

# INSTRUCTIONS FOR USE

## Annex

### DIPLOMAT CONSUL DC 310 AND DL 210 DISINFECTION SYSTEMS

#### 1. Disinfection. Purpose and Use.

To ensure safety and well-being for everyone in your dental office it's critical to maintain cleanliness and sanitation. It is crucial to preform disinfection procedures of the main waterlines and patient's glass water supplying lines in order to reduce the content of biofilms, bacteria, fungi at the interior wall surface of the tubing.

Disinfection systems have three cleaning modes to choose from. Disinfection cycle is a one-time cycle and needs to be activated manually.

##### **Disinfection modes:**

- Cup-fill disinfection (patient's glass water supply lines)
- Water coolant lines disinfection
- *Long-lasting effect* disinfection

**The manufacturer recommends using the ALPRON disinfectant solution (Alpro Medical).**

It is highly recommended that you run the waterlines and cup-fill disinfection cycles at least once a day (e.g. at the end of the working shift). Plastic bottle marked with a **blue sticker with ALPRON logo** serves as the reservoir for the disinfectant solution. The reservoir is located inside the spittoon block. The reservoir is holder-mounted, enabling easy access and refill. See fig.1.

##### **Caution**



Disinfection cycles could only be activated when there is a sufficient amount of distilled water and disinfectant solution in the reservoirs. To refill the distilled water bottle switch the water source toggle switch to "0" position (fig.2). The reservoir can only be refilled when the dental unit is turned off (main switch is in "off" position).

