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## User Manual

# System of Automatic Hygiene

For dental units

Comfort Line

DA270,DA280,DC310,DL210 model 2015

Premium Line

DA370,DA380,DC350,DL320 model 2015

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## 1 Purpose and use of the hygiene

### Hygiene = Disinfection + Decontamination

#### Disinfection

- of the waterlines of the instruments and
- of the cup filler

is made in order to eliminate and/or reduce the biofilms formed by microcolonies of bacteria, fungi and protozoa on the internal surface of waterlines of the dental unit.

#### Decontamination

- of the bowl flushing and
- of the suction hoses

is made in order to eliminate germs and clean the waste and suction unit, separator and/or amalgam trap installed in the dental unit.

The control electronics (hardware) of the dental unit is designed to enable the modes of disinfection and decontamination.

Disinfection and decontamination is targeted (it needs to be started manually – it does not work continuously) and is one-time (the mode is not stored into the memory).

Decontamination of the suction hoses can be also continuous, separately for both the big and the small aspirators.

These 2 independent modes serve for the hygiene of the dental unit at the beginning or the end of the working day, and either after the dental unit has been shut down for a prolonged period.

The control software of the dental unit ensures automatic admixing of :

**disinfecting solution (ALPRON** by Alpro medical, GmbH) into the water of the cup filler and into the cooling water of the instruments,

**decontamination solution\*** into the water for bowl flushing and into the suction hoses.

\*In the event that **CATTANI** separator or **METASYS** amalgam trap is built in the dental unit, it is necessary to use the agent **GREEN & CLEAN M2**. The said agent must be used at least twice during each working day for the decontamination of the bowl flushing and the suction hoses.

- Disinfection of the cooling of the instruments and cup filler is recommended to be carried out at least always at the end of each working day.
- Plastic jar marked with a **blue label** with the inscription **ALPRON** serves as the container of the solution for the disinfection of the cooling of the instruments and the cup filler.
- Plastic jar marked with a green label with the inscription **GREEN & CLEAN M2** serves as the container of the decontamination solution.
- The said containers are located in the spittoon block of the dental unit (Fig. 1). They are filled with the said solutions in non-diluted condition (100 % concentration).

#### Caution



- Activate the modes of disinfection and decontamination only if there is enough solution and distilled water in the containers!
- It is possible to replenish the distilled water in the container only when the selector switch of the water source is in the position „0“ (Fig. 2).
- Replenishing of the solutions of ALPRON and GREEN & CLEAN M2 is possible only when the main switch of the dental unit is turned off!

