

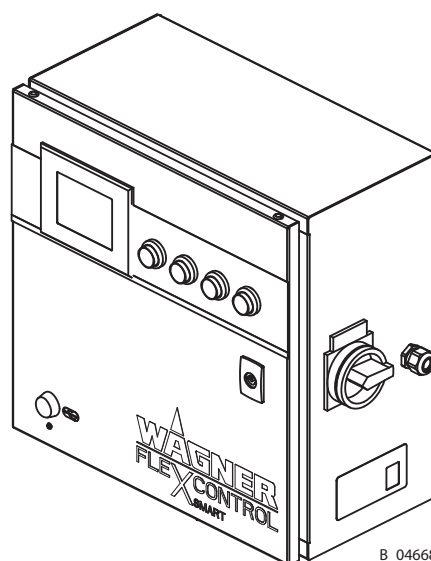


Software Documentation

FleXcontrol *smart* Software version 1.1x

Version 11/2013

Electronically Controlled 2K System for Lacquers



B_04668

CE

CE  (2)G

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1 ABOUT THIS OPERATING MANUAL



1.1 PREFACE

This software documentation contains information about the unit software. The software documentation is part of the corresponding operating manual. Always follow both instructions when using the unit. This equipment can be dangerous, if it is not operated in accordance with the data in the operating manual and in the software documentation. Observance of these documents is a prerequisite for the guarantee agreements.



1.2 WARNINGS, NOTICES, AND SYMBOLS IN THIS OPERATING MANUAL

Warning instructions in this operating manual highlight particular dangers to users and to the device and state measures for avoiding the hazard. These warning instructions fall into the following categories:



Danger - immediate risk of danger.
Non-observance will result in death or serious injury.

	 DANGER
	<p>This notice warns you of a hazard! Possible consequences of not observing the warning instructions. The signal word indicates the hazard level.</p> <p>→ The following are measures which can be taken to prevent the hazard and its consequences.</p>

Warning - possible imminent danger.
Non-observance may result in death or serious injury.

	 WARNING
	<p>This notice warns you of a hazard! Possible consequences of not observing the warning instructions. The signal word indicates the hazard level.</p> <p>→ The following are measures which can be taken to prevent the hazard and its consequences.</p>

Caution - a possibly hazardous situation.
Non-observance may result in minor injury.

	 CAUTION
	<p>This notice warns you of a hazard! Possible consequences of not observing the warning instructions. The signal word indicates the hazard level.</p> <p>→ The following are measures which can be taken to prevent the hazard and its consequences.</p>

Notice - a possibly hazardous situation.
Non-observance may result in material damage.

NOTICE	
<p>This notice warns you of a hazard! Possible consequences of not observing the warning instructions. The signal word indicates the hazard level.</p> <p>→ The following are measures which can be taken to prevent the hazard and its consequences.</p>	

Note - provides information about particular characteristics and how to proceed.

1.3 LANGUAGES

This **Flexcontrol smart software documentation** is available in the following languages:

Language	Order No.
German	2341825
English	2341826

→ **Flexcontrol smart operating manual:**

Language	Order No.
German	2341812
English	2341820
French	2341822
Spanish	2341823
Italian	2341824

→ **Flexcontrol smart spare parts catalog:**

Language	Order No.
German	2341830
English	2341831

1.4 ABBREVIATIONS

Stk	Number of pieces
Pos	Position
K	Marking in the spare parts lists
Order No.	Order number
1K	One component
2K	Two components
3K	Three components
AIS	Adaptive Injection System
AIS-B	AIS for component B
AIS-C	AIS for component C
Q	Flow

Short designations for system

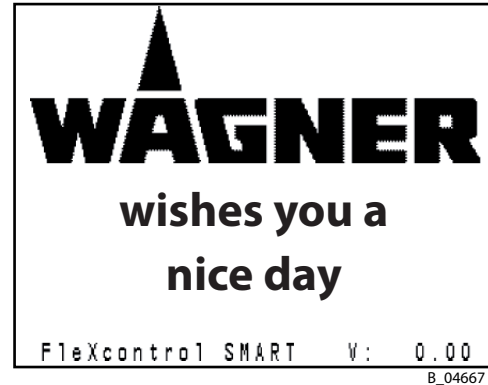
Flexcontrol smart	Non Ex version of Flexcontrol smart
Flexcontrol smart Ex	Ex version of Flexcontrol smart

2 CONTROLLER PRINCIPLES


2.1 START PAGE

Once the controller has been switched on with the main switch, the start page with details of the software version appears briefly.



When switched on for the very first time, initialization starts with a prompt to choose various basic settings (language, measurement unit etc.).



2.2 SELECTING LANGUAGE

1. [Menu] button (second button in bottom row)
2. 
3. Touch language: [English]

2.3 OPERATION

	<p>Some buttons are emphasized using reversed colors (on screen with light background). The emphasized buttons indicate our current location.</p>
	<p>All fields with frames can be touched. For example, to trigger an action, select a different recipe, or enter a number.</p>

Recurring operating elements

- [↑] Scroll up screen
- [↓] Scroll down screen
- [📄] Saves the data
- [✓] Confirm selection
- [✕] Cancel selection

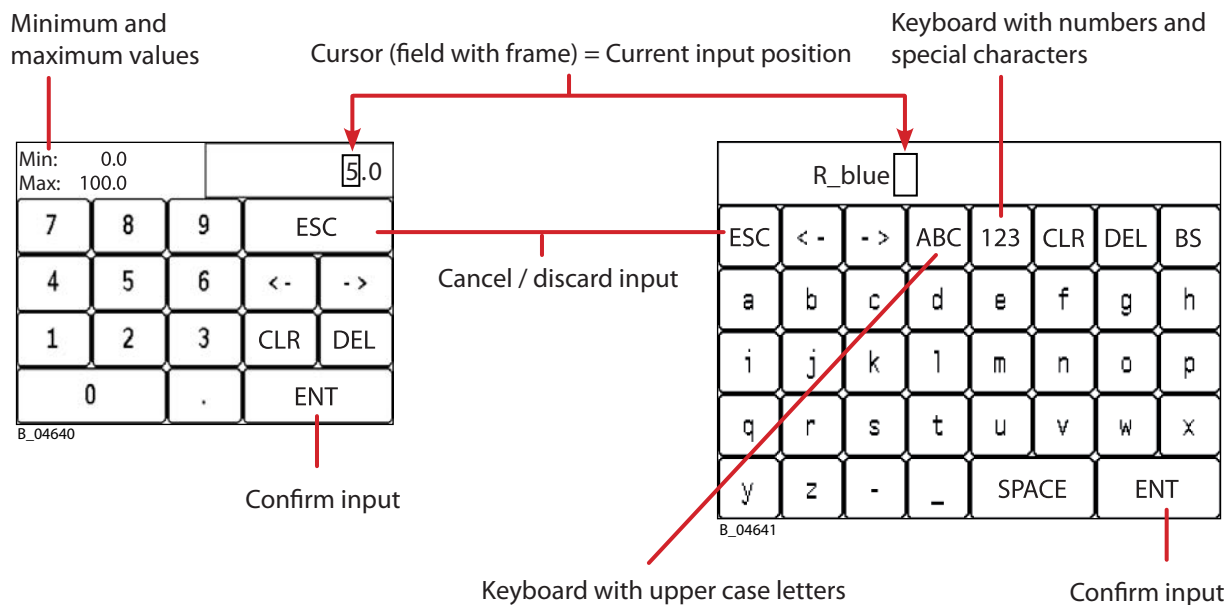
Differences in screen displays

The controller's functions differ depending on system, accessories installed, and user settings. The screens shown in the following chapters may therefore contain additional input options, or some of the buttons and fields shown may not be present in your version.

→ The screen will only ever show what is actually installed.

2.3.1 KEYBOARD INPUT

A keyboard with numbers or letters may appear when fields with frames are touched. Input is confirmed with [ENT] or discarded with [ESC].



Keyboard Controls

- [ESC] Escape / Cancel
- [→] Move cursor to right
- [←] Move cursor to left
- [ENT] Enter / Confirm input
- [CLR] Clear / Delete all
- [DEL] Delete / Delete character
- [BS] BackSpace / Delete character to left of cursor (backspace)
- [SPACE] Space

Changing over keyboard with letters

- [ABC] Switch to keyboard with upper case letters
- [abc] Switch to keyboard with lower case letters
- [123] Switch to keyboard with numbers and special characters

2.4 PASSWORDS

Some functions and input options are protected by passwords. The following password levels exist:

Password level	Responsibility	Functions
0	Painter	Spraying mode
1	Painter with control jobs	Plus enter flushing and paint recipes, diagnosis, calibration
2	Foreman	Plus system settings
3	Service customer	Plus basic system settings

The passwords, which are set by Wagner with the distribution of the equipment, are not contained for safety reasons in the manual. The valid passwords are communicated to the customer separately.

Password input

1. [Menu] button
2. If [Log Out] button appears: [Log Out] (→ The button switches to [Log In].)
3. [Log In]
4. Touch password input field.
A numerical keyboard appears.
5. Enter the password.
6. [ENT]
The password level is displayed briefly, for example: "Level 1".
The menu buttons for the corresponding password level then appear.

3 SPRAYING MODE

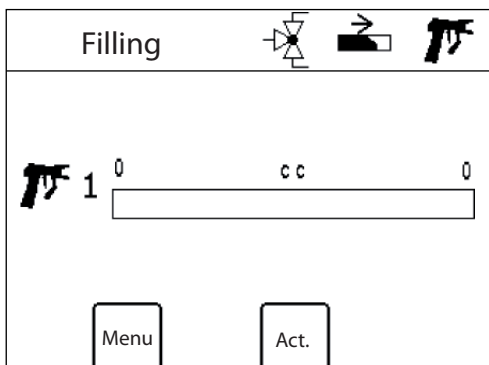
3.1 MECHANICAL PUSHBUTTONS

The system's basic functions are controlled by four mechanical pushbuttons:

START	STOP	FLUSHING	RECIPE CHANGE
Starts spraying mode. Lights up green as soon as the mixed product is in the gun and the system is ready for spraying. The AirCoat air is activated (option).	Ends the spraying or flushing process. (Depending on setting, it may not be possible to end the flushing process early.) Alarm → Lights up red. Warning → Flashes red.	Starts final flushing of the last paint recipe used (or possibly flushing from external mixer). Lights up blue during flushing process.	Switches to next paint recipe. STOP + recipe change → jumps 10 steps.

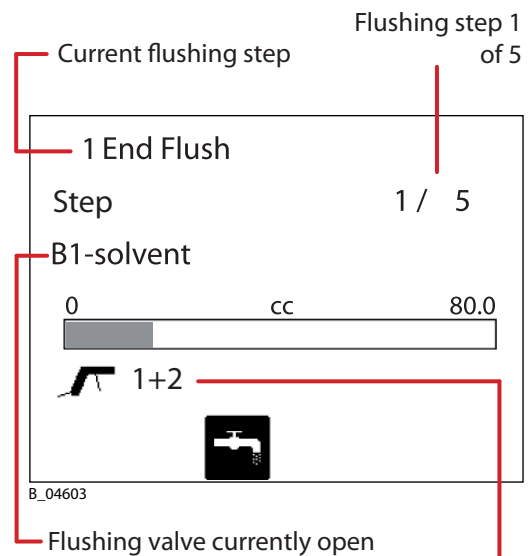
Filling
During filling, three screens in turn inform you of filling progress:

- 1. From product valves to mixer.
- 2. From mixer to splitter valve.
- 3. From splitter valve to gun.



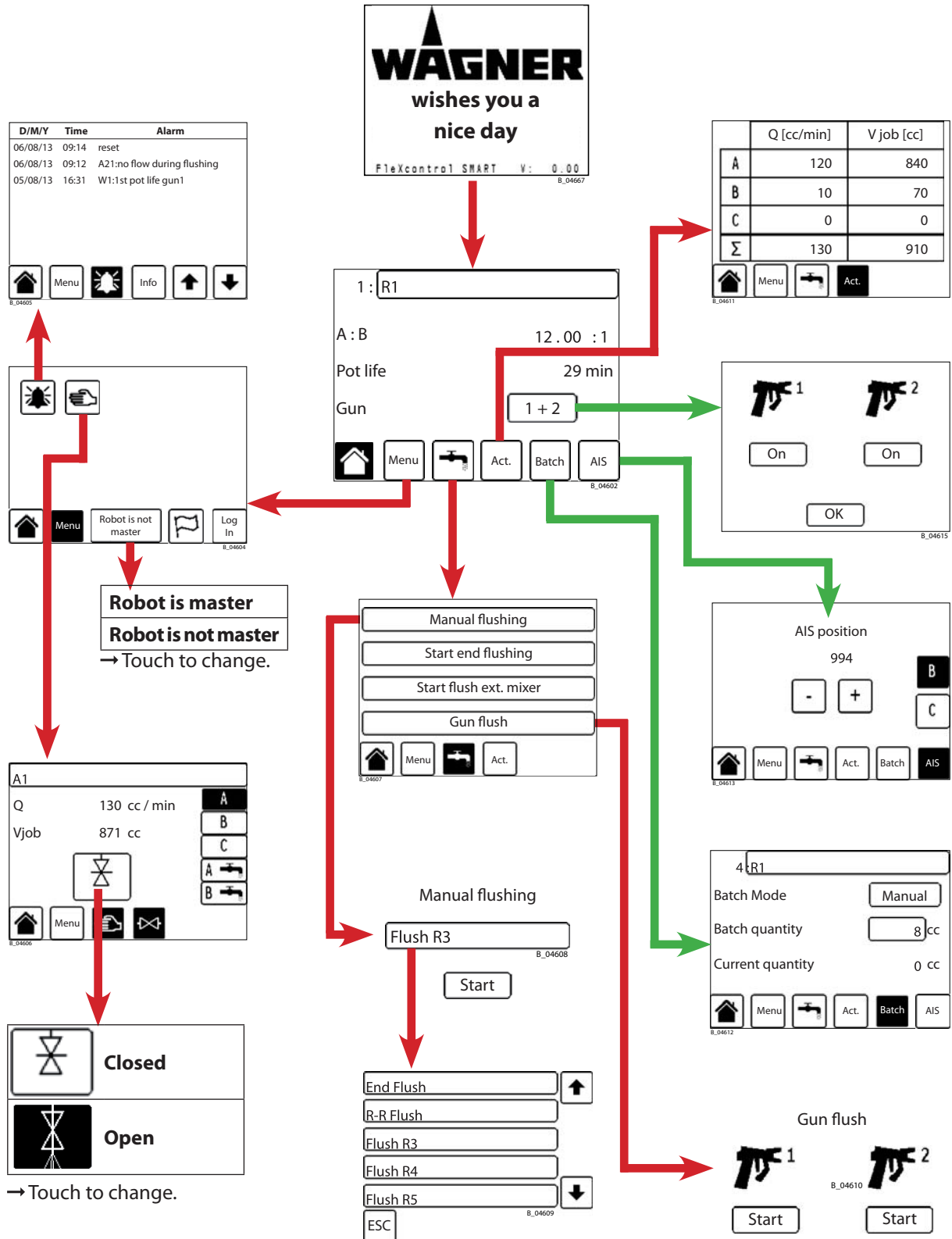
B_04617

Flushing
During flushing the screen informs you of the individual flushing steps.