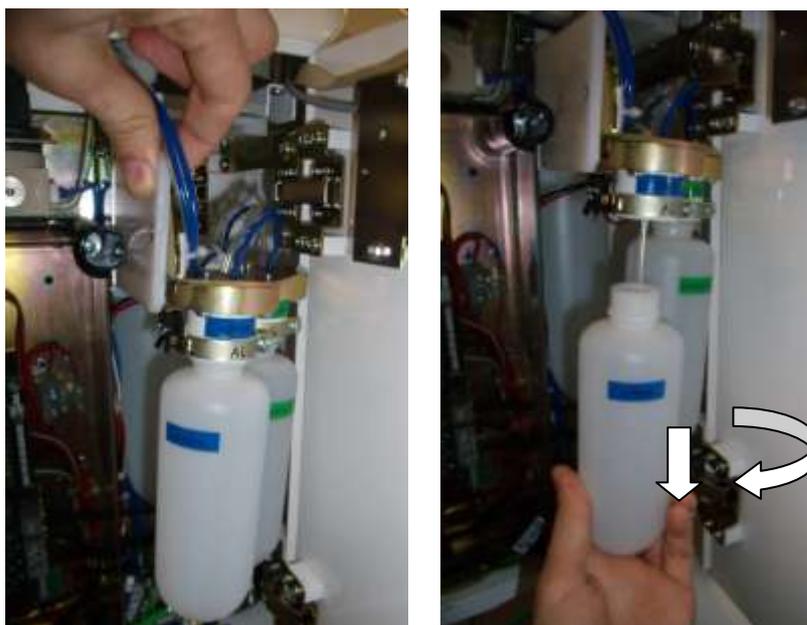


fig. 1 ALPRON solution reservoir

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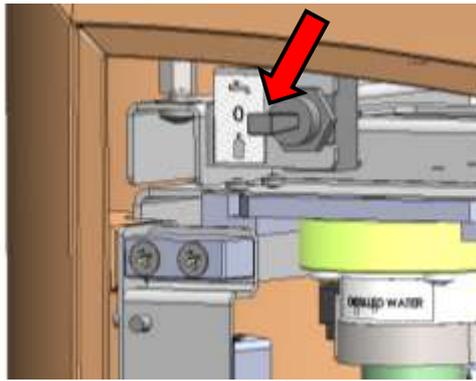
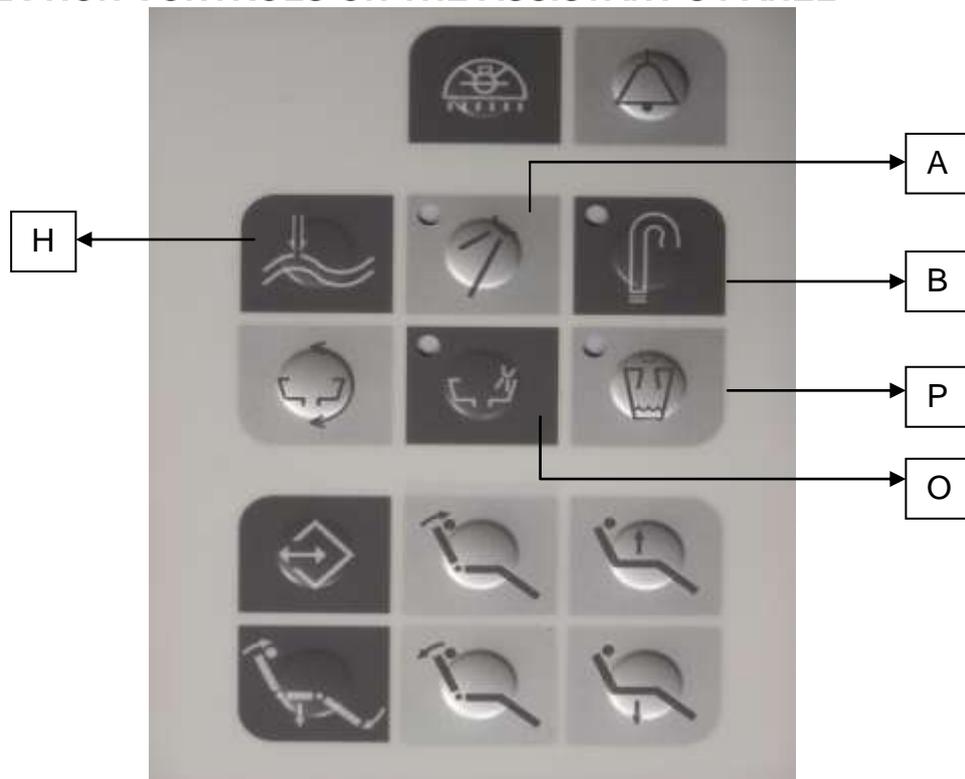


fig. 2 water source toggle switch is in "0" position (inside the spittoon block)

## 2. DISINFECTION CONTROLS ON THE ASSISTANT'S PANEL



Obr. 3 Assistant's keyboard

### Symbols:

**H** – long-lasting effect disinfection key

**A** – waterlines and water coolant lines key (LED-indicated: HCOOL)

**B** – cup-fill disinfection (LED-indicated: HCUP)

**O** – distilled water level key with LED-indication

**P** – *Alpron* disinfectant solution level key with LED-indication

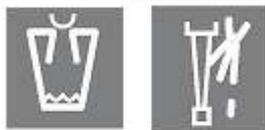
Use the following keys: **H, A and B** to choose the desired disinfection mode and to control the disinfection system from the assistant's panel:



## **INSTRUCTIONS FOR USE**

### **3. DISINFECTION CONTROLS ON THE CONTROL PANEL**

Use the following two keys to activate and to control the disinfection system from control panel:



### **4. LOW DISTILLED WATER / DISINFECTANT SOLUTION LEVEL WARNING**

The current distilled water level is indicated on the display on the control panel and on the bowl-rinse key (LED) on the assistant's panel (fig.3). When the distilled water amount is low the following message will appear on the third line of the main display:

**!!! WATER LOW !!!** - is not displayed when a handpiece is active

The bowl-rinse key LED will light up and the disinfection mode selection keys will be blocked automatically.

The current disinfectant solution level is indicated on the display on the control panel and on the cup-fill key (LED) on the assistant's panel (pic.3). When the disinfectant solution amount is low the following message will appear on the third line of the main display:

**! DISINFECTION LOW !** - is not displayed while a handpiece is active

The cup-fill key LED will light up and the disinfection mode selection keys will be blocked automatically.

### **5. ACTIVATION AND INDICATION**

Use the corresponding keys on the control panel or the assistant's panel (pic.3) to activate a disinfection cycle.

