

Authorised Specialists

manual

Installation and Operating Instructions

MatCleaner 300199-DE/UK-A

English

**MatCleaner
with washbasin**



MatCleaner



Declaration of Conformity

Manufacturer:

Ehrle GmbH

Address:

**Industriestraße 3
D – 89165 Dietenheim**

Product:

Mat Cleaner

This product is given below is in conformity with the European Directives:

Relevant EC Directives:

2000/14/EC
2006/42/EC
2011/65/EU
2014/30/EU
2004/108/EC
2006/95/EC

Applied harmonized standards:

EN 60335-1
EN 60335-2-79
EN 50581
EN 55014-1: 2006+A1: 2009+A2: 2011
EN 55014-2: 2015
EN 62233: 2008
EN IEC 61000-3-2: 2019-12
EN 61000-3-3: 2020-07

Conformity procedures applied:

2000/14/EC: Annex V

This product conforms to
the following directives:

**UK UK
CA NI**

CE

CE-0085

Dietenheim, 01.11.2024

Development



Christoph Nöldner

Head of Development



Reiner Ehrle

CEO

Table of Content

1	User information	
1.1	General	7
1.2	Operating concept.....	7
1.3	Terminology.....	8
1.4	Meaning of the emphasis.....	8
1.5	Meaning of the symbols.....	9
1.6	Target group.....	10
1.7	Warranty and Liability.....	11
1.8	Environmental protection.....	12
2	Safety	
2.1	General safety information.....	13
2.2	Access for persons to the device interior	13
2.3	Safety instructions for cleaning operation during opening hours (self-service operation)	13
2.4	Intended use	14
2.5	Duty of care for the plant operator	14
2.6	Duty of care for the maintenance personnel.....	14
2.7	Accident prevention regulations.....	15
2.8	Lifting and moving loads.....	15
2.9	Periodic inspections.....	15
2.10	Manufacturer tests	15
2.11	Safety regulations Electrical connection	15
2.12	Design changes to the device.....	16
2.13	Safety devices.....	16
3	Product description	
3.1	General product overview	17
3.2	Product variants.....	17
3.2.1	Dry Cleaning.....	18
3.2.2	Dry Cleaning / Wet Cleaning	18
3.2.3	Dry- / Wet Cleaning / Dry Blower	19
3.2.4	Dry- / Wet Cleaning / Chemical-dosing unit.....	19
3.2.5	Dry- / Wet Cleaning / Chemical-dosing unit / Dry Blower.....	20
3.3	MatCleaner views.....	21
3.3.1	Total view of MatCleaner	21
3.3.2	MatCleaner door open on the right.....	22
3.3.3	MatCleaner door open on the left.....	24
3.4	Type plates.....	26
3.5	Serial number	29
3.6	Technical data.....	29
4	Installation	
4.1	Selection of the operating location.....	31
4.2	Installation at the operation location.....	35
4.2.1	Delivery.....	35

4.2.2	Fastening at the operating location.....	36
4.2.3	Water drainage	36
4.2.4	Water connection	36
4.2.5	Electrical installation.....	37
4.3	Initial commissioning after installation	38
5	Commissioning	
5.1	Measures prior to commissioning.....	39
5.2	Settings by maintenance personnel	39
5.2.1	Frost protection system	39
5.2.2	Setting the Chemical-dosing unit	40
5.3	Commissioning by operating personal	41
5.4	Web-based user interface	42
5.4.1	Set up web-based user interface for maintenance personnel	43
5.4.2	Web-based user interface for device settings by maintenance personnel	49
5.4.2.1	Menu Economics	52
5.4.2.2	Window Software-Version	52
5.4.2.3	Settings.....	53
6	Operation	
6.1	Control panels.....	55
6.2	Control and indicator elements.....	56
6.3	User instructions for mat cleaning	57
6.3.1	CentralPay operator terminal.....	57
6.3.2	Mat guidance during cleaning process	57
6.3.3	Operating procedure mat cleaning.....	58
6.3.3.1	Customer animated button lighting (option)	59
6.3.4	Programme stop	59
6.3.5	Wash and care programmes.....	59
6.3.5.1	Water inflow (washbasin)	59
6.3.5.2	Dry Cleaning	59
6.3.5.3	Wet Cleaning	60
6.3.5.4	Chemical-dosing unit.....	60
6.3.5.5	Dry Blower	60
6.3.6	Hygiene concept after programme completion.....	61
6.3.6.1	Device cleaning and rinsing function	61
6.3.6.2	Fresh water emptying function at end of operation	61
6.4	Flow chart PLC programme MatCleaner.....	61
7	Decommissioning	
7.1	Temporary decommissioning by maintenance personnel.....	65
7.2	Decommissioning for a longer period of time.....	65
8	Maintenance	
8.1	General Information	66
8.2	Maintenance work.....	66
8.3	Check belt tension.....	68

8.4	Upper access to the device interior	69
8.4.1	Removing roof	69
8.4.2	Removing brush tray cover	71
8.5	Spray angle nozzle pipes.....	71
8.5.1	Check spray angle Wet Cleaning and Chemical-dosing unit.....	72
8.5.2	Check spray angle device rinsing	73
8.5.3	Spray angle adjustment nozzle pipes	74
9	Troubleshooting	
9.1	Troubleshooting table	76
9.2	Replacement of components and parts	78
10	Spare parts logistic	79
10.1	MatCleaner assembly overview.....	79
10.2	Roof assembly	80
10.3	Base assembly	82
10.4	Assembly right side	84
10.5	Distributor assembly.....	86
10.6	Brush tub assembly	88
10.7	Output shaft assembly.....	90
10.8	Drive assembly	92
10.9	Drying shaft assembly	94
10.10	Electric components	96
10.11	Assembly left side	98
11	Circuit diagrams	
11.1	Title page	100
11.2	List of contents	101
11.3	Heavy Current 3 x 400 VAC.....	102
11.4	SPS1 Inputs / Outputs Overview	103
11.5	SPS2 Outputs Overview	104
11.6	SPS Power Supply	105
11.7	SPS Analog Inputs.....	106
11.8	SPS Digital Inputs	107
11.9	SPS Digital Outputs (page 1).....	108
11.10	SPS Digital Outputs (page 2).....	109
11.11	CWE 6 Power Supply	110
11.12	CWE 6 Overview	111
12	Notes	



1 User information

1.1 General



General Information

For a comprehensive advice and information on the MatCleaners please contact the EHRLE Customer Service

With the purchase of an EHRLE MatCleaner you are the owner of a quality product, which is characterised by:

- user-friendliness,
- reliability,
- environmental friendliness.

These Installation and Operating Instructions are part of the MatCleaner and must be kept at the operating site and available at all times.

For the MatCleaner the manual contains information on

- User information
- Safety
- Product information
- Installation
- Commissioning
- Operation
- Decommissioning
- Maintenance
- Troubleshooting
- Spare parts
- Circuit diagrams.

1.2 Operating concept

The MatCleaner is designed for:

- **Maintenance personnel of plant operators**
with access to
 - device assemblies and components inside the cabinet via the two lockable side doors
 - Ethernet interface for setting device parameters (duration of wash programme, duration of water supply, etc.)
 - control elements inside the cabinet.

The controls in the cabinet are used to set

- water pressure via pressure reducer (device equipment Wet Cleaning).
- heater (device equipment Frost Protection)
- chemical dosing pump (device equipment Chemical-dosing unit).



- **self-service operation by customers during opening hours** with access to
 - buttons for selecting the desired washing programme
 - mat cleaning shaft and mat drying shaft
 - fresh water dispenser with washbasin and tap equipment.

1.3 Terminology

In this manual the terminology listed below is replaced by the relevant short terms whenever possible:

- | | |
|---|------------------|
| • Vehicle floor mat (car doormat) | floor mat or mat |
| • Installation and Operating Instructions | manual |
| • MatCleaner | device |

If a clear factual reference is required in parts of the description, the full terminology is used.

1.4 Meaning of the emphasis

The emphasis used in this manual have the following meanings:

WARNING

Warning precedes operating procedures, instructions, etc., which, if not strictly observed, could result in personal injury or loss of life. Warning precedes also, when device misuse could result in personal injury or loss of life.






CAUTION








Caution precedes operating procedures, instructions, etc., which, if not strictly observed, could result in damage to the device. Caution precedes also, when device misuse could result in damage to the device.



This symbol indicates additional information.

1.5 Meaning of the symbols

Symbol	Meaning
	WARNING Follow instructions! Non-observance or neglecting of prescribed instructions, incorrect operation or misuse of the device may endanger life and limb of persons.
	WARNING Danger of death due to electric shock. Switch off the device and disconnect it from the power supply before starting installation, maintenance and repair work. Protect the device against unintentional restarting. Touching live parts can lead to life-threatening injuries.
	WARNING Risk of burns due to hot surface of Dry Blower. The Dry Blower can become very hot during operation. Touching hot surfaces can cause burns to the surface of the skin. Wait until the Dry Blower has cooled down before touching the surface.
	WARNING Risk of injury due to belt drive. When operating the device with the left side door open, keep away from the rotating drive motor with toothed belt-driven brush unit. Fingers or the hand can be pulled in between the running toothed belt and the gear wheels of the drive motor or brush unit and crushed or serious injuries can occur.
	WARNING Danger with heavy loads. A person is not allowed to lift and move loads more than 23 kg. Otherwise the health of persons may be endangered (e.g. overload of the spinal column, injuries from falling loads). For loads of more than 23 kg, use suitable lifting equipment (e.g. forklift truck, lift truck).

Symbol	Meaning
	WARNING Risk of injury due to suspended load. No persons may be in the danger zone or under the suspended load. A falling load endangers the life and limb of persons.
	CAUTION Observe instructions for installation, device adjustment, operation, maintenance and repair. Non-observance or neglecting prescribed instructions, incorrect operation or misuse of the device may result in damage to parts, assemblies or components.
	General Information. General additional information.
	Information on recycling. General information on recycling.
	Information on disposal. General information on the professional and environmentally sound disposal of old appliances, assemblies, components, materials and consumables. The symbol with the crossed-out dustbin indicates that.
	Information on hearing protection. General information on hearing protection.
	Requires direct action.

1.6 Target group

These Installation and Operating Instructions contain information and instructions for

- Qualified, trained and authorised specialist personnel for the installation and initial commissioning of the MatCleaner.
- Qualified electricians for electrical installation and repair measures in the event of electrical malfunctions.

- Qualified, trained maintenance personnel authorised by the system operator for
 - supervision of daily commissioning and preparatory measures for self-service operation (opening hours).
 - monitoring of the payment system (CentralPay system) with emptying of daily cash intake
 - setting and care work
 - maintenance work.

1.7 Warranty and Liability

The MatCleaner may only be used for its intended purpose.

Intended use includes

- Installation, maintenance and setting work may only be carried out by specialised personnel, who
 - is instructed and trained on the device, or
 - have fully read and understood the information and instructions in this Installation and Operating Instructions and are thereby able to ensure safe handling of the device.
- The information and instructions contained in this Installation and Operating Instructions must be observed.
- Installation, maintenance, repair and setting of the device only by qualified, trained and authorized personnel. For installation, maintenance, repair and setting of the device, the relevant specialist personnel can be consulted and commissioned by the EHRLE Customer Service.
- The device must not be put into operation if the safety devices and protective covers are faulty.
- The device may only be operated with fully functional safety equipment and protective covers. In the event of functional failures during operation, the device must be taken out of operation immediately.
- Faulty, insufficient or defective devices must not be put into operation. Before commissioning, carry out a visual inspection for faulty, inadequate or defective device components.
- No constructive changes may be made to the device.
- The device may only be operated in the configuration certified by the manufacturer. Operation with subsequently installed modules, components or additional devices is not permitted and may endanger life and limb of persons or lead to damage to the device.
- Only original parts from the manufacturer or consumables approved by the manufacturer may be used for maintenance and repair work.
- Only chemicals approved by the manufacturer may be used for the chemical-dosing unit programme.

Any warranty and liability claims for personal injury and damage to the device are void if the device is not used for its intended purpose.

1.8 Environmental protection



Not on recycling
 The packaging materials are recyclable. Please do not throw the packaging into the household waste, but recycle it.



Note on disposal.
 Old appliances, assemblies or device parts contain valuable recyclable materials that should be sent for possible recovery.
 The old appliances must not be disposed of together with unsorted municipal waste (household waste). The symbol with the crossed-out dustbin on the appliance indicates this obligation.
 Therefore, please dispose of discarded devices, assemblies or parts properly via suitable collection systems.

Dispose of used materials in an appropriate and environmentally friendly manner. Observe the local regulations.
 Old appliances, assemblies or device parts contain valuable recyclable materials that should be recycled.
 According to environmental regulations, lubricants such as oils and greases must not get into the ground, water or sewer system.
 Do not allow lubricants such as oils and greases to be released into the environment. Protect the soil and dispose of lubricants in an environmentally friendly manner.

2 Safety

2.1 General safety information

Observe the relevant national regulations of the legislator on accident prevention.

Observe the respective national legal regulations for operating the MatCleaner.

The specialised personnel for installation, maintenance, repair and setting must be able to assess the accident hazards on the device and be aware of the risks.

Maintenance personnel must be regularly trained by means of safety instructions on the danger areas and the warning signs, symbols and instructions attached to the MatCleaner.

Do not use any aggressive, abrasive cleaning agents or cleaning solutions to clean the device.

Observe the safety instructions provided with the cleaning chemicals used (usually on the packaging label).

Keep cleaning agents out of the reach of unauthorized persons. Risk of poisoning or caustic burns from cleaning agents! Observe the instructions on the cleaning agents.

Perform prescribed maintenance and inspection work in due time (see section 8, Maintenance).

Report safety-relevant defects and faults immediately and commission their rectification without delay.

Observe the warning signs, symbols and instructions on the MatCleaner and keep it legible.

2.2 Access for persons to the device interior

Only qualified, trained maintenance personnel authorised by the plant operator may have access to the device interior for maintenance, repair and setting work.

2.3 Safety instructions for cleaning operation during opening hours (self-service operation)

The side doors must be closed and locked with the key during self-service opening hours. Keep the keys in a place accessible only to authorised personnel

Keep away from the mat cleaning and drying chute

- braids, long hair
- fingers and hands
- Scarves, carpets, ties etc.
- Other objects that can be pulled in.

The MatCleaner can be used by persons aged 14 and over and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance and understand the hazards involved. Children must not play with the device.

2.4 Intended use

The MatCleaner is designed for commercial use.

The device is used exclusively for cleaning standard vehicle floor mats. The mats can be made of rubber or textile fabric.

Any other use constitutes improper use. Any warranty and liability claims for personal injury and damage to property are void if the device is used in a manner other than that intended.

Preferred operating locations are petrol stations and car washes. Operation in areas where there is a risk of fire or explosion is not permitted.

2.5 Duty of care for the plant operator

It is the duty of care of the plant operator to ensure that all safety regulations, instructions and information for comprehensive operation are observed and monitored by the maintenance personnel.

The information and instructions contained in this Installation and Operating Instructions must be observed.

The plant operator must ensure:

- The device may only be operated in a technically perfect condition and in accordance with its intended purpose, with an awareness of safety and dangers, and in compliance with this manual.
- Take the device out of operation immediately or do not put it into operation under any circumstances if damage or destruction is found on the device, the fastening parts or the power supply or if safe operation cannot be guaranteed.
- If parts are damaged, incorrect operation or other defects, stop operation immediately or do not use the device. Immediately rectify any damage, incorrect operation or function and contact customer service if necessary.
- In order to carry out the maintenance tasks comprehensively, the maintenance personnel must be regularly trained and instructed in relation to occupational safety and environmental protection.
- The areas of responsibility, competences and monitoring of the maintenance personnel must be regulated by the plant operator.
- The currently applicable local accident prevention regulations, the local industrial safety regulations and other safety-related rules and regulations as well as the operating instructions must be observed.
- In addition to this manual, the generally applicable and local regulations for accident prevention and environmental protection must be made available and observed.

2.6 Duty of care for the maintenance personnel

The maintenance personnel have the following duties

- Monitoring of device operation during opening hours in self-service operation with regard to safety and function.
- Ensure that the side doors are closed and the door locks are locked during self-service opening hours. The keys must be kept in a place accessible only to authorised personnel.

- Wear the appropriate personal protective equipment (PPE) for special maintenance work.
- Carry out maintenance work in accordance with regulations.
- Always keep the area around and inside the device clean. Ensure that the floor and the interior are not dirty and/or smeared with oil or grease. If necessary, clean the areas and remove the oil and grease.
- All instructions, information and safety instructions in this manual must be observed.
- All warning signs, information and notices attached to the device must be observed and kept legible.
- Any use of the device is prohibited for maintenance personnel under the influence of alcohol or drugs. If you are taking medication, a doctor must be consulted before using the device. The medical instructions must be observed.

2.7 Accident prevention regulations

Observe the applicable national regulations of the legislator on accident prevention.

2.8 Lifting and moving loads

The MatCleaner weigh 220 kg respectively 255 kg. Components of the MatCleaner can have a weight of more than 23 kg.

Lifting and moving loads is permitted for one person up to 23 kg. If the load exceeds 23 kg use suitable lifting equipment (e.g. forklift, lift trucks)

Observe the international standard „ISO 11228-1 Ergonomie - Manuelles Handhaben von Lasten - Teil 1 Heben und Tragen 05/2003“.

2.9 Periodic inspections

The periodic inspections are listed in Section 8 (Maintenance).

2.10 Manufacturer tests

The acceptance test report is part of the scope of delivery.

2.11 Safety regulations Electrical connection

When working on electrically live parts:

- Observe accident prevention regulations DGUV V3 (previously BGV A3) and local regulations
- use tools according to DIN EN 60900.

2.12 Design changes to the device

Design changes to the MatCleaner are not permitted.

When operating a device which has been modified or changed in design, the device will not be used for its intended purpose. If the device is not used for its intended purpose, no liability or warranty will be accepted (see section 1.7, Warranty and Liability).

2.13 Safety devices

Safety devices and protective covers serve to protect personnel or operators and may not be disabled or their function bypassed.

The MatCleaner has safety and protective covers. All safety and protective covers must be fitted during operation.

The programme stop button is used to stop an activated programme immediately in order to prevent unforeseen processes, risk of damage to the device or risk of injury to persons.

3 Product description

3.1 General product overview



General Information

The Ehrle product programme for MatCleaners comprises the Indoor and Outdoor product lines.

For each product line, customers can choose from a wide range of variants to find a customised solution for their individual needs.

EHRLE customer service can be consulted at any time for detailed advice and information on the product variants.

The two product lines Indoor and Outdoor comprise a large number of product variants. Each product line offers an integrated stainless steel washbasin as an option.



With the exception of the frost protection components for outdoor use, the Indoor and Outdoor MatCleaners have the same features

3.2 Product variants





The following table lists the different variants with their equipment and refers to the sections with detailed information.

Device equipment	Indoor	Outdoor	Reference
Dry Cleaning	x	-	see section 3.2.1
Dry Cleaning Wet Cleaning	x	x	see section 3.2.2
Dry Cleaning Wet Cleaning Dry Blower	x	x	see section 3.2.3
Dry Cleaning Wet Cleaning Chemical-dosing unit	x	x	see section 3.2.4
Dry Cleaning Wet Cleaning Chemical-dosing unit Dry Blower	x	x	see section 3.2.5






3.2.1 Dry Cleaning

Device equipment	Indoor		Outdoor		Symbol
Article-No.	585901	585906	-	-	-
Washbasin	-	x	-	-	
Dry Cleaning	x	x	-	-	

3.2.2 Dry Cleaning / Wet Cleaning

Device equipment	Indoor		Outdoor		Symbol
Article-No.	585902	585907	585904	585909	-
Washbasin	-	x	-	x	
Frost Protection	-	-	x	x	
Dry Cleaning	x	x	x	x	
Wet Cleaning	x	x	x	x	



3.2.3 Dry- / Wet Cleaning / Dry Blower

Device equipment	Indoor		Outdoor		Symbol
Article-No.	585903	585908	585905	585910	-
Washbasin	-	x	-	x	
Frost Protection	-	-	x	x	
Dry Cleaning	x	x	x	x	
Wet Cleaning	x	x	x	x	
Dry Blower	x	x	x	x	

3.2.4 Dry- / Wet Cleaning / Chemical-dosing unit

Device equipment	Indoor		Outdoor		Symbol
Article-No.	585911	585912	585915	585916	-
Washbasin	-	x	-	x	
Frost Protection	-	-	x	x	
Dry Cleaning	x	x	x	x	
Wet Cleaning	x	x	x	x	
Chemical-dosing unit	x	x	x	x	

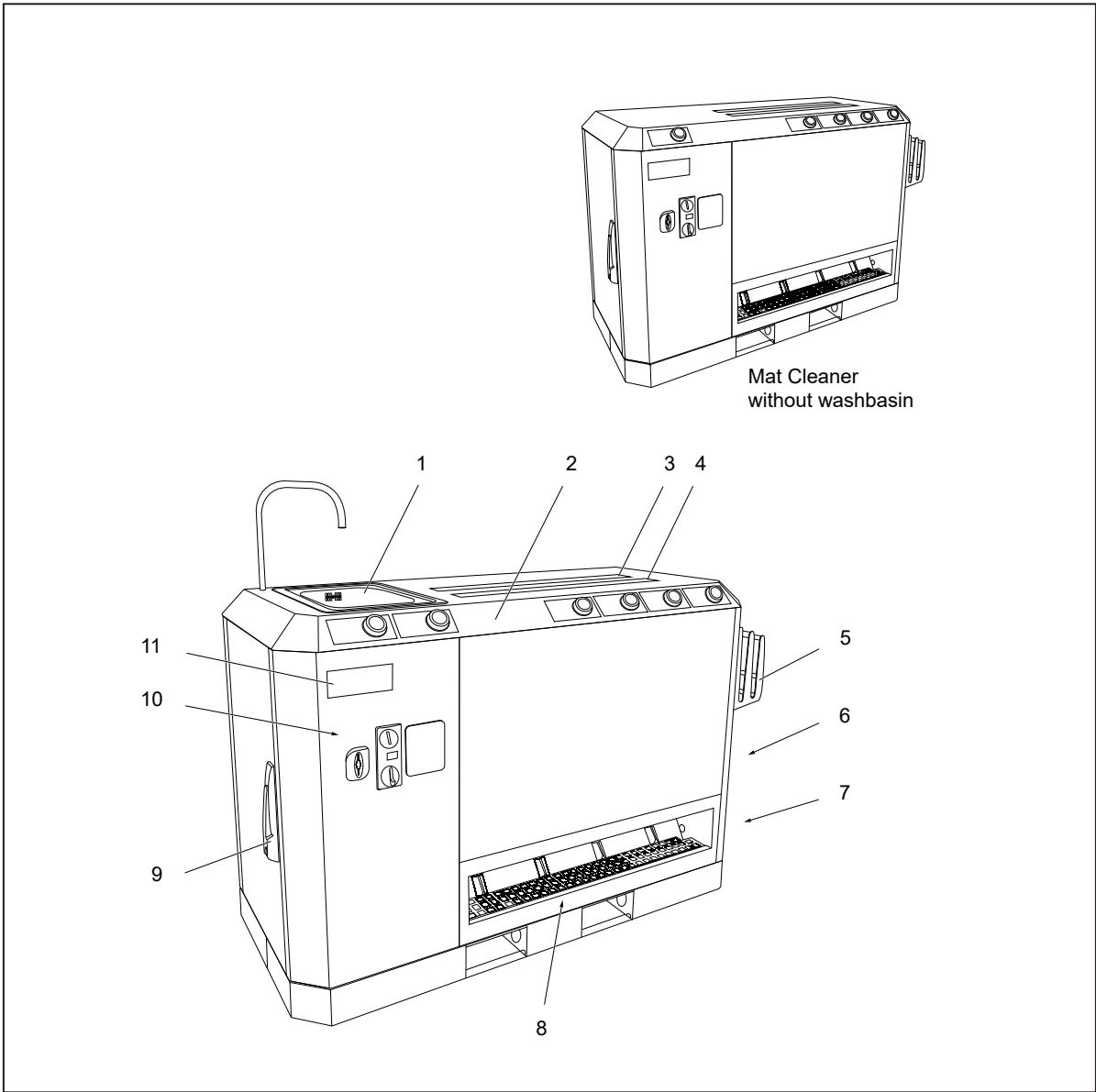
3.2.5 Dry- / Wet Cleaning / Chemical-dosing unit / Dry Blower

Device equipment	Indoor		Outdoor		Symbol
Article-No.	585913	585914	585917	585918	
Washbasin	-	x	-	x	
Frost Protection	-	-	x	x	
Dry Cleaning	x	x	x	x	
Wet Cleaning	x	x	x	x	
Chemical-dosing unit	x	x	x	x	
Dry Blower	x	x	x	x	

3.3 MatCleaner views

3.3.1 Total view of MatCleaner

The figure shows the MatCleaner with all optional equipment (see section 3.2.5).



- | | |
|----------------------------|--|
| 1 Washbasin with water tap | 7 Mat output chute |
| 2 Control panel | 8 Water collection channel with drain |
| 3 Mat drying shaft | 9 Door interlock with lock |
| 4 Mat cleaning shaft | 10 CentralPay system (key reader, coin checker
credit card terminal / bank note reader (option) |
| 5 Mat holder | 11 Display unit (4 digits) |
| 6 Door interlock with lock | |

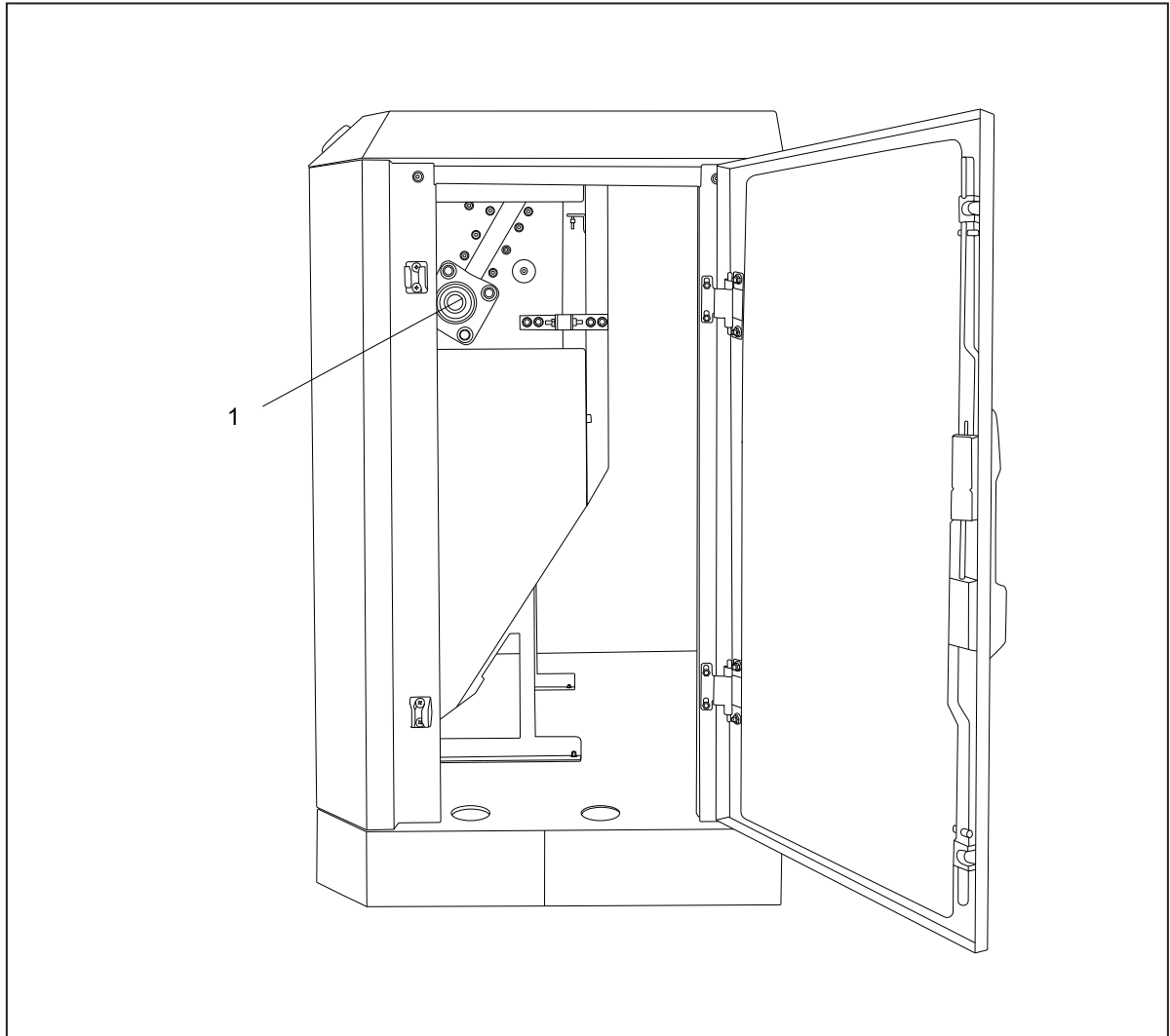
Fig. 3 - 1 MatCleaner with all optional equipment, total view

3.3.2 MatCleaner door open on the right

The figure shows the components for the basic version Dry Cleaning (indoor) equipment without washbasin when the right door is open (see section 3.2.1).