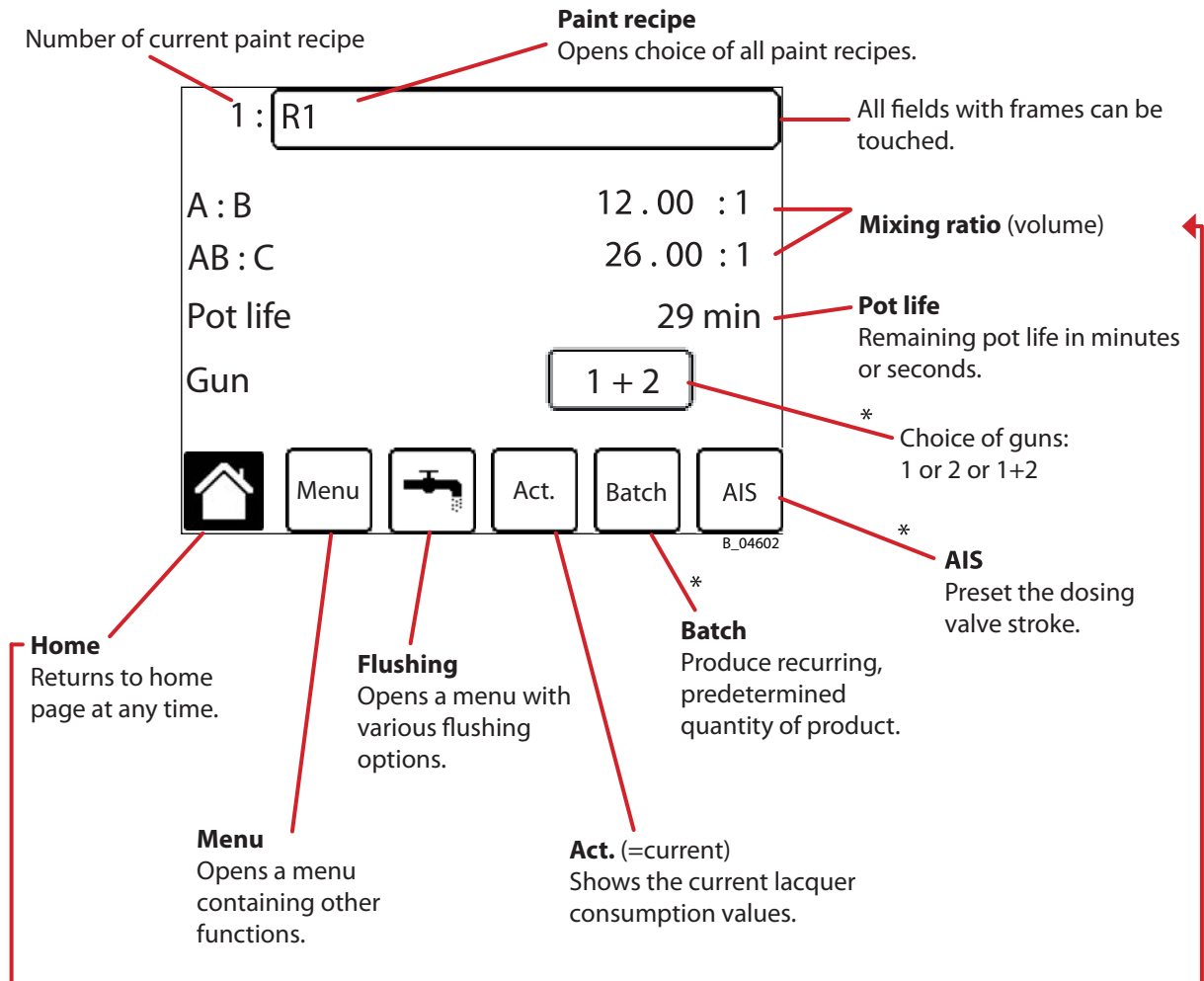


Guns to open during this flushing step

3.2 OVERVIEW OF SPRAYING MODE



3.3 HOME PAGE



The 'Home' button is emphasized using reversed colors – on screen with light background. This shows us our current location: on the home page.

* Only present with corresponding setting (with password level 3, see Chapter 6.1).

Mixing ratio (volume)

Display	Examples		
2K	A : B 12.00 : 1		
2K, percentage	B 8.33 % of A		
3K	A : B 12.00 : 1 A : C 24.00 : 1	A : B 12.00 : 1 AB : C 26.00 : 1	A : C 24.00 : 1 AC : B 12.50 : 1
3K, percentage	B 8.33 % of A C 4.17 % of A	B 8.33 % of A C 3.85 % of AB	C 4.17 % of A B 8.00 % of AC

Define type of display: see Chapter 6.1.

3.3.1 PAINT RECIPE SELECTION

Go to next paint recipe



Press RECIPE CHANGE pushbutton (see Chapter 3.1).

Select other paint recipes

1. Touch paint recipe field:

1 :

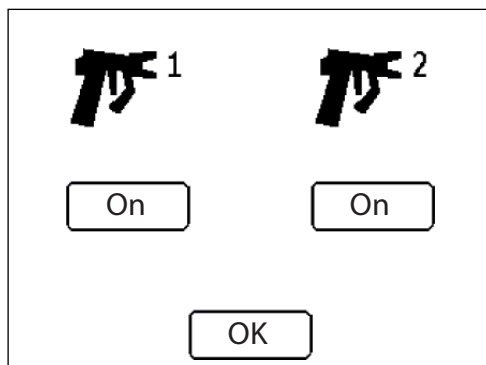
2. A list of the paint recipes available appears.
If necessary, use arrow keys to page up or down.
3. Touch desired paint recipe.

3.3.2 GUN SELECTION

1. Touch gun field:

Gun

2. Switch guns off or on individually.

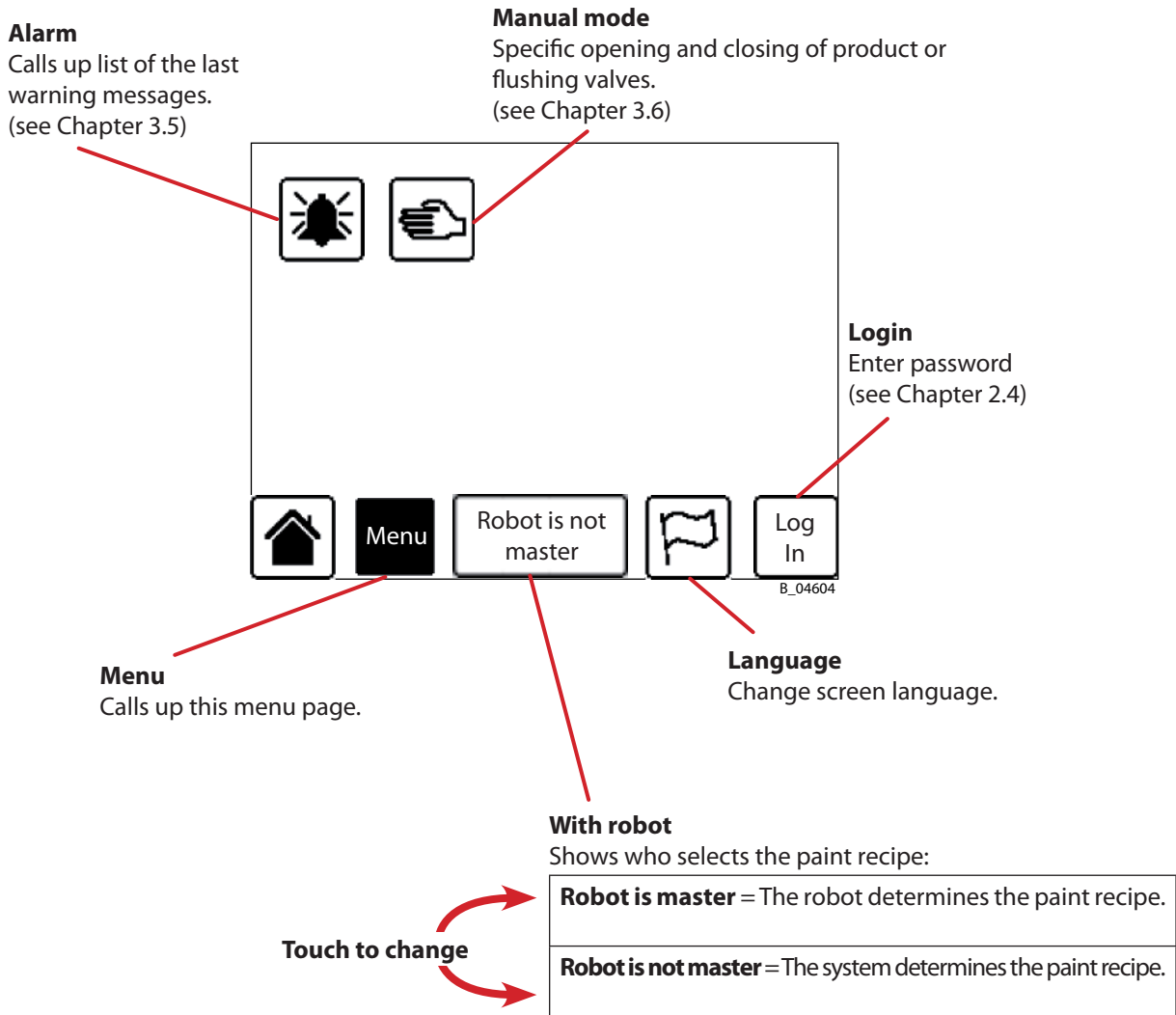


B_04615

3. OK.

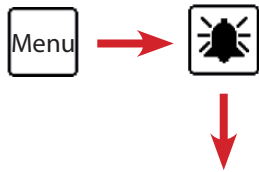
3.4 MENU

The menu page can be accessed at any time using the [Menu] button:



If a password is entered, more menu buttons and functions are available.

3.5 ALARM MESSAGES AND WARNING MESSAGES



D/M/Y	Time	Alarm
06/08/13	09:05	reset
06/08/13	09:03	W2:1st pot life gun1
06/08/13	09:03	W17:1st pot life to spl.valve
06/08/13	09:02	W1:1st pot life gun1
06/08/13	09:01	A21:no flow during flushing

B_04605

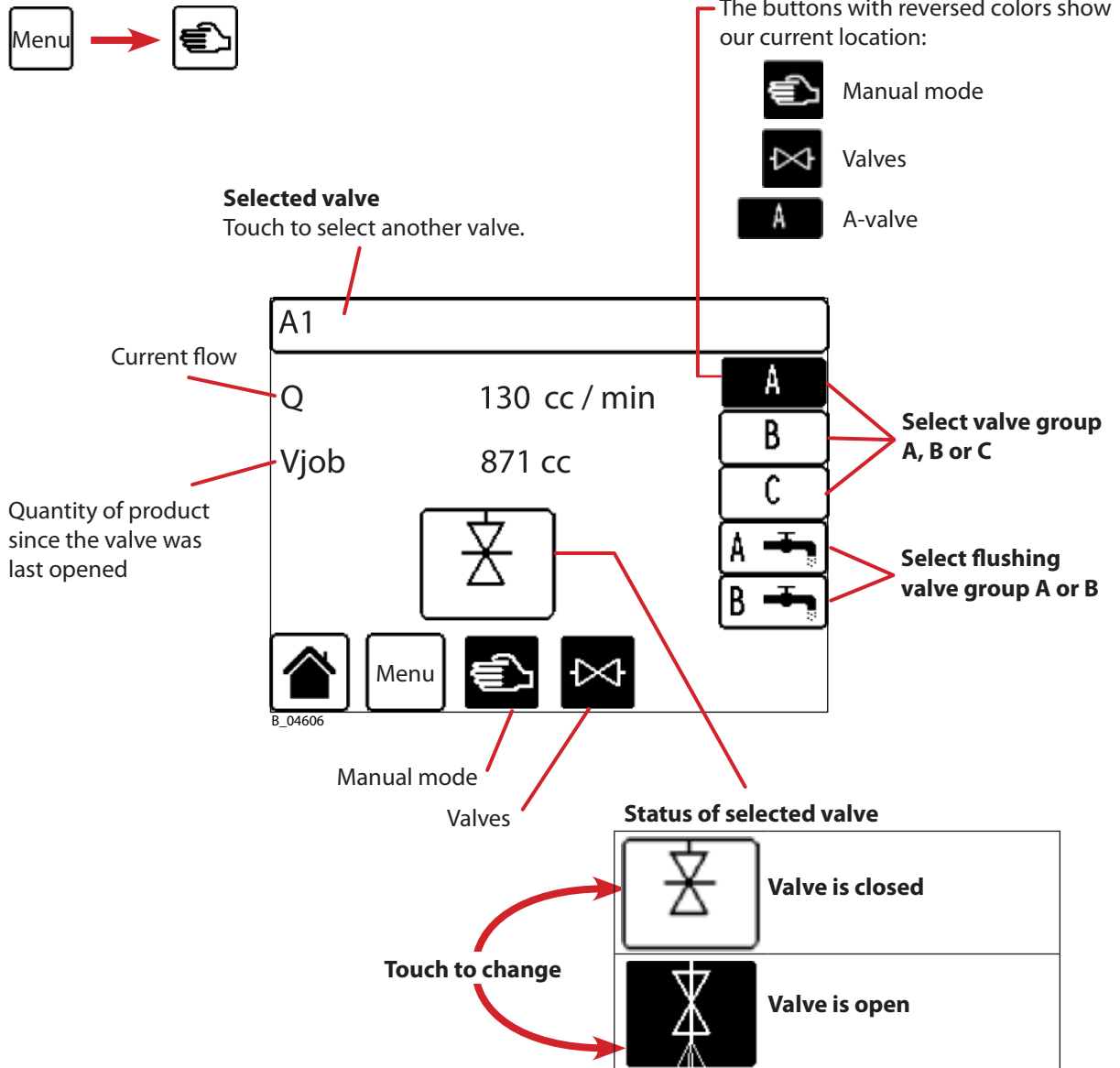
Arrow buttons
To highlight a line / alarm message.

Info
Shows more information about the alarm in the highlighted line.