Fig. 1 Containers of the solutions of ALPRON and GREEN &amp; CLEAN M2

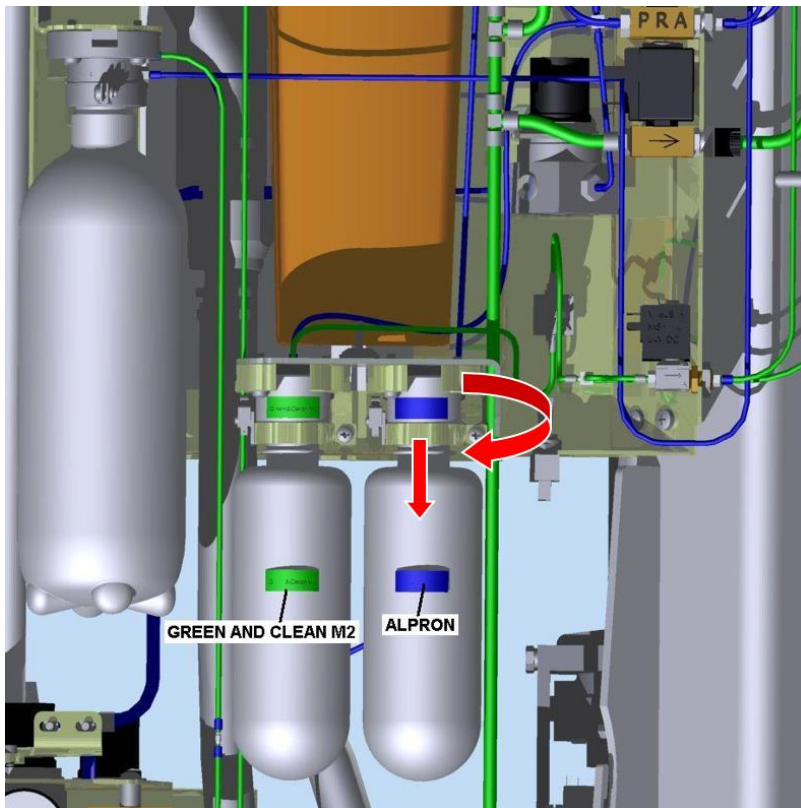
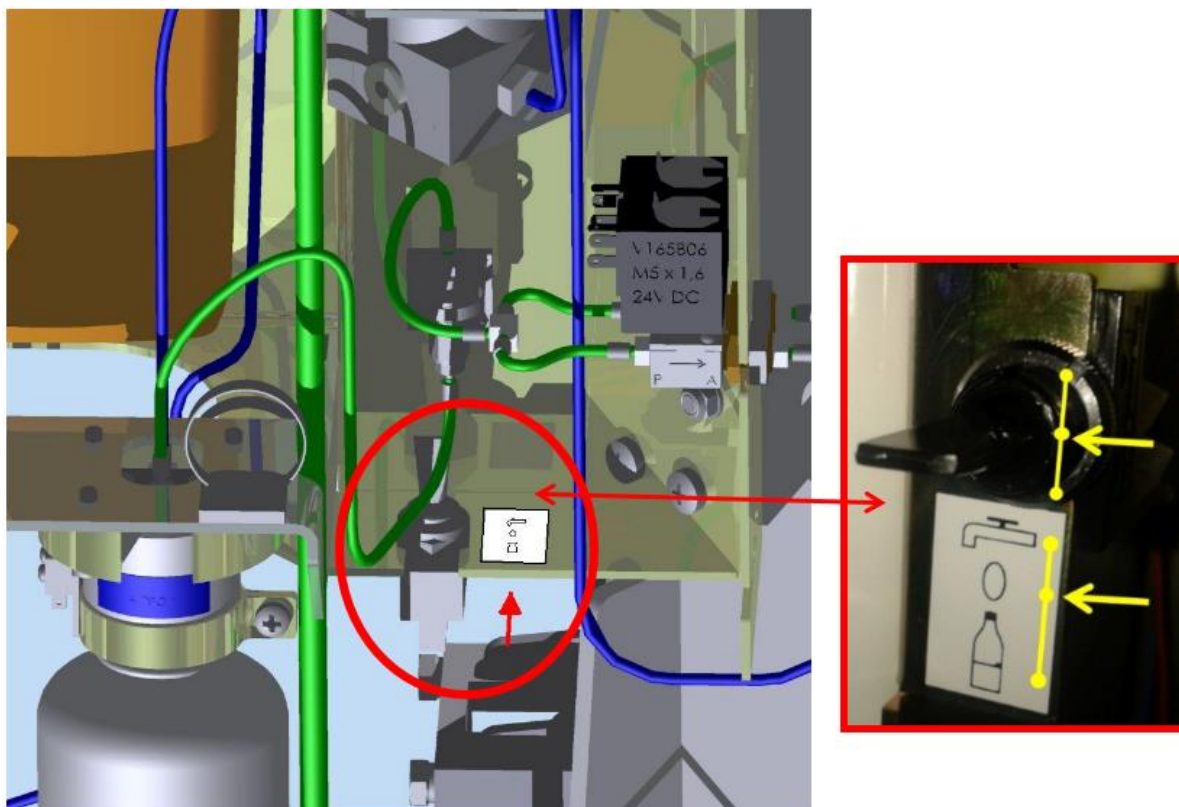


Fig. 2 Selector switch of the water source in the position „0“ (located in the spittoon block)
















## 2 Control of hygiene from the touch screen









To get access to HYGIENE mode, press the button HYGIENE in SETTINGS screen.

