

OPERATING INSTRUCTIONS

LINEAR STAINER cromatec



INS5100GB
2018-04-004.00

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1. Introduction

1.1 About this Manual

This manual shall help you handling the device. Please read the manual completely and follow the advice. Acquaint yourself to the control elements and their functionality by studying the figures. This way, an adequate use of the device is ensured.

1.1.1 Used symbols and their meanings



Danger warning: Danger warnings are marked by a red framed triangle.



Warning: Warnings are marked with a yellow warning triangle, showing an exclamation mark.



Flammability: Warnings regarding flammability are marked with a yellow triangle, showing a flame.



Heat warning: Heat warnings identify parts and situations of the device with high temperatures.



Notice: Notices, meaning important information for the user, that are not classified as danger or warning, are marked with an information symbol.

1.2 Intended Use

The cromatec is an automated stainer and is made for the purpose of staining tissue specimens in histology and pathology laboratories only. The instrument may be operated only according to the instructions contained in this manual. Any other use of the cromatec is considered improper.

The conditions for operation, maintenance and service mentioned in this instruction manual have to be strictly observed.



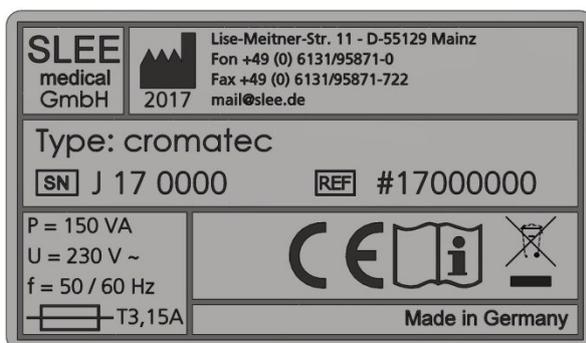
To prevent damages to the instrument and specimens, only use accessories and spare parts which have been approved by SLEE medical GmbH.

1.3 Authorized Operators

The cromatec must be used only by those persons who have been authorized by the owner. In his working area, the operator is responsible with regard to third persons. The owner must give the operator access to this instruction manual and make sure that the operator has read and understood its contents.

1.4 Instrument type

All information provided in this manual applies only to the instrument type indicated on the title page. A name plate indicating the instrument serial number is attached to the rear panel of the instrument.



1.5 Safety Instructions for working with the cromatec and reagents

When working with the cromatec, please pay particular attention to the used reagent's characteristics regarding flammability and further hazards. Read the manual carefully before working with the cromatec and reagents for the first time. Keep the manual near and easy accessible to the device. Consult the manual in case of obscurities.



Many reagents' fluids and vapours are flammable. If you are not sure about using a reagent, please contact the manufacturer.



Always wear protective clothes (e.g. laboratory coat, gloves, safety glasses) to prevent accidental contact with reagents!



Do not eat, drink or otherwise consume reagents and/or reagent vapours! Do not eat, drink, smoke within the surrounding area of the device!



In case of accidental eating or drinking of, or skin contact with a reagent or its vapours, immediately consult the correspondent safety data sheet and follow the instructions stated in the corresponding sections!



Make sure the exhaust air decontamination system is working before starting to work with the cromatec and reagents!



Ensure that the device is cleaned and maintained according to the schedule and advice given in Chapter 5!



If the cromatec is not in use, the water supply must be switched off at the tap independently. In case the device becomes a defect, the warranty expires.

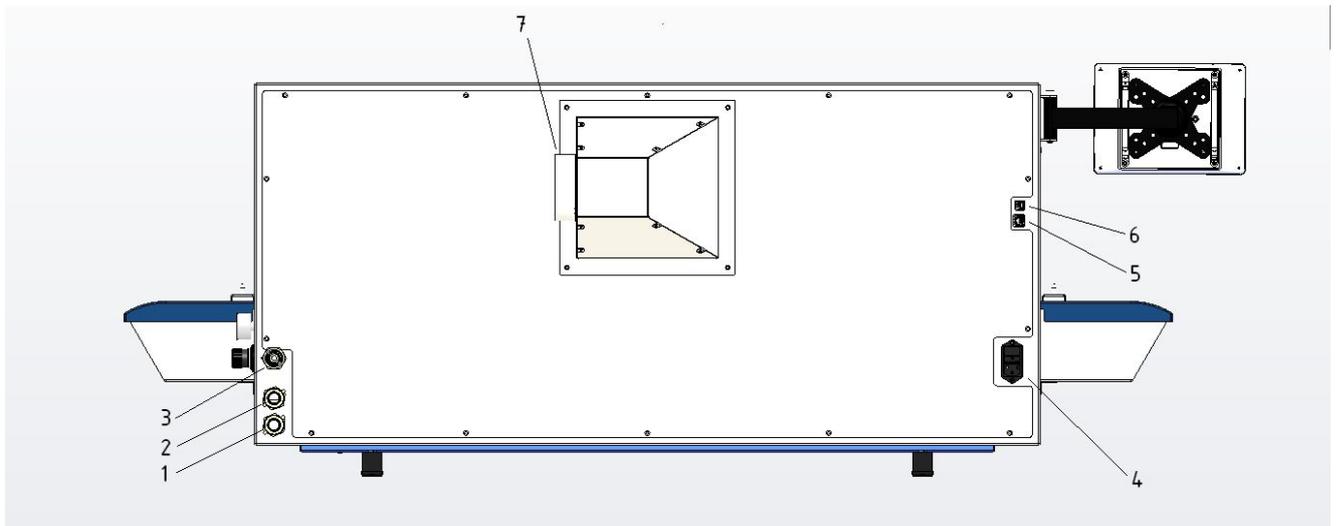
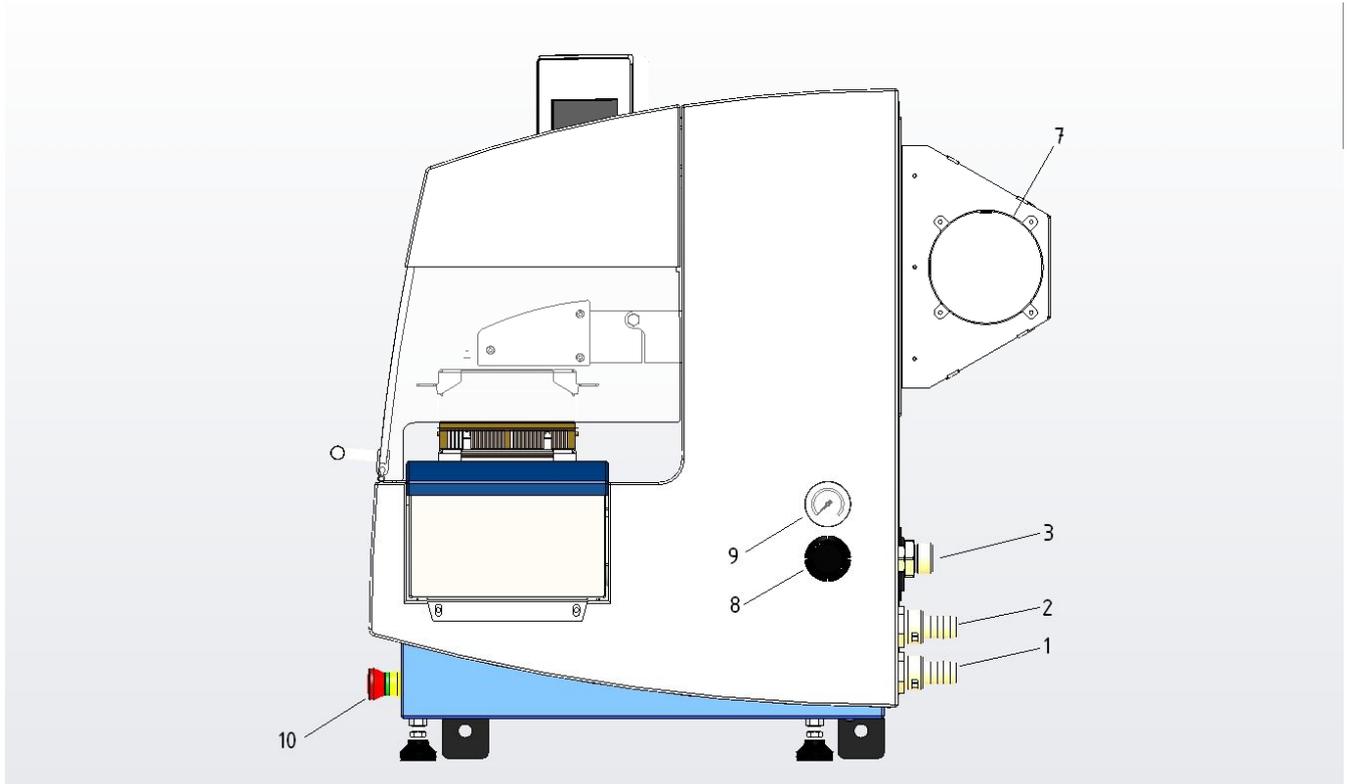


If you have trouble understanding instruction, questions, or are not sure about the safety, please consult your Sales Representative first!

2. Components of the cromatec Linear Stainer

2.1 Instrument Components





1	Water drain receptacle
2	Water drain washing cuvettes
3	Water connection / inlet
4	Connection power cable
5	Network connection RJ45
6	USB connector type B
7	Hose connection exhaust air Ø 100 mm
8	Water flow pressure regulator
9	Pressure gauge
10	Emergency stop button

2.2 Standard components

Basic instrument with 20 incubation stations

1 x loading station

1 x unloading station

20 x Staining cuvettes (plastic)

6 x Flushing station (plastic)

2 x Basket carrier

2 x Slide basket (plastic) for 30 slides

Inlet- and drain tube for flushing water

Fume extraction with 1 charcoal filter

Mains cable

Operation manual

Transport handles

2.3 Technical Specification

General

Nominal Voltage	100 – 240 V AC +/- 10 %
Nominal frequency	50 / 60 Hz
Max. power consumption	250 VA
Max. heat emission	250 J/s
IEC 1010 classification	Protective class 1 Pollution degree 2 Overvoltage installation category II
Fuses	2 x T 2,5 A
Interfaces	USB, RJ 45
Operating temperature range	+10° to +35°C
Relative humidity	Max. 80 % non condensing
Temperature range during storage	+5 to + 55°C
Humidity during storage	<80%

Dimensions and weight

Dimensions (W x D X H)	1560 mm x 640 mm x 620 mm
Weight unpacked (without accessories)	110 kg

Capacity

Specimen slide throughput	Up to 1.800 slides/h*
Loading capacity	Up to 20 slide racks simultaneously
Slide rack capacity	30 slides
Total number of stations	20
Number of washing stations	Max. 6
Reagent / Washing cuvettes volume	400 ml
Water flow regulation for washing stations	0,5 to 2,0 l/min
Load / Unload stations	5 each
Programs	20 programs, up to 20 steps each
Incubation time setting	5 sec. up to 59 min, 59 sec.
*depending on staining protocol	

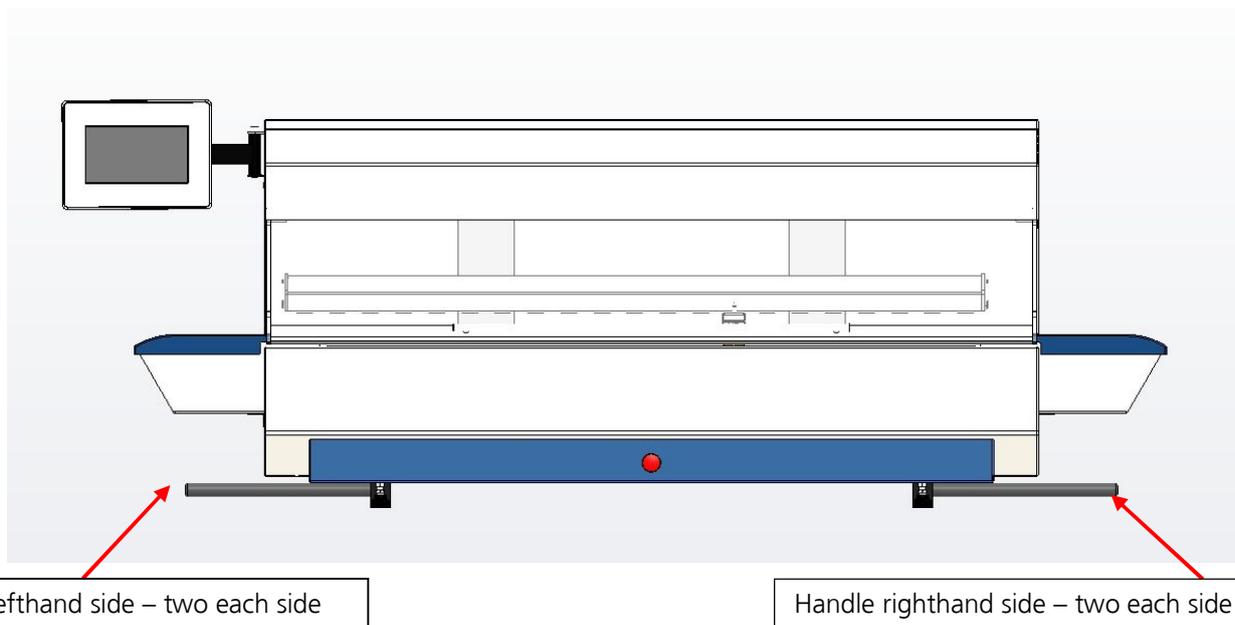
3. Setting up the instrument

3.1 Installation site requirements

Installation site requirements:

- The instrument must be used in closed rooms, only.
- Stable, exactly horizontal laboratory bench with even surface of a minimum width of 1.80 m and minimum depth of 0.80 m which can accept a weight of 110 kg!
- The minimum distance of the instrument back to the wall or other instruments should at least be 10 cm to guarantee sufficient ventilation. Furthermore pay attention that no inflammable objects are in the area heated by the instrument.
- Tap water supply located a maximum of 2.50 m and waste water drain pipe a maximum of 2.00 m away from the corresponding in-/outlets at the rear panel of the instrument.
- If the instrument is to be operated with air evacuation hose, a fume cupboard at a distance of maximum 3.50 m from the instrument is required. Alternative: operation with activated carbon filter.
- Sufficient space of min 0.90 m above the laboratory bench for opening / closing the instrument lid without any problem.
- Stable ambient temperature between +10 °C and +35 °C.
- Relative air humidity of maximum 80 %, non-condensing.
- Do not place near instruments which might be sources of vibration.
- The instrument must not be exposed to direct sunlight.

To lift, take the instrument by the carrying the handles (see below picture). Four people are required to lift and / or carry the instrument, as the instrument weights a total of approx. 110 kg.



After installation please remove the handles on both sides!

3.2 Tap water supply connection

- Unpack the water inlet hose (including Safety-Aquastop).
- Connect the hose to the inlet connection.



Always connect the water inlet hose!



3.3 Waste water hose connection



Please note that the waste water hose is not part of the standard delivery.

- Connect the waste hose to the waste water connection. Please note that water can escape in the upper drain hose, but in the lower only in an exceptional case.



Please do not bend the hoses and pay attention for sufficient inclination.



The two drains on the rear of the unit must never be brought together.



The lower drain is to be used only for cleaning purposes to rinse and clean the cuvette trough. Connect as required and provide sufficient slope.



The upper drain is only for the maximum of 6 water baths and must be connected constantly with sufficient slope.

3.4 Electrical connection

- The electrical connection is located at the rear of the unit.
- Connect the mains cable to the mains power supply socket.



The instrument must be connected to an grounded mains power outlet socket. Make sure to use the appropriate mains cable for the local voltage supply.



