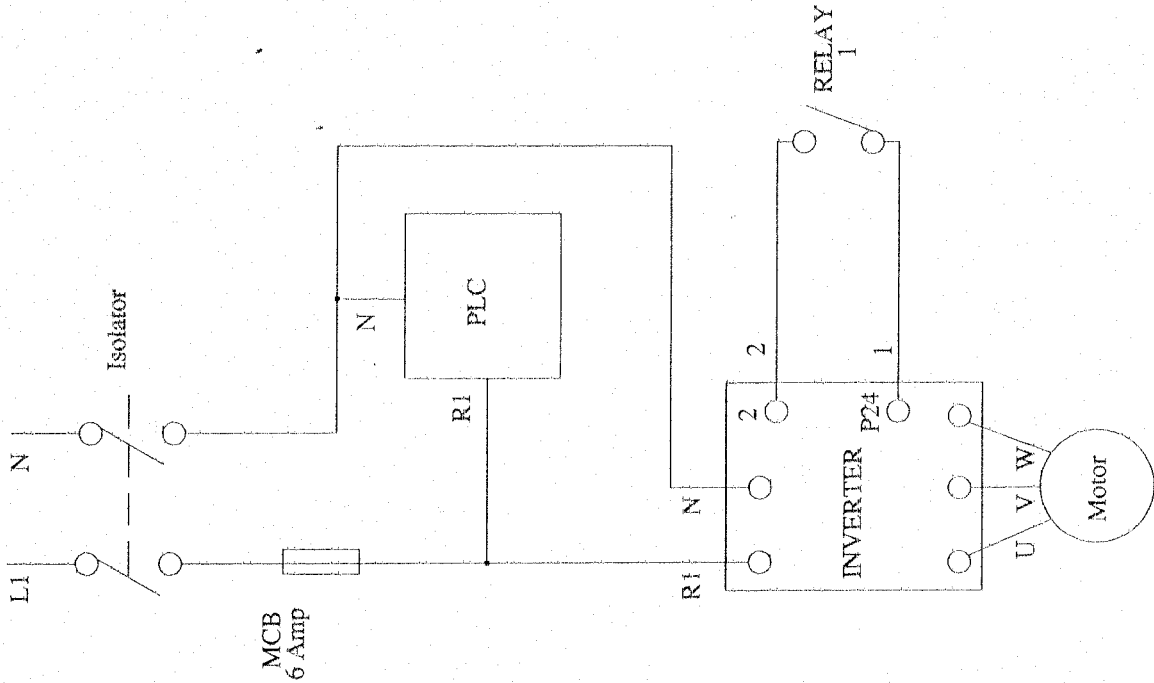








CORR



PLC



**Inputs**

- Eject Push Button 000
- System ON Switch 001
- 1 Sensor Collation Belt 002
- 2 Sensor Collation Belt 003
- Infeed Belt Sensor 004
- Lid Up Sensor 006

**Outputs**

- Belt Start Collation 0504
- Belt Infeed 0502
- Belt Swissvac 0501

THIS DRAWING IS PRODUCED IN GOOD FAITH AND MUST NOT BE SHOWN TO A THIRD PARTY WITHOUT WRITTEN CONSENT FROM EUROFLOW ENGINEERING