For the large number of possible product variants of the Indoor and Outdoor product lines and their equipment, see section 3.2.1 to section 3.2.5.

An example of the product variant with all optional equipment is shown in the Fig. 3 - 3.

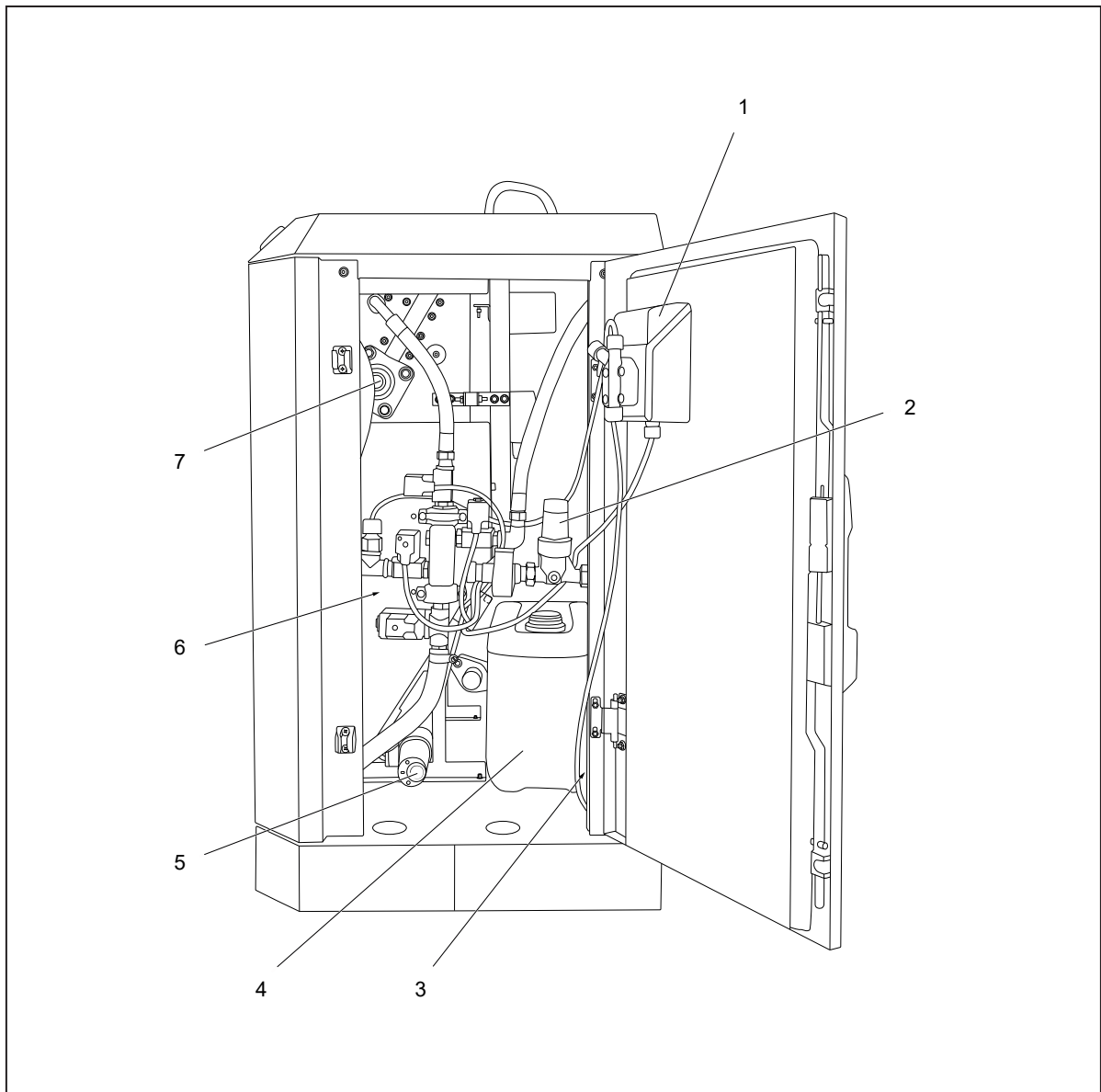


1 Brush unit

Fig. 3 - 2 MatCleaner right door open, variant with Dry Cleaning equipment without washbasin (Indoor)

The figure shows a MatCleaner product variant with all optional equipment when the right door is open (see section 3.2.5).

For the large number of possible product variants of the Indoor and Outdoor product lines and their equipment, see section 3.2.1 to section 3.2.5.

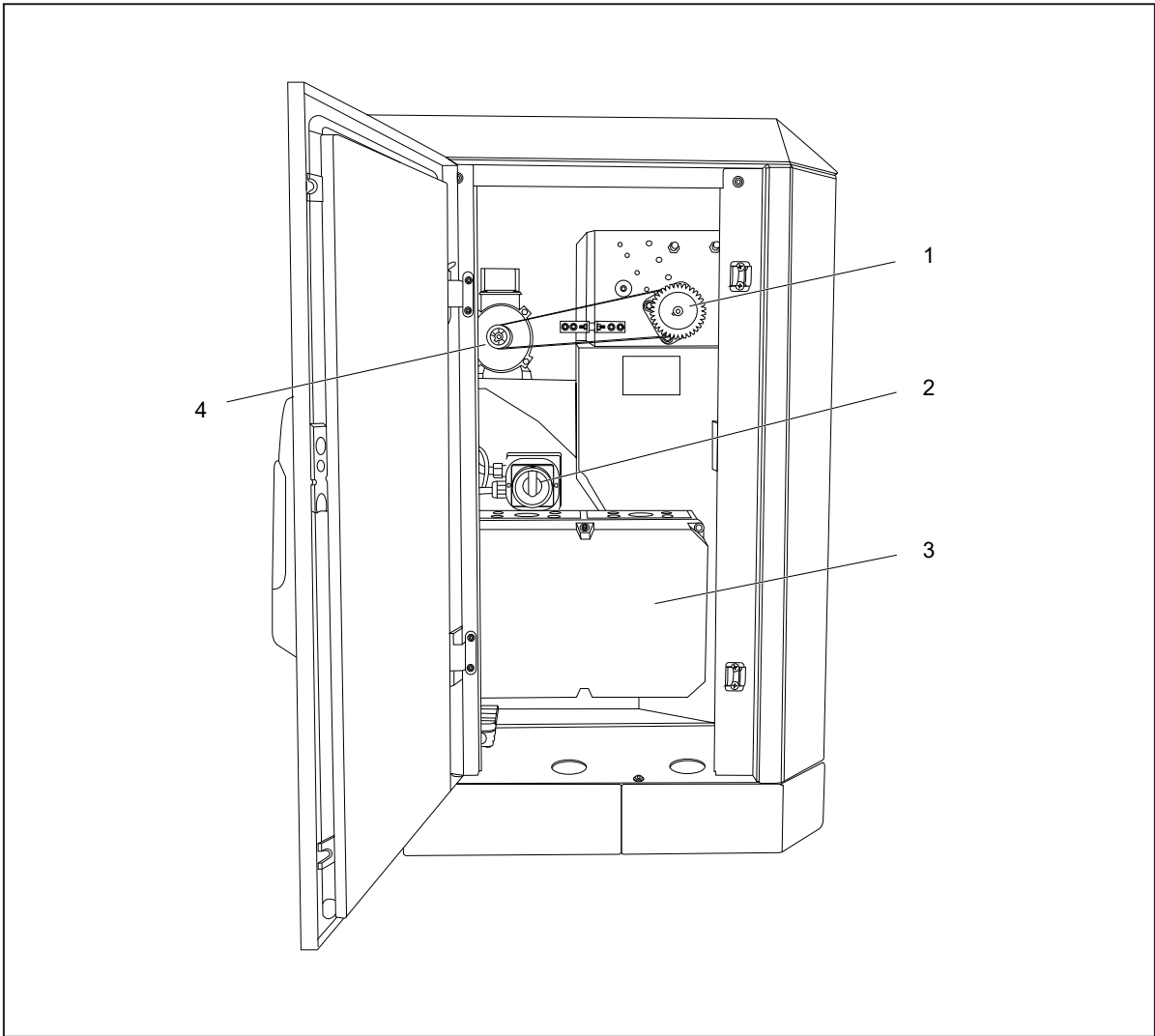


- | | |
|--------------------------------------|--|
| 1 Dosing pump (Chemical-dosing unit) | 5 Elektrical heater (frost protection equipment) |
| 2 Pressure reducer (distributor) | 6 Distributor unit |
| 3 Water connection adapter | 7 Brush unit (Dry-/Wet Cleaning, Chemical-dosing unit) |
| 4 Chemical tank (option) | |

Fig. 3 - 3 MatCleaner right door open, variant with all optional equipment (Outdoor)

3.3.3 MatCleaner door open on the left

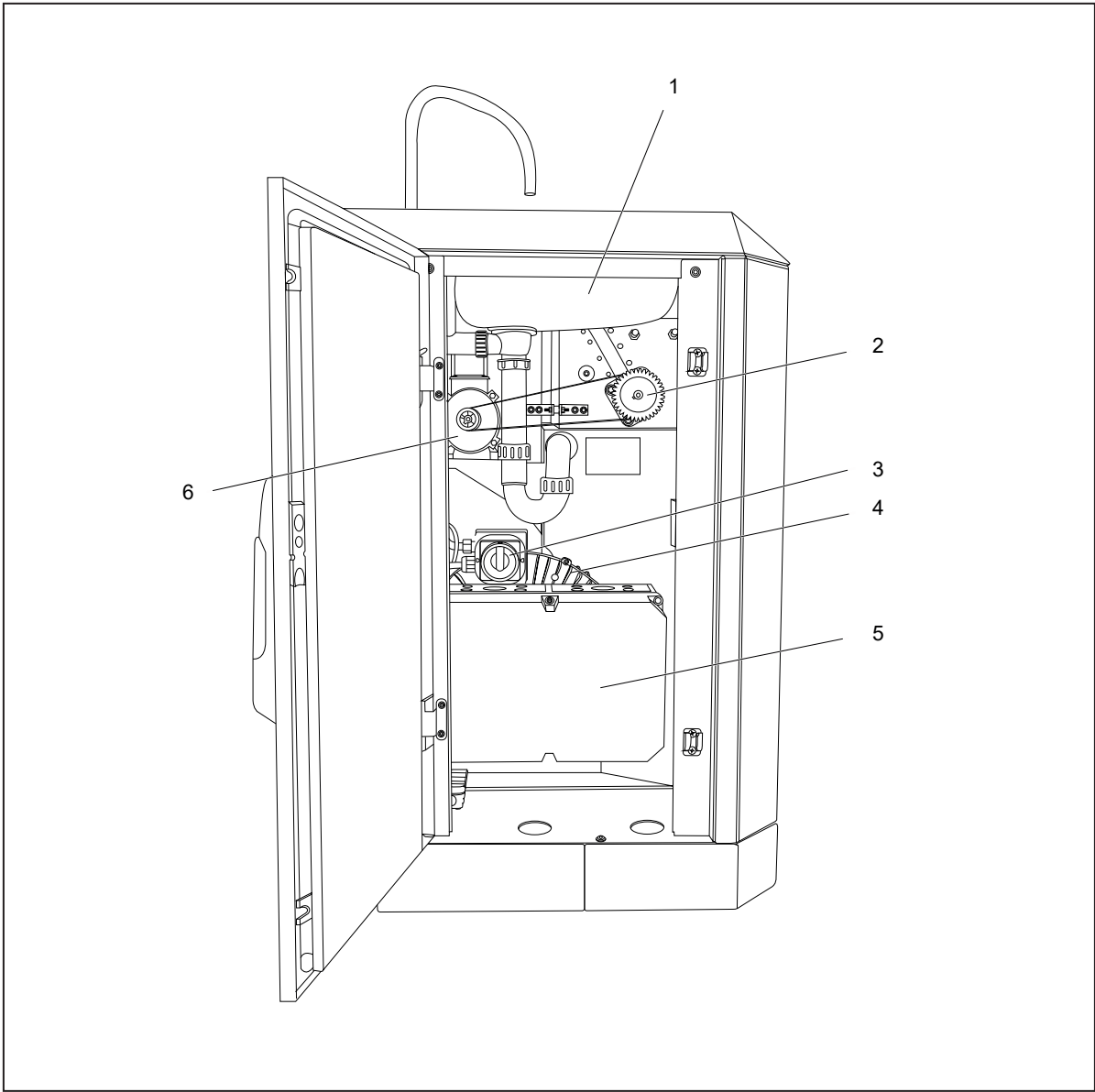
The figure shows the components for the basic version Dry Cleaning (indoor) equipment without washbasin when the left door is open (see section 3.2.1).
For the large number of possible product variants of the Indoor and Outdoor product lines and their equipment, see section 3.2.1 to section 3.2.5.
An example of the product variant with all optional equipment is shown in the Fig. 3 - 5.



- | | | | |
|---|--------------------------|---|-----------------------------------|
| 1 | Brush unit | 3 | Electrical control and switch box |
| 2 | Main switch power ON/OFF | 4 | Drive motor brush unit |

Fig. 3 - 4 MatCleaner left door open, variant with Dry Cleaning equipment without washbasin (Indoor)

The figure shows a MatCleaner product variant with all optional equipment when the left door is open (see section 3.2.5).
For the large number of possible product variants of the Indoor and Outdoor product lines and their equipment, see section 3.2.1 to section 3.2.5.



- | | |
|--|-------------------------------------|
| 1 Washbasin | 4 Blower motor |
| 2 Brush unit (Dry-/Wet Cleaning equipment) | (Dry Blower equipment) |
| 3 Main switch power ON/OFF | 5 Electrical control and switch box |
| | 6 Drive motor brush unit |

Fig. 3 - 5 MatCleaner left door open, variant with all optional equipment (Outdoor)





3.4 Type plates

3.4.1 MatCleaner Indoor

Dry Cleaning

Type: Mattenreiniger Indoor
Trockenreinigung
585901-XX-A



EAC UK CA
CE UK NI

Voltage	3N/PE/AC/400V/50Hz/0,75kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	220kg

Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry Cleaning with washbasin

Type: Mattenreiniger Indoor
Trockenreinigung
inkl. Waschbecken
585906-XX-A



EAC UK CA
CE UK NI


Voltage	3N/PE/AC/400V/50Hz/0,75kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	220kg

Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning

Type: Mattenreiniger Indoor
Trocken- und Nassreinigung
585902-XX-A



EAC UK CA
CE UK NI

Voltage	3N/PE/AC/400V/50Hz/0,75kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	220kg

Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with washbasin

Type: Mattenreiniger Indoor
Trocken- und Nassreinigung
inkl. Waschbecken
585907-XX-A



EAC UK CA
CE UK NI



Voltage	3N/PE/AC/400V/50Hz/0,75kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	220kg

Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with Dry Blower

Type: Mattenreiniger Indoor
Trocken- und Nassreinigung
mit Trocknungsgebläse
585903-XX-A



EAC UK CA
CE UK NI

Voltage	3N/PE/AC/400V/50Hz/3,0kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	255kg

Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with Dry Blower and washbasin

Type: Mattenreiniger Indoor
Trocken- und Nassreinigung
mit Trocknungsgebläse inkl.
Waschbecken
585908-XX-A



EAC UK CA
CE UK NI

Voltage	3N/PE/AC/400V/50Hz/3,0kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	255kg


Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600





Dry- and Wet Cleaning with Chemicals

Type: Mattenreiniger Indoor
Trocken- und Nassreinigung
mit Chemie
585911-XX-A



Voltage	3N/PE/AC/400V/50Hz/0,75kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	220kg



Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with Chemicals and washbasin

Type: Mattenreiniger Indoor
Trocken- und Nassreinigung
mit Chemie inkl. Waschbecken
585912-XX-A



Voltage	3N/PE/AC/400V/50Hz/0,75kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	220kg




Serial No.: 00111011188812



EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with Chemicals and Dry Blower

Type: Mattenreiniger Indoor
Trocken- und Nassreinigung
mit Chemie
und Trocknungsgebläse
585913-XX-A



Voltage	3N/PE/AC/400V/50Hz/3,0kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	255kg



Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with Chemicals Dry Blower and washbasin

Type: Mattenreiniger Indoor
Trocken- und Nassreinigung
mit Chemie und
Trocknungsgebläse
inkl. Waschbecken
585914-XX-A



Voltage	3N/PE/AC/400V/50Hz/3,0kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	255kg




Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600



3.4.2 MatCleaner Outdoor with frost protection

Dry- and Wet Cleaning

Type: Mattenreiniger Outdoor
Trocken- und Nassreinigung
585904-XX-A



Voltage	3N/PE/AC/400V/50Hz/0,75kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	220kg



Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with washbasin

Type: Mattenreiniger Outdoor
Trocken- und Nassreinigung
inkl. Waschbecken
585909-XX-A



Voltage	3N/PE/AC/400V/50Hz/0,75kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	220kg



Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600



Dry- and Wet Cleaning with
Dry Blower

Type: Mattenreiniger Outdoor
Trocken- und Nassreinigung
mit Trocknungsgebläse
585905-XX-A



Voltage	3N/PE/AC/400V/50Hz/3,0kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	255kg



Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with Dry Blower
and washbasin

Type: Mattenreiniger Outdoor
Trocken- und Nassreinigung
mit Trocknungsgebläse inkl.
Waschbecken
585910-XX-A



Voltage	3N/PE/AC/400V/50Hz/3,0kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	255kg



Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with
Chemicals

Type: Mattenreiniger Outdoor
Trocken- und Nassreinigung
mit Chemie
585915-XX-A



Voltage	3N/PE/AC/400V/50Hz/0,75kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	220kg



Serial No.: 10011011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with
Chemicals and washbasin

Type: Mattenreiniger Outdoor
Trocken- und Nassreinigung
mit Chemie inkl. Waschbecken
585916-XX-A



Voltage	3N/PE/AC/400V/50Hz/0,75kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	220kg



Serial No.: 00111011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with
Chemicals and Dry Blower

Type: Mattenreiniger Outdoor
Trocken- und Nassreinigung
mit Chemie und
Trocknungsgebläse
585917-XX-A



Voltage	3N/PE/AC/400V/50Hz/3,0kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	255kg



Serial No.: 10011011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600

Dry- and Wet Cleaning with Chemicals
Dry Blower and washbasin

Type: Mattenreiniger Outdoor
Trocken- und Nassreinigung
mit Chemie
und Trocknungsgebläse
inkl. Waschbecken
585918-XX-A



Voltage	3N/PE/AC/400V/50Hz/3,0kW
Electrical protection	3x16A slow
Max. Size of the mat	650x1000mm
Weight	255kg



Serial No.: 10011011188812

EHRLE GmbH | Industriestraße 3 D-89165 Dietenheim
Tel.: 0 73 03 / 16 00-0 | Fax: 0 73 03 / 16 00-600



3.5 Serial number

The serial number on the nameplate uniquely identifies the product. It is required for Ehrle customer service.

Ser. No. _____

3.6 Technical data

		Product line	
		Indoor	Outdoor
Electrical connection			
Mains voltage	V	400	400
Phase	~	3	3
Mains frequency	Hz	50	50
Connected load	kW	0,75	0,75
for equipment option Dry-/Wet Cleaning, Chemical-dosing-system and Frost Protection			
Current (max.)	A	3	3
Connected load	kW	3	3
for additional equipment option with Dry Blower			
Current (max.)	A	8	8
Degree of protection	IP	IPX5	IPX5
Main fuse (slow blowing)	A	3 x 16	3 x 16
Residual current circuit breaker (max. allowed residual current)	mA	30	30
Chemical-dosing unit (equipment dosing pump)			
Chemical suction quantity	l/h	6	6
Pressure	Bar	0,03 - 6	6
Suction height max. (from bottom of chemical tank)	m	1,5	1,5

Tab. 3 - 1 Technical data (Variant 1 to 18)



		Product line	
		Indoor	Outdoor
Water connection			
Max. feed pressure	bar	6	6
	MPA	0,6	0,6
Feed volume	l/min	4,15	4,15
Noise emission			
Noise level at a distance of 4 m			
Dry Blower off	dB (A)	48	48
Dry Blower in operation	dB (A)	64	64
Environmental conditions			
Temperature	°C	3 bis +55	-20 bis +55
Humidity (non-condensing)	%	95	95
Weights and dimensions			
Weight			
Device equipment: Dry-/Wet Cleaning and Chemical- dosing unit	kg	220	220
Device equipment: Dry-/Wet Cleaning, Chemical-dosing unit, Dry Blower	kg	255	255
MatCleaner length	mm	1549	1549
with lateral mat holder	mm	1577	1577
Width	mm	630	630
Height	mm	1013	1013
Height with washbasin	mm	1313	1313

Tab. 3 - 1 Technical data (Variant 1 to 18)

4 Installation



WARNING

Ensure correct device assembly.

For the installation of the MatCleaner, the personnel must

- have read this manual and understood, that error-free installation can be guaranteed, or
- be specially trained and instructed.

Otherwise, the life and limb of persons may be endangered.



General Information

For detailed advice and information on the installation of the MatCleaner, please contact EHRLE customer service.

If required, EHRLE customer service can commission appropriately qualified personnel to carry out a wide range of installation work.

4.1 Selection of the operating location



WARNING

Select an appropriate and permissible operating location for the MatCleaner.

The local regulations regarding the installation and operation of the MatCleaner must be observed.

The MatCleaner must not be installed or operated in rooms or areas where there is a risk of fire or explosion.

When selecting the operating location for indoor and outdoor use, take the permissible environmental conditions into account (see Technical Data, section 3.6)

Select a dry (Indoor) and safe location (Indoor/Outdoor) for the MatCleaner. Provide a frost-free area for indoor devices.

The indoor MatCleaner does not have an independent frost protection system, but an automatic water drainage system. For outdoor installation, the indoor version is only suitable to a limited extent.

The outdoor MatCleaner has a frost protection system with an automatic water drainage system.

Do not set up the MatCleaner in hazardous areas, e.g.

- on tank shafts (not even those connected to the petrol separator)
- areas where fine dust or corrosive gases occur
- explosion and fire hazard areas.

The foundation must

- have a horizontal and flat surface
- be designed for the load caused by the weight of the MatCleaner.

The location must have

- mains voltage connection on site
- water supply and drainage.

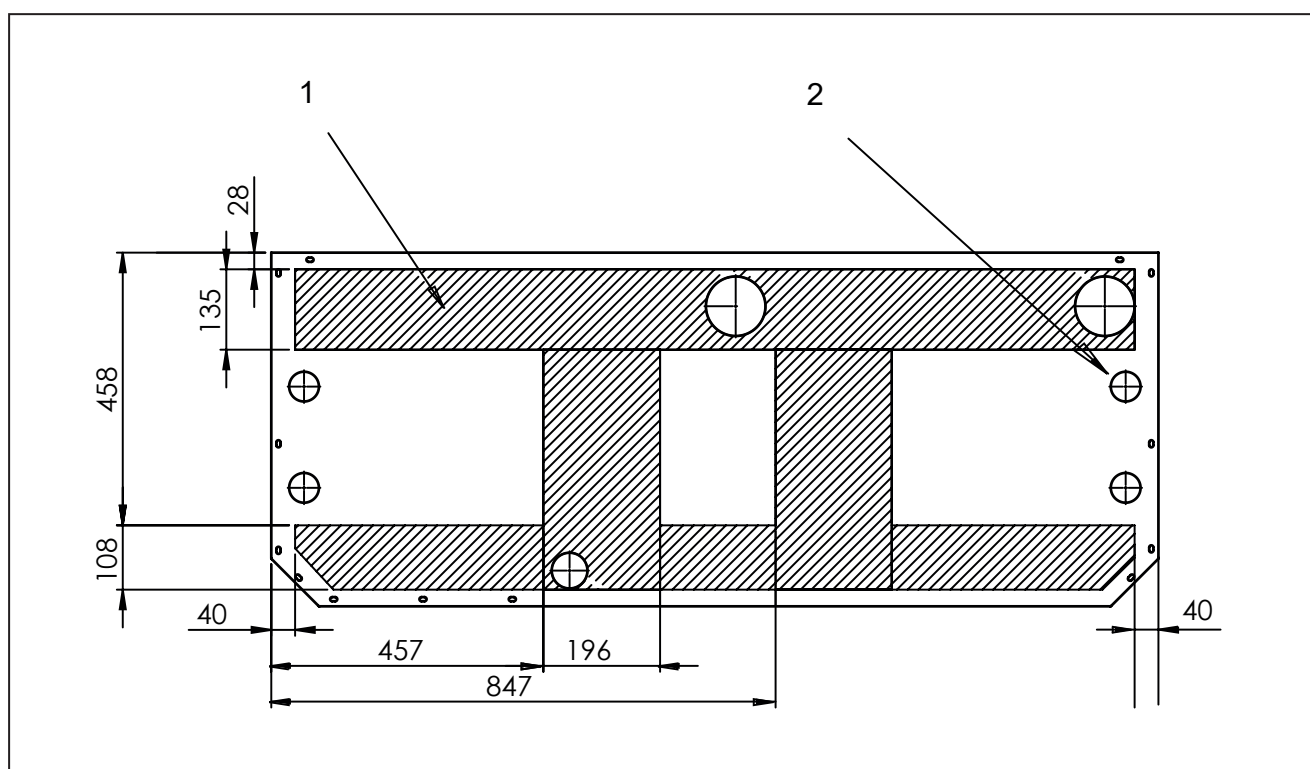
The building water connection (mains water supply), water drainage and electrical connection (building mains connection) must be designed for trouble-free operation (see also section 3.6, Technical Data)

Fig. 4 - 1 shows the foundation plan with the possible area of the waste water drainage and the device attachment points (4x).

The foundation plan (see Fig. 4 - 2) shows as a general example the dimensioning of the positions for

- power supply cable feed
- water pipe feed
- water drainage (waste water).

Insulate water pipes to the device if temperatures below freezing can occur in the winter months.



- 1 Possible area for wastewater drainage
- 2 Device attachment point (4 x)

Fig. 4 - 1 Possible area for wastewater drainage, foundation plan

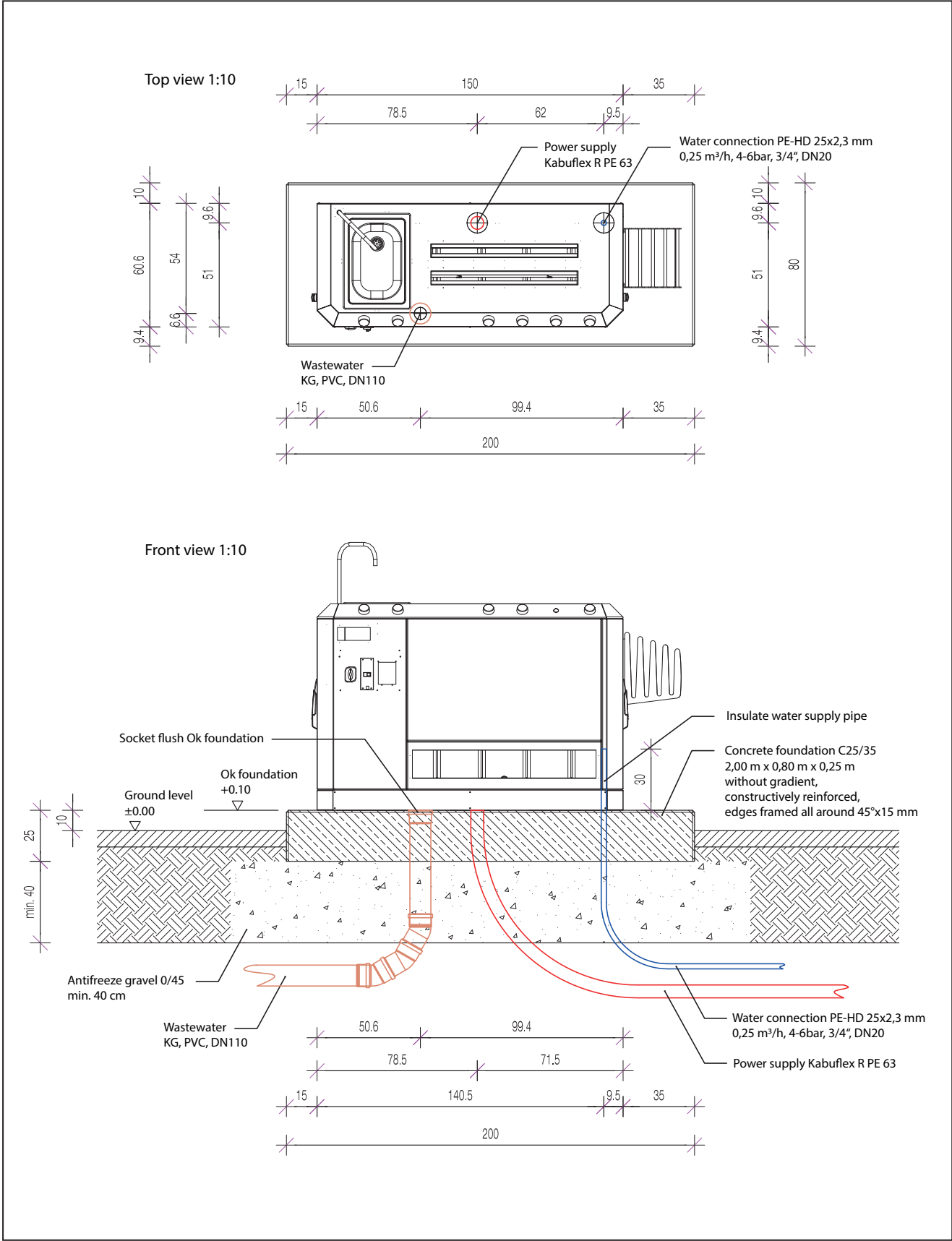


Fig. 4 - 2 Foundation plan, general example

When selecting an operating location, take into account that the following device components and the power supply must be easily accessible for installation, operation, maintenance, repair and adjustment work.