3.5 Connection of air evacuation (optional)

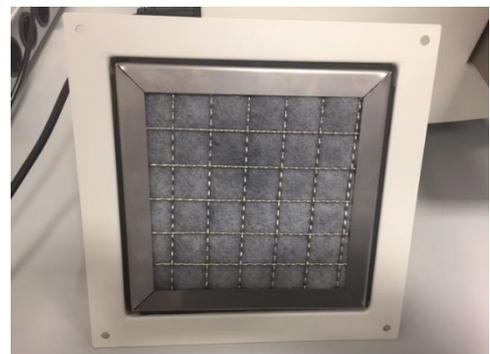
- For the connection to an external air evacuation please contact the local SLEE service.

3.6 Inserting/Changing the activated carbon filter



The cromatec will be delivered with the filter already installed.

- For changing the filter, unscrew the 4 screws at the rear of the instrument panel.
- Take out the filter and replace with a new one.
- Connect the filter housing to the rear panel again.
- Set filter change in the menu (see chapter 4.6.3).



3.7 Leveling the instrument

- Once all accessories are installed move the instrument to its final position.
- The easiest way to find the right level is using a spirit level.
- The right level will be achieved by adjusting the instrument feet.



3.8 Inserting the cuvettes

- There are two different cuvette types:
 - Reagent cuvettes
 - Running water cuvettes



Reagent cuvette



Running water cuvette



The reagent cuvette can simply be placed at the any station



The running water cuvette can simply be clicked into the water tube at the button of the station. It can be freely selected.



Please do not use chloroform, acetone and toluene (Methylbenzene).

3.9 Inserting the racks

- The rack carrier system consists of two parts:
 - The rack for 30 slides
 - The transport system to connect to the magnet system



To make sure the rack is not falling out of the transport system, you can hold it with your finger as shown in the picture.

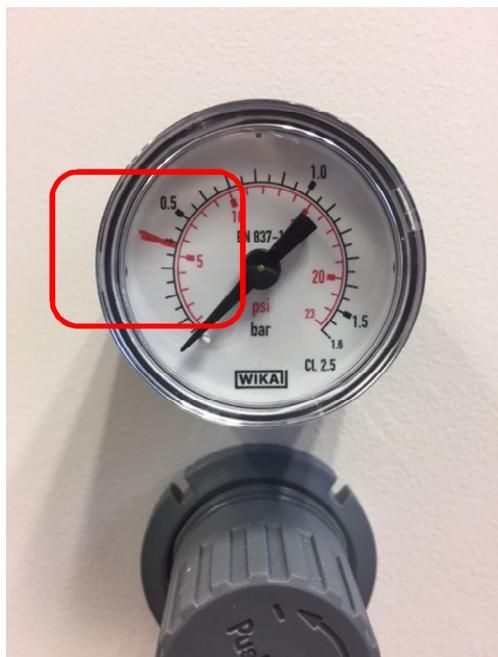


The transport system has to be clean at all time to make sure the magnets are taking the full racks. Please do not use the instrument with just the transport system but always with a basket insertet.



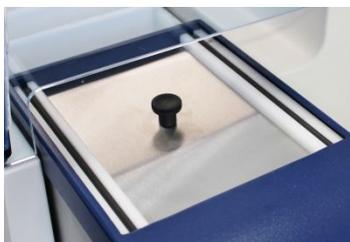
Please pay attention to an even load.

3.10 Setting the water pressure for running water station



The red marking indicates the flow pressure during operation.

3.11 Store samples in xylene at the end of the process



For this purpose, an insert tray with bow handle and lid was specially developed so that the samples can be stored in xylene at the end of the process. The bow handle may only be used to remove the tray from the spout pan; otherwise the lid collapses so that the xylene does not evaporate (over night or when not in use for a long time), it must not remain in the device during the process.

4. Operation

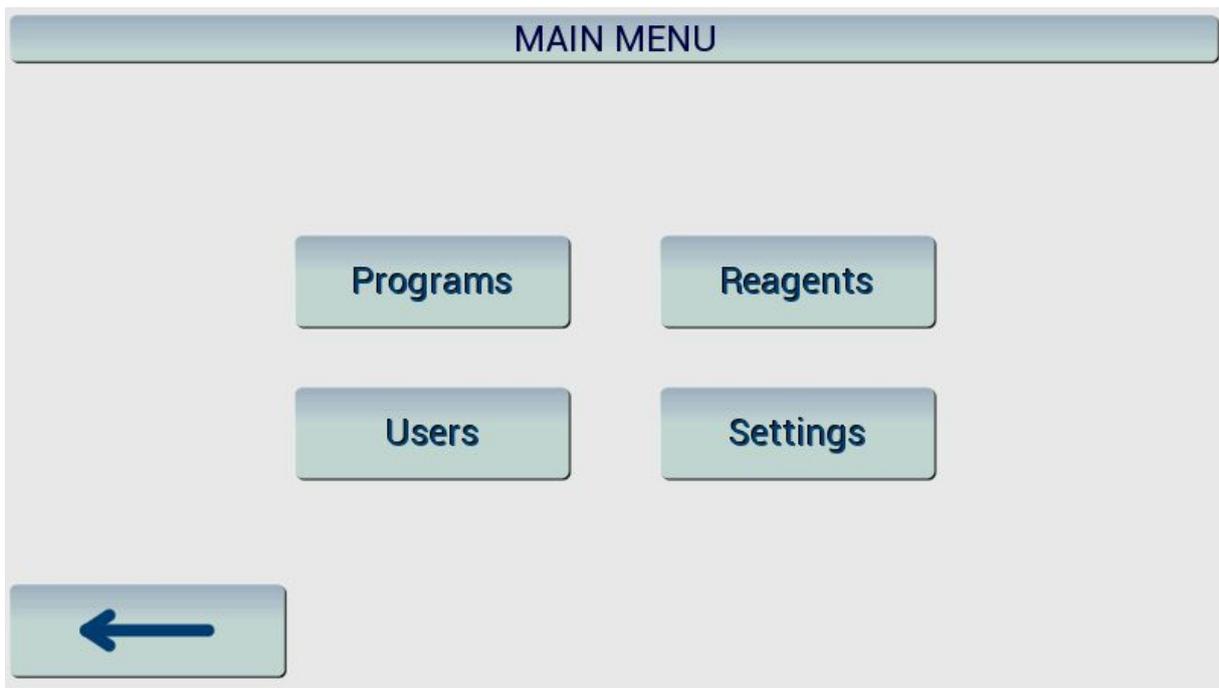
4.1 Switching on the instrument

- Switch on the device at the main switch at the rear panel of the instrument.



4.2 Main menu

After switching on the instrument, the system start booting and the following display is shown:



From this status all functions are started.

Programs

The "Programs" button is for selection and changing of programs.

Users

The "Users" button is to set and change user data

Reagents

The "Reagents" button is for managing the reagents.

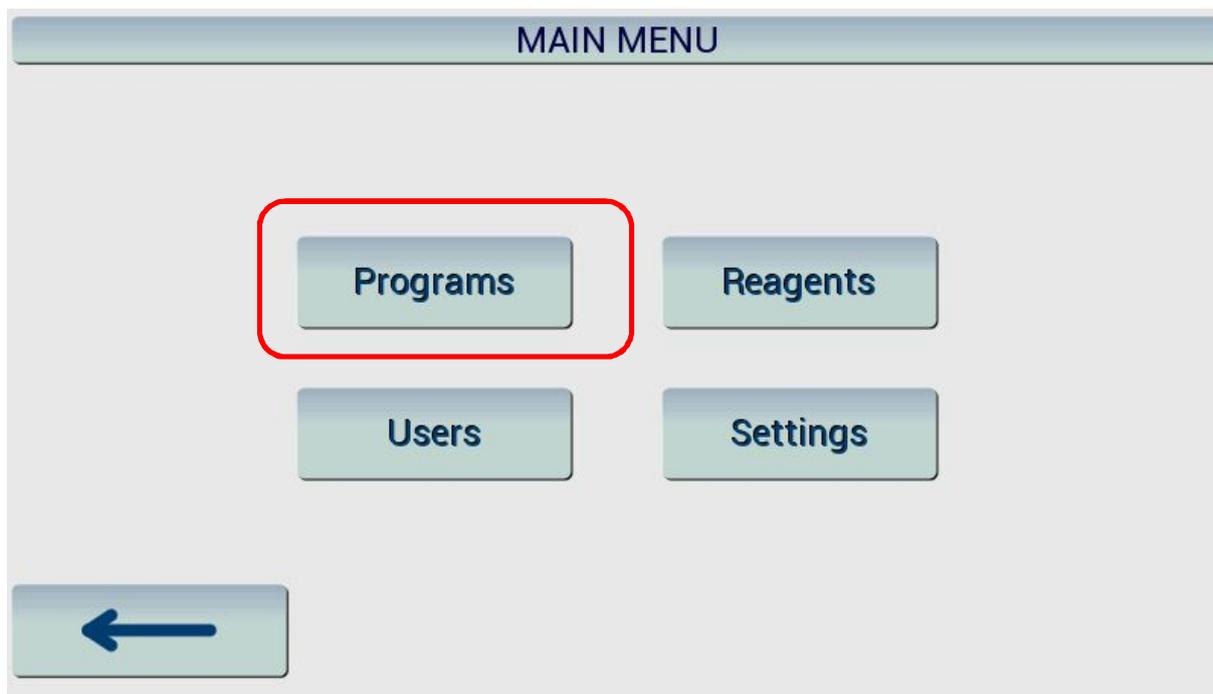
Settings

The "Settings" button is for generell settings.

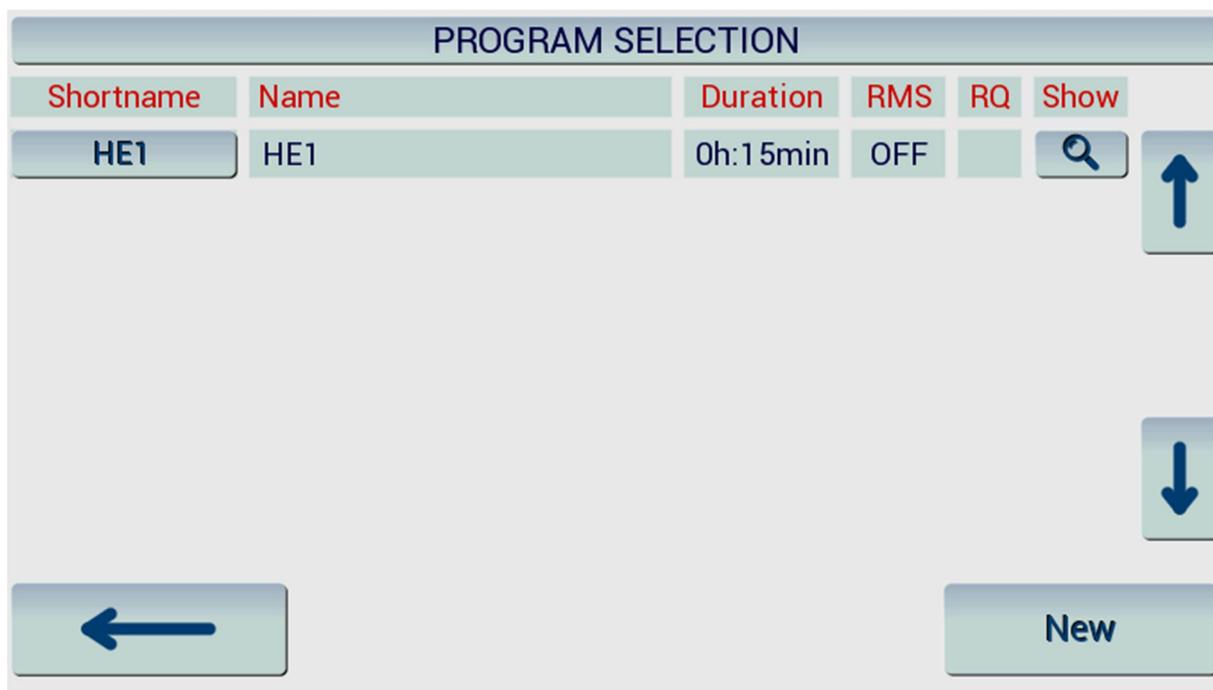
4.3 Programs

4.3.1 Edit a new or existing program

Please follow the below instructions to save a new program or to edit a existing program.



Please press "Programs" to find the list of programs or to select a new one.



With the magnifier  you can edit an existing program. With the button "New"  you can programme a new one.

After pressing "New" in the "program selection" menu you see the following:



PROGRAM DETAILS		
Shortname	HE1	Change
Name	HE1	Change
Driptime	5	Change
Total duration	0:15:00	Steps
RMS	<input type="checkbox"/> OFF	

Abort **Clear** **Save as new** **Save**

While pressing "Change" behind Shortname you can insert the requested details (Shortname is the name of the program to be seen in the overview):



Enter Shortname:

q w e r t y u i o p 7 8 9
a s d f g h j k l % 4 5 6
z x c v b n m , . - 1 2 3
^ 0 ()
HE| <-
Abort **OK**

Please confirm every step with the "OK" button and to return to the menu "Program details".

PROGRAM DETAILS

Shortname	HE1	Change
Name	HE1	Change
Driponff time	5	Change
Total duration	0:15:00	Steps
RMS	OFF	

Abort Clear Save as new Save

While pressing "Change" behind Name you can insert the requested details (Name is the long version of the name of the program to be seen in the overview):

Enter Name:

q w e r t y u i o p 7 8 9
a s d f g h j k l % 4 5 6
z x c v b n m , . - 1 2 3
^ 0 ()
| <-
Abort OK

Please confirm every step with the "OK" button and to return to the menu "program details".

PROGRAM DETAILS

Shortname	HE1	Change
Name	HE1	Change
Driponff time	5	Change
Total duration	0:15:00	Steps
RMS	<input type="radio"/> OFF	

While pressing "Change" behind Drip-off time you can select the time the basket may take out of the last cuvette for dripping of the reagent.

PROGRAM DETAILS

HE: Driponff time

<input type="text" value="5"/>	7	8	9
	4	5	6
	1	2	3
	0	<-	

You can select from 0 – 250. Please confirm every step with the "OK" button and to return to the menu "program details".

PROGRAM DETAILS

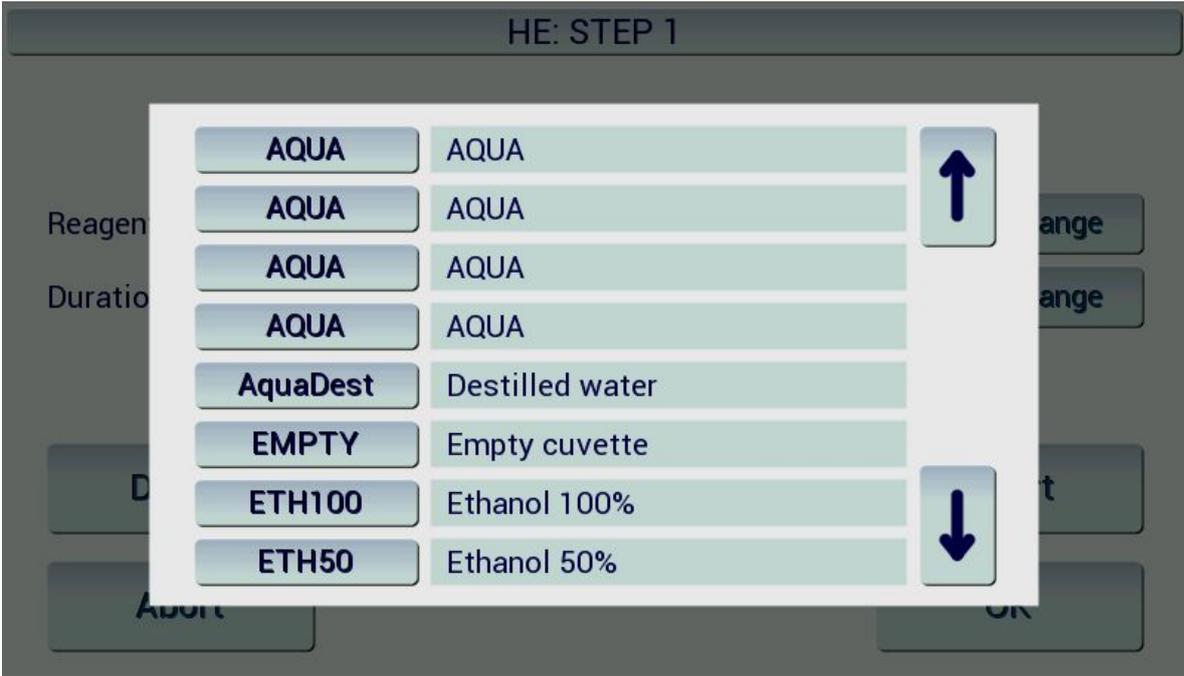
Shortname	<input type="text" value="HE1"/>	<input type="button" value="Change"/>
Name	<input type="text" value="HE1"/>	<input type="button" value="Change"/>
Dripoff time	<input type="text" value="5"/>	<input type="button" value="Change"/>
Total duration	<input type="text" value="0:15:00"/>	<input type="button" value="Steps"/>
RMS	<input type="checkbox"/> OFF	

While pressing "Steps" behind Total duration you can select the step time and reagent.

