



SERVICE TRAINING CENTER

## Service Manual

HOBART GmbH

An ITW-Company

EFFICIENT – RELIABLE – INNOVATIVE

PRELIMINARY



# SERVICE MANUAL

## AMX(X) / AUXX / AUP SERIES

STARTING FROM SERIAL NO 8658 0001




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# 1. STANDARD MODELS – OVERVIEW

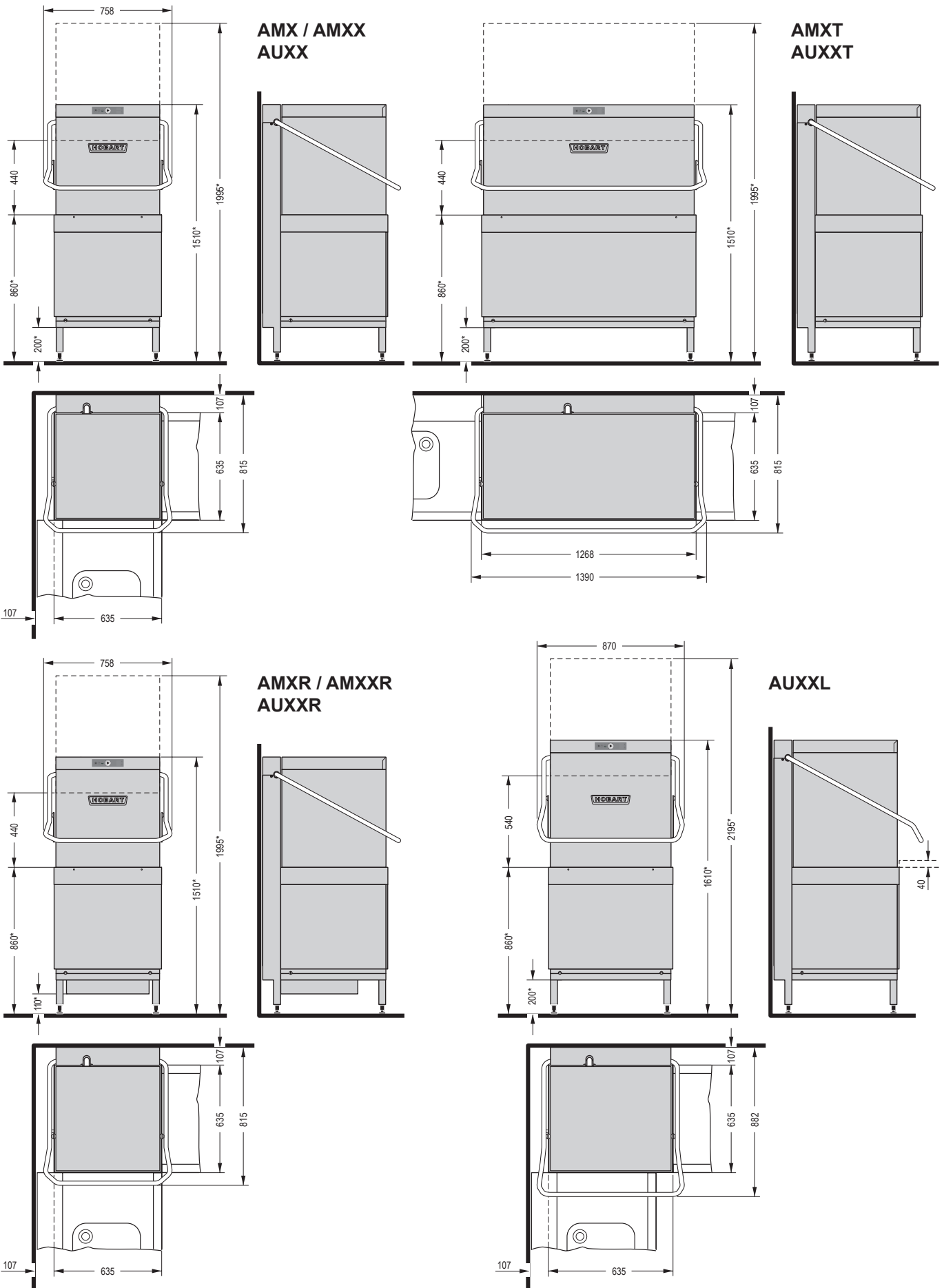
TYP	NO.	DEVICE CODE	EPROM	PROGRAM NO	
AMX	1	AMX-10	897547-004	1	
	2	AMXS-10	897547-004	2	
	3	AMX-16	897547-004	1	
	4	AMXS-16	897547-004	2	
	5	AMX-20	897547-004	1	
	6	AMX-220	897547-004	1	
	7	AMXR-16	897547-004	3	
	8	AMXRS-16	897547-004	4	
	9	AM900-10N	897547-004	25	
	10	AMS900-10N	897547-004	26	
AMXX	11	AMXX-10	897547-004	5	
	12	AMXXS-10	897547-004	6	
	13	AMXX-141	897547-004	5	
	14	AMXX-31	897547-004	5	
	15	AMXXS-31	897547-004	6	
	16	AMXXS-NAV	897547-004	6	
	17	AMXX-210	897547-004	5	
	18	AMXX-211	897547-004	5	
	19	AMXX-215	897547-004	5	
	20	AMXX-220	897547-004	5	
	21	AMXX-221	897547-004	5	
	22	AMXX-225	897547-004	5	
	23	AMXXR-30	897547-004	7	
AUXX	24	AUXX-10	897547-004	9	
	25	AUXXS-10	897547-004	10	
	26	AUXX-141	897547-004	9	
	27	AUXX-31	897547-004	9	
	28	AUXXS-31	897547-004	10	
	29	AUXXR-30	897547-004	11	
AUP (Premax)	30	AUP-31	897547-004	13	
	31	AUPS-31	897547-004	14	
	32	AUPR-31	897547-004	15	
	33	AUPRS-31	897547-004	16	
...XT	34	AMXT-10N	897547-004	17	
	35	AMXTS-10N	897547-004	18	
	36	AUXXT-10N	897547-004	21	
	37	AUXXTS-10N	897547-004	22	
AUXXL	38	AUXXL-11N	897547-004	9	
	39	AUXXLS-11N	897547-004	10	

### DEVICE CODE EXPLANATION

**AMX** = alternating current pump, single wash arm  
**AMXX** = three-phase pump, double wash arm (cross)  
**AUXX** = with high pressure as option  
**AUP** = PREMAX model

**T** = Twin model  
**R** = with heat Recovery  
**S** = with integrated Softener  
**L** = Large model (height & width)  
**NAV** = Marine version

**2. MACHINE DIMENSIONS**



### 3. INSTALLATION

#### 3.1 ELECTRICAL CONNECTION

The machines will be supplied as standard with cable H07RN-F 5G 2.5 mm<sup>2</sup> (cable length approx. 2.5 m from cable gland).

The supply cord must be connected via a cut-off device (isolating switch or accessible plug device).

According to EN 60 335 the appliance must be connected to an equipotential conductor.

The connecting screw (⚡) is located beside the cable inlet.

#### 3.2 WATER CONNECTION

**The machines must be operated with potable water.**

**For water with an extremely high mineral content an external demineralisation is strongly recommended.**

Ideal conductivity value for washware made of stainless steel 80 µS/cm, for glasses 100 µS/cm and for dishes 200 to 400 µS/cm

##### Machines without softener:

The machine should be connected to soft and if possible warm water (up to 3 °dh = 0.5 mmol/l, **max. 60°C**).

##### Machines with softener:

The machine should be connected to warm water if possible (**max. 60°C**).

Softener has to be adjusted according to water hardness.

Line flow pressure 0.5 – 10 bar.

**Important:** the line flow pressure must not be less than 0.5 bar.

**If the line flow pressure is above 10 bars provide pressure reducer at source.**

Connect the union nut "A" (3/4") of the water supply hose to the site shut off valve.

Do **not kink** or **cut** the supply hose. Eventually needed extension has to be provided with a suitable pressure hose (e.g. 324088-1).

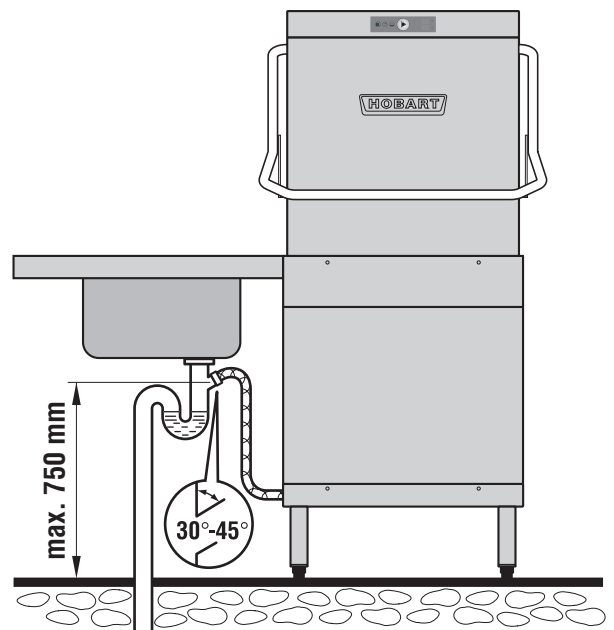
#### 3.3 DRAIN CONNECTION

Connection between machine and site drain must not exceed the specified height of **max. 0.75 m**.

Do **not kink** the drain hose.

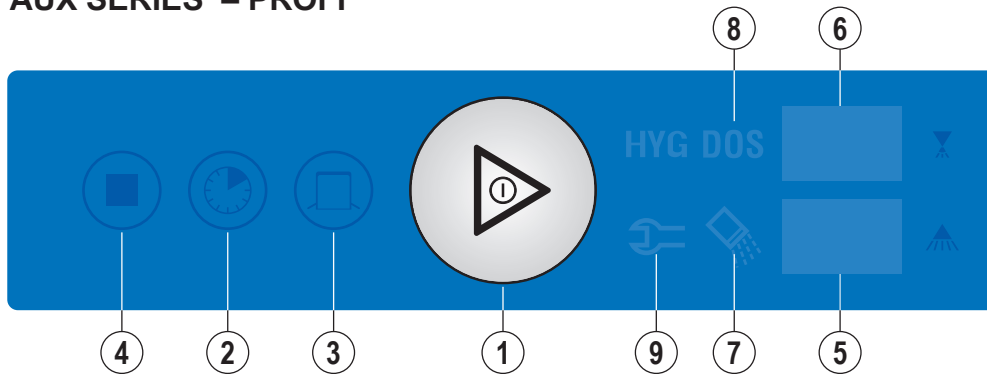
Do not place the drain hose loosely on the floor (the hose could be rubbed through).

**Fix it at site!**



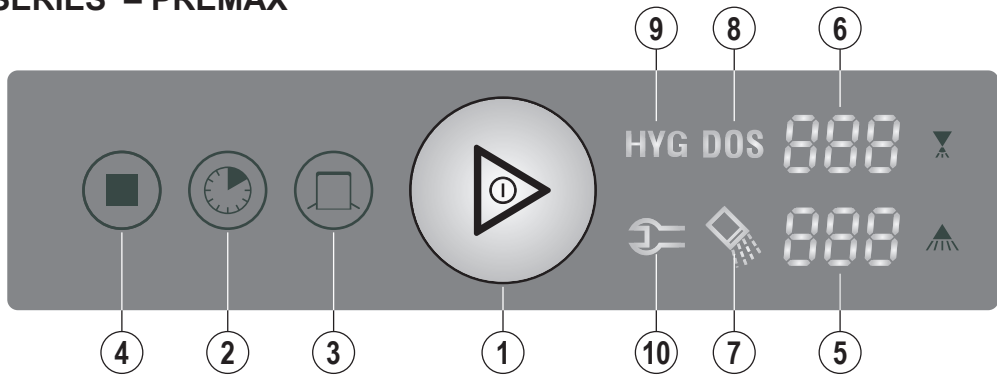
## 4. SMARTTRONIC CONTROLS

### 4.1 AMX / AUX SERIES – PROF I



<b>1 Machine ON/OFF DRAIN</b>		<p>Pushing this button switches the dishwasher on.</p> <p>By pushing and holding (3 s) this button, the drain and self cleaning cycle starts. Once the drain cycle has completed the machine switches off automatically.</p> <p><b>After switch off, the machine is not voltage free!</b></p> <p>The button illuminates to indicate the mode of the machine:</p> <p><b>GREEN</b> (flashing) = machine fills and starts heating  <b>GREEN</b> (permanent) = ready for operation (softener test U03)  <b>BLUE</b> (permanent) = wash cycle is running (basic data U02)  <b>BLUE</b> (flashing) = machine draining / switch-off  <b>RED</b> (permanent) = critical failure (machine type setting U01)  <b>GREEN/RED</b> (alternate flashing) = noncritical failure  <b>BLUE/RED</b> (alternate flashing) = negative pressure failure</p>
	<b>2 Program button</b>	<p>By pushing this button it is possible to select between different preset programs, according to model and equipment. The program no. will be shown in the upper Display.</p>
<b>3 High pressure / Service button</b>		<p><b>AUX(X/L/T) models only:</b> Activation of high pressure cleaning. Never use for cleaning glasses and light dishes (breakage) !</p>
<b>4 Stop button</b>		<p>In case of operating error or faults, it is possible to switch-off the machine immediately without drain cycle, by pushing this button.</p> <p><b>After switch off, the machine is not voltage free!</b></p>
<b>5 Temperature Wash (°C)</b>		<p>Temperatures are only <b>displayed when the program button is pushed</b> for minimum <b>3 seconds</b>. The indicators go out <b>10 seconds</b> after releasing <b>program</b> button.</p>
<b>6 Temperature Rinse (°C)</b>		<p>Permanent temperature display can be activated ( set U02 S15 to "1" ).</p>
<b>7 Salt required</b>		<p>Indicates the need for regeneration salt to be added. (Only with built-in softener.)</p>
<b>8 Detergent / Rinse aid indicator</b>	<b>DOS</b>	<p>Indicates detergent (CH1) or rinse aid (CH2) deficiency.</p>
<b>9 Service indicator</b>		<p>This symbol indicates that the dishwasher has developed a fault. In the rinse temperature display appears a code (see page 34 to 36).</p>

4.2 AUP SERIES – PREMAX



<p><b>1 Machine ON/OFF DRAIN</b></p>		<p>Pushing this button switches the dishwasher on.</p> <p>By pushing and holding (3 s) this button, the drain and self cleaning cycle starts. Once the drain cycle has completed the machine switches off automatically. <b>After switch off, the machine is not voltage free!</b></p> <p>The button illuminates to indicate the mode of the machine:</p> <p><b>GREEN</b> = ready for operation (softener test U03)  <b>BLUE</b> = wash cycle is running (basic data U02)  <b>RED</b> (permanent) = critical failure (machine type setting U01)  <b>GREEN/RED</b> (alternate flashing) = noncritical failure  <b>BLUE/RED</b> (alternate flashing) = negative pressure failure</p> <p>The status of the program is indicated by the color change of the four button segments:</p> <p>Filling increasingly GREEN          Draining decreasingly GREEN          Washing from BLUE back to GREEN</p>
<p><b>2 Program button</b></p>		<p>By pushing this button it is possible to select between different preset programs, according to model and equipment. The program no. will be shown in the Display ⑥.</p>
<p><b>3 High pressure / Service button</b></p>		<p>Activation of high pressure cleaning. Never use for cleaning glasses and light dishes (breakage) !</p>
<p><b>4 Stop button</b></p>		<p>In case of operating error or faults, it is possible to switch-off the machine immediately without drain cycle, by pushing this button. <b>After switch off, the machine is not voltage free!</b></p>
<p><b>5 Temperature Wash (°C)</b></p>		<p>Temperatures are only <b>displayed when the program button is pushed</b> for minimum <b>3 seconds</b>. The indicators go out <b>10 seconds</b> after releasing <b>program</b> button.</p>
<p><b>6 Temperature Rinse (°C)</b></p>		<p>Permanent temperature display can be activated ( set U02 S15 to "1" ).</p>
<p><b>7 Salt required</b></p>		<p>Indicates the need for regeneration salt to be added. (Only with built-in softener.)</p>
<p><b>8 Detergent / Rinse aid indicator</b></p>	<p><b>DOS</b></p>	<p>Indicates detergent or rinse aid deficiency (integrated reservoir).</p>
<p><b>9 Hygiene indicator</b></p>	<p><b>HYG</b></p>	<p>After reaching a pre-set number of wash cycles (C71) the indicator lights up (S19 = "1"). Hygiene cleaning will be selected by pushing the program button repeatedly (the upper display shows "H") and started via ON/OFF button.</p>
<p><b>10 Service indicator</b></p>		<p>This symbol indicates that the dishwasher has developed a fault. In the rinse temperature display appears a code (see page 34 to 36).</p>

## 5. FIRST RUN / CUSTOMER MENU

### INITIAL FILL OF THE RINSE BOOSTER

On delivery, the switching function **S28** (first booster filling) is set to "0". There is no menu "boF". As the booster is controlled by a pressure transmitter, no initial fill must be carried out. Therefore the booster heating is not locked.