SETTINGS	
HYGIENE	ESC
USER	
SERVICE / FACTORY	
TEST	
USB	
INFO	

The hygiene screen is displayed:

HYGIENE			
			
	10 sec		60 sec
	10 sec		ESC <hr/>  <hr/>  <hr/>  <hr/>
	50 sec		

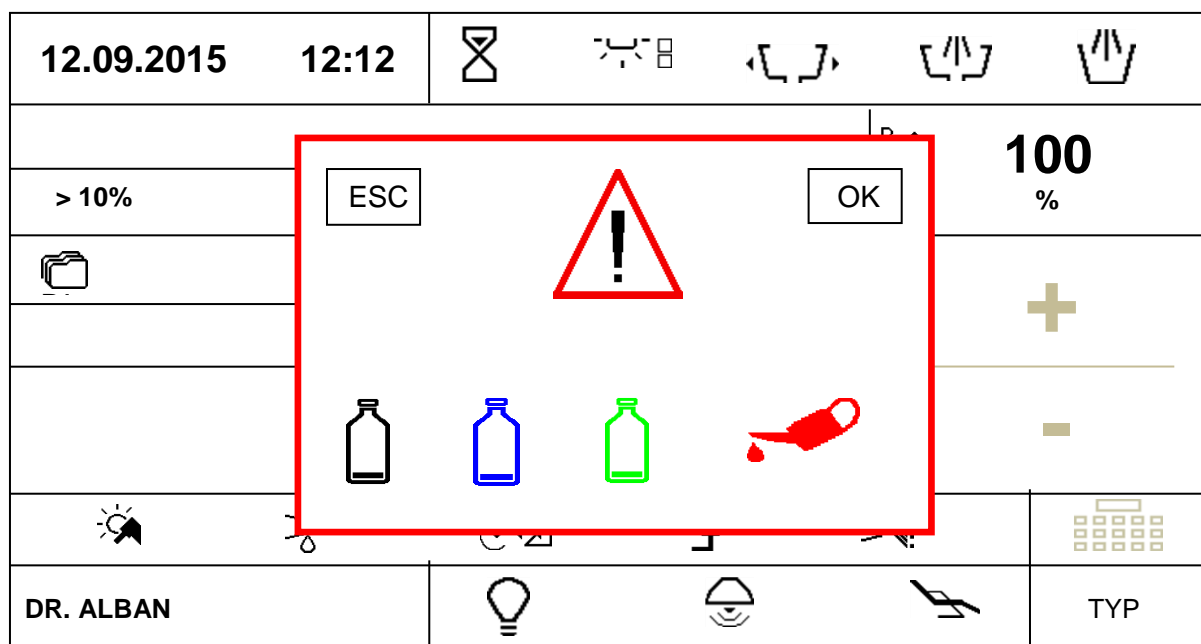
Screen symbols explained:

	Turning the continuous decontamination for the small aspirator On/Off
	Turning the continuous decontamination for the big aspirator On/Off
	Starting the decontamination of the spittoon bowl
	Starting the targeted decontamination for the big and small aspirator
	Starting the disinfection of the cup filler
	Starting the disinfection of the instruments of the dentist table
	Starting the rinsing of the instruments of the dentist table
	Setting the exposure time of the disinfecting solution for the disinfection of instruments

### 3 Fillings shortage indication

#### 3.1 Fillings shortage indication before starting

In the event of the shortage of a filling before the hygiene is started (water, disinfecting solution, decontamination solution) the following screen with alarm is displayed briefly and an audible signal sounds.



After a short period the screen is cancelled automatically and the alarm is indicated by means of a small icon at the bottom right corner of the display:



Press the button with alarm icon to display the original screen with the type of the alarm.

Lack of filling is indicated at the dentist side by means of the symbol of empty bottle for the filling in question and with a short audible signal.



- bottle for distilled water is empty



- bottle for disinfecting solution is empty (if hygiene is installed)
















- bottle for decontamination solution is empty (if hygiene is installed)

### 3.2 Fillings shortage indication during hygiene

If the filling being used is spent during the hygiene operation, information is displayed in the respective button by means of flashing symbol of a bottle in orange field and by means of interrupted acoustic indication.


To end the warning indication, press the respective button.

HYGIENE				
			ESC	
 10 sec	 60 sec		+	
 10 sec	  		-	
 50 min	  		→	

## 4 Activation of Hygiene




Hygiene can be activated by means of the buttons of the touch screen of the dentist table.




### 4.1 Decontamination of the spittoon bowl

Press the button .

This will start the flushing of the spittoon bowl with water with admixed decontamination solution for **10 seconds**. After that the process is automatically stopped. Decontamination is one-time, it means that the mode is not stored into the memory. Current time to the end of the decontamination is displayed in the button surface.


### 4.2 Continuous decontamination of the suction hoses

Press the button  to turn the continuous decontamination of the small aspirator on/off. The status is indicated by symbol  - ON /  - OFF.