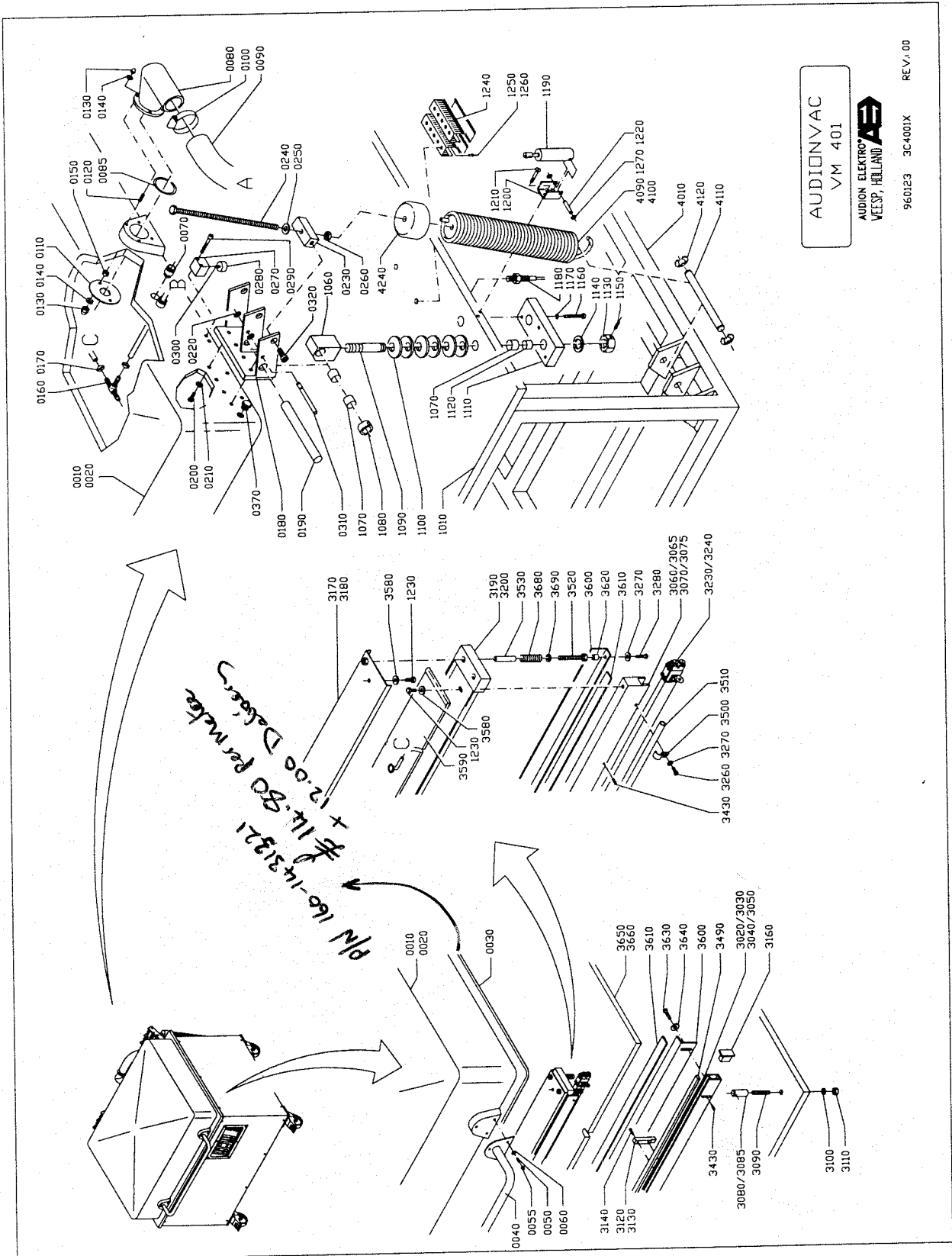



TEL: +44 (0)1205 357887  
 FAX: +44 (0)1205 358140  
 NOTES: CLIENT: Converter System  
 JOB TITLE: DATE: 31-9-00  
 SCALE: MTS  
 DRAWN BY: J Sower  
 CHECKED BY:  
 TITLE: General Arrangement Electrical Control Circuit  
 DRWG No: 217602-1