List of all alarm messages + fault rectification

→ See operating manual (troubleshooting)

3.6 MANUAL MODE: OPENING VALVES



Manual mode is used for troubleshooting or to fill a pump, for example.

Only one valve can be opened at any one time. If another valve is touched, the controller closes all valves.

With a gun flush box, a valve for the gun is also opened: either for gun 1 (if gun 1 or 1+2 is selected on the home page), or for gun 2 (if gun 2 is selected on the home page).

Open several valves / output signals at the same time

→ With password level 3, see Chapter 6.2.

3.7 FLUSHING

Start predefined flushing recipe

→ see Chapter 3.7.1.

Start other flushing recipes

In screen on home page:



Start flushing recipe manually

Manual flush

End Flush
B_04608

Start

Select from flushing recipe list

End Flush



R-R Flush

Flush R3

Flush R4

Flush R5



ESC
B_04609

Start end flushing
Starts end flushing of the last paint recipe used

With external mixer
Flush directly from external mixer. The product hoses between valves and mixer are not flushed.

Flush from splitter valve.
The product hoses between valves and splitter valve are not flushed. The option only appears if there is a splitter valve with flushing and "Flush gun separately" is set.

B_04607

Manual flushing

Start end flushing

Start flush ext. mixer

Gun flush

Home Menu Act.

Flushing

Gun flush



Start



B_04610

Start

3.7.1 STARTING PREDEFINED FLUSHING RECIPE



The FLUSHING pushbutton normally starts end flushing of the last paint recipe used (see Chapter 3.1).

The end flushing ("End") is defined in the paint recipe (see Chapter 4.6.2).

Flush with external mixer

Setting "Flushing ext. mixer is standard" -*	FLUSHING pushbutton
On	Starts mixer flushing ("Mix") of last paint recipe used. → Flushing from external mixer.
Off	Starts end flushing ("End") of the last paint recipe used.

* see Chapter 6.1

3.8 CURRENT PRODUCT DELIVERY RATES

On the home page:



Current flow in cc per minute

Product volume in cc since last start

	Q [cc/min]	V job [cc]
A	120	840
B	10	70
C	0	0
Σ	130	910

Components

Total of all components

Act.

Current product delivery rates

B_04611

3.9 BATCH MODE

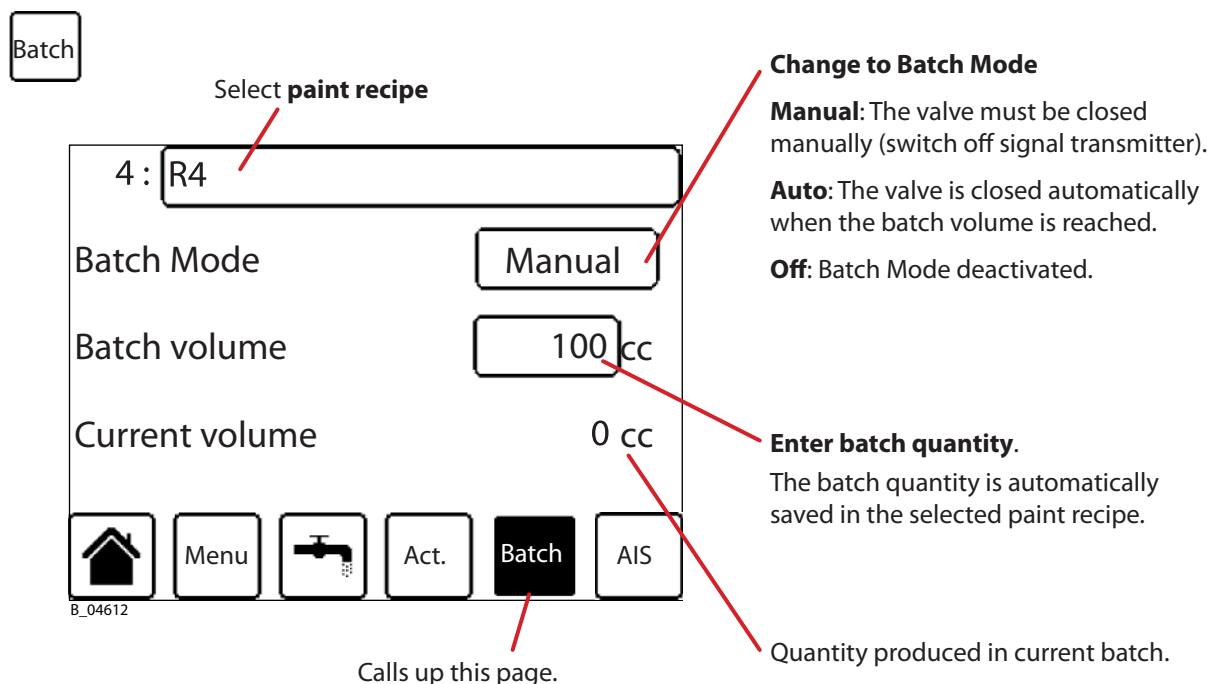
"Batch Mode" allows a recurring and pre-defined quantity of product to be discharged via an external valve.

Prerequisite: Accessories set for automatic filling + external signal transmitter (e.g. foot-operated switch)

Settings for Batch Mode (see Chapter 6.1):

- Batch Mode: **On**

The [Batch] button appears on the home page with the above setting:



Function

Each batch is started when the external signal transmitter is switched on. The external valve remains open and the 'Current quantity' increases for as long as the signal is present.

- Batch Mode **'Manual'**: The signal transmitter opens and closes the external valve.
- Batch Mode **'Auto'**: As soon as the batch quantity is reached, the valve is closed automatically. The signal may be interrupted; as soon as it is switched back on, the batch continues.

Once one batch ends, the next can be started by switching the external signal transmitter off and on. The operating cycle can be repeated any number of times.

Measuring the batch volume needed

- Batch Mode: 'Manuel'
- Activate signal transmitter and perform a batch.
- Read off the 'Current quantity' consumed and enter as 'Batch quantity' for the paint recipe selected.

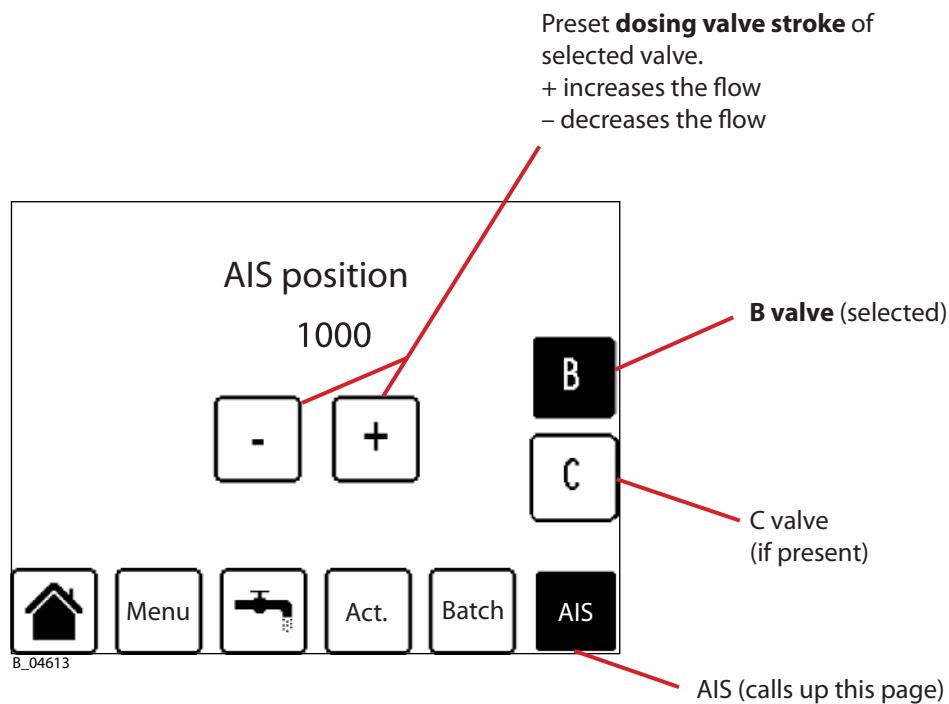
3.10 AIS: PRESETTING DOSING VALVE STROKE

The dosing valve stroke can either be controlled manually with an adjustment screw or automatically with an AIS (Adaptive Injection System).

Settings with AIS for B and / or C valve (see Chapter 6.1):

- AIS-B: **On**
- AIS-C: **On**

The [AIS] button appears on the home page with the above setting:



The AIS automatically regulates the dosing valve stroke. It can be observed on this page. Depending on the starting position, some time may be needed to reach the optimum stroke (AIS position). This alignment time can be reduced with an appropriate manual presetting.

The start value (after pressing the START pushbutton) is 1,000. A number greater than 1,000 increases the flow. A number less than 1,000 decreases the flow.

4 PASSWORD LEVEL 1

Everything that can be done in spraying mode (no password) can be done in password level 1. Other input options and functions are also available.

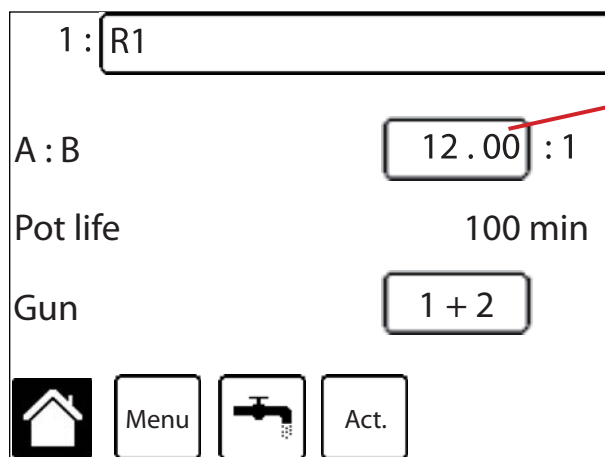
Password input

→ See Chapter 2.4

4.1 ADDITIONAL INPUT OPTIONS

Some numbers, names and settings, which are displayed in spraying mode for information only, can be changed in password level 1 and therefore have a frame around them. For example, the mixing ratio on the home page:

Home page (2K system)



B_04614

Home

Returns to this home page at any time.

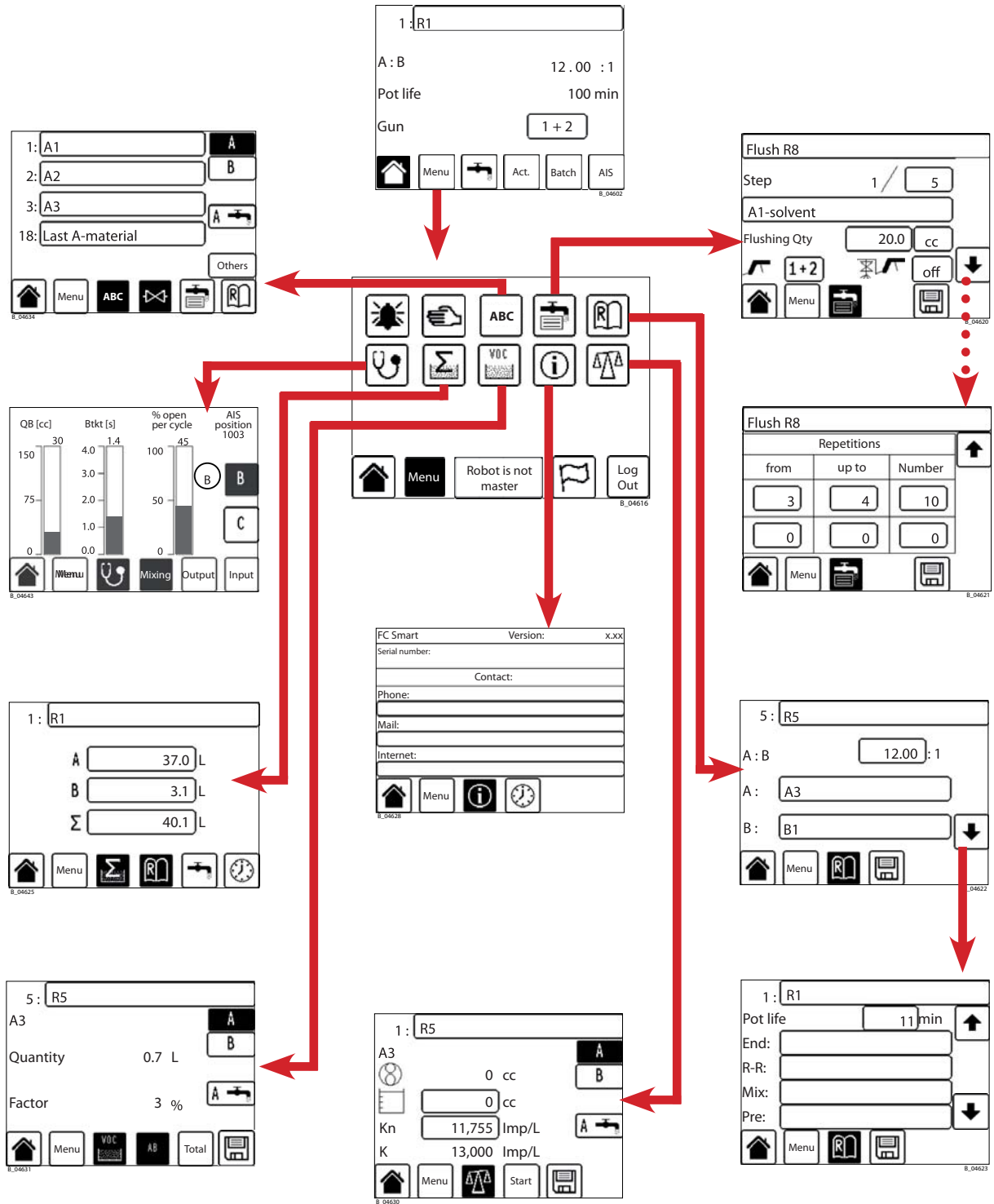
Mixing ratio

Touch to set the ratio.

→ 0.10 - 50.00

→ 0.00 for 1K

4.2 OVERVIEW OF PASSWORD LEVEL 1



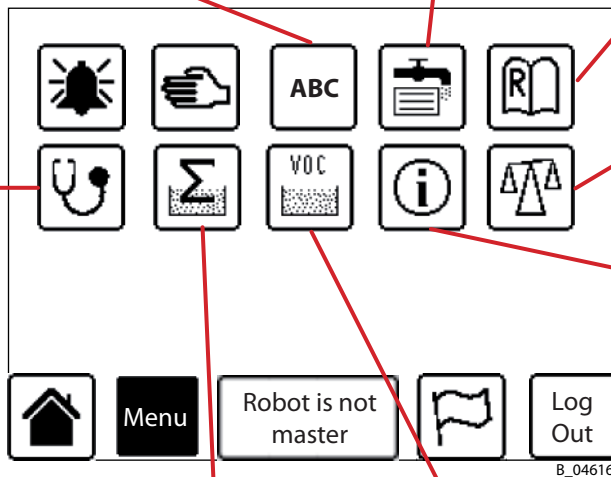
4.3 ADDITIONAL MENU FUNCTIONS

Additional functions appear on the menu page in password level 1.

