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1 Introduction

1.1 Purpose, Scope and application

This document serves as a quick guide to the P6 cleaning machine and is intended to provide an overview of its basic use.

This quick guide often refers to the operating instructions for the P6 cleaning machine. The references refer to the document

BA-6028-001 Revision G

The software version can be found in the operating instructions mentioned above.

The operating instructions for the P6 cleaning machine provide more detailed descriptions and must be observed!

1.2 Abbreviations and definitions

CU4000	Control computer
CC	Cleaning cycle

1.3 Referenced documents

Quick guide Software update P6:	BA-6028-002
Operating instructions P6 Suite (PC software):	BA-6028-003
Operating instructions Up/Download:	BA-6028-004
Operating instructions SCADA:	BA-6028-005
Up/download of licenses P6:	BA-6028-006
Licenses used P6	T-6028-003

2 Commissioning

See BA-6028-001, Chapter 4 Commissioning of the machine.

3 Screen Capture / Screenshots

In the operating instructions BA-6028-001, chapter
[12 Remote access](#)

Screenshots of the CU4000 (machine control) can be taken via any web browser. To do this, the IP address (e.g. <http://192.0.2.1>) or the host name (<http://IndexLine>, or <http://IndexLine.local>) of the machine must be entered in the browser.

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HTTP vs HTTPS:

Communication takes place via HTTP. It is normally sufficient to simply enter the IP address (e.g. 192.168.1.3). If the browser displays https (e.g. https://192.168.1.3), you must switch to http (without "s", e.g. http://192.168.1.3).

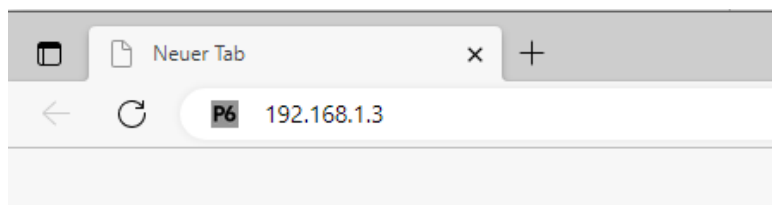


Fig. 1.3-1 Enter IP address or host name in the browser

4 Software update

A software update of the CU4000 (machine control unit) can be carried out via a PC, see quick guide software update P6, chapter 1.3 Referenced documents

5 Main page, Status, Start cleaning cycle

In the operating instructions BA-6028-001, chapter [5.2 First steps](#)

After switching on and initializing (initializing the motors, measuring the liquid levels of the baths, etc.), the following display appears:

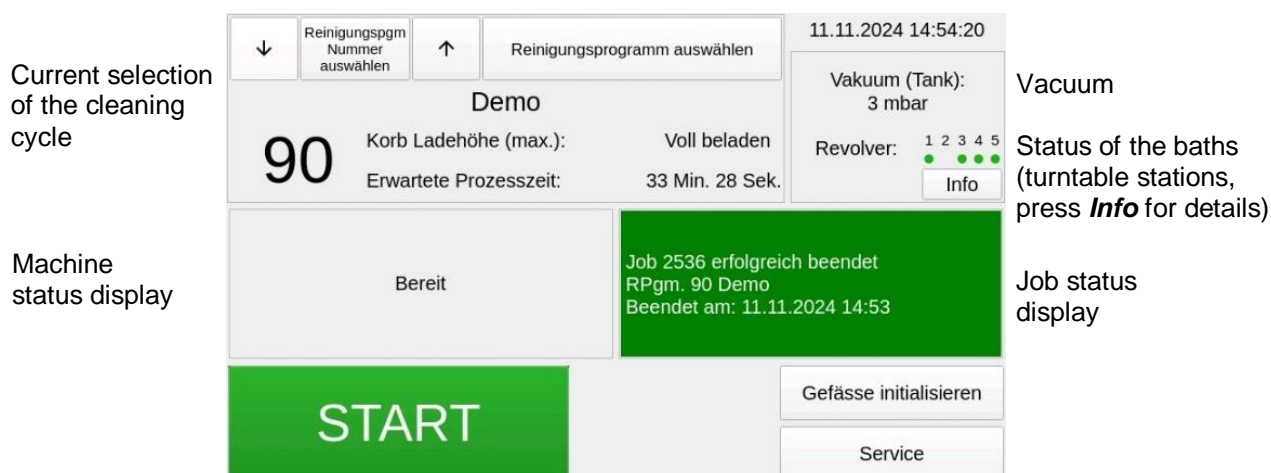


Fig. 1.3-1 Display after initialization

The selected cleaning cycle (CC) is displayed in the upper left half. A different CC can be selected using the buttons. Many actions and displays also refer to the selected CC.