# 18 VM 401 exploded view

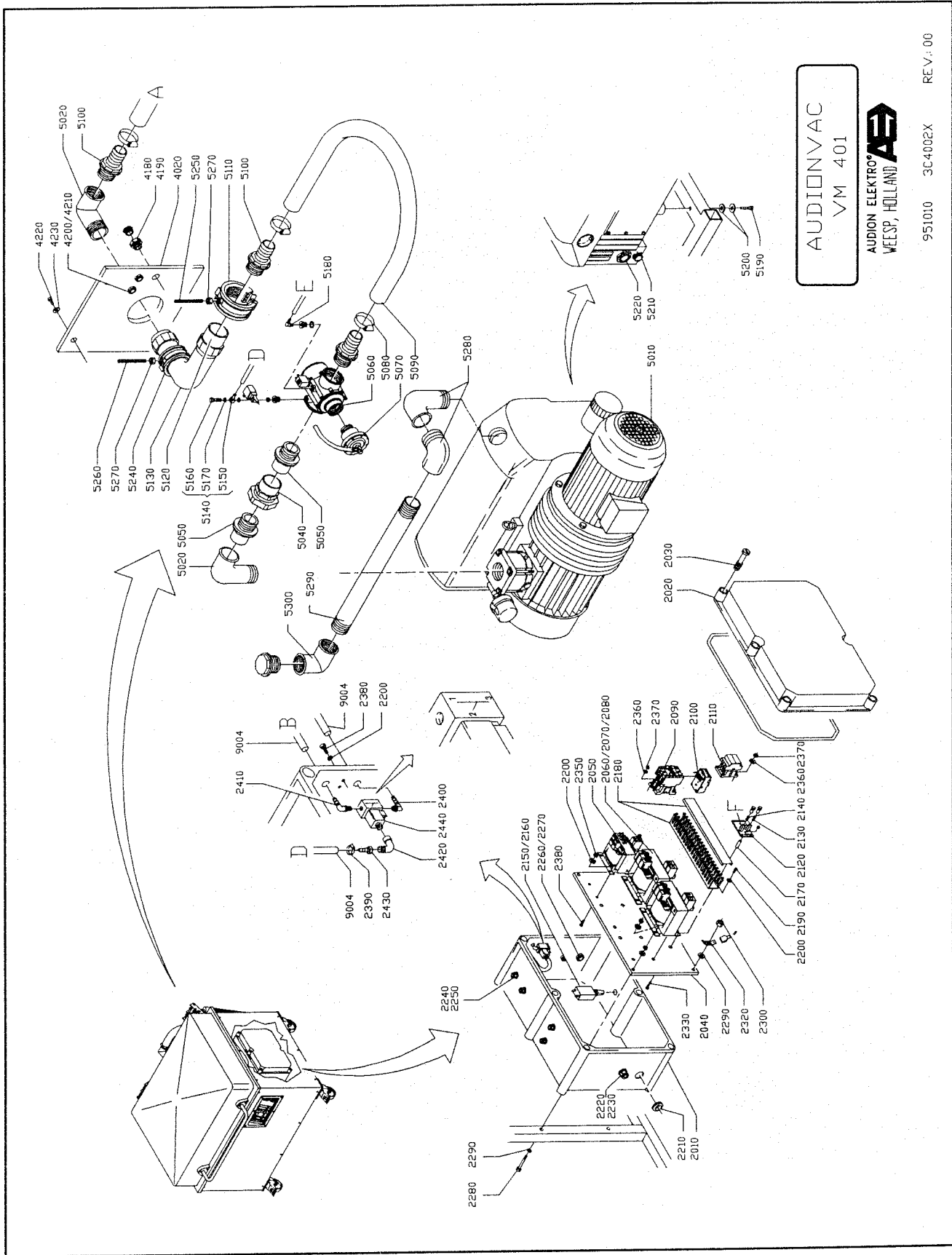




AUDIONVAC  
VM 401

AUDION ELEKTRO  
WEESP, HOLLAND

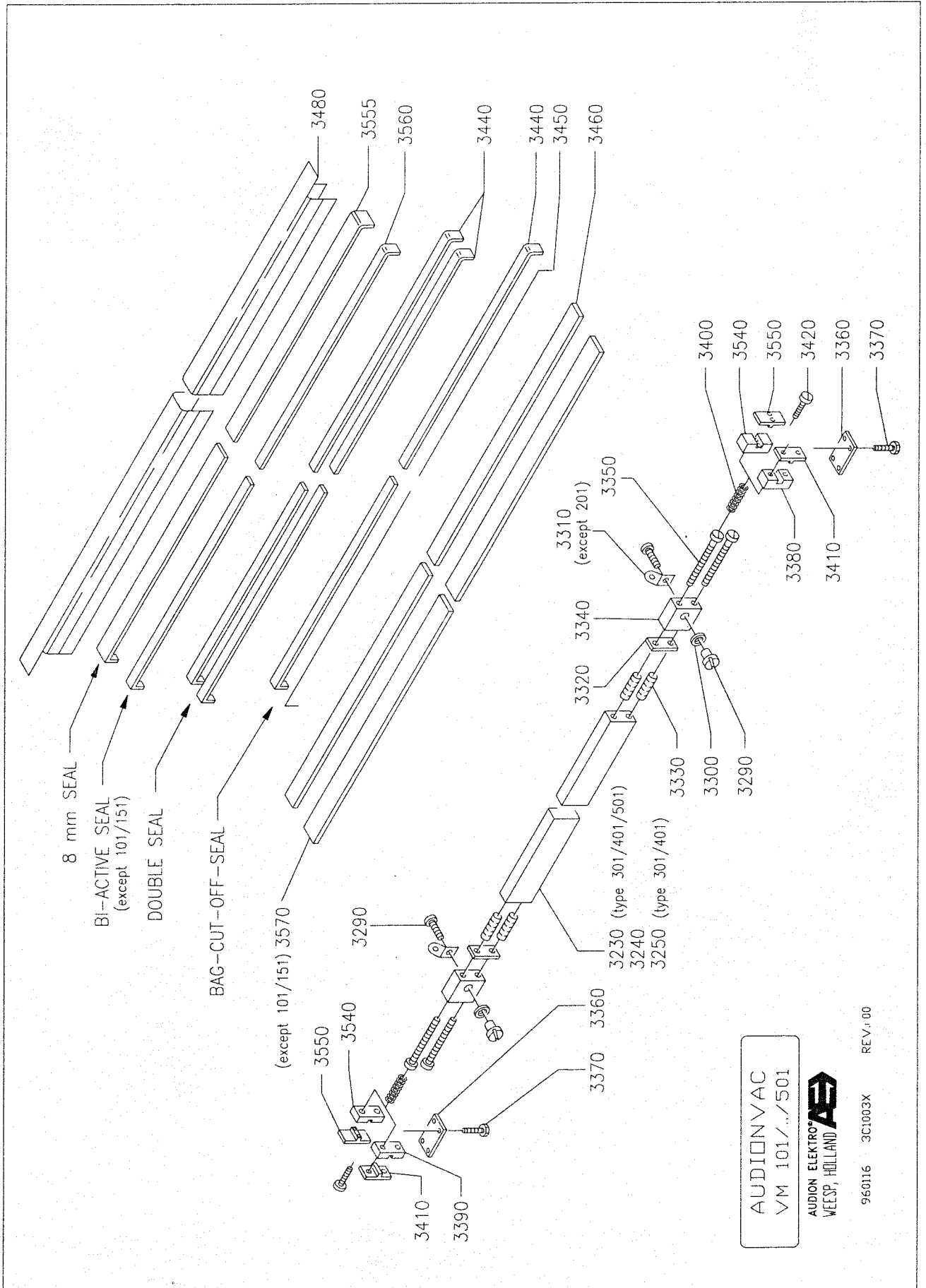
951010 3C4002X REV: 00

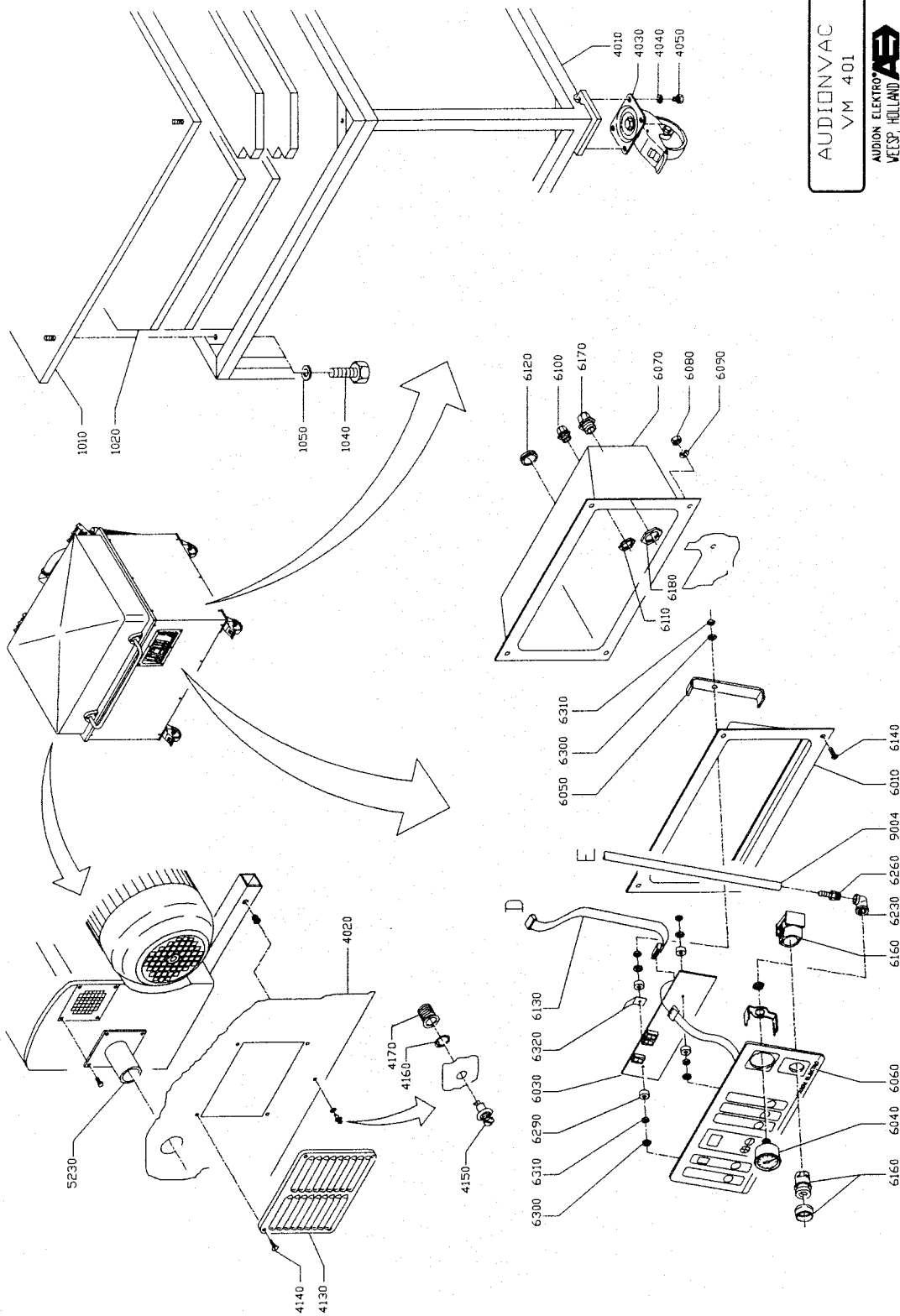


Enclosure D2



# 19 Sealbar exploded view





AUDIONVAC  
VM 401

AUDION ELECTRO  
VEESP, HOLLAND

951010 3C4003X REV.: 00





## TYPICAL R 5 025/040/063/100 ASSEMBLY BY REFERENCE NUMBER

Ref. No.	Description	Ref. No.	Description	Ref. No.	Description
1	Pump Cylinder	95	Oil Drain Plug	230	Oil Tubing
4	Stud	96	O-Ring, Buna	231	Oil Tubing
15	Rotor	99	Pipe Nipple	232	Oil Tubing
18	Bearing Sleeve	100	Automotive-Type Oil Filter	240	Cooling Coil
22	Vane	105	Cover Plate	250	Inlet Flange, Lower Housing
25	Endplate, Motor Side (A)	106	Gasket	251	Valve Plate
26	Endplate, Oppos. Motor Side (B)	107	Hex Head Cap Screw	252	Valve Guide
30	Bearing	108	Gasket Ring	253	O-Ring, Buna
35	Shaft Seal, Viton	120	Exhaust Filter	254	Spring
42	Support Ring			255	O-Ring, Buna
43	Slotted Cheese Head Machine Screw	121	O-Ring, Buna	260	Inlet Flange, Upper Housing
46	Plug	125	Filter Spring Assembly	261	Inlet Screen
47	Gasket Ring	126	Slotted Cheese Head Machine Screw	265	Hex Head Cap Screw
50	O-Ring, Viton	130	Baffle Strainer	266	Lockwasher
53	Hex Head Cap Screw	131	Foam Block	270	Plug
54	Lockwasher	146	Hex Head Cap Screw	271	Gasket Ring