### REQUIREMENT: MACHINE "OFF" AND HOOD OPEN

If the hood will be closed or if no button is pressed within 10 seconds, the display switches off automatically and the new settings will be saved.

**Push Stop and Program button at the same time.**

EXAMPLE: Select function with the program button.		DISPLAY		parameter	range
		rinse	wash		
1	Detergent dosage	CH1	XX	C16	0-50 s
2	Rinse aid dosage – program P01 to P04	CH2	X.X	C18	0-50 s
3	Detergent dosage – not used	CH3	--	C20	0-50 s
4	Rinse aid dosage – program basic clean (AUP only)	CH4	X.X	C19	0-50 s
<i>Set chemicals values with the ON/OFF button (0.5s steps).</i>					
5	<b>Water hardness adjustment</b> Set value with the ON/OFF button (basic setting H02). <b>H01</b> = up to 7°dh / <b>H02</b> = 8 to 14°dh / <b>H03</b> = 15 to 21°dh / <b>H04</b> = 22 to 30°dh	<b>H01</b>		C60 - C63	
To initiate a manually regeneration with the next wash cycle press the stop button for 3 seconds (confirmed by the flashing water hardness indication).		Hereby the softener function will be set to initial condition. (With next wash cycle, regeneration starts automatically.)			
6	<b>Wash cycle counter</b> Reset to "0" only via basic data (service menu).	PXX	XXX	C73 + C74	0-999999
7	<b>Water consumption counter</b> Reset to "0" only via basic data (service menu).	EXX	XXX	C77 + C78	0-999999
8	<b>Remaining water quantity counter for external water treatment</b> To reset the counter to pre-set value, press ON/OFF button for 3 seconds.	dXX	XXX	C79 + C80	0-999999
<b>CLOSE THE Hood</b>					
9	<b>Hose priming detergent (dispenser M4)</b> By pushing the ON/OFF button, relay 5 will be activated for 60 seconds.	SF1	--0 --1		0 / 1
10	<b>Hose priming rinse aid (dispenser M3)</b> By pushing the ON/OFF button, relay 6 will be activated for: AMX(X) / AUXX = 360 seconds / AUP = 130 seconds	SF2	--0 --1		0 / 1
<i>To interrupt a priming cycle, push the ON/OFF button again.</i>					
11	<b>Acoustic signal (AUP models only)</b> By pushing the ON/OFF button acoustic signals will be activated ("1") or deactivated ("0"). There are 3 different signals: end of program: 1 x 2.0s "ON" noncritical failure: 2 x 0.5s with 0.5s pause critical failure: 5s continuous signal	S	--0 / --1	S24	0 / 1
12	<b>Chemicals deficiency sensor</b> By pushing the ON/OFF button sensors will be activated ("1") or deactivated ("0").	CH	--0 / --1		0 / 1
<b>To quit the menu : – point 1 to 8 – close the hood, point 9 to 11 – open the hood            – or do not press any button during next 10 seconds            The indicator switches itself off and the new settings will be saved.</b>					



## 6. HYDRAULIC SCHEMATICS

### 6.1 LEGEND OF COMPONENTS

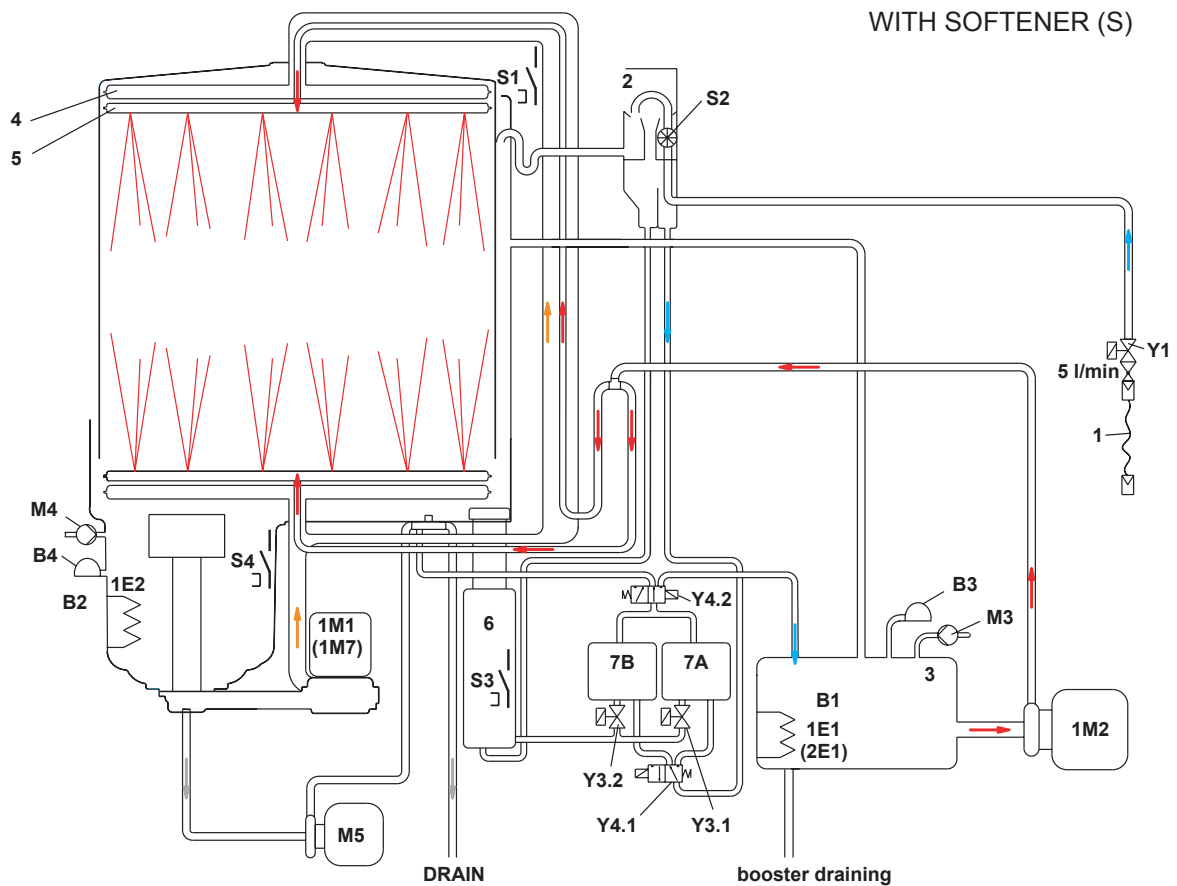
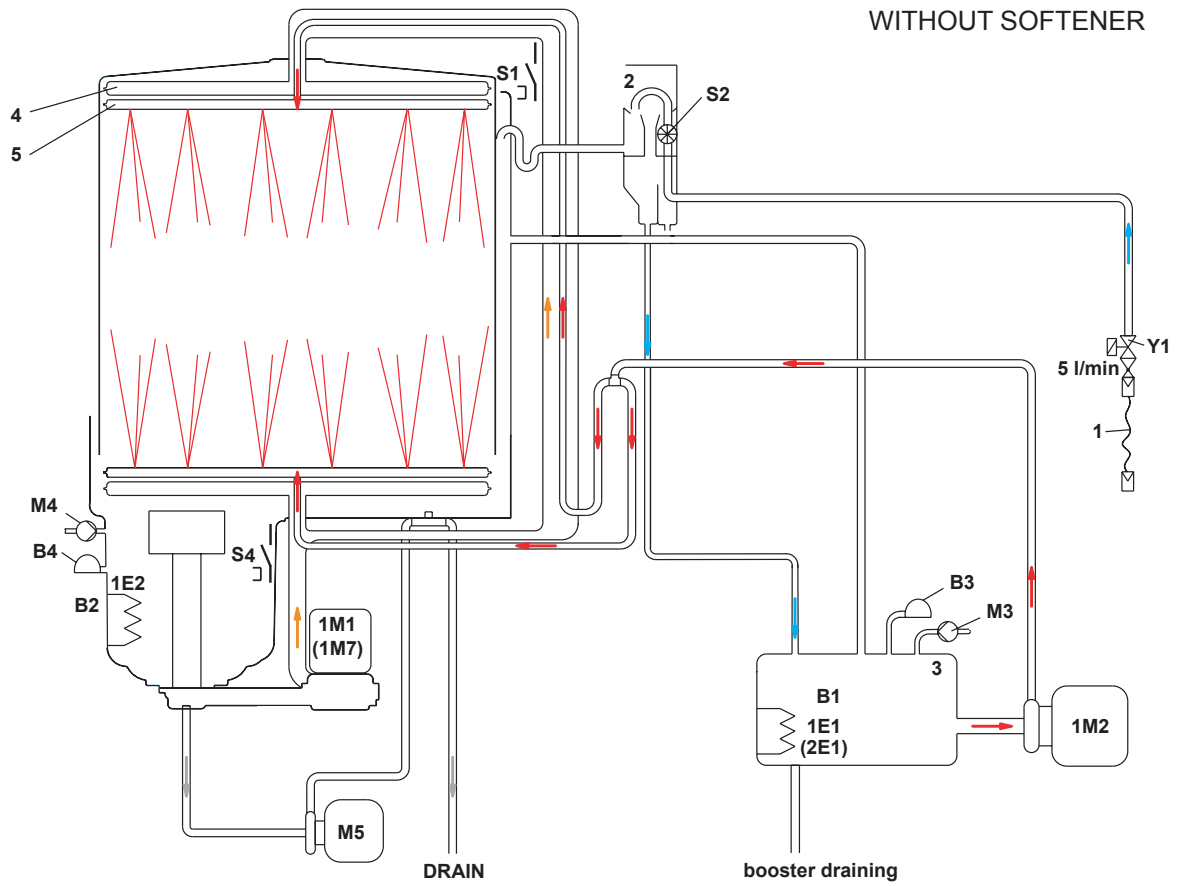
B1	TEMPERATURE SENSOR BOOSTER
B2	TEMPERATURE SENSOR TANK
B3	PRESSURE TRANSMITTER BOOSTER
B4	PRESSURE TRANSMITTER TANK
E1	BOOSTER HEATING
E2	TANK HEATING
M1	WASH PUMP
M2	RINSE PRESSURE PUMP
M3	RINSE AID DISPENSER
M4	DETERGENT DISPENSER
M5	DRAIN PUMP
S1	REED-SWITCH – HOOD
S2	AIRGAP IMPELLER <sup>1)</sup>
S3	SALT DEFICIENCY SWITCH <sup>2)</sup>
S4	REED-SWITCH – STRAINER
Y1	SOLENOID VALVE – FILL
Y3.1	VALVE RESIN A <sup>2)</sup>
Y3.2	VALVE RESIN B <sup>2)</sup>
Y4.1	VALVE RESIN B/A <sup>2)</sup>
Y4.2	VALVE DRAIN/BOOSTER <sup>2)</sup>
1	WATER SUPPLY HOSE
2	WATER INLET AIRGAP <sup>1)</sup>
3	BOOSTER
4	WASH ARM
5	RINSE ARM
6	SALT CHAMBER <sup>2)</sup>
7	RESIN A / RESIN B <sup>2)</sup>

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<sup>1)</sup> AIRGAP ASSY.

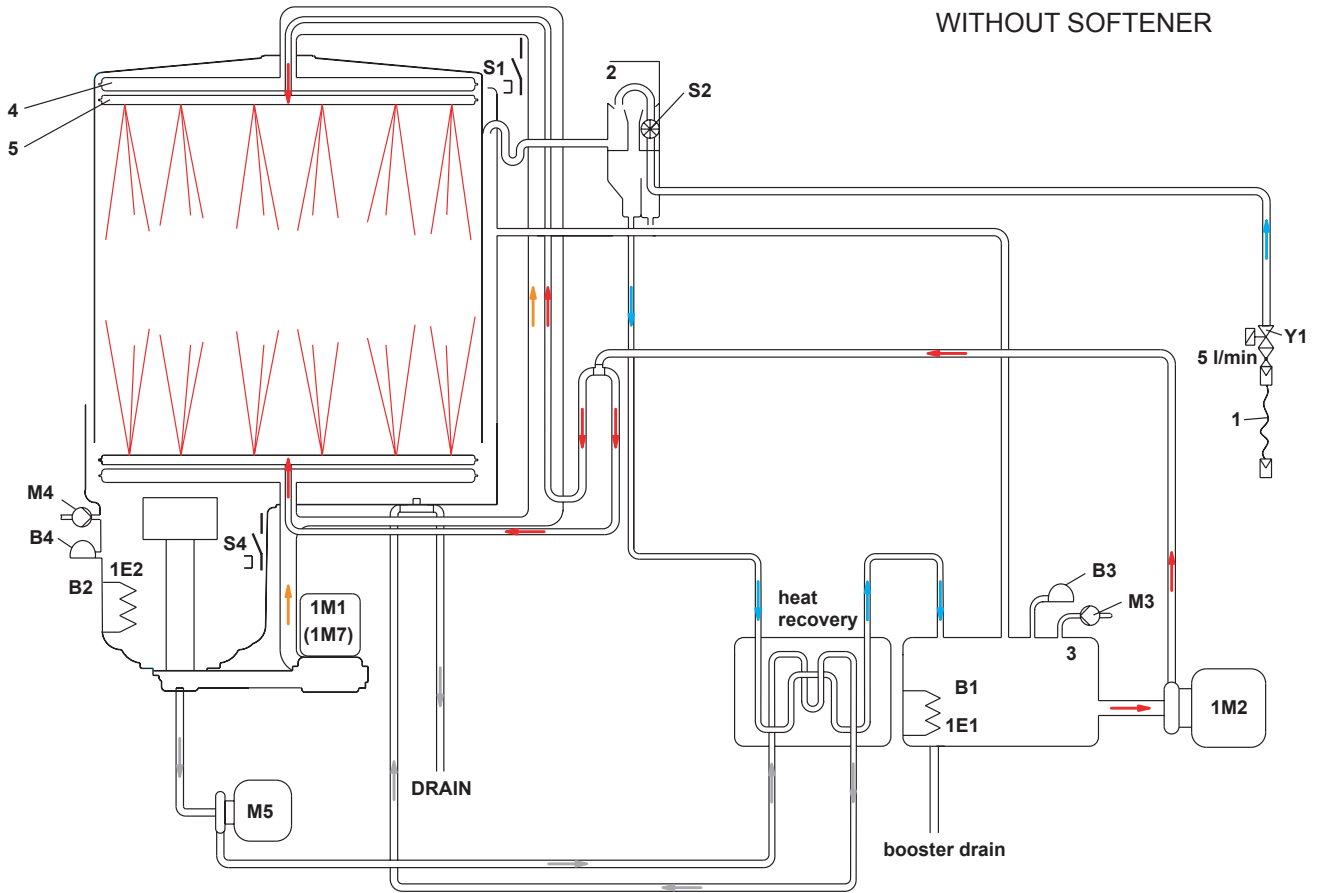
<sup>2)</sup> SOFTENER ASSY.