Machine status display

Operating instructions BA-6028-001, chapter 5.3 Machine and turntable status

The machine status is displayed in the window on the left in the middle. Information on errors in the CC or turntable stations (containers) that are not ready is also displayed here. By touching the area or pressing **START**, more information is displayed in the event of an error (e.g. a message with the corresponding error in the CC), or a corresponding menu is opened (e.g. initialize baths), or an attempt is made to reinitialize the baths.

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Status of the turntable stations

Operating instructions BA-6028-001, chapter 5.3 Machine and turntable status

- Green dot: Turntable station (bath) is ready for cleaning (depending on the selected CC)
- Red dot: The corresponding turntable station (bath) is not ready (e.g. too little cleaning solution in the bath, or the bath is not initialized, etc.).
- No dot: The turntable station (bath) is not used in the selected CC.

Info opens a menu with more information, see BA-6028-001, chapter 5.3.1 Revolver status (baths).

Job status display:

Operating instructions BA-6028-001, chapter 5.3 Machine and turntable status

Information on the last job (cleaning process).

START starts the selected CC.

Initialize baths is used to fill the baths, replace cleaning solution, replace baths, etc., see 7 Fill baths, replace cleaning solution

Service opens the menu for editing cleaning cycles (CC), for all settings, calibrations etc., see BA-602-001, chapter 6 Service

6 Cleaning cycles

In the operating instructions BA-6028-001, chapter
[5.4 Structure of the cleaning cycles](#)
[5.6 Operating and programming cleaning cycles](#)

The cleaning process is defined by a cleaning cycle (CC). A CC consists of several phases. In one phase, the basket with the items to be cleaned is immersed in the cleaning solution or dried (dryer at turntable position 6). Each phase takes place at a turntable position.

6.1 Create and edit cleaning cycles

The menu can be found under
Service → *Edit cleaning cycles*

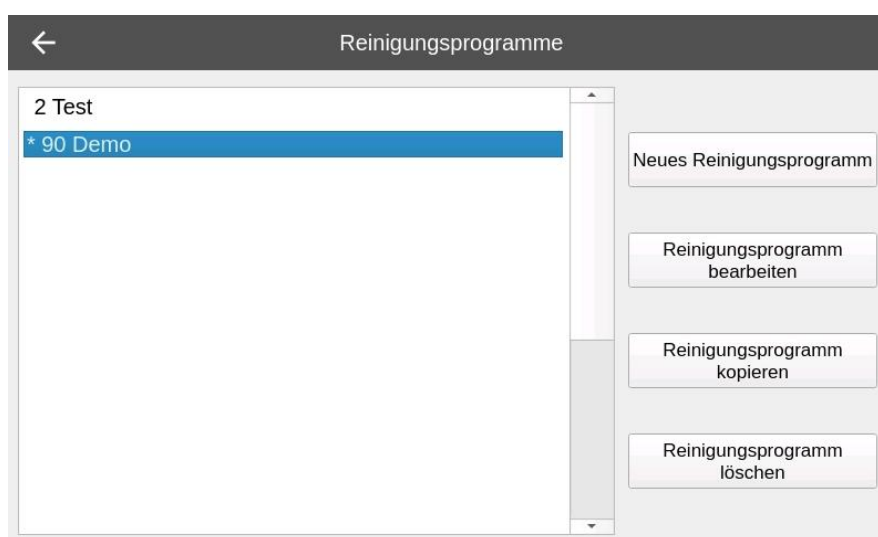


Fig. 6.1-1 Edit cleaning cycles menu

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Note: Some parameters of the CC are defined for each turntable position, e.g. whether the bath is used with or without cleaning solution, the turntable temperature, etc. One of the turntable positions is used in each phase.

6.2 Edit cleaning cycles on Windows PC, backup

CCs can be exchanged between the CU4000 and a PC, and can be created and edited on a Windows PC. Cleaning cycles can also be archived on a PC or server (backup).

Please note that CCs are saved on the PC as a file. The CC or the file can be edited on the PC (printing or saving as a PDF is also possible). The file can then be sent back to the machine (CU4000).

See operating instructions *P6 Suite* (PC software), 1.3 Referenced documents

7 Fill baths, replace cleaning solution

In the operating instructions BA-6028-001, chapter 5.7 Initialize baths

The turntable stations are equipped with cleaning baths that must be maintained manually (emptied, cleaned and filled). The baths must be removed from the turntable for maintenance and replacement of the cleaning solution. The **Initialize baths** menu is used for this purpose.