60	Taper Pin	152	Lockwasher	275	Oil Return Valve
65	Shaft Key	153	Exhaust Silencer Complete	276	Gasket Ring
66	Shaft Key	159	Exhaust Valve Complete	285	Oil Recirculation Screw
75	Pump Exhaust Box	180	Plug	286	Banjo Fitting
78	Sheet Metal Baffle	185	Gasket	288	Gasket Ring
79	Steel Demister	186	Hex Head Cap Screw	289	Gasket Ring
83	Oil Sight Glass	187	Lockwasher	290	Oil Return Line
84	Gasket Ring	200	Drum Plug	291	Hydraulic Fitting, Elbow
88	Oil Fill Plug	201	O-Ring, Viton	300	Motor Mounting Bracket
89	Gasket Ring	220	Hydraulic Fitting, Straight	302	Lockwasher
90	Pressure Gauge	221	Hydraulic Fitting, Elbow	303	Hex Nut
91	Gasket Ring	222	Hydraulic Fitting, Straight	310	Coupling Half, Pump Side
		223	Hydraulic Fitting, Elbow	310	Coupling Half, Motor Side
				310	Coupling Insert, Bowex
				310	Coupling Insert, Bowex
				320	Spacer
				321	Fan
				326	Retaining Ring
				340	Fan Cover
				341	Sheet Metal Screw
				342	Plastic Sleeve
				400	Motor
				401	Hex Head Cap Screw
				402	Lockwasher
				415	Slotted Set Screw
				416	Stud
				417	Slotted Set Screw
				418	Slotted Set Screw
				419	Spacer
				420	Spacer
				421	Rubber Foot
				423	Lockwasher
				424	Hex Nut
				430	Name Plate
				431	Directional Arrow
				432	Busch Logo
				433	Oil Level Label
				436	Maintenance Label
				440	Gas Ballast Valve Complete