**6.2 AMX(S) / AMXX(S) / AUXX(S) / AUP(S)**

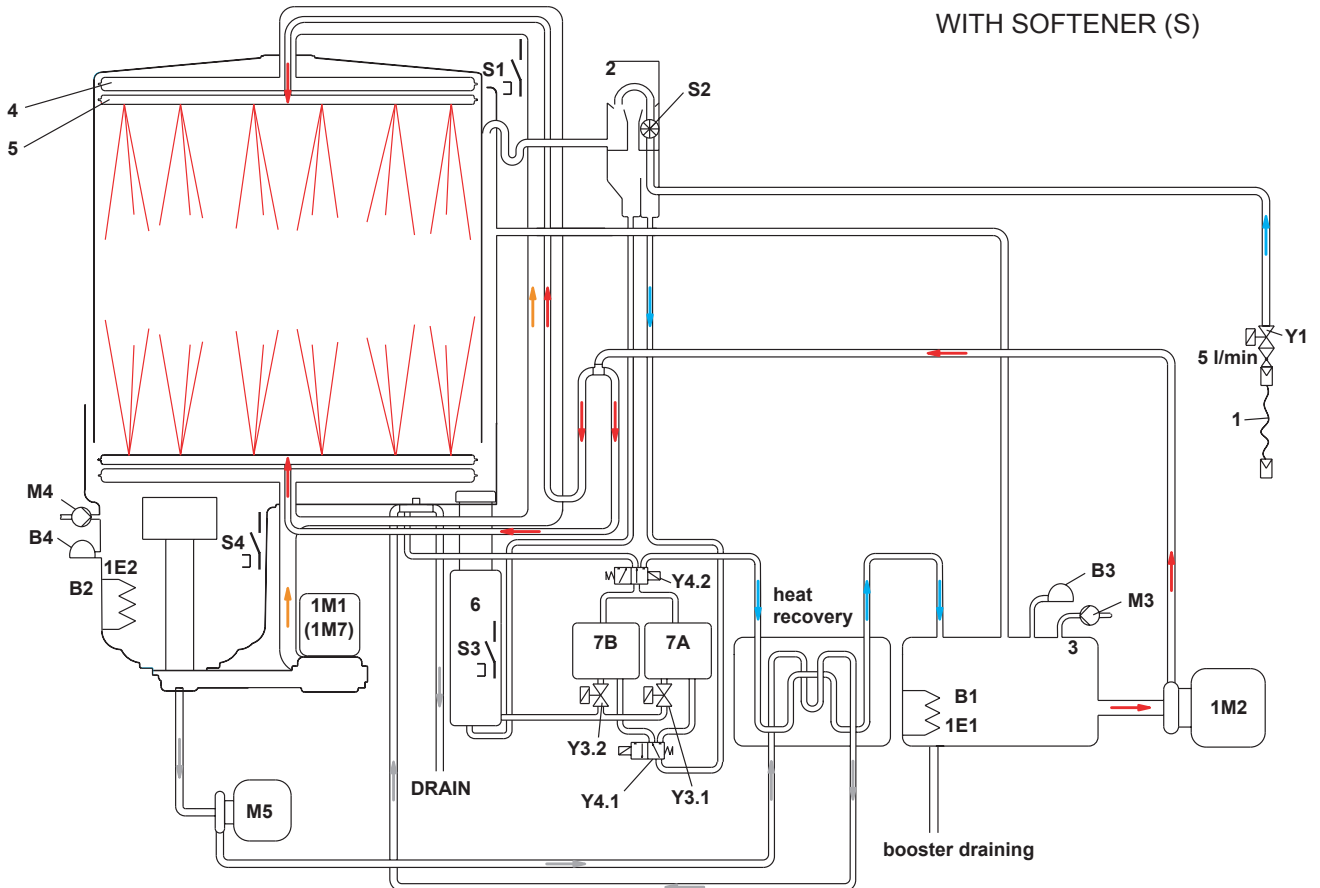


6.3 AMXR(S) / AMXXR(S) / AUXXR(S) / AUPR(S)

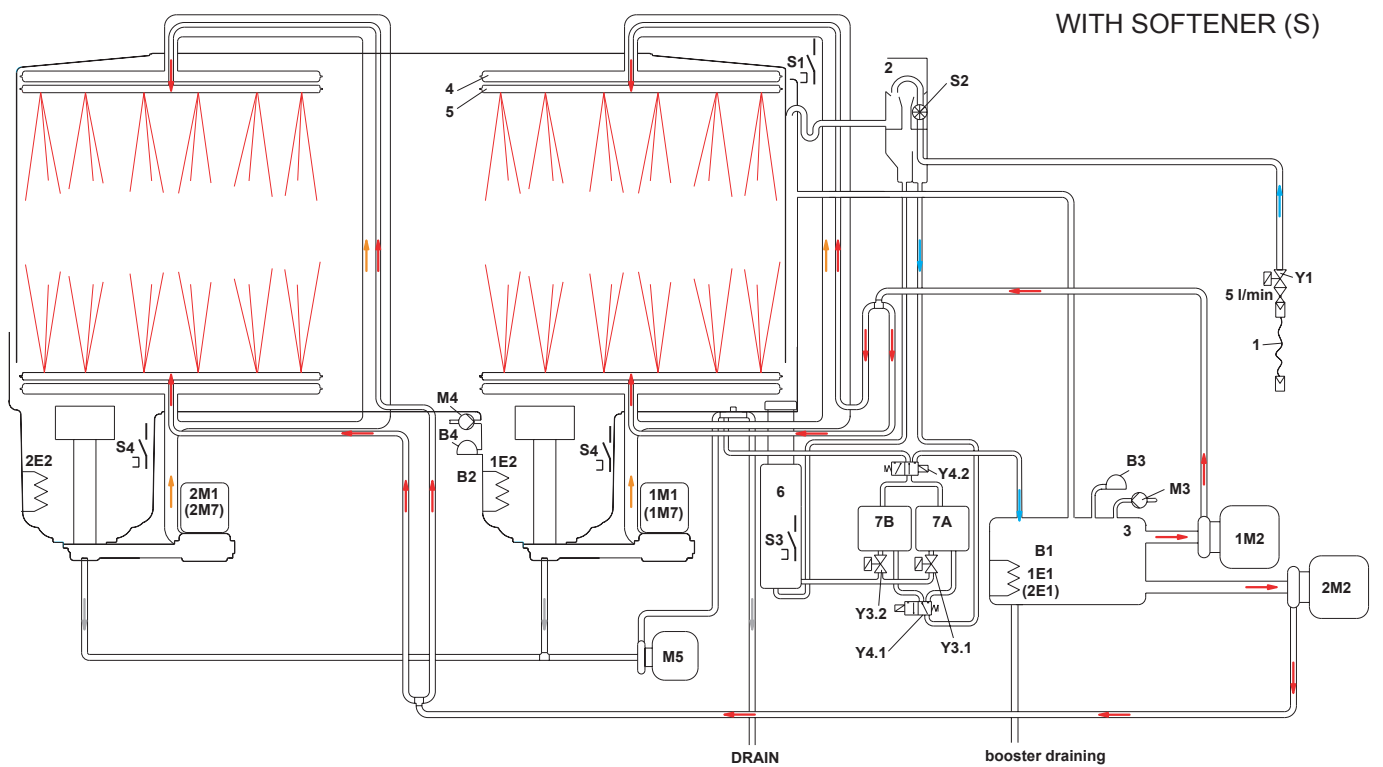
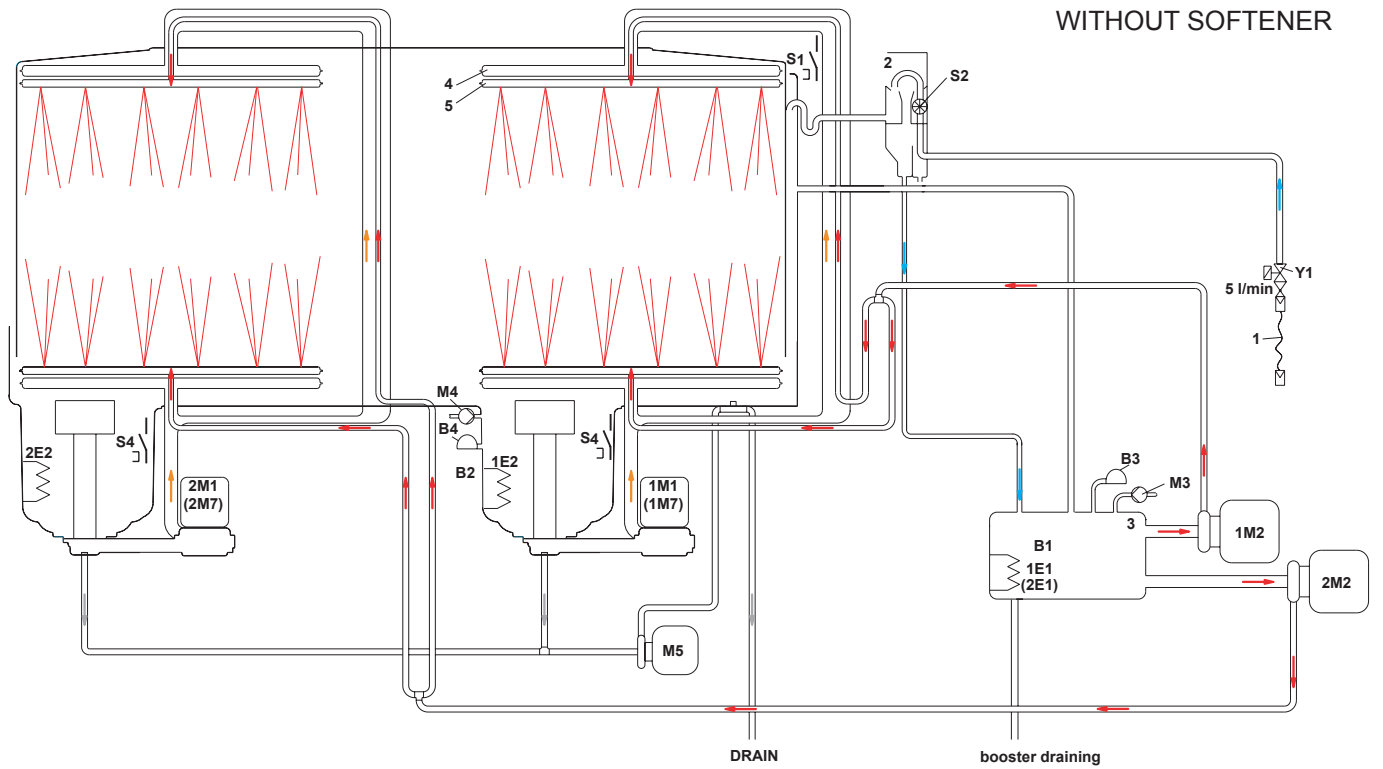
WITHOUT SOFTENER



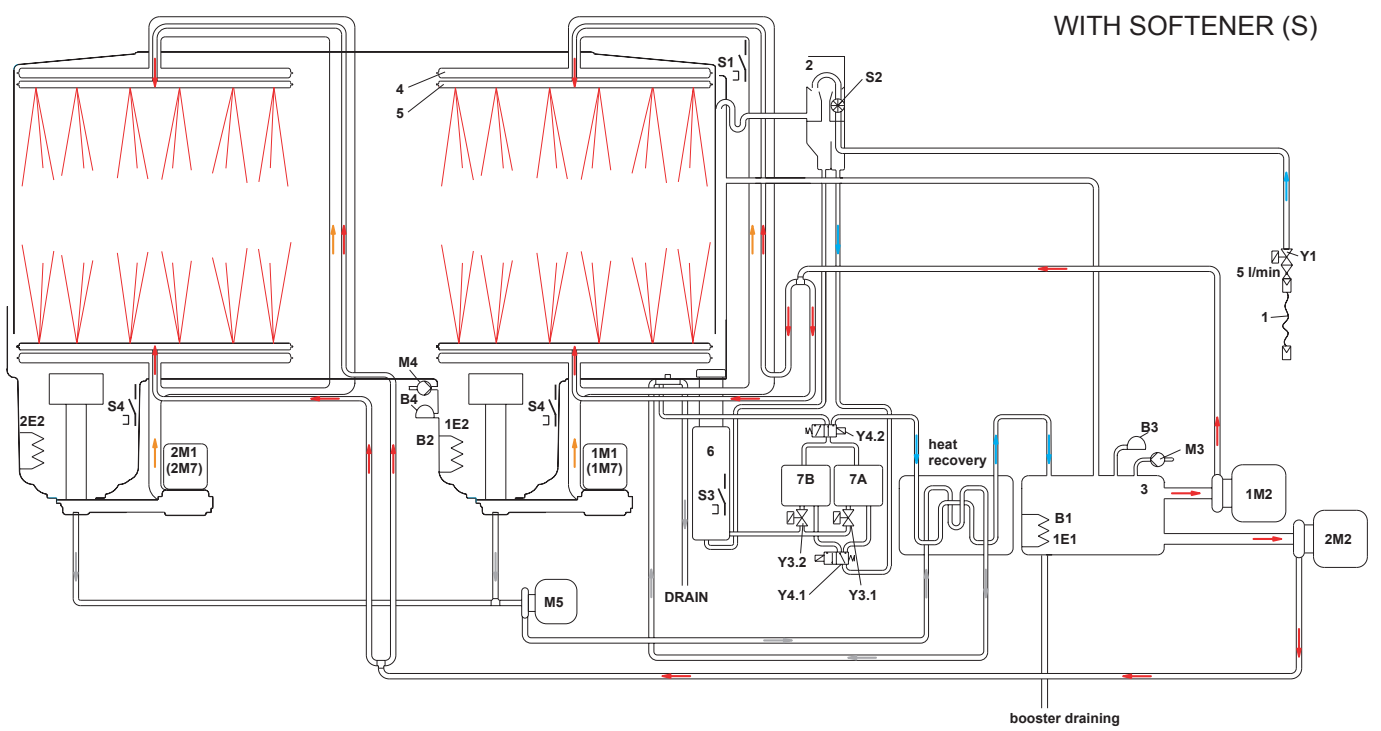
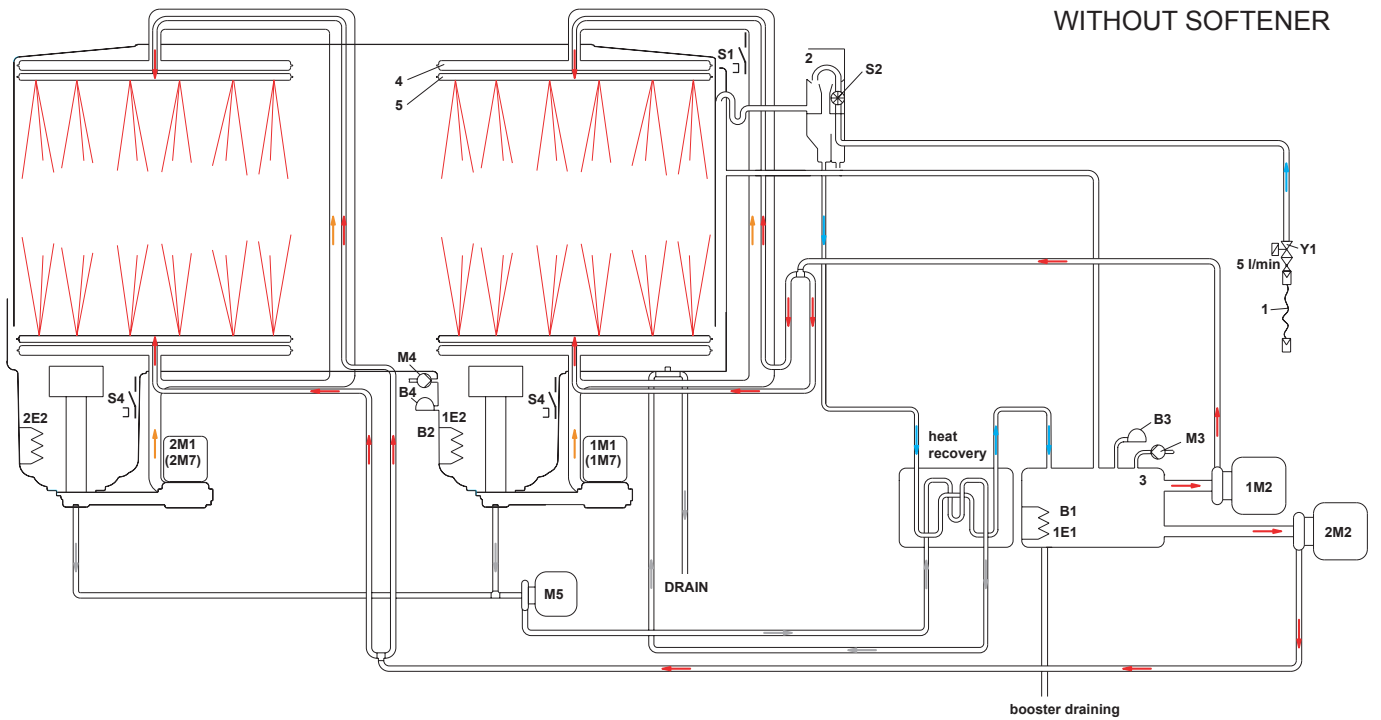
WITH SOFTENER (S)



**6.4 AMXT(S) / AUXXT(S)**



6.5 AMXTR(S) / AUXTR(S)



## 7. FILLING

### 7.1 AIRGAP

The reed-switch **S2** on the small PCB 775540-1 is actuated by the impeller magnet.

The impeller monitors the incoming water flow by counting impulses and then relaying that information back to the main PCB. The count rate is **200 impulses per litre**.