- Connections for device supply
 - power supply
 - water pipe
 - wastewater
- pivoting areas of the side cabinet doors must be completely free (see Fig. 4 - 3)
- clearance for access at the front and back (see Fig. 4 - 3).

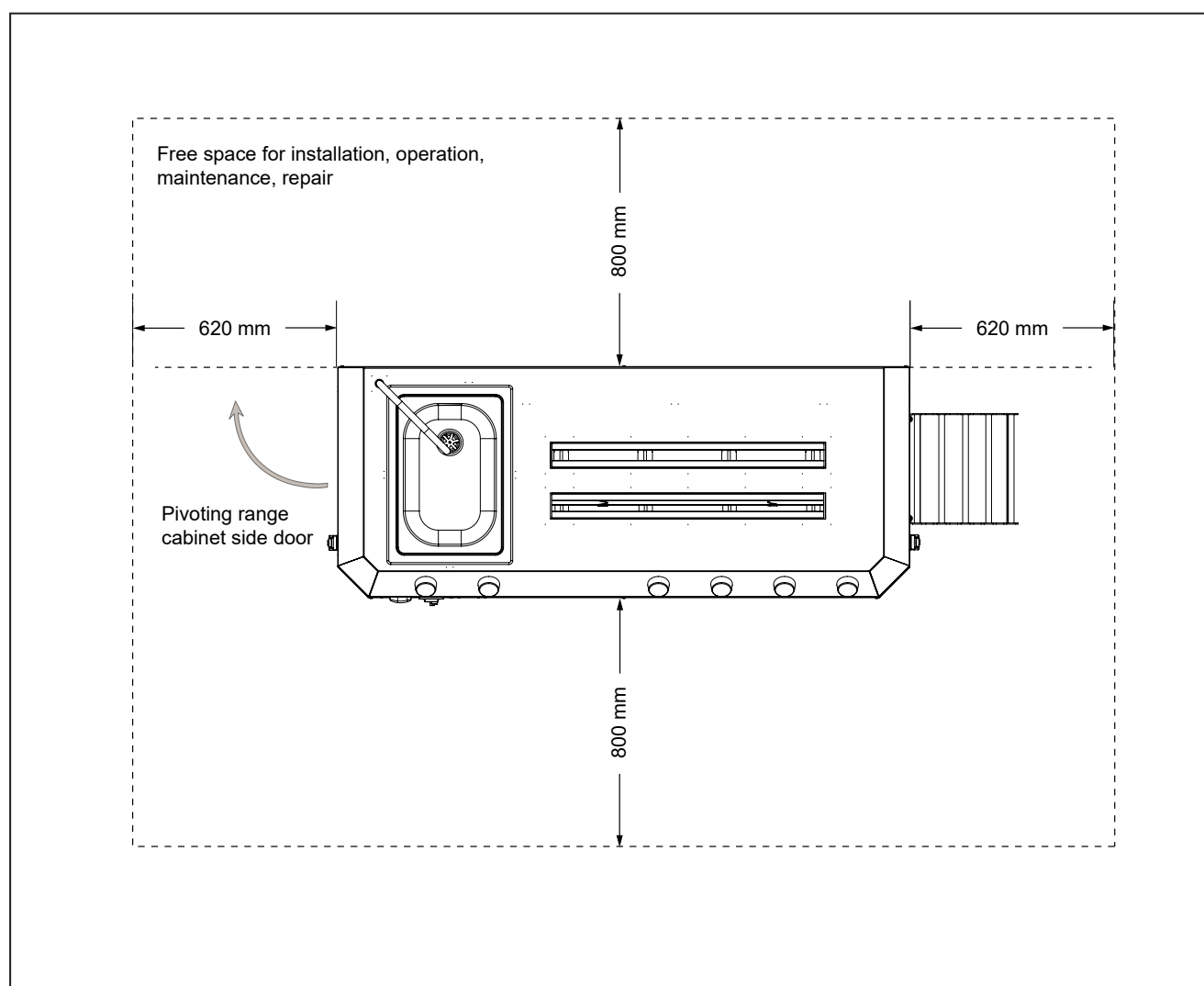


Fig. 4 - 3 Clearance around the MatCleaner

4.2 Installation at the operation location

4.2.1 Delivery



WARNING

Carry out transport work professionally.

Transport work with the MatCleaner may only be carried out by qualified, trained and authorised specialist personnel.



WARNING

Risk of injury due to suspended load.

When loading and transporting, observe the relevant safety regulations and applicable accident prevention regulations.

Observe the safety regulations for the means of transport, conveyor vehicles and lifting equipment.

The means of transport, conveyor vehicles or lifting equipment (e.g. forklifts) must have a load-bearing capacity that can safely withstand the total weight of the MatCleaner with transport packaging.

When attaching the lifting devices, lifting gear and aids, take into account the center of gravity of the MatCleaner.

People must not step under the suspended load or stay in the danger area.

Falling heavy loads endanger life and limb.



General Information

Upon receipt of the MatCleaner, device parts or accessories, carry out a visual inspection for transport damage

In the event of transport damage, notify the transport company immediately.

If necessary, have the transport damage assessed by independent specialists.

Before delivery, the MatCleaner is subjected to a final inspection for correct function and safety, as well as a final visual inspection for mechanical damage.

The transport pallet, transport packaging or the transported goods may be damaged unintentionally during transport.

Generally immediately after receipt of the delivery

- Carry out a visual inspection for damage to the transport pallet and transport packaging.
- Use the delivery note to check that the transported goods are complete.
- Visually inspect the MatCleaner and supplied appliance parts for damage.
- Using the nameplate on the MatCleaner and any device parts supplied, check that they have been delivered correctly as ordered. In the event of incorrect delivery, notify Ehrle or customer service immediately.

Any damage to the transport pallet, the MatCleaner or the supplied appliance parts must be noted on the delivery note and reported to the transport company.

The extent of any relevant damage or missing device parts must be recorded in writing and reported immediately to Ehrle or the customer service department.

Never put damaged MatCleaners into operation.

4.2.2 Fastening at the operating location



WARNING

Risk to injury due to suspended load.

No persons may be in the danger zone or under the suspended load.

Be careful when lifting, moving and setting down the MatCleaner.

A falling load endangers life and limb of persons.

When lifting, moving and setting down the MatCleaner at the operating location, only use lifting equipment and load-carrying devices with sufficient load capacity (weight of the MatCleaner see type plate).

Position the MatCleaner securely at the prepared operating location.

Anchor the MatCleaner at the four attachment points (see Fig. 4 - 1) with dowels and screws. Depending on the nature of the foundation, special dowels may have to be used.

4.2.3 Water drainage

Fig. 4 - 2 shows a foundation plan (general example) with the housing feed-through for the water drainage nozzle. Ensure a tight connection when connecting the drain pipe.

4.2.4 Water connection

Fit the water connection from the mains water supply with a shut-off valve.

The water connection must be designed for:

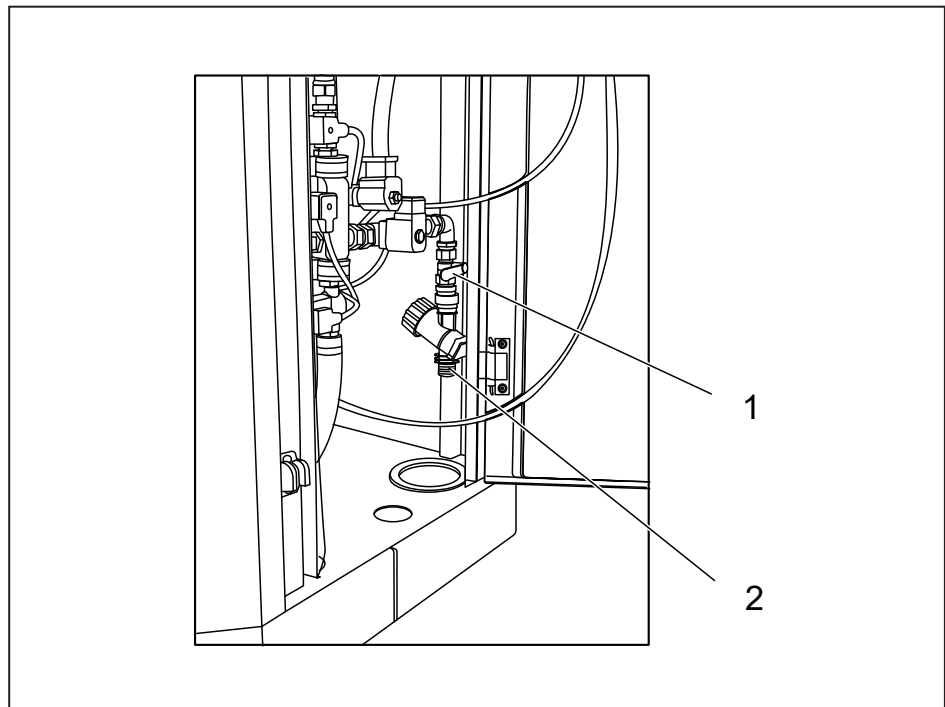
- Flow pressure: 4 - 6 Bar
- Flow rate: 0,25 m³ / h

Push the water hose through the housing bushing (see Fig. 4 - 2) and connect it to the connection adapter (3/4 ") of the manifold (see 2, Fig. 4 - 4).

Insert the water hose through the housing bushing (see Fig. 4 - 2) and connect it to the connection adapter (3/4") of the distributor (2, Fig. 4 - 4).

Ensure that the water connection is tight.

Set the pressure reducer (2, Fig. 3 - 3) of the MatCleaner to 2 bar.



- 1 Shut-off valve for water inlet
- 2 Adapter for water hose connection

Fig. 4 - 4 View of water hose connection and shut-off fitting, right door open

The environmental, waste and water protection regulations must be observed by the system operator!

4.2.5 Electrical installation



WARNING

Ensure proper installation of the electrical connection.

The electrical connection may only be carried out by qualified, trained and authorised electrical specialists.

The installation work for the electrical connection of the MatCleaner may only be carried out by qualified and trained electricians.

Observe the IEC-regulations for electrical cable laying.

Only connect the MatCleaner to voltage sources grounded in accordance with safety regulations.

Improper installation of the electrical connection can endanger life and limb of persons.



CAUTION

Observe the direction of rotation of the drive motor.

Observe the direction of rotation of the drive motor during electrical installation.

Otherwise the device may be damaged during operation.

The electrical mains connection (building connection) for the supply voltage of the device must be designed for trouble-free constant operation (see section 3.4, Technical Data).

The electrical mains connection from the building (or infrastructure) must correspond to the electrical values specified on the type plate of the device (see also section 3.6, Technical data).

The building connection of the MatCleaner must be equipped with a circuit breaker for switching on/off the power supply to the device.

Depending on the equipment of the MatCleaner, the electrical mains connection must be appropriately fused on site (see project-specific circuit diagram).

Connect the power supply cable to the mains connection of the building (or infrastructure) and to the electrical control and switch box (see 3, Fig. 3 - 4 or 5, Fig. 3 - 5) in the device in accordance with the project-specific circuit diagram. Ensure compliance with the provisions of IEC 60364-1.



WARNING

Danger of electric shock.

The power supply from the building's mains connection may only be established after all electrical installation work has been completed. Otherwise, the life and limb of persons may be endangered.

For commissioning and operation, proceed in accordance with section 5.

4.3 Initial commissioning after installation



WARNING

Carry out initial commissioning professionally after installation.

The measures for initial commissioning may only be carried out by qualified, trained and authorised specialist personnel.

Otherwise, the life and limb of persons may be endangered.

The EHRLE MatCleaners are subjected to a final test for correct function and safety before delivery.

The initial commissioning and the first mat cleaning operation after installation serve to check that the device is functioning correctly if transport has caused damage to assemblies or components that is not immediately visible.

In the event of a faulty device function, consult EHRLE customer service immediately.

For initial commissioning, proceed as follows

- Section 5: Commissioning
- Section 6: Operation







5 Commissioning

5.1 Measures prior to commissioning

The plant operator must provide qualified and trained maintenance personnel for

- daily commissioning and monitoring of self-service operations during opening hours
- daily care measures
- device settings
- maintenance and repair

Use the key to unlock and open the respective side door.

Device equipment	Symbol	Preparatory measure
Dry Cleaning		Not applicable.
Washbasin		If necessary, open the shut-off valve of the tap water network. Open the shut-off valve (1, Fig. 4 - 4) in the device. Set the pressure reducer (2, Fig. 3 - 3) to 2 bar.
Wet Cleaning		
Frost protection		Set the regulator of the electrical heater (5, Figs. 3 - 3) to maximum.
Chemical-dosing unit		Provide the chemical tank (4, Fig. 3 - 3) and set the chemical dosing unit (see section 5.2.2).
Dry Blower		Not applicable.

5.2 Settings by maintenance personnel

5.2.1 Frost protection system

The MatCleaners for outdoor use have a frost protection system. The heating switches on automatically at temperatures below the set temperature.

The frost protection heater setting control (see 5, Fig. 3 - 3) must be set to set to maximum.

5.2.2 Setting the Chemical-dosing unit



WARNING

Only use permitted detergents.

Only use cleaning detergents authorised by manufacturer EHRLE when using equipment with chemical dosing.

Only use cleaning detergents approved by the manufacturer EHRLE for MatCleaners that are equipped with the optional Chemical-dosing unit.

Observe the safety data sheets and information provided by the cleaning detergent manufacturer. Keep cleaning detergents out of reach of unauthorised persons.

The use of unauthorised cleaning detergents can endanger the health of persons.

The Chemical-dosing unit provides using cleaning detergent for mat cleaning.

In order to protect the environment, we recommend using detergents sparingly. Observe the dosage recommendations on the container labels of the detergents.

An up-to-date list of approved detergents or chemical additives can be requested from manufacturer EHRLE.

Observe the safety instructions provided with the cleaning detergents used (usually on the packaging label).

For equipment with optional Chemical-dosing system, place the chemical tank inside the device in the designated place (see 4, Fig. 3 - 3).

Insert the filter of the detergent hose to the bottom of the chemical tank.

The Chemical-dosing unit is set to 20 % on the control panel on delivery from the factory. For the setting options available to maintenance personnel on the control panel, see Fig. 5 - 1.

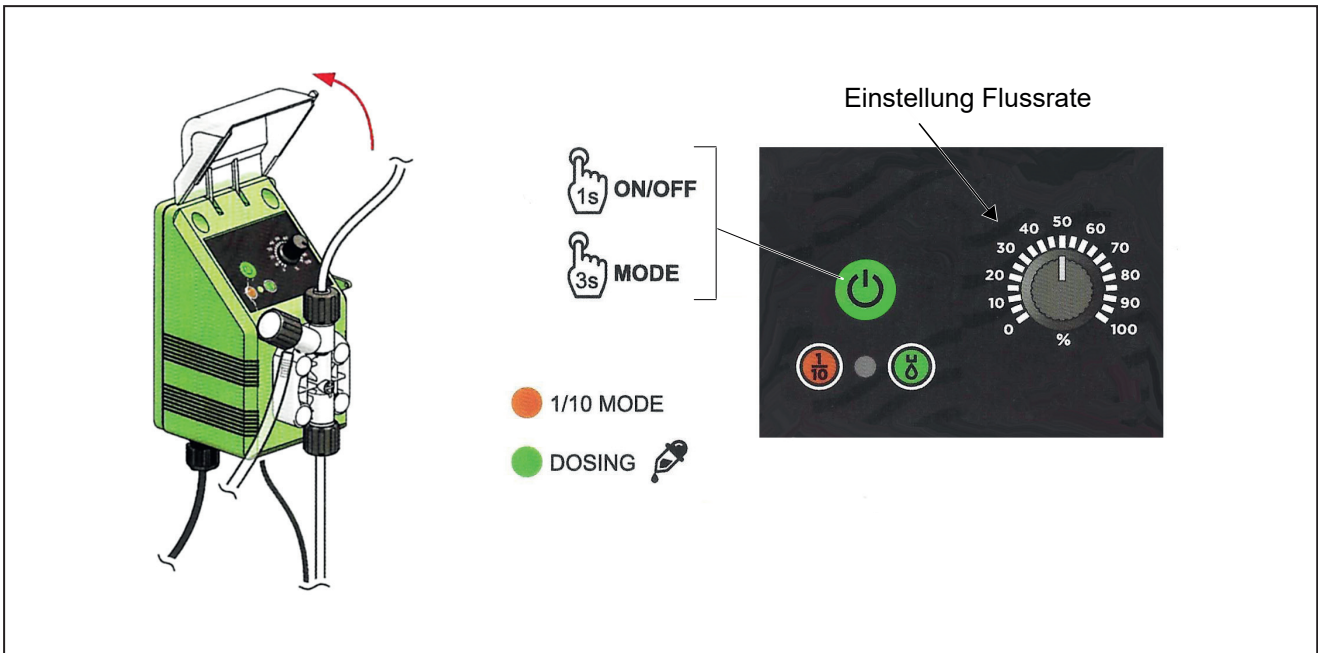


Fig. 5 - 1 Control and indicator elements of the Chemical-dosing unit

5.3 Commissioning by operating personal



WARNING

During self-service opening hours, the side doors must be closed and the door locks locked.

After commissioning by the operating personnel, close the side doors and lock the door locks with the key.

Store the keys so that only authorized personnel have access.

Access to the interior of the device by unauthorised persons can endanger life and limb.



WARNING

Danger due to rotating drive motor with toothed belt.

After opening the left door during device operation, keep away from the rotating drive motor with toothed belt-driven brush unit (1, Fig. 3 - 4 or 2, Fig. 3 - 5).

By reaching in, fingers or the hand can be pulled between the running toothed belt and the gear wheels of the drive motor or the brush unit and crushed or serious injuries can occur.



WARNING

Risk of burns due to hot surface of the Dry Blower.

When the left door is open, do not touch the Dry Blower (4, Fig. 3 - 5) behind the electrical switch box during the activated drying programme or shortly afterwards.

The surface may become hot during operation with the Dry Blower. Allow the surface to cool before touching it.

Touching the hot surface can burn people's skin.

For commissioning with all device variants:

- If necessary, switch on the circuit breaker or main switch of the building mains connection.
- Unlock the lock on the left door and open the door.
- Switch on the main switch (2, Fig. 3 - 4 or 3, Fig. 3 - 5) of the device.
- During opening hours, the 4-digit display unit lights up (11, Fig. 3 - 1). With optional device equipment, the button lighting is activated as a running light in standby mode.
- Close the side door and lock the lock with the key. Store the key so that only authorised maintenance personnel have access.

To set operating parameters via the Ethernet interface, proceed as follows:

- After initial commissioning by maintenance personnel, set up the web-based user interface (see section 5.4).
- Set operating parameters via the web-based user interface (see section 5.5).
- For operation of the MatCleaner, see section 6.

5.4 Web-based user interface



WARNING

Setup and settings via the web-based user interface only when washing programs are not activated.

Ensure that the washing programmes cannot be activated unintentionally. Otherwise, the life and limb of persons is at risk.

The means that you can use the web-based user interface for device settings, proceed as follows:

- Open the left door to access the Ethernet cable connection from the switch.
- Connect laptop (or PC) with Ethernet cable to the Ethernet cable connection (below the CentralPay system).
- Set up web-based user interface, see section 5.4.1.
- Set operating parameters via the web-based user interface, see section 5.4.2.

5.4.1 Set up web-based user interface for maintenance personnel

Before you can open the web-side from Siemens Plc, you must be configure your pc-network card to a fixed IP address, in the same range as Siemens PLC (e.g. 192.168.99.50).

Proceed as follows for the configuration.

Select adapter symbol SPS-Netz in the control panel Network Connection

In the window Network Connection, select the drop-down menu via the PLC network adapter icon and call up the PLC network properties window.

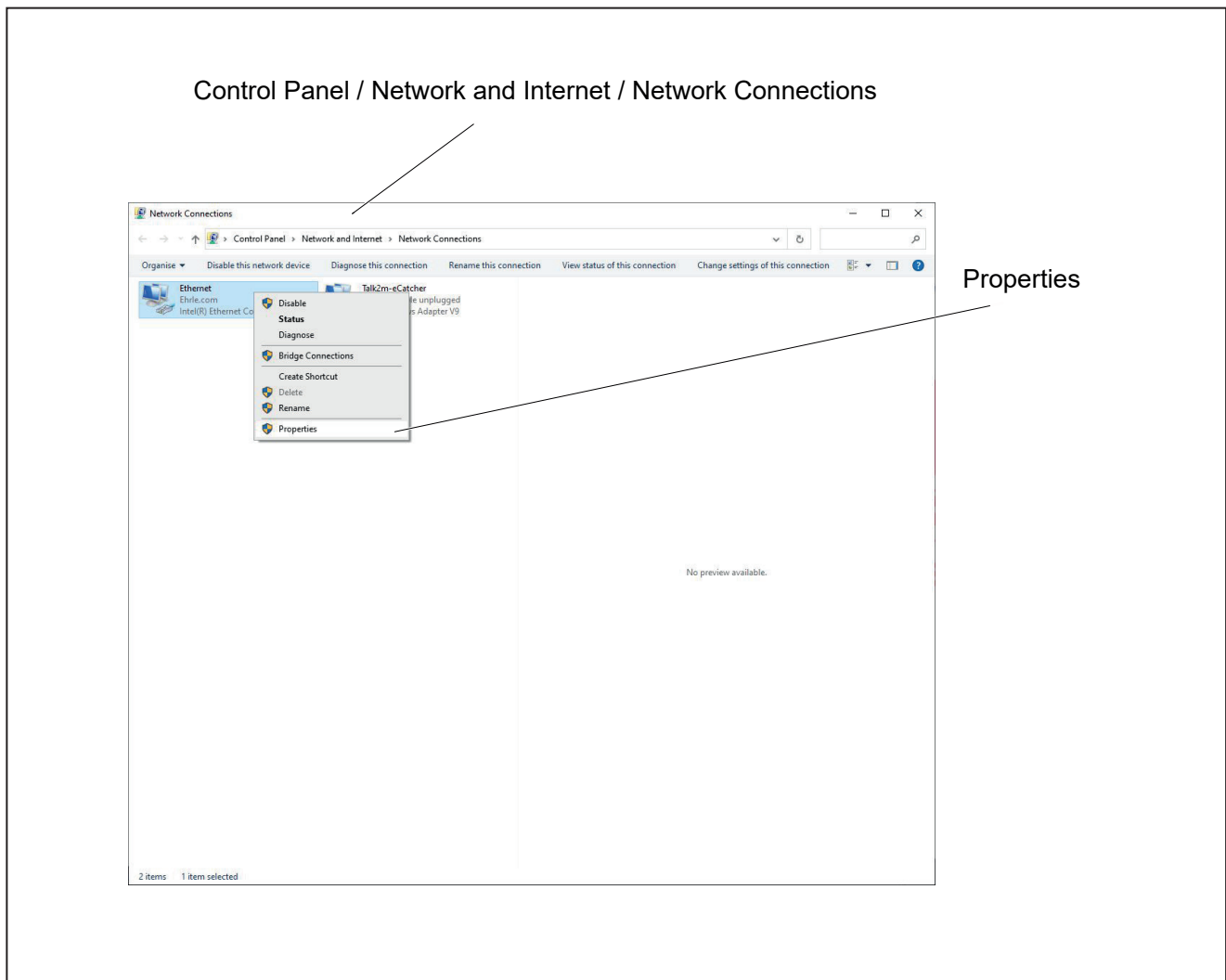


Fig. 5 - 2 Open the PLC network properties window

Select Internet Protocol Version 4 and call up Properties.

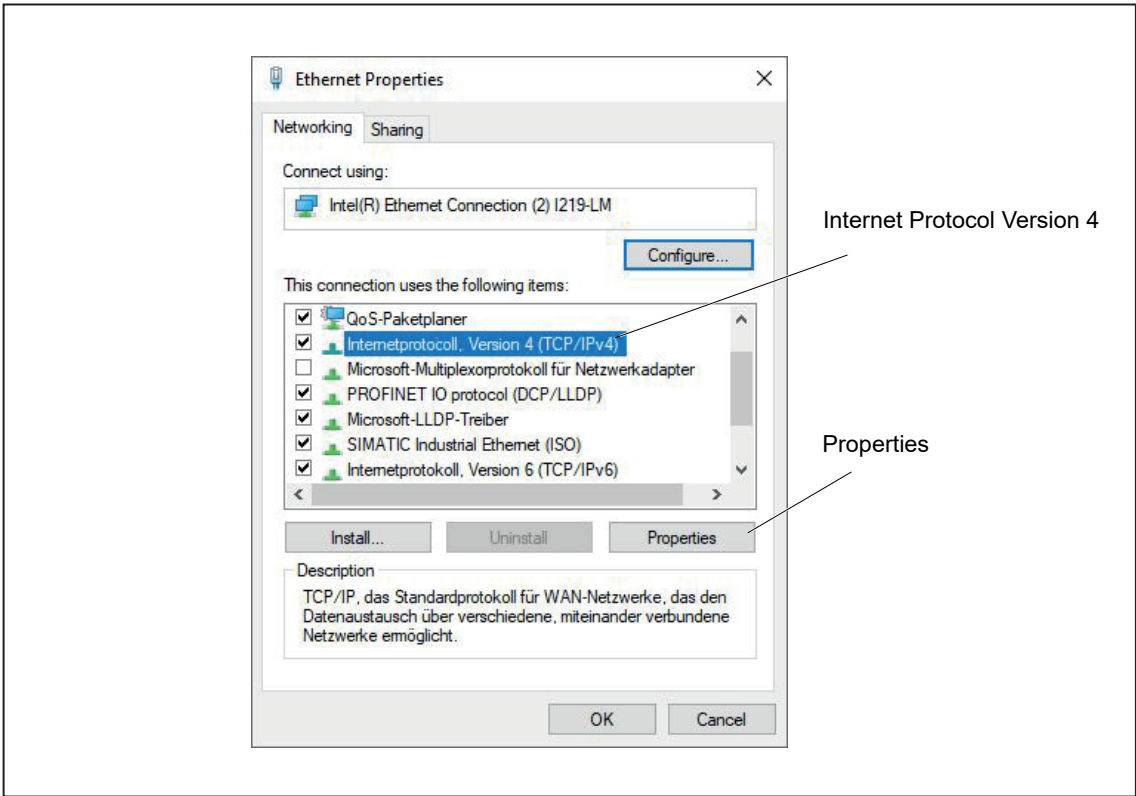


Fig. 5 - 3 PLC network properties window

Change selection to: Use the following IP-Adress
enter IP-Adress and Subnet mask

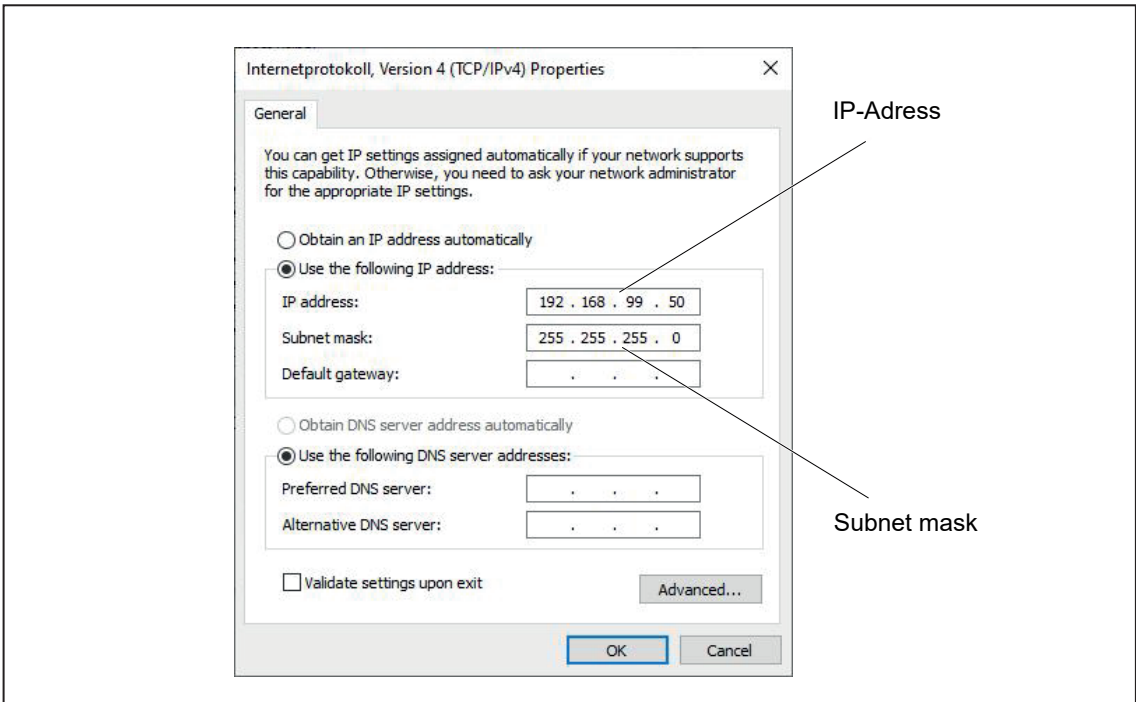


Fig. 5 - 4 Internet Protocol Version 4 Properties window, IP settings

Open web-based application SIMATIC S7-1200.