Press the button  to turn the continuous decontamination of the big aspirator on / off. The status is indicated by symbol  - ON /  - OFF.

If the respective decontamination is turned on, the hoses are continuously rinsed with water with admixed decontamination solution during the work with the dental unit.


### 4.3 Targeted decontamination of the suction hoses

Press the button  to start the targeted rinsing of the suction hoses with the decontamination solution. Both aspirators placed in the holders will be rinsed with water with admixed decontamination solution for **60 seconds**. Decontamination is one-time, it means that the mode is not stored into the memory. Press the button again to end the decontamination which is in progress.

### 4.4 Disinfection of the cup filler

Press the button  to start the rinsing of the water path of the cup filler with water with admixed disinfection solution for **10 seconds**. The disinfection is one-time, it means that the mode is not stored into the memory. The current time to the end of the rinsing is displayed in the button surface.

It is recommended to perform the disinfection of the cup filler at the end of each working day.

Subsequent rinsing of the cup filler with clean water (by pressing the button  on the main screen) should be made for **at least 20 seconds**.

The said rinsing is recommended to be made only at the beginning of the next working day.



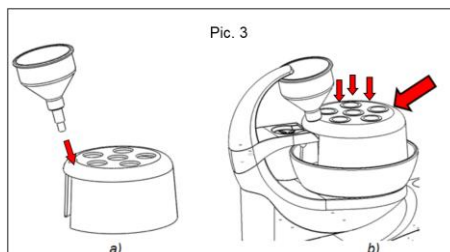
#### 4.5 Disinfection of the cooling waterlines of the instruments

Insert the funnel (Figure a) into the container (Pic. 3a).

Fit the container prepared in described way over the spittoon bowl (Pic. 3b).


Take out all instruments for the disinfection of the cooling waterlines.

The instruments should be taken off the hoses and the hoses should be inserted into the beds in the container on the spittoon bowl (Pic. 4).



Obr. 4



Press the button  to start the process of the disinfection of waterlines of instruments. The progress of the disinfection is displayed at the lower part of the screen.

POSITION						START
1	2	3	4	5	6	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Each square represents the instrument at the respective position. Instrument taken out is indicated by means of the square filled-in with text color. As long as at least one instrument is taken out, the START button is active.

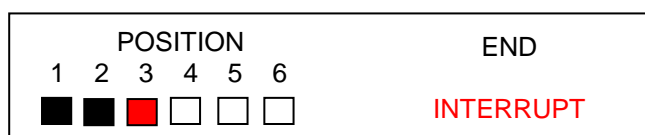
POSITION						START
1	2	3	4	5	6	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

If the instruments are returned back into the holders at the dentist table, the process can be ended by ESC button. Press the START button to start the process of the disinfection of the instruments. Until the disinfection has been completed the selected instruments must not be changed, otherwise the process will be interrupted and the condition will be indicated. You are notified not to forget on SYRINGES:

POSITION						FILLING
1	2	3	4	5	6	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SYRINGE!!!

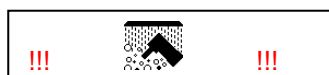
After the SYRINGE hoses are manually filled with the disinfection solution, please confirm it by pressing red button: SYRINGES.

Till the end of the process, you cannot change instrument positions, otherwise the process will be interrupted.  
The change of the instrument is indicated by the red square and error message: END - **INTERRUPT**

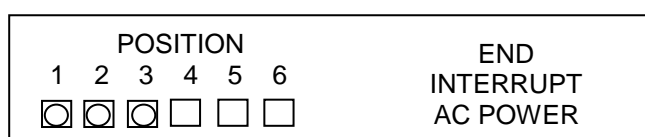


You can continue from this point only when the instruments will be returned back on its positions as indicated by red squares.