Change name
Enter names of valves, flushing and paint recipes.
→ See Chapter 4.4.

Flushing recipes
Enter flushing steps
→ See Chapter 4.5.

Paint recipes
Enter paint valves, mixing ratio, and pot life, select appropriate flushing recipes.
→ See Chapter 4.6.



Calibrate the flow meters.
→ See Chapter 4.11.

Info
View software version number, set language, date and time.
→ See Chapter 4.10.

Diagnosis
View mixing and signal statuses.
→ See Chapter 4.7.

VOC quantities
View VOC quantities, enter VOC factors.
→ See Chapter 4.9.

Totals
View product consumption and working times.
→ See Chapter 4.8.

4.4 CHANGING NAMES

Menu → ABC

1: A1 A

2: A2 B

3: A3 A

18: Last A-material

Others

Other valve names

0: -----	No valve open.
14: Wait	Wait.
15: Mix Head Flush	Flushing from mixing head valve (option).
16: Ext. Mixer Flush	Flushing from external mixer (option)
17: Gun Change	Demand gun change. (With 2 guns and only one gun flush box.)

Change name

Change valve name

Change flushing recipe name

Change paint recipe name

Default name upon delivery		
Valves		
0: -----	11: B1-solvent	Flushing recipes
1: A1	12: B2-solvent	
2: A2	13: C1	
3: A3	14: Wait	
4: A4	15: Mix Head Flush	
5: A5	16: Ext. Mixer Flush	
6: A1-solvent	17: Gun Change	
7: A2-solvent	18: Last A-material	
8: AIR	19: Last B-material	
9: B1	20: Last C-material	
10: B2		
Paint recipes		
1: R1		
... to ...		
100: R100		

4.5 ENTERING FLUSHING RECIPE

Menu → [Icon]

If a new flushing recipe is to be created:

1. Increase the "Number of flushing recipes" in the settings by one (with password level 2, see Chapter 5.4).
2. Change the flushing recipe name assigned automatically (see Chapter 4.4).

Select existing flushing recipe.

Current flushing step for input on this page.

Define total number of flushing steps for this recipe.
→ 1 - 16

Select action for this flushing step.
→ flushing valve to open, or
→ Wait (=wait)
→ Gun Change (=extend gun change)

Enter flushing quantity or flushing time for this flushing step.
→ 0.0 - 9,999.9

Enter short flushing steps first (rough flushing) to begin with, then long flushing steps (approx. twice the hose content).
(No influence for "Gun Change".)

Switch between flushing quantity and flushing time.
→ cc or seconds

Go to next flushing step.
→ Repetitions can be entered after the last flushing step (see Chapter 4.5.1).

With two guns: Select guns for this flushing step.
→ 1 / 2 / 1+2

With two guns, separate flushing steps must be defined for each gun.
Only those guns which were in use are then flushed automatically.

Flushing via dump valve:
on or off.
Only visible if "Dump valve" option is activated (see Chapter 6.1).

Example with splitter valve

B_04620

4.5.1 REPETITIONS

Flushing recipe input (see Chapter 4.5)



Once the last flushing step is entered, you can page forward again. Individual step sequences can be repeated on the next page.

Flushing steps to be repeated (from - to) → 1 - 16

Repetitions		
from	up to	Number
3	4	10
0	0	0

Number of repetitions. → 0 - 99

If necessary, another sequence of steps can be repeated.

Save flushing recipe.

B_04621

Example 1

6 steps. From step 3 to step 4 with 10 repetitions:
→ Flushing steps undertaken:

1, 2, 3, 4,	Flushing program
3, 4, 3, 4, 3, 4, 3, 4, 3, 4, 3, 4, 3, 4, 3, 4,	10 repetitions from 3 to 4
5, 6.	Continue with flushing program

Example 2

8 steps. From step 3 to 7 with 2 repetitions, and from step 4 to 5 with 2 repetitions.
→ Flushing steps undertaken:

1, 2, 3, 4, 5,	Flushing program	The first option to repeat occurs after step 5.
4, 5, 4, 5,	2 repetitions from 4 to 5	The "4, 5" repetition is thereby complete. It is irrelevant for the rest of the flushing program.
6, 7,	Continue with flushing program	
3, 4, 5, 6, 7, 3, 4, 5, 6, 7,	2 repetitions from 3 to 7	
8.	Continue with flushing program	

Examples of flushing recipes


Low pressure with air/solvent flushing (for example, for EvoMotion 5-60 pump)

Step	Action	Flushing quantity	Flushing time	Remarks
1/6	Last A-material	10 cc	--	Press 10 cc from last A product used into spray hose.
2/6	Last B-material	10 cc	--	Press 10 cc from last B product used into spray hose.
3/6	A1-solvent	200 cc	--	Flushing A (Press mixed product out of the spray hose)
4/6	A1-solvent	--	1 sec	Flushing A (solvent for solvent/air flushing)
5/6	AIR	--	2 sec	Air for solvent/air flushing
6/6	A1-solvent	200 cc	--	Flushing A (fill spray hose with flushing agent again)

Repetitions:

from	up to	Quantity	
4	5	10	10 repetitions between stage 4 and 5

Medium pump (for example for Puma 28-40 pump), with dump valve

Step	Action	Flushing quantity		Remarks
1/4	Last A-material	10 cc	on	Press 10 cc from last A product used into spray hose.
2/4	Last B-material	10 cc	on	Press 10 cc from last B product used into spray hose.
3/4	A1-solvent	150 cc	on	Flushing A (flush product hose with 150 cc via dump valve)
3/4	A1-solvent	50 cc	off	Flushing A (flush product hose with 50 cc via gun)

Larger pump (for example for Leopard 48-110 pump)

Step	Action	Flushing quantity	Flushing time	Remarks
1/4	Last A-material	25 cc	--	Product A
2/4	Last B-material	25 cc	--	Product B
3/4	B1-solvent	200 cc	--	Flushing B (flush 200 cc on B side)
4/4	A1-solvent	200 cc	--	Flushing A (flush 200 cc on A side)

4.5.2 GUN FLUSHING RECIPE

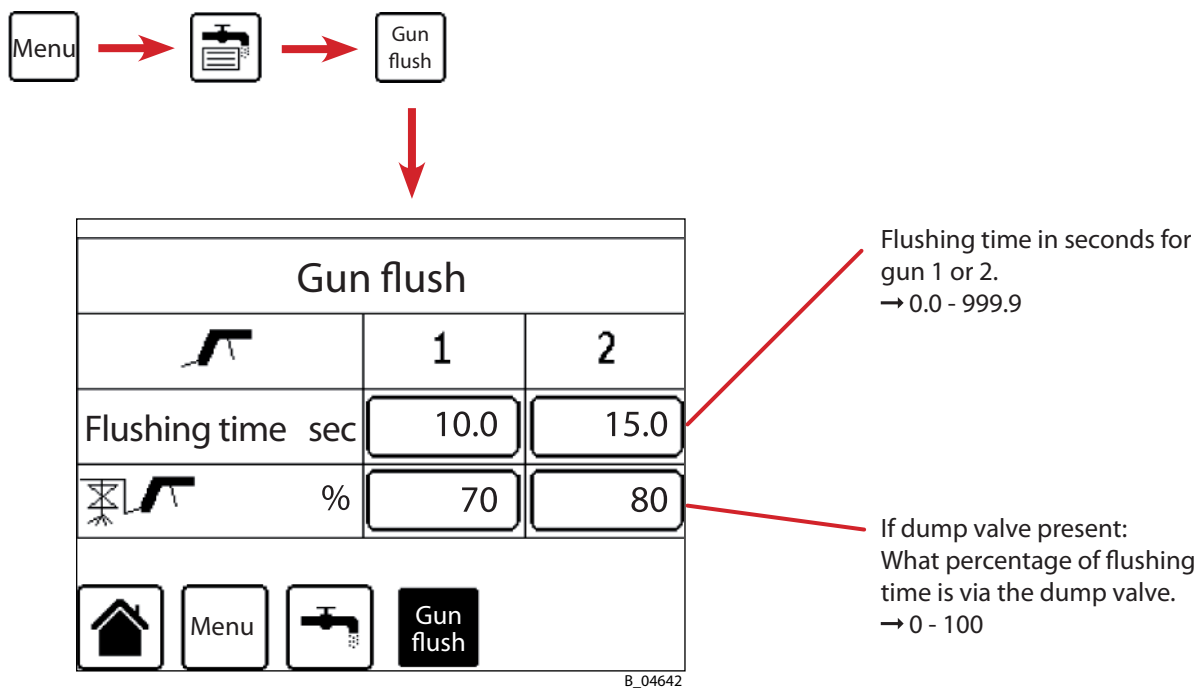
Guns flush from splitter valve. The product hoses between valves and splitter valve are not flushed.

Accessories set: Splitter set for 2 guns with flushing

Settings (with password level 3, see Chapter 6.1):

- Number of guns: **2**
- Splitter valve: **On**
- Flush guns separately: **On**
- Dump valve: **Off** (= not present) or **On**

The [Gun flush] button appears in the flushing recipes with the above settings.



The gun flushing recipe is independent of all other flushing recipes.

Any input or change in this recipe is automatically saved with immediate effect.

Start "Gun flush"

→ See Chapter 3.7.

4.6 PAINT RECIPE



4.6.1 PAINT RECIPE INPUT, PAGE 1

If a **new paint recipe** is to be created:

1. In the settings, increase the "Number of recipes" by one (with password level 2, see Chapter 5.4).
2. Change the recipe name issued automatically (see Chapter 4.4).

Select existing paint recipe.

Enter **mixing ratio (volume)** for the selected recipe
 → 0.1:1 - 50.00:1
 → 0.02% - 1000.00%
 (for 1K application: 0.00:1 or 0.00%)
 The flow is measured by volume and the mixing ratio is entered and controlled volumetrically by default.

Select **product valves** for components A and B.
 (for 1K application: B valve = "-----")

Go to next page
 → See Chapter 4.6.2

Mixing ratio

Display	Examples		
2K	A : B 12.00 : 1		
2K, percentage	B 8.33 % of A		
3K	A : B 12.00 : 1	A : B 12.00 : 1	A : C 24.00 : 1
	A : C 24.00 : 1	AB : C 26.00 : 1	AC : B 12.50 : 1
3K, percentage	B 8.33 % of A	B 8.33 % of A	C 4.17 % of A
	C 4.17 % of A	C 3.85 % of AB	B 8.00 % of AC

Define display type: with password level 3, see Chapter 6.1.

4.6.2 PAINT RECIPE INPUT PAGE 2

Select flushing recipes to use:

Is carried out, ...
... after this paint recipe has been used when end flushing is being carried out.
... after this paint recipe has been used when the recipe is changed.
... when flushing just from the external mixer to the gun.
... before using this paint recipe. (For whether a recipe change and / or end flushing comes first: see Chapter 6.1.)

* May also be missing, depending on configuration (see Chapter 6.1).

Select empty field if no flushing recipe is to be active.

Enter **pot life**
 → 0 - 3,000 minutes
 → 0 - 3,000 seconds
 Define unit of measurement:
 see Chapter 6.1.

The screenshot shows a control panel interface for entering a paint recipe. At the top, a field labeled '1:' contains the text 'R1'. Below this is a 'Pot life' field with the value '11' and the unit 'min' to its right. To the right of the 'Pot life' field is an upward-pointing arrow button. Below the 'Pot life' field are four empty input fields labeled 'End:', 'R-R:', 'Mix:', and 'Pre:'. To the right of the 'Pre:' field is a downward-pointing arrow button. At the bottom of the panel are five buttons: a home icon, a 'Menu' button, a button with a paint palette icon, a button with a document icon, and a button with a right-pointing arrow icon. Red lines connect the text in the surrounding document to specific elements in the screenshot: one points to the '11 min' field, another to the 'Save paint recipe.' button, and a third to the right-pointing arrow button.

B_04623

Save paint recipe.

Go to next page
 → See Chapter 4.6.3

4.6.3 PAINT RECIPE INPUT PAGE 3

Flow monitoring

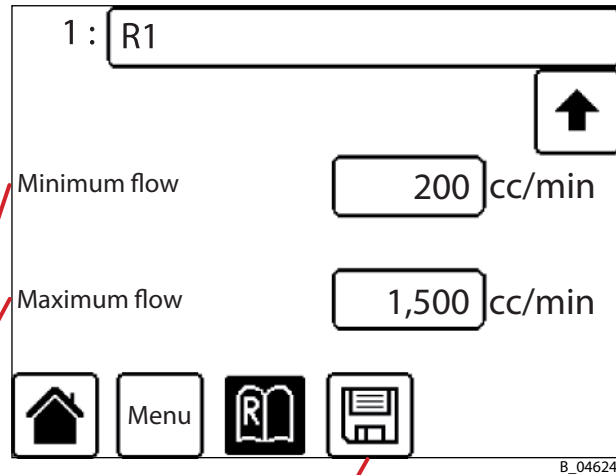
For example, with robot applications to monitor nozzle wear and nozzle blockages.

Prerequisite

Gun monitoring or flow monitor

Settings

- Activate "Flow monitoring"
→ See Chapter 6.1
- "Alarm delay Flow monitoring"
→ See Chapter 5.4



B_04624

Input for minimum and maximum flow in cc (cm³) per minute.
→ 0 - 99,999

If flow falls below or exceeds the limits, the system stops with alarm A17 or A18.

Save paint recipe.

→ Then continue with Chapter 4.6.4.

4.6.4 CALIBRATION AND VOC

New paint recipe

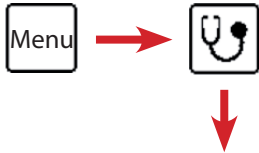
When a new paint recipe has been entered, the following steps must be undertaken:

- Enter VOC factors for the new paint recipe. → See Chapter 4.9
- Calibration: Enter K factors for the new paint recipe. → See Chapter 4.11

Changed paint recipe

If the paint recipe has been changed, you must check whether the VOC and K factors are still right for the recipe or whether they need entering again.