The corresponding LED-lights on the assistant panel and display messages indicate the current status.



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### 6. INSTRUCTIONS FOR COOLING WATER AND CUP-FILL WATER SUPPLY LINES

Place the funnel (supplied) in the  $\text{\O}16$  mm tank outlet (as shown on pic.4a). Then place the tank inside the spittoon bowl so that the cup-fill spout is housed directly inside the funnel. (as shown on pic. 4b)

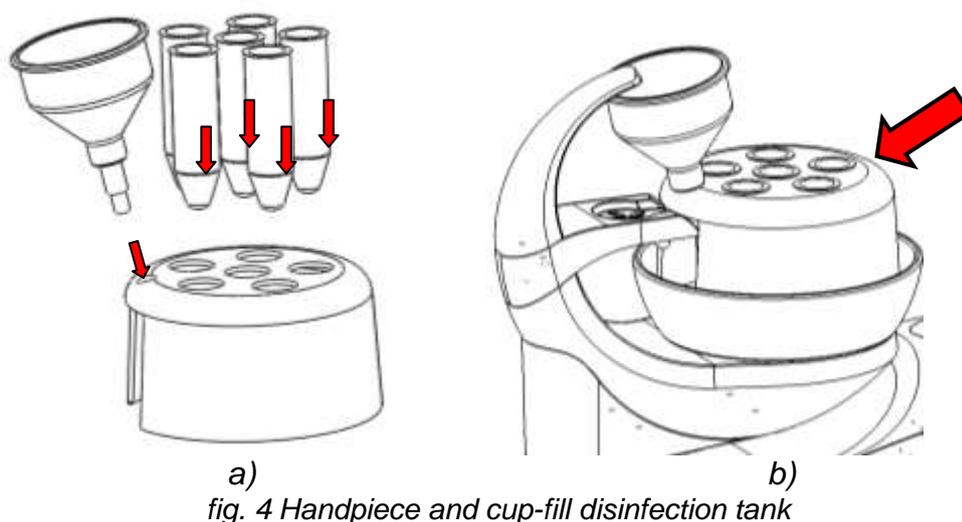


fig. 4 Handpiece and cup-fill disinfection tank

Place the tubing housings inside the  $\text{\O}36$  mm tank outlets (as shown on fig. 4a). Withdraw the desired handpieces, then detach them from the tubings and insert the tubings into the outlets inside the tank (as shown on fig.5).



Pic. 5

*It is necessary to detach the tip from the Amdent scaler.*

# INSTRUCTIONS FOR USE

## 7. INITIAL REQUIREMENTS FOR ALL DISINFECTION CYCLES

Disinfection cycle can only be activated when:

- all the handpieces are placed in the holders
- there is a sufficient amount of distilled water in the reservoir

### !!! WATER LOW !!!



- the following LED-indicator is off
- there is a sufficient amount disinfectant solution

### ! DISINFECTION LOW !



- the following LED-indicator is off:
- You cannot activate any disinfection cycle when the amount of distilled water / disinfectant is insufficient.

## 8. CUP-FILL DISINFECTION

This cycle has the following three stages:

- disinfectant solution inflow - 5s
- solution exposure - 10 min.
- rinse - 30s

### 8.1 SELECTING THE CUP-FILL DISINFECTION



Press the  key on the assistant's panel. The corresponding LED-light will light up. The following message will appear on the display:

**CUP-FILL DISINFECTION**  
**PLACE TUBING ON CUP-FILL OUTPUT**  
**PRESS CUP-FILL TO START**

**DEZINFEKCIA PLNIČA**  
**DAJ TRUBKU NA VÝSTUP PLNENIA**  
**NA ODŠARTOVANIE STLAČ PLNENIE**

### 8.2 ACTIVATING THE CUP-FILL DISINFECTION

After selecting the cup-fill disinfection cycle as described above in 8.1, activate the cycle by



pressing  key on the control panel. The following message will appear on the display:

**CUP-FILL DISINFECTION**  
**CYCLE IN PROGRESS**  
**PRESS HCUP TO STOP**  
**TIME REMAINING: sec: xxx**

**DEZINFEKCIA PLNIČA**  
**PROCES JE V POSTUPE**  
**NA ZASTAVENIE STLAČ HCUP**  
**ČAS DO UKONČENIA V s: xxx**

The remaining time for the current stage (inflow/exposure/rinse...) will be shown on the fourth line of the display.

