AUDION ELEKTRO®

Audionvac Service Manual for Digital 1 Program Models

VMS 43, 53, 113, 133

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< Important Notes >

- This manual is written only for the service engineers of dealers of Audionvac vacuum packers.
- We do not recommend providing this manual to end users in order not to confuse the basic settings of the machines.
- Read this manual carefully before change any setting and understand completely what you are doing, because **improper settings can cause a serious damage**.

1. Start-up Displays

Start-up displays are the codes shown on the control panel immediately after switching on the machine. From these codes, the settings of the machine can be found using the table below.

Buttons	Displays	Description
		Check that the lid of the machine is open. Press the on/off button and switch on the machine.
		The display lights up and shows a code which corresponds with the software version of the control panel.
		The display then shows a 2-digit code that corresponds with the machine settings. (See the table below.)
		Then the machine goes into operation mode. The display shows the vacuum time set on the program.

Display code	Oil replacement alarm *1	Conditioning program alarm *2
08	OFF	OFF
10	ON	OFF
12	OFF	ON
14	ON	ON

*1 See chapter 3 for the details of oil replacement alarm.
*2 See chapter 4 for the details of conditioning program alarm.

2. Conditioning Program of Vacuum Pump

For maintaining the vacuum pump in good condition, the conditioning program is built into the user control. During the normal use of a machine, moisture naturally enters the pump (in the oil) that would affect the performance of vacuum, or lead to corrosion.

To remove moisture from the pump, it needs to run at working temperature for a certain time. The conditioning program repeats vacuum and de-compress processes for 15 minutes, and during this time the moisture in the oil gets evaporated. The conditioning program needs to be run at least once a week. Run the program more frequently when packaging wet or liquid products.

It is also advisable to use the conditioning program before changing oil so all the dirt and moisture in the pump will be mixed into the oil before taking the oil out.

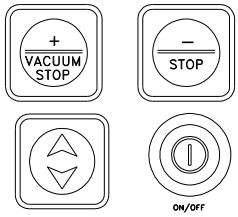
Buttons	Displays	Description
		Open the lid and switch on the machine with the on/off button.
		Press “Conditioning program” button. The display shows “C”. The machine is now ready for running the conditioning program.
Close the lid		The conditioning program starts by closing the lid. The program repeats vacuum and de-vacuum cycles for 15 minutes. After 15 minutes, the program ends and the lid opens.
		The conditioning program can be stopped anytime by pressing “STOP” button.

3. Oil Replacement Alarm

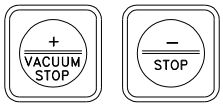
The oil replacement alarm is a service program which is used to maintain a good and stable service for the vacuum pump. "Oil" sign is shown on the display when the machine has been operated for the set number of hours. The machine can still be operated with having "oil" indicated on the display, but the machine start up is delayed. Replace the pump oil as early as possible and reset the alarm hours following the instructions below.

Note : This program is set to "OFF" as default.

3.1 To activate / de-activate the oil replacement alarm

Buttons	Displays	Description
		Switch off the machine and open the lid. Press "+ / vacuum stop", "- / stop" and "select" buttons and then switch on the machine by pressing on/off button. Keep the buttons pressed until "6 $_0$" appears on the display (about 8 seconds).
		Press "+ / vacuum stop" button to activate the function. The display will change to "6 $_1$".
		To de-activate the function, press "- / stop" button.
Close the lid		To store the change, close the lid.

3.2 To change the oil replacement alarm setting

Buttons	Displays	Description
	= approx. 20 hours = 120 hours	When the oil replacement alarm is activated, the alarm time can be changed. Turn the machine on and press “select” button for about 8 seconds. The display first shows a figure for the consumed hours, then after about 3 seconds it shows another figure for the set alarm hours. (The figures are per 10 hours.)
	= 100 hours	Press “+ / vacuum stop” or “- / stop” to set the new value (per 10 hours). The alarm time can be set in between 10 and 250 hours.
		To store the new setting, press “select” button.

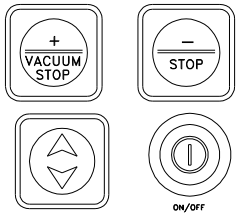
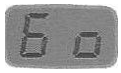
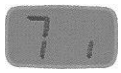
- The default value is “OFF”.
- The recommended alarm time is 120 hours. The actual setting is depending on the ambient surroundings.
- See chapter 13 of the user manual for the types and volume of oil to be replaced.

4. Conditioning Program Alarm

This function reminds the operator to execute the pump conditioning program. The alarm timer starts counting the running time of the pump after activating the function. If the alarm time reaches 120 hours (fixed value), the machine will show a flashing sign of "C" on the display when it is switched on. This sign is repeatedly shown at every start up of the machine until the pump conditioning program is fully executed. When it is done, the alarm timer starts counting again from 0 till the next 120 hours.

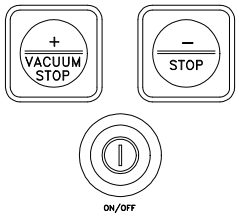
Note : This program is set to "OFF" as default.