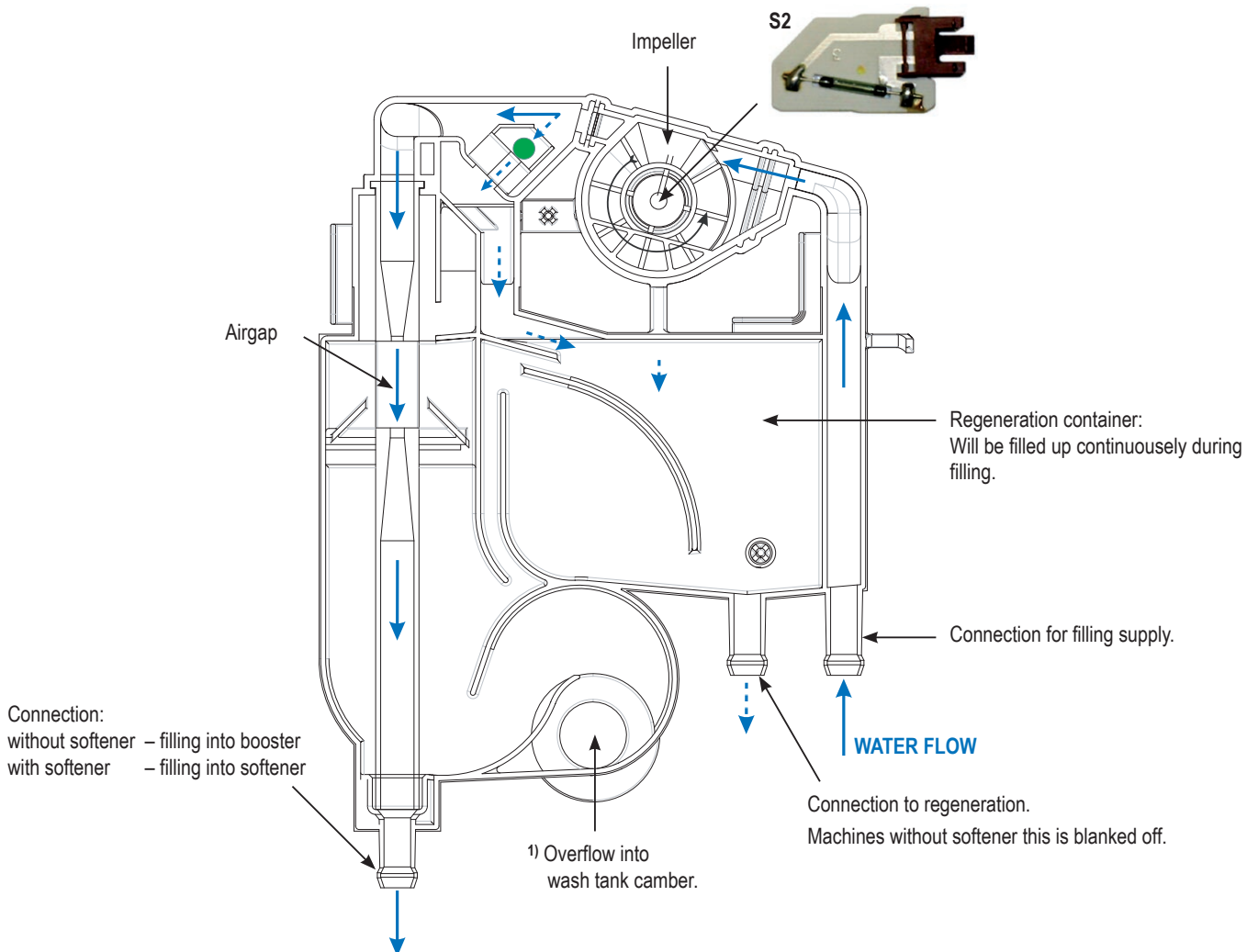
1. Water consumption counter [C77] + [C78] (counted litres are added to basic value "0").
2. Remaining water quantity counter for external water treatment [C79] + [C80] + [S18] (counted litres are subtracted from preset value). See also chap. 12.3, page 33.

#### MAINTENANCE – TO BE CHECKED:

Whether leaking water from the airgap overflow (see figure<sup>1)</sup>) enters the wash tank chamber (visual inspection). If so, the leaking water quantity must not exceed 100 ml per fill step.

Whether the impeller sensor works. This can be carried out in two ways.

1. Service Menu: Select input S2 and activate the fill valve by pushing the ON/OFF button (-0 / -1 will be displayed alternately). See also chap. 12.1.2, page 29.
2. Visual check: quick flashing LED on main board (see page 31).



#### **NOTE:**

To avoid incrustations, the fill valve is activated during stand-by every 20 minutes for a short time to humidify the nozzles inside the airgap. (Parameter [S45] set to "1".)

## 7.2 PRESSURE TRANSMITTER B3 / B4

Via air traps (booster / wash tank) compressed air will be directed via clear hoses to the pressure transmitter booster (B3) and wash tank (B4). The transmitter changes the upcoming pressure into DC voltage which will be processed by the control as water level message.

If there is no fault, the voltage value can be displayed:

- via the service menu **F03** fill level booster / **F04** fill level wash tank or
- set switching function [**S56**] to "1" (menu U02).

Possible faults see page 35.

Output voltage *	Pressure transmitter B3 (booster)
approx. 0.50 V	Booster is empty. Fill valve will be activated.
approx. 0.62 V	Booster heating will be switched on (heating up to fill start temperature <b>85°C</b> ).
approx. 0.90 V	Booster is filled. Fill valve closes.

Output voltage *	Pressure transmitter B4 (tank) – example AMX
approx. 0.50 V	Wash tank is empty.
approx. 0.65 V	Tank heating will be switched on.
approx. 1.00 V	Machine is ready for operation (tank is filled).
approx. 1.15 V	With a delay-time of 5 seconds drain pump will be activated until normal water level is reached. (Error UL)
approx. 0.60 V	At the end of the self cleaning cycle water remains in the wash tank. When the machine will be switched on the next time, "AL" error will be displayed.

### Voltage value\* additions for pressure transmitter B4 (tank):

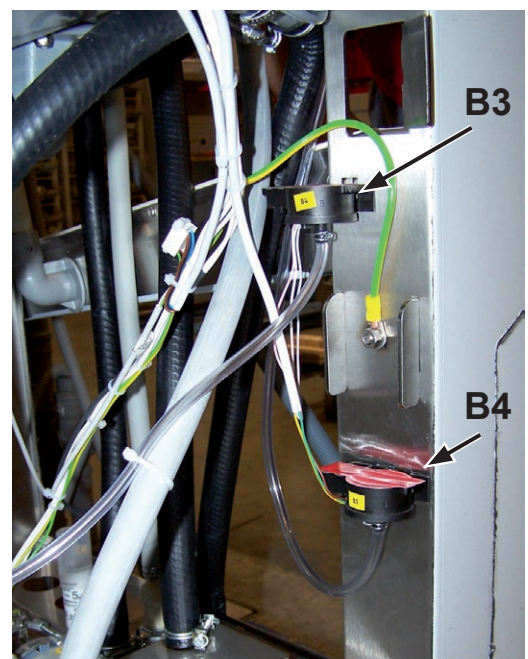
Model	tank heating ON	tank filled	safety level (UL)	AL	negative pressure
<b>AMX/AMXT</b>	0.65V (ca. 13 l)	1.00V (ca. 21 l)	1.30V (ca. 27 l)	0.60V (ca. 12 l)	0.58V (ca. 11 l)
<b>AMXX</b>	0.65V (ca. 13 l)	1.55V (ca. 33 l)	1.90V (ca. 40 l)	0.60V (ca. 12 l)	0.80V (ca. 15 l)
<b>AUXX/AUXXT/AUP</b>	0.65V (ca. 13 l)	1.90V (ca. 40 l)	2.25V (ca. 48 l)	0.60V (ca. 12 l)	0.80V (ca. 15 l)

**\* Voltage values may not be changed by the service technician (only on instruction of HOBART).**

### MACHINES WITH EXTERNAL FILLING

If external filling is activated (S20 set to "1"), a voltage regulation of 0.1 V must take place within 30 seconds, after a holding time of 60 seconds.

Otherwise the error message FIL will be displayed.



**7.3 DOSING EQUIPMENT**

**7.3.1 DETERGENT / RINSE AID DISPENSER**

DISPENSERS		
<b>AUP (Premax)</b>	Detergent (01-240195-2): delivery rate 3.0 l/hr Rinse aid (01-240195-1): delivery rate 1.3 l/hr	hose inside: 01-240195-12 hose inside: 01-240195-11
<b>AMX(X) / AUXX (Profi)</b>	Detergent (775556-12): delivery rate 3.0 l/hr Rinse aid (775556-11): delivery rate 0.4 l/hr	hose inside: 775608-2 hose inside: 775608-1
PRE-ADJUSTED VALUES		
<b>Detergent CH1</b>	All models: "8" = 8.0 s ≈ 2.40 g/l (possible range 0-50 s ≈ 0-15.4 g/l)	
<b>Rinse aid CH2</b>	AMX(X)/AUXX: "7.0" = 7.0 s ≈ 0.31 g/l (possible range 0-50 s ≈ 0-2.2 g/l) AUP: "2.5" = 2.5 s ≈ 0.33 g/l (possible range 0-50 s ≈ 0-6.6 g/l)	
DOSAGE		
<b>Detergent</b>	Pre-dosing is activated simultaneous with rinse pump M2. Wash dosing is activated simultaneous with the wash pump.	
<b>Rinse aid</b>	Pre-dosing is activated after the end of the fill cycle. Wash dosing is activated after the end of wash cycle.	

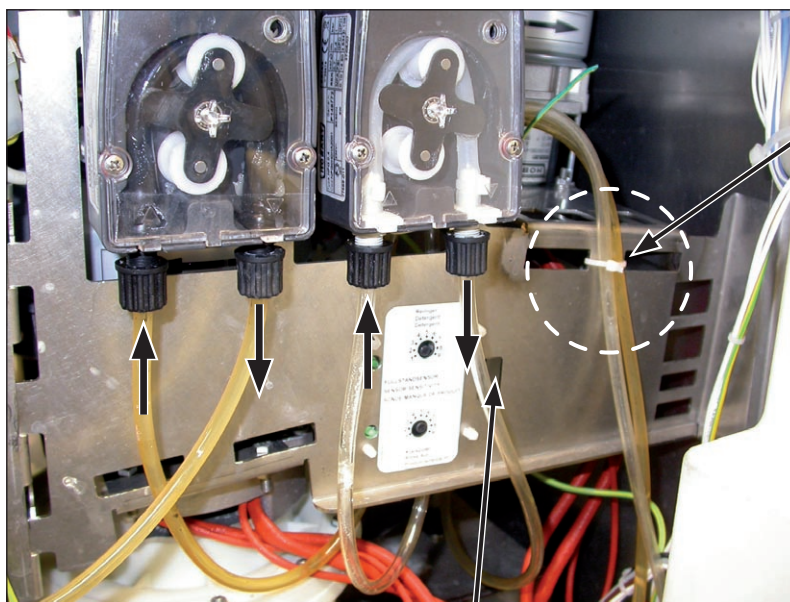
Hose priming and factory settings see page 8 "Customer Menu".

MAINTENANCE

1. Check hoses, dispensers and connections.
2. As a precaution, the dosing hoses have to be replaced every two years (hoses inside dispensers, suction and pressure hoses).

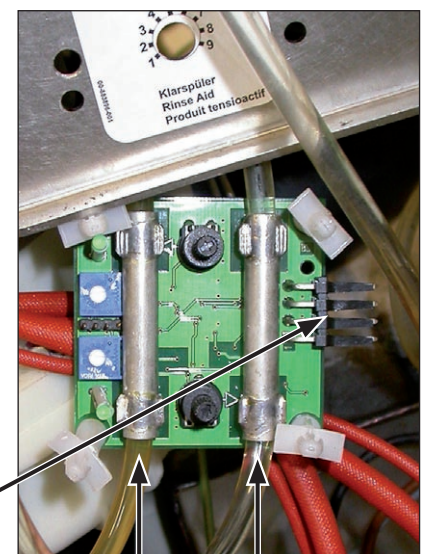
Dosing hoses (sold by meter) – part no. 01-246301-099

**Installation of dosing hoses (e.g. AMXX):**



Do not use adhesive clamp!

Dosing PCB

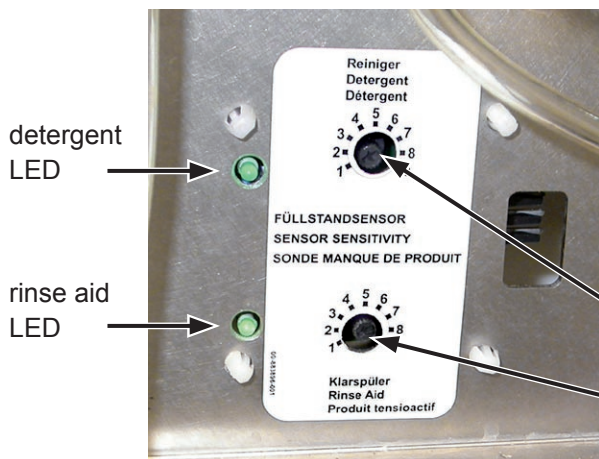


**Inspection window**  
Check if plug is connected correctly.

**detergent**      **rinse aid**



7.3.2 ADJUSTMENT OF CHEMICALS DEFICIENCY SENSORS



POTENTIOMETER:

Graduations:	<b>1 to 9</b>
Sensitivity:	<b>1</b> (non-sensitive chemical sensing / sensitive failure indication) <b>9</b> (sensitive chemical sensing / non-sensitive failure indication)
Basic setting:	<b>3</b>

Due to the physical properties of rinse aid (e.g. wetting), even smallest rinse aid quantities inside the hose will be detected by the deficiency sensor. If the sensor is adjusted too sensitively, maybe deficiency will not be released.

- TEST "DEFICIENCY"  
Flush the suction hose thoroughly with fresh water to remove any chemicals. When the hose is drained, the respective LED should be "OFF".
- TEST "FULL"  
Fill the suction hose (see chapter 5, page 8). The respective LED should light up. If not, adjust potentiometer until the LED lights up. Now the hose should be completely filled and without air bubbles.

TESTING THE PCB

- Select **Service Mode** (see chapter 12.1.2, page 29).
- Hoses are empty and deficiency sensor potentiometers turned to **left stop**: Switching functions "S07" (detergent) and "S08" (rinse aid) must be "0". **No sensor LED** lights up.
- Potentiometers turned to **right stop**: Switching functions "S07" (detergent) and "S08" (rinse aid) must be "1". The **LED** of the respective circuit lights up.



Detergent deficiency indication "- - 0"



Rinse aid hose filled "- - 1"

- After testing:  
Set potentiometers (detergent and rinse aid) to value "3" (based on tests with the most common products).

**7.4 SOFTENER**

**7.4.1 GENERAL**

Before first run, the softener has to be filled with 2 kg of regeneration salt and potable water.

**Switching function:** [S05] = "1" (standard setting for machine programs with softener)

**Salt capacity:** max. 2 kg (coarse grained, max.10 mm – no tablets)

**Salt consumption:** approx. 40 g / regeneration

**Softener setting:** see next page

**Parameters:** [C84] number of salt fillings  
 (see also page 33) [C85] number of wash cycles with deficiency of salt

**NOTE:**

1. Manually initiation of regeneration (salting column "B") is possible.  
 See also page 8, "customer menu" point 5.
2. **Y4.2** (switching Drain / Booster)  
 de-energized = switched to drain / energized = filling into booster.

It will take several wash cycles until the salt indicator switches off.



left hand view



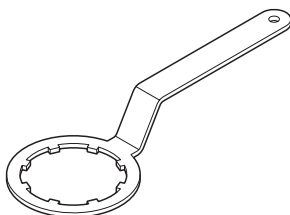
right hand view



front view



rear view



**1) Special tool needed (softener wrench 01-293500-1)**

In case of softener replacement the fastening nut has to be re-tighten after three wash cycles.

## 7.4.2 SOFTENER CHECK PROCEDURE

### Check:

Parameter [C84] = number of salt fillings.

Parameter [C85] = number of wash cycles with deficiency of salt (illuminated salt indicator).

### What you need to verify the softener function:

1. Test kit to measure the water hardness (part number 607236). Pay attention to expiry-date.
2. A conductivity-meter (possibly pH indicator strips 609927).

### How respectively where to measure?

Use clean tea-cup or beaker for sampling water.

1. Take measurement of the total water hardness (°dh) at the tap where the machine is connected to.
2. Measure the conductivity (µS/cm) at the tap where the machine is connected to.
3. Measure the hardness of the water in the booster.  
Therefore, the booster drain hose is to be used. Discard the first cup of water to ensure that no residuals from the hose falsifies the measured value.
4. Measure the conductivity of the booster water.

### Adjustment of softener setting according to the hardness of incoming water:

1. Ensure adequate softener setting:  
**H01** = up to 7°dh / **H02** = 8 to 14°dh / **H03** = 15 to 21°dh / **H04** = 22 to 30°dh.
2. Ensure that the salt chamber contains salt.
3. Ensure that granular salt is used (salt tablets are not allowed).
4. Ensure that the salt chamber has been filled up with water.

### Approximate values if softener function is O.K.:

The conductivity of the booster water shall be about 300µS/cm higher than the conductivity of that water taken at the tap.

**For example:** If the total hardness of the incoming water is 500µS/cm, the conductivity of the booster water will be roughly 800µS/cm. If this value is significantly higher (e.g. 3000 µS/cm), an incorrect softener function is very likely.