As the cycle is completed the following message will appear on the display:

**CUP-FILL CYCLE**  
**FINISHED**  
**PRESS HCUP TO EXIT**  
**TIME REMAINING: sec: 0**

**HYGIENA PRE PLNENIE POHÁRA**  
**PROCES BOL SKONČENÝ**  
**NA UKONČENIE STLAČ HCUP**  
**ČAS DO UKONČENIA V s: 0**

## **INSTRUCTIONS FOR USE**

Press the  key on the assistant's panel. The corresponding LED-light will turn off. The following message will appear on the display:

**DENTAL UNIT V1  
READY FOR WORK**

### **8.3 INTERRUPTING THE CUP-FILL DISINFECTION CYCLE**

If needed, a cycle can be interrupted (when activated according to instructions provided in 8.2.).

Press the  key on the assistant's panel. The corresponding LED-light will turn off. The following message will appear on the display:

<b>CUP-FILL DISINFECTION CYCLE INTERRUPTED END OF DISINFECTION</b>	<b>DEZINFEKCIA PLNIČA PROCES BOL PRERUŠENÝ UKONČENIE DEZINFEKČIE</b>
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The following message will appear on the display:

**PRESS HCUP TO START**

Then continue as described in section 8.1.: press the  key and follow the instructions on the display.

When restarting the cycle after interruption, remember, that only the final "rinse" stage will be performed, as the certain amount of disinfectant solution has been already inflow before the cycle was interrupted.

#### **8.3.1 CANCELLING THE PREVIOUSLY SELECTED CUP-FILL DISINFECTION CYCLE**

Press  key on the assistant's panel if you want to change to a different cycle. The corresponding LED-light will turn off. The following message will appear on the display:

<b>CUP-FILL DISINFECTION CYCLE INTERRUPTED END OF DISINFECTION</b>	<b>DEZINFEKCIA PLNIČA PROCES BOL PRERUŠENÝ UKONČENIE DEZINFEKČIE</b>
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Then the following message will appear on the display:

**DENTAL UNIT V1  
READY FOR WORK**

## **9. WATER COOLANT LINES DISINFECTION**

This cycle has the following three stages:

- disinfectant solution inflow - 20s
- solution exposure - 10 min.
- rinse - 30s



### **Caution**

**!!! During this cycle all tubings must remain inside the disinfection tank!!!**

## **INSTRUCTIONS FOR USE**

### **9.1 SELECTING THE WATER COOLANT LINES DISINFECTION CYCLE**

Press the  key on the assistant's panel. The corresponding LED-light will light up. The following message will appear on the display:

<b>COOLANT LINES DISINFECTION</b>	<b>DEZINFEKCIA PRE HADICE</b>
<b>PLACE TUBINGS INTO TANK</b>	<b>VLOŽ HADICE DO MISY</b>
<b>PRESS COOL TO START</b>	<b>NA ODŠARTOVANIE STLAČ CHLADENIE</b>

### **9.2 ACTIVATING WATER COOLANT LINES DISINFECTION CYCLE**

After selecting the water coolant lines disinfection cycle as described above in 9.1, activate the cycle by pressing  key on the control panel. The following message will appear on the display:

<b>COOLANT LINES DISINFECTION</b>	<b>DEZINFEKCIA PRE HADICE</b>
<b>IN PROGRESS</b>	<b>PROCES JE V POSTUPE</b>
<b>PRESS HCOOL TO STOP</b>	<b>NA ZASTAVENIE STLAČ HCOOL</b>
<b>TIME REMAINING: sec: 0</b>	<b>ČAS DO UKONČENIA V s: xxx</b>

The remaining time for the current stage (inflow/exposure/rinse...) will be shown on the fourth line of the display.