Fig. 5 - 5 Open the SIMATIC S7-1200 window

Download and open certificate.



Fig. 5 - 6 Download and open certificate

Installation of the certificate.

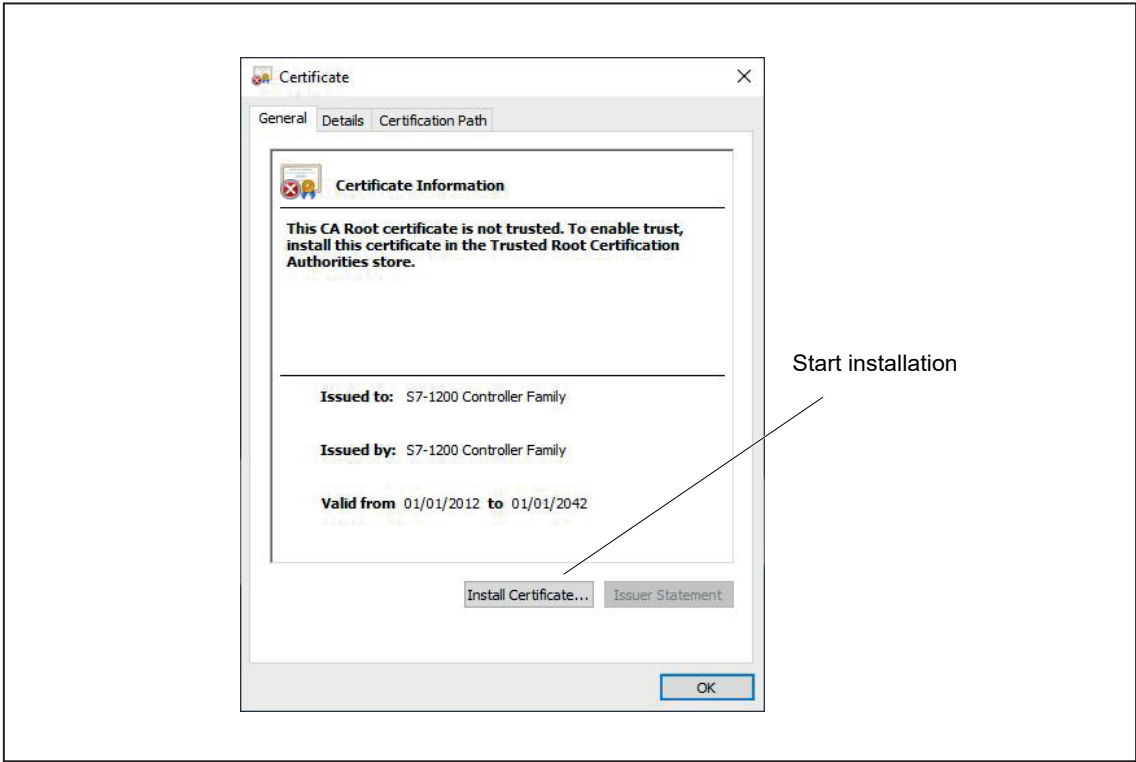


Fig. 5 - 7 Installation of the certificate

Confirming the certificate import wizard.

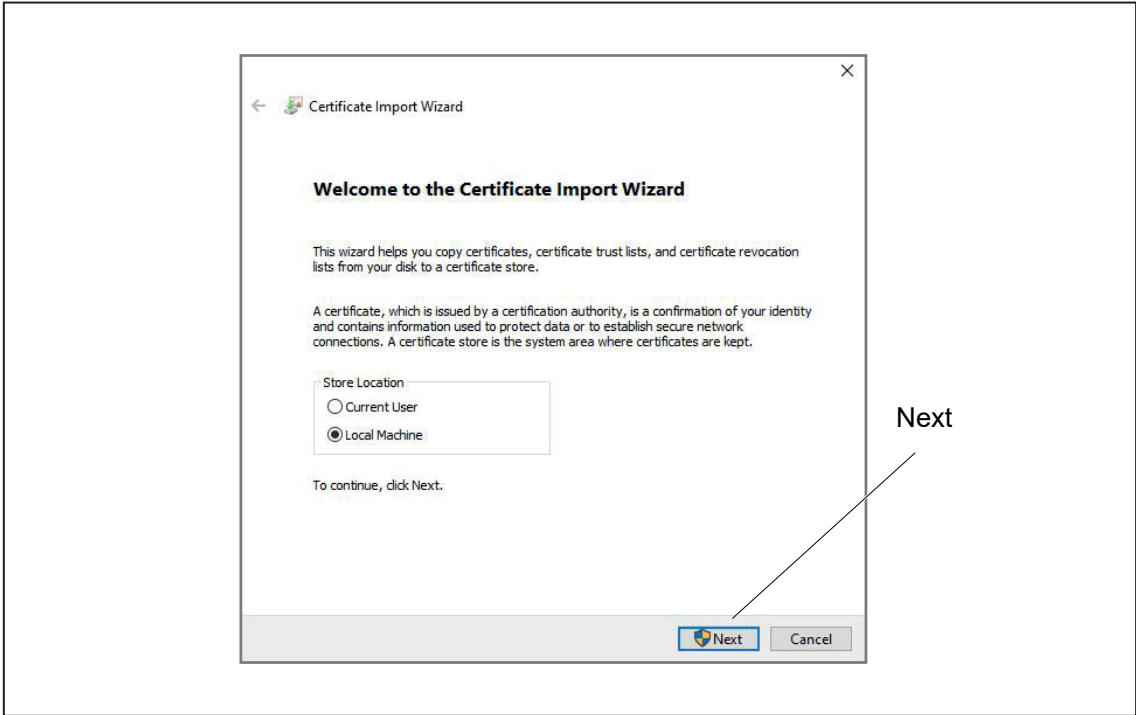


Fig. 5 - 8 Calling up the certificate import wizard

Select certificate store.

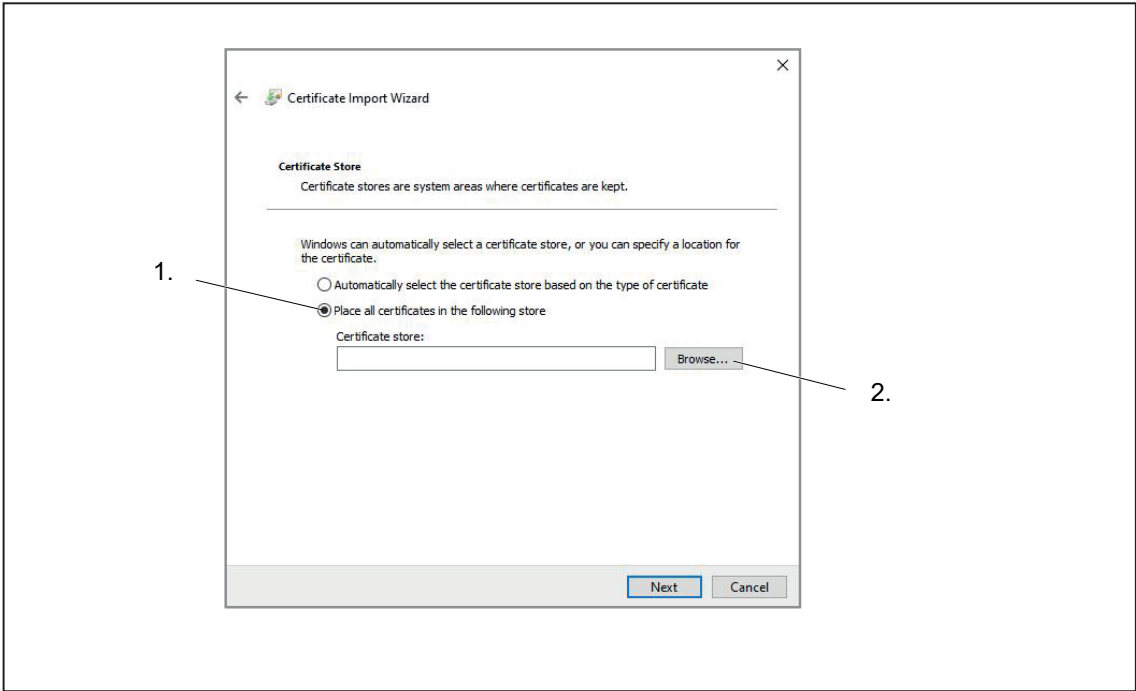


Fig. 5 - 9 Certificate Import Wizard window, saving the certificate

Save certificate.

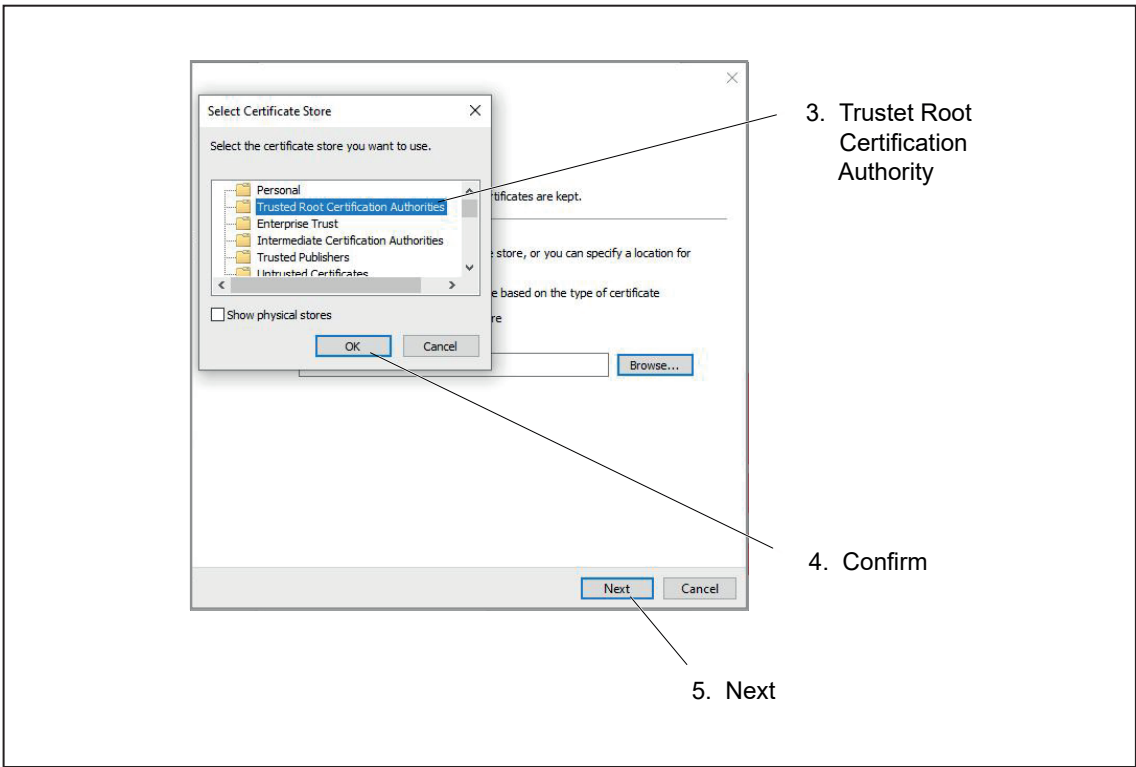


Fig. 5 - 10 Select certificate store window

Complete the Certificaion Import Wizard.

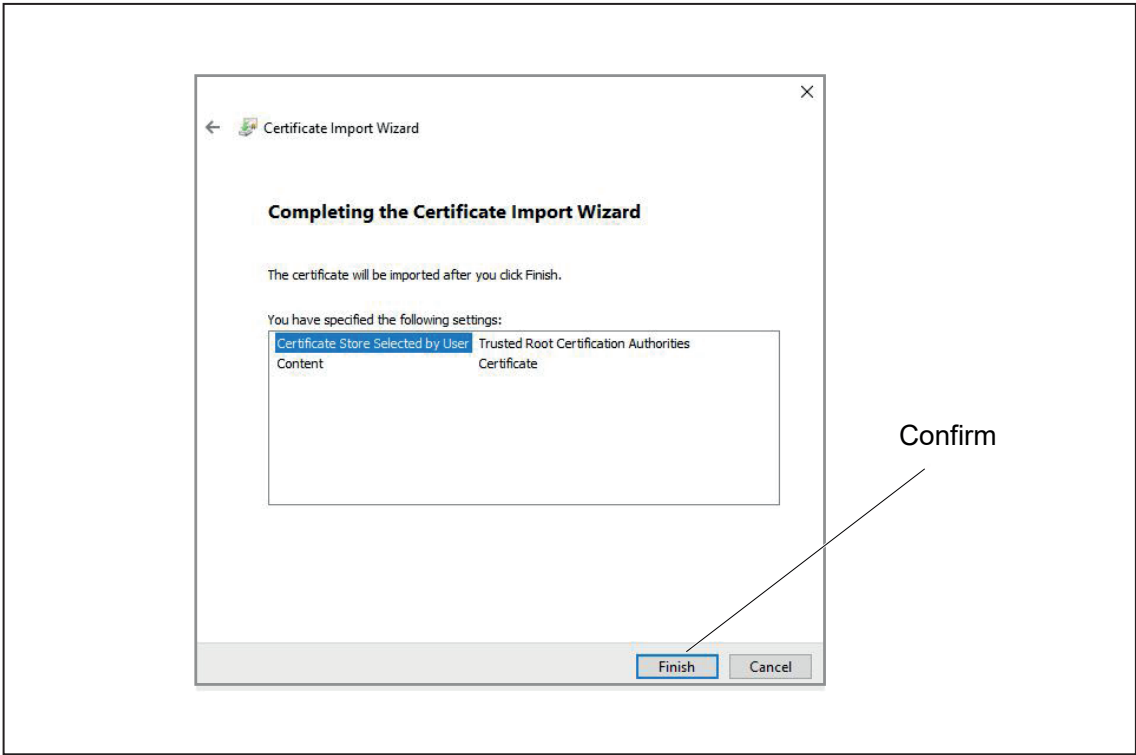


Fig. 5 - 11 Completing the wizard

Confirm successful import.



Fig. 5 - 12 Confirm successful Certificate Import Wizard

Start Certificate insatallation.

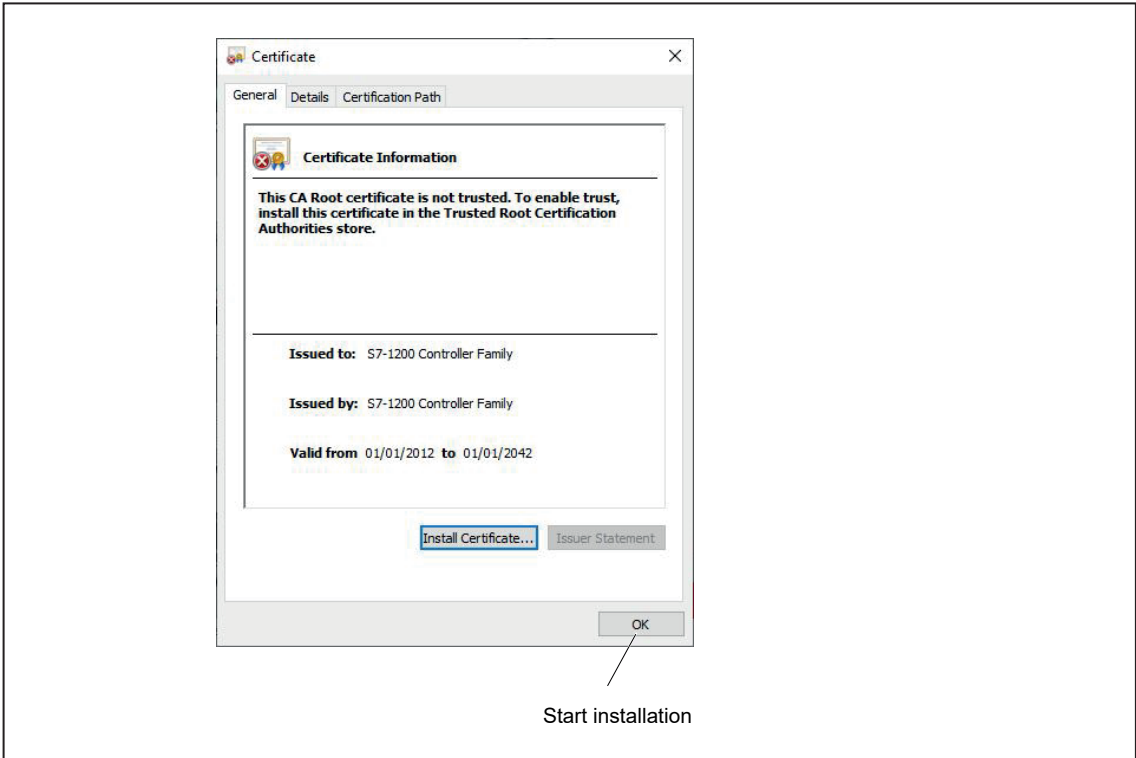


Fig. 5 - 13 Start Certificate installation

For information on how maintenance personnel can access the web-based user interface for the device settings, see section 5.4.2.

5.4.2 Web-based user interface for device settings by maintenance personnel

Call up the SIMATIC S7-1200 start page and click ENTER.



Fig. 5 - 14 Start page

Click on the User Pages menu on the Start Page.

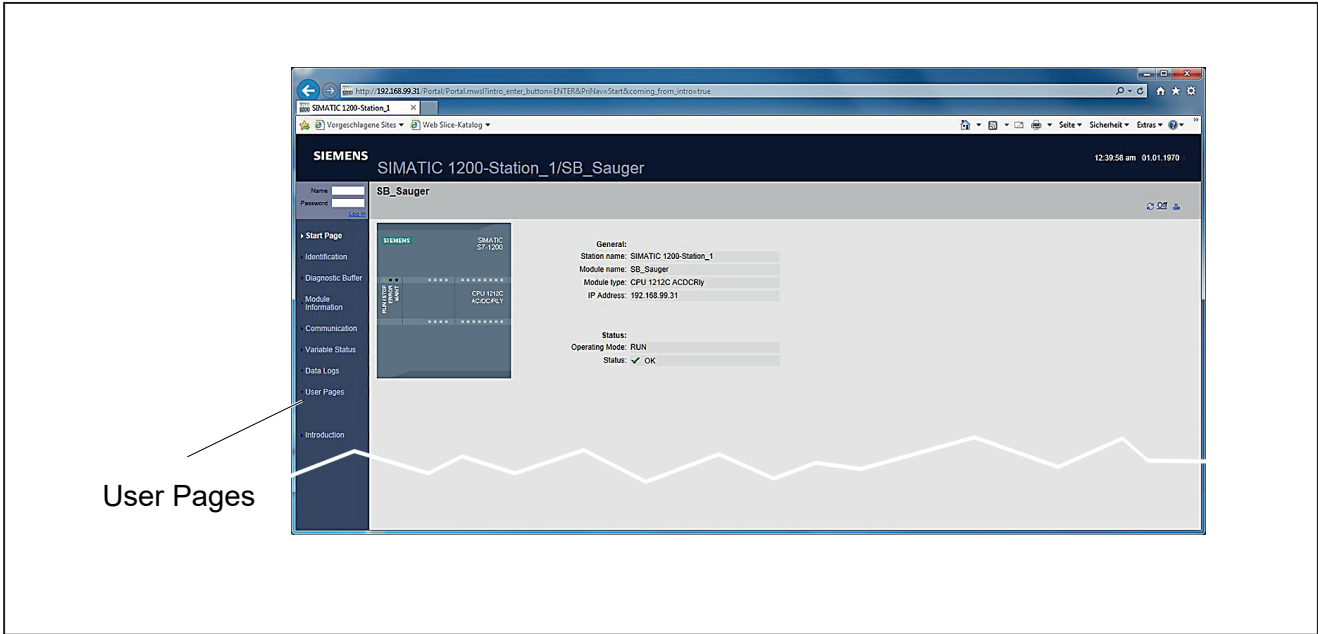


Fig. 5 - 15 Start Page

Click on the link on the start page to call up the device settings menus.

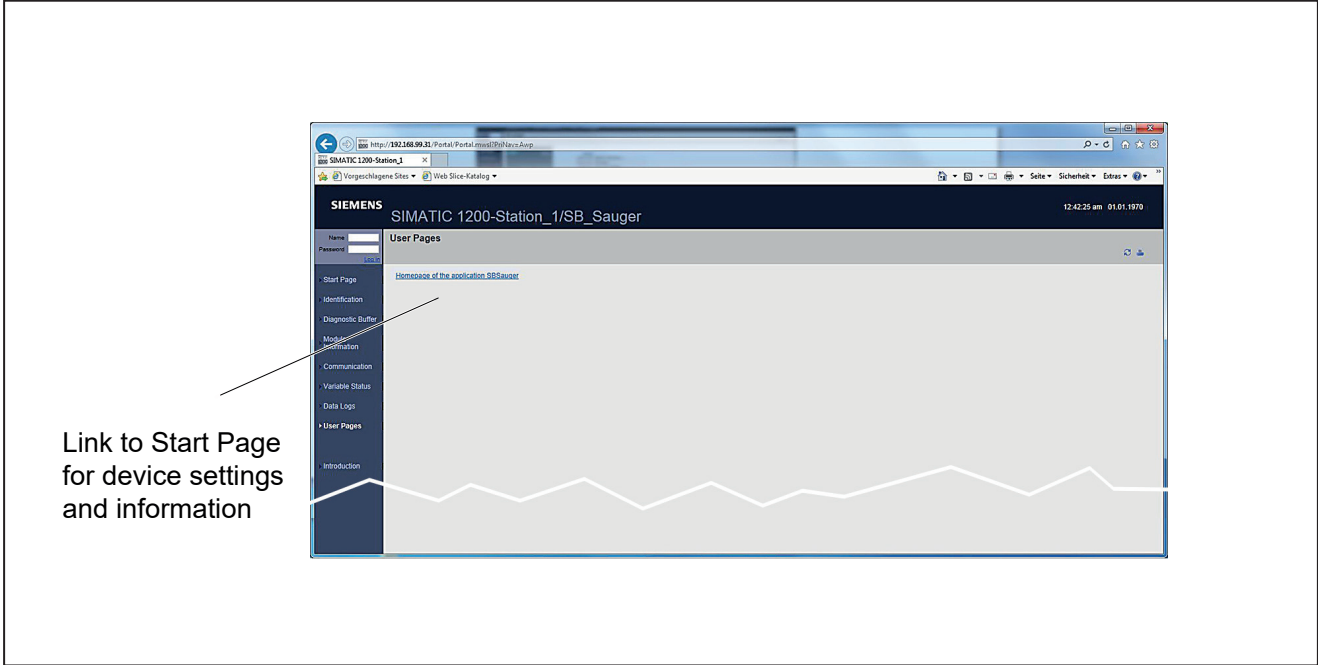


Fig. 5 - 16 Open the User Pages Settings window

Start page for selecting menus for device settings and device information.



Fig. 5 - 17 Start page for menu window Device settings and information

The following menus can be selected on the start page:

- Economics (ECO) for sales displays (see section 5.4.2.1):
- Software for information on the software version (see section 5.4.2.2):
- Settings for device and programme settings via the menus (see section 5.4.2.3):
 - OPH: Setting opening hours
 - Credit: Programme-dependent user fee
 - DTGT: Setting device parameters (period of time, happy hour multiplier, frost protection temperature).

5.4.2.1 Menu Economics

The total turnover for several MatCleaners appears under the Total menu.

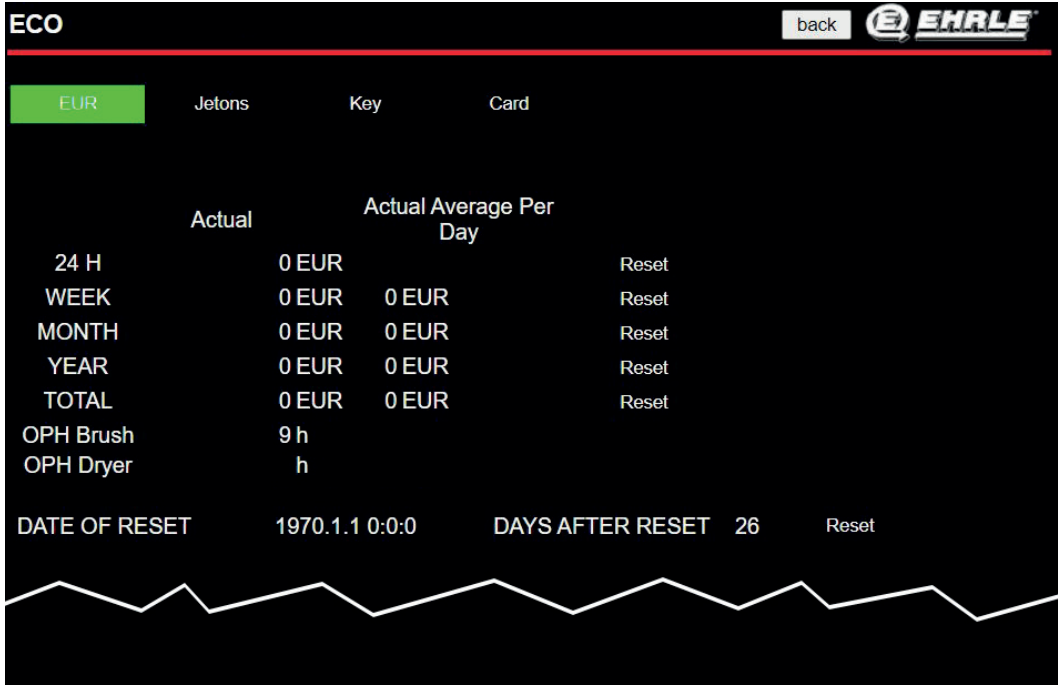


Fig. 5 - 18 Total turnover for several MatCleaners

5.4.2.2 Window Software-Version

Information window for software version.

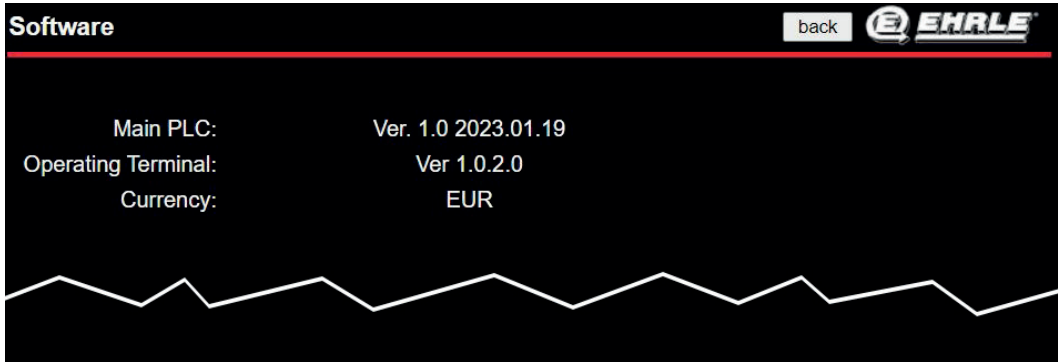


Fig. 5 - 19 Window Software-Version

5.4.2.3 Settings

The settings for the opening hours can be made under the OPH menu. In the bottom line Set Time, the time of the timer for the opening time is set.

