



Management  
System  
ISO 9001:2015  
ISO 14001:2015  
OHSAS 18001:2007  
[www.tuv.com](http://www.tuv.com)  
ID 0091004412



# AP3900 Maintenance work through the user

## 1. Daily:

### System Check:

The daily system check is very important for the overall performance of the AP3900. Dispenser, the inlet and outlet to the rinse vessel can influence the results if they are not set correctly. Air bubbles cause too small results, contaminated rinse water, on the other hand, results that are too high. Please follow the instructions below carefully!

Component	(Comment)
Init & Flush P Dispenser	Air bubbles in tubing should be removed.
Water supply, Flow Cell and Waste Water Line	<ul style="list-style-type: none"> <li>- Refresh the DI water for the dispenser and check visually for particles (use S16M002 to remove particles).</li> <li>- Spare bottle for Dispenser. We recommend preparing the DI water bottle 24h before. That's a natural degassing.</li> <li>- Check the level in the water reservoir for the rinsing cell.</li> <li>- Check the continuous flow when the pump is working during Flush.</li> <li>- Peristaltic pump should work properly.</li> <li>- Waste line should not give back pressure (check for bended waste line or wrong gradient).</li> </ul>
Air Pressure AP3900 (4-6 bar)	5 bar is recommended. Check the gas supply for correct pressure.
Air Pressure Gripper (2 bar)	
Heater 1 (148°C)	Check 148 °C for COD on the software panel (green is in the tolerance).
Heater 2 (110°C)	Check 110 °C for TP & TN on the software panel (green is in the tolerance).
Brake Z- arm	Robot Arm should park above the DR3900 at home position.
Waste Container	Empty the waste container.
Cleaning solution	Check if the cleaner is filled in second rinsing vessel (Cleaning solution for electrodes – order number: S16M002). Automated cleaning at the end of the run should be activated.
QC Control	Place QC Control to check the entire system.

### Sample Check:

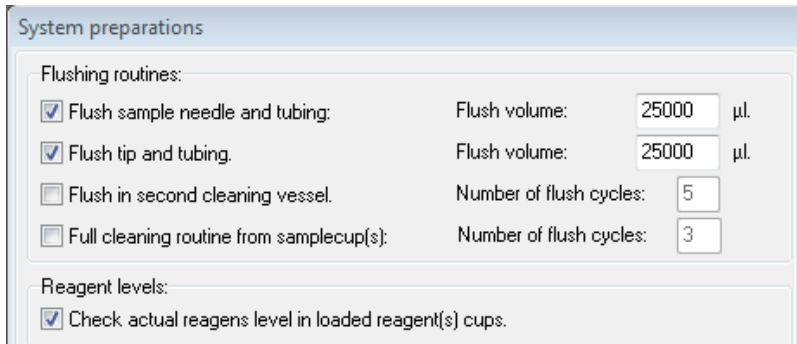
Fill the sample vials with approx. 40 ml of sample. The stirrer should not be in the sample when it is moved out, because the stirrer turns again in the upper position.



### Reagent Check:

Check that all reagents are available. With **R** you are able to open all reagent covers.

Alternatively, the control of the reagents can also be automated (recommended option). Therefore, the system preparation **P** is defined as follows.



**System preparations**

Flushing routines:

<input checked="" type="checkbox"/> Flush sample needle and tubing:	Flush volume:	25000	µl.
<input checked="" type="checkbox"/> Flush tip and tubing.	Flush volume:	25000	µl.
<input type="checkbox"/> Flush in second cleaning vessel.	Number of flush cycles:	5	
<input type="checkbox"/> Full cleaning routine from samplecup(s):	Number of flush cycles:	3	

Reagent levels:

Check actual reagents level in loaded reagent(s) cups.

### Cuvette Check:

We recommend cleaning all cuvettes with a soft cloth when placing them in the trays.

It is also recommended to check that the cuvettes are correctly positioned in the trays before starting.

Production-related inclined caps should be sorted out.

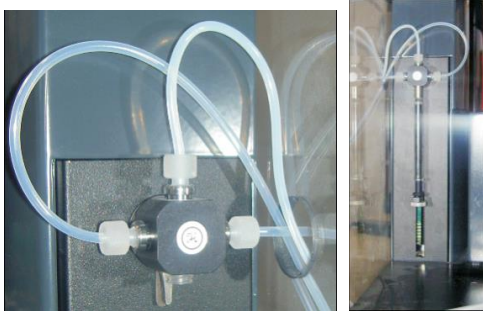


It is recommended, if possible, to store the reagents in a cool place overnight and to cover the cleaning vessel. For this purpose, the blue caps of the sample cups can be used.

## 2. Weekly:

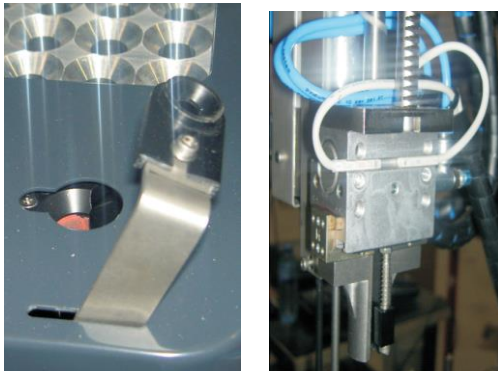
Change the cleaning solution in the 2nd cleaning vessel (S16M002 - electrode cleaning solution) and clean the sample needle and stirrer with 5% HCL, finally with DI water.

Check that all dispenser connections are finger tight.

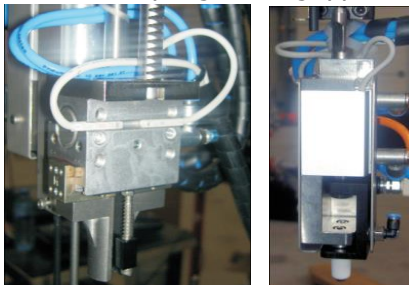


## 3. Monthly:

Clean the rubber seals with isopropanol (article number: 1227642, L221.0500, 1445949).



Grease the spring in the gripper with silicone grease (article number: 6M0920) and clean the pipette holder.





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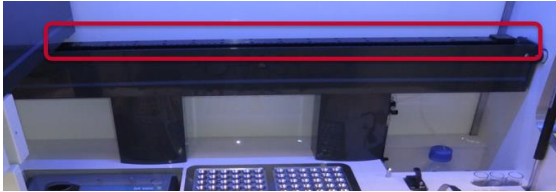


#### 4. Quarterly:

Clean the cleaning vessels and check the stirring speed (70 rpm).



Clean the X-axis with PTFE spray.



Refill compressor oil and drain condensation water.

To do this, first switch off the compressor, then release the pressure and then pull the valve head upwards and turn it anticlockwise.



Remove compressed air hose.



Open the drain and catch the oil.