As the cycle is completed the following message will appear on the display:

<b>COOLANT LINES DISINFECTION</b>	<b>DEZINFEKCIA PRE HADICE</b>
<b>CYCLE COMPLETED</b>	<b>PROCES BOL SKONČENÝ</b>
<b>PRESS HCOOL TO EXIT</b>	<b>NA UKONČENIE STLAČ HCOOL</b>
<b>TIME REMAINING: sec: 0</b>	<b>ČAS DO UKONČENIA V s: 0</b>

After pressing the HCOOL key it is possible to exit the cycle menu and it won't be necessary to return the tubings back into holders.  
If the HCOOL key won't be pressed the following message will be displayed:

<b>COOLANT LINES DISINFECTION</b>	<b>DEZINFEKCIA PRE HADICE</b>
<b>CYCLE COMPLETED</b>	<b>PROCES BOL SKONČENÝ</b>
<b>RETURN TUBINGS INTO HOLDER</b>	<b>VLOŽ HADICE DO STOLÍKA</b>
<b>TIME REMAINING: sec: 0</b>	<b>ČAS DO UKONČENIA V s: 0</b>

As soon as the tubings are placed back into initial positions the following message will be displayed:

<b>COOLANT LINES DISINFECTION</b>	<b>DEZINFEKCIA PRE HADICE</b>
<b>CYCLE COMPLETED</b>	<b>PROCES BOL SKONČENÝ</b>
<b>PRESS HCOOL TO EXIT</b>	<b>NA UKONČENIE STLAČ HCOOL</b>
<b>TIME REMAINING: sec: 0</b>	<b>ČAS DO UKONČENIA V s: 0</b>

Press the  key on the assistant's panel. The corresponding LED-light will turn off. The following message will appear on the display:

**DENTAL UNIT V1**  
**READY FOR WORK**

## **INSTRUCTIONS FOR USE**

### **9.2 INTERRUPTING THE WATER COOLANT LINES DISINFECTION CYCLE**

Press the  key on the assistant's panel. The corresponding LED-light will turn off. The following message will appear on the display:

**COOLANT LINES DISINFECTION  
CYCLE INTERRUPTED  
END OF DISINFECTION**

**DEZINFEKCIA PRE HADICE  
PROCES BOL PRERUŠENÝ  
UKONČENIE DEZINFEKIE**

The following message will appear on the display:

**COOLANT LINES DISINFECTION  
CYCLE INTERRUPTED  
KEEP TUBINGS IN THE BOWL**

**DEZINFEKCIA PRE HADICE  
PROCES BOL PRERUŠENÝ  
NECHAJ HADICE V MISE**

The following message will appear on the display:

**PRESS HCOOL TO START**

Then continue as described in section 9.1.: press the  key and follow the instructions on the display.

When restarting the cycle after interruption, remember, that only the final "rinse" stage will be performed, as the certain amount of disinfectant solution has been already inflown before the cycle was interrupted.

### **9.4 CANCELLING THE PREVIOUSLY SELECTED WATER COOLANT LINES DISINFECTION CYCLE**

Press  key on the assistant's panel if you want to change to a different cycle. The corresponding LED-light will turn off. The following message will appear on the display:

**COOLANT LINES DISINFECTION  
CYCLE INTERRUPTED  
END OF DISINFECTION**

**DEZINFEKCIA PLNIČA  
PROCES BOL PRERUŠENÝ  
UKONČENIE DEZINFEKIE**

Then the following message will appear on the display:

**DENTAL UNIT V1  
READY FOR WORK**

## **10 LONG-LASTING EFFECT DISINFECTION CYCLE**

This cycle has the following stages:

- disinfectant solution inflow for cup-fill - 5s
- disinfectant solution inflow for water coolant lines - 20s
- solution exposure after unit shutdown.
- rinse after the unit is turned on: cup-fill – 30s, water coolant lines – 30s

## **INSTRUCTIONS FOR USE**

### **10.1 SELECTING THE LONG-LASTING EFFECT DISINFECTION CYCLE**

Press the  key on the assistant's panel. The following message will appear on the display:

<b>PLACE TUBINGS ON CUP-FILL OUTPUT</b>	<b>DAJ TRUBKU NA VÝSTUP PLNENIA</b>
<b>PLACE TUBINGS INTO BOWL</b>	<b>VLOŽ HADICE DO MISY</b>
<b>PRESS HCUP TO START</b>	<b>NA ODŠTARTOVANIE STLAČ HCUP</b>
<b>PRESS CUP TO END CYCLE</b>	<b>NA UKONČENIE STLAČ CUP</b>

### **10.2 ACTIVATING THE LONG-LASTING EFFECT DISINFECTION CYCLE**

After selecting the long-lasting effect disinfection cycle as described above in 10.1 (tubings must be placed inside the disinfection tank), activate the cycle by pressing  key on the assistant's panel. The corresponding LED-light will light up and the following message will appear on the display:

<b>PLACE TUBINGS ON CUP-FILL OUTPUT</b>	<b>DAJ TRUBKU NA VÝSTUP PLNENIA</b>
<b>PLACE TUBINGS INTO BOWL</b>	<b>VLOŽ HADICE DO MISY</b>
<b>PRESS CUP TO START</b>	<b>NA ODŠTARTOVANIE STLAČ PLNENIE POHÁRA</b>

Then press the  on the control panel. The following message will be displayed:

<b>PLACE TUBINGS ON CUP-FILL OUTPUT</b>	<b>DAJ TRUBKU NA VÝSTUP PLNENIA</b>
<b>PLACE TUBINGS INTO BOWL</b>	<b>VLOŽ HADICE DO MISY</b>
<b>PRESS HCUP TO STOP</b>	<b>NA ZASTAVENIE STLAČ HCUP</b>
<b>DISINFECTION CYCLE</b>	<b>DEZINFEKČNÝ PROCES</b>

<b>PLACE TUBINGS ON CUP-FILL OUTPUT</b>	<b>DAJ TRUBKU NA VÝSTUP PLNENIA</b>
<b>PLACE TUBINGS INTO BOWL</b>	<b>VLOŽ HADICE DO MISY</b>
<b>PRESS HCUP TO STOP</b>	<b>NA ZASTAVENIE STLAČ HCUP</b>
<b>TIME REMAINING sec: xxx</b>	<b>ČAS DO UKONČENIA V s: xxx</b>

<b>PLACE TUBINGS ON CUP-FILL OUTPUT</b>	<b>DAJ TRUBKU NA VÝSTUP PLNENIA</b>
<b>PLACE TUBINGS INTO BOWL</b>	<b>VLOŽ HADICE DO MISY</b>
<b>PRESS HCUP TO STOP</b>	<b>NA ZASTAVENIE STLAČ HCUP</b>
<b>TIME REMAINING sec: xxx</b>	<b>ČAS DO UKONČENIA V s: xxx</b>

After the disinfectant solution inflow the following message will be displayed:

<b>PLACE TUBINGS ON CUP-FILL OUTPUT</b>	<b>DAJ TRUBKU NA VÝSTUP PLNENIA</b>
<b>PLACE TUBINGS INTO BOWL</b>	<b>VLOŽ HADICE DO MISY</b>
<b>PRESS HCUP TO STOP</b>	<b>NA ZASTAVENIE STLAČ HCUP</b>
<b>CYCLE FINISHED</b>	<b>PROCES BOL SKONČENÝ</b>

Then the following message will be displayed:

<b>SWITCH OFF THE UNIT</b>	<b>VYPNI SÚPRAVU</b>
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Then it is necessary to switch of the dental unit so the disinfectant solution could expose for sufficient amount of time .

## **INSTRUCTIONS FOR USE**

### **10.3 INTERRUPTING THE LONG-LASTING EFFECT DISINFECTION CYCLE**

If needed, a cycle can be interrupted (when activated according to instructions provided in 10.2.). Press the  key on the assistant's panel. The corresponding LED-light will turn off. The following message will appear on the display

<b>PLACE TUBINGS ON CUP-FILL OUTPUT</b>	<b>DAJ TRUBKU NA VÝSTUP PLNENIA</b>
<b>PLACE TUBINGS INTO BOWL</b>	<b>VLOŽ HADICE DO MISY</b>
<b>PRESS HCUP TO STOP</b>	<b>NA ZASTAVENIE STLAČ HCUP</b>
<b>CYCLE INTERRUPTED</b>	<b>PROCES BOL PRERUŠENÝ</b>