The doors must be closed for all movements.

The menu can be found under *Initialize baths*



Fig. 6.2-1 Initialize baths menu

The icon on the right-hand side of the screen shows the current status of the selected turntable position (depending on the selected CC¹)

The desired turntable position can be selected, **Go to turntable position and open cover** executes the action.

¹ See BA-6028-001, chapter 5.3.1 Turntable status (baths)

The cleaning bath can be removed from the turntable for maintenance. To do this, it is lifted slightly from its position and removed towards the front:



Baths must be **unlocked before removal!**

Ultrasonic & Permanent Flow

Move the lever on the bottom of the station to the left stop to unlock.

When locking **and** unlocking the turntable, use the counter grip to prevent radial forces from acting on the turntable. This will help avoid damage to the turntable's suspension!



Glass baths

To remove, push the lever upwards, pull the bottom of the bath slightly forwards and remove it upwards.

To insert bath, place it against the unlocking mechanism and press lightly backwards until the locking mechanism audibly snaps into place.



"Click"

Dryer



The dryer is locked with a pin on the back of the bath. Remove the pin to remove the dryer bath.



Before inserting a cleaning bath, its underside and the base with lever must be dry.



At turntable positions that require the cleaning bath to be locked, care must be taken to ensure that the connector plugs of the bath mount do not come into contact with liquid, **risk of short circuit!** Dry off any drops on the bath mount.



If a cleaning bath is no longer being used, make sure that the underside of the cover is dry after closing it and that no drops can come loose when turning the turntable.



When removing the permanent flow bath, a drop of water may remain on the mount. Dry this off with a cloth.



When filling the baths with cleaning media outside the machine, safety measures must be taken in accordance with the chemicals used!

Once the cleaning bath has been serviced, it is reinserted.

The menu can be found under
Initialize baths

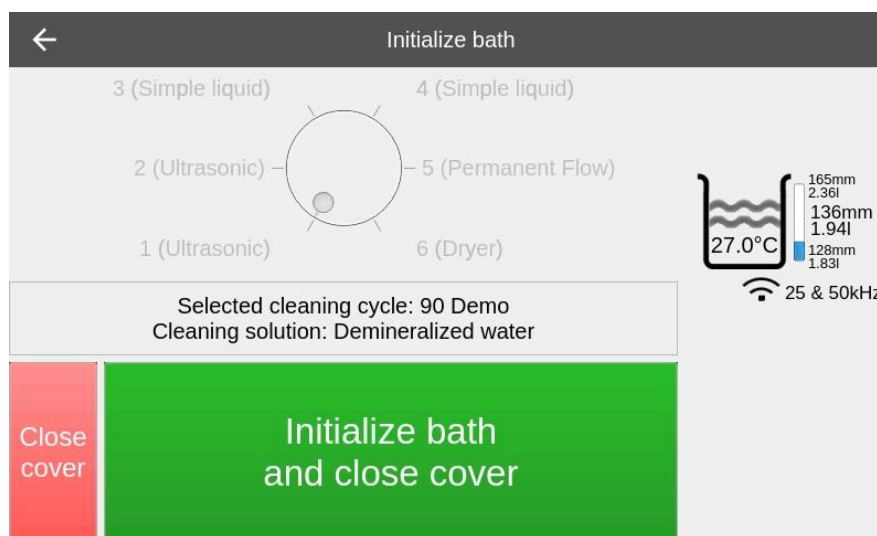


Fig. 6.2-2 Initialize bath menu with open cover

When the cover is open, the maximum and minimum fill level or fill quantity of the cleaning solution is also displayed in the bath status (symbol on the right-hand side of the screen). Whether the bath is used with or without cleaning solution is defined in the selected CC (see 6 Cleaning cycles). Furthermore, the description of the cleaning solution is displayed above the green button.

If Autofill and / or dosing unit are installed, you can access the Autofill menu via **Autofill / dosing unit**, see BA-6028-001, chapter 5.7.1 Autofill.

Initialize bath and close cover initializes the bath (turntable station, e.g. measures the level of the cleaning solution, starts the bath heating or fills the permanent flow bath, depending on the turntable position and the selected CC). The cover is then closed.

The turntable stations are checked periodically during operation (e.g. level of the cleaning solution). The

intervals for this check can be parameterized.