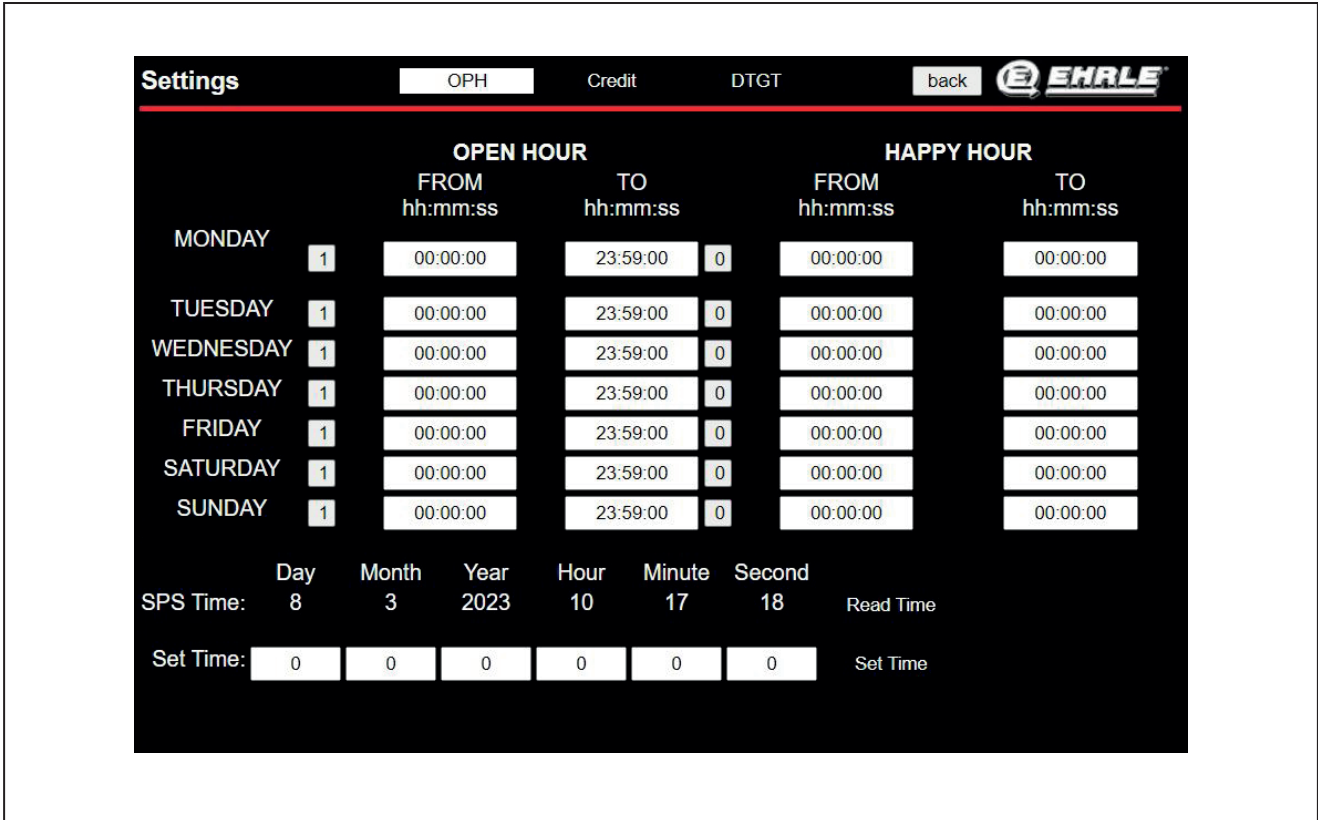


Fig. 5 - 20 Menu window Settings for opening hours

The user fee can be set under the Credit menu depending on the programme.

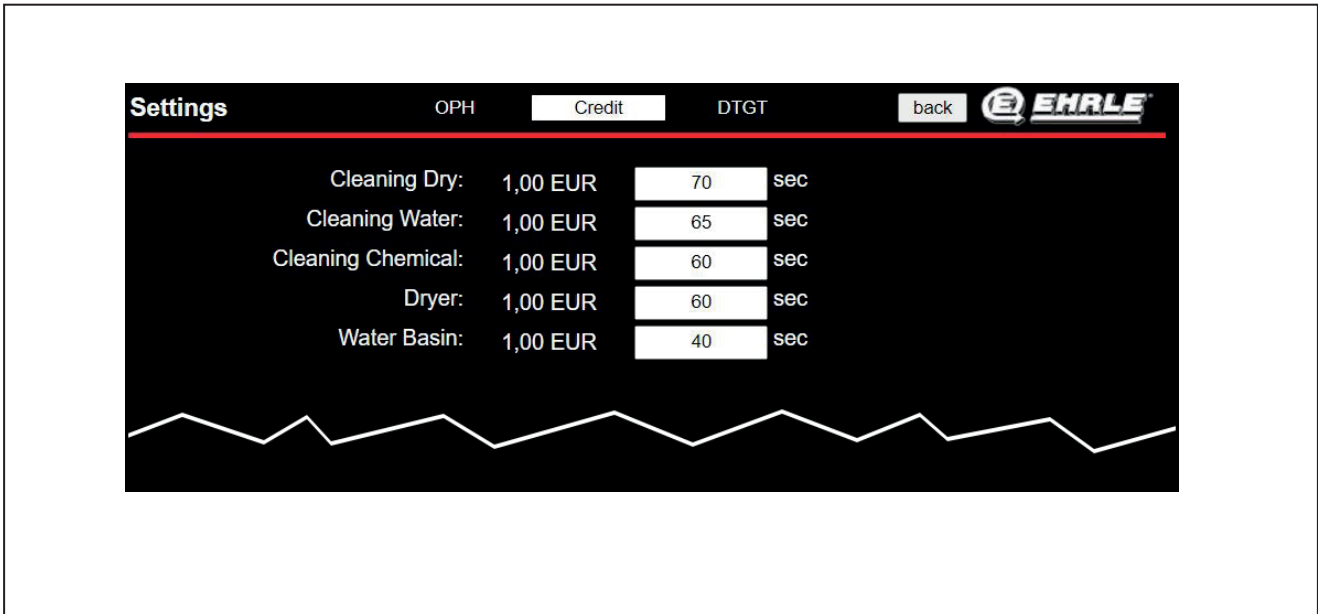


Fig. 5 - 21 Timer control menu for programmes

DGTH menu for setting programme parameters (time sequences, frost protection temperature, happy hour multiplier, etc.)

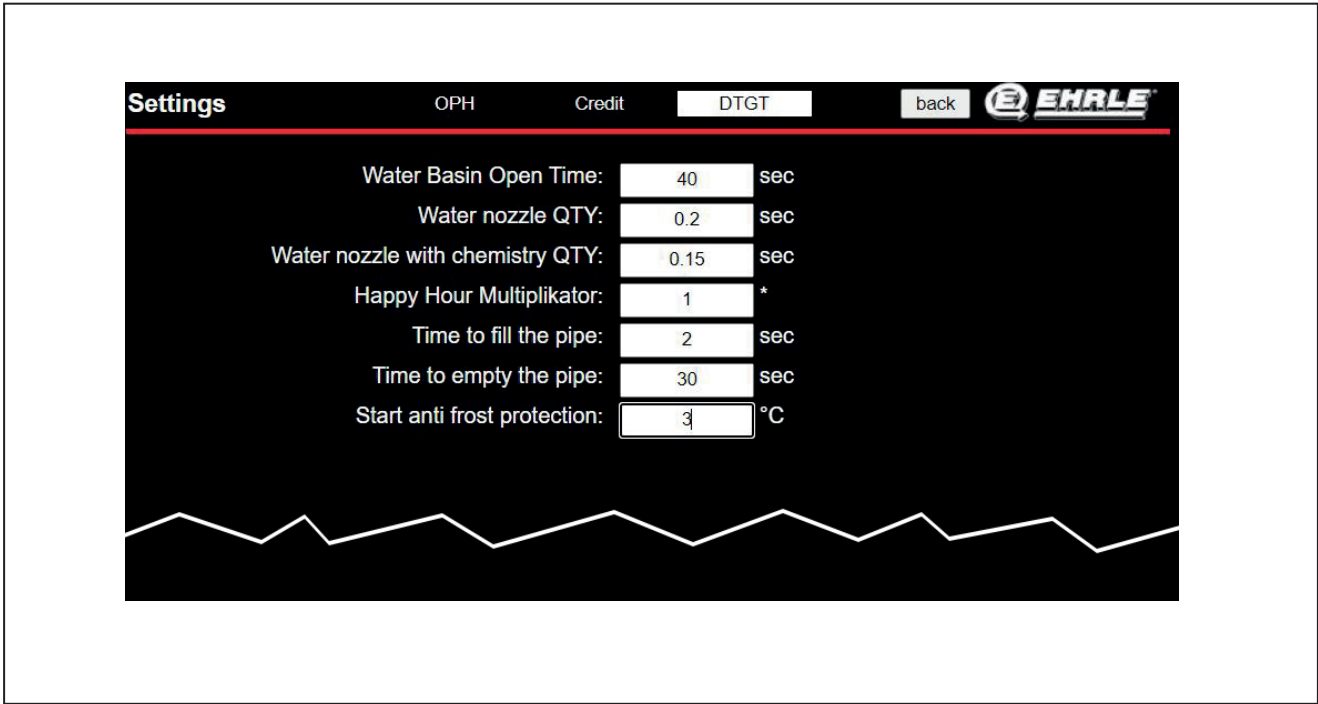
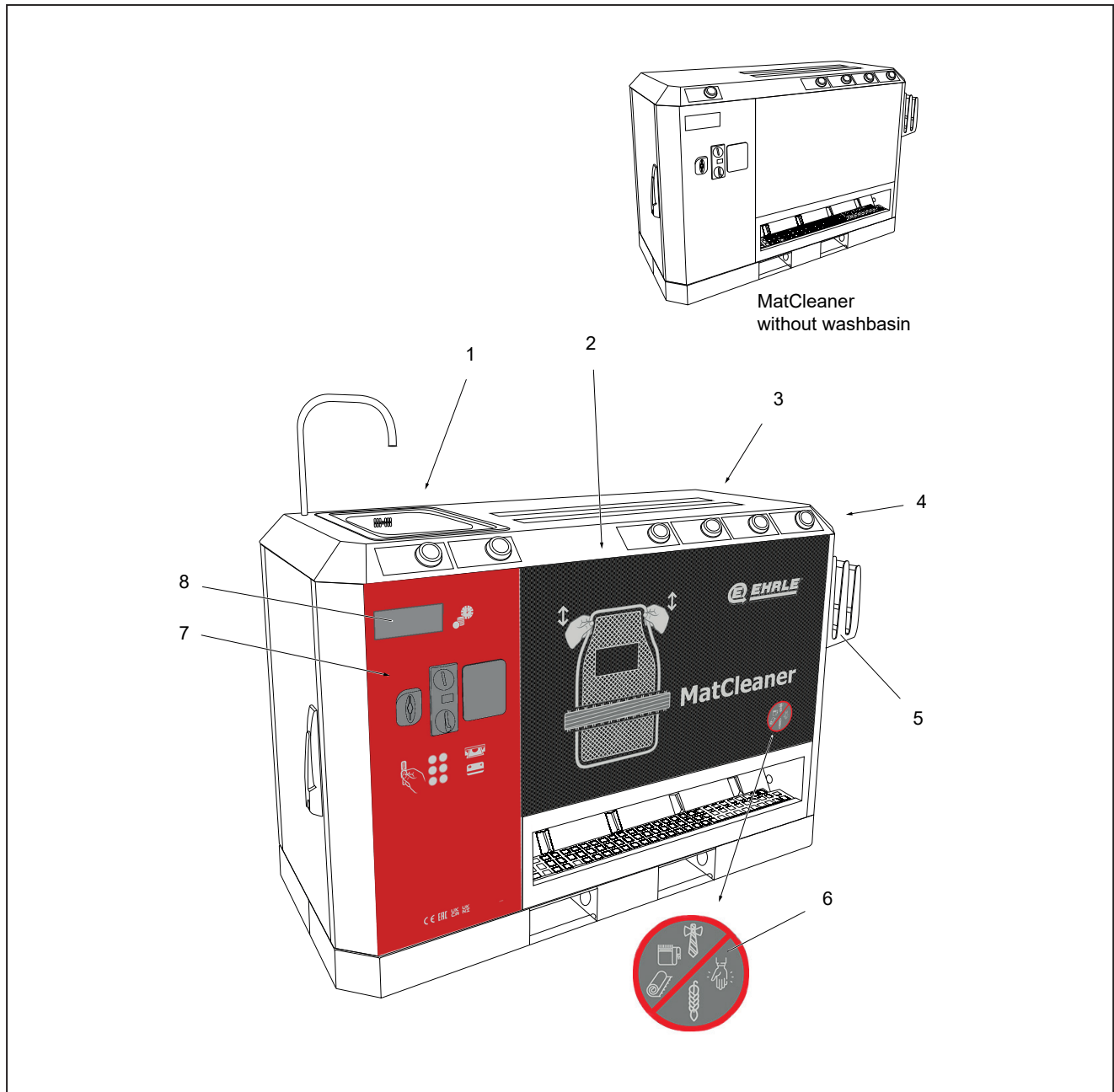


Fig. 5 - 22 DTGT menu, programme parameter settings

6 Operation

6.1 Control panels

The figure shows the MatCleaner with all optional equipment (see section 3.2.5).



- | | |
|-------------------------------------|--|
| 1 Washbasin with water tap | 6 Warning sign (keep hands, ties etc. away from the mat cleaning shaft and mat drying shaft) |
| 2 Illustrated mat guidance | 7 CentralPay system (key reader, coin checker, credit card terminal / bank note reader (option)) |
| 3 Mat cleaning and mat drying shaft | 8 Display unit (4-digits) |
| 4 Operating panel (push button row) | |
| 5 Lateral mat holder | |

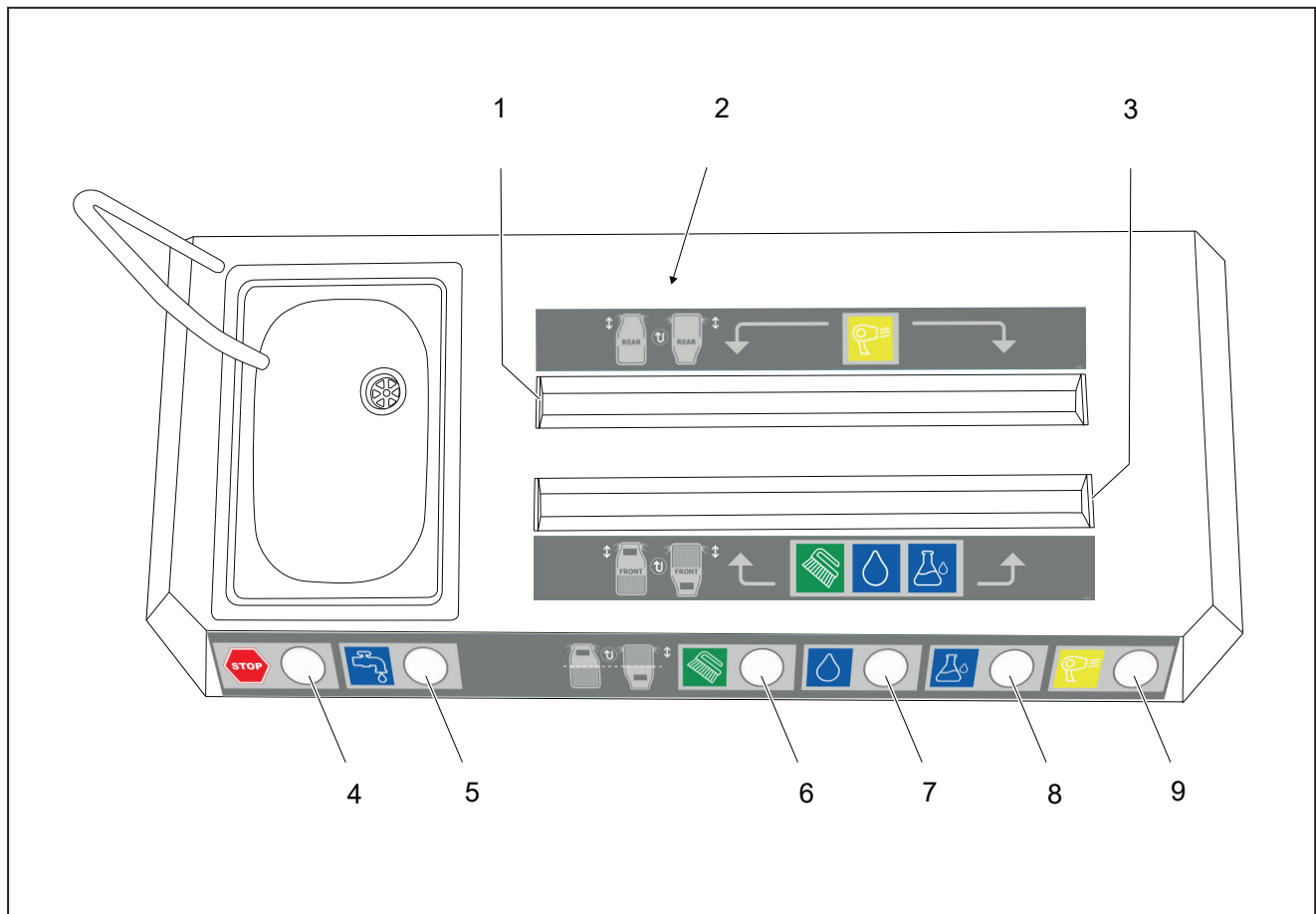
Fig. 6 - 1 Control panels

6.2 Control and indicator elements

The figure shows a MatCleaner with all possible optional equipment (see section 3.2.5).

The user-friendly symbols on the control panel provide simple and self-explanatory guidance through the available programmes to achieve the quickest and best possible result for mat cleaning.

The handling of the mat guide for the cleaning process is illustrated on the mat cleaning shaft and mat drying shaft.



- | | |
|--|--|
| 1 Mat drying shaft | 5 Push button water inflow (washbasin) |
| 2 Symbol for mat guide upwards/downwards | 6 Push button Dry Cleaning |
| 3 Mat cleaning shaft | 7 Push button Wet Cleaning |
| 4 Push button program stop | 8 Push button Chemical-dosing unit |
| | 9 Push button Dry Blower |

Fig. 6 - 2 Control and indicator elements of the MatCleaner

6.3 User instructions for mat cleaning



WARNING

Keep your hands, long hair and utensils away from the mat cleaning and mat drying shaft.

Do not reach into the mat cleaning or mat drying shaft with your hands. Keep away from the shafts with long hair (plaits etc.).

Do not allow any objects such as scarves, carpets, ties etc. to enter the shafts.

If body parts or objects get into the shafts during operation, persons can be injured.



Customer-activated wash and care instructions

As an option, the EHRLE company offers the MatCleaner with animated button lighting. In stand-by mode, the button lighting is activated as a running light.

If a wash programme is selected using the push button

- Dry Cleaning
- Wet Cleaning
- Chemical-dosing unit

then the button light for the next recommended programme flashes to achieve the best possible washing and care result.

6.3.1 CentralPay operator terminal

The CentralPay operating terminal includes the following components:

- Display unit (8, Fig. 6 - 1)
 - displays the value for the amount entered
 - after starting the washing program, the remaining running time is displayed
- CentralPay system (7, Fig. 6 - 1) with
 - key reader
 - coin checker for entering coins
 - credit card terminal or bank note reader (option)

6.3.2 Mat guidance during cleaning process

Hold the mats firmly with your left and right hand and insert them into the mat cleaning or mat drying shaft. For the mat guide (up/down movement), see illustration (2, Fig. 6 - 1) on the front of the MatCleaner.

If the mat accidentally slips out of your hands, it is dispensed from the mat output chute (7, Fig. 3 - 1) below.

Observe the symbols on the warning sign (6, Fig. 6 - 1) during cleaning operation:

- Do not reach into the mat cleaning or mat drying chute with your hands or fingers.
- Keep long hair (plaits, ponytails, etc.) away from the shafts.
- Do not clean carpets.
- Keep scarves or ties away from the ducts.






6.3.3 Operating procedure mat cleaning

Proceed as follows to clean the mat with a standard device:

- Make payment via the desired payment system at the CentralPay operating terminal (see section 6.3.1 and Fig. 6 - 3, flow chart). The value for the amount paid appears on the display unit (8, Fig. 6 - 1).
- Depending on the device equipment, the desired wash and care programme can be called up using the programme buttons (see Fig. 6 - 4).

In the expansion stage with all device equipment (see Fig. 6 - 1 and Fig. 6 - 2), the programs listed in the table below are available.

Depending on the device equipment (see section 3.2) of the MatCleaner, the corresponding programs are available.

Program	Symbol	Function
Water inflow (washbasin)		see section 6.3.5.1
Dry Cleaning		see section 6.3.5.2
Wet Cleaning		see section 6.3.5.3
Chemical-dosing unit		see section 6.3.5.4
Dry Blower		see section 6.3.5.5

- After pressing a programme button, the button illumination lights up.
After pressing a button for the wash programmes

- Wet Cleaning
- Chemical-dosing unit

the entire water pipe system of the MatCleaner is filled with fresh water.

At the same time, the cleaning brush is wetted and cleaned with water via a nozzle pipe with 5 flat jet low-pressure nozzles.

- After starting a washing programme, the remaining time appears on the display unit.
- A selected wash and care programme can be stopped at any time using the programme stop button (4, fig. 6 - 2) at any time (see section 6.3.4).

6.3.3.1 Customer animated button lighting (option)

In the case of a MatCleaner with customer animated button lighting, the mat cleaning process is additionally supported as follows:

- After switching on the device via the main switch (as per Section 5.3), the button lighting is activated as a running light in standby mode.
- After paying for the wash and care programme, the programme buttons light up.
- After selecting one of the two wash and care programmes
 - Wet Cleaning
 - Chemical-dosing unit

the Dry Blower button light flashes as a recommendation for the next programme stage in order to achieve an optimum cleaning result.

6.3.4 Programme stop

The programme stop button (4, Fig. 6 - 2) can be used to stop an activated programme immediately in the event of unforeseen sequences or dangers such as

- injury to persons
- damage to the device

The remaining running time of the selected program is retained.

If the button is pressed for more than 3 seconds, the remaining time is cancelled.

The programme is also stopped if the button selected for a wash programme is pressed during the programme run.

To resume a wash programme, select the button for the desired wash programme.

6.3.5 Wash and care programmes

6.3.5.1 Water inflow (washbasin)

By pressing the water inflow button (5, Fig. 6 - 2), water flows out of the tap for the preset time. The button lighting comes on.

The user of the MatCleaner can clean their hands and wash off any remaining residue. Additionally, any odours are eliminated.

The facility offers a fresh water dispenser for users of the MatCleaner. The water can be taken in an amount of 5 liters for a fee.

6.3.5.2 Dry Cleaning

General information



Depending on customer requirements, the MatCleaner can also only be delivered with Dry Cleaning equipment (see section 3.2.1).

For liquid-sensitive textile mats, cleaning only with a brush can achieve best results.

Pressing the Dry Cleaning button (6, Fig. 6 - 2) activates the programme for the preset time. The button lighting comes on.

Strong, coarse dirt is first removed by dry brushing so that the dirt can be loosened from the carpet fibres. This is recommended for both rubber mats and textile mats. By removing the coarse dirt, lumps can be avoided in the subsequent wet programs due to large dirt deposits.

By removing the coarse dirt, the formation of lumps due to large dirt deposits can be avoided in the subsequent wet programmes

Dry cleaning with the brush serves as a preliminary stage to the subsequent cleaning programs.

6.3.5.3 Wet Cleaning

Pressing the Wet Cleaning button (6, Fig. 6 - 2) activates the programme for the preset time. The button lighting comes on.

During wet cleaning, fresh water is supplied via a nozzle pipe with five flat jet low-pressure nozzles. The water is added in a pulsating manner so as not to oversaturate the vehicle floor mat with too much water

With this cleaning program, the loosened dirt residues on the mat are rinsed out. This also removes the remaining cleaning solution. In addition, the cleaning brush is rinsed with fresh water and the remaining dirt is removed.

After completion of the program, a hygiene concept (see Section 6.3.6) is carried out as follows

- device cleaning and rinsing function
- final draining of the fresh water with integrated frost protection function.

6.3.5.4 Chemical-dosing unit

Pressing the Chemical-dosing unit button (6, Fig. 6 - 2) activates the programme for the preset time. The button lighting comes on.

In this washing program, a chemical cleaning solution is added to the fresh water from the nozzle pipe with 5 flat jet low-pressure nozzles.

This addition takes place in a pulsating manner via a separate Chemical-dosing unit (chemical pump). The quantity of solution can be infinitely adjusted on the chemical pump.

With this cleaning program, deep dirt stored in the carpet is chemically dissolved and then mechanically brushed out.

In addition, the cleaning brush is kept clean with the supplied chemical cleaning solution, thus minimizing wear.

After completion of the program, a hygiene concept (see Section 6.3.6) is carried out as follows

- device cleaning and rinsing function
- final draining of the fresh water with integrated frost protection function.

6.3.5.5 Dry Blower

Pressing the Dry Blower button (6, Fig. 6 - 2) activates the programme for the preset time. The button lighting comes on.

In the drying program, the vehicle car mat is rotated 180° and inserted into the rear mat drying shaft.

The drying air is compressed with an air overpressure of 280 mbar via a powerful side channel compressor. Due to the compression, the air is heated to approx. 45°C.

Precision AirBlades along the entire width of the mat drying shaft accelerate the warm air to a high speed and direct it onto the mat.

The warm, dry air removes the attached water residue while drying the deep fibres of the carpet.

6.3.6 Hygiene concept after programme completion

6.3.6.1 Device cleaning and rinsing function

After the washing process is complete, the entire MatCleaner is rinsed through with water 3 minutes later (see Fig. 6 - 5).

Fresh water is applied to the nozzle pipe at regular intervals and the brush (see Fig. 8 - 7) and the interior of the brush housing are rinsed (see Fig. 8 - 8).

The rinsing water, together with the remaining dirt, is routed via the waste water discharge device into the water collection channel below.

In addition, the dirty water remaining in the water collection channel with the residual dirt it contains is conveyed towards the sewage system via a side-mounted flushing outlet.

This means that the MatCleaner is completely rinsed out and is ready for the next customer with the best possible hygiene.

6.3.6.2 Fresh water emptying function at end of operation

Once the device cleaning and rinsing function of the MatCleaner have been completed, the remaining fresh water in the water pipe system is automatically drained (see Fig. 6 - 5).

This function is extremely important as the entire water pipe system prevents the formation of legionella bacteria in standing water during the warm season.

In the frosty season, freezing of the fresh water in the pipe system and especially the water tap (equipment with washbasin) is prevented.

All solenoid valves remain open so that residual water can still drain off after a while. The heat from the electric coils of the solenoid valves keeps the water distribution above freezing at all times.

6.4 Flow chart PLC programme MatCleaner

The PLC programme MatCleaner is divided into three segments as shown in the following flow charts (Fig. 6 - 3 to Fig. 6 - 5):

- The CentralPay operating terminal (see section 6.3.1) offers various options for paying the washing fee (see flowchart Fig. 6 - 3).
- Once payment has been made, the various wash and care programmes (see section 6.3.5) can be selected using the buttons on the operating panel (4, Fig. 6 - 1). The sequences of the various programmes are shown in the flow chart Fig. 6 - 4.
- After the programme is completed, the device is cleaned (see Fig. 6 - 5). Finally, draining takes place with integrated frost protection functions.