**Busch, Inc.**

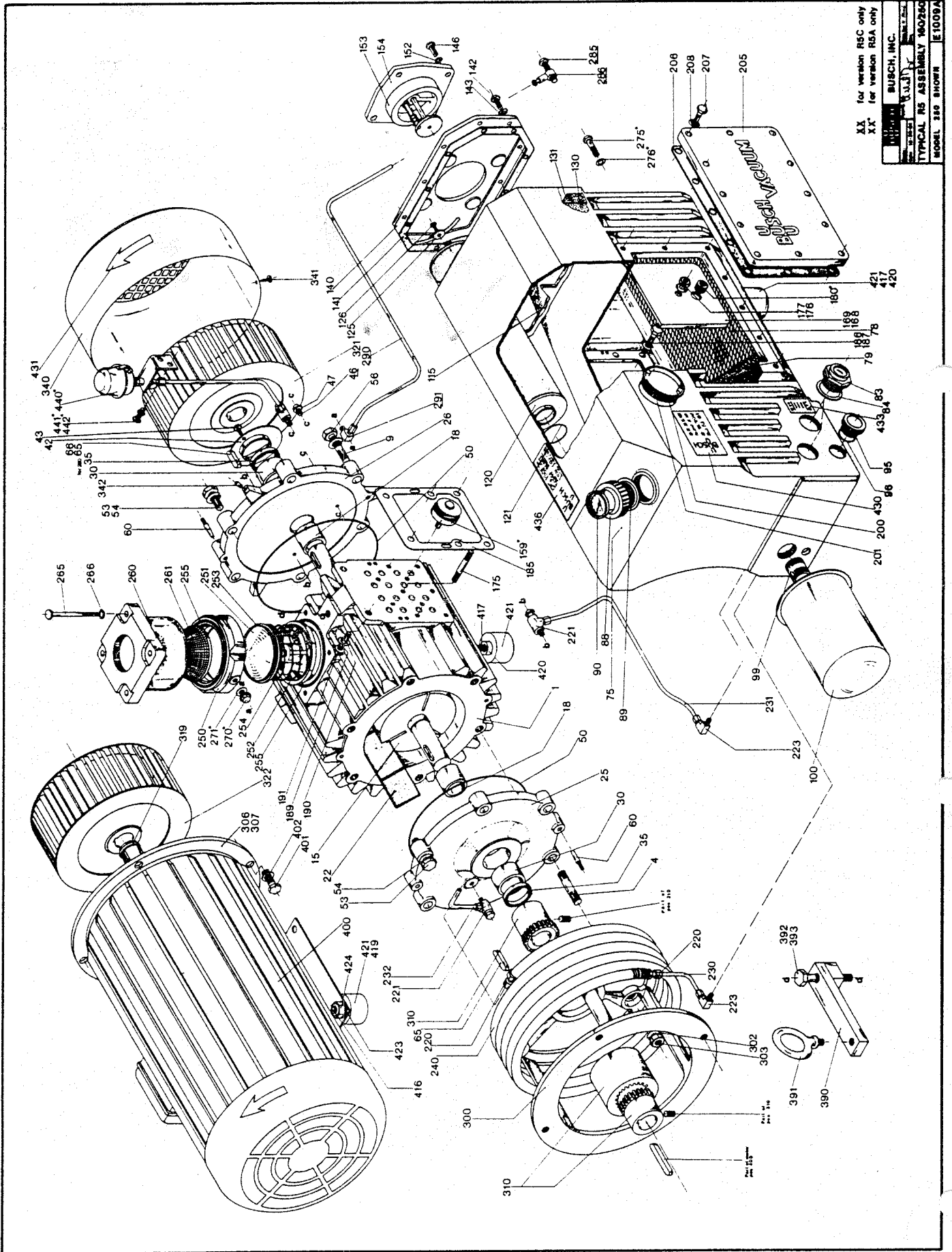
516 Viking Drive  
Virginia Beach, VA 23452  
Phone: (804) 463-7800