4.7 DIAGNOSIS

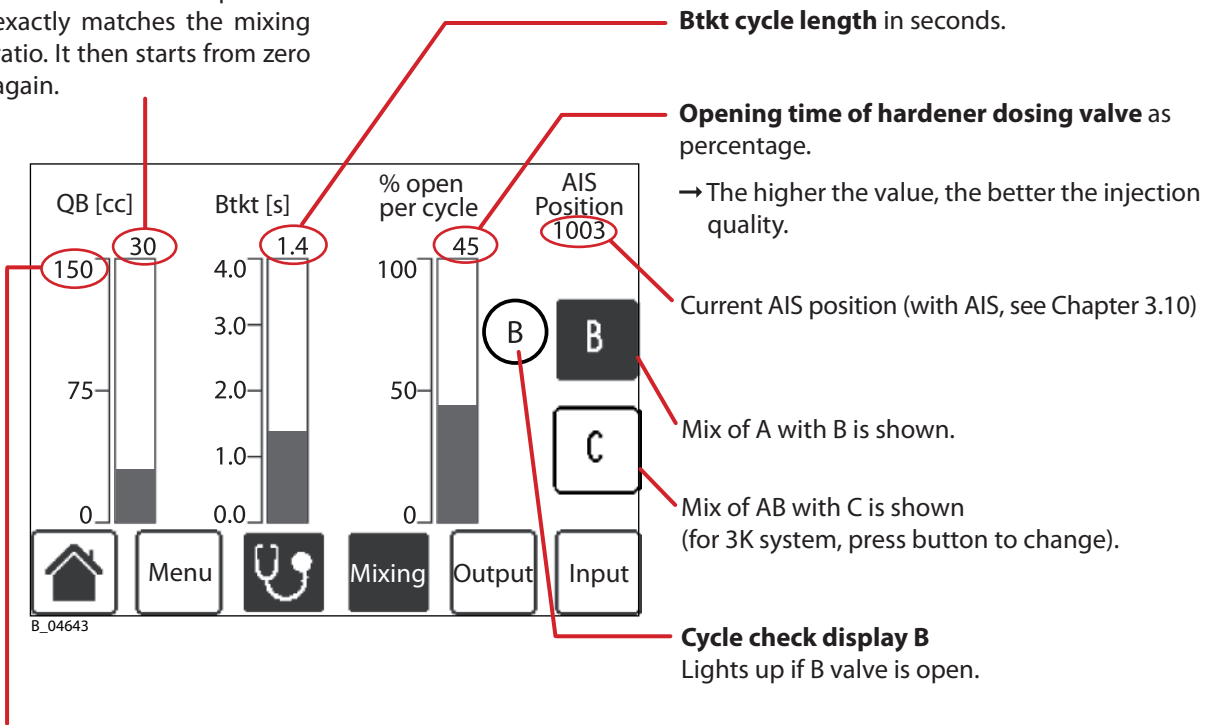


Example for mixing A with B

With and without AIS
 If the dosing valve only opens very briefly (low percentage), the difference in pressure between A and B is too great. Slowly reduce difference in pressure.

Without AIS
 Without AIS, Btkc cycle lengths of between around 0.5 and 3 seconds are good. If Btkc > 3 seconds, the difference in pressure between A and B is too great. Slowly reduce difference in pressure. If necessary, also reduce the dosing valve stroke by screwing the adjustment screw further in. You must ensure that the valve doesn't close fully.

Mixing quantity QB in cc.
 Is increased until the quantity ratio of A and B components exactly matches the mixing ratio. It then starts from zero again.



Check quantity QB-Control in cc.

If this quantity is exceeded, the system switches to fault.

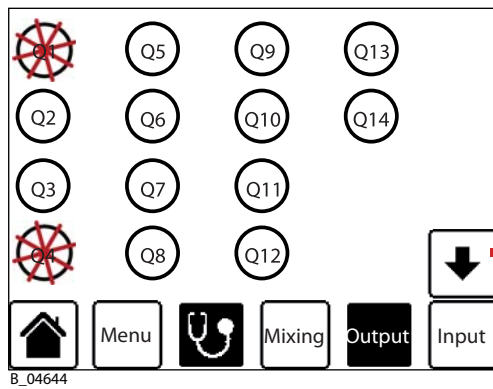
→ Define check quantity: with password level 2, see Chapter 5.4).

In the event of mixing problems: Check AIS function
 Observe for 3 minutes in spray mode with gun open: If the AIS position is continually counting up or down in the same direction without the "% open per cycle" column changing, the AIS is not working. Contact the Wagner service team.

4.7.1 OUTPUT SIGNALS



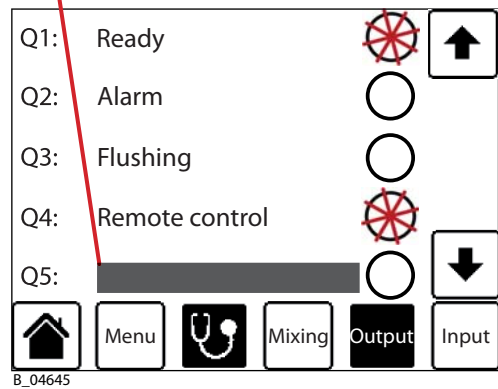
Output signals Q1 - Q14
Lamp lights up → Signal activated



B_04644

Output signals with names

Lamp lights up → Signal activated
Bar → Signal not assigned



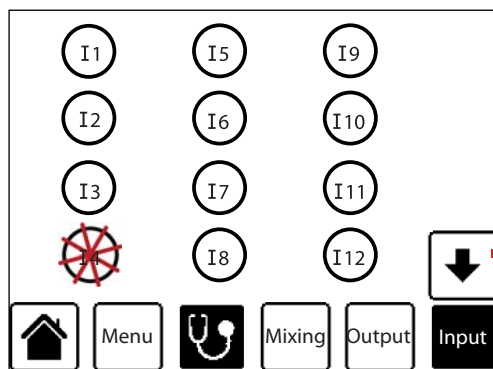
B_04645

Output signals Q15 - Q30

4.7.2 INPUT SIGNALS



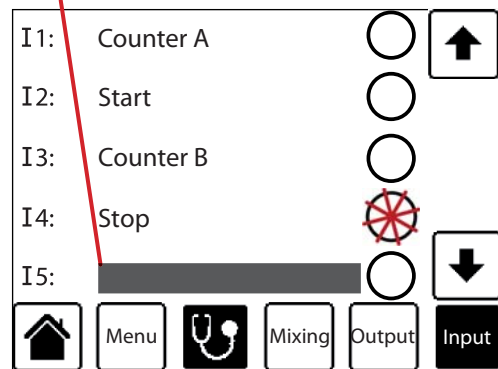
Input signals I1 - I12
Lamp lights up → Signal activated



B_04646

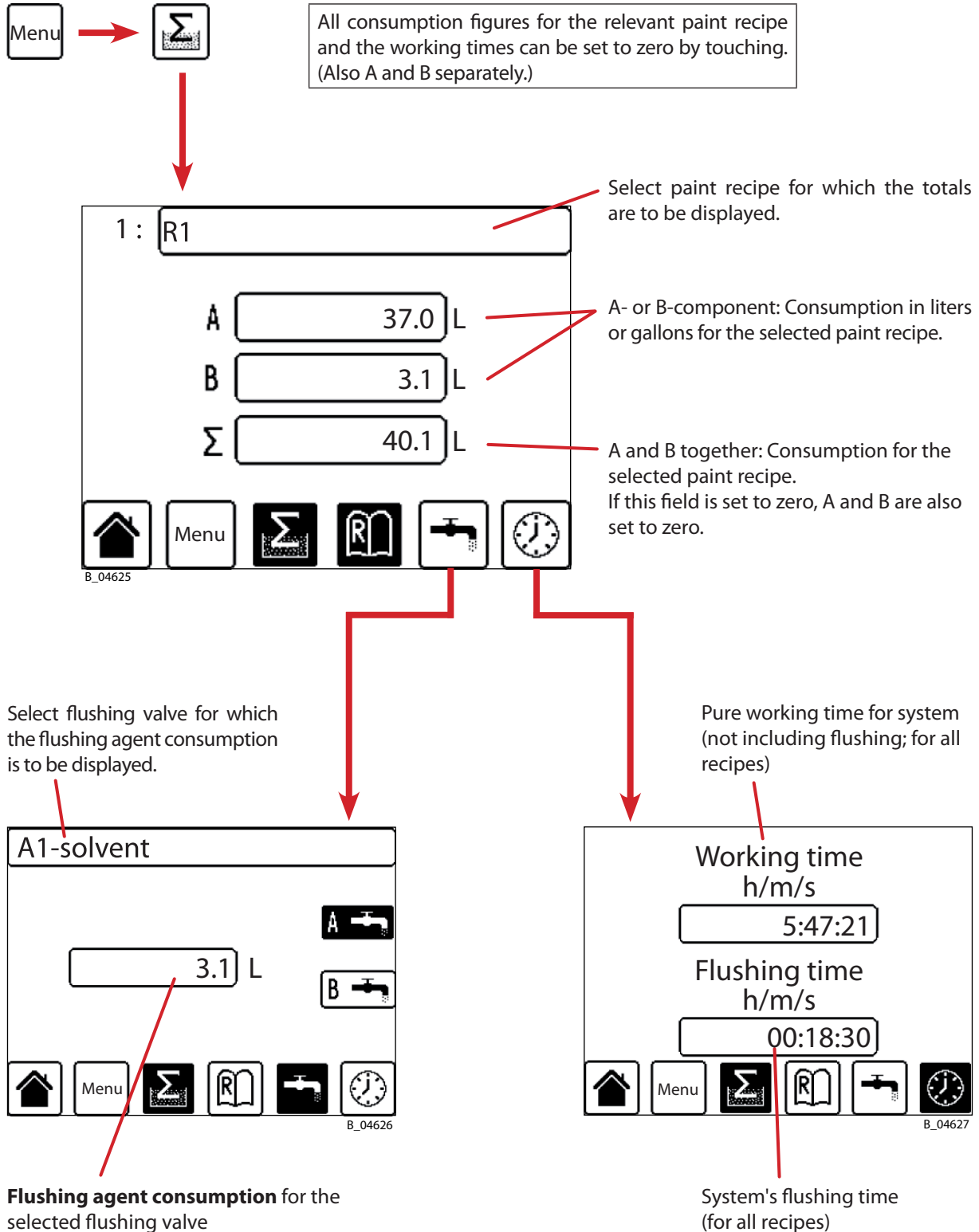
Input signals with names

Lamp lights up → Signal activated
Bar → Signal not assigned



B_04647

4.8 TOTALS: PRODUCT CONSUMPTION AND WORKING TIMES



4.9 voc



VOC = Volatile Organic Compounds.
 If the local specifications require a VOC measurement, then the corresponding VOC factor (solvent content) must be entered in every paint recipe for each component.

VOC quantity for the selected paint recipe and selected component.
 → As of password level 2:
 The numbers field has a frame and can be reset to zero.

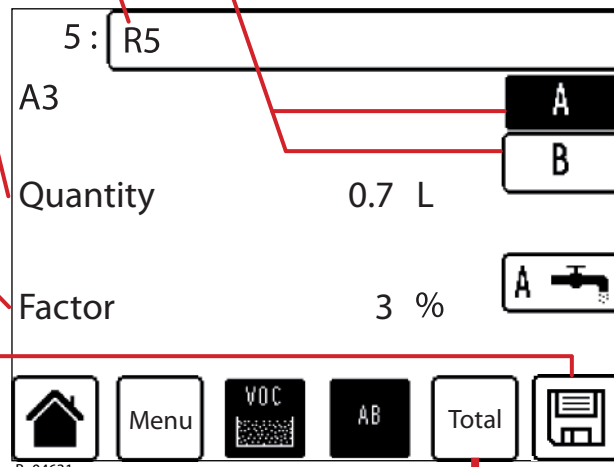
Select **paint recipe** for which the VOC quantities are to be displayed.

Select component A/B/C.
 → The corresponding valve is displayed on the left.

VOC values for the flushing valve (independent of paint recipe).

As of password level 2:
 For the selected paint recipe, enter the VOC factor for each component one after another.
 → 0 - 100 %, or
 → 0 - 9,999 g/L (gram / liter)
 The unit of measurement is defined in the settings (see Chapter 5.4).

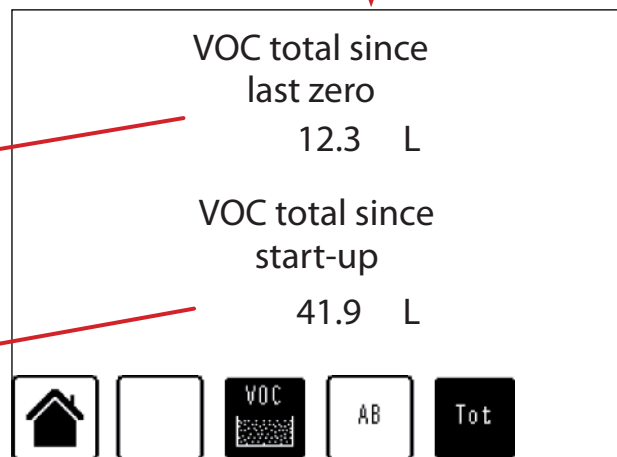
Only if the corresponding factor is to be saved for all paint recipes.
 (In the current paint recipe, the factor is already saved with the input.)



B_04631

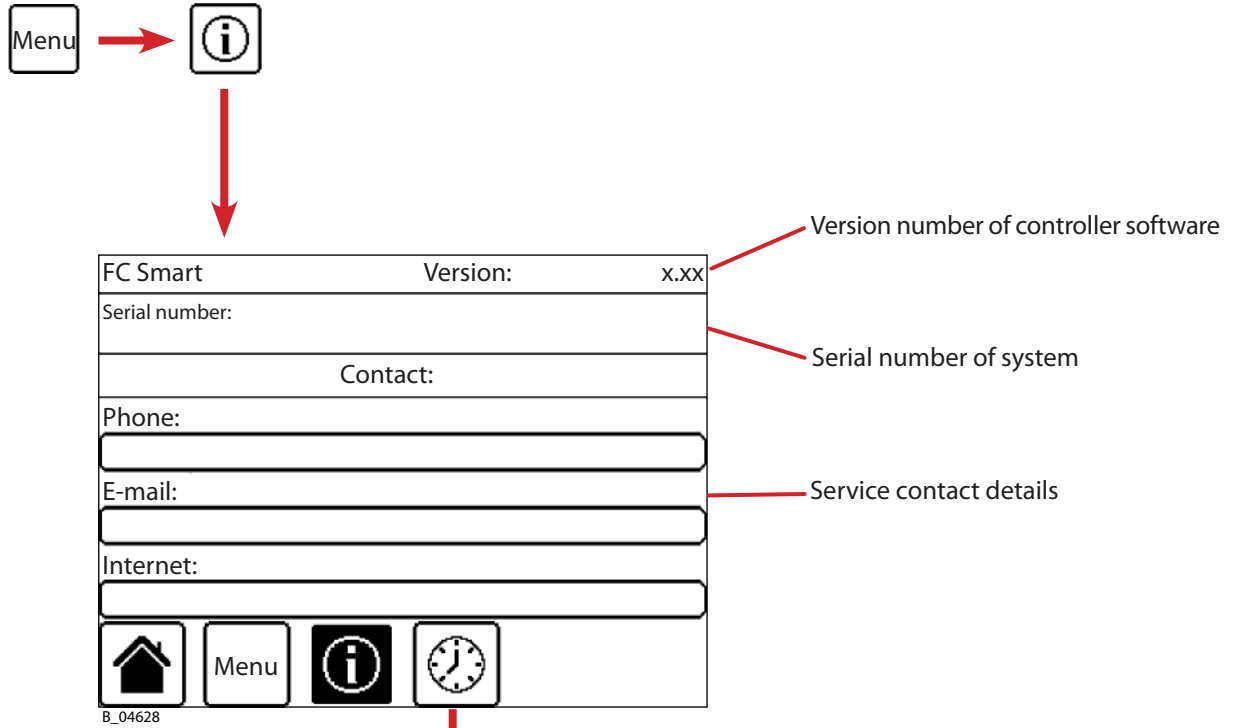
VOC quantity of all components since last zero.
 → in liters or gallons (if VOC factor in %)
 → in kilograms (if VOC factor in g/L or g/G)

VOC quantity of all components since commissioning (cannot be zeroed).