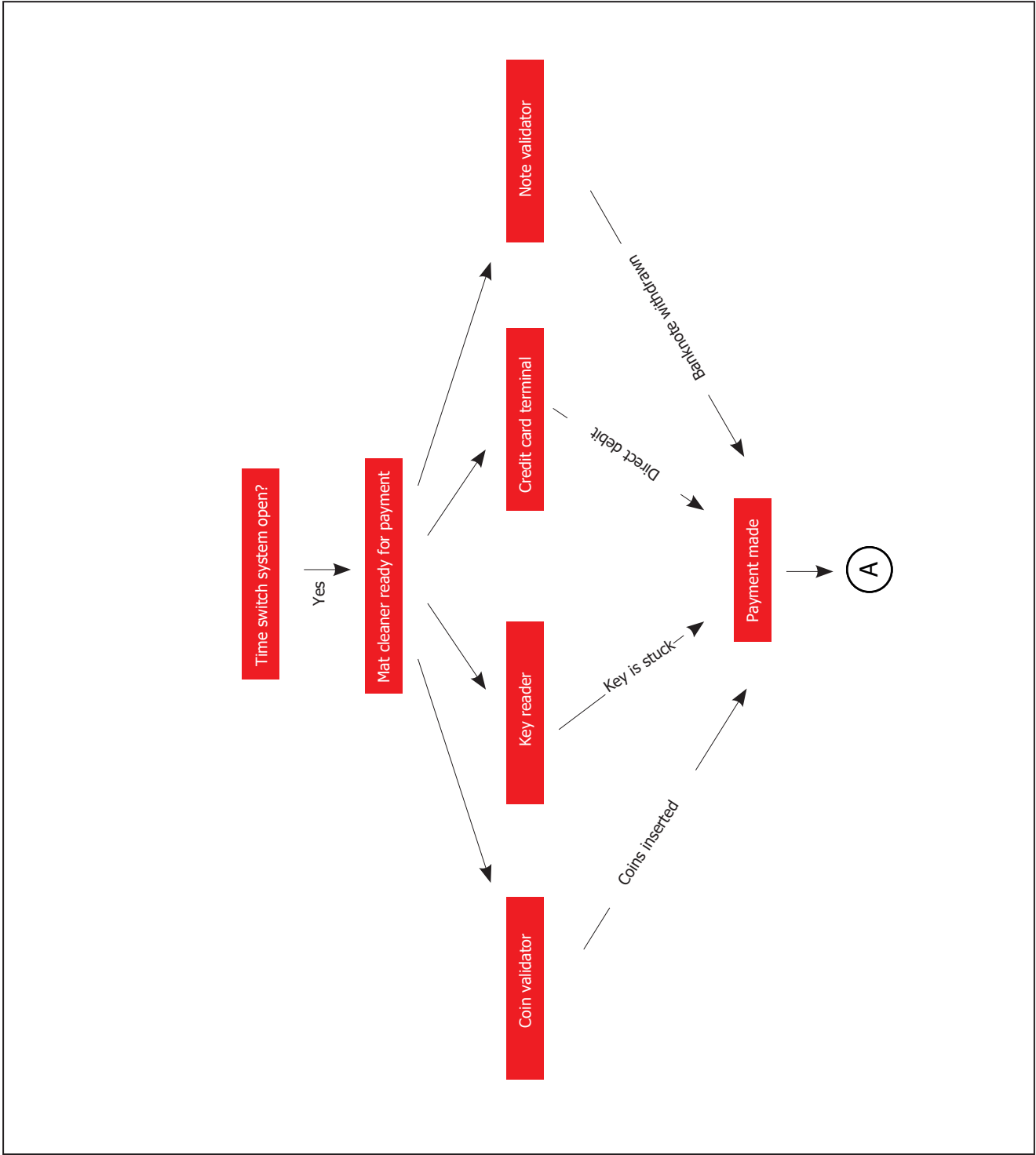


Fig. 6 - 3 Flow chart (page 1 of 3), CentralPay system

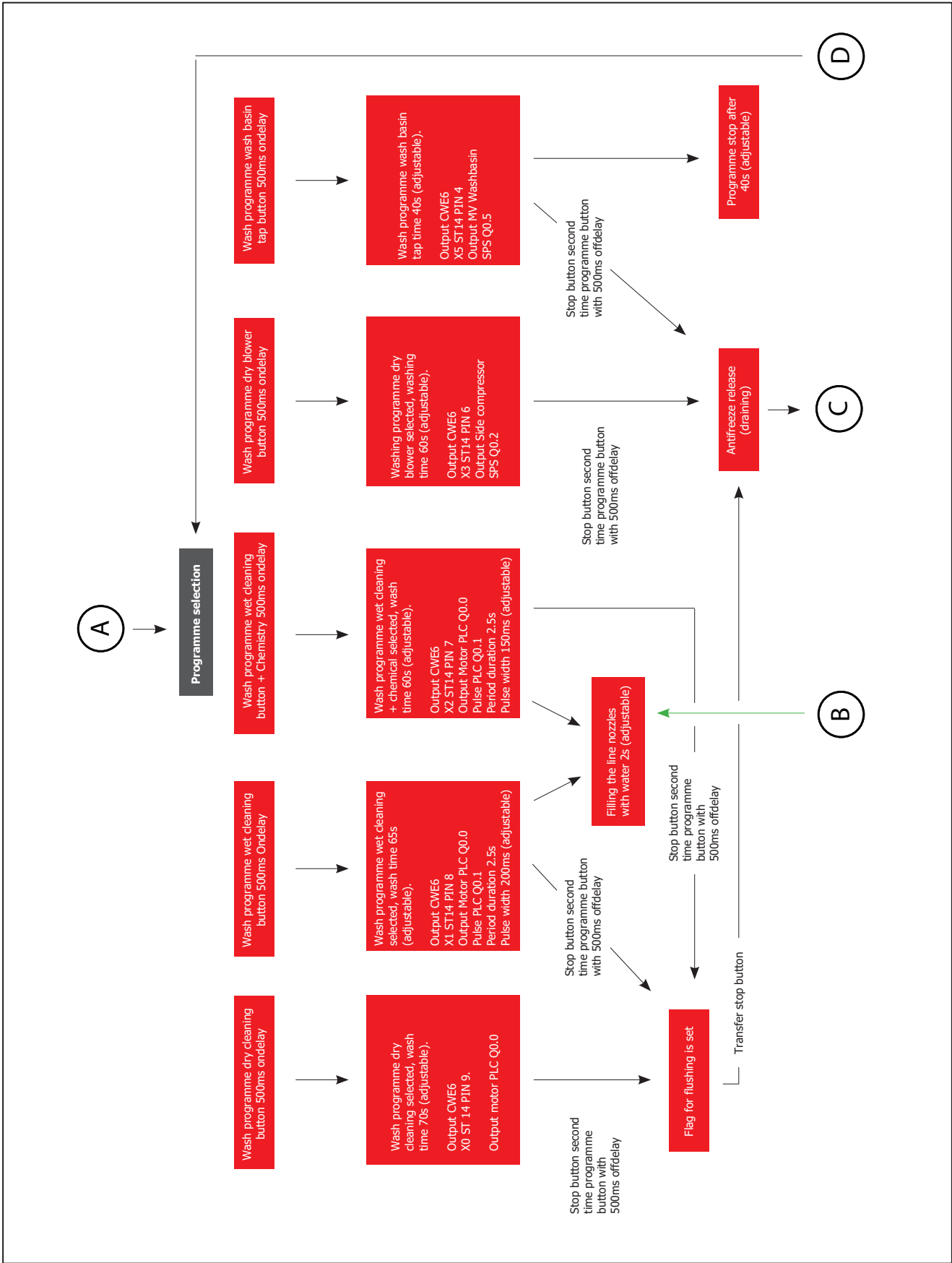


Fig. 6 - 4 Flow chart (page 2 of 3), programm selection

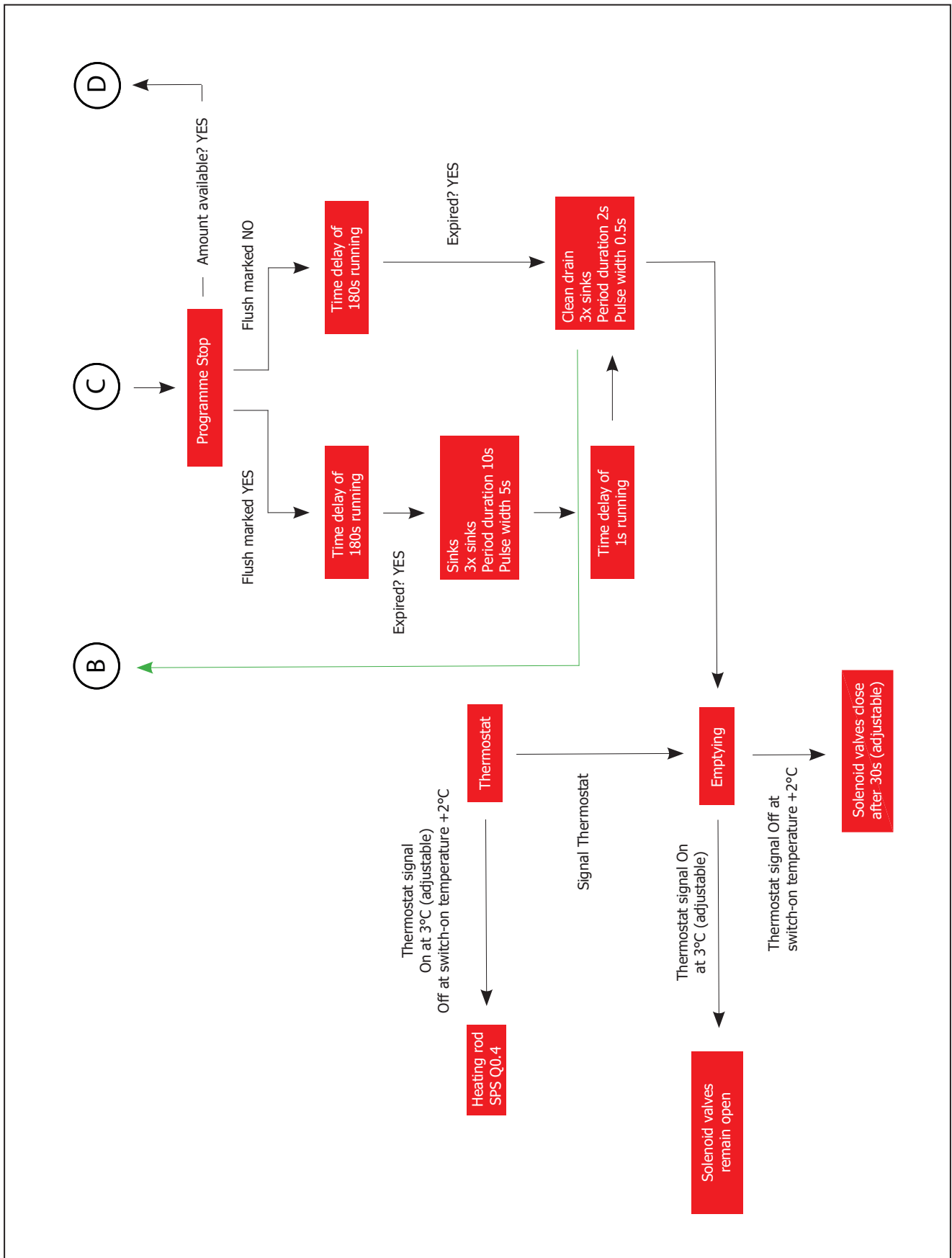


Fig. 6 - 5 Flow chart (page 3 of 3), final device cleaning and frost protection

7 Decommissioning

7.1 Temporary decommissioning by maintenance personnel

To temporarily decommission for maintenance or for several days, proceed as follows:

- ▶ Open left door.
- ▶ Switch off main switch (2, Fig. 3 - 4 or 3, Fig. 3 - 5) of the device.
- ▶ If necessary, close the shut-off valve (1, Fig. 4 - 4) for water inlet.
- ▶ If necessary, close the main switch or circuit breaker of the power supply from the infrastructure (e.g. building connection).

7.2 Decommissioning for a longer period of time

For decommissioning and storage for a period of more than 6 months:

- Take the device out of operation in accordance with section 7.1.
- Drain the water pipe system completely.
- If necessary, remove the device from the operating location and store it in a frost-protected storage location.
- Cover the device with a protective tarpaulin.

8 Maintenance



WARNING

Carry out maintenance measures professionally.

Maintenance of the device may only be carried out by qualified, trained and authorised personnel

Before carrying out any maintenance work, take the device out of operation. If necessary, close the main switch or circuit breaker of the power supply from the infrastructure (e.g. building connection).

8.1 General Information

The maintenance measures must be carried out professionally as well as regularly and mean for the device:

- guarantee of operational safety
- achieving a long service life
- Maintaining the performance.

8.2 Maintenance work

Components which show increased wear or whose design duration has been exceeded or is exceeded before the next maintenance must be replaced as a precaution.

The following table contains the periodical maintenance work for the MatCleaner.

Period	Component	Measure	Authorised Personnel
Daily	CentralPay system coins	empty	Maintenance personnel
	MatCleaner	Visually check for grease or oily substances on the floor around the device. If necessary, remove any dirt on the floor, resp. dispose of grease and oil properly.	Maintenance personnel
	Chemical tank (equipment Chemical-dosing unit)	Check for filling and provide a full container if necessary.	Maintenance personnel
	Water inlet hose	Visually inspect for damage or leaks. If necessary, replace defective hose.	Maintenance personnel resp. Customer Service

Tab. 8 - 1 List of periodical maintenance work

Period	Component	Measure	Authorised Personnel
Daily (Continued)	Matcleaner	Visually inspect for damage.	Maintenance personnel
		Replace damaged parts	Maintenance personnel resp. Customer Service
	Cable of the device.	Visually inspect for damage. Replace damaged cables by qualified electricians.	Maintenance personnel resp. Electrical Specialist
Weekly	Device interior resp. exterior	Visual inspection for soiling. Clean with water if necessary.	Maintenance personnel
	Cables, electrical resp. electronic assemblies and components	Visual inspection for damage; In the event of damage, inform a qualified electrician immediately.	Electrical Specialist resp. ggf. Customer Service
	Toothed belt	Visual inspection for damage.	Maintenance personnel
		Check belt tension (see section 8.3).	Maintenance personnel
		Set the belt tension correctly.	Customer Service
		Replace damaged belt.	Customer Service
	Water supply/water drain	Check for soiling or clogging; if necessary, rinse or clean with water, remove clogging.	Maintenance personnel
	Brush	Visual inspection for dirty or damaged brush.	Maintenance personnel
		Rinse the dirty brush with water.	Maintenance personnel
		Replace damaged or worn brush. For access to the brush tray, see section 8.4.	Customer Service
Monthly	Filter in the water inlet.	Visual inspection for dirt, clean if necessary or replace if damaged.	Maintenance personnel
	Flange bearing Brush roller.	Lubricate over both grease nipples.	Maintenance personnel
3 Month	Door locks.	Lubricate	Maintenance personnel

Tab. 8 - 1 List of periodical maintenance work

Period	Component	Measure	Authorised Personnel
6 Month	Fixing screws of the device.	Visual check for corrosion or damage; Check for tight fit, retighten fixing screws if necessary; Repair damaged screw connection.	Maintenance personnel
As required	Brush contact pressure	Set correctly if necessary.	Customer Service
As required	Brush tray (interior) and components (brush, pipe nozzles etc.).	Visually check for contamination of the brush tray and blockage of nozzle pipes. If necessary, clean or remove blockages. For access to the brush tray, see section 8.4.	Maintenance personnel

Tab. 8 - 1 List of periodical maintenance work

8.3 Check belt tension

To check the belt tension, proceed as follows:

- Open left door (see Fig. 3 - 4 resp. Fig. 3 - 5).
- Switch off the power supply for the device using the main switch (2, Fig. 3 - 4 resp. 3, Fig. 3 - 5).
- Check belt tension as shown in Fig. 8 - 1. When correctly adjusted, the belt can be compressed by 1 - 1.5 cm. If necessary, readjust the belt tension if the value deviates or replace damaged belts

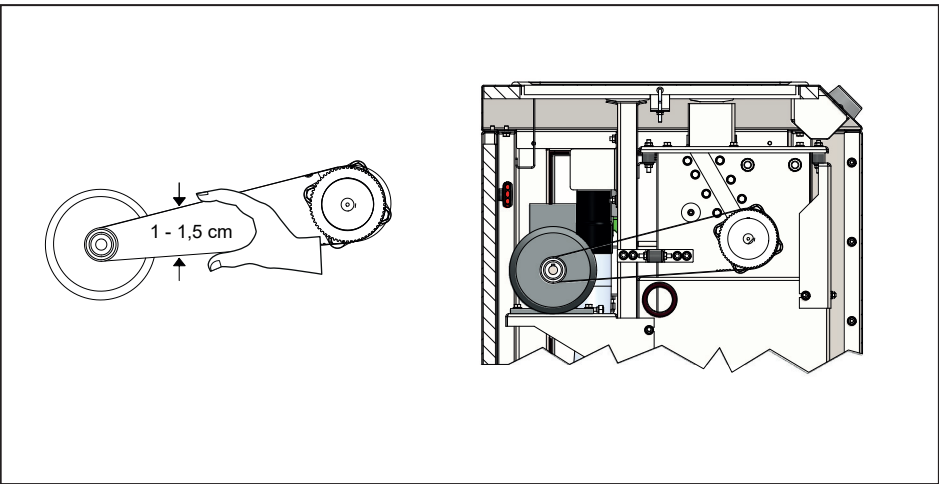


Fig. 8 - 1 Position of drive belt, belt tension check

8.4 Upper access to the device interior

The following components are only accessible with the roof and the brush tray cover removed:

- brush tray interior
- brush
- nozzle pipe Wet Cleaning and Chemical-dosing unit
- nozzle pipe device rinsing.

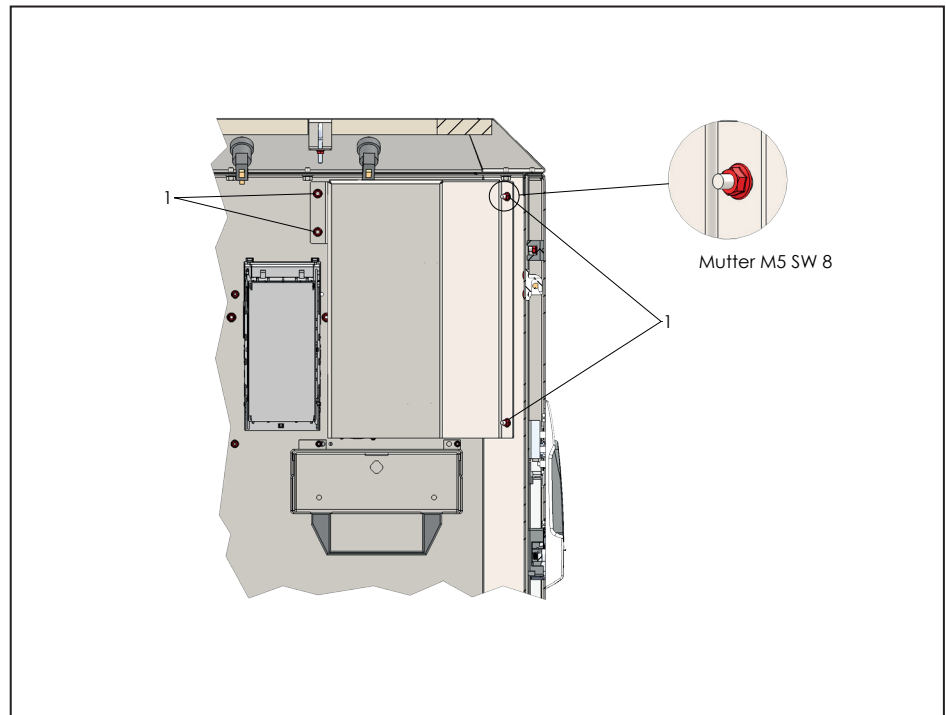
For access to the device interior from above for maintenance and repair work:

- Open left door (see Fig. 3 - 4 resp. Fig. 3 - 5).
- Switch off the power supply for the device using the main switch (2, Fig. 3 - 4 resp. 3, Fig. 3 - 5).
- Remove roof as per section 8.4.1.
- Remove brush tray cover as per section 8.4.2.

8.4.1 Removing roof

To remove the roof, proceed as follows:

- Loosen the four fastening nuts (1, Fig. 8 - 2) and remove the cover.

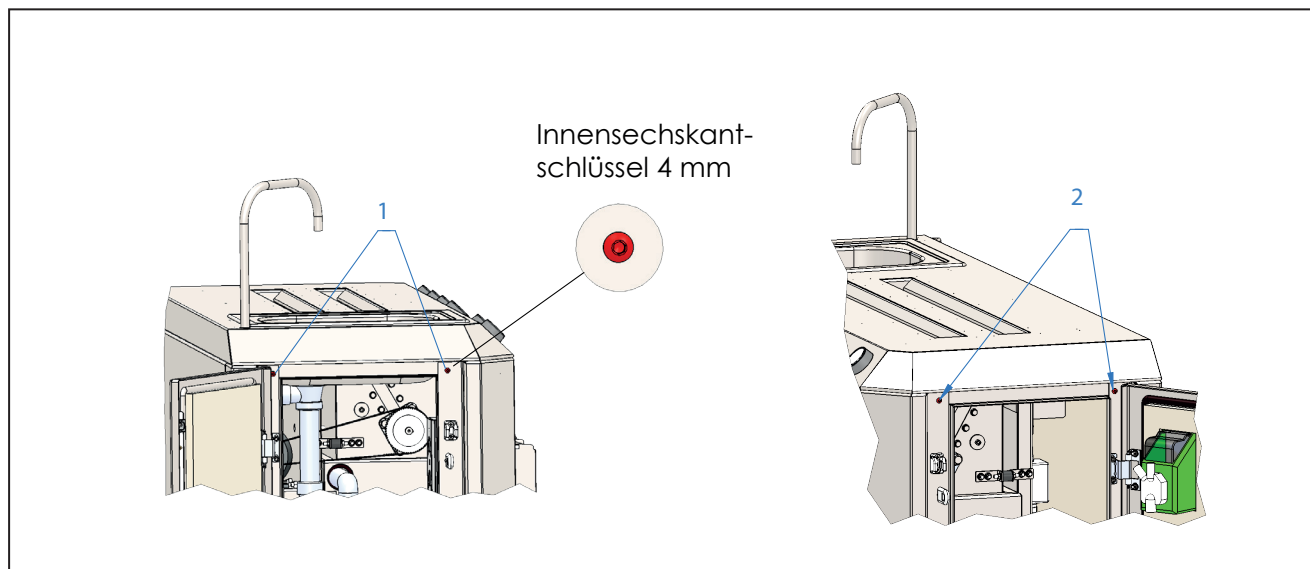


1 Fixing nuts cover for CentralPay system

Fig. 8 - 2 CentralPay system cover, position of fixing nuts

- Disconnect the two 10-pin cable plugs from the sockets.
- Both side doors must be open to access the fastening screws (see 1 and 2, Fig. 8 - 3) of the roof.

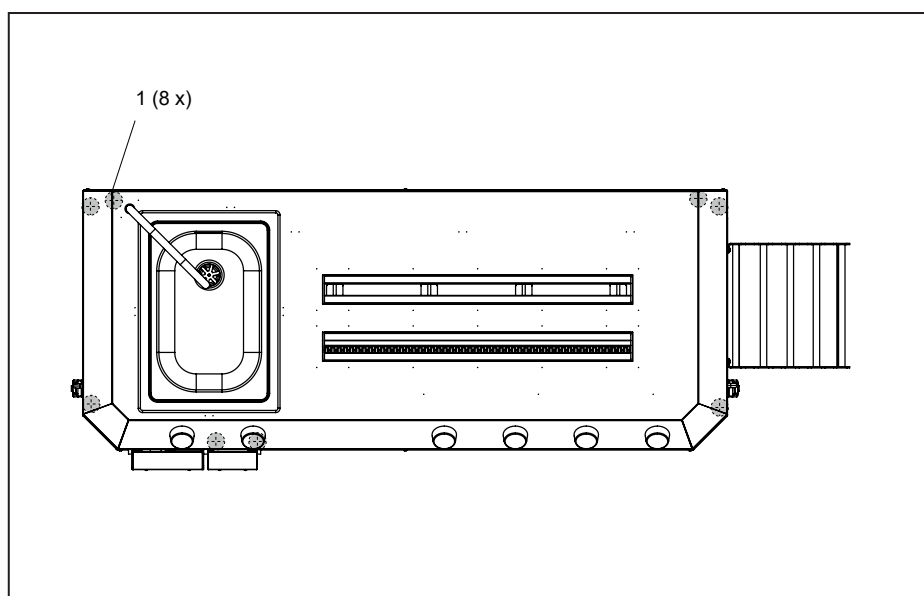
- Remove the two fixing screws at the top left and right of the door frame.



- 1 Fixing screws roof, left door open
- 2 Fixing screws roof, right door open

Fig. 8 - 3 Position of fixing screws (left and right door open)

- Access to the fastening screws (position see 1, Fig. 8 - 4) of the roof in the interior is possible via the two open side doors.
- Loosen and remove the roof fastening screws and remove the roof upwards.



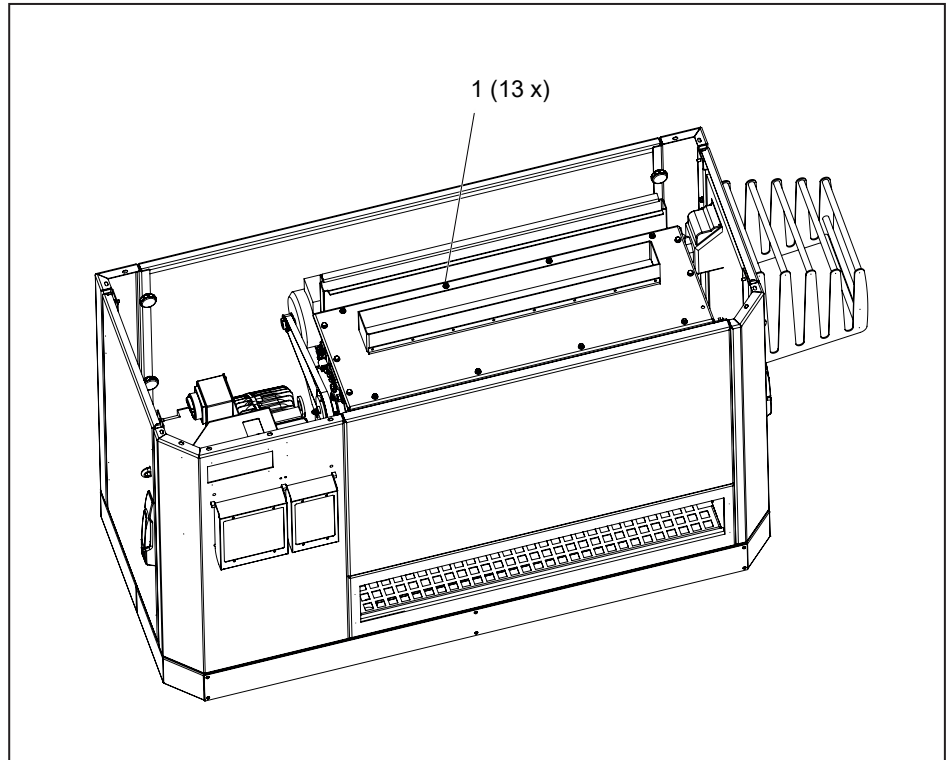
- 1 Position Befestigungsschrauben Abdeckung Dach

Fig. 8 - 4 Position der Bestigungsschrauben des Dachs im Geräteinnen-
raum

8.4.2 Removing brush tray cover

To access the brush tray, the roof must be removed and then proceed as follows:

- Loosen and remove the fixing screws of the brush tray (1, Fig. 8 - 5) and remove the brush tray.



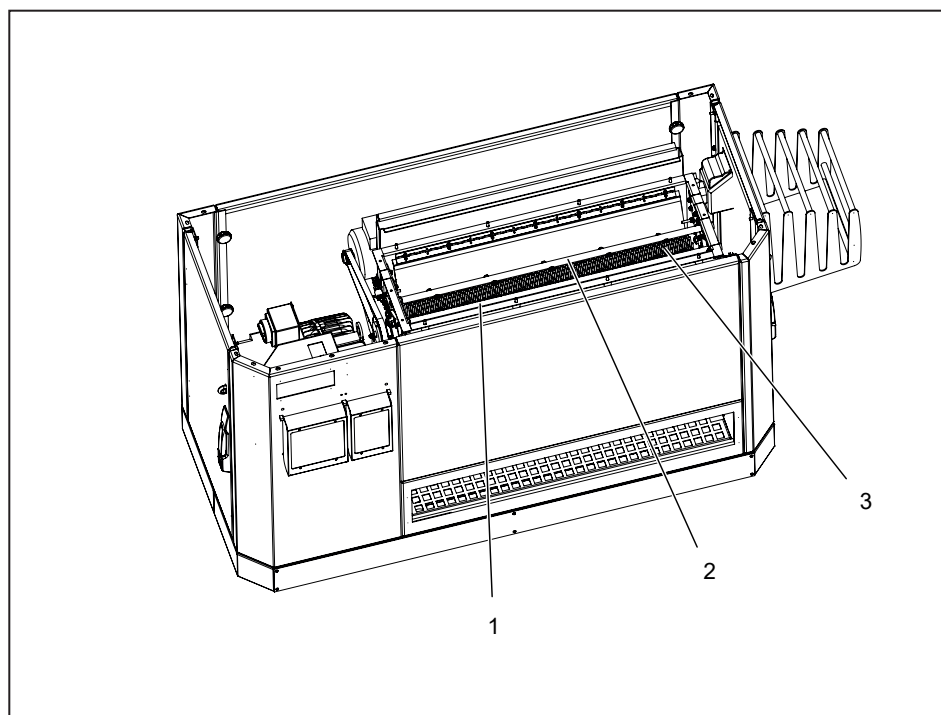
1 Position of fixing screws, brush tray cover

Fig. 8 - 5 Brush tray cover, position of fixing screws

8.5 Spray angle nozzle pipes

Figures 8 - 6 show the position of the nozzle pipes in the device. For checking the spray angle of the

- nozzle pipe Wet Cleaning and Chemical-dosing unit (1, Fig. 8 - 6) see section 8.5.1
- nozzle pipe device rinsing (2, Fig. 8 - 6) see section 8.5.2.