**Dwg. No. E 1008 A**



01753 588564

# VACUUM PUMP VM 401



Enclosure E3

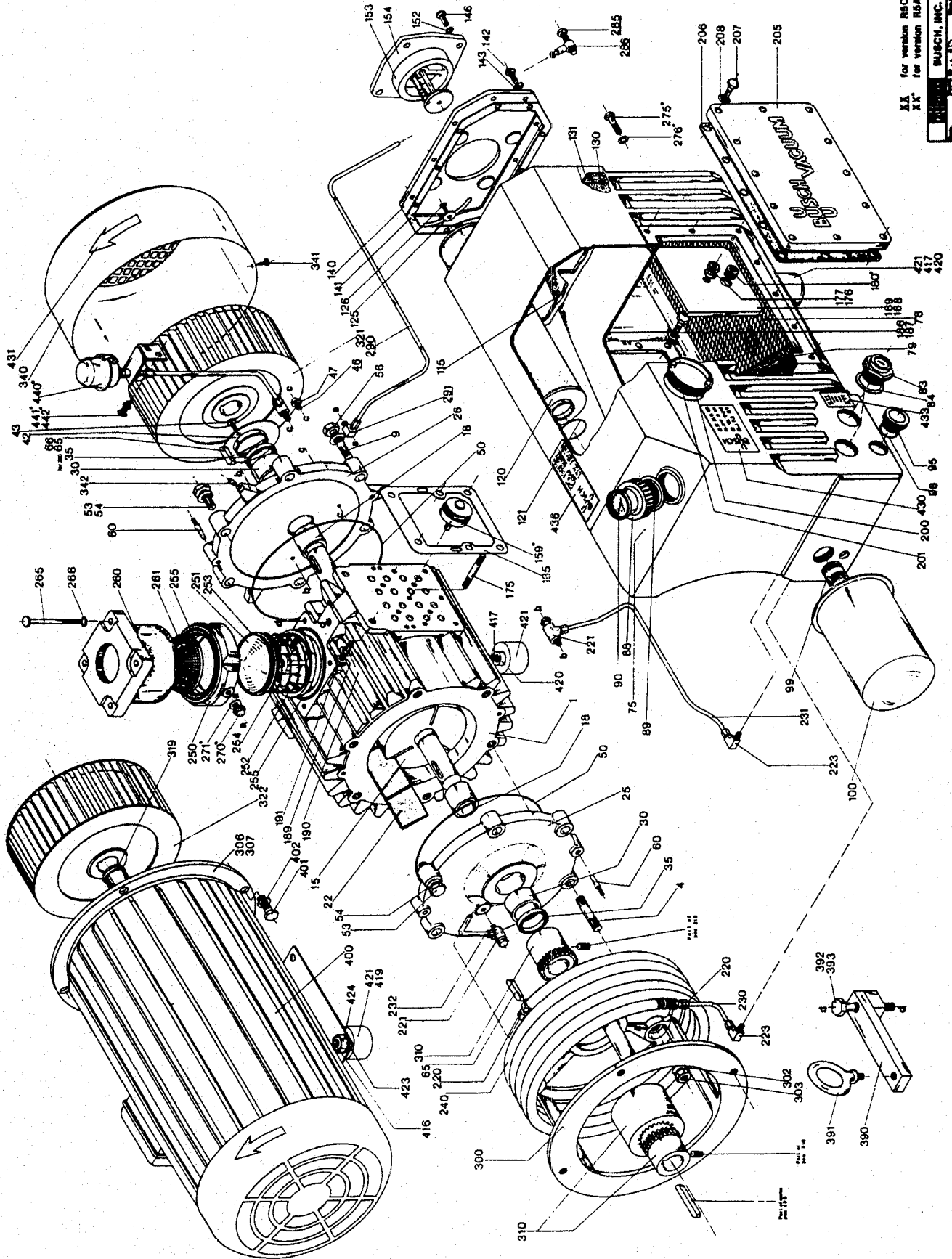
*Handwritten:* JMX 6152677423



01753 588564

# VACUUM PUMP VM 401

3065



XX for version RSC only  
 XX for version RBA only  
 BUSCH, INC.  
 TYPICAL RE ASSEMBLY 900290  
 MODEL 250 SHOWN E 1000A