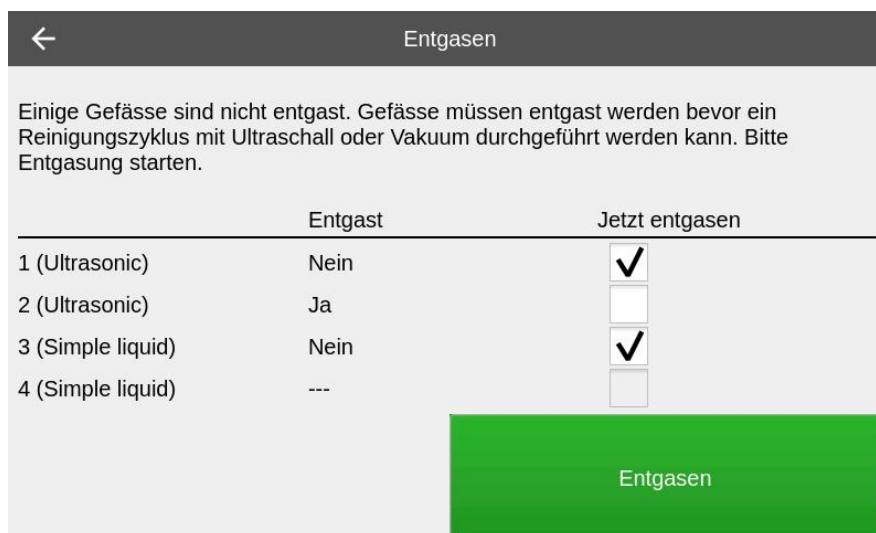
Degassing opens the menu for degassing the baths. When the menu is closed, the menu for degassing is opened automatically if not all baths have been degassed (see 7.1 Degassing).

7.1 Degassing

In the operating instructions BA-6028-001, chapter 5.7.2 Degassing

Baths filled with a cleaning solution that are used with a vacuum must be degassed. Degassing reduces the amount of gas (air) dissolved in the cleaning solution. As a result, the cleaning solution foams significantly less under vacuum.

The menu can be found under
Initialize baths → Degassing



	Entgast	Jetzt entgasen
1 (Ultrasonic)	Nein	<input checked="" type="checkbox"/>
2 (Ultrasonic)	Ja	<input type="checkbox"/>
3 (Simple liquid)	Nein	<input checked="" type="checkbox"/>
4 (Simple liquid)	---	<input type="checkbox"/>

Entgasen

Fig. 7.1-1 Degassing

Baths for which the level of the cleaning solution is adequate can be selected for degassing. The baths are degassed one after the other using the parameters specified in the machine settings.

The CC specifies whether a bath must be degassed or not (see 6 Cleaning cycles).



High bath temperatures and foaming cleaning agents can lead to increased water absorption of the vacuum system during vacuum cycles!

It is important that foaming cleaning solution is degassed!

The manufacturer accepts no liability for water damage to the vacuum pump.

8 Other functions

8.1 Barcodes / QR codes

In the operating instructions BA-6028-001, chapter
5.5.2 Barcodes / QR codes

The following use of barcodes / QR codes is supported:

1. *Barcodes / QR codes to start cleaning cycle* (parameter in the CC, see operating instructions BA-6028-001, chapter 5.4.2 Cleaning cycle header)

The listed barcodes / QR codes must be scanned before starting the CC. The CC can only be started once all codes have been scanned.

2. *Scan and save any barcodes / QR codes on start* (parameter in the CC, see operating instructions BA-6028-001, chapter 5.4.2 Cleaning cycle header)

Any barcodes / QR codes can be scanned before starting the CC. All scanned codes are saved. The codes and all relevant information about a job (cleaning cycle) are recorded in SCADA².

3. Combination of 1. and 2.

The CC can be started by pressing **START** or scanning a barcode / QR code.

The screenshot shows the machine's control interface. At the top, there are buttons for 'Reinigungspgm Nummer auswählen' (down arrow) and 'Reinigungsprogramm auswählen' (up arrow). The main display area shows 'Demo' mode with a large '90' for 'Korb Ladehöhe (max.):' and 'Voll beladen'. Below this, it shows 'Erwartete Prozesszeit: 5 Min. 42 Sek.'. On the right, there's a status box showing '12.11.2024 11:54:15', 'Vakuum (Tank): 142 mbar', and 'Revolver: 1 2 3 4 5' with five green dots. Below the status box, there's a green box with the text 'Job 2542 erfolgreich beendet', 'RPgm. 32 vakuumzeit kalt', and 'Beendet am: 12.11.2024 08:28'. At the bottom left, there's a large green 'START' button. At the bottom right, there are buttons for 'Gefäße initialisieren' and 'Service'. The status 'Bereit' is shown above the 'START' button, with the instruction 'Barcodes scannen oder START drücken.'