- 1 Nozzle pipe Wet Cleaning and Chemical-dosing unit
- 2 Nozzle pipe device rinsing
- 3 Brush

Fig. 8 - 6 View to nozzle pipes and brush, brush tray cover removed

8.5.1 Check spray angle Wet Cleaning and Chemical-dosing unit

In programme mode Wet Cleaning or Chemical-dosing unit, check the spray angle or wetting of the brush through the mat cleaning shaft.

Check the spray angle setting for the correct value as shown in Fig. 8 - 7.

If the value differs, set the spray angle according to section 8.5.3.

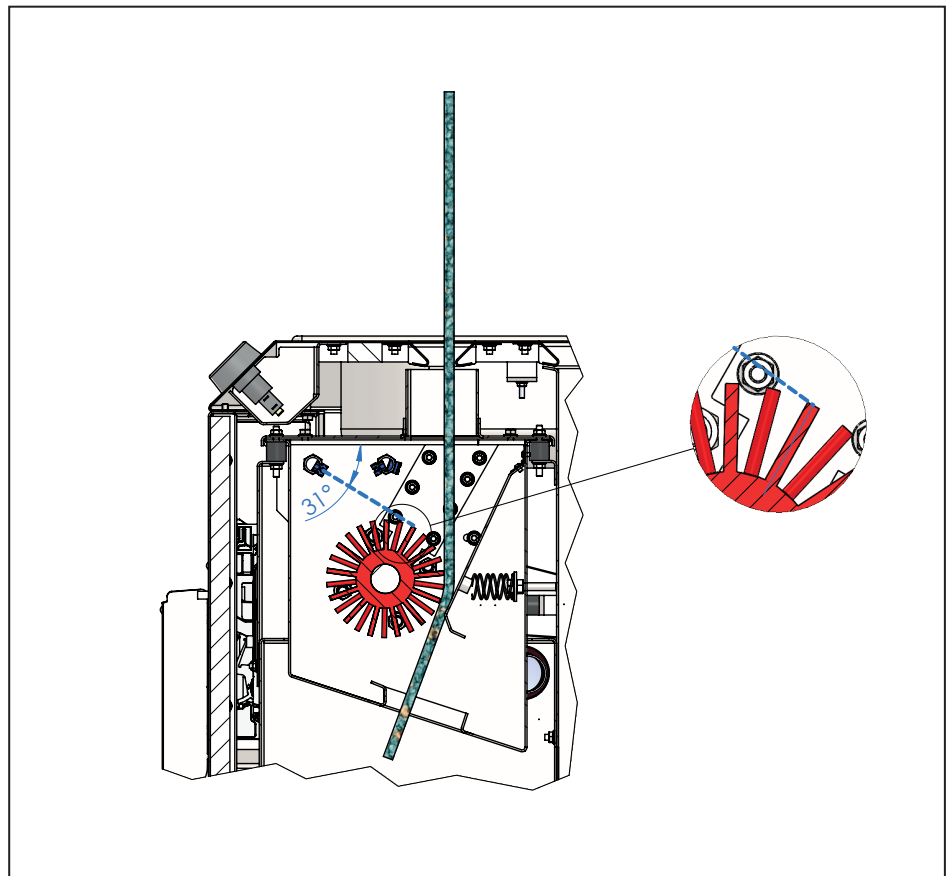


Fig. 8 - 7 Spray angle for nozzle pipe Wet Cleaning and Chemical-dosing unit

8.5.2 Check spray angle device rinsing

After the mat has been cleaned in programme mode Wet Cleaning or Chemical-dosing unit, the interior is rinsed with fresh water for 3 minutes.

Check the rinsing process through the mat cleaning shaft. Check the spray angle setting for the correct value as shown in Fig. 8 - 8.

If the value differs, set the spray angle according to section 8.5.3.

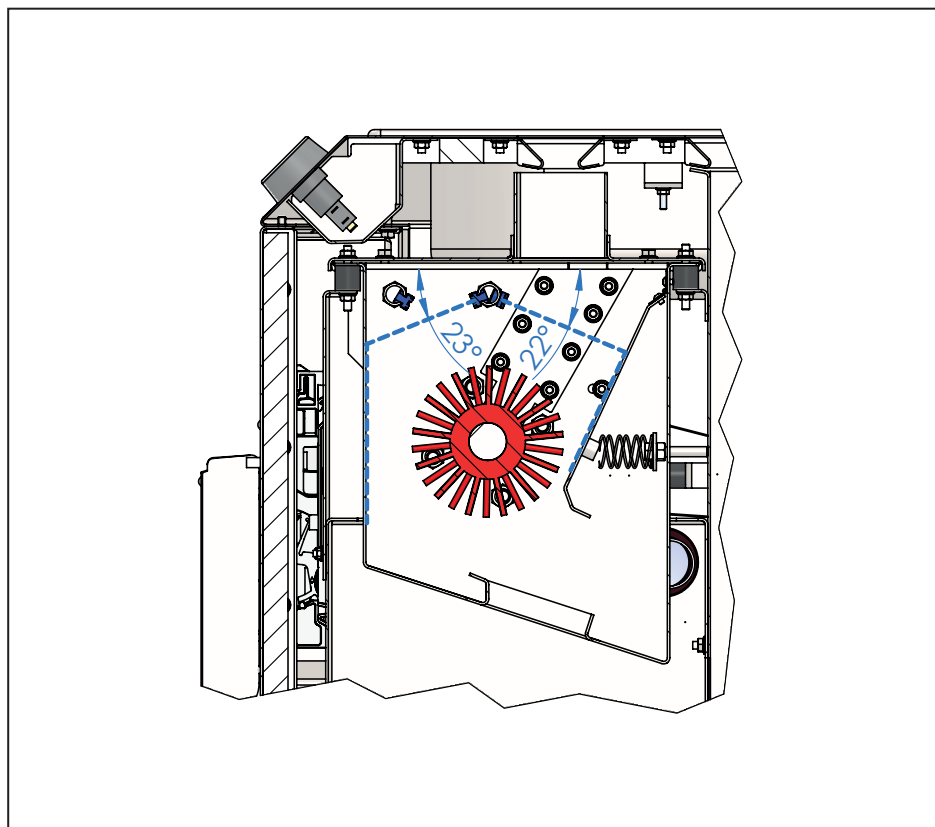


Fig. 8 - 8 Spray angle nozzle pipe device rinsing

8.5.3 Spray angle adjustment nozzle pipes



WARNING

Danger due to rotating drive motor with toothed belt.

After opening the left door during device operation, keep away from the rotating drive motor with toothed belt-driven brush unit (1, Fig. 3 - 4 or 2, Fig. 3 - 5).

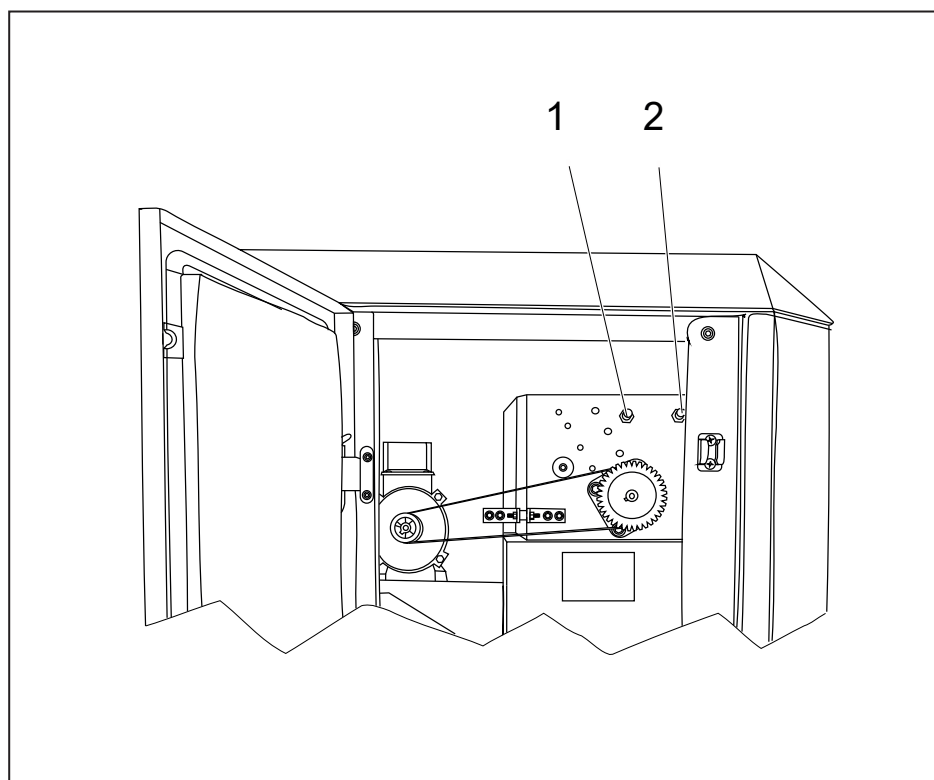
Before loosening or tightening the fixing nuts (1 resp. 2, Fig. 8-9), switch off the device using the main switch (2, Fig. 3 - 4 or 3, Fig. 3 - 5)

By reaching in, fingers or the hand can be pulled between the running toothed belt and the gear wheels of the drive motor or the brush unit and crushed or serious injuries can occur.

Proceed as follows to set the nozzle pipe Wet Cleaning and Chemical-dosing unit (1, Fig. 8 - 6) and the nozzle pipe device rinsing (21, Fig. 8 - 6):

- Open left door.
- Switch off the power supply for the device using the main switch (2, Fig. 3 - 4 resp. 3, Fig. 3 - 5).
- Loosen (do not remove) the fastening nut of the relevant nozzle pipe.
- Open the right side door and use an open-end spanner to adjust the hexagonal screw connection on the relevant nozzle pipe for optimum adjustment of the spray angle or wetting of the brush.

- Tighten the fastening nut of the relevant nozzle pipe again.



- 1 Nozzle pipe device rinsing
- 2 Nozzle pipe Wet Cleaning and Chemical-dosing unit

Fig. 8 - 9 Position of nozzle pipe fixing nuts (left door open)

9 Troubleshooting



WARNING

Carry out troubleshooting and rectification properly.

Troubleshooting of the device may only be carried out by qualified, trained and authorised personnel.

Before troubleshooting, take the MatCleaner out of operation using the main switch in the device.

9.1 Troubleshooting table

For troubleshooting purposes, possible error causes are listed in the following table.

Clean the contaminated parts (filter, pipes, nozzles etc.) to eliminate possible faults. Replace defective parts.

Error	Possible cause	Remedying	Authorised personnel
Device cannot be switched on via main switch power on/off.	Main switch or circuit breaker of the infrastructure (building connection) switched off or has tripped.	Switch on the main switch or circuit breaker again.	Maintenance personnel
	Circuit breaker from the infrastructure trips again after repeated switching on.	If building power supply OK, device defective; leave device switched off, inform customer service.	Customer service
	Power supply cable damaged or defective.	Replace damaged or defective cable.	Electrical Specialist
	Device control or components defective.	Replace defective components.	Customer service
Button lighting	No button illumination when the wash and care programme is activated, resp. no running light with optional customer animated button lighting or individual button lighting does not light up.	Repairing push-button lighting.	Customer service
Device switched off during operation.	Switch the device on again.	If device switches off several times during operation, leave device switched off and inform customer service.	Customer service

Tab. 9 - 1 Troubleshooting table

Error	Possible cause	Remedying	Authorised personnel
Poor cleaning results in Dry Cleaning mode	Brush contact pressure	Set correctly if necessary	Customer service
	Check brush for wear or damage.	Replace the worn brush. To access the brush, see section 8.4.	Customer service
	Brush does not rotate correctly or rotates too slowly.	Check the condition of the drive belt resp. the function of the drive motor. Replace damaged drive belt.	Maintenance personnel resp. Customer service
		Drive belt tension loose (readjustment see section 8.3).	Customer service
		Drive motor defective, replace defective motor.	Customer service
Poor cleaning results in Wet Cleaning mode.	Flat jet low-pressure nozzles (fresh water) in the brush tray are dirty or clogged.	Remove contamination or blockage. For access to the brush tray, see section 8.4.	Maintenance personnel
	Malfunction or failure due to defective components in the distributor assembly.	Replace defective components.	Customer service
Poor cleaning results in Chemical-dosing unit mode.	Chemical tank empty.	Provide a full chemical tank or top up the tank.	Maintenance personnel
	Detergent hose filter not at the bottom of the tank.	Insert the filter to the bottom of the tank.	Maintenance personnel
	Filter of the detergent hose is soiled.	Clean filter.	Maintenance personnel
	Chemical dosing unit setting not correct.	Make the desired setting for chemical dosing unit.	Maintenance personnel
	Chemical dosing unit defective.	Replace defective unit.	Customer service
	Detergent hoses dirty or clogged.	Clean hoses resp. remove blockages.	Maintenance personnel
	Flat jet low-pressure nozzles (chemical dosing unit) in brush tray are dirty or clogged.	Remove contamination or blockage. For access to the brush tray, see section 8.4.	Maintenance personnel

Tab. 9 - 1 Troubleshooting table

9.2 Replacement of components and parts

Replace the defective components and parts.

Only use spare parts recommended and approved by the manufacturer.

10 Spare parts logistic

10.1 MatCleaner assembly overview

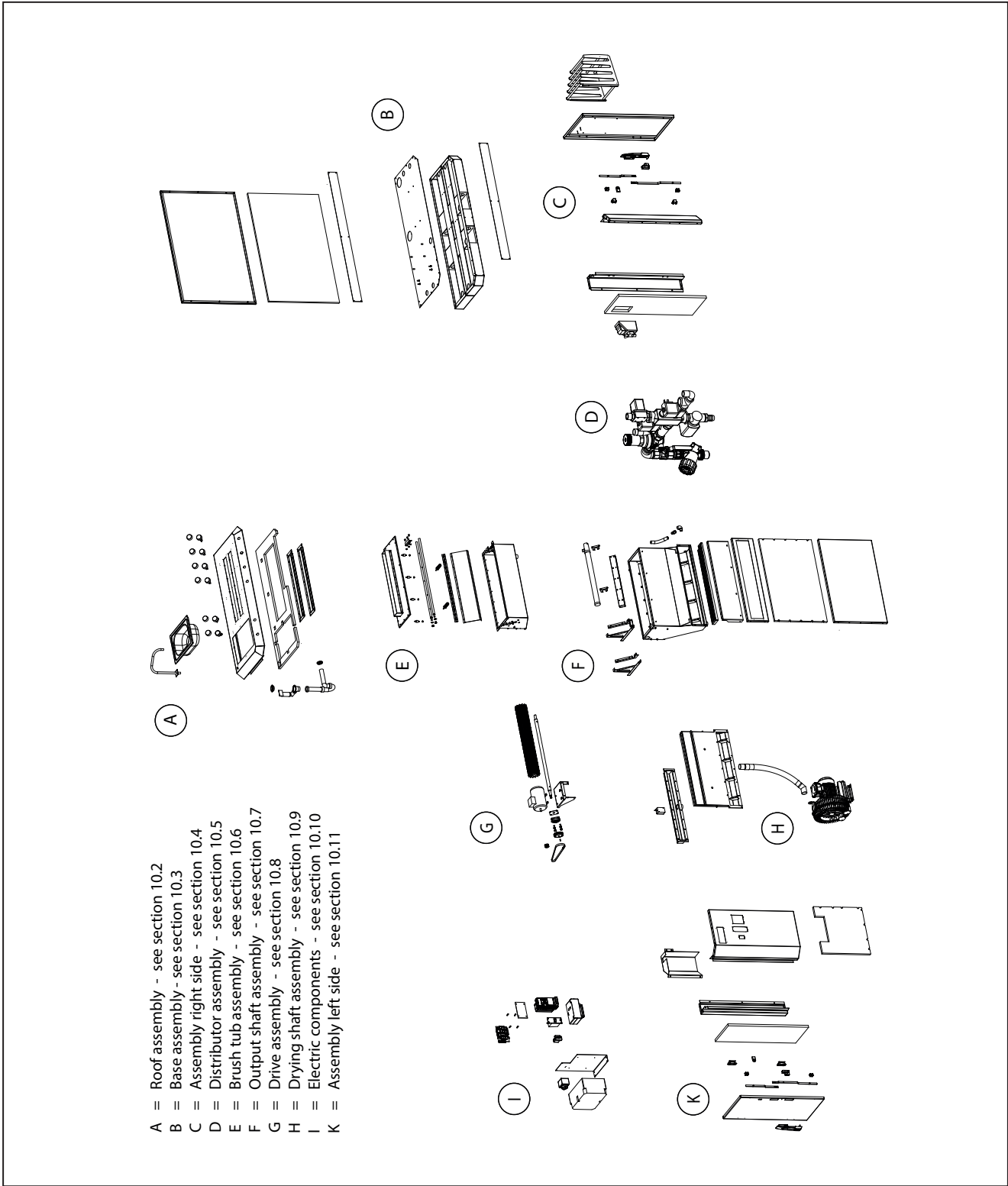


Fig. 10 - 1 MatCleaner, assembly overview

10.2 Roof assembly

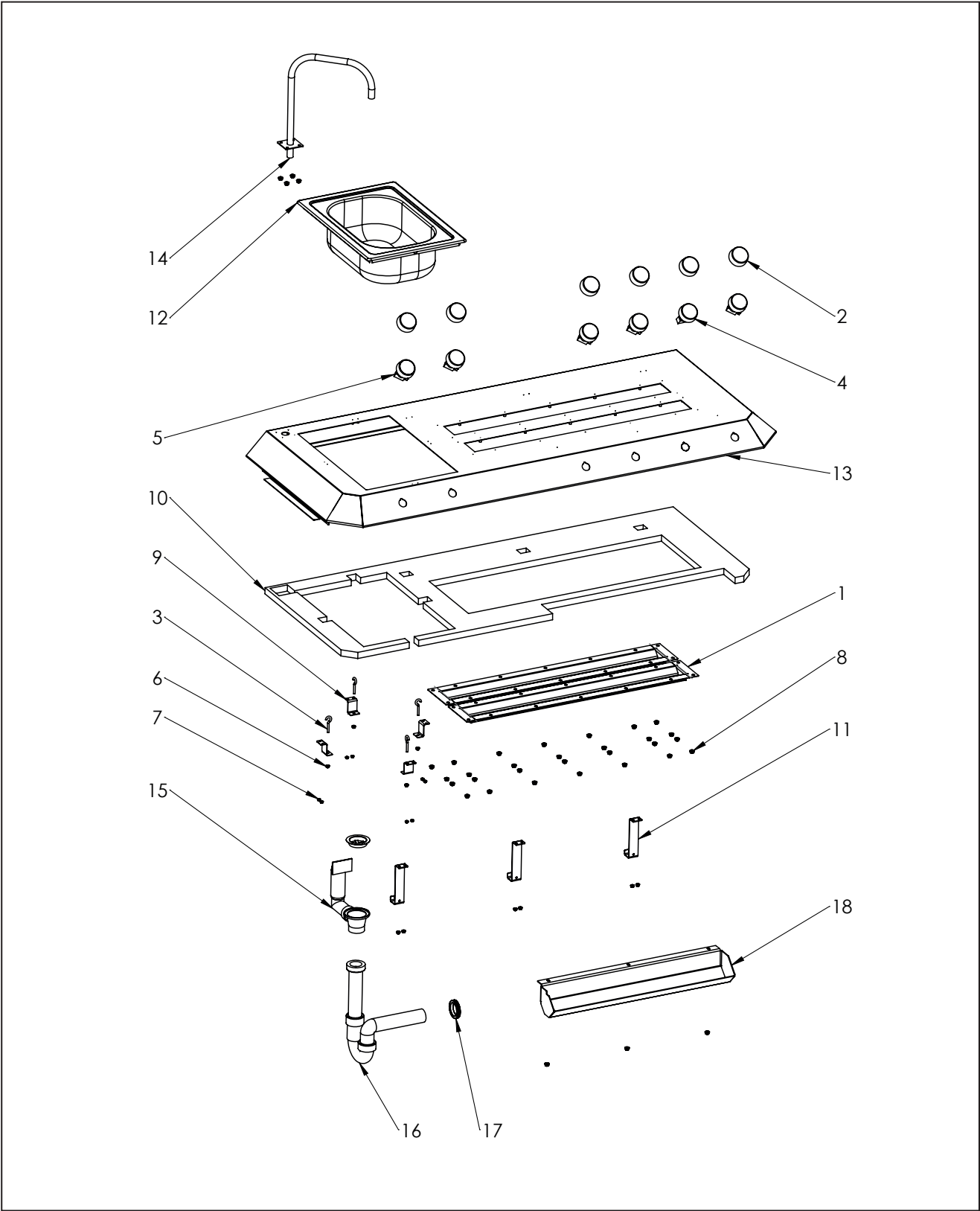


Fig. 10 - 2 Roof assembly, exploded view

Pos-No.	Article No.	Drawing number	Designation 1	Designation 2	Qty
1	602723	MR-000-011-003	Inlet shaft assembly	Matcleaner	2
2	51612	-001	Push button cover	PVC	6
3	265999	-001	Screw hook curved	M5x50 stainless steel	4
4	516104	STB-099-112-001	push-button white incl. LED double 12VDC		5
5	516115	STB-099-112-001	push-button red without LED	for ModulLine	1
6	386306	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M5 stainless steel "	10
7	386305	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M4 stainless steel "	8
8	386307	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M6 stainless steel "	32
9	602689	MR-003-052-001	Clamping angle sink stainless steel	Matcleaner	4
10	579023	MR-004-006-002	Pipe insulation	MatCleaner with washbasin	1
11	602686	MR-003-051-001	Sink hose holder stainless steel	Matcleaner	3
12	587002	-001	Sink Stainless Steel 330x470mm	Basin 240x370mm	1
13	602716	MR-000-008-007	Wet cleaning the roof assembly + drying	Matcleaner	1
14	602724	MR-000-012-002	Faucet assembly	Matcleaner	1
15	587003	-001	Drain Set Blanco	for Sink	1
16	509335	-001	Tube Odour trap VIEGA	plastic 1 1/2" x 40mm	1
17	5837	-001	Performance socket 39x50x57	DG M50 black unperforated	1
18	602875	MR-003-063-001	Cover button in the roof stainless steel	Matcleaner	1

Tab. 10 - 1 Parts list roof assembly

10.3 Base assembly

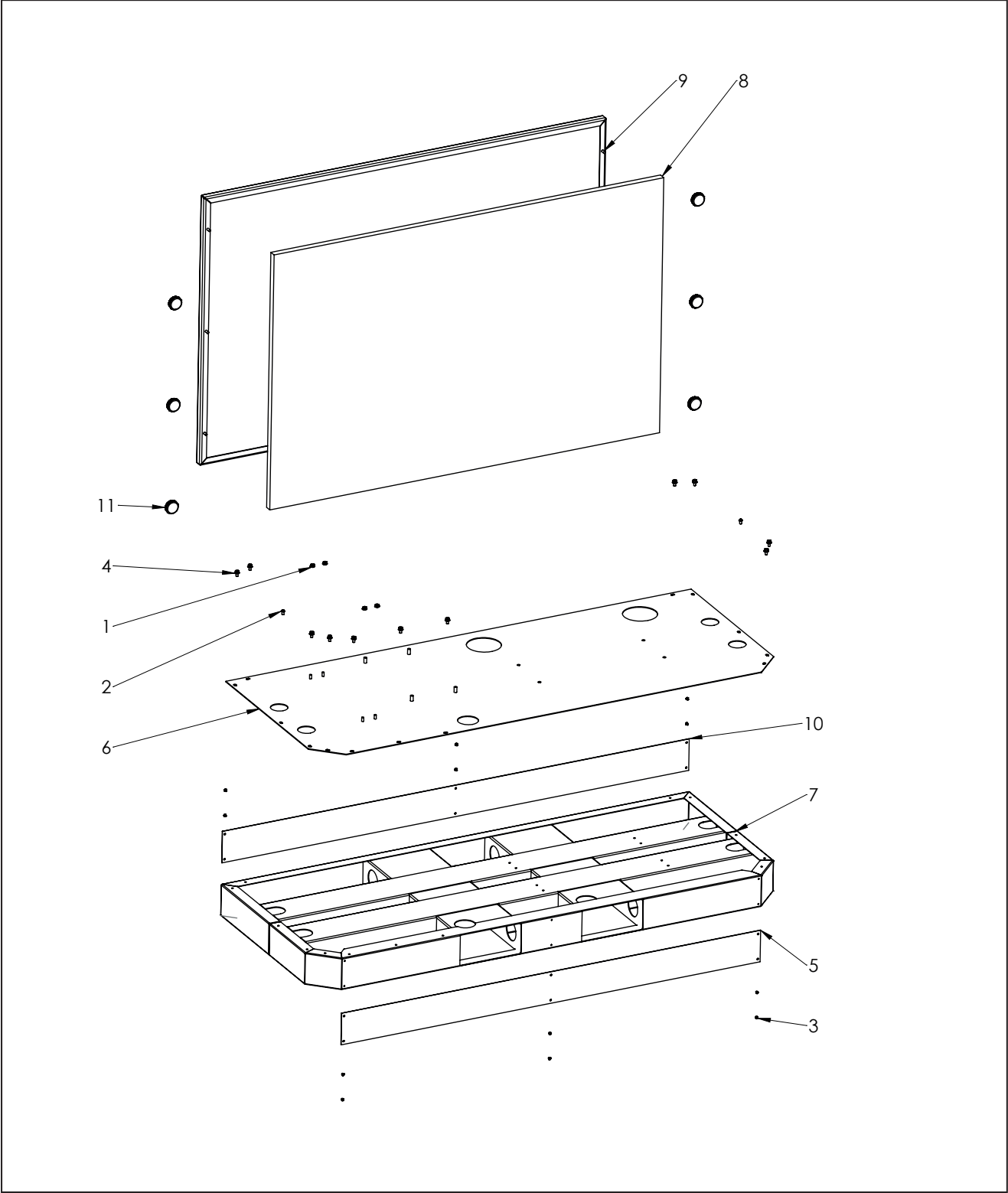


Fig. 10 - 3 Base assembly, exploded view

Pos-No.	Article No.	Drawing number	Designation 1	Designation 2	Qty
1	386307	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M6 stainless steel "	4
2	384552	-xxx	"Hexagon socket button head screw"	"DIN-EN-ISO 7380-2 M6x10 Edelstahl"	2
3	384506	-xxx	"Hexagon socket button head screw"	"DIN-EN-ISO 7380-2 M4x6 stainless steel"	12
4	386207	-xxx	"Hexagon head screw serrated with flange"	"like DIN 6921 M6x10 stainless steel "	11
5	602558	MR-002-001-002	"Front plinth panel stainless steel"	Matcleaner	1
6	602527	MR-001-009-006	Floor plate stainless steel	Matcleaner	1
7	602713	MR-000-006-005	Base assembly	Matcleaner	1
8	579023	MR-004-006-002	Noiseflex insulation mat cut Proof PU20mm	"Roof with washbasin and mat drying shaft"	1
9	602542	MR-001-014-001	Back wall stainless steel	Matcleaner	1
10	602560	MR-002-002-002	Rear plinth panel stainless steel	Matcleaner	1
11	205201	STB-099-266-001	Stargrippnut black/red PA6	"with thread insert galvanized"	6