2 OF 3

TYPICAL R 5 025/040/063/100 ASSEMBLY BY REFERENCE NUMBER

Ref. No.	Description	Ref. No.	Description	Ref. No.	Description
1	Pump Cylinder	95	Oil Drain Plug	230	Oil Tubing
4	Stud	96	O-Ring, Buna	231	Oil Tubing
15	Rotor	99	Pipe Nipple	232	Oil Tubing
18	Bearing Sleeve	100	Automotive-type Oil Filter	240	Cooling Coil
22	Vane	105	Cover Plate	250	Inlet Flange, Lower Housing
25	Endplate, Motor Side (A)	106	Gasket	251	Valve Plate
26	Endplate, Oppos. Motor Side (B)	107	Hex Head Cap Screw	252	Valve Guide
30	Bearing	108	Gasket Ring	253	O-Ring, Buna
35	Shaft Seal, Viton	120	Exhaust Filter	254	Spring
42	Support Ring			255	O-Ring, Buna
43	Slotted Cheese Head Machine Screw	121	O-Ring, Buna	260	Inlet Flange, Upper Housing
46	Plug	125	Filter Spring Assembly	261	Inlet Screen
47	Gasket Ring	126	Slotted Cheese Head Machine Screw	265	Hex Head Cap Screw
50	O-Ring, Viton	130	Baffle Strainer	266	Lockwasher
53	Hex Head Cap Screw	131	Foam Block	270	Plug
54	Lockwasher	146	Hex Head Cap Screw	271	Gasket Ring
60	Taper Pin	152	Lockwasher	275	Oil Return Valve
65	Shaft Key	153	Exhaust Silencer Complete	276	Gasket Ring
66	Shaft Key	159	Exhaust Valve Complete	285	Oil Recirculation Screw
75	Pump Exhaust Box	180	Plug	286	Banjo Fitting
78	Sheet Metal Baffle	185	Gasket	288	Gasket Ring
79	Sleet Demister	186	Hex Head Cap Screw	288	Gasket Ring
83	Oil Sight Glass	187	Lockwasher	290	Oil Return Line
84	Gasket Ring	200	Drum Plug	291	Hydraulic Fitting, Elbow
88	Oil Fill Plug	201	O-Ring, Viton	300	Motor Mounting Bracket
89	Gasket Ring	220	Hydraulic Fitting, Straight	302	Lockwasher
90	Pressure Gauge	221	Hydraulic Fitting, Elbow	303	Hex Nut
91	Gasket Ring	222	Hydraulic Fitting, Straight	310	Coupling Half, Pump Side
		223	Hydraulic Fitting, Elbow	310	Coupling Half, Motor Side
				310	Coupling Insert, Bowex
				341	Sheet Metal Screw
				342	Plastic Sleeve
				400	Motor
				401	Hex Head Cap Screw
				402	Lockwasher
				415	Slotted Set Screw
				416	Stud
				417	Slotted Set Screw
				418	Slotted Set Screw
				419	Spacer
				420	Spacer
				421	Rubber Foot
				423	Lockwasher
				424	Hex Nut
				430	Name Plate
				431	Directional Arrow
				432	Busch Logo
				433	Oil Level Label
				436	Maintenance Label
				440	Gas Ballast Valve Complete



Busch, Inc.  
 516 Viking Drive  
 Virginia Beach, VA 23452  
 Phone: (804) 463-7800