### Further steps:

1. Adjust the softener to "H04" to ensure a new regeneration will be actuated every 3 cycles.
2. Select the shortest program "P01" and take a sample of water (a tea-cup) at the booster drain hose immediately after the program cycle has ceased.
3. Measure and note down the water hardness.
4. Measure and note down the conductivity.

Repeat procedures 1 to 4 seven times to ensure salting of both resin columns.

An incorrect softener function is most supposable if the measured hardness at the booster drain hose is higher than 5°dh and / or the conductivity is extremely high (i. e. in the range of 3000 µS/cm).

### Proceed as following in case of too high hardness and / or conductivity values:

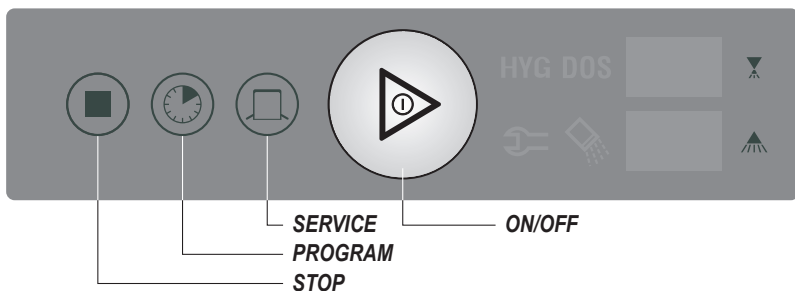
1. Run the drain cycle to ensure booster emptying down to the pump intake.
2. Remove the side panels.
3. Activate the softener test program "U03" as described on next page.  
Observe the resin columns with the aid of a torch from the left hand side of the machine.  
(Column "A" is at the left, column "B" is at the right from this point of view).

If the sequential operation deviates from the described one (see next page), i. e. resin "B" was six times activated, it is very likely that a softener valve is jamming or the electrical connections are interchanged (this is less probable).

The booster must be flushed thoroughly at the end of this procedure (run 5 wash cycles) to ensure the chloride content is at an acceptable level to prevent corrosion.

**Never run the softener test program at the begin of the herein described procedure because it is unavoidable that salt will be flushed into the system. Thus, measurements would become incorrect.**

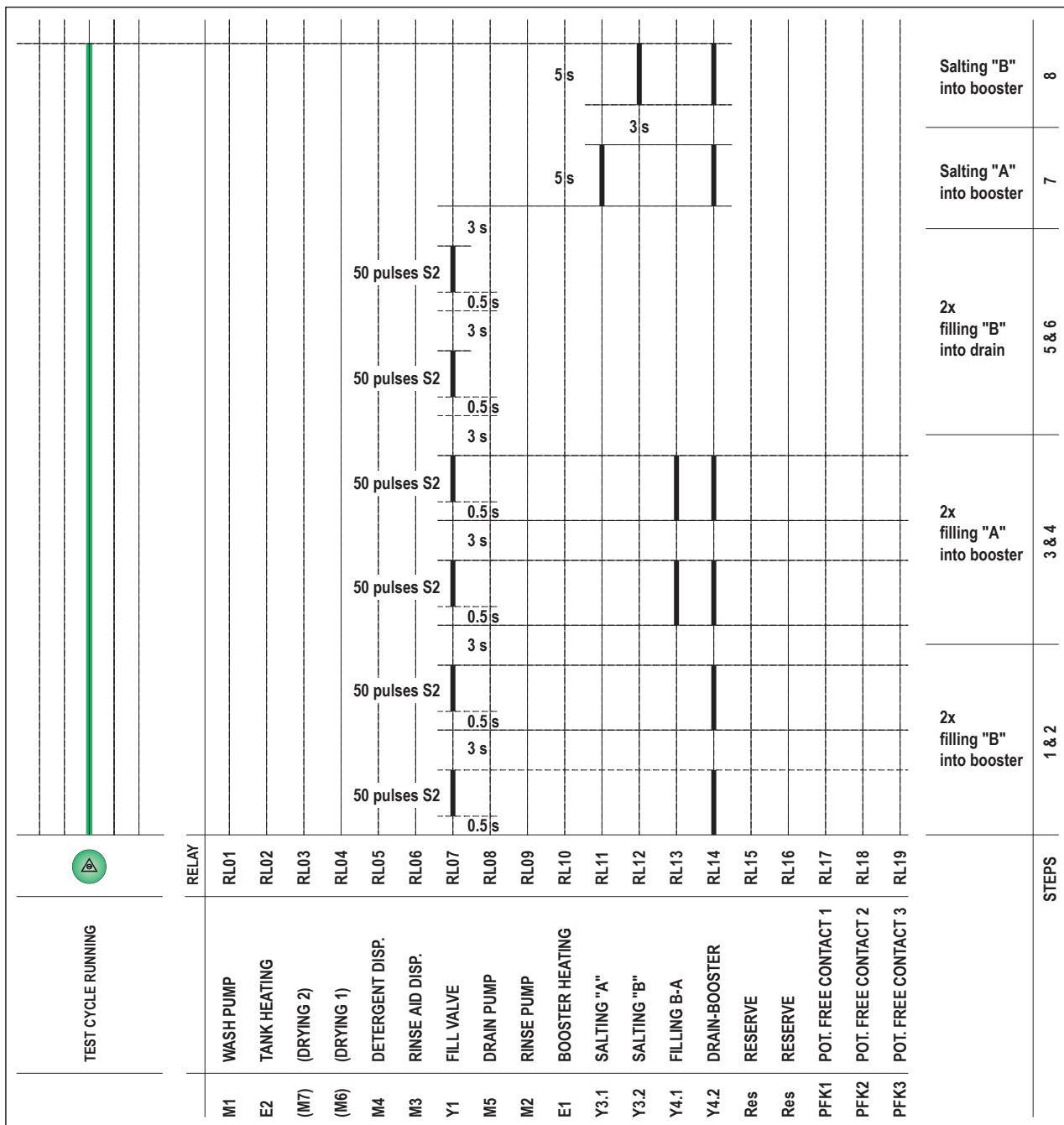
### 7.4.3 SOFTENER TEST PROGRAM



**REQUIREMENT:**

Machine has to be switched "OFF" and the hood must be open.

- Push and hold **program** and **service button (dryer button)** together. **U01** appears in the rinse temperature display.
- Select softener test program **U03** by pushing the **stop button**.
- To enter U03 push the **ON/OFF** button. The ON/OFF button illuminates GREEN while the test program is running. Once the test sequence has completed, the ON/OFF button will switch off.



## 7.5 BOOSTER / TANK / TEMPERATURE PROBES

### BOOSTER

Booster heating: 6.22 kW (T model = 2 x 6.22 kW)  
 Total volume: 10.3 liter  
 Useable volume: 5.2 liter  
 Water consumption / rinse cycle: 2.5 liter

#### Part numbers:

Booster heating **E1** 01-240135-002  
 O-ring – booster heating 01-240135-011  
 Air trap 01-240076-002  
 O-ring – air trap 01-276903-050

### TANK

Tank heating: 2.5 kW (T model = 2 x 2.5 kW)

Tank volume (liter):	AMX	AMXX	AUXX	AUP	AMXT	AUXXT
	21	33	40	40	42	80

#### Part numbers:

Tank heating **E2** 00-883423-001  
 Air trap 01-240076-002  
 O-ring – air trap 01-276903-050

### TEMPERATURE PROBES

#### Part numbers:

Temperature probe booster **B1** 00-775612-001  
 Temperature probe tank **B2** 00-775612-001

**Temperature range:** min. – 40°C  
 max. + 125°C

**Possible faults see page 35.**

**8. WASHING**

**8.1 WASH PUMP AND STRAINER SYSTEM**

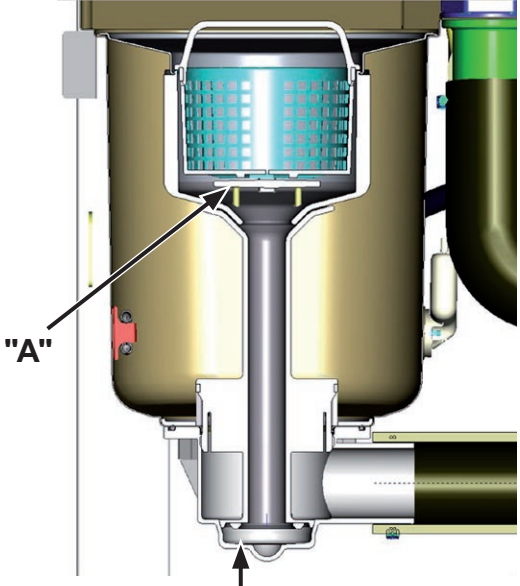
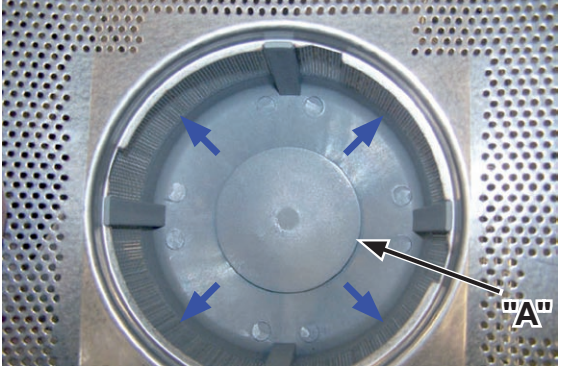

The pump unit includes motor with flange, mechanical shaft seal, impeller and capacitor (AMX only). A non return flap (called Flipper) allows the draining of the circulation system. The Flipper prevents soil, collected in the pump sump, from reentering the circulating system.

**8.1.1 FUNCTION:**

During wash cycle, the wash liquid is distributed to the upper and lower wash arm. The back flowing wash liquid is passing a strainer system, the integrated intake strainer and enters the wash pump from the outer annular space of the suction unit via the main duct.

**Drain system:** Used for partial draining of the soiled wash liquid (**Genius X<sup>2</sup>**) during wash cycle (approx. 20 seconds after program start) or for the complete draining of the wash tank. Pressure-side the soiled wash liquid will enter the drain via hose system and ventilation valve.

During draining or self-cleaning cycle the flipper is open.

<p style="text-align: center;"><b>Sectional drawing Genius X<sup>2</sup></b></p>  <p style="text-align: center;">Flipper closed (during recirculation)</p>	 <p style="text-align: center;">→ flow direction during wash cycle</p>
<p><b>When the overflow pipe is missing, flap "A" closes to provide water filtration during recirculation.</b></p>	 <p style="text-align: center;">Flipper open (during draining)</p>

**MAINTENANCE**

- Check movability of flipper.
- Clean fine strainer if necessary.
- Remove drain pump and clean it.
- Subsequently carry out leakage test.

Furthermore the ventilation valve has to be checked for soiling.

**NOTE:**

Tank strainer and fine strainer have to be cleaned daily.

8.1.2 TECHNICAL DATA

WASH PUMPS – CONNECTED LOAD

	Part no.	Voltage / Frequency / Phases	Current	Capacitor	Power	Impeller
AMX / AMXT	883617-1	220-240V / 50Hz / 1P	3.2A	16µF	0.73kW	105mm
AMXX / AUXX / AUP / AUXXT	883526-1	380-415V / 50Hz / 3P 220-240V / 50Hz / 3P	2.1A 3.5A	---	1.1kW	105mm
AUXX / AUP / AUXXT	883525-1	380-415V / 50Hz / 3P 220-240V / 50Hz / 3P	2.1A 3.5A	---	1.1kW	105mm

WASH PUMPS – SERVICE KITS

AMX / AMXT	883617-10	50Hz
	883617-20	60Hz
AMXX / AUXX / AUP / AUXXT	883526-10	50Hz
	883526-20	60Hz
AUXX / AUP / AUXXT	883525-10	50Hz
	883525-20	60Hz

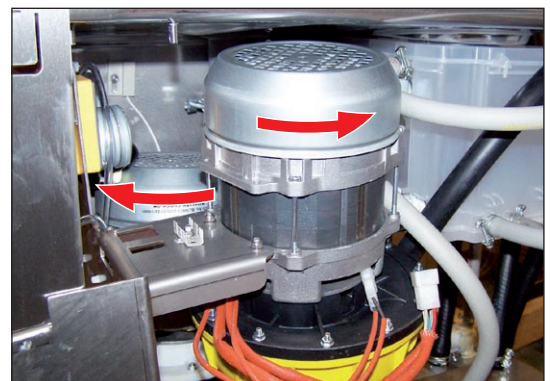
**The Service Kits include:**

1. O-ring
2. Impeller
3. Mechanical shaft seal

8.1.3 CHECKING THE DIRECTION OF ROTATION

To be done with first run or after pump replacement (only with filled wash tank).

1. Remove panels.
2. Put a binder approx. 2 cm into the motor ventilation housing grid and keep it hold.
3. Switch on machine.  
Determine, into which direction of rotation the motor starts. The direction of rotation must always point to direction of arrow (see picture).
4. If motor turns in the opposite direction, interchange two of the three phases at the power supply cable.
5. Check direction of rotation again.  
Switch off machine and put panels back in place.



direction of rotation requirement (example AUXX/AUP)

**NOTE:**

With AM/AMX models with alternating current pumps a direction of rotation check is not necessary.

8.2 RINSE PUMP

Part number	775854-1
Voltage	220-240 V
Frequency	50 Hz
Current	0.46 A
Power	0.14 kW
Capacitor	5.0 µF / 400V

rinse time	average value	rinse time	average value
7.5 s	2.5 l	9.5 s	3.2 l
8.0 s	2.8 l	10.0 s	3.4 l
8.5 s	2.9 l	10.5 s	3.5 l
9.0 s	3.1 l	11.0 s	3.6 l

## 9. CLEANING

### 9.1 HYGIENE CLEANING (AUP MODELS ONLY)

After reaching a pre-set number of wash cycles (parameter [C71] = 2500) the Hygiene indicator "HYG" lights up to indicate that an automatic hygiene cleaning of the machine interior should be carried out.

#### PROCEDURE

- Before end of operation:  
Take out rack and remove manually coarse soil from tank strainer
- Put two **HOBART-Hygiene-Cleaner Tabs**<sup>1)</sup> into the machine interior.
- Push **Program** button repeatedly until the upper Display shows "H".
- Close the hood.  
During the Hygiene program is running (duration approx. 20 minutes) the green illuminated segments go out one after the other.

At the end of the cycle the machine switches off automatically.

*If necessary hygiene cleaning should be carried out before reaching the pre-set number of wash cycles. With regular use the machine interior will remain free of food debris and deposits.*

<sup>1)</sup> part number 897954 = box with 15 Tabs.

#### FUNCTIONAL DESCRIPTION

- Switching function [S19] has to be activated "1" (with AUP automatically).
- Machine ON and hood closed.
- Hygiene cleaning "H" selected.

When the **ON/OFF** button is pressed, the tank will be completely drained. Simultaneously the standard filling program (booster filling, booster heating, rinse pump, etc.) will be started, without pre-dosing of detergent / rinse aid.

If tank level is reached, the wash pump will be started (approx. **5 minutes**) to circulate the tank water. When wash cycle is completed, the self cleaning program will be started.

After the Hygiene program has ceased, the control switches off and parameter [C71] will be reset to the adjusted wash cycle number.

#### MAINTENANCE

Via parameter [C72] you can check the number of completed hygiene cycles (see also page 33).



## 9.2 STRIPPING PROGRAM "BASIC CLEAN" (AUP MODELS ONLY)

Special program for removal of heavy coatings / deposits (e.g. protective film on new glasses, starch residues).

- Manual dosing of a dedicated powdered detergent required (according to the recommendation of chemicals supplier).

**Please pay attention to the manufacturers safety instructions.**

### PROCEDURE

- Open the hood.
- Remove manually coarse soil from tank strainer.
- According to the manufacturers dosing recommendations add powdered detergent for 30 liters of water to the flat side on the right of the tank. (Tank level will be pumped down from 40 l to 30 l.)
- Push **Program** button repeatedly until the upper Display shows "**bc**" (basic-cleaning).
- Close the hood.

- Move rack with washware into the machine and close the hood.

During the stripping cycle (takes approx. 4 minutes), the color of the **ON/OFF** button changes from **blue** back to **green**.

*Depending on the water feed temperature, the cycle can extend up to several minutes.*

- As soon as the **ON/OFF** button illuminates completely **green**, the cycle is finished.

### **NOTE:**

For each following stripping cycle an additional manual dosing is necessary according to 4 liters of water.

- Return to "normal" wash cycle by pushing the **Program** button.

### ADJUSTMENT OF RINSE AID DOSAGE QUANTITY – PROGRAM **bc**

- Select Customer Menu (see chapter 5, page 8).
- Push Program button repeatedly until the upper Display shows "CH4".  
In the lower Display appears e.g.:  
"3.5" = pre-adjusted value of the rinse aid dosage time = 3.5 s ≈ 0,31 g/l.
- To adjust the rinse aid dosage time, push ON/OFF button repeatedly, until the desired value appears (0-50 s ≈ 0-4.4 g/l).