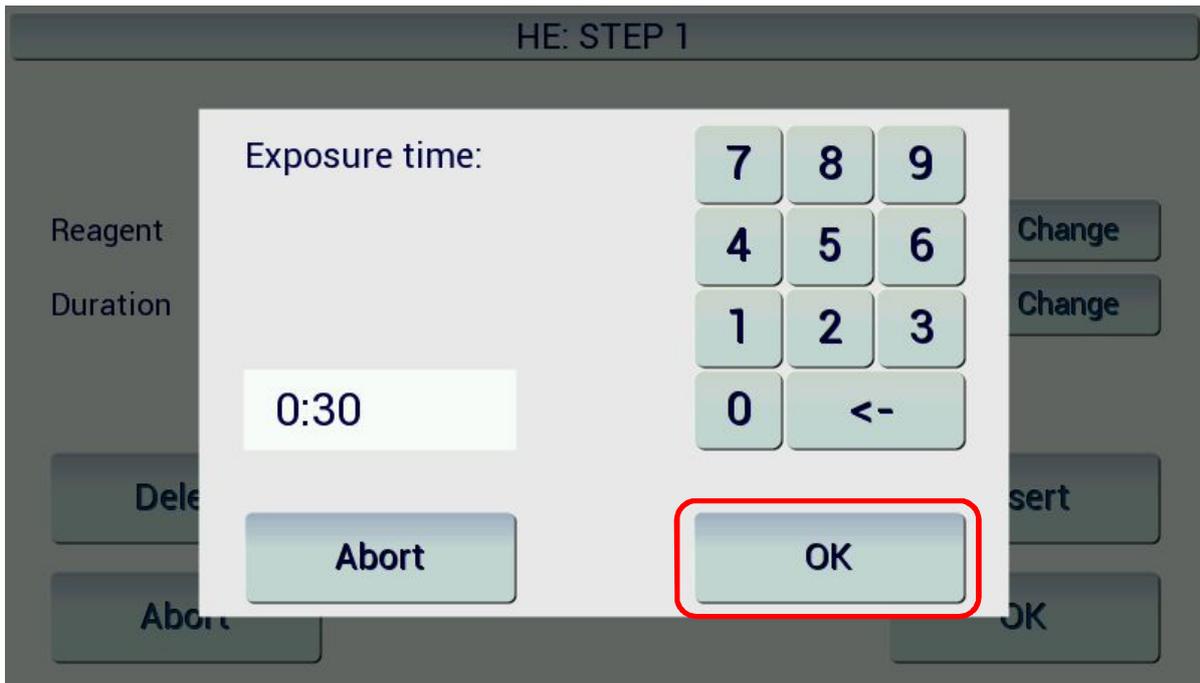
HE: STEP 1

Reagent	<input type="text" value="AQUA"/>	<input type="button" value="Change"/>
Duration	<input type="text" value="0:30"/>	<input type="button" value="Change"/>

Please press "Change" behind Reagent to select the reagent out of the below list.



Please press "Change" behind Duration to select the incubation time.



Please confirm your selection by pressing the OK button.

HE: PROGRAM STEPS					
No.	Reagent	Duration	RMS	RQ	Show
1	Empty cuvette	0:30	OFF		🔍
2	Empty cuvette	0:30	OFF		🔍
3	Empty cuvette	0:30	OFF		🔍
4	Empty cuvette	0:30	OFF		🔍
5	Empty cuvette	0:30	OFF		🔍
6	Empty cuvette	0:30	OFF		🔍
7	Empty cuvette	0:30	OFF		🔍

← ↑ ↓

Please repeat the step, described under 4.3.1 for every step (bath).

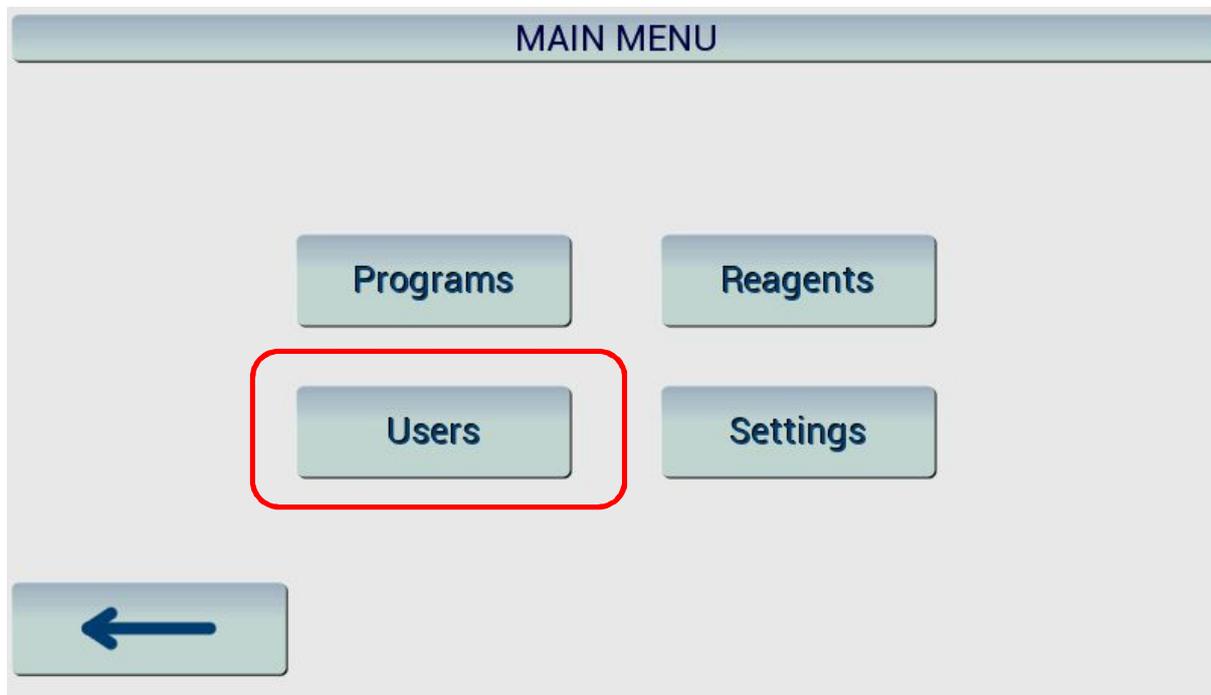


Please note that the cromatec can only work step by step. No station can be shipped. If a station has no reagent it has to be marked as empty.

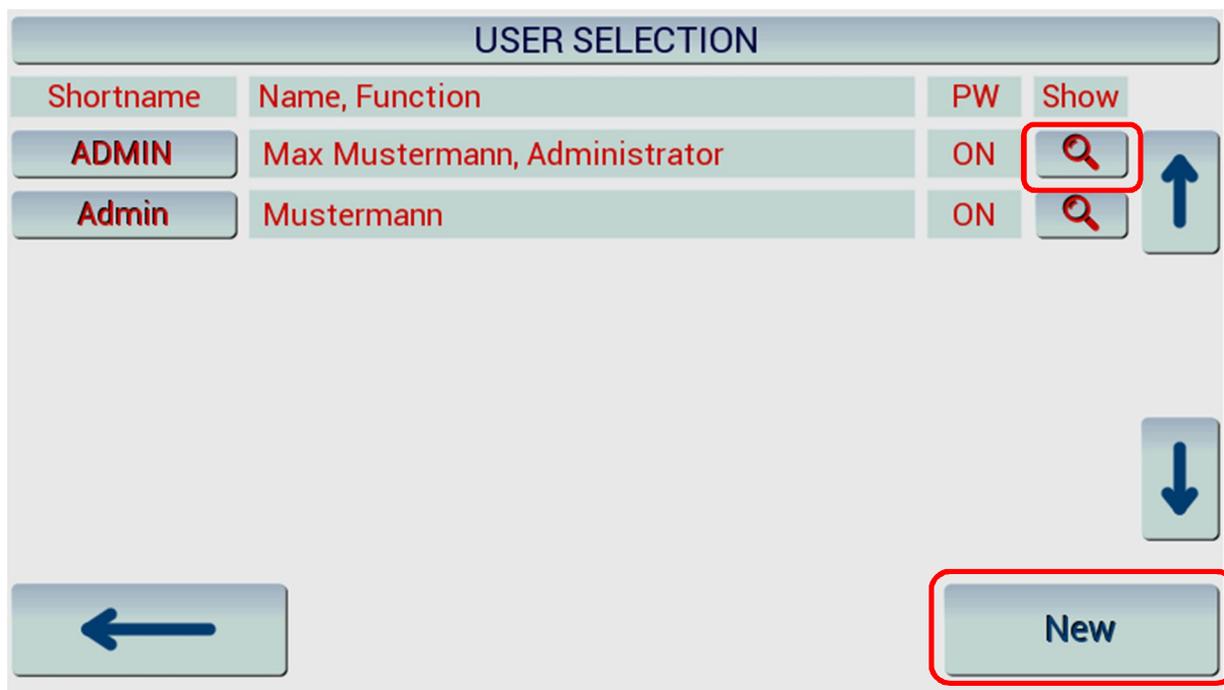
4.4 Users

4.4.1 Edit a new or existing user

Please follow the below instructions to save a new user or to edit a existing user.



If you want to add or select a new user please press "Users" in main menu.



With the magnifier you can change the values of the user. If you want to add a user please press "New".

USER DETAILS

Shortname	<input type="text" value="Admin"/>	<input type="button" value="Change"/>
Name, Function	<input type="text" value="Mustermann"/>	<input type="button" value="Change"/>
Password	<input type="password" value="*****"/>	<input type="button" value="Change"/>
Admin	<input checked="" type="checkbox" value="YES"/>	

Press "Change" behind Shortname to enter the Shortname of the user.

Enter Shortname:

q	w	e	r	t	y	u	i	o	p	7	8	9
a	s	d	f	g	h	j	k	l	%	4	5	6
z	x	c	v	b	n	m	,	.	-	1	2	3
^										0	()
<input type="text" value="Admin "/>										<input type="button" value="<-"/>		
<input type="button" value="Abort"/>										<input type="button" value="OK"/>		

Please confirm with ok and to return to menu user details.

USER DETAILS

Shortname	<input type="text" value="Admin"/>	<input type="button" value="Change"/>
Name, Function	<input type="text" value="Mustermann"/>	<input type="button" value="Change"/>
Password	<input type="text" value="*****"/>	<input type="button" value="Change"/>
Admin	<input checked="" type="checkbox" value="YES"/>	

Press change behind Name, Function to enter the Name and Function or Department of the user.

Enter Name and Function:

q	w	e	r	t	y	u	i	o	p	7	8	9	
a	s	d	f	g	h	j	k	l	%	4	5	6	
z	x	c	v	b	n	m	,	.	-	1	2	3	
^											0	()

Please confirm with ok and to return to menu user details.

USER DETAILS

Shortname	<input type="text" value="Admin"/>	<input type="button" value="Change"/>
Name, Function	<input type="text" value="Mustermann"/>	<input type="button" value="Change"/>
Password	<input type="password" value="*****"/>	<input type="button" value="Change"/>
Admin	<input checked="" type="checkbox" value="YES"/>	

Press change behind Password to change the password. If <none> is selected, there is no password active.

Enter new password:

q	w	e	r	t	y	u	i	o	p	7	8	9	
a	s	d	f	g	h	j	k	l	%	4	5	6	
z	x	c	v	b	n	m	,	.	-	1	2	3	
^											0	()
<input type="password" value="****"/>												<-	
<input type="button" value="Abort"/>												<input type="button" value="OK"/>	

Please confirm with ok and to return to menu user details.

USER DETAILS

Shortname	<input type="text" value="Admin"/>	<input type="button" value="Change"/>
Name, Function	<input type="text" value="Mustermann"/>	<input type="button" value="Change"/>
Password	<input type="password" value="*****"/>	<input type="button" value="Change"/>
Admin	<input checked="" type="checkbox" value="YES"/>	

Please confirm everything with save and to return to menu user selection.

USER SELECTION

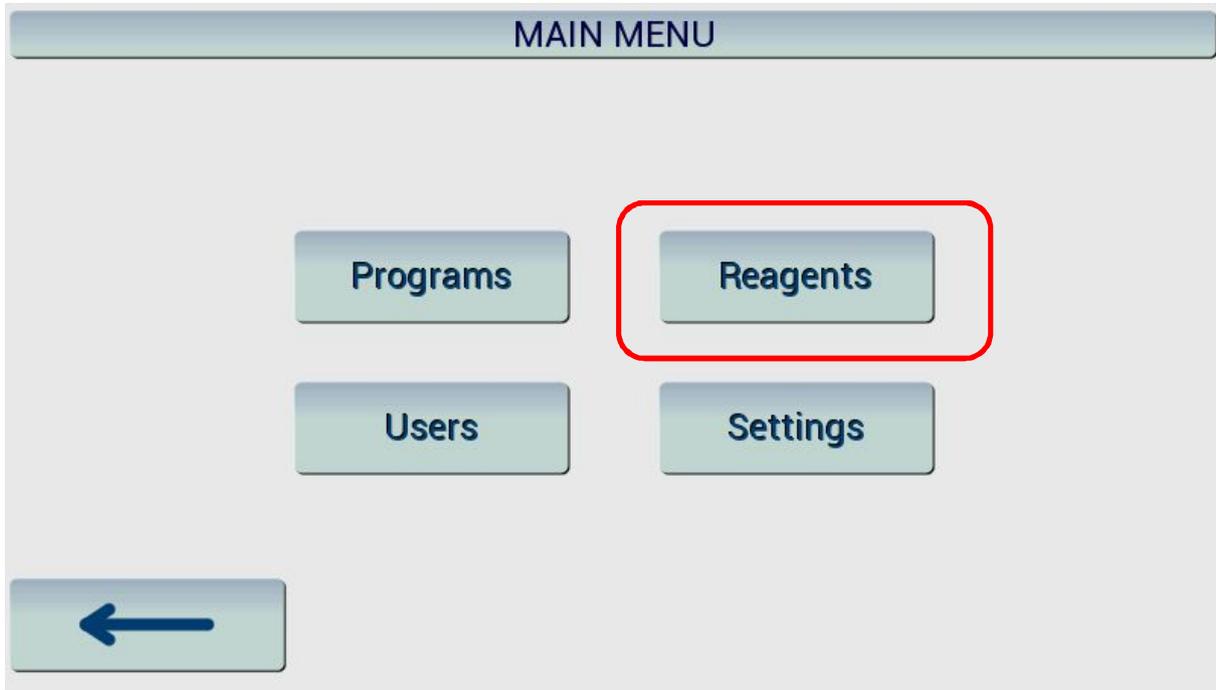
Shortname	Name, Function	PW	Show	
<input type="button" value="ADMIN"/>	Max Mustermann, Administrator	ON	<input type="button" value="🔍"/>	<input type="button" value="↑"/>
<input type="button" value="Admin"/>	Mustermann	ON	<input type="button" value="🔍"/>	

With the arrow you can return to the main menu.