To activate / de-activate the conditioning program alarm

Buttons	Displays	Description
		Switch off the machine and open the lid. Press "+ / vacuum stop", "- / stop" and "select" buttons and then switch on the machine by pressing on/off button. Keep the buttons pressed until "6 $_0$" appears on the display (about 8 seconds).
		Press "select" button once to show the display as "7 $_0$"
		Press "+ / vacuum stop" button to activate the function. The display will change to "7 $_1$".
		To de-activate the function, press "- / stop" button.
Close the lid		To store the change, close the lid.

5. Gate Test

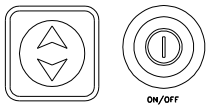
In this mode, all the gates (components) can be activated separately and the functioning of each component can be checked.

Buttons	Displays	Description
		Switch off the machine and open the lid. Press "+ / vacuum stop" and "- / stop" buttons and then switch on the machine by pressing on/off button. Keep the buttons pressed until "1 $_0$" appears on the display (about 8 seconds).
	   Etc.	Use "select" button to select the gate to test. 1 = Vacuum pump relay 2 = Seal valve 3 = Seal relay * Do not activate the seal relay longer than 0.5 second. The seal wire burns immediately without pressure on the sealing bar. 4 = No function 5 = De-vac valve
		Press "+ / vacuum stop" button to activate the selected gate. For example with vacuum pump relay, the display changes from "1 $_0$" to "1 $_1$" and the pump starts to rotate.
		Press "- / stop" button to de-activate the gate. For example with vacuum pump relay, the display changes from "1 $_1$" to "1 $_0$" and the pump stops.
		Switch the machine off and on to return to operation mode.

6. Reprogram Default Values

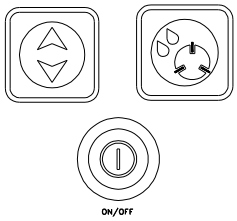
In this mode, the complete controller can be reset to the default settings. This operation may be executed when the panel is showing unusual display or when the panel does not operate properly as commanded.

The current settings on the controller memory will be erased.

Buttons	Displays	Description
		*** Note :** **This command refreshes the controller memory immediately. Do not activate this command unless you are absolutely sure that the controller needs to be reset to default settings.**
		Switch off the machine and open the lid. Press “select” button and then switch on the machine by pressing on/off button. Keep the button pressed until the display shows “rp” (about 8 seconds). The default settings have been re-installed on the controller.

7. Machine Counter Function

In this mode, it is possible to investigate how the machine has been used. The controller shows how many hours the vacuum pump has run, how many cycles the machine has run and how many times the pump conditioning program has run.

Buttons	Displays	Description
		Switch off the machine and open the lid. Press “select” and “Conditioning program” buttons and then switch on the machine by pressing on/off button. Keep the buttons pressed until “co” appears on the display (about 8 seconds).
	 Pump operated hours (approx. 100 hours) Number of cycles (approx. 4000 cycles) Number of timers of conditioning program	Release the buttons. The display will show 3 values in a row, showing 2 seconds each. The first value is the time that the vacuum pump has run (per 10 hours). The second value is the number of cycles the machine has run (per 100 cycles). The third value is the number of times the machine has run the pump conditioning program. The controller returns to the operation mode automatically.