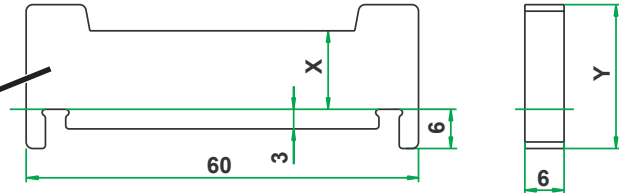
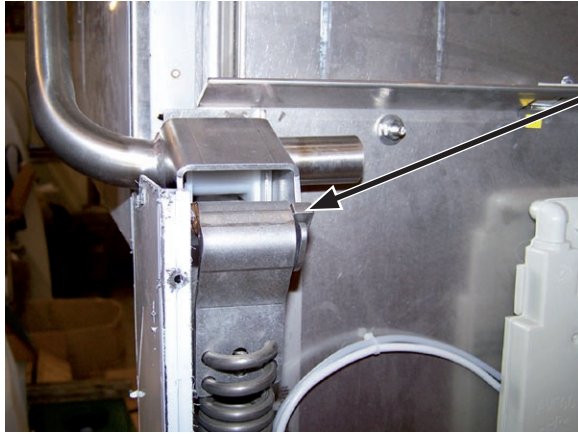
Adjustment should be done in accordance with chemical suppliers recommendations.

## 10. HOOD – DETAILS

### MAINTENANCE

Check plastic bearings for sufficient lubrication.

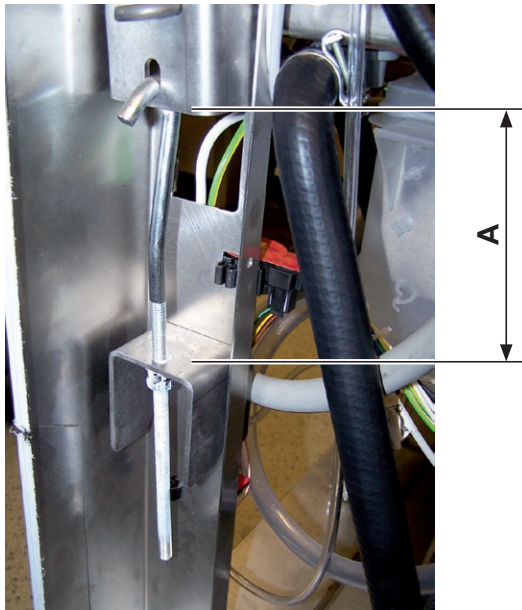
#### Hood lift handle Support



There are two different spring bolts:  
 883683-1 (x = 8 mm / y = 18 mm)  
 883683-2 (x = 12 mm / y = 22 mm)

See also table below.

#### Adjustment of tension springs



#### Example: AMX

Distance "A" from lower edge of bent to upper edge of channel:

approx. 12 cm – **insulated hood**  
 approx. 18.5 cm – **non-insulated hood**

#### Insufficient spring force:

The hood keeps not safe in "stand-by" position or closes.

#### Too much spring force:

The hood does not keep tightly closed during wash cycle.

**Make sure, that in "stand-by" position the hood neither opens nor slowly closes.**

Spring bolt	Part No.	AMX	AMXX	AUXX	AUP	AMXT	AUXXT	AUXXL
insulated hood	883683-1	x	x	x	x			
	883683-2					x	x	x
non-insulated hood	883683-2	x	x	x	---	x	x	x

#### Tension spring

2x1	883636-1	x	x	x	x			
1x2 right hand	883957-1					x	x	x
1x2 left hand	883958-1					x	x	x

## 11. HEAT RECOVERY

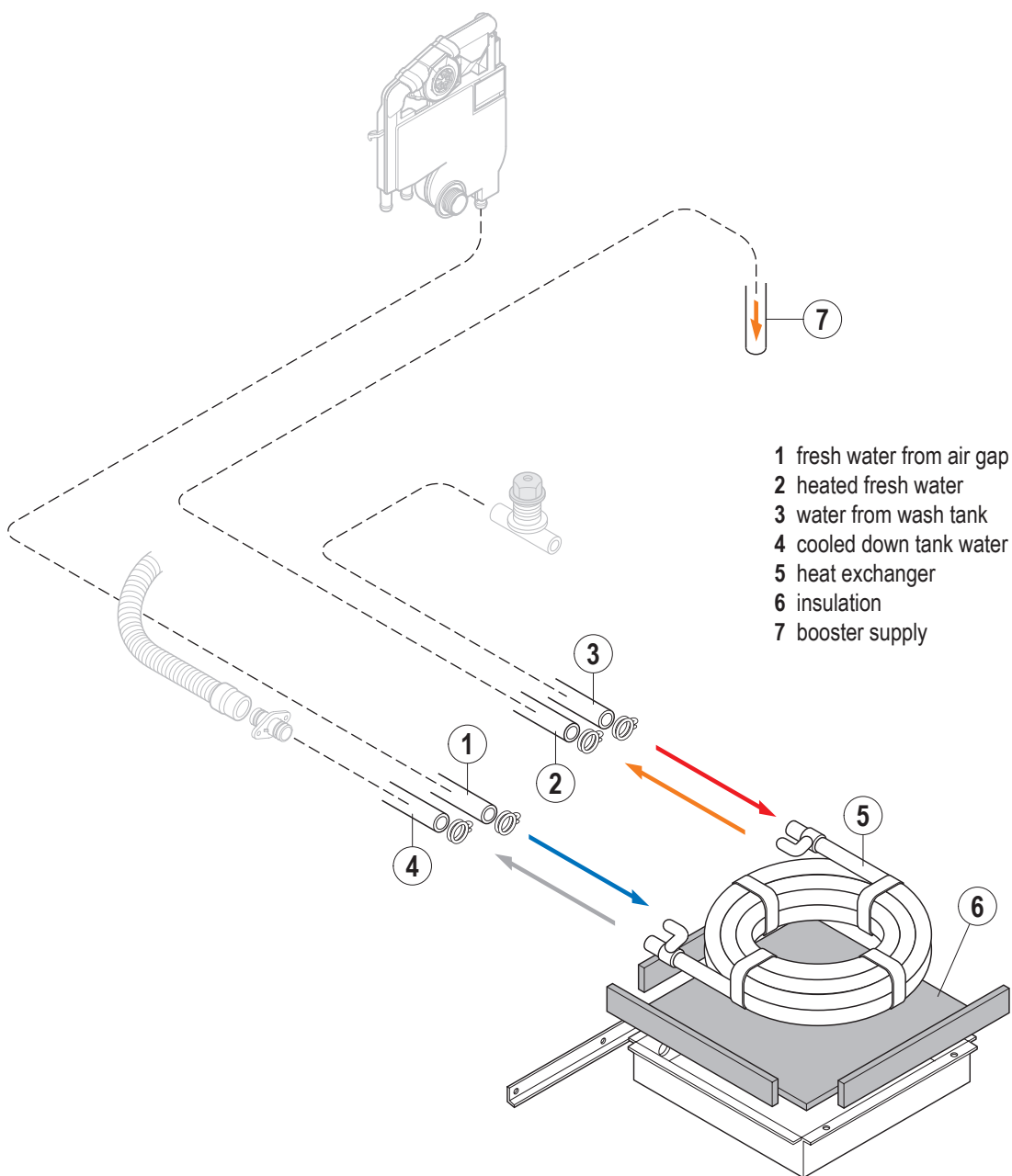
### GENERAL

With activation of the fill valve (booster refill), the control 897545-1 will be actuated by an impulse and starts the drain pump (partial tank draining, approx. 2.5 l) simultaneous to filling. The output clock signal is adjustable via basic data.

The fresh water enters via the airgap the outer coaxial pipe of the heat exchanger and will be heated up by tank water, flowing in the inner coaxial pipe (counter-flow principle).

Menu U02 – Basic Data:

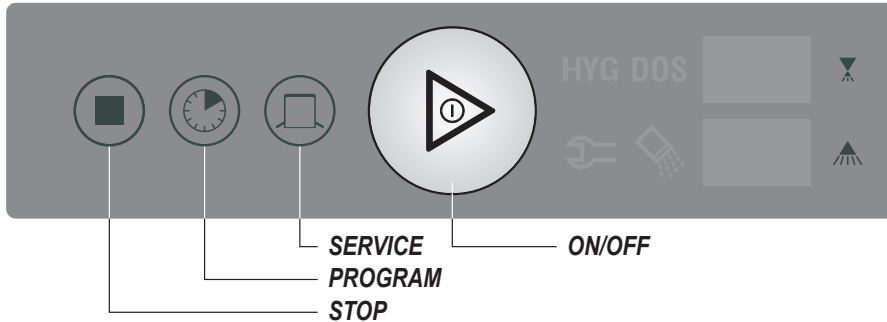
Switching function [S32] is set to "1".



## 12. ELECTRONIC CONTROL

### 12.1 KEY COMBINATIONS

#### 12.1.2 BASIC OPERATION / CUSTOMER SETTINGS



BASIC OPERATION	X = button to be pushed				REQUIREMENTS	HOOD
	STOP	PROGR.	SERVICE	ON/OFF		
Machine ON				X	Machine "off"	Open or Close
Machine OFF	X				Machine "off" at any time	Open or Close
Drain program				X > 3 s	Start at any time	Close
Program selection		X			Machine on / Fill program completed	Open or Close
Program start				X	Machine on / Fill program completed	Close
Temperature display		X > 3 s			Temperature display for 10 seconds	Open or Close
Special programs			X		Machine on / Fill program completed	Open or Close

CUSTOMER SETTINGS	X	X			Machine Off	OPEN
	<b>DISPLAY</b>					
	<b>UPPER</b>	<b>LOWER</b>				
Detergent dosage	CH1	value C16	<b>Select function with the program button. Set value with the ON/OFF button.</b>			Open
Rinse aid dosage	CH2	value C18				Open
Detergent dosage Cold 1	CH3	value C19				Open
Detergent dosage Cold 2	CH4	value C20				Open
Hardness	H01 - H04					Open
Wash cycle counter	P + C74	value C73	Reset only by Service. Reset by pushing the ON/OFF button for 3 seconds.			Open
Water counter - Total	E + C78	value C77				Open
Water counter - Demi	d + C80	value C79				Open
<b>CLOSE HOOD</b>						
Hose priming detergent	SF1	0 - 1	Select function with the program button. Activate appropriate dosing pump with the ON/OFF button.			Close
Hose priming rinse aid	SF2	0 - 1				Close
Acoustic signal	S	0 - 1	Activate / deactivate with the ON/OFF button.			Close
Chemicals sensor	CH	0 - 1	Activate / deactivate with the ON/OFF button.			Close

See also page 8 "First run / Customer Menu" and page 33 "Counter Functions".

12.1.2 SERVICE MENU

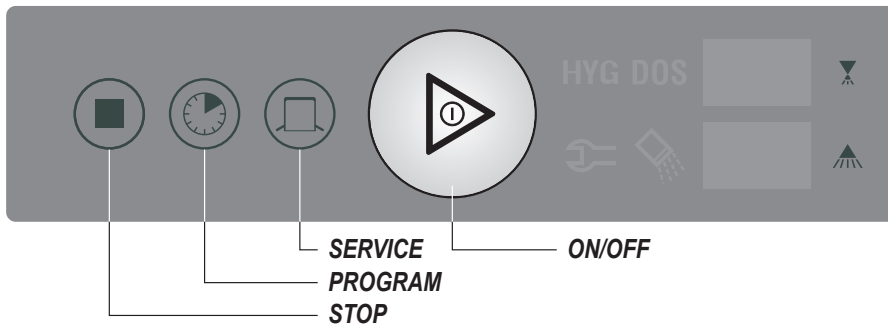
**Requirements: Machine OFF and Hood open.**

Push **Stop**, **Program** and **Service** button to enter the Service Menu.

		DISPLAY:		UPPER	LOWER	
			S01	-- 0	(ON/OFF button illuminates green)	
<b>CLOSE HOOD (door switch test S1)</b>			S01	-- 1		
<b>Select appropriate Input or Output by pushing the Program button.</b>						
<b>Inputs test:</b>						
X13.3	Impeller switch		S02	-- 0	no signal / -- 1 signal from S2	
	Push ON/OFF to activate additionally fill valve Y1.			-- 0	/ -- 1 will be displayed alternately	
X13.5	Salt switch status		S03	-- 0	salt container is filled / -- 1 when empty	
X13.7	Strainer		S04	-- 0	not in place / -- 1 strainer in place	
X13.9	Reserve		S05	-- 0		
X13.11	Reserve		S06	-- 0		
X12.3	Detergent deficiency <sup>1)</sup>		S07	-- 0	no deficiency / -- 1 when empty	
X12.4	Rinse aid deficiency <sup>1)</sup>		S08	-- 0	no deficiency / -- 1 when empty	
	<sup>1)</sup> Push ON/OFF to activate the respective dispenser (M4/M3). Activation will persist until remedy of deficiency.			...	moving light point – dispenser activated	
<b>Temperature probes test:</b> 0-105°C = okay / -- 1 = short circuit (>99°C) / -- 2 = open circuit (< 0°C)						
X14.1/2	Temperature sensor booster	B1	F01	actual Temperature		
X14.3/4	Temperature sensor tank	B2	F02	actual Temperature		
<b>Pressure transmitter test:</b> 0.3 - 4.0V = okay / -- 1 => 4.0V / -- 2 = open circuit < 0.3V						
X14.7	Pressure transmitter booster	B3	F03	voltage display (booster level)		
X14.10	Pressure transmitter tank	B4	F04	voltage display (tank level)		
<b>Outputs test:</b> -- 0 = not active / -- 1 = active						
<b>Hood must be closed.</b> Selected output can be activated with the <b>ON/OFF</b> button. <b>Starting from A01:</b> push Stop button to scroll back.						
	Voltage supply Triac		RL1.1	A00	-- 0	
X1.1/3	Bypass Triac		RL1	A01	-- 0	
X2.1/2	Tank heating	E2 (K2)	RL2	A02	-- 0	
X3.1/3	Wash pump High Pressure		RL3	A03	-- 0	AUXX / AUP
	Wash pump Low Pressure – left					AMXT / AUXT
X4.1/3	External fill	Y2	RL4	A04	-- 0	(option)
X5.1/3	Detergent dosage	M4	RL5	A05	-- 0	
X6.1/3	Rinse aid dosage	M3	RL6	A06	-- 0	
X7.1/3	Fill valve	Y1	RL7+RL14	A07	-- 0	
X8.1/3	Drain pump	M5	RL8	A08	-- 0	
X9.1/3	Rinse pump	M2	RL9	A09	-- 0	
X10.1/3	Booster heating	E1	RL10	A10	-- 0	
X21.6	Softener - salting A	Y3.1	RL11	A11	-- 0	only with built-in extension board
X21.7	Softener - salting B	Y3.2	RL12	A12	-- 0	only with built-in extension board
X21.8	Fill B-A	Y4.1	RL13	A13	-- 0	only with built-in extension board
X21.9	Drain / booster	Y4.2	RL14	A14	-- 0	only with built-in extension board
X22.1/3	Reserve		RL15	A15	-- 0	only with built-in extension board
X23.1/3	Reserve		RL16	A16	-- 0	only with built-in extension board
X24.1/2	PFK1		RL17	A17	-- 0	only with built-in extension board
X25.1/2	PFK2		RL18	A18	-- 0	only with built-in extension board
X26.1/2	PFK3 /		RL19	A19	-- 0	only with built-in extension board
	Wash pump High Pressure					AUXXT
X1.1/3	Wash pump		RL1+RL1.1	A20		AMX / AMXX / AUXX / AUP
	Wash pump Low Pressure – right					AMXT / AUXXT
	Handle lightning			G r l	- FF	
	Operation unit test			BAE	-- 0	
	Counter reset (C72-C80 + C84-C85)			r ES	-- 0	/ -- 1 when ON/OFF button is pushed (3s)

**EXIT THE TEST PROGRAM BY OPENING THE HOOD (only possible with menu item "outputs test").**


### 12.1.3 PROGRAMMING / MODIFICATION OF BASIC DATA / SOFTENER TEST




#### REQUIREMENT: MACHINE "OFF" AND HOOD OPEN.

- Push **Program** and **Service** button together.  
Software release will be displayed short-time.
- Push **Stop** button to select the menu item.
  - U01** = Machine type selection
  - U02** = Basic data sheet
  - U03** = Softener test program
- The selected function will be confirmed with the **ON/OFF** button and indicated by the illuminated ON/OFF button.
  - Red** = Machine type selection
  - Blue** = Basic data sheet
  - Green** = Softener test program


#### MACHINE TYPE SETTING: U01

- Set machine type with the **Stop** button (01 – 26, sequential scan only).  
Program Number see page 3.
-  Push **ON/OFF** button for 2 seconds.  
The selected program with the basic data's will be saved and the "Red" illuminated **ON/OFF** button switches off.