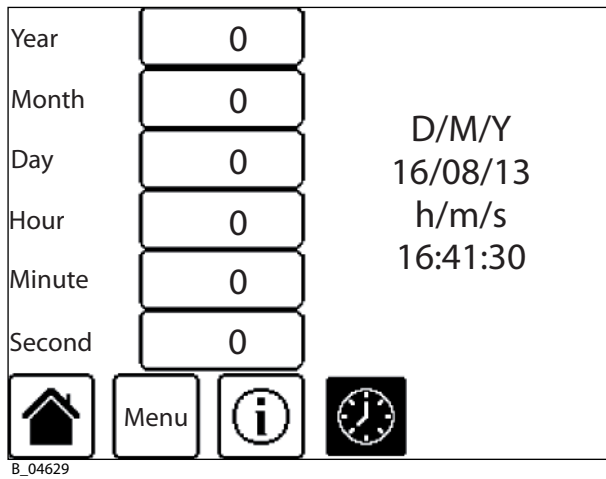


B_04632

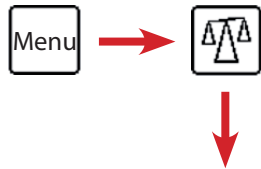
4.10 INFO: VERSION NUMBER, LANGUAGE AND DATE SETTINGS



Setting date and time



4.11 CALIBRATION



There is a **flow meter** installed for every component (A, B, flushing A, etc.). Every flow meter has to be calibrated. This produces a K factor for every flow meter. The K factors may vary depending on the lacquer (A1, A2, A3, ...) which is why the K factors for each paint recipe are saved separately. The default is the average from the calibration report for the flow meter in question. The default is accurate and is a good match for most products. If calibration is repeated, it should be a precise process (see operating manual).

Flow quantity measured by the system

Valve used by paint recipe

Select paint recipe (for A / B / C) or flushing valve

Display paint recipe and A valve used

Display paint recipe and B valve used

Display list of A flushing valves

K = Current K factor for selected component (A, B, ...).
→ Is saved in the selected paint recipe.

Kn = Newly calculated K factor

Input of quantity calculated with measuring cup and scale.

Start measurement

5 PASSWORD LEVEL 2

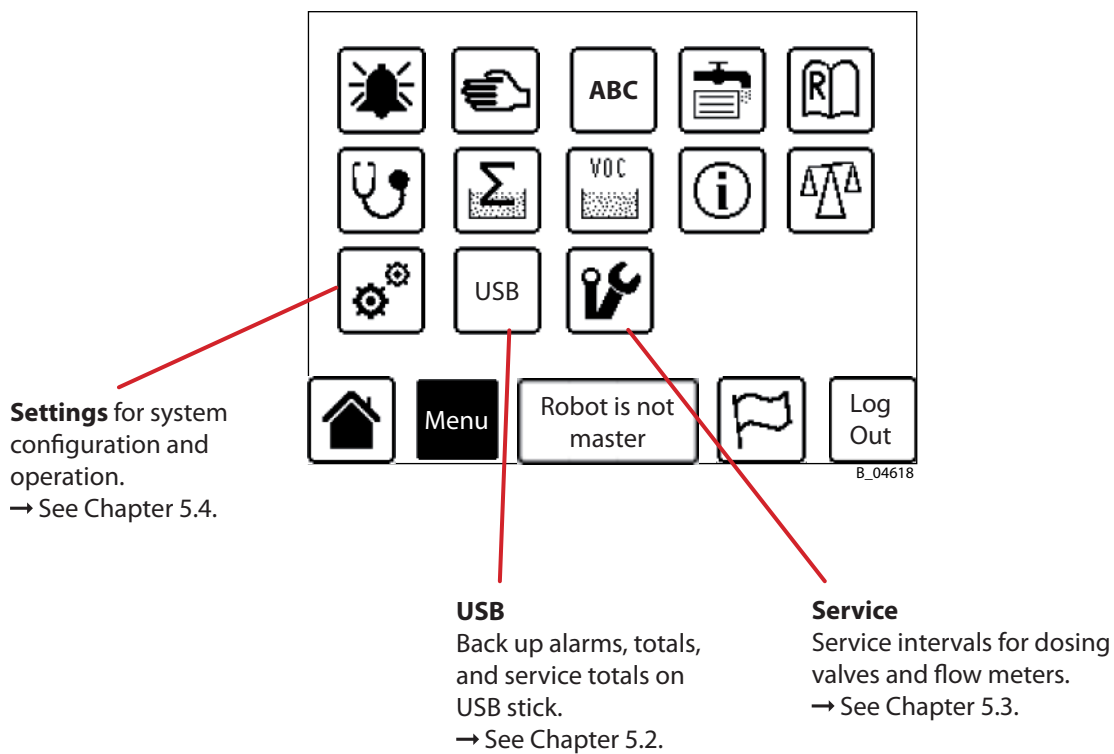
Everything that can be done in password level 1 can be done in level 2 too. Other input options and functions are also available.

Password input

→ See Chapter 2.4

Additional menu functions

Additional functions appear on the menu page in password level 2.



5.1 POT LIFE ANALYSIS

1 : R1

A : B 12.00 : 1

AB : C 26.00 : 1

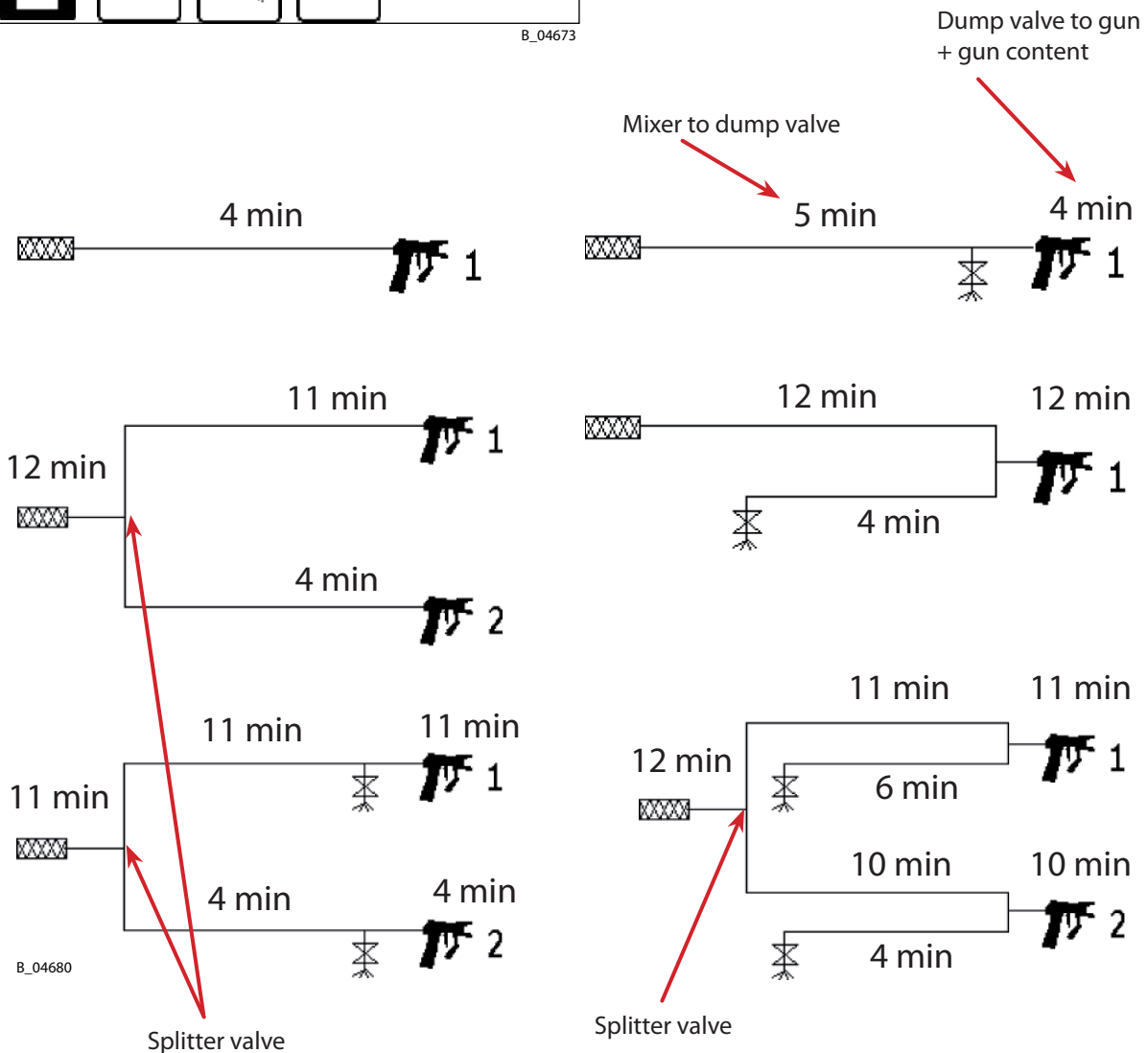
Pot life 4 min

Gun 1 + 2

Menu Act.

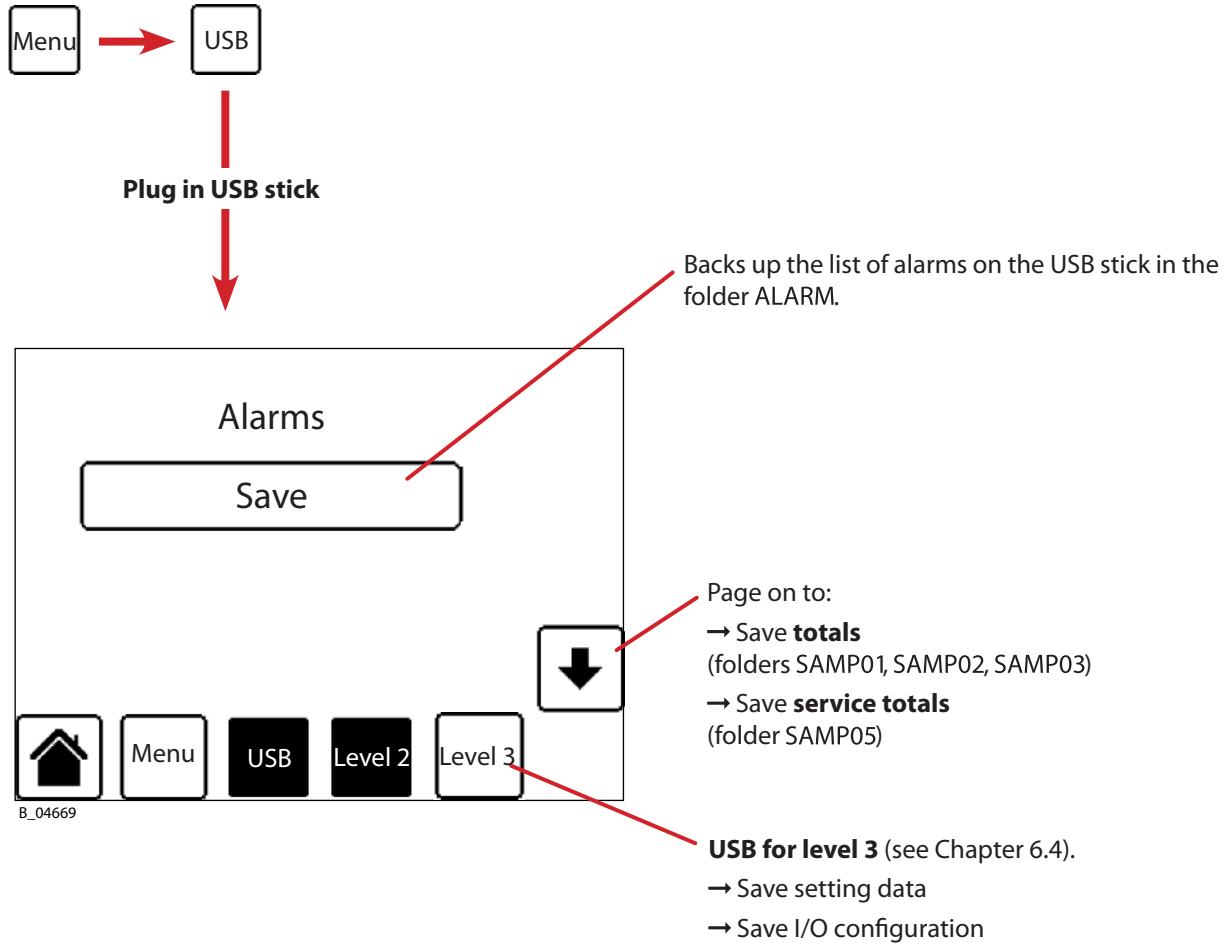
B_04673

Touch pot life.
Depending on configuration, one of the displays shown below appears. This includes the current pot lives broken down for the individual distances between the branches.



B_04680

5.2 USB: SAVING DATA



Alarms, totals, and service totals can be saved on a USB stick (not supplied). The USB port is on the front of the control cabinet.

The data is stored on the USB stick in various folders. The individual files are numbered sequentially, for example "SA00001", "SA00002", etc.

The saved files can be transferred to a PC where they can be opened.