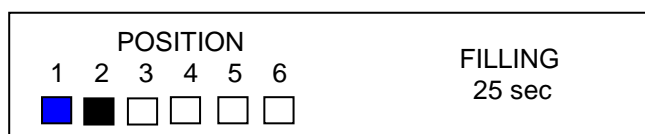
After that the process can be finished only by washing the hoses with water and then you can start the disinfection procedure from beginning. Rinse the hoses by pressing this button:



If Power Off happens during disinfection process then after Powering-On, this message is shown:




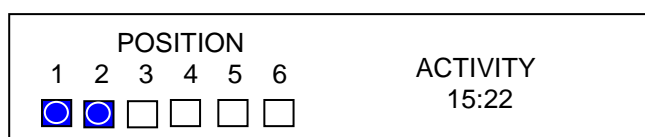
After pressing button START, starts the process of filling of hoses. Filling with the disinfection takes 20 seconds for each hose. Filling of the first hose takes some more time as it includes the initial filling of the primary waterline. You can see informative message:



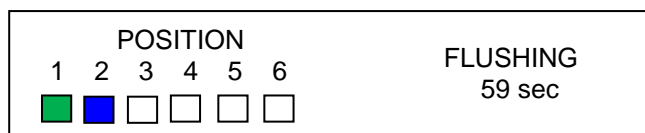
Currently filled hose is indicated by blue square.

After all instrument hoses have been filled up, the time starts to count down of the activity of the disinfecting solution for the set period.

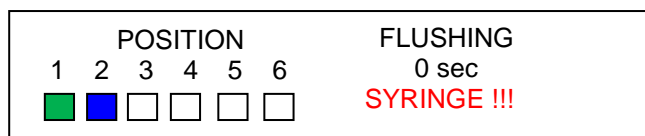
The time of exposure must be already set before starting the instrument disinfection with the button .  
The condition with respective time to end is displayed:



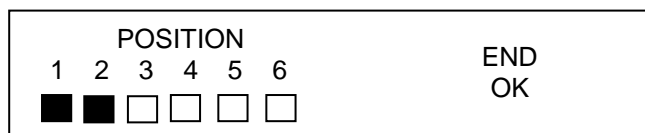
After the set exposure time has elapsed the rinsing of the instruments with water is started automatically. The instruments are rinsed one by one. The instrument currently being rinsed is indicated by green square. Either countdown time for each hose is displayed:



When all selected instruments have been rinsed, you are notified to manually rinse the syringes.  
Rinse the syringes and press the button on the screen:



The disinfection process ends with message:



After the instruments have been returned into the holders in the dentist table the whole process is completed.

#### 4.6 Disinfection of the syringe waterlines

This serves to perform the hygiene of the syringes located in the control panel of the dentist panel and in the assistant table (if fitted).

##### Caution



The disinfection of the syringe can be started only if at least one another instrument is taken out of the holder of the control panel on which the disinfection is to be performed too. Therefore it is recommended to perform the disinfection of the syringe simultaneously with the disinfection of other instruments (Chapter 4.5).

##### Activation:


Make sure that at least one more instrument besides the syringe is taken out and placed in the vessel (Fig. 4) in order to perform disinfection.


Take the syringes out of the instrument holders, facing to the spittoon bowl or to free opening in the vessel, drain funnel (Fig. 4) or other external vessel.

Press the button START. After that press the **left lever on syringe (water)**. Keep the syringe directed into the spittoon bowl all the time. Hold the left lever for **ca 20 seconds**. Then release the lever and place the syringe into the vessel for instruments (Fig.4). Waterline of the syringe has been filled with disinfecting solution. Disinfection of other instruments continues in automatic mode described in chapter 4.5.

Disinfection of the syringes is recommended to be made at the end of each working day. Subsequent manual rinsing of the syringes with clean water should be made for **at least 20 seconds**. The said rinsing is recommended to be made at the beginning of the next working day.

## 4.7 Setting of the exposure time of the solution for the disinfection

By pressing button  you enter to the editing mode of solution exposure time. Buttons + / - serve to set up the required time in the range from 1 to 240 minutes.

Repeated pressing of the button  saves the time to memory.

## 4.8 Interruption of the disinfection of the cooling of the instruments

If at any time during the hygiene of the instrument waterlines occurs:

- turning the unit off,
- interruption of hygiene,
- taking or inserting of hoses already taken,
- electricity breakoff

the following message is displayed on the dentist table

END  
INTERRUPTION

In such a case it is necessary to perform rinse of the waterlines by pressing:



### Caution



The control panel does not allow any other activity until the rinsing has been completed for the same instruments taken with which the process began, plus those which were taken out during the process of the disinfection of instruments!

## 5 Recommendation of the manufacturer

In general the most efficient is the targeted disinfection of the unit **at the end of the working day**. Subsequent rinsing of the internal distributions of the dental unit **at the beginning of the next working day** with clean water or distilled water ensures washing the broken biofilms exposed to the disinfected solution out of the internal distributions of the dental unit.



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