Dwg. No. E 1008 A





# 20 VM 401 Spare parts list

Pos number	Description	Pos. number	Description
10	LID	3050	SILICONE HOLDER
20	LID	3060	PRESSURE BAR
30	SILICONE CORD	3065	PRESSURE BAR
40	HANDLE	3070	PRESSURE BAR
50	SET SCREW M6X20	3075	PRESSURE BAR
55	CAP NUT M6	3080	ADJUSTING RING
60	SPRING WASHER	3085	ADJUSTING RING
70	TIGHT FITTING 3/8"	3090	STUD M10X50
80	FITTING	3100	WASHER COPPER
85	O- RING 50x2	3110	CONNECTOR
90	HOSE	3120	BLOCK
100	HOSE CLIP 50-65MM	3130	BLOCK
110	COVER PLATESLIDE	3140	BOLT M4X16
120	SET SCREW M5X20	3160	PLUG
130	CAP NUT M5	3170	MOUNTING PLATE SEAL-UNIT UP
140	WASHER	3180	MOUNTING PLATE SEAL-UNIT UP
150	NUT M5	3190	MOUNTING PLATE SEAL-UNIT LOWER
160	HOSE ADAPTER	3200	MOUNTING PLATE SEAL-UNIT LOWER
170	HOSE CLIP 11-13MM	3230	SEAL BAR L=1050mm STANDARD
180	FORK FOR HINGE	3240	SEAL BAR L=1050mm BAG-CUT-OFF
190	SHAFT	3250	SEALBAR L=800mm
200	BOLT M8X40	3260	BOLT M4X6
210	WASHER COPPER	3270	WASHER M4
220	RETAINING RING 8MM	3280	BOLT M4X25
230	SPRING	3290	BOOKSCREW
240	BOLT M10X250	3300	WASHER
250	WASHER	3310	CONNECTOR
260	NUT M10	3320	INSULATION PLATE
270	BRACKET	3330	INSERT
280	REEDSWITCH	3340	TUMBLER
290	BOLT M6X40	3350	BOLT
300	BOLT M5X25	3360	CONNECTOR
310	SHAFT	3370	BOLT
320	BOLT M10X16	3380	CLAMP BAG-CUT-OFF RIGHT-SIDE
370	PLUG 1/4" BRASS	3390	CLAMP BAG-CUT-OFF LEFTSIDE
1010	WORKING TABLE	3400	SPRING
1020	INSULATION PLATE	3410	CLAMP
1040	BOLT M10X16	3420	BOLT
1050	WASHER	3430	BOLT M6X12
1060	HINGE	3440	SEAL WIRE STANDARD
1070	SLIDE BEARING	3450	SEAL WIRE BAG-CUT-OFF
1080	ADJUSTING RING	3460	LOWER TEFLON (DOUBLE / BAG-CUT-OFF)
1090	STUD	3480	UPPER TEFLON
1100	CONICAL SPRING WASHER	3490	SILICONE STRIP 17x8
1110	SUPPORT	3500	HOSE CLIP
1120	SLIDE BEARING	3510	TUBE 10x1 MM
1130	NUT M20X1,5	3520	BOLT M8X60
1140	WASHER	3530	SLIDE BUSHING
1150	SET SCREW M6X6	3540	CLAMP DOUBLE SEAL
1160	BOLT M6X30	3550	CLAMP
1170	WASHER	3560	SEALWIRE BI-ACTIVE
1180	REEDSWITCH	3570	LOWER TEFLON (BI-ACTIVE)
1190	SHOCK ABSORBER	3580	WASHER M6
1200	MOUNTING BRACKET	3590	SEAL BAG 2"
1210	BOLT M6X16	3600	RUBBER STRIP
1220	PIN	3610	LOWER TEFLON 10x5mm
1230	RETAINING RING 6MM	3620	SPACER
1240	CABLE CONDUIT	3630	BOLT M4x8
1250	THREAD CUTTING SCREW	3640	WASHER M4
1260	WASHER M4	3650	INSERT PLATE BLACK
2010	HOUSING	3660	INSERT PLATE BLACK
2020	LID FOR HOUSING	3670	BOLT M6X16
2030	BOLT	3680	SPRING
2040	MOUNTING PLATE	3690	WASHER
2050	TRANSFORMER 110/230/415 24V 60VA	4010	FRAME
2060	TRANSFORMER 230/400 21,4/900VA	4020	PLATE
2070	TRANSFORMER 230/400 33V/900VA	4030	SWIVEL CASTER
2080	TRANSFORMER 230/400 59V/900VA	4040	WASHER
2090	RELAY	4050	BOLT M10X16
2100	THERMAL RELAY	4090	SPRING
2110	RELAY	4100	SPRING
2120	PCB SUB	4110	SHAFT
2130	FUSE FAST 1A	4120	RETAINING RING 16MM
2140	FUSE FAST 4A	4130	GRATE
2150	FUSE 4A	4140	BOLT
2160	FUSE 8A	4150	SHAFT
2170	SPACER	4160	WASHER
2180	CABLE CONDUIT	4170	INSERT
2190	THREAD CUTTING SCREW	4180	STRAIN RELIEF PG21
2200	WASHER M4	4200	STRAIN RELIEF PG13.5
2210	PLUG	4210	NUT FOR STRAIN RELIEF PG13.5
2220	STRAIN RELIEF PG13.5	4220	BOLT M5X10
2230	NUT FOR STRAIN RELIEF PG13.5	4230	WASHER M5
2240	STRAIN RELIEF PG9	4240	CAP
2250	NUT FOR STRAIN RELIEF PG9	5010	VACUUM PUMP
2260	STRAIN RELIEF PG21	5020	FITTING 2"
2270	NUT FOR STRAIN RELIEF PG21	5040	FITTING
2280	BOLT M6X45	5050	ADAPTER
2290	WASHER	5060	SOLENOID VALVE
2300	NUT M6	5070	DECOMPRESSION VALVE COVER
2320	CONNECTOR	5080	HOSE CLIP 50-65MM
2330	BOLT M4X25	5090	HOSE
2350	NUT M3	5100	HOSE ADAPTER
2360	WASHER M3	5110	MOUNTING BRACKET
2370	NUT M3	5120	ADAPTER
2380	BOLT M3x12	5130	FITTING
2390	HOSE CLIP 11-13MM	5140	SOLENOID VALVE 3/2
2400	HOSE ADAPTER	5150	FITTING
2410	HOSE ADAPTER	5160	FITTING
2420	FITTING 1/8"	5170	WASHER
2430	HOSE ADAPTER	5180	HOSE ADAPTER
2440	SOLENOID VALVE 3/2	5190	STUD M10X50
3020	SILICONE HOLDER	5200	WASHER M10
3030	SILICONE HOLDER	5210	OIL DRAIN PLUG
3040	SILICONE HOLDER	5220	OIL SIGHT GLASS



5230	OUTLET VACUUM PUMP
5240	MOUNTING BRACKET
5250	STUD
5260	STUD
5270	NUT M8
5280	FITTING 1 1/2"
5290	ADAPTER
5300	FITTING 1 1/2"
6010	HOLDER FRONT PANEL
6030	PCB MAINBOARD
6040	VACUUM METER
6050	BRACKET
6060	DISPLAY
6070	FRAME FOR DISPLAY
6080	NUT M6
6090	WASHER
6100	STRAIN RELIEF PG13.5
6110	NUT FOR STRAIN RELIEF PG13.5
6120	PLUG
6130	FLATCABLE
6140	BOLT M4x10
6160	MAIN SWITCH
6170	STRAIN RELIEF PG16
6180	NUT FOR STRAIN RELIEF PG16
6230	FITTING 1/4"
6260	HOSE ADAPTER
6290	SPACER
6300	WASHER
6310	NUT M3
6320	CONNECTOR
9004	HOSE INLET





## EC-DECLARATION OF CONFORMITY

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

herewith declares that the

**AUDIONVAC**

**Type: VM 401-2**

- is in conformity with the provisions of the following EEC directives:  
73/23/EEC Low Voltage Directive  
89/336/EEC EMC-Directive  
89/392/EEC Machinery Directive
- and that the following (parts/clauses of) harmonized standards have  
been applied:  
EN 294; EN 415; EN 563; NEN 1010; EN 60204-1; EN 60742;  
EN 50081-1; EN 50082-2

Weesp, dec '99

  
A. Fitoussi  
Director

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