File content

The saved files contain the following values:

Alarms → Files in the folder **ALARM**:

Column heading	Meaning
Number of Message(s)	Number of alarm messages and warning messages
Trigger Date	Date of alarms
Trigger Time	Time of alarms
Message(s)	Alarm message
Acknowledge Time	–
Recovery Time	Alarm active (time between alarm and reset)
No. of occ.	How often does this alarm occur in the list
Acc. time	Total "Recovery Time" (of this alarm)
Level	–

Totals → recipe totals in the folder **SAMP01**:

Column heading	Unit	Meaning
Date		Date when saved on the USB stick
Time		Time when saved on the USB stick
Recipe		Number of paint recipe
Sum A / B / C	cc	Consumption for component A / B / C
VOC Sum A / B / C	cc* g*	VOC quantity for component A / B / C

Totals → Flushing totals in folder **SAMP02**:

Column heading	Unit	Meaning
Date		Date when saved on the USB stick
Time		Time when saved on the USB stick
Flush A1 / A2 / B1 / B2	cc	Consumption for flushing valve A1 / A2 / B1 / B2
VOC Flush A1 / A2 / B1 / B2	cc* g*	VOC quantity for flushing valve A1 / A2 / B1 / B2

Totals → VOC totals and working times in folder **SAMP03**:

Column heading	Unit	Meaning
Date		Date when saved on the USB stick
Time		Time when saved on the USB stick
VOC-Summe	cc* g*	VOC quantity of all components
Tot. VOC-Summe	cc* g*	VOC quantity of all components since start-up
Work. time [h]/[m]/[s]		Working time of system (gun open, without flushing) [hours] / [minutes] / [seconds]
Flush. time [h]/[m]/[s]		Flushing time of system [hours] / [minutes] / [seconds]

* cc If "VOC-measuring unit" = % (see Chapter 5.4).

g If "VOC-measuring unit" = g/L or g/G (see Chapter 5.4).

Service totals → Files in folder **SAMP05**:

Column heading	Unit	Meaning
Date		Date when saved on the USB stick
Time		Time when saved on the USB stick
Sum A / B / C	cc	Consumption for component A / B / C
Total Sum A / B / C	cc	Consumption of component A/B/C since commissioning
Pulses B1 / B2 / C		Switching cycle of dosing valve B1 / B2 / C
Tot. Pulses B1 / B2 / C		Switching cycle of dosing valve B1/B2/C since commissioning

Saving at regular intervals

Practical example: Alarms, totals, and service totals are saved weekly. Yes is selected when the prompt for zeroing totals appears. No totals are zeroed on screen between the weekly saves. This means that the figures for the corresponding week can be found in the files.

Save date

The save date "Date" is saved in the files in the form of YY/MM/DD (year/month/day). If the save date is not displayed correctly in a table calculation, it has to be converted when the file is opened.

Example for Excel 2003 / 2010
<ul style="list-style-type: none"> - Change file type ".csv" into ".txt" - In Excel: File → Open → "All files" → Open renamed file - A text conversion wizard appears → File type: "Split" → File origin: "Windows (ANSI)" → Next → Separator: "Comma" → Next → Highlight date column (the first or second column) → Next → Date format for columns: "Date: YMD" → Done.

5.2.1 JOB TOTALS

If the "save job total" setting is activated, the job totals for every job (between start and stop) are saved on the USB stick. (USB stick must be plugged in.) Do not mix up USB sticks from different systems.

→ Files in folder **SAMP10**:

Column heading	Unit	Meaning
Date		Date when saved on the USB stick
Time		Time when saved on the USB stick
Start (year / month / day / hour / minute / second)		Job start (year / month / day / hour / minute / second)
Stop (year / month / day / hour / minute / second)		Job end (year / month / day / hour / minute / second)
Jobsum A / B / C	cc	Job total A / B / C
Jobsum Total	cc	Job total A+B+C
VOC Jobsum A	cc* g*	Job total VOC for A / B C
VOC Jobsum Tot	cc* g*	Job total VOC for A+B+C

* cc If "VOC-measuring unit" = % (see Chapter 5.4).

g If "VOC-measuring unit" = g/L or g/G (see Chapter 5.4).

5.3 SERVICE FOR DOSING VALVES AND FLOW METERS



Dosing valves

Current switching cycle of selected dosing valve. After servicing or installing a new dosing valve, set value to zero.

Current switching cycle of selected dosing valve. The value cannot be zeroed.

Enter maximum switching cycle of selected dosing valve.
 → 0 - 4294967295
 → The "Valve service" warning appears when the value is reached.

Switch	1045201	B
Switch	14501	
Max Switch	5000000	C

B_04648

Dosing valve B is displayed.

Display dosing valve C.

Flow meters

Current flow rates of flow meters. After servicing or installing a new flow meter, the corresponding values must be zeroed.

Enter maximum flow rates of flow meters.
 → The "Flow meter service" warning appears when these values are reached.

	Vtot [L]	Vmax [L]
A	5711.0	30000
B	943.8	30000
C	50.0	30000

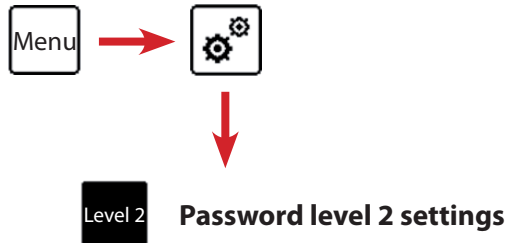
B_04649

Current flow rates of flow meters. The values cannot be zeroed.

	Vtot [L]
A	5711.0
B	943.8
C	50.0

B_04650

5.4 LEVEL 2 SETTINGS



Number of paint recipes		5	1
Number of flushing recipes		2	
QB-control	cc	150	
QC-control	cc	150	
Gun Delay	sec	5.0	
↓			
<div style="display: flex; justify-content: space-between; align-items: center;"> Menu Level 2 Level 3 </div>			

Page number

Page forward to pages 2 to 16. Depending on configuration, pages may be jumped.

Password level 3 settings
→ See Chapter 6.1.

B_04665

Level 2, page 1







Setting	Unit	Values	Default	Explanation
Number of paint recipes		1-100 *	1	Number of paint recipes
Number of flushing recipes		1-10	1	Number of flushing recipes
QB-control	cc	20-9999	150	QB and QB-control: see Chapter 4.7.
QC-control	cc	20-9999	150	QC and QC-control: see Chapter 4.7.
Gun Delay	sec	1.0-100.0	5.0	Delay time of the alarm of A-, B-, C-, A+, B+, C+ after a gun monitoring signal is present and the value is below the A-, B-, C- limit values or above the A+, B+, C+ limit values.

* With robot communication, 1 to 7.

Level 2, page 2




Setting	Unit	Values	Default	Explanation
Post-alarm for pot life	min / sec	1-3,000	5	Once the pot life + post-alarm times have passed, the system stops (alarm A11, A12, A24 to 28). The alarm is repeated until the system is flushed. If "Automatic flushing at pot life alarm" is activated, flushing is started automatically. Important: The guns must be in the gun flush box for flushing to take place.
Alarm delay Flow monitoring	sec	0.0-100.0	2.0	If the flow is outside the limits for longer than the time entered, the system stops with alarm A17 or A18. Activate "Flow monitoring" → See Chapter 6.1 Enter limits in paint recipe → See Chapter 4.6.3
Atomizing air at alarm stop	sec	0.0-100.0	2.0	In the event of an alarm stop, the atomizing air remains on for x seconds so that coating can be completed during falling product pressure with as little dripping as possible.
Atomizing air at end of flushing	sec	0.0-100.0	2.0	At the end of flushing, the atomizing air is activated again for x seconds to blow the air cap free.
VOC measuring unit		% or g/L (g/G)	%	VOC measuring unit in percentage or grams per liter or grams per gallon (depending on "Measuring unit volume" setting, see Chapter 6.1).
Password level 1		1-99999		Input of password for password level 1.

Level 2, page 3

Setting	Unit	Values	Default	Explanation *
 Hose length	m / ft			Hose length from A valve to mixer.
 Hose diameter	mm / inch			Inner hose diameter from A valve to mixer.
 Hose volume	cc			Hose volume calculated from the above two values.
 Hose length	m / ft			Hose length from B valve to mixer.
 Hose diameter	mm / inch			Inner hose diameter from B valve to mixer.
 Hose volume	cc			Hose volume calculated from the above two values.




* For configuration examples, see Chapter 5.4.1.

Level 2, page 4 (option)

Setting	Unit	Values	Default	Explanation *
 Hose length	m / ft			Hose length from C valve to mixer.
 Hose diameter	mm / inch			Inner hose diameter from C valve to mixer.
 Hose volume	cc			Hose volume calculated from the above two values.







* For configuration examples, see Chapter 5.4.1.

Level 2, page 5 (option)

Setting	Unit	Values	Default	Explanation *
 Hose length	m / ft			Hose length from mixer to splitter valve.
 Hose diameter	mm / inch			Inner hose diameter from mixer to splitter valve.
 Hose volume	cc			Hose volume calculated from the above two values.







* For configuration examples, see Chapter 5.4.1.

Level 2, page 6 (option)

Setting	Unit	Values	Default	Explanation *
 Hose length	m / ft			Hose length from mixer to gun 1.
 Hose diameter	mm / inch			Inner hose diameter from mixer to gun 1.
 Hose volume	cc			Hose volume calculated from the above two values.
 Content	cc	0-1,000	20	Volume of 2K product in gun 1.
 Filling through dump valve	%	0-100	0	Filling quantity for gun 1: After what percentage of gun hose is the dump valve connected. This part of the hose is discharged via the dump valve. The rest passes via the gun.
 Atom. air on flush % of hose volume	%	0-100	0	When flushing: What percentage of the hose content between mixer and gun 1 can still be used for coating. The atomizing air for gun 1 remains activated for this period when flushing. See also "flush pause".




* For configuration examples, see Chapter 5.4.1.

Level 2, page 7 (option)

Setting	Unit	Values	Default	Explanation *
 Hose length	m / ft			Hose length from splitter valve to gun 1.
 Hose diameter	mm / inch			Inner hose diameter from splitter valve to gun 1.
 Hose volume	cc			Hose volume calculated from the above two values.
 Content	cc	0-1,000	20	Volume of 2K product in gun 1.
 Filling through dump valve	%	0-100	0	Filling quantity for gun 1: After what percentage of gun hose is the dump valve connected. This part of the hose is discharged via the dump valve. The rest passes via the gun.
 Atom. air on flush % of hose volume	%	0-100	0	When flushing: What percentage of the hose content between mixer and gun 1 can still be used for coating. The atomizing air (and electrostatics) for gun 1 remains activated for this period when flushing. See also "flush pause".

* For configuration examples, see Chapter 5.4.1.

Level 2, page 8 (option only with "Dump valve as return flow")

Setting	Unit	Values	Default	Explanation *
 Hose length	m / ft			Hose length from gun 1 (or from branch in gun hose) to dump valve.
 Hose diameter	mm / inch			Inner hose diameter from gun 1 to dump valve.
 Hose volume	cc			Hose volume calculated from the above two values.

* For configuration examples, see Chapter 5.4.1.

Level 2, page 9 (option)

Like page 7, but for gun 2.

Level 2, page 10 (option only with "Dump valve as return flow")

Like page 8, but for gun 2.

Level 2, page 11

Setting	Unit	Values	Default	Explanation
Flush pause	sec	0.0-30.0	2.0	Duration of flush pause with atomizing air flushing. The flush pause indicates that the remainder must be sprayed into the waste container. The atomizing air remains on during the flush pause.
Ext. mixer: % of dump in waste	%	0-100	0	For external mixer + dump valve with waste separation: What percentage of the flush quantity that is emptied via the dump valve goes into the waste tank. (The remainder passes into the flushing agent tank.) Part returns to the waste tank even if followed directly by flushing.
Save job total		On/Off	Off	"On": Job totals are written continuously to a USB stick (USB stick must be plugged in).
Pot life alarm → Flushing		On/Off	Off	"On" = Flushing is mandatory after a pot life alarm. Additional spraying is also possible with "Off".
Mixing alarm → Flushing		On/Off	Off	"On" = Flushing is mandatory after a mixing error alarm* (A01 to A10, A13, A15). Additional spraying is also possible with "Off".
Mixing alarm → Filling		On/Off	Off	"On" = Filling is mandatory after a mixing error alarm* (A01 to A10, A13, A15). Additional spraying is also possible with "Off".

* For alarm messages, see operating manual (troubleshooting).

Level 2, page 12

Setting	Unit	Values	Default	Explanation
More filling than hose volume	%	0-100	10	What percentage of the total hose content is to also be filled between product valve and gun to ensure that there is no flushing agent left in the hose.
Flow monitoring during filling		On/Off	Off	"On" = The flow is limited when filling to optimize the dosing quality. → Undertake the three settings outlined below.
Filling Max. flow	cc/min	0-5,000	2,000	Maximum flow which should not be exceeded when filling.
Filling Min. flow	cc/min	0-5,000	1,000	Minimum flow below which should not fall when filling.
Filling time period	sec	0.2-9.9	0.5	Interval at which A valve cycles if the maximum flow rate is exceeded during filling.
Reset the pot life		[OK]		Pot life is reset manually.

Level 2, page 13 (option, only with AIS)

Setting	Unit	Values	Default	Explanation
AIS-B cycle for calculation		3-20	5	Number of cycles for creating average for regulating AIS-B.
AIS-B alarm level	%	0-100	0	Minimum injection quality (opening time of hardener dosing valve as percentage). If the value falls below this, a warning is triggered (W9: AIS-B warning limit).
AIS-B lower limit	%	0-100	50	Lower injection quality limit (opening time of hardener dosing valve as percentage). If the value falls below this, the AIS optimizes the injection quality.
AIS-B upper limit	%	0-100	80	Upper injection quality limit (opening time of hardener dosing valve as percentage). If this value is exceeded, the AIS restricts the injection quality to ensure a smooth operation.
B-valve > open AIS-B open	sec	0.5-25.0	1.0	If the B valve is permanently opened for longer than the stated time, too little product can flow through. The AIS allows more product through.
Repeat intervall AIS-B open	sec	0.5-25.0	0.5	For the above function, the AIS undertakes a step every x seconds until the B valve is back in cycle.

Level 2, page 14 (option, only with AIS)

Setting	Unit	Values	Default	Explanation
AIS-B open at stop		0-20	3	Number of steps which the AIS is to open when mixing operation is ended.
AIS-B min flow	cc/min	0-2,000	20	Minimum flow of all components for AIS to undertake regulation.
AIS-B hysteresis		0-20	1	Number of steps which have no impact when AIS switches (e.g. close → open) and are therefore inserted at the changeover points.
AIS-B number of cycles for 2 guns		0-20	3	Number of steps which the AIS-B is to open or close when the second gun is switched on or off.