#### MODIFICATION OF BASIC DATA: U02

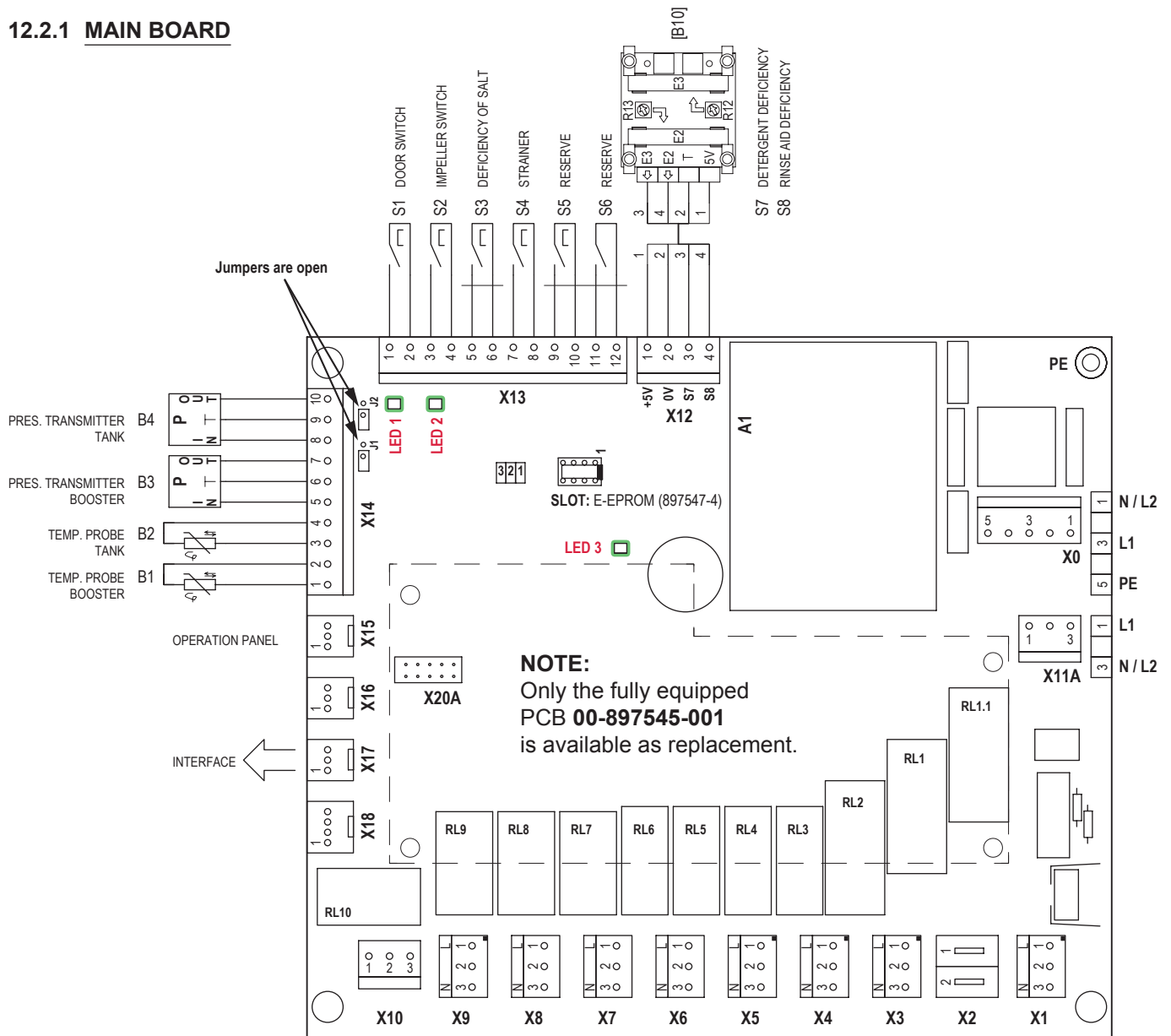
- Set function with the **Stop** button (forwards) or first **Program** button and then **Stop** button (backwards).  
(Sequential scan or quick scan by holding the button.)
- Change value upwards (+) with the **Program** button and downwards (–) with the **Service** button.  
(Sequential scan or quick scan by holding the button.)
- Decimal points will appear.
-  Push and hold the **ON/OFF** button.  
New value is saved when the points disappear.

#### SOFTENER TEST PROGRAM: U03

-  Push **ON/OFF** button.  
Test program starts according to diagram (see page 20).

## 12.2 PRINTED CIRCUIT BOARDS

### 12.2.1 MAIN BOARD



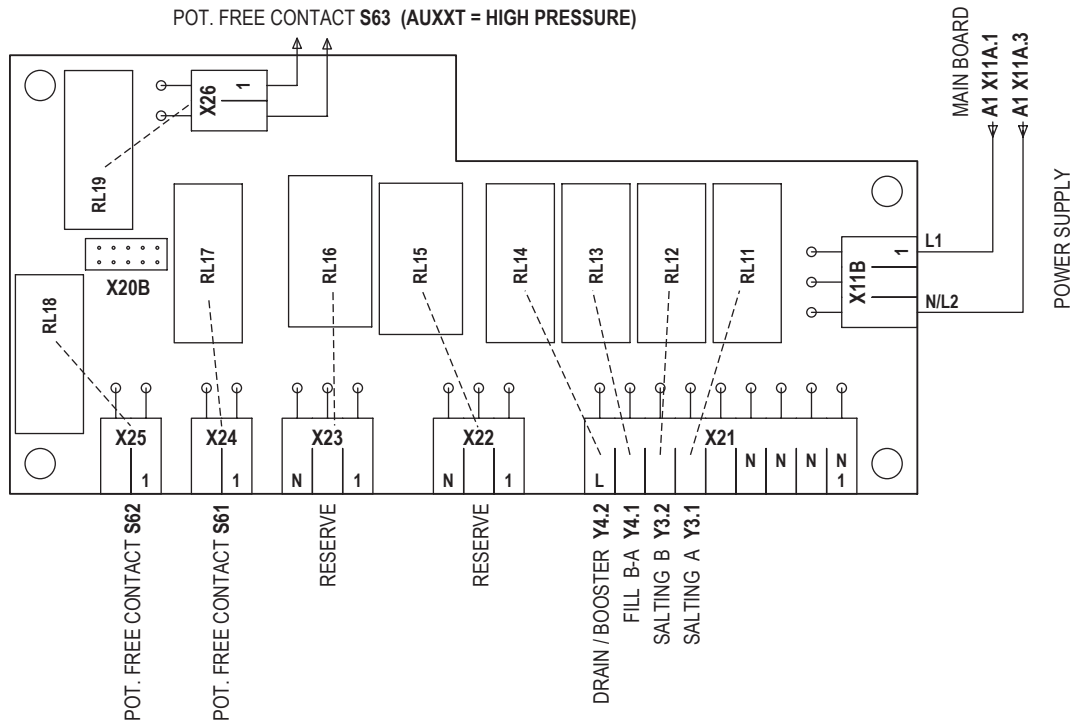
- LED 1** hood switch: ON = hood closed
- LED 2** impeller switch: unsteady = water flow (pulses)
- LED 3** processor function: flashing = voltage on, processor running  
permanent = voltage on, processor not running

**Note:** The control works with or without plugged E-EPROM 897547-4.

TO INSTALL A NEW SOFTWARE RELEASE:

1. **Disconnect control fuse F1.**
2. Plug in the new E-EPROM and reconnect F1.  
A check is carried out and the stored software will be updated automatically (the progress is indicated at the display by L9, L8, ...).
3. Set machine type – see page 30, menu **U01** (also to be done after replacing the PCB).
4. Disconnect control fuse F1, remove E-EPROM and reconnect F1.

**12.2.2 EXTENSION BOARD A3**



**NOTE:**

The additional board (**897546-1**) is only built in at machines with softener.

This PCB has three potential-free contacts. Each one can be assigned to different switching functions via one parameter (only on extension board):

Parameter [S61] =	RL17 (X24) switches:	PFK1
0 =	machine "On"	
1 =	program "On"	
2 =	temperature F02 / F05 below pre-set value	
3 =	fill or wash program active	

Parameter [S62] =	RL18 (X25) switches:	PFK2
0 =	program "On"	
1 =	machine "On"	
2 =	rinse pump "On" (switch-off delay [C86])	
3 =	fill program active	

Parameter [S63] =	RL19 (X26) switches	PFK3
0 =	fill program active	
1 =	rinse pump "On" (switch-off delay [C86])	
2 =	temperature F02 / F05 below pre-set value	
3 =	fill or wash program active	



## 12.3 COUNTER FUNCTIONS

### Request for hygiene program [C71] – down-counter

The number of wash cycles will be subtracted from the preset value ([S19] "on").  
When "0" is reached, start of hygiene program is requested.  
After hygiene cleaning is completed, this counter will be reset to basic value.

### Number of hygiene cycles [C72] – up-counter / basic value "0"

The number of completed hygiene cycles is counted.  
Reset only possible via basic data.

**Note:** Control, how often the program has been started.

### Number of wash cycles [C73] + [C74] – up-counter / basic value "0"

The number of wash cycles will be counted.  
Example **1420** cycles: [C73] = **420** / [C74] = **1**

**Note:** Readout and note down in the report.

### Service interval [C75] + [C76] – down-counter

The number of wash cycles will be subtracted from the preset value ([S17] "on").  
When [C75] + [C76] is "0", the service indicator illuminates.  
Reset only possible via basic data.

**Note:** Of interest in case of service contract.

### Water consumption [C77] + [C78] – up-counter / basic value "0"

After **200 input pulses** of **S2** (= 1 litre water flow), the counter value will be increased by 1.  
Input pulses **below 200** are buffered and counting will continue with the next input pulses.  
Reset only possible via basic data.

**Note:** The customer can readout the actual water consumption (see page 8 "customer menu").

### Remaining water quantity (external water treatment) [C79] + [C80] + [S18] – down-counter

This function will be programmed via service mode **U02** (see page 28).

[S18] = activation

[C79]+[C80] = water treatment capacity (liter). Possible settings are [C79] **0-999**, [C80] **0-999 x 1000**.

Example **5500** litres: [C79] = **500** / [C80] = **5**

After **200 input pulses** of **S2** (= 1 litre water flow), the counter value will be decreased by 1.  
Input pulses **below 200** are buffered and counting will continue with the next input pulses.  
When "0" is reached, "d 0" will be displayed.  
Reset to pre-set value via customer menu by pushing the ON/OFF button (see page 8).

**Note:** The actual value can be checked via customer menu (indication for next replacement of external demineralisation cartridge for example).

### Number of salt fillings – deficiency of salt [C84] – up-counter

The number of "salt indicator switch-on" will be counted.

**Note:** With this parameter you can check how often the softener has been refilled.

### Wash cycles with deficiency of salt [C85] – up-counter

The number of started wash cycles in spite of salt deficiency (illuminated salt indicator) will be counted.

**Note:** Maybe an evidence in the case of calcified machine or heating elements for example.

#### **NOTE:**

**Starting from E-EPROM rev. 3.0, the actual counter readings keep unchanged after software update as well as settings of detergent and rinse aid dispensers (rev. 3.9).**

**Reset of all counters can be carried out via menu option **rES** in Service Menu (see also page 29).**

### 13. FAULTS

#### 13.1 UNCRITICAL FAULTS

Fill, wash and drain program can be started.



During the fill program, uncritical faults are only indicated by the indicator lights and error codes (none green/red flashing ON/OFF button).

INDICATOR			THE ON/OFF BUTTON IS FLASHING GREEN/RED ALTERNATELY.		
Rinse	Wash	Lamp	FAULT		PARAM.
<b>AL</b>			<b>Drain fault</b>	Level switch value [F11] still exceeded at the end of the drain cycle. To reset, repeat drain program until value is below [F11].	F11
			<b>Possible cause</b> 1. Kinked drain hose. 2. Drain pump does not run (jammed or defective). 3. Pressure transmitter <b>B4</b> defective (wiring, PCB). 4. Trap possibly clogged.		
<b>HEI</b>			<b>Thermostop</b>	The thermostop time [C25] is exceeded (max. heating period for wash and fill cycle). Reset via machine "OFF-ON".	C25 S02 S58
			<b>Possible cause</b> 1. Booster heating defective. 2. Missing phases. 3. Machine single-phase connected (230 V). 4. Tank heating defective (with thermostop tank) parameter S58.		
<b>CH1 CH2</b>		<b>DOS</b>	<b>Chemical deficiency</b>	Detergent deficiency <b>X12.3</b> "on" / rinse aid deficiency <b>X12.4</b> "on". If both containers are empty, CH1/CH2 is displayed alternately.	S06
			<b>Possible cause</b> 1. Chemical container empty / suction hoses not filled. 2. Adjustment of chemical deficiency sensors not correct. 3. Missing electrical supply (X12.1/2).		
<b>SAL</b>			<b>Salt deficiency</b>	Softener salt deficiency indication – <b>X13.5</b> "on" (only if softener [S05] = "1").	S05
			<b>Possible cause</b> 1. Salt container empty. 2. Float switch inside salt container jammed [S3]. 3. Loose contact on PCB (X13.5/6).		
<b>d 0</b>			<b>External water treatment (option)</b>	Only if activated in service mode [S18]. The preset water quantity [C79] + [C80] is reached (down-counter). For reset see customer menu.	C79 C80 S18
			<b>Possible cause</b> 1. Counter reading of preset water quantity (liter) is "0". 2. Switching function [S18] is set to "1" without specified water quantity.		
<b>CLOSE Hood</b>			<b>Cause</b>	<b>Remedy</b>	
(running indication)			Fill cycle interrupted as hood is open.	Close hood, filling will continue.	

### 13.2 CRITICAL FAULTS

Only the drain program can be started. Fill program and all wash programs are locked.

INDICATOR			THE ON/OFF BUTTON ILLUMINATES RED.			
Rinse	Wash	Lamp	FAULT		PARAM.	
<b>F01</b>	-- 1 -- 2		Temperature probe <b>BOOSTER B1</b>	Booster heating <b>RL10</b> will be switched off immediately. Fill and wash programs are locked, drain program can be started.		
			<b>Possible cause</b> 1. -- 1 = short circuit (temperature probe or wires to probe). 2. -- 2 = open circuit. 3. Inlet temperature to low.			<b>Remedy</b> 1. Check wires, replace temperature probe. 2. Replace wiring, replace temperature probe if necessary. 3. Check inlet temperature.
<b>F02</b>	-- 1 -- 2		Temperature probe <b>TANK B2</b>	Tank heating <b>RL2</b> will be switched off immediately. Fill and wash programs are locked, drain program can be started.		
			<b>Possible cause</b> 1. -- 1 = short circuit (temperature probe or wires to probe). 2. -- 2 = open circuit			<b>Remedy</b> 1. Check wires, replace temperature probe. 2. Replace wiring, replace temperature probe if necessary.
<b>F03</b>	-- 1 -- 2		Pressure transmitter <b>BOOSTER B3</b>	Control of input voltage <b>X14.7</b> – min. 0.3V up to max. 4.0V. If the input voltage is out of range, the running program will be stopped. Fill and wash programs are locked, drain program can be started.		
			<b>Possible cause</b> 1. -- 1 = short circuit (transmitter or wires to transmitter) / > 4.0V. 2. -- 2 = open circuit / < 0.3V.			<b>Remedy</b> 1. Check wires, replace transmitter B3. 2. Replace wiring, replace B3 if necessary.
<b>F04</b>	-- 1 -- 2		Pressure transmitter <b>TANK B4</b>	Control of input voltage <b>X14.10</b> – min. 0.3V up to max. 4.0V. If the input voltage is out of range, the running program will be stopped. Fill and wash programs are locked, drain program can be started.		
			<b>Possible cause</b> 1. -- 1 = short circuit (transmitter or wires to transmitter) / > 4.0V. 2. -- 2 = open circuit / < 0.3V.			<b>Remedy</b> 1. Check wires, replace transmitter B4. 2. Replace wiring, replace B4 if necessary.
	-- 3		Pressure transmitter <b>TANK B4 / SOFTENER</b>	The max. water quantity [ <b>C82</b> ] is exceeded and value [ <b>F16</b> ] is not reached. Only "draining" possible.	C82 F16	
			<b>Possible cause</b> 1. Air trap blocked or leaky. 2. Hose to pressure transmitter leaky. 3. Valve Y4.2 locked (drain direction) or coil defective. 4. Extension board not correctly plugged to Main PCB.		<b>Remedy</b> 1. Check air trap, clean or replace if necessary. 2. Replace hose. 3. Run Softener Test. Replace switching valve if necessary. 4. Plug in correctly.	
			<b>To quit the fault:</b> start drain program or reload machine program no. ( <b>U01</b> see page 23).			
<b>SIE</b>			STRAINER CONTROL	Reed-switch [ <b>S4</b> ] (X13.7) more than 5 seconds "off". Start of fill and wash programs is locked automatically.	S38	
			<b>Possible cause</b> 1. Tank strainer is missing or not correctly positioned. 2. Magnet at the strainer is missing. 3. Reed switch in wrong position. 4. Cable break.			<b>Remedy</b> 1. Put strainer correctly in place. 2. Fit magnet. 3. Put reed switch in correct position. 4. Replace reed switch and cable.