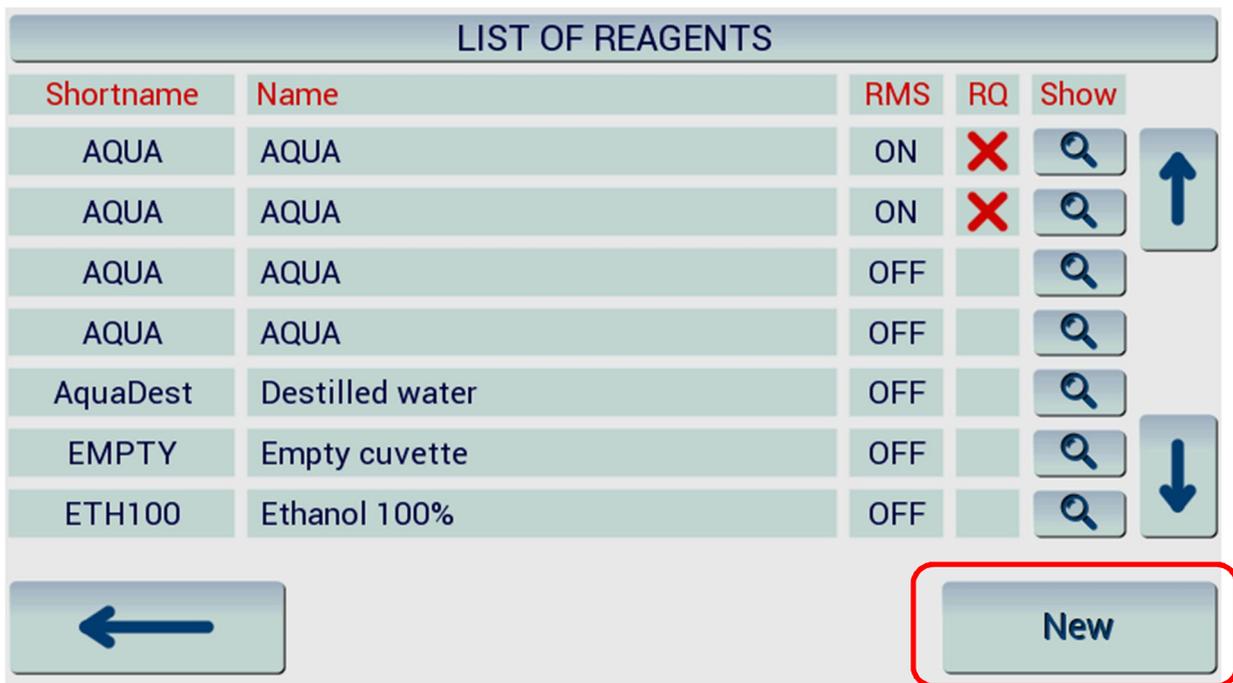
4.5 Reagents

4.5.1 Edit or create a new reagent

Please follow the below instructions to save a new reagent or to edit a existing reagent



If you want to add or select a new reagent please press "Reagents" in main menu.



With the magnifier you can adjust a existing reagents or with "New" you can add a new one.

REAGENT DETAILS

Shortname	<input type="text"/>	<input type="button" value="Change"/>
Name	<input type="text"/>	<input type="button" value="Change"/>
RMS	<input type="radio"/> OFF	
Max. Days	<input type="text" value="10"/> Used: 0 - 100% remaining	<input type="button" value="Change"/>
Max. Runs	<input type="text" value="10"/> Used: 0 - 100% remaining	<input type="button" value="Change"/>
Replaced	<input type="text" value="<unknown>"/>	<input type="button" value="Replace"/>

Enter Shortname:

<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">q</td><td style="padding: 2px 5px;">w</td><td style="padding: 2px 5px;">e</td><td style="padding: 2px 5px;">r</td><td style="padding: 2px 5px;">t</td><td style="padding: 2px 5px;">y</td><td style="padding: 2px 5px;">u</td><td style="padding: 2px 5px;">i</td><td style="padding: 2px 5px;">o</td><td style="padding: 2px 5px;">p</td> </tr> <tr> <td style="padding: 2px 5px;">a</td><td style="padding: 2px 5px;">s</td><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">f</td><td style="padding: 2px 5px;">g</td><td style="padding: 2px 5px;">h</td><td style="padding: 2px 5px;">j</td><td style="padding: 2px 5px;">k</td><td style="padding: 2px 5px;">l</td><td style="padding: 2px 5px;">%</td> </tr> <tr> <td style="padding: 2px 5px;">z</td><td style="padding: 2px 5px;">x</td><td style="padding: 2px 5px;">c</td><td style="padding: 2px 5px;">v</td><td style="padding: 2px 5px;">b</td><td style="padding: 2px 5px;">n</td><td style="padding: 2px 5px;">m</td><td style="padding: 2px 5px;">,</td><td style="padding: 2px 5px;">.</td><td style="padding: 2px 5px;">-</td> </tr> <tr> <td style="padding: 2px 5px;">^</td><td colspan="9" style="border: 1px solid gray; height: 20px;"></td> </tr> </table>	q	w	e	r	t	y	u	i	o	p	a	s	d	f	g	h	j	k	l	%	z	x	c	v	b	n	m	,	.	-	^										<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">7</td><td style="padding: 2px 5px;">8</td><td style="padding: 2px 5px;">9</td> </tr> <tr> <td style="padding: 2px 5px;">4</td><td style="padding: 2px 5px;">5</td><td style="padding: 2px 5px;">6</td> </tr> <tr> <td style="padding: 2px 5px;">1</td><td style="padding: 2px 5px;">2</td><td style="padding: 2px 5px;">3</td> </tr> <tr> <td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">(</td><td style="padding: 2px 5px;">)</td> </tr> </table>	7	8	9	4	5	6	1	2	3	0	()
q	w	e	r	t	y	u	i	o	p																																												
a	s	d	f	g	h	j	k	l	%																																												
z	x	c	v	b	n	m	,	.	-																																												
^																																																					
7	8	9																																																			
4	5	6																																																			
1	2	3																																																			
0	()																																																			
	<input type="button" value="←"/>																																																				
<input type="button" value="Abort"/>	<input type="button" value="OK"/>																																																				

Enter Name:

q	w	e	r	t	y	u	i	o	p	7	8	9
a	s	d	f	g	h	j	k	l	%	4	5	6
z	x	c	v	b	n	m	,	.	-	1	2	3
^										0	()
<input type="text"/>										<-		
Abort										OK		

REAGENT DETAILS			
Shortname	<input type="text"/>		Change
Name	<input type="text"/>		Change
RMS	<input type="radio"/> ON		
Max. Days	<input type="text" value="10"/>	Used: 0 - 100% remaining	Change
Max. Runs	<input type="text" value="10"/>	Used: 0 - 100% remaining	Change
Replaced	<input type="text" value="<unknown>"/>		Replace
Abort		Clear	Save

REAGENT DETAILS

Shortname Change

Name Change

RMS OFF

Max. Days Used: 0 - 100% remaining Change

Max. Runs Used: 0 - 100% remaining Change

Replaced Replace

Abort
Clear
Save

REAGENT DETAILS

Shortname Change

Name Change

RMS OFF

Max. Days Used: 0 - 100% remaining Change

Max. Runs Used: 0 - 100% remaining Change

Replaced Replace

Abort
Clear
Save

Max. Days

7	8	9
4	5	6
1	2	3
0	<-	

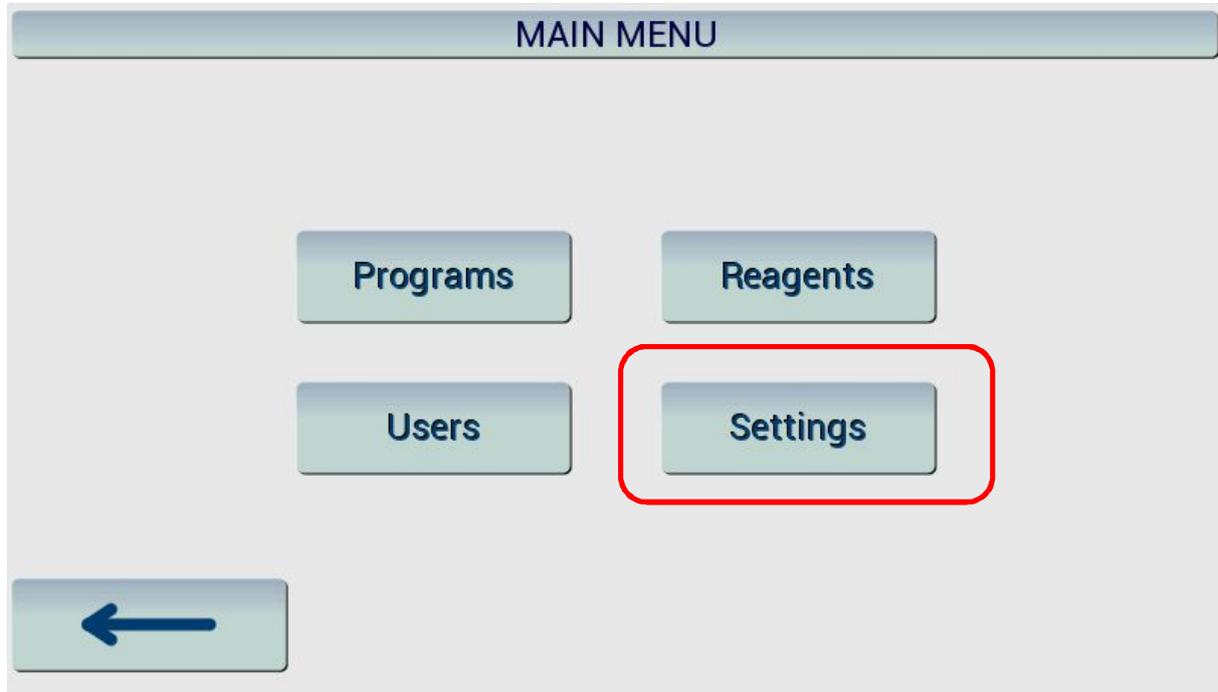
Abort
OK



4.6 Settings

4.6.1 Settings of the cromatec

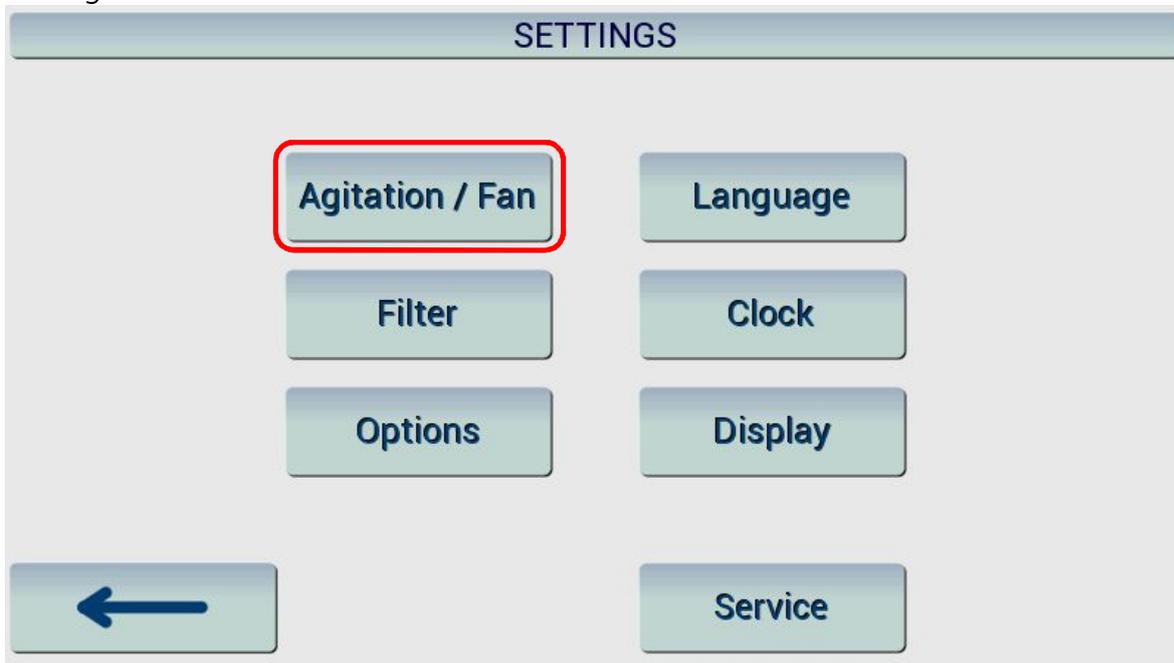
Please follow the below instructions to edit and save settings.



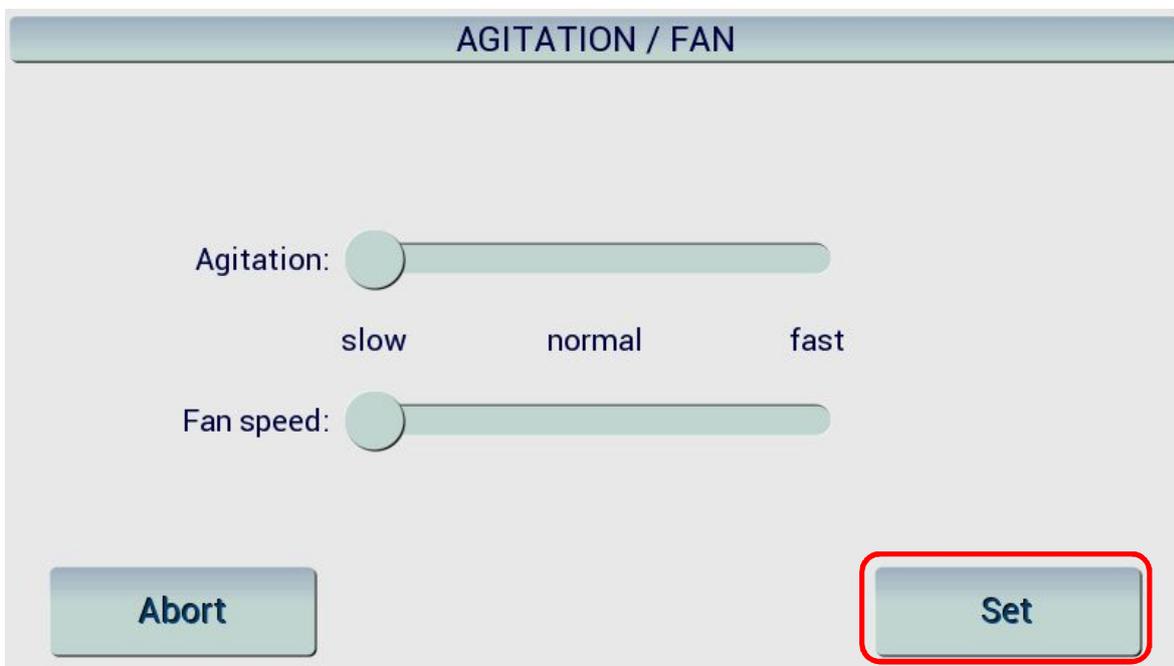
If you want to change the settings of the cromatec please press "Settings" in main menu.