8. Time / Function Diagram

8.1 Digital Single Program Model (time control)

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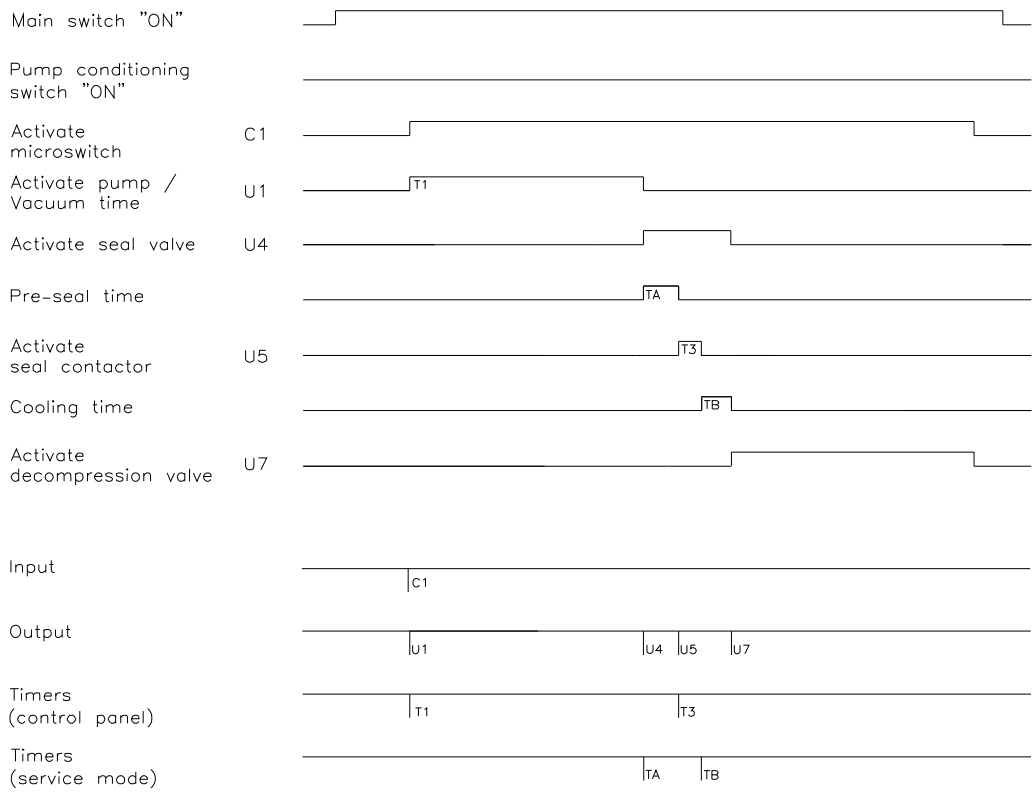
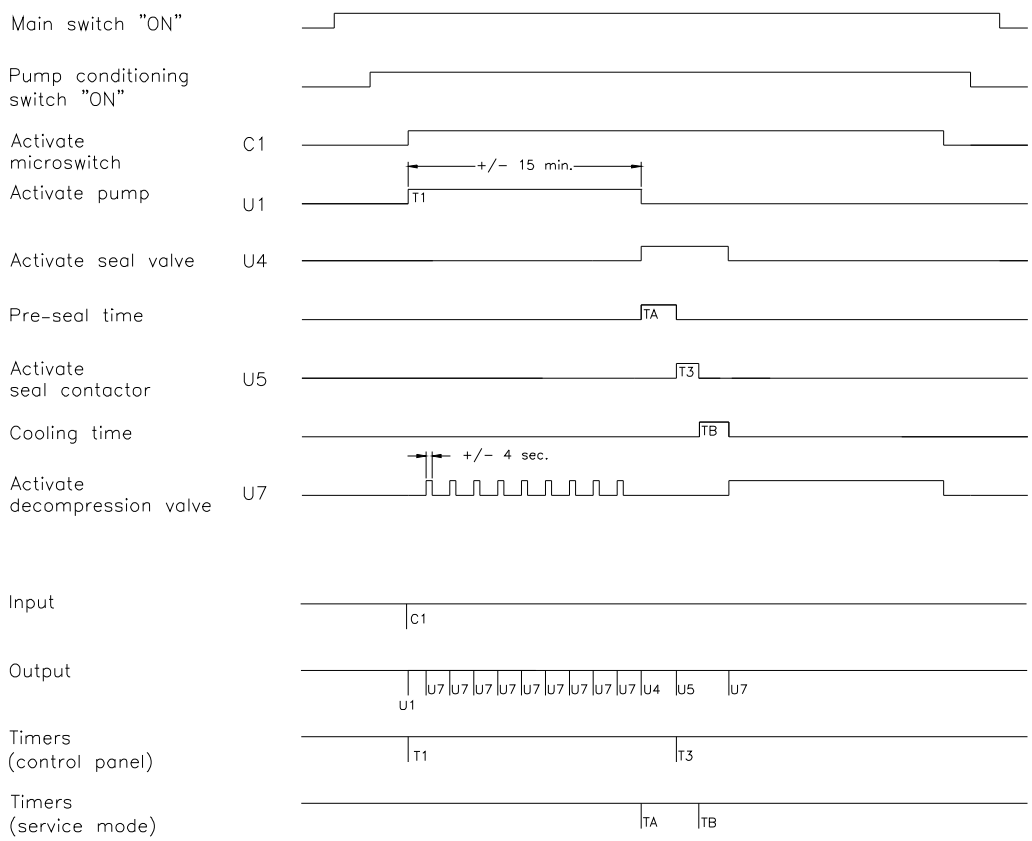


Input		Output		Timers		
C1	Micro switch	U1	Contactor pump	Timer 1	= Vacuum time	(0–99 sec)
		U4	Seal valve	Timer 3	= Seal time	(0–6 sec)
		U5	Seal contactor			
		U7	Decompression valve	Timer A	= Pre-seal time	(fixed)
				Timer B	= Cooling time	(fixed)

8.2 Pump Conditioning Program

VMS 43, 153, 113, 133 (pump conditioning program)



Input		Output		Timers		
C1	Micro switch	U1	Contactor pump	Timer 1	= Vacuum time	(+/−15 minutes)
		U4	Seal valve	Timer 3	= Seal time	(0−6 sec)
		U5	Seal contactor			
		U7	Decompression valve	Timer A	= Pre-seal time	(fixed)
				Timer B	= Cooling time	(fixed)

9. Error Code

There is an error code that can be shown on the display of the control panel.

Code	Problem	Examples of the causes
F1	Micro switch is de-activated during cycle run.	- Operator opens the lid before the vacuum is enough to keep the lid closed. - Gas flush time is set too long and the chamber vacuum level decreases and the lid opens.

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