Fig. 8.1-1 Machine ready, CC selected with barcodes / QR codes.
Status "Scan barcodes or press START"

² SCADA see 1.3Referenced documents

8.2 Replace cleaning solution regularly

In the operating instructions BA-6028-001, chapter [5.5.1 Replace cleaning solution regularly](#)

In the CC, you can define for each turntable position after how many uses the cleaning solution should be replaced.

8.3 User system

In the operating instructions BA-6028-001, chapter [5.8 User system and access authorization](#)

The user system can be activated or deactivated as required (only by the administrator). Each registered user is assigned an access authorization level. Minimum access authorization levels are defined for certain functions. Certain events (e.g. start or change of a CC) are recorded (see Events, operating instructions BA-6028-001, chapter 9 Machine status and events). If the user system is activated, the identification of the logged-in user is also saved with the event.

8.4 Settings

In the operating instructions BA-6028-001, chapter [6.2](#)

General settings (e.g. date and time, IP address, etc.), machine settings, turntable parameters (e.g. name of the turntable positions, minimum and maximum filling quantity, etc.), user, etc. can be found in the Settings menu.

The menu can be found under
Service → Settings

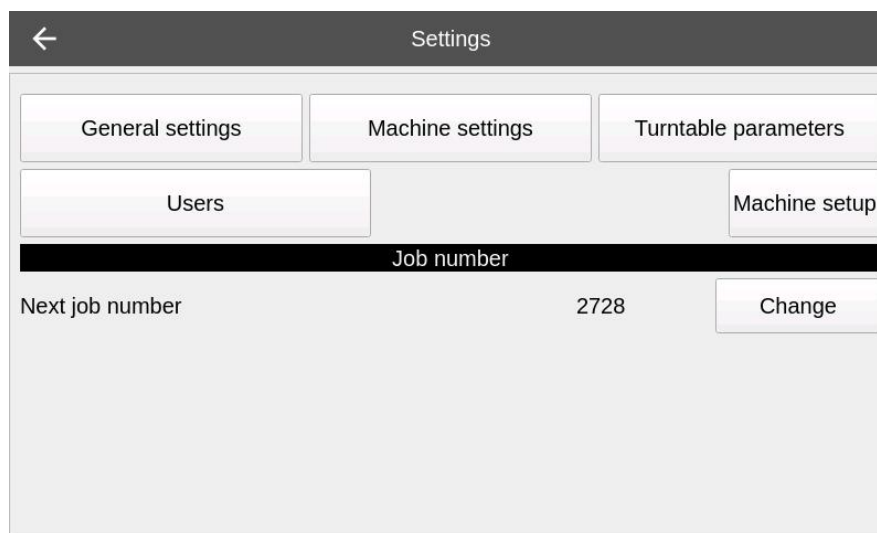


Fig. 8.4-1 Menu settings

8.5 Tests, calibrations & maintenance

In the operating instructions BA-6028-001, chapter [6.3 Tests, calibrations & maintenance](#)

The *Tests, calibrations & maintenance* menu provides access to the following functions:

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- Temperature curve
- Vacuum curve
- Conductivity curve
- Axis movement
- Manual code
- Ultrasonic test
- Calibrations / Adjustments
- Maintenance (filter / oil, remaining time of components with limited service life)

8.6 SCADA

A license is required to use SCADA. The license code can be entered in the general settings³, or the license file can be sent directly to the CU4000 via the PC program *P6 Suite*⁴.

When SCADA is activated, every job (cleaning cycle) is recorded. See SCADA operating instructions, 1.3 Referenced documents

9 Troubleshooting

9.1 Error messages

In the operating instructions BA-6028-001, chapter 9.1 Errors, warnings, messages

Some warnings and error messages are identified by event numbers (error numbers).

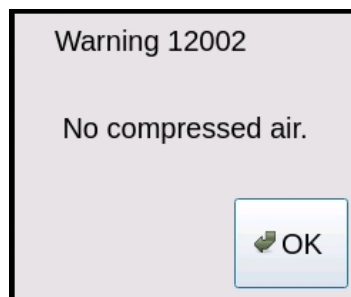


Fig. 9.1-1 Example of a warning (with event number)

The causes and remedies for some of these can be found in the BA-6028-001 operating instructions, chapter 9.1 Errors, warnings, messages

9.2 Jammed motor axes

If the motor axes become jammed (e.g. cover) and it is no longer possible to initialize the machine, each motor axis can be moved individually manually via the Axis movement menu. See operating instructions BA-6028-001, chapter 6.3.4 Axis movement.

³ see operating instructions BA-6028-001, chapter 6.2.3 General settings

⁴ See upload/download of licenses P6, 1.3Referenced documents