4.6.2 Agitation/Fan

To change the settings for agitation and fan please select "Agitation/Fan" in the Settings menu.



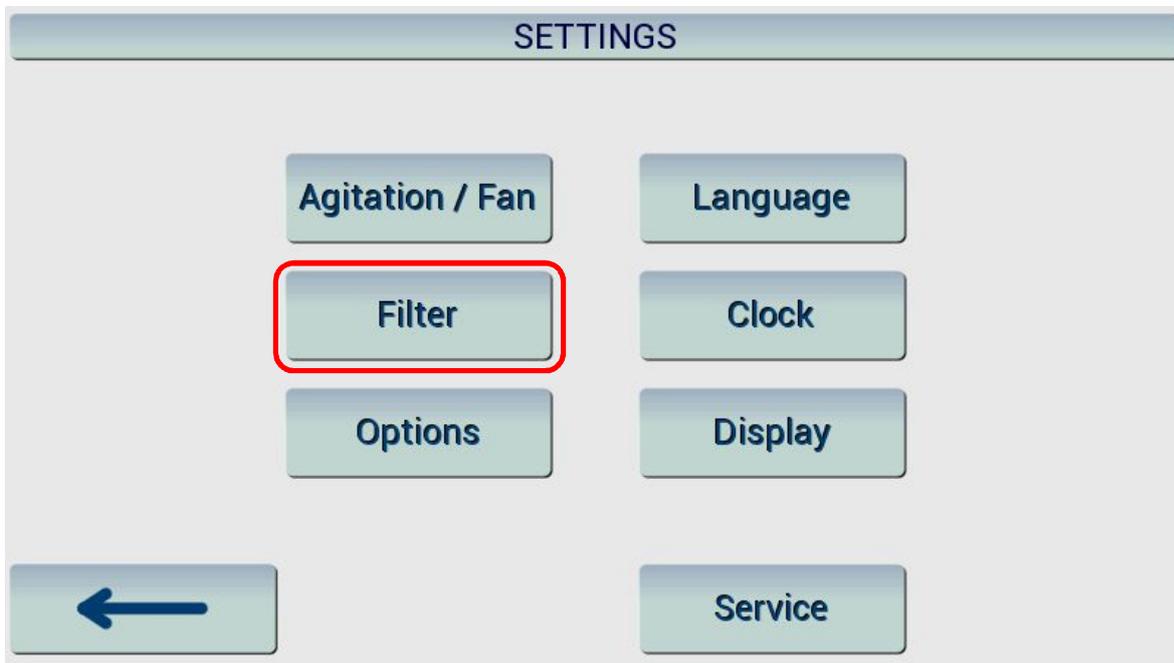
The agitation and fan speed can be changed in the menu. You can select between slow, normal and fast.

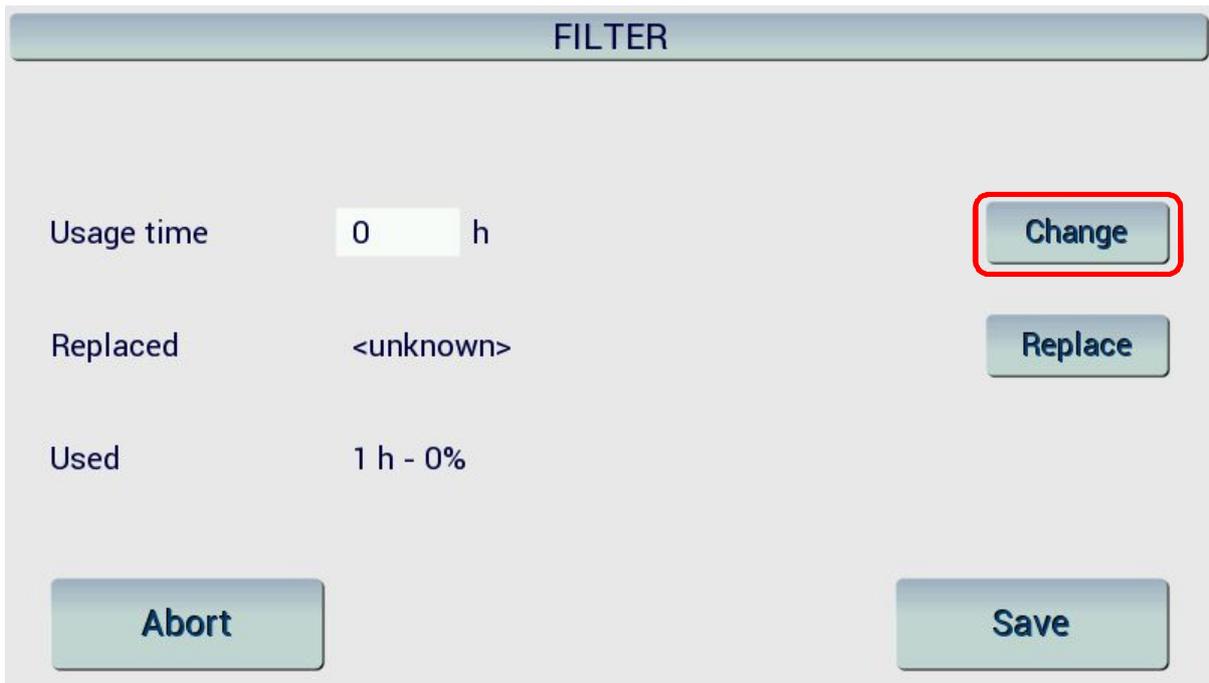


Please confirm your settings by pushing "Set".

4.6.3 Filter

To change the settings for the filter please select "Filter" in the Settings menu.





If you want to change the filter usage time please select "Change". Please adjust the values as follows.



A value of 1000 hrs is default setting. You can select values from 1h to 9999 hrs. Please confirm your settings by pressing "OK".

FILTER

Usage time	1000 h	Change
Replaced	18.06.16 - 01:58	Replace
Used	0 h - 0%	

Abort **Save**

If you have replaced the filter, please press "Replace". The value shown under "Used" will be set to 0. (For filter exchange please refer to chapter 3.6)

FILTER

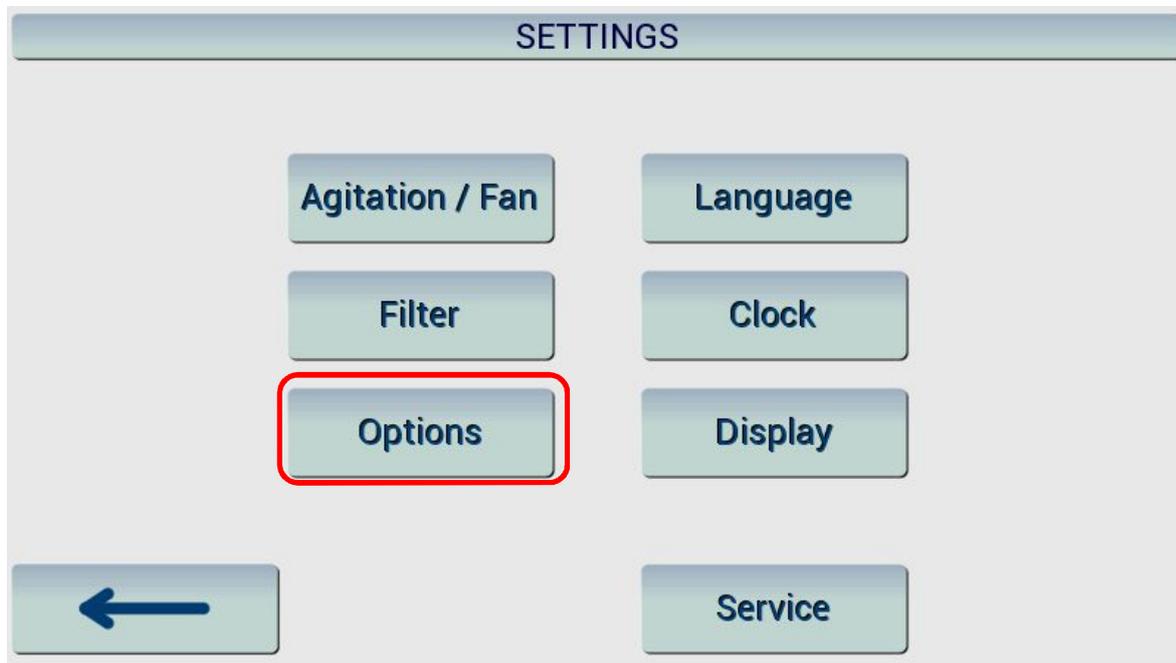
Usage time	1000 h	Change
Replaced	18.06.16 - 01:58	Replace
Used	0 h - 0%	

Abort **Save**

Please save your settings by pressing "Save".

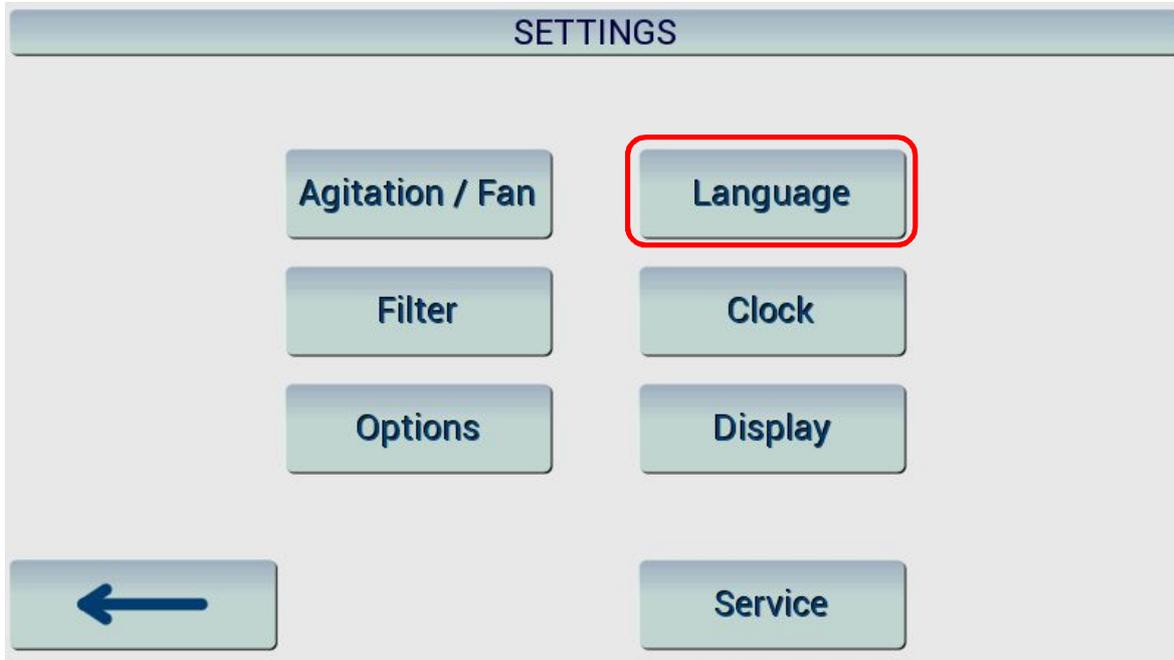
4.6.4 Options

To change the settings for the options please select "Options" in the Settings menu.



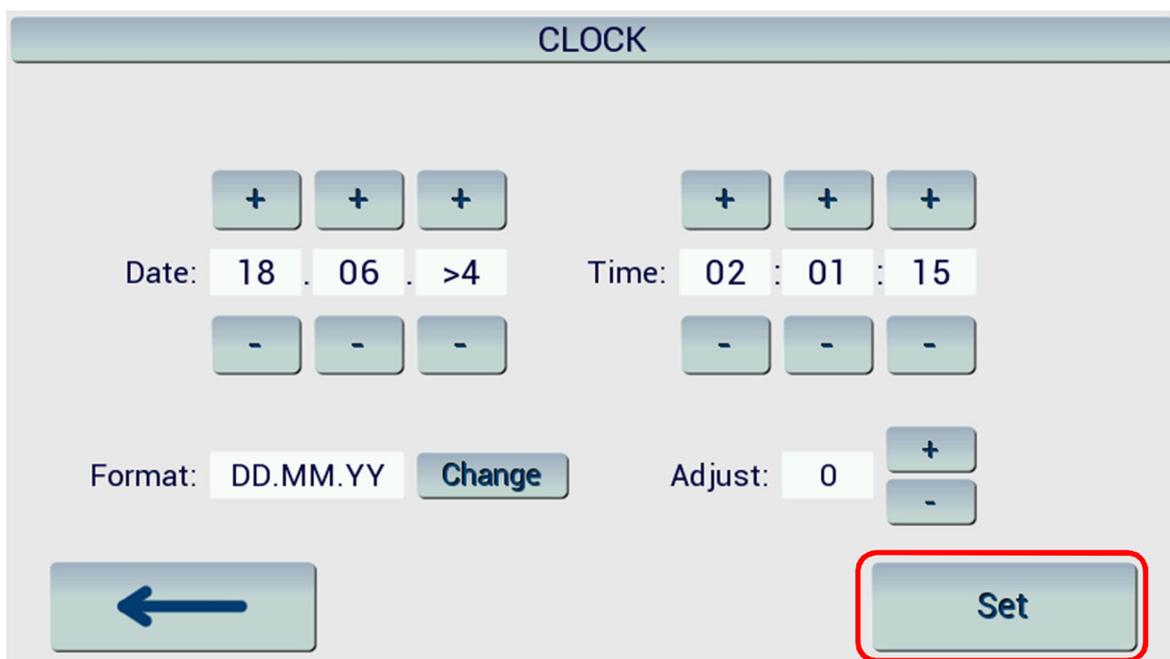
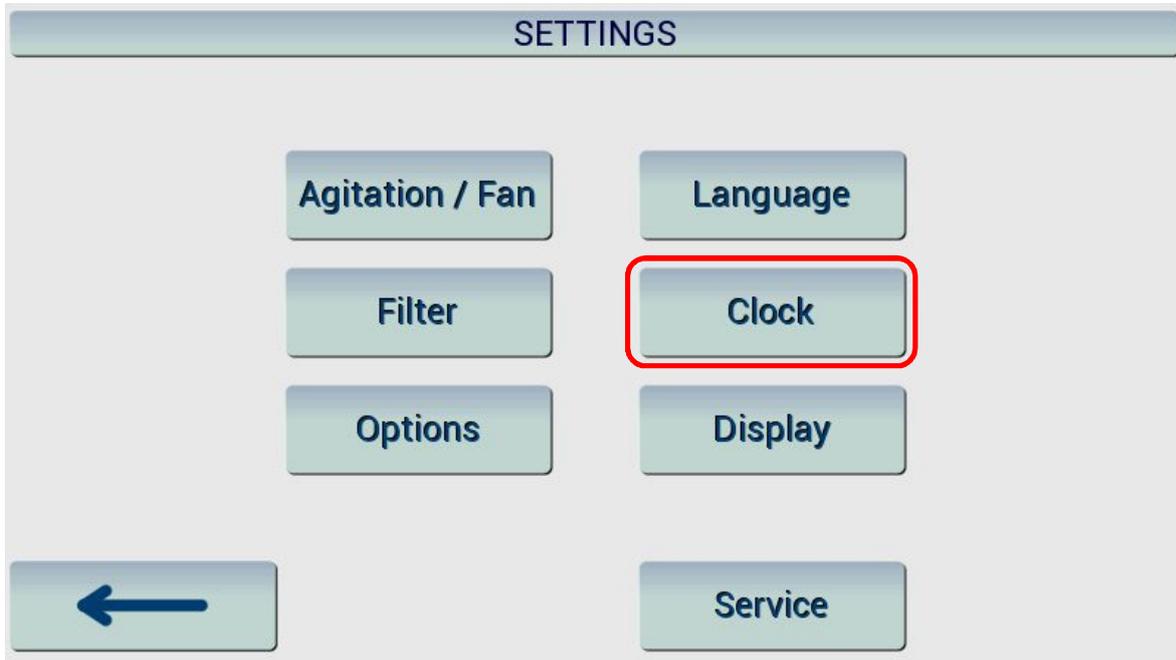
4.6.5 Language

To change the settings for the language options please select "Language" in the Settings menu.