Then the following message will appear on the display:

<b>SWITCH OFF THE UNIT</b>	<b>VYPNI SÚPRAVU</b>
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### **10.4 CANCELLING THE PREVIOUSLY SELECTED LONG-LASTING EFFECT DISINFECTION CYCLE**

Press  key on the control panel if you want to change to a different cycle or cancel the selected cycle. The following message will appear on the display:

**DENTAL UNIT V1**  
**READY FOR WORK**

### **10.5 COMPLETING THE DISINFECTION CYCLE AFTER TURNING ON THE UNIT**

The cycle is completed after all the tubings exposed to disinfectant solution are rinsed with water. Rinsing starts automatically after the unit is turned on.

it is necessary to complete the cycle, if:

- the long-lasting effect disinfection cycle was active before the unit was turned off
- in case of black-out (if any of the cycles was in progress)
- you have accidentally switched off the unit while one of the cycles was in progress



#### **Caution**

**During the disinfection cycle completion all tubings must remain inside the disinfection tank.**

If it is still necessary to complete the cup-fill disinfection cycle, the following message will appear on the display after the unit is turned on:

**PRESS HCUP TO START**

Press the  key on the assistant's panel. The corresponding LED-light will turn on. The following message will appear on the display:

<b>CUP-FILL DISINFECTION</b>	<b>DEZINFEKCIA PLNIČA POHÁRA</b>
<b>PLACE TUBINGS ON CUP-FILL OUTPUT</b>	<b>DAJ TRUBKU NA VÝSTUP PLNENIA</b>
<b>PRESS CUP TO START</b>	<b>NA ODŠTARTOVANIE STLAČ PLNENIE</b>

Then continue as described above in 8.2.

If it is still necessary to complete the water coolant lines disinfection cycle, the following message will appear on the display after the unit is turned on:

**PRESS HCOOL TO START**

## INSTRUCTIONS FOR USE



Press key on the assistant's panel if you want to change to a different cycle. The corresponding LED-light will turn on. The following message will appear on the display:

**PIPE DISINFECTION  
PUT PIPES TO BOWL  
PRESS COOL TO START**

**DEZINFEKCIA PRE HADICE  
VLOŽ HADICE DO MISY  
NA ODŠARTOVANIE STLAČ CHLADENIE**

Then continue as described above in 9.2.

Every disinfectant solution inflow is monitored and recorded on the memory source, independent from main power supply.

The memory source is inspected automatically every time you turn on the unit.

As the memory source contains all the important system data, it is inspected automatically every time you turn on the unit.

In case of the memory source malfunction the following error message is displayed:

**!!! EEPROM ERROR !!!**



### Note

**If this message is displayed call the service immediately**

**In case of such malfunction the recorded data is no longer reliable, thus it is necessary to rinse all the tubings with water (at least for 20 sec) manually. Turn the water cooling on and rinse the cup-fill lines and all tubings with water for min. 20 sec., in case you need to carry on the treatment procedure.**

In order to complete the disinfection of water coolant lines, there has to be a sufficient amount of distilled water in the reservoir.

The following message displays on the screen when the minimum water level in the main tank is reached. The insufficient amount of distilled water in the reservoir is indicated as described above in paragraph 4.

You need to turn off the dental unit first, and then refill the reservoir, then turn the unit on again and then continue following instructions on the screen as was described above in the corresponding paragraphs.

## 11 ALARMS

There are four types of alarms used for disinfection cycles:

- Triple alarm: end of disinfectant solution inflow
- Triple alarm as you turn on the unit: disinfection cycle needs to be completed
- Triple alarm: memory source malfunction
- 6X triple alarm: disinfection cycle completed

The purpose of the alarm is to draw your attention to a message shown on a display.

## 12 DISINFECTING THE SYRINGE

Designated for syringe disinfection. Suitable for syringes installed in the control panel and on the assistant's panel (if equipped).



### Note

It is only possible to perform the syringe asepsis, when all the tubings are taken out from the holders (disinfecting all tubings simultaneously).