INDICATOR			THE ON/OFF BUTTON ILLUMINATES RED.		
Rinse	Wash	Lamp	FAULT		PARAM.
FIL			<b>FILL 1</b>	The fill valve <b>Y1 (RL7)</b> is triggered and the impeller switch <b>S2</b> does not count (no impulses on <b>X14.3</b> ). Reset via input pulses on <b>X14.3</b> or machine "OFF".	
			<b>Possible cause with incoming water</b> 1. Bad contact at impeller switch plug (airgap) or PCB. 2. Impeller switch PCB not correctly locked. 3. Reed switch in wrong position.  <b>Possible cause without incoming water</b> 1. Shut-off valve is closed. 2. Fill valve Y1 defective (wiring and pin). 3. No output signal from PCB A1 (X7.1/3).	<b>Remedy</b> 1. Check contacts, solder plug (airgap) if necessary. 2. Check PCB and lock in place. 3. Put reed switch in correct position.  <b>Remedy</b> 1. Open shut-off valve at site. 2. Check fill valve via service mode and replace if necessary. 3. Replace PCB.	
FIL			<b>FILL 2</b>	Exceeded fill time [ <b>C43</b> ]. The fill valve <b>Y1 (RL7)</b> and all other outputs will be switched off immediately. Reset via machine "OFF".	C43
			<b>Possible cause</b> 1. See above. 2. Line flow pressure very low. 3. Line strainer clogged.	<b>Remedy</b> 1. See above. 2. Check line flow pressure. 3. Clean line strainer.	
FIL			<b>FILL 3</b>	External fill valve is triggered, tank level does not rise.	C34 F27 S37
			<b>Possible cause</b> 1. Shut-off valve is closed. 2. Fill valve Y1 defective (wiring and pin). 3. Line strainer clogged.	<b>Remedy</b> 1. Open shut-off valve at site. 2. Check fill valve via service mode and replace if necessary. 3. Clean line strainer.	
UL			<b>OVERFLOW PROTECTION</b>	Requirement: machine "off" or "on" / hood "open" or "closed" <b>S1</b> . When [ <b>F18</b> ] is exceeded, a running program will be stopped: - after 5 seconds [ <b>S37</b> ] = "1" - immediately [ <b>S37</b> ] = "0". The drain pump <b>RL8</b> will be switched on until [ <b>F17</b> ] is below preset value.	F17 F18 S37
			<b>Possible cause</b> 1. Fill valve is jammed and water is running permanently. 2. Hose from air trap to pressure transmitter tank (B4) is leaky. 3. Not enough water is pumped out. - Drain pump clogged. - Kinked drain hose.	<b>Remedy</b> 1. Replace fill valve Y1 2. Drain tank manually and replace hose. 3. Drain tank manually. - Dismantle and clean drain pump or replace if necessary. - Place drain hose correctly.	
ERR			<b>INTERFACE</b>	Communication problem.	
			<b>Possible cause</b> 1. Broken connection: Display / Main PCB 2. Defective Circuit Board.	<b>Remedy</b> 1. Check plugs/cable and connect correctly. 2. Replace PCB.	

### 13.3 OTHER INDICATIONS

INDICATOR			THE ON/OFF BUTTON IS FLASHING BLUE/RED ALTERNATELY.		
Rinse	Wash	Lamp	FAULT		PARAM.
			<b>Negative Pressure</b>		
			<b>Possible cause</b> 1. Wash tank filters blocked.	<b>Remedy</b> 1. Remove and flush strainers.	





# URDATENTABELLE

Program number:	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025	026	027	028	029	030	
Program I	60	60	60	60	52	52	52	52	52	52	52	52	47	47	47	47	60	60	60	60	52	52	52	52	60	60	90	90	--	--	
Program II	90	90	90	90	75	75	75	75	75	90	90	90	70	70	70	70	90	90	90	90	90	90	90	90	90	90	90	120	120	--	--
Program III	120	120	120	120	120	120	120	120	240	240	240	240	150	150	150	150	120	120	120	120	240	240	240	240	120	120	--	--	--	--	
Program IV	--	--	--	--	52 DA	52 DA	52 DA	52 DA	52 DA	52 DA	52 DA	52 DA	47 DA	47 DA	47 DA	47 DA	--	--	--	--	52DA	52DA	52DA	52DA	--	--	--	--	--	--	
Program V	--	--	--	--	--	--	--	--	--	--	--	--	1200HY	1200HY	1200HY	1200HY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Program VI	--	--	--	--	--	--	--	--	--	--	--	--	360 bc	360 bc	360 bc	360 bc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tradeshaw program	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	1	1	1	1	3	3	3	3	5	5	5	5	--	--	

Gesamtlaufzeit (total program time):

Zeiten:		Timer:				AMX	AMXS	AMXR	AMXRS	AMXX	AMXXS	AMXXR	AMXXRS	AUXX	AUXXS	AUXXR	AUXXRS	AUP	AUPS	AUPR	AUPRS	AMXT	AMXTS	AMXTR	AMXTRS	AUXXT	AUXXTS	AUXXTR	AUXXTRS	AM900-10N	AMS900-10N	Baraid S 500	Baraid S 800								
		Min	Max	Step	Unit																																				
C01	Wartezeit Start	0	999	1	sec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		C01			
C02	Waschzeit P01	0	999	1	sec	35	35	35	35	27	27	27	27	27	27	27	23	23	23	23	35	35	35	35	27	27	27	27	35	35	67	67					C02				
C03	Waschzeit P02	0	999	1	sec	65	65	65	65	50	50	50	50	65	65	65	65	45	45	45	45	65	65	65	65	65	65	65	65	65	65	94	154					C03			
C04	Waschzeit P03	0	999	1	sec	95	95	95	95	95	95	95	95	215	215	215	215	125	125	125	125	95	95	95	95	215	215	215	215	95	95	95	95					C04			
C05	Waschzeit P04	0	999	1	sec	0	0	0	0	27	27	27	27	27	27	27	27	22	22	22	22	0	0	0	0	27	27	27	27	0	0	0	0					C05			
C06	Spülzeit 1 (P01)	0	99	0,5	sec	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,0	7,0	7,0	7,0	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5		C06			
C07	Spülzeit 2 (P02)	0	99	0,5	sec	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5		C07		
C08	Spülzeit 3 (P03)	0	99	0,5	sec	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5		C08		
C09	Abpumpen 1	0	999	1	sec	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15		C09		
C10	Abpumpen 2	0	999	1	sec	6	6	3	3	6	6	3	3	6	6	3	3	6	6	3	3	6	6	3	3	6	6	3	3	6	6	10	10					C10			
C11	Abpumpen 3	0	999	1	sec	65	65	60	60	90	90	90	90	120	120	105	105	120	120	105	105	150	150	140	140	260	260	270	270	65	65	50	50					C11			
C12	Abpumpen 4	0	999	1	sec	20	20	20	20	20	20	20	20	30	30	20	20	30	30	20	20	30	30	30	30	30	30	30	30	20	20	50	50					C12			
C13	Tropfzeit	0	999	1	sec	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9		C13		
C14	Vorheizung Boiler	0	999	1	sec	10	10	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14		C14	
C15	Vordosierung Reiniger	0	100	1	sec	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	32	32	32	32	16	16	16	16	16	16	16	16	16	16	16	16	16		C15	
C16	Waschdosierung Reiniger 1	0	50	1	sec	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	16	16	16	16	8	8	8	8	8	8	8	8	8	8	8	8	8		C16	
C17	Vordosierung Klarspüler	0	100	1	sec	25	25	25	25	25	25	25	25	25	25	25	7	7	7	7	46	46	46	46	25	25	25	25	25	25	25	25	25	25	25	25	25	25		C17	
C18	Waschdosierung Klarspülung 1	0	50	0,5	sec	7	7	7	7	7	7	7	7	7	7	7	2,5	2,5	2,5	2,5	14	14	14	14	7	7	7	7	7	7	9	9					C18				
C19	Waschdosierung Klarspülung 2	0	50	0,5	sec	--	--	--	--	--	--	--	--	--	--	--	3,5	3,5	3,5	3,5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		C19		
C20	Waschdosierung Reiniger 2	0	999	1	sec	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		C20		
C21	Wartezeit Ende	0	100	1	sec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		C21		
C22	Standbytemperatur Ein	0	999	1	sec	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60		C22	
C23	Regeneration (Besalzung)	0	999	1	sec	--	10	--	10	--	10	--	10	--	10	--	10	--	10	--	10	--	10	--	10	--	10	--	10	--	10	--	10	--	10	--	10	--	10		C23
C24	Besalzung nachdrücken	0	10	0,1	sec	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3	--	0,3		C24
C25	Thermostop Boiler	0	100	1	min	20	20	20	20	15	15	15	15	15	15	15	15	15	15	15	20	20	20	20	15	15	15	15	20	20	40	40					C25				
C26	Verzög. Unterdruckabschaltung	0	1	0,1	sec	--	--	--	--	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	--	--	--	--	0,2	0,2	0,2	0,2	--	--	--	--	--	--	--	--	--	--		C26	
C27	Startverzögerung Hochdruck	0	999	1	sec	--	--	--	--	--	--	--	--	5	5	5	5	5	5	5	--	--	--	--	5	5	5	5	--	--	--	--	--	--	--	--	--	--		C27	
C28	Waschzeit Ablaufprogramm	0	999	1	sec	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15		C28
C29	Waschdosierung Reiniger 3	0	999	1	sec	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		C29	
C30	Wärmerück. Takt Ein	0	10	0,1	sec	--	--	1,5	1,5	--	--	0,6	0,6	--	--	0,6	0,6	--	--	0,6	0,6	--	--	3	3	--	--	3	3	--	--	--	--	--	--	--	--	--		C30	
C31	Wärmerück. Takt Pause	0	10	0,5	sec	--	--	7,0	7,0	--	--	7,0	7,0	--	--	7,0	7,0	--	--	7,0	7,0	--	--	3,0	3,0	--	--	3,0	3,0	--	--	--	--	--	--	--	--	--		C31	
C32	Dauerlauf Waschp. max.	0	100	1	min	--	--	--	--	20	20	20	20	20	20	20	20	20	20	20	--	--	--	--	20	20	20	20	--	--	--	--	--	--	--	--	--	--		C32	
C33	Wartezeit Überwachung S20=1	0	999	1	sec	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120		C33	
C34	Überwachung FIL bei S20=1	0	999	1	sec	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30		C34
C35	Dosierung externe Füllung	0	999	1	sec	17	17	17	17	12	12	12	12	15	15	15	15	15	15	15	15	17	17	17	17	15	15	15	15	17	17	17	17	17	17	17	17	17	17		C35
C36	Pause Dos. Externe Füllung	0	999	1	sec	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		C36	
C37	Vorspülpumpe entlüften	0																																							

URDATENTABELLE

Program number: 001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022 023 024 025 026 026 026 029 030

Zähler / Zeiten:		Counters / Timers:				Min	Max	Step	Unit	AMX	AMXS	AMXR	AMXRS	AMXX	AMXXS	AMXXR	AMXXRS	AUX	AUXS	AUXR	AUXRS	AUP	AUPS	AUPR	AUPRS	AMXT	AMXTS	AMXTR	AMXTRS	AUXXT	AUXXTS	AUXXR	AUXXRS	AM900-10N	AMS900-10N	Baraid S 500	Baraid S 800					
C57	Enthärt. Auswaschung 1	Wash out 1 (softener)	0	999	1	Imp.			--	100	--	100	--	100	--	100	--	100	--	100	--	100	--	100	--	100	--	100	--	100	--	100	--	100	100	100			C57			
C58	Enthärt. Auswaschung 2	Wash out 2 (softener)	0	999	1	Imp.			--	30	--	30	--	30	--	30	--	30	--	30	--	30	--	30	--	30	--	30	--	30	--	30	--	30	30	30			C58			
C59	Enthärt. Auswaschung 3	Wash out 3 (softener)	0	9	1K	Imp.			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C59			
C60	Härte H01 (1-7dH)	Degree of hardness H01	0	999	1	Liter			--	140	--	140	--	140	--	140	--	140	--	140	--	140	--	140	--	140	--	140	--	140	--	140	--	140	140	140			C60			
C61	Härte H02 (8-14dH)	Degree of hardness H02	0	999	1	Liter			--	80	--	80	--	80	--	80	--	80	--	80	--	80	--	80	--	80	--	80	--	80	--	80	--	80	80	80			C61			
C62	Härte H03 (15-21dH)	Degree of hardness H03	0	999	1	Liter			--	40	--	40	--	40	--	40	--	40	--	40	--	40	--	40	--	40	--	40	--	40	--	40	--	40	40	40			C62			
C63	Härte H04 (22-30dH)	Degree of hardness H04	0	999	1	Liter			--	20	--	20	--	20	--	20	--	20	--	20	--	20	--	20	--	20	--	20	--	20	--	20	--	20	20	20			C63			
C64	Boilerfüllung Spülung 1	Filling booster rinse 1	0	999	1	Imp.			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C64			
C65	Boilerfüllung Spülung 2	Filling booster rinse 2	0	9	1K	Imp.			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C65			
C66	Boilerfüllung Spülung 3	Filling booster rinse 3	0	999	1	Imp.			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C66			
C67	Boilerfüllung Spülung 4	Filling booster rinse 4	0	999	1	Imp.			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C67			
C68	Boilererstbefüllung 1	Initial fill 1 booster	0	999	1	Imp.			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C68			
C69	Boilererstbefüllung 2	Initial fill 2 booster	0	9	1K	Imp.			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C69			
C70	Taktung Vorspülbehälter spülen	Prewash box (pulsing wash out)	0	999	1	Imp.			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			C70			
C71	Aufforderung Hygieneprog.	Demand of hygiene cycle	0	999x10	10	wash			--	--	--	--	--	--	--	--	--	--	--	--	250	250	250	250	--	--	--	--	--	--	--	--	--	--	--	--			C71			
C72	Anzahl Hygieneprogramme	Number of hygiene cycles	0	999	1	wash			--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--			C72			
C73	Zählerstand Waschungen 1	Counter 1: wash program	0	999	1	wash			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			C73		
C74	Zählerstand Waschungen 1x1K	Counter 1x1K: wash program	0	999	1K	wash			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			C74	
C75	Serviceintervall	Service interval	0	999	1	wash			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			C75	
C76	Serviceintervall x 1K	Service interval x 1K	0	999	1K	wash			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			C76
C77	Gesamtwasserzähler 1	Counter 1: total water cons.	0	999	1	Liter			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			C77	
C78	Gesamtwasserzähler 1x1K	Counter x1K: total water cons.	0	999	1K	Liter			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			C78
C79	Wasserzähler 2	Water counter 2	0	999	1	Liter			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			C79	
C80	Wasserzähler 2 x1K	Water counter 2x1K	0	999	1K	Liter			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			C80
C81	Taktungen abpumpen 2	Pulsing draining 2	2	15	1	Ablauf			6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	2	2			C81
C82	Füllmenge max.	Water contents max.	0	999	1	Liter			35	35	35	35	45	45	45	45	55	55	55	55	55	55	55	55	70	70	70	70	110	110	110	110	35	35	25	25			C82			
C83	Reserve	Reserve							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C83		
C84	Anzahl Salzfüllungen	Number of salt filling	0	999	1	S-Füll.			--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	0	0	0	0			C84	
C85	Waschungen bei Salzangel	Wash programs by salt failing	0	999	1	wash			--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	0	0	0	0			C85	
C86	Nachlauf RL18/19	Lag relay 18/19	0	999	1	sec			15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15			C86	
C87	Reserve	Reserve							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C87	
C88	Reserve	Reserve							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C88	
C89	Reserve	Reserve							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C89	
C90	Reserve	Reserve							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C90	
C91	Reserve	Reserve							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C91	
C92	Thermostop Tank	Thermostop wash tank	0	999	1	min			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			C92		
C93	Start Besalzung	Start regeneration	4	999	1	sec			--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	5	5	5			C93		
C94	Pause 1 - Auswaschung 1	Break 1 - elutriation 1	0	999	1	sec			--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	15	15	15			C94		
C95	Start Auswaschung 2	Start - elutriation 2	0	999	1	sec			--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5	5	5	5			C95		
C96	Pause - Auswaschung 2-4	Break between elutriation 2-4	0	999	1	sec			--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	--	15	15	15	15			C96		

Temperaturen:		Temperatures:			
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NOTES

A large grid of graph paper for taking notes, consisting of approximately 30 columns and 40 rows of small squares.

SERVICE TRAINING CENTER



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