4.6.6 Time and date

To change the settings for time and date please select "Clock" in the Settings menu.

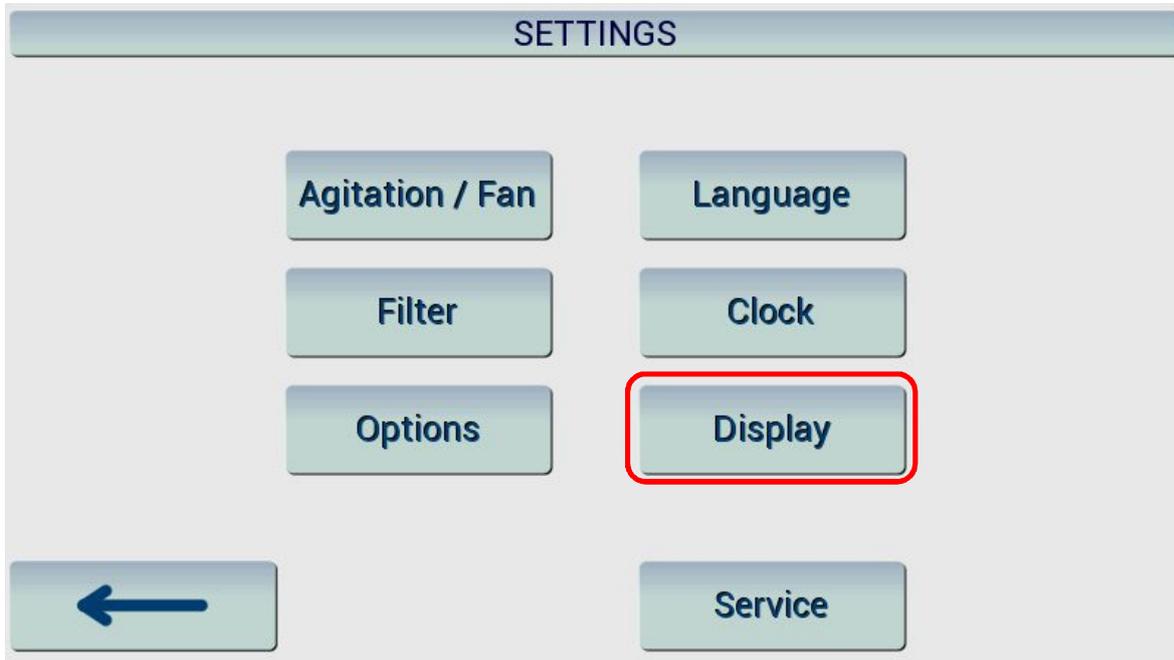


With + and – you can select the actual time and date. If you want to change the format of date please press "Change". Possible formats are: DD.MM.YY and MM.DD.YY. With adjust you can select differences between summer and wintertime.

After that please press "SET" for saving these settings and to return to settings menu and to main menu.

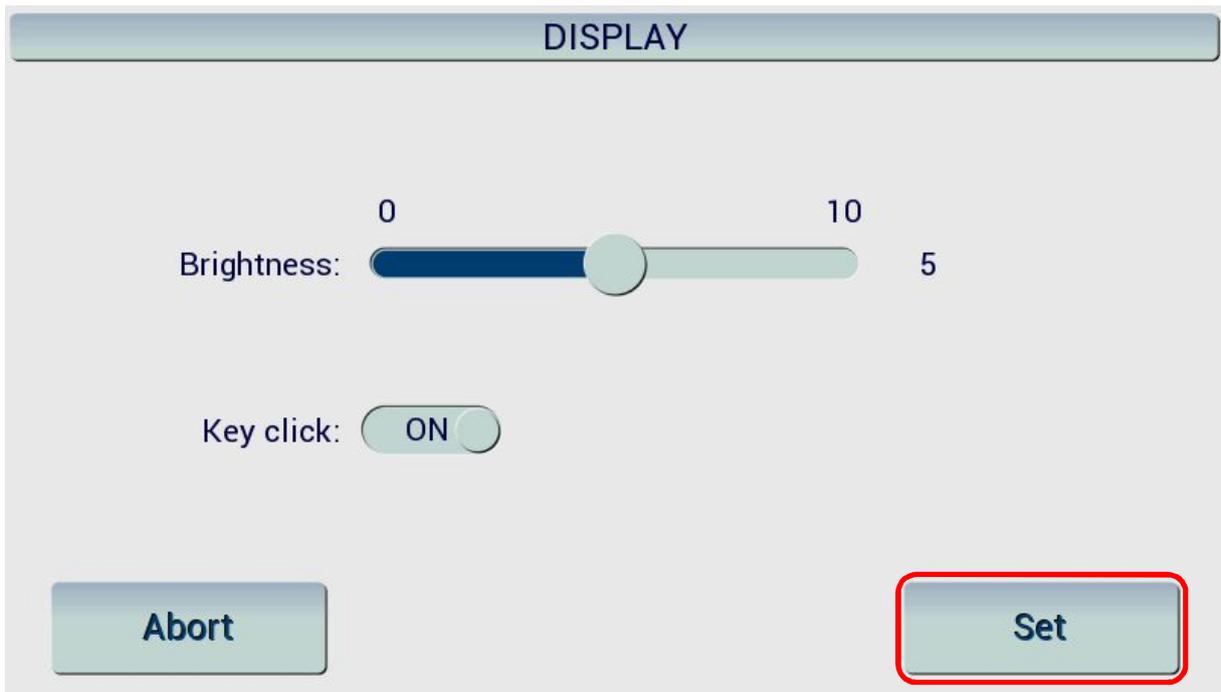
4.6.7 Display

To change the settings for the display please select "Display" in the Settings menu.



You can select the display brightness from 0 to 10. With the button "Key click" you switch on / off the key tones.

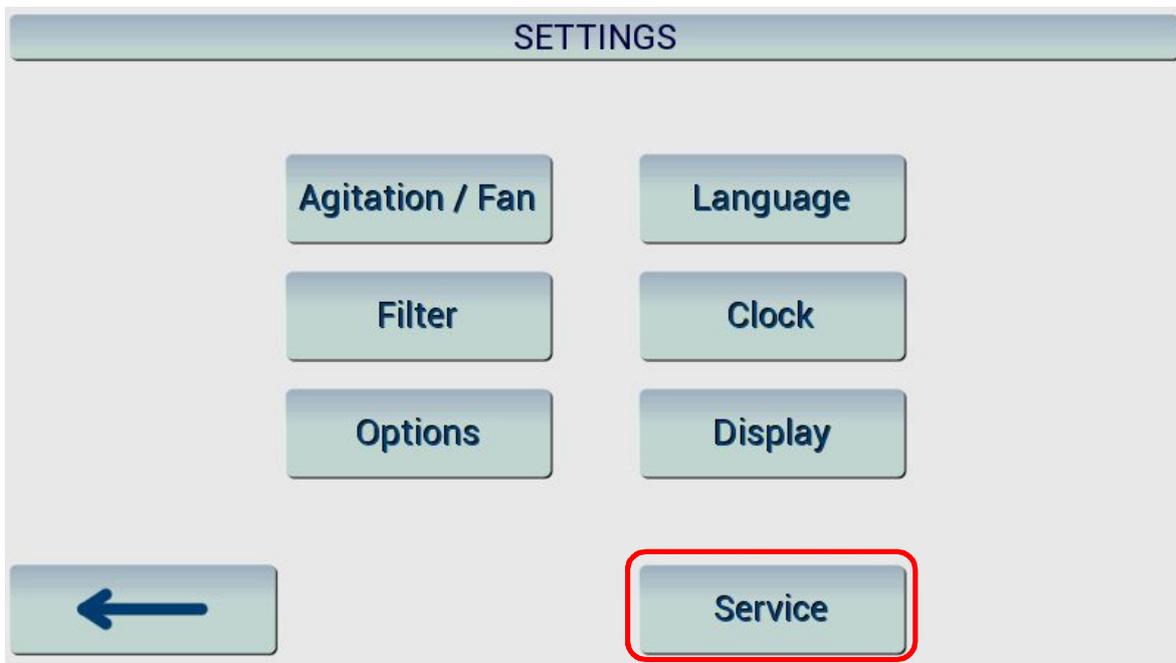




Please confirm your selection with set.

4.6.8 Service

To change the Service settings please select "Service" in the Settings menu.



Service settings are password protected!

4.7 Running staining programs

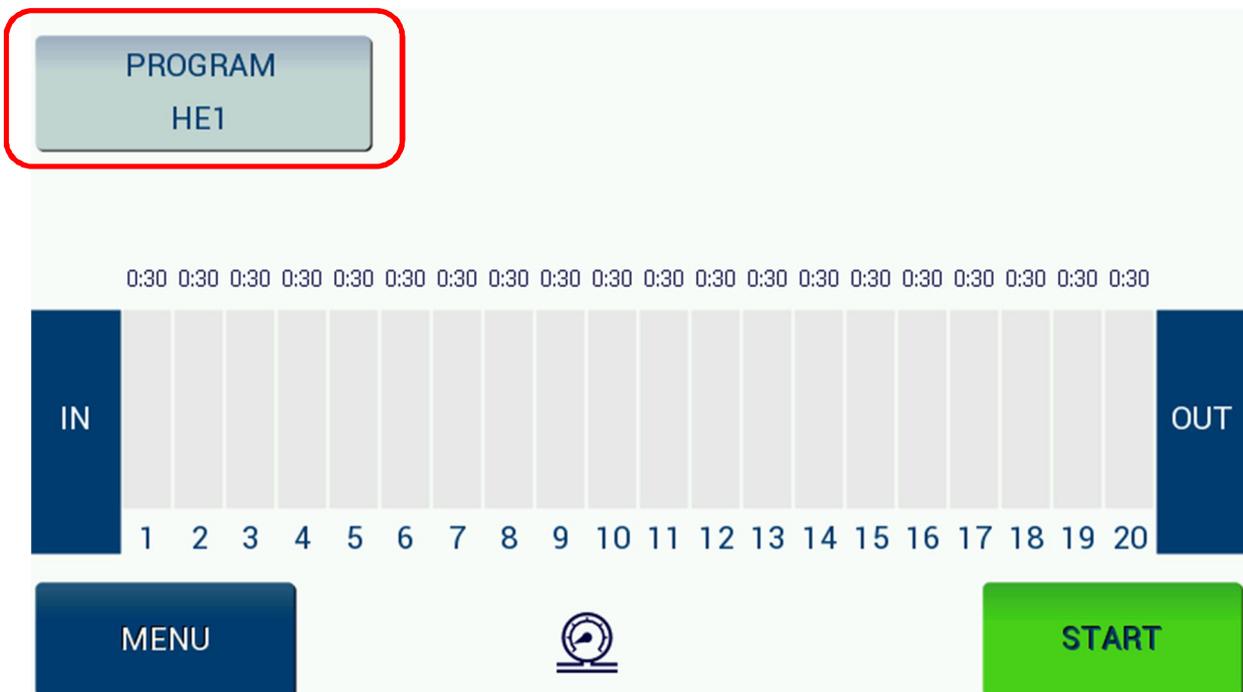
4.7.1 Place racks in the loading station

Please put the racks you want to stain into the loading station. You can place up to 5 racks into the loading station.

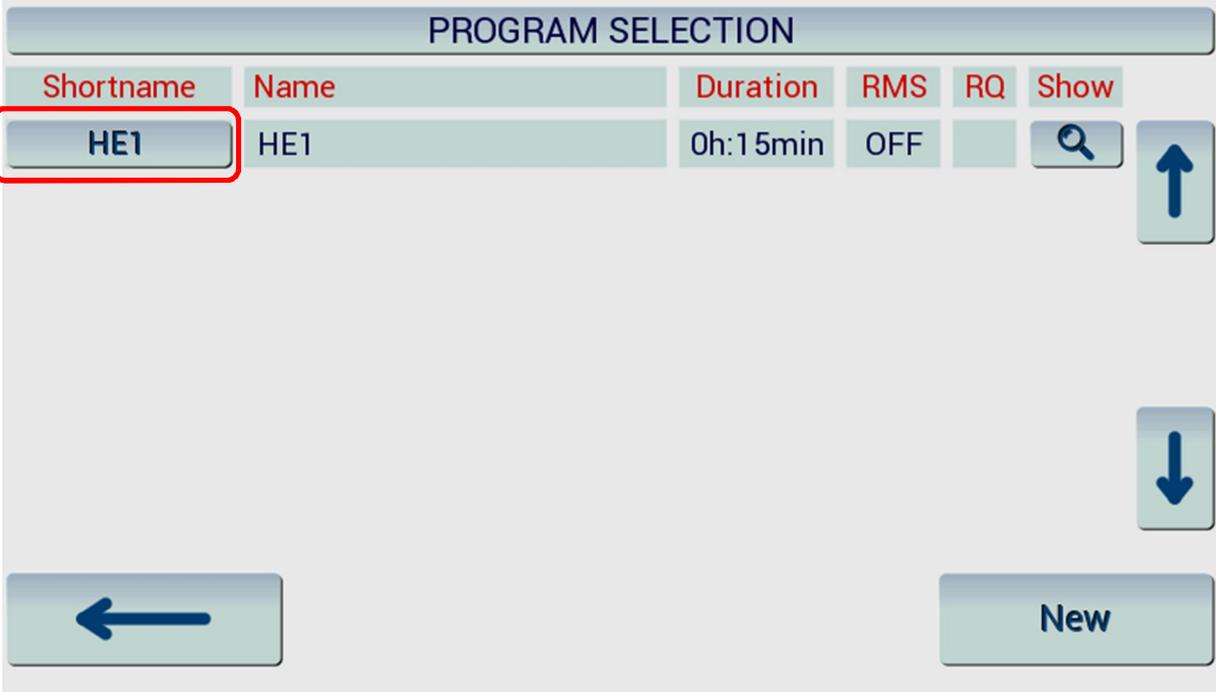


4.7.2 Select the program you want to stain

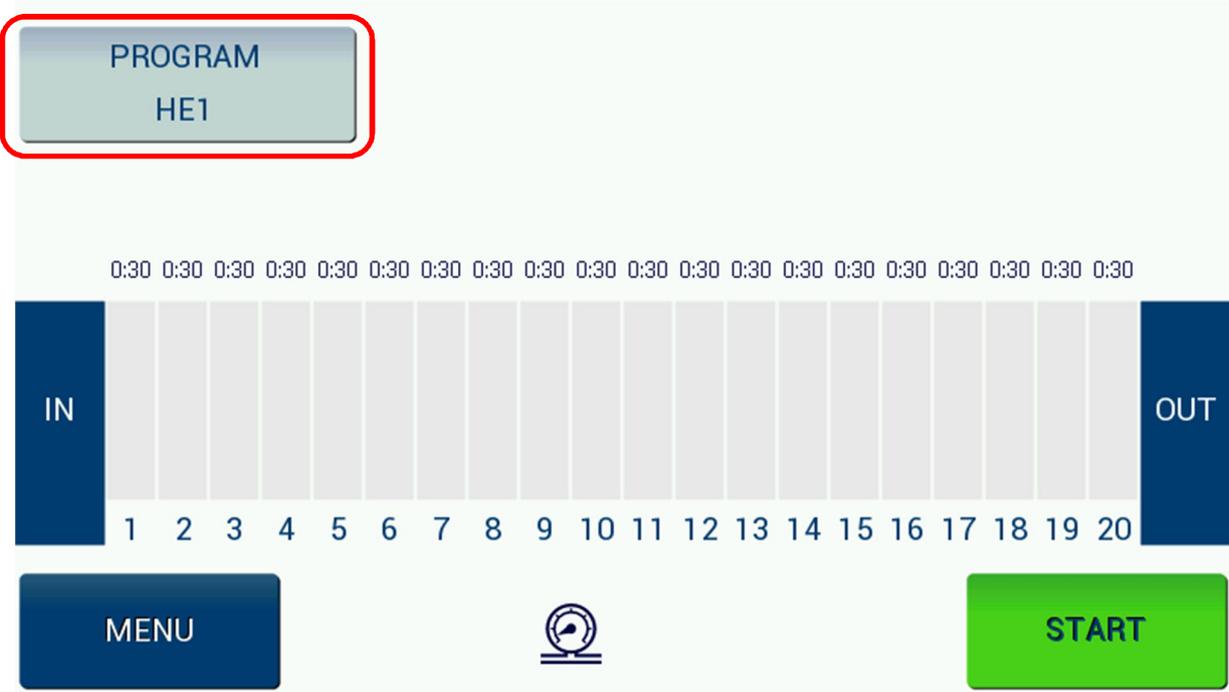
You can select the program you want to stain by pressing the current program.