Level 2, page 15 + 16 (option, only with AIS)

Like pages 13 + 14, but for AIS-C.

5.4.1 HOSE SETTINGS: CONFIGURATION EXAMPLES

Symbol	Meaning
	Product valve
	Mixer

Symbol	Meaning
	Splitter valve

Symbol	Meaning
	Gun
	Dump valve

Essentially

→ Hose details in accordance with above symbols.

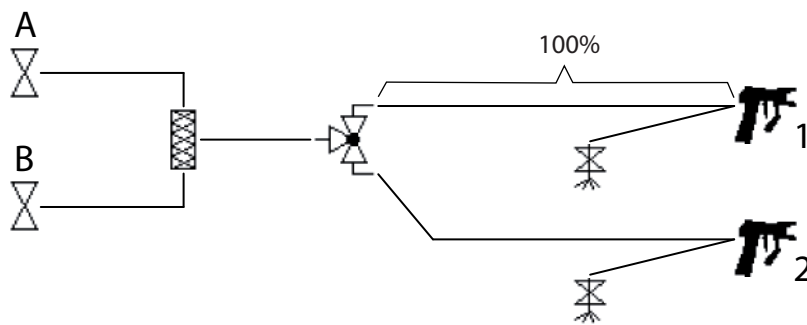
→ Content	= Gun content of gun 1 in cc	Content	= Gun content of gun 2 in cc
------------	------------------------------	---------	------------------------------

Example 1

2K, splitter valve, 2 guns, 2 dump valves after guns

→ Dump valve as return flow = On

→ Filling through dump valve	= 100 %	Filling through dump valve	= 100 %
-------------------------------	---------	----------------------------	---------



B_04663

With dump valves for waste separation (double valves):

→ Dump valve for waste separation = On

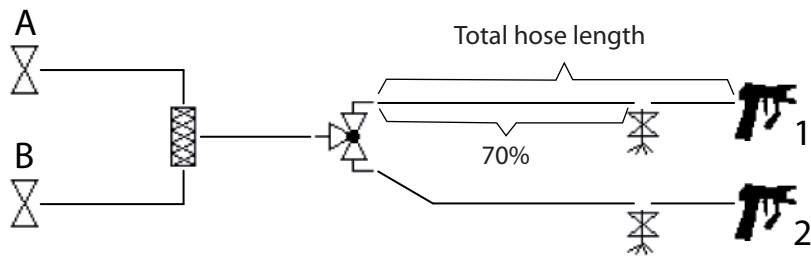
Example 2

2K, splitter valve, 2 guns, 2 dump valves before guns

→ Dump valve as return flow = Off

→ Hose length from splitter valve to gun = "total hose length" shown

→ Filling through dump valve	= Hose length before dump valve (e.g. 70 %)	Filling through dump valve	analog (e.g. 70%)
-------------------------------	---------------------------------------------	----------------------------	-------------------



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6 PASSWORD LEVEL 3

An extra menu button appears in password level 3:

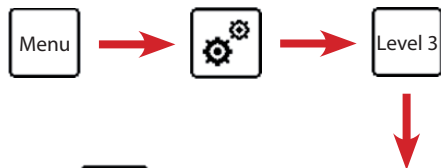


All the functions available in level 2 are present, as are:

- System parameter settings (level 3) → See Chapter 6.1
- Activate and deactivate all control signals by hand → See Chapter 6.2
- Define I/O configuration → See Chapter 6.3
- USB: Back up system settings and I/O configuration → See Chapter 6.4

Password input → See Chapter 2.4

6.1 LEVEL 3 SETTINGS



Level 3 Password level 3 settings

2K or 3K	2K	1
Measuring unit volume	Liters	
Measuring unit length	Meters	
Mixing sequence	A:B; AB:C	
Mixing ratio type of enter	A:B	
Gun closed → Valves closed	Off	
↓		

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Page number
Depending on configuration,
pages may be jumped.

Page forward to pages 2 to 10.

Password level 2 settings
→ See Chapter 5.4.

Level 3, page 1

Setting	Unit	Values	Default	Explanation
2K or 3K		2K/3K		System with 2 or 3 components
Measuring unit volume		Liters/ gallons	Liters	Volume unit in liters or gallons
Measuring unit length		Meters/ inches	Meters	Length unit in meters or feet
Mixing sequence		A:B; AB:C / A:C; AC:B / A:B; A:C	A:B; AB:C	Mixing ratio: Input sequence of components
Input type for mixing ratio		A:B / %B	A:B	Mixing ratio: Input as ratio or percentage
Gun closed → Valves closed		On/Off	Off	"On": When the guns are closed, all product valves are closed automatically too. Beneficial for low-pressure applications. Prerequisite: Gun monitoring (not flow monitor).

Level 3, page 2

Setting	Unit	Values	Default	Explanation
Number of guns		1 / 2		Number of guns
Gun monitoring		0 / 1 / 2		Number of gun monitoring units
Splitter valve		On/Off		"On" = Splitter valve is fitted. Prerequisite: Number of guns = 2
Flush guns separately		On/Off		"On" = splitter valve with flushing (separate gun flushing valves). Prerequisite: splitter valve = On.
Number of gun flush boxes (GFB)		0 / 1 / 2		Number of activations fitted for gun flush boxes.
Automatic flushing at pot life alarm		On/Off	Off	"On": At pot life alarm (pot life + post-alarm time), flushing is automatic. Prerequisite: Gun flush box.

Level 3, page 3

Setting	Unit	Values	Default	Explanation
Dump valve		On/Off		"On" = There is a dump valve installed for every gun. *
Dump valve as return flow		On/Off		Dump hose present between gun and dump valve.* Prerequisite: Dump valve = On.
Dump valve for waste separation		On/Off		Dump valve for waste separation present (double valve). Prerequisite: Dump valve = On.
Precision of waste separation		0-8	0	Waste separation when flushing: 0 = Exact separation without safety margin 1 = 25% of dump hose as safety margin 2 = 50% of dump hose as safety margin 8 = 200% of dump hose as safety margin
Batch Mode		On/Off		Allows a recurring and pre-defined quantity of product to be discharged. See Chapter 3.9.
Mixing head valve with injection		On/Off		If mixing head valve is fitted: "On" = Mixing head valve cycles. "Off" = B valve cycles.

* For configuration examples, see Chapter 5.4.1.

Level 3, page 4

Setting	Unit	Values	Default	Explanation
Number of A-valves		1-5		Number of A-valves
Number of B valves		1-2		Number of B valves
Number of A flushing valves		0-2		Number of A flushing valves
Number of B flushing valves		0-2		Number of B flushing valves
Air flushing valve		On/Off		"On" : Air flushing is fitted.
Flushing ext. mixer is standard		On/Off		"On": The FLUSHING pushbutton starts mixer flushing ("Mix") of the last paint recipe used. → Flushing from external mixer. "Off": The FLUSHING pushbutton starts end flushing ("End") of the last paint recipe used.

Level 3, page 5

Setting	Unit	Values	Default	Explanation *	
A	Minimum flow	cc/min	0-99999	5	Minimum flow of flow meter A → Alarm A06: A- flow rate
	Maximum flow	cc/min	0-99999	3,000	Maximum flow of flow meter A → Alarm A05: A+ flow rate
B	Minimum flow	cc/min	0-99999	5	Minimum flow of flow meter B → Alarm A08: B- flow rate
	Maximum flow	cc/min	0-99999	3,000	Maximum flow of flow meter B → Alarm A07: B+ flow rate
C	Minimum flow	cc/min	0-99999	5	Minimum flow of flow meter C → Alarm A10: C- flow rate
	Maximum flow	cc/min	0-99999	3,000	Maximum flow of flow meter C → Alarm A09: C+ flow rate

* For operating ranges and usage limits of flow meters, see operating manual.

Level 3, page 6

Setting	Unit	Values	Default	Explanation
AIS-B		On/Off		"On" : AIS-B is fitted.
AIS-C		On/Off		"On" : AIS-C is fitted.
Remote control		On/Off		"On" : Remote control is fitted.
Robot		On/Off		"On" : Robot communication is fitted.
External mixer		On/Off		"On" : External mixer is fitted.
Flow monitoring		On/Off	Off	"On" = Flow monitoring active Prerequisite: Gun monitoring or flow monitor. Activate "Flow monitoring" → See Chapter 6.1 Enter limits in paint recipe → See Chapter 4.6.3

Level 3, page 7

Setting	Unit	Values	Default	Explanation
Air bubbles monitoring		On/Off		"On" = Air bubbles monitoring is active. Prerequisite: Air bubbles monitoring is fitted.
Alarm delay for air bubbles monitoring	sec	0.0-100.0	2.0	How long can an air bubble be present before the system stops (→ alarm A15)?
Alarm delay no flow during filling	sec	0.0-999.9	120.0	How long can filling be interrupted before an alarm occurs (alarm A20). If set to 0.0 seconds, the function is deactivated?
Alarm delay no flow during flush	sec	0.0-999.9	60.0	How long can filling be interrupted before an alarm occurs (alarm A21)? When flushing, this alarm takes the place of the pot life alarm. If the setting is "0.0 seconds", the function is deactivated, the pot life continues and a pot life alarm occurs.
Invert dump valve outputs		On/Off	Off	"Off" = Compressed air opens dump valve. "On" = Compressed air closes dump valve.
Measuring unit for pot life		min / sec	min	Measuring unit for pot life: Minutes or seconds. (Adapt accordingly after changing recipes!)

Level 3, page 8

Setting	Unit	Values	Default	Explanation
Pre-flushing after end flushing		On/Off	Off	"On" = A pre-flushing must be undertaken after an end flush. Prerequisite: Pre-flushing recipe is defined and selected in the paint recipes.
Pre-flushing after paint change flushing		On/Off	Off	"On" = A pre-flushing must be undertaken after a recipe change flushing. Prerequisite: Pre-flushing recipe is defined and selected in the paint recipes.
Second output module is installed		On/Off		"On" : Second output module is fitted. Creates additional connections for accessory sets.
Password level 2		1-99999		Password input for password level 2.
Password level 3		1-99999		Password input for password level 3.
Timeout for auto logout	sec	0-99999	0	As soon as the menu functions and menu are exited, the password level automatically returns to level 0 after the timeout. "0 sec" = No automatic logout.

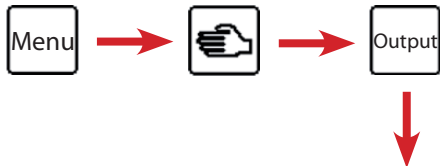
Level 3, page 9

Setting	Unit	Values	Default	Explanation
Flushing in sec: with gun monitoring		On / Off	Off	If the flushing agent is not flowing through the flow meter. Prerequisite: Gun monitoring signal from flow monitor or robot, not from air monitoring. "On" = Flushing time only runs when there is a gun signal. "Off" = Flushing time also runs without a gun signal.
Booster pump		Off / A-side / Mix-side	Off	"A-side" = Pressure increase pump is fitted upstream of mixer, "Mix-side" pressure increase pump is fitted downstream of mixer. When the system is stopped, the booster pump is switched off too (air valve on pump not supplied).
Flush interruption ok?		On / Off	On	"On" = Flushing process can be interrupted and e.g. the new color filled. "Off" = The entire flushing process must be undertaken first. If flushing is aborted, the process starts again afresh.
A-valve selection at start		On / Off	Off	"On": After starting, a prompt appears asking which A valve is to be used for the selected recipe.
Pressure regulator fully open during flushing		On / Off		"On" = During flushing, the product pressure regulator is alternately subjected to working and full air pressure, in order to flush it more effectively.
Pulse time at flush for prod.press reg.	sec	1.0-10.0	1.0	Cycle time for the above function.

Level 3, page 10

Setting	Unit	Values	Default	Explanation
External release		On / Off	On	"On" = External release (e.g. interlock with spray booth's outgoing air). Connected with internal control voltage as standard.
Reset initialization		OK		"OK" = Initialization program starts when system is next switched on (e.g. for training purposes). The current settings are preset, nothing is lost.
Start software update		OK		"OK" = A software update is undertaken. Special knowledge is needed for this (see separate instructions).

6.2 MANUAL MODE (LEVEL 3): ALL OUTPUT SIGNALS



All output signals can be activated and deactivated individually. Several signals can be activated at the same time.

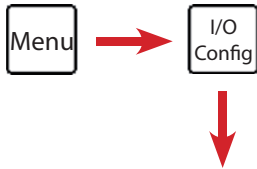
Touch to activate or deactivate.

Q1: Ready		On
Q2: Alarm		Off
Q3: Flushing		
Q4: Remote control		
Q5: A1 valve		

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Open and close individual valves.
→ See Chapter 3.6

6.3 I/O CONFIGURATION



Assign the connected inputs and outputs.
→ See Operating manual, Accessories chapter.

Touch to assign the right output signal to the output (for example Q5).

Q1: Ready
Q2: Alarm
Q3: Flushing
Q4: Remote control
Q5:

↓

Home Menu I/O Config Output Input

Page forward

Assign outputs Assign inputs

B_04651

Signals not allocated:



6.4 USB FOR PASSWORD LEVEL 3



USB for password level 2:
see Chapter 5.2

→ Plug in USB stick.

The settings data can be saved in level 3: All system settings, names, working and flushing recipes and I/O configuration.

→ Save totals: see Chapter 5.2.

A separate program is available for viewing and changing the settings data on a PC.

Save system data to USB stick

Save settings data + I/O configuration	→ Menu → USB → Level 3 → Settings data Save
----------------------------------------	----------------------------------------------------

The data is saved to one single file in the "Data" folder on the USB stick. The file name is the serial number of the system.

→ Save data to a PC and delete from USB stick. Once the system has been converted, added to or changed, the file must be deleted and a new one created.

Load system data from USB stick to control unit

Warning: This function may only be undertaken by staff with in-depth knowledge of how the system works. Loading incorrect data may result in damage to property and injury.



Load settings data (without I/O configuration)	→ Menu → USB → Level 3 → Settings data Load
Load I/O configuration	→ Menu → USB → Level 3 → [↓] → I/O configuration Load

→ After loading, the assignment of all inputs and outputs must be checked and a function test undertaken.

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Germany

J. WAGNER GmbH

Otto-Lilienthal-Str. 18

Postfach 1120

D- 88677 Markdorf

Phone +49/ (0)7544 / 5050

Fax +49/ (0)7544 / 505200

E-mail service.standard@wagner-group.com

Switzerland

J. WAGNER AG

Industriestrasse 22

Postfach 663

CH- 9450 Altstätten

Phone +41/ (0)71 / 757 2211

Fax +41/ (0)71 / 757 2222

More contact addresses on the Internet at:

www.wagner-group.com

Company/Locations/WAGNER worldwide

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