You will be taken to the Program Selection menu. Just click on the short name to chose the program.

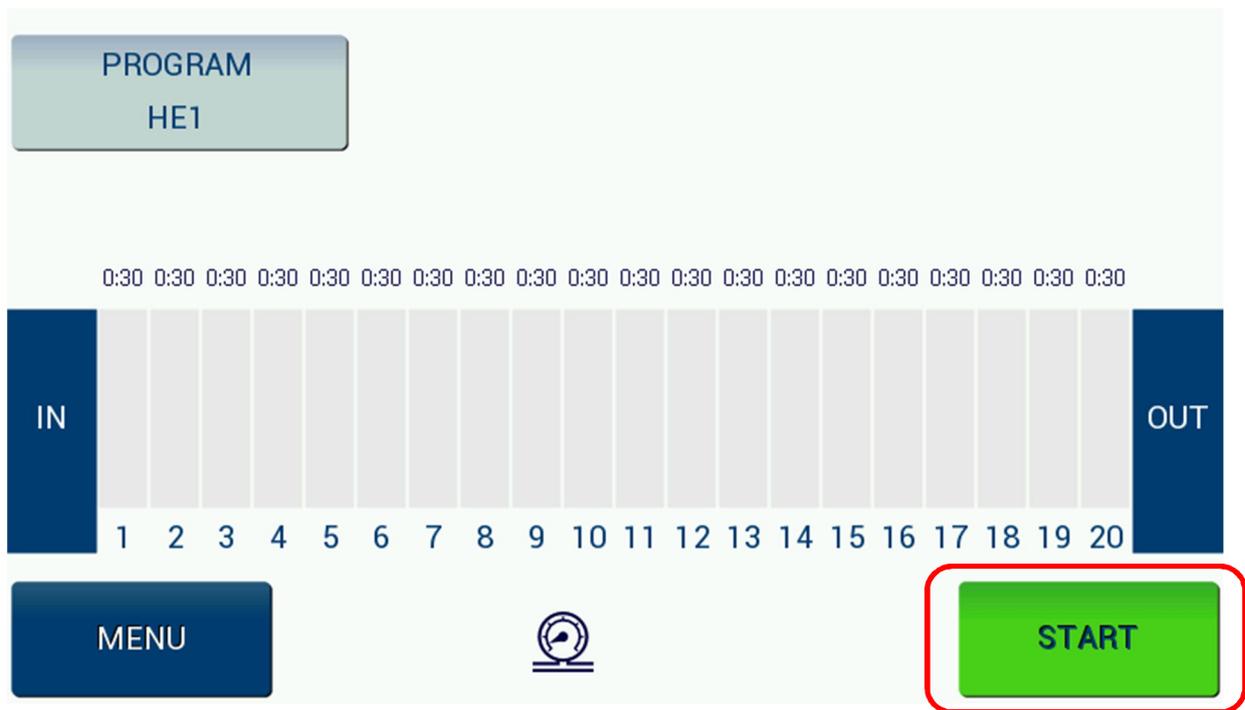


Once selected you will be back at the overview screen and the selected program is visible.

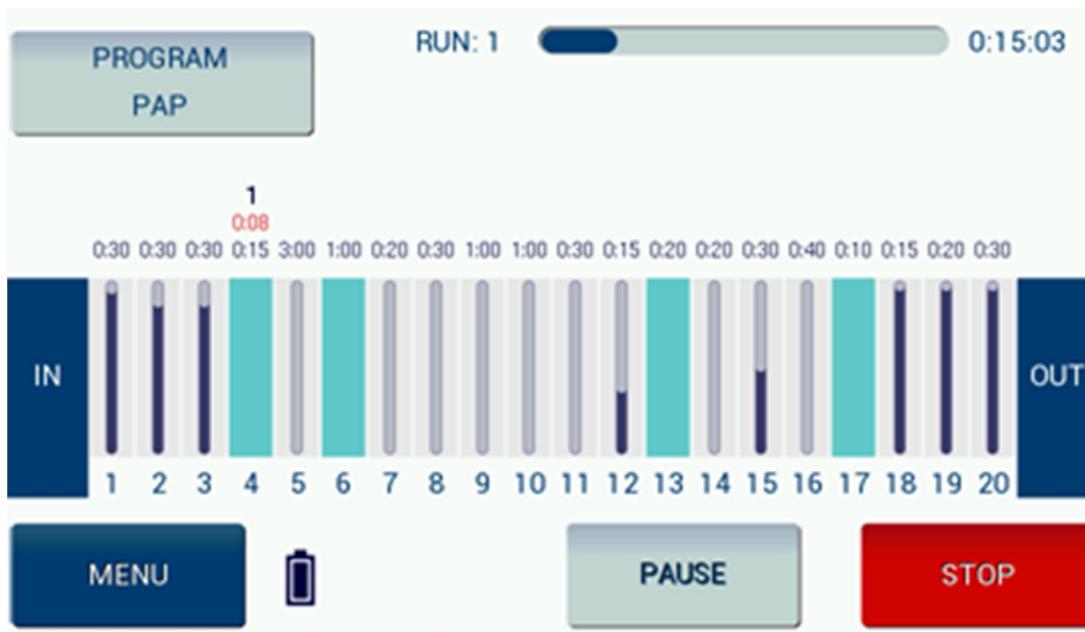


4.7.3 Start the program

You start the program by pressing the “Start” button.



Sample program – in this case PAP staining:



- Bath 1 – 3: 30 seconds - reagent
- Bath 4: 15 seconds – water
- Bath 5: 3 minutes – reagent
- Bath 6: 1 minute – water
- Bath 7: 20 seconds – reagent
- Bath 8: 30 seconds – reagent
- Bath 9 + 10: 1 minute – reagent
- Bath 11: 30 seconds – reagent
- Bath 12: 15 seconds – reagent
- Bath 13: 20 seconds – water
- Bath 14: 20 seconds – reagent
- Bath 15: 30 seconds – reagent
- Bath 16: 40 seconds – reagent
- Bath 17: 10 seconds – water
- Bath 18: 15 seconds – reagent
- Bath 19: 20 seconds – reagent
- Bath 20: 30 seconds – reagent

Blue Bars show the "consumption" of reagents (ReagentManagementSystem).

Above mentioned example show a first run. Rack is in bath no. 4 since 8 seconds.

4.7.4 Symbols during program



In mains operation, the battery is showed in grey until it is fully charged. Then the icon disappears.

In floating operation, the battery icon shows the level, dark blue with sufficient residual charge and red below 25%.

When switching off (in the buffer mode) a signal tone sounds. No new samples are recorded in floating operation.

After end of program (or crash) in floating operation, the signal tone sounds also, then then the unit switches itself off.



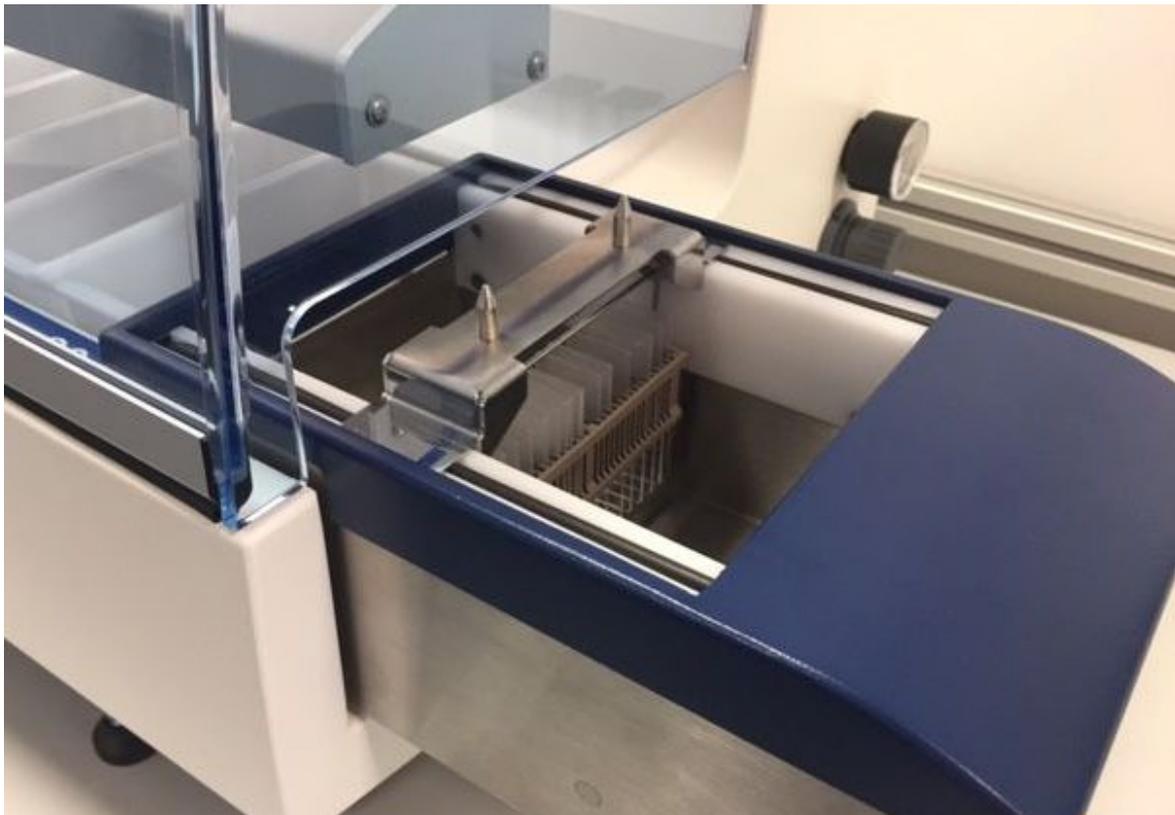
Monitoring filter runtime, change display.

End of term with icon on the main screen display PopUp with change notice, both at program startup.



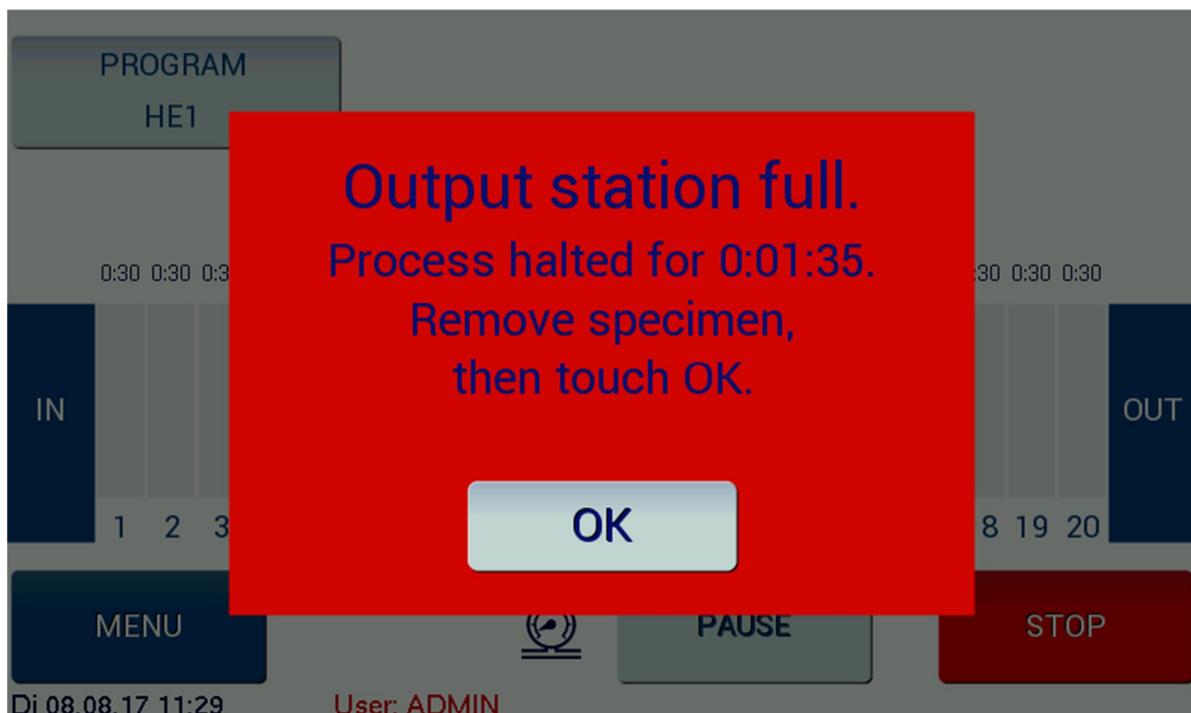
Water pressure low

4.7.5 End of program



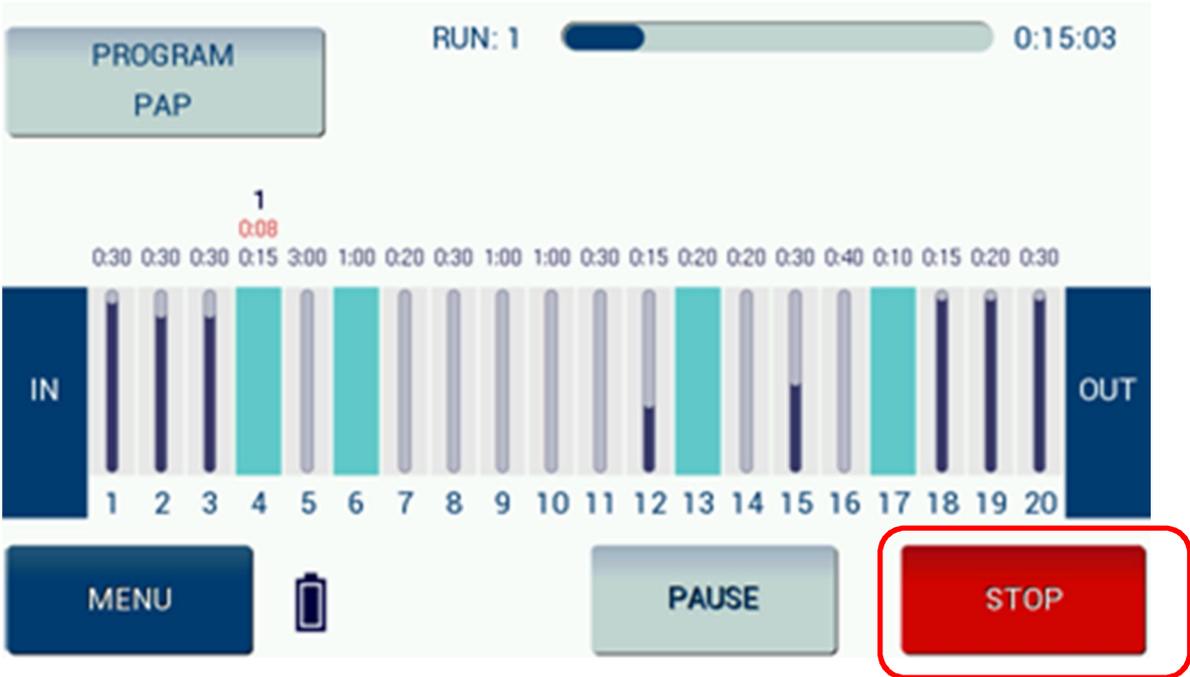
After the program is finished, racks are placed in the unload station (capacity 5 racks) and the instrument indicates by a ton signal.

In case the unload station is full, the instrument gives the following warning message:

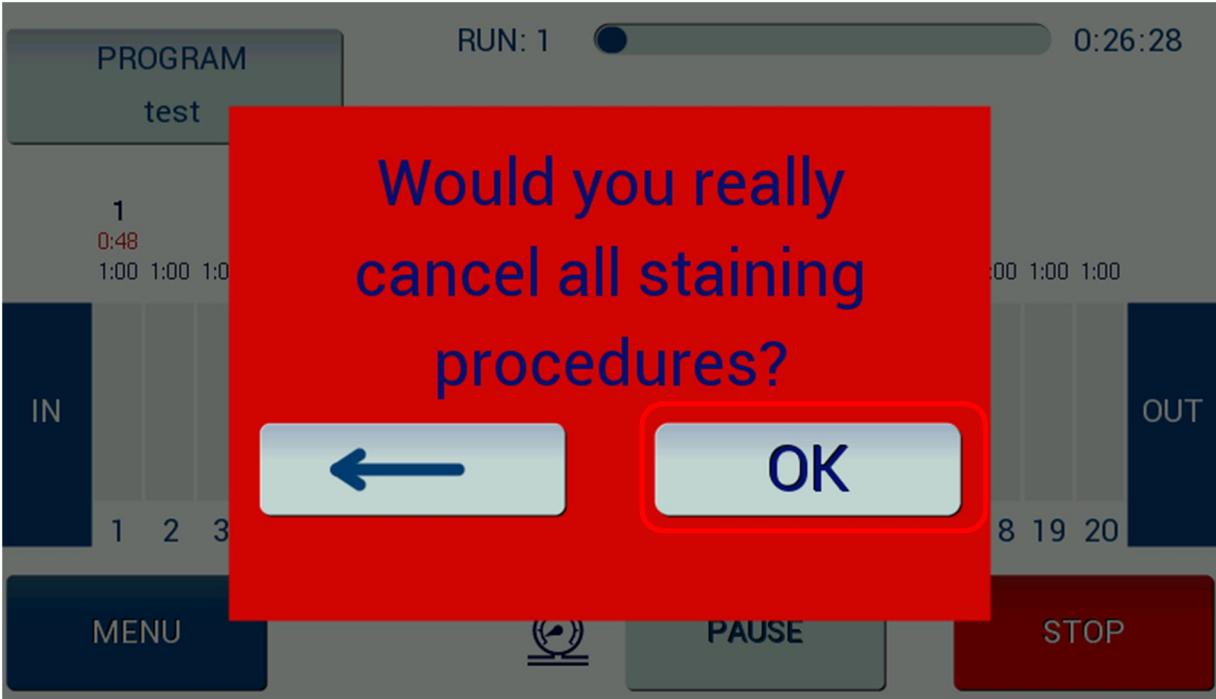


4.7.6 Stop a running program

If you want to stop a running program, press the "Stop" button.



The following message will appear. Press "OK" and the program will stop. You have to take out the racks manually.

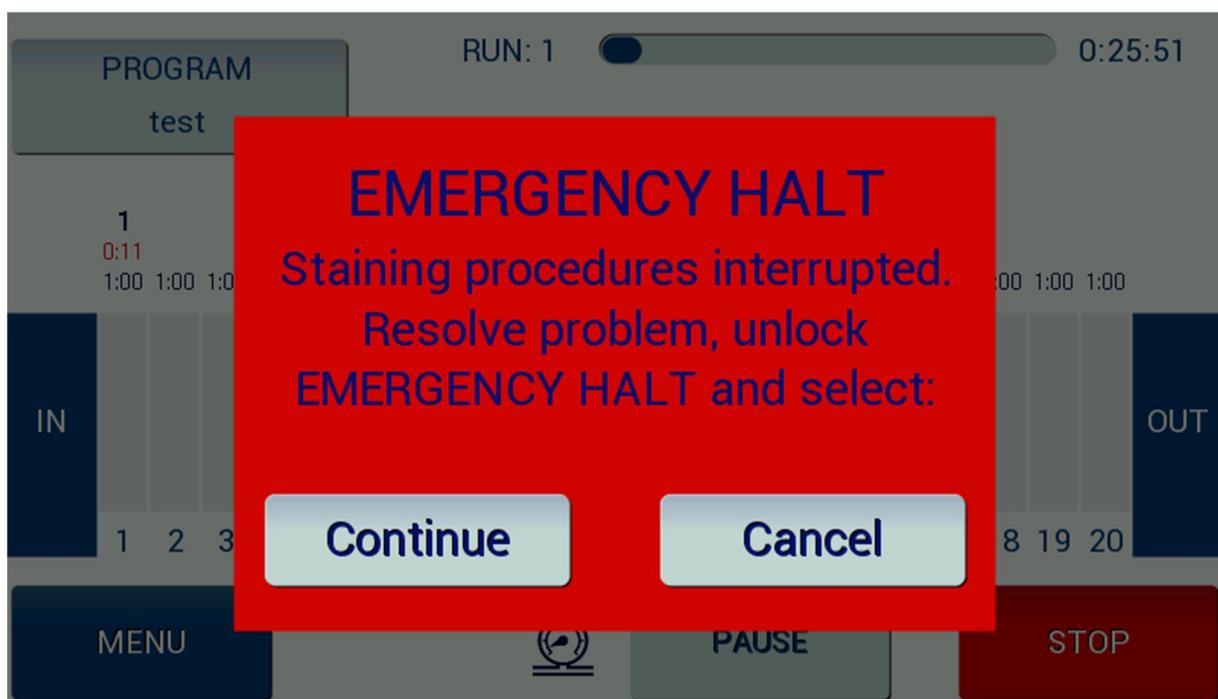


4.7.7 Emergency stop

In case of an emergency, the operation function of the cromatec can be switched off by pressing the emergency stop located at the lower front of the instrument.



To continue the program, release the emergency stop button and confirm the alarm message.

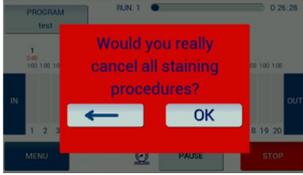
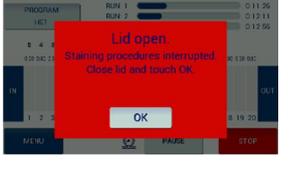


5 Errors

5.1 Notes

Any failure occurring during the operation of the cromatec is indicated by an alarm sound and message, shown on the display. Please refer to the trouble shooting list.

5.2 PopUp messages in normal operation

<p>After pressing STOP: Red PopUp "Would you really cancel all staining procedures?"</p>	 <p>Press ok to confirm or go back.</p>
<p>After confirming of cancellation: Red Info PopUp</p>	 <p>Wait while staining is being stopped.</p>
<p>After confirming of PAUSE</p>	<p>Staining procedures interrupted since hh:mm:ss Terminate PAUSE with OK</p>
<p>After pressing Emergency button: Red PopUp „EMERGENCY STOP“</p>	 <p>Staining procedures interrupted. Resolve problem, unlock EMERGENCY HALT and select: [Continue] [Cancel]</p>
<p>After canceling by "Cancel" after emergency stop: Red PopUp "EMERGENCY STOP"</p>	<p>Manually remove specimen, then touch OK. [OK]</p>
<p>After opening of hood: Red PopUp „Lid open“</p>	 <p>Staining procedures interrupted. Close lid and touch OK. [OK]</p>

<p>Flow of the filter running time: Yellow PopUp „INFO“</p>	<p>Filter usage time expired, please replace. [OK]</p>
<p>Expiration of reagent: Yellow PopUp „INFO“</p>	 <p>At least one reagent expired, please replace. [OK]</p>
<p>At start attempt despite emergency stop: Yellow PopUp "EMERGENCY HALT"</p>	<p>Resolve problem, unlock EMERGENCY HALT and select: [OK]</p>
<p>When starting with open hood: Yellow PopUp "Lid open"</p>	 <p>Close lid and touch OK. [OK]</p>
<p>When starting with "Auto" inside a program: Yellow PopUp "INFO"</p>	<p>Program invalid: Empty/Auto is allowed only right-aligned. [OK]</p>
<p>At start-up with water requirement and without pressure: Yellow PopUp "INFO"</p>	 <p>Program requires water, but pressure is too low. [OK]</p>
<p>At initial attempt with almost empty battery: Yellow PopUp "INFO"</p>	 <p>Battery voltage too low, charge before starting. [OK]</p>
<p>In the case of a start experiment with samples still attached to the arm: Yellow PopUp (State after prior emergency stop) "INFO"</p>	 <p>Specimen found at transport arm. Please remove. [OK]</p>

<p>On start with expired filter running time: Yellow PopUp "INFO"</p>	<p>Filter usage time expired please replace. [OK] (Start nevertheless possible)</p>
<p>When starting with reagents that have expired: Yellow PopUp "INFO"</p>	<p>At least one reagent expired, please replace. [OK] (Start nevertheless possible)</p>

5.3 Error messages in normal operation

<p>Motor Error: Red PopUp "MOTOR ERROR"</p>	<p>Staining procedures interrupted since hh:mm:ss [Retry] [Cancel]</p> <p>Messages: Overcurrent horizontal Overcurrent vertical Timeout horizontal Timeout vertical</p>
<p>Failure of the magnetic control: Red PopUp "MAGNET ERROR"</p>	<p>Specimen transport impossible Manually remove specimen and call service</p> <p>Note: no OK-Button, present programm will be cancelled!</p>
<p>Downstream pressure: Red PopUp "ERROR"</p>	<p>Water pressure too low. [OK]</p>
<p>Leakage: Red PopUp "ERROR"</p>	<p>Water leakage detected. -- places see below. -- [OK]</p> <p>Places: (container) (enclosure) (container and enclosure)</p>
<p>No more samples in the enema during the admission test: Yellow PopUp "INFO"</p>	<p>No specimen found in input station. [OK]</p>
<p>Other holders in the system when attempting to take sample holders: Yellow PopUp "INFO"</p>	<p>Specimen found in stations 1-20. Please remove. [OK]</p>
<p>Output station full: Red PopUp "Output station full"</p>	<p>Process hold for hh:mm:ss. Remove specimen, then touch OK. [OK]</p>
<p>Glue the sample holder to the arm (raised too much): Red PopUp „ERROR"</p>	<p>Specimen sticking at n1 n2 n3 (Station number) Correct, then touch OK. [OK]</p>

Specimen lost (while lifting down): Red PopUp „ERROR“	Specimen lost at n1 n2 n3 (station no.) Correct, then touch OK. [OK]
Specimen holder stick or lost (combination 8+9): Red PopUp „ERROR“	Specimen sticking at n1 n2 n3 (station no.) Specimen lost at n4 n5 n6 (station no.) Correct, then touch OK. [OK]
Unexpected samples in the unit (detected during lowering): Red PopUp „ERROR“	Alien specimen found at n1 n2 n3 (station no.) Correct, then touch OK. [OK]
Fail-safe sensor in run-in station (continuous signal): Red PopUp „ERROR“	Input station sensor failure. [OK]
Invalid internal state: Red PopUp „SYSTEM ERROR“	Invalid internal state. Touch OK and shutdown. [OK]
Display not working or not connected correctly	Lights are flashing



Never use deformed baskets. A damaged basket can stop the staining process.

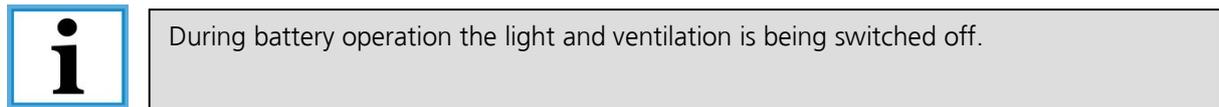
Fill the baths up to the mark. Check the filling level daily.

5.4 Power failure

The cromatec has a built in battery to allow the unit to work even in a case of power failure. In case of a power failure the display shows the following symbol:



The operation is continued using the emergency power supply. As the battery gets loaded during operation, a fully loaded device can be operated using the battery. However, new racks shall not be placed during indicated battery operation.



During battery operation the light and ventilation is being switched off.

If the power comes back, the battery symbol disappears and the device turns back to regular operation, including light and ventilation. No action from the user is needed.

5.5 Hood

When the hood is opened, the instrument stops immediately and the following Red PopUp window is shown.



The cromatec will not perform any staining program while the lid is open. When the lid is opened, the ventilation will automatically be increased.

6 Cleaning

6.1 General cleaning advice

The SLEE linear stainer cromatec has a solvent resistant surface area according to the requirements of histological laboratories so that an easy cleaning can be done without problems. Only the display should be cleaned with a damp cloth.



Before starting the cleaning, please turn off the instrument. Dispose of used reagents according to the laboratory regulations in force in your country.

Do not use alcohol, detergents containing alcohol (window cleaner!), abrasive cleaning powders, solvents containing acetone or xylene.

Inner side of the cromatec:

Please remove the cuvettes and clean the stainless steel inner panels carefully with a regular cleaner.

Transport system:

Be careful with the lower side, where the magnets are located. In normal operation it should be sufficient to wipe with a moistured cloth.

Outside surfaces:

Please clean the outside surfaces with a mild detergent and subsequently wipe down with a moistened cloth.

For the window, use a moisture cloth.

Screen:

Please use a commercial screen cleaner for cleaning the touch screen.

Cuvettes:

It is also possible to clean the staining cuvettes with a usual dish washer. Please consider the chemical rests in the troughs and their harmful influences to the environment.

Inlet/Outlet hose:

Please check weekly the waste water drain hose for accumulated dirt, particularly for algae. Clean whenever necessary.

6.2 Disposal

The instrument or parts of the instrument must be disposed of according to existing local applicable regulations.



Do not expose the instrument to regular domestic or industry waste. It contains electrical parts that can be dangerous to the environment!

Optimized H&E program

Station	Reagent	Time
1	Xylol	1,30
2	Isopropanol	1,30
3	Isopropanol	1,30
4	96% Ethanol	1,30
5	96% Ethanol	1,30
6	Water	1,30
7	Hämalaun	1,30
8	Hämalaun	1,30
9	Water	1,30
10	Eisessig	1,30
11	Running Water	1,30
12	Running Water	1,30
13	96% Ethanol	1,30
14	96% Ethanol	1,30
15	Eosin	1,30
16	96% Ethanol	1,30
17	96% Ethanol	1,30
18	Isopropanol	1,30
19	Isopropanol	1,30
20	Xylol	1,30

SLEE medical GmbH

Lise-Meitner-Str. 11

55129 Mainz / Germany

Tel. +(49) 61 31/9 58 71-0

Fax +(49) 61 31/9 58 71-722

mail@slee.de

<http://www.slee.de>