Tab. 10 - 2 Parts list base assembly

10.4 Assembly right side

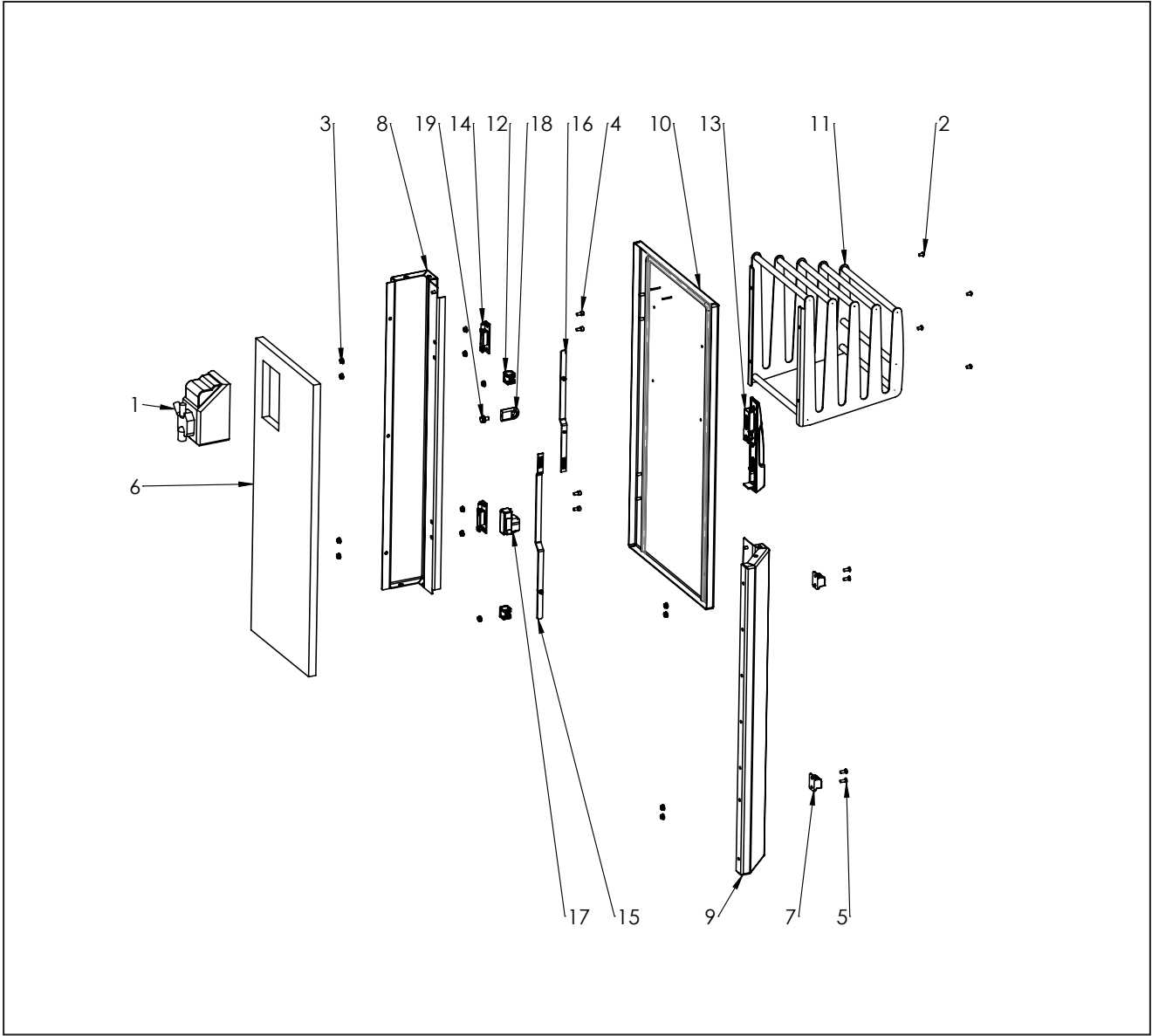


Fig. 10 - 4 Assembly right side, exploded view

Pos-No.	Article No.	Drawing number	Designation 1	Designation 2	Qty
1	521780	-001	Chemical Pump		1
2	384552	-xxx	"Hexagon socket button head screw"	"DIN-EN-ISO 7380-2 M6x10 Edelstahl"	6
3	386307	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M6 stainless steel "	14
4	38581	-xxx	"Hexagon socket head cap screw"	"DIN 912 DIN-EN-ISO 4762 M6x12 stainless steel"	4
5	386201	-xxx	"Cross recessed countersunk head screw"	"DIN 965 DIN-EN-ISO 7046 M6x16 stainless steel"	4
6	579023	MR-004-006-002	Noiseflex insulation mat cut Proof PU20mm	"MatCleaner with washbasin"	1
7	583402	STB-099-240-001	Catch owner		2
8	602539	MR-001-013-004	Side part right 2 stainless steel	Matcleaner	1
9	602504	MR-001-002-005	Side part right stainless steel	Matcleaner	1
10	602727	MR-000-015-002	Door assembly 2	Matcleaner	1
11	602721	MR-000-010-002	Mat support assembly	Matcleaner	1
12	4004	STB-099-239-001	Metal-Bar Lock		2
13	39971	STB-099-238-001	Handle with push button		1
14	399603	STB-099-237-001	Hinge	"for SafeTerminal, Vacuum Cleaner, LCE, HSC-ST"	2
15	583603	STB-099-514-001	Locking rod below 434mm	LCE-Terminal	1
16	583505	STB-099-515-001	Locking rod above 315mm	LCE-Terminal	1
17	403701	-001	Lock-Cylinder	"Vacuum-Cleaner, HSC-ST"	1
18	395403	STB-099-142-001	pad lock 1.4301 stainless steel	„pad lock st.st. like drawing RAH-03-010“	1
19	386214	-xxx	"Hexagon head screw serrated with flange"	"like DIN 6921 M8x12 stainless steel "	1

Tab. 10 - 3 Parts list assembly right side

10.5 Distributor assembly

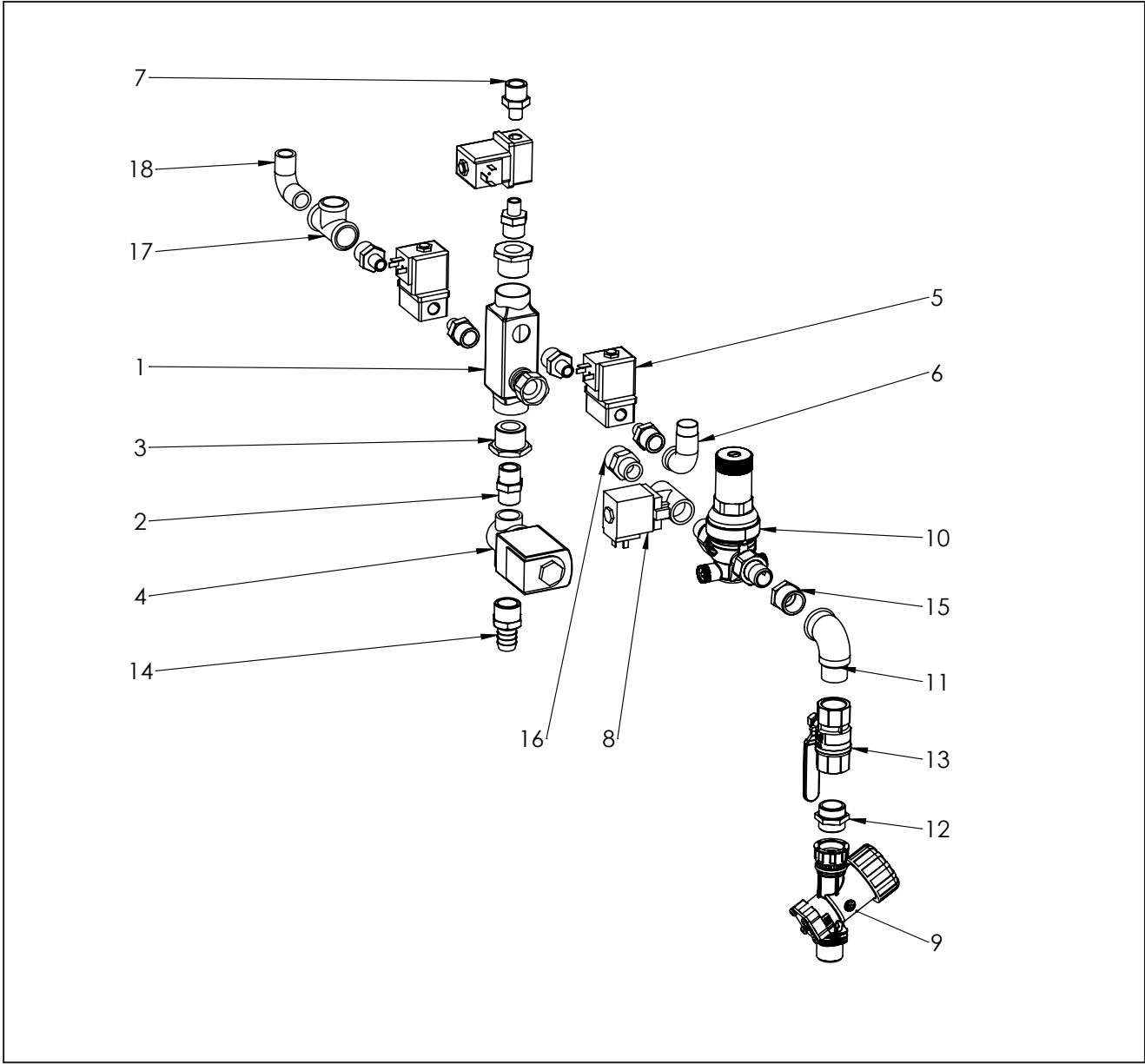


Fig. 10 - 5 Distributor assembly, exploded view

Pos-No.	Article No.	Drawing number	Designation 1	Designation 2	Qty
1	506300	-1	Special distributor DN25		1
2	505707	STB-099-388-001	"Fitting-Double nipple brass hex SW24"	1/2"x38 M.M.	1
3	5111	STB-099-389-001	"Fitting-Reducer brass hex SW37"	1"x1/2" M.F.	2
4	536904	STB-099-507-001	"Magnetic-valve DN12 1/2"" 0,02bar EPDM INOX"	"2/2 NC directacting AC24V/15W"	1
5	537301	STB-099-294-001	"Magnetic-valve DN4 1/4"" 0-2bar EPDM brass"	"2/2 NC directacting AC230V / 8W"	3
6	510701	STB-099-033-001	Fitting-Elbow 90° brass	1/2" F.M.	1
7	37594	STB-099-516-001	"Fitting-Reducing nipple brass hex SW24 "	1/2"x1/4" M.M.	6
8	536602	STB-099-498-001	"Magnetic-valve DN10 1/2"" 0-10bar EPDM brass"	"2/2 NC forced control AC24V/8W"	1
9	12017500	STB-099-326-001	Dust trap DN17 10bar 250my	"both sides 3/4"" with strainer mesh 0,25mm PA66"	1
10	583912	-1	Pressure regulator 1/2" DN15	max. 30°C	1
11	380501	STB-099-130-001	Elbow brass 3/4"M - 3/4"F		1
12	375900	STB-099-012-001	"Fitting-Reducing nipple brass hex SW28"	3/4"x1/2" M.M. 44mm	1
13	537901	STB-099-516-001	3/4"x1/2" M.M. 44mm	3/4" F.F.	1
14	3688	STB-099-317-001	"Hose nipple brass hex 3/4"" 'F. 20mm"		1
15	509801	STB-099-518-001	"Fitting-Reducer brass hex SW28"	3/4"x1/2" M.F.	1
16	579807	STB-099-340-001	"Fitting-Reducing nipple red bress"	3/4"x1/2" M	1
17	2076	STB-099-540-001	Fitting-T-connection brass	1/2" F.F.F.	1
18	207701	STB-099-541-001	Fitting-Elbow 90° brass	1/2" M.M.	1

Tab. 10 - 4 Parts list distributor assembly

10.6 Brush tub assembly

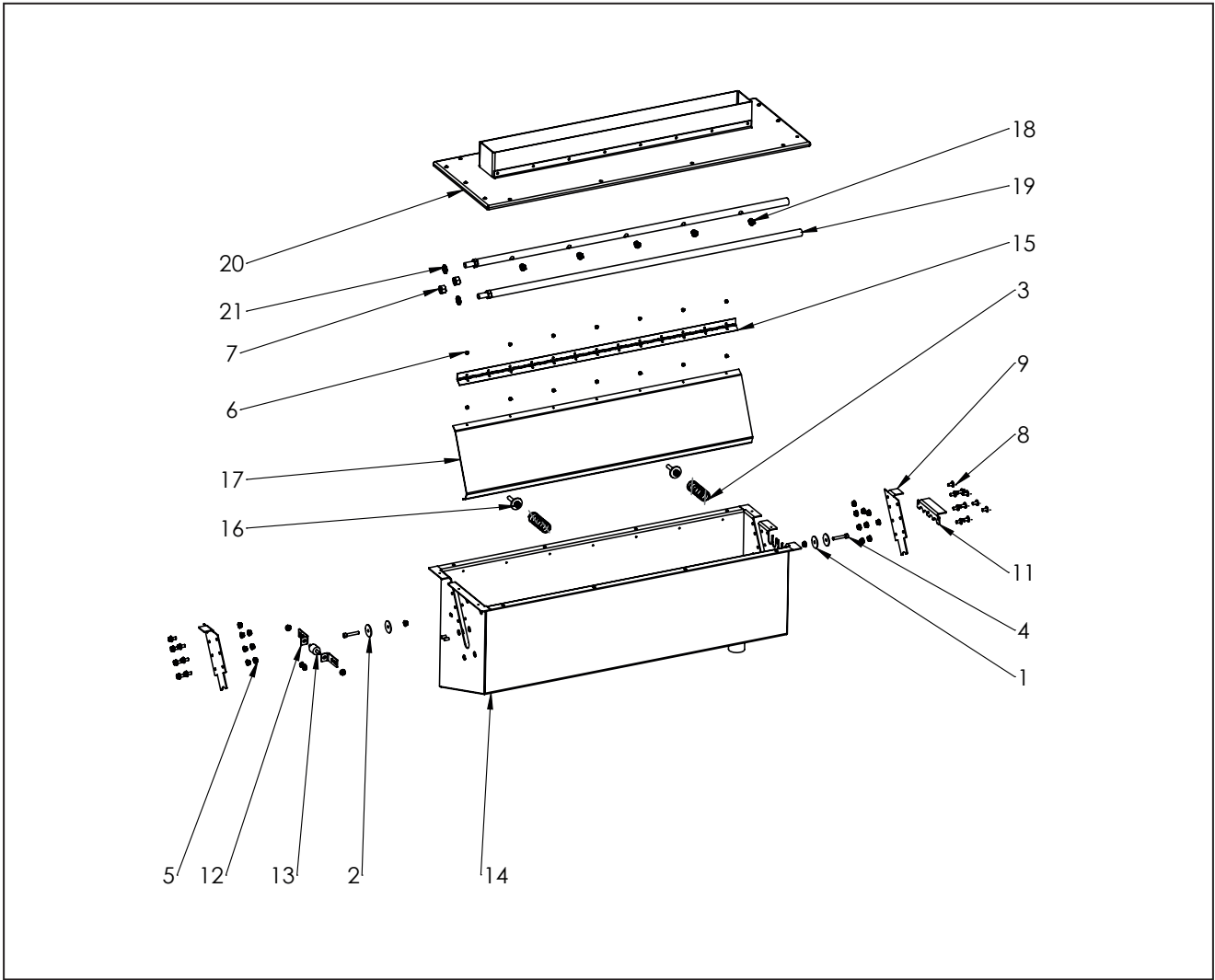


Fig. 10 - 6 Brush tub assembly, exploded view

Pos-No.	Article No.	Drawing number	Designation 1	Designation 2	Qty
1	x	MR-004-012-001	Sealing washer Ø 30x6.3x1.5	Matcleaner	2
2	x	MR-004-011-001	Washer Ø 30x6.3x2 stainless steel	Matcleaner	2
3	377200	-1	Spring 1.4310	1,60x23,40x72,00x5,00mm	2
4	517201	-xxx	Hexagon socket head cap screw	"DIN 912 DIN-EN-ISO 4762 M6x35 stainless steel"	2
5	386307	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M6 stainless steel "	27
6	384506	-xxx	Hexagon socket button head screw	"DIN-EN-ISO 7380-2 M4x6 stainless steel"	19
7	27131	-xxx	Hexagon nut	"DIN 934 DIN-EN-ISO 4032 M12 stainless steel"	2
8	386211	-xxx	"Hexagon head screw serrated with flange"	"like DIN 6921 M6x12 stainless steel "	17
9	602649	MR-003-038-001	Brush shaft insert cover 2 stainless steel	Matcleaner	1
10	602628	MR-003-023-002	Brush shaft insert cover stainless steel	Matcleaner	1
11	602677	MR-003-048-002	Cover insert spray tube stainless steel	Matcleaner	1
12	602635	MR-003-029-001	"Tension compensation angle stainless steel"	Matcleaner	4
13	270300	-1	Buffer Rubber-metal 20/20 Typ A M6	55 Shore	2
14	602708	MR-000-003-005	Brush tray assembly	Matcleaner	1
15	399605	-	Hinge Aluminium	32x1,0x0,8m Dorn Ø1,75	1
16	x	MR-000-027-001	Preload screw for pressure spring	Matcleaner	2
17	602719	MR-000-009-002	Pressure plate assembly	Matcleaner	1
18	602758	MR-000-026-001	Cleaning tube assembly	Matcleaner	1
19	602725	MR-000-013-001	Spray tube assembly	Matcleaner	1
20	602715	MR-000-007-005	Brush tray cover assembly	Matcleaner	1
21	38707	-xxx	Serrated lock washer type A DIN 6798	"Ø1=12,5 mm Ø2=20,5mm stainless steel"	2

Tab. 10 - 5 Parts list rush tub assembly

10.7 Output shaft assembly

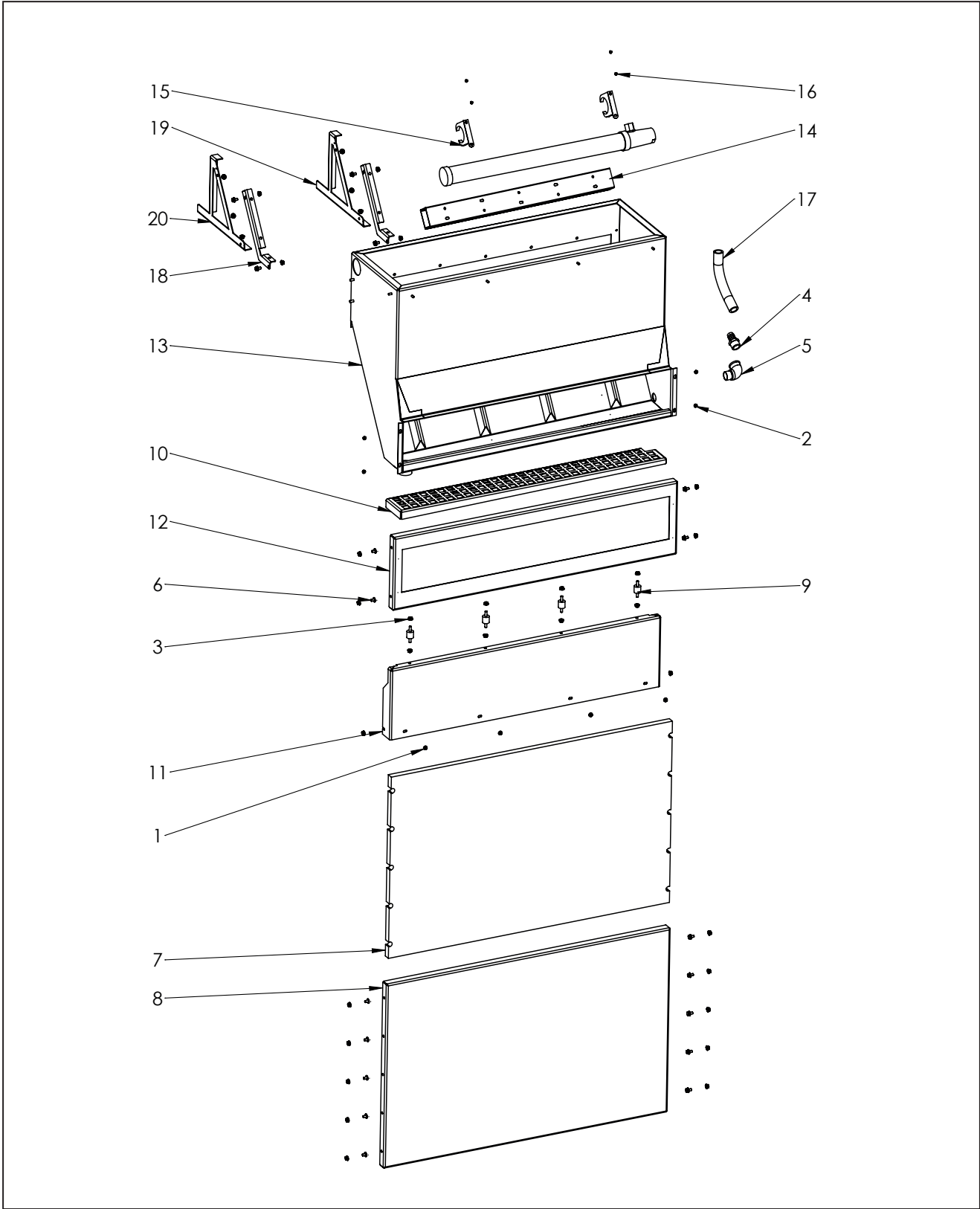


Fig. 10 - 7 Output shaft assembly, exploded view

Pos-No.	Article No.	Drawing number	Designation 1	Designation 2	Qty
1	386306	-xxx	Hexagon flange nut serrated	like DIN 6923 DIN-EN 1661 M5 stainless steel	8
2	386305	-xxx	Hexagon flange nut serrated	like DIN 6923 DIN-EN 1661 M4 stainless steel	4
3	386307	-xxx	Hexagon flange nut serrated	like DIN 6923 DIN-EN 1661 M6 stainless steel	34
4	3688	STB-099-317-001	"Hose nipple brass hex 3/4" F. 20mm"		1
5	380501	STB-099-130-001	Elbow brass 3/4" M - 3/4" F		1
6	386207	-xxx	"Hexagon head screw serrated with flange"	like DIN 6921 M6x10 stainless steel	18
7	579023	MR-004-006-002	with thread insert galvanized	MatCleaner with washbasin	1
8	602536	MR-001-012-002	Front fairing panel stainless steel	Matcleaner	1
9	270300	-1	"Buffer Rubber-metal 20/20 Typ A M6"	55 Shore	4
10	602638	MR-003-031-005	Grating stainless steel	Matcleaner	1
11	602625	MR-003-022-003	"Attachment brush output stainless steel"	Matcleaner	1
12	602507	MR-001-003-001	"Side part mat output stainless steel"	Matcleaner	1
13	602710	MR-000-004-007	Output tray assembly	Matcleaner	1
14	377212	MR-004-013-002	"Conduit duct 60x40mm L=572mm"	Matcleaner	1
15	283707	STB-099-519-001	"Heating Anti-Freeze AC230V/50Hz 80W"	Heating Anti-Freeze AC-230V/50Hz 80W	1
16	384506	-xxx	"Hexagon socket button head screw"	DIN-EN-ISO 7380-2 M4x6 stainless steel	4
17	3667		"Rubber hose black 19x28mm R3/4"	30bar -30°C/+100°C	1
18	x	MR-003-060-001	"Mounting bracket foot stainless steel"	Mat cleaner output shaft	2
19	602740	MR-003-055-003	Foot 2 output slot stainless steel	Matcleaner	1
20	602646	MR-003-037-003	Foot output slot stainless steel	Matcleaner	1

Tab. 10 - 6 Parts list output shaft assembly

10.8 Drive assembly

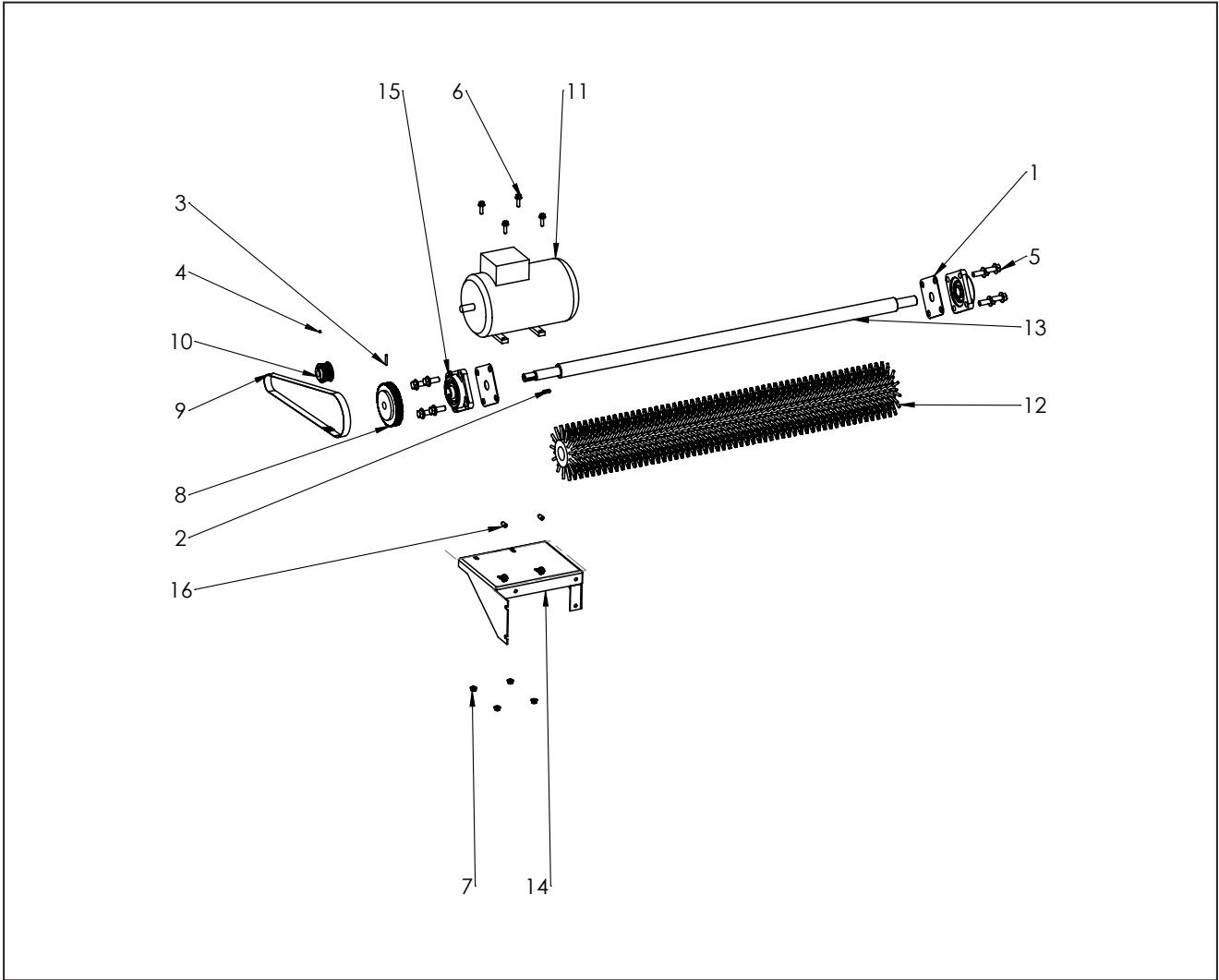


Fig. 10 - 8 Drive assembly, exploded view

Pos-No.	Article No.	Drawing number	Designation 1	Designation 2	Qty
1	x	MR-004-010-001	Rubber seal for flange bearings	Matcleaner	2
2	377209	-1	Feather Key DIN6885-A	"5x5x18mm Steel zinc plated"	1
3	538706	-xxx	Setscrew DIN 4027 M4x25 A2		1
4	520401	-xxx			1
5	386224	-xxx	"Hexagon head screw serrated with flange"	"like DIN 6921 M10x25 stainless steel "	8
6	386213	-xxx	"Hexagon head screw serrated with flange"	"like DIN 6921 M6x20 stainless steel "	4
7	386307	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M6 stainless steel "	4
8	377208	-1	"Toothed Belt Wheel Aluminium T5 60 teeth"	drilling Ø16mm	1
9	377206	-1	Toothed Belt PU 16mm T5-840	pitch length 840mm	1
10	377210	STB-099-508-001	"Toothed Belt Wheel Aluminium T5 24 teeth"	drilling Ø14mm	1
11	377255	-1	"Electric-Motor 3AC230/400V 50HZ 0,55kW MEC71"	2810rpm B3 shaft Ø16mm	1
12	573301	-1	"Round brush PP grey length 800mm Ø120mm"	"fiber PBT transparent 0,35mm"	1
13	573300	MR-003-024-002	Brush shaft	Matcleaner	1
14	602860	MR-000-028-001	E-motor console assembly	Matcleaner	1
15	377205	-1	Bullet flange bearing Unit grey iron	drilling 20mm	2
16	541700	-xxx	Grub screw with hexagon socket	"DIN 915 DIN-EN-ISO 4028 M8x16 zinc plated"	2

Tab. 10 - 7 Parts list drive assembly

10.9 Drying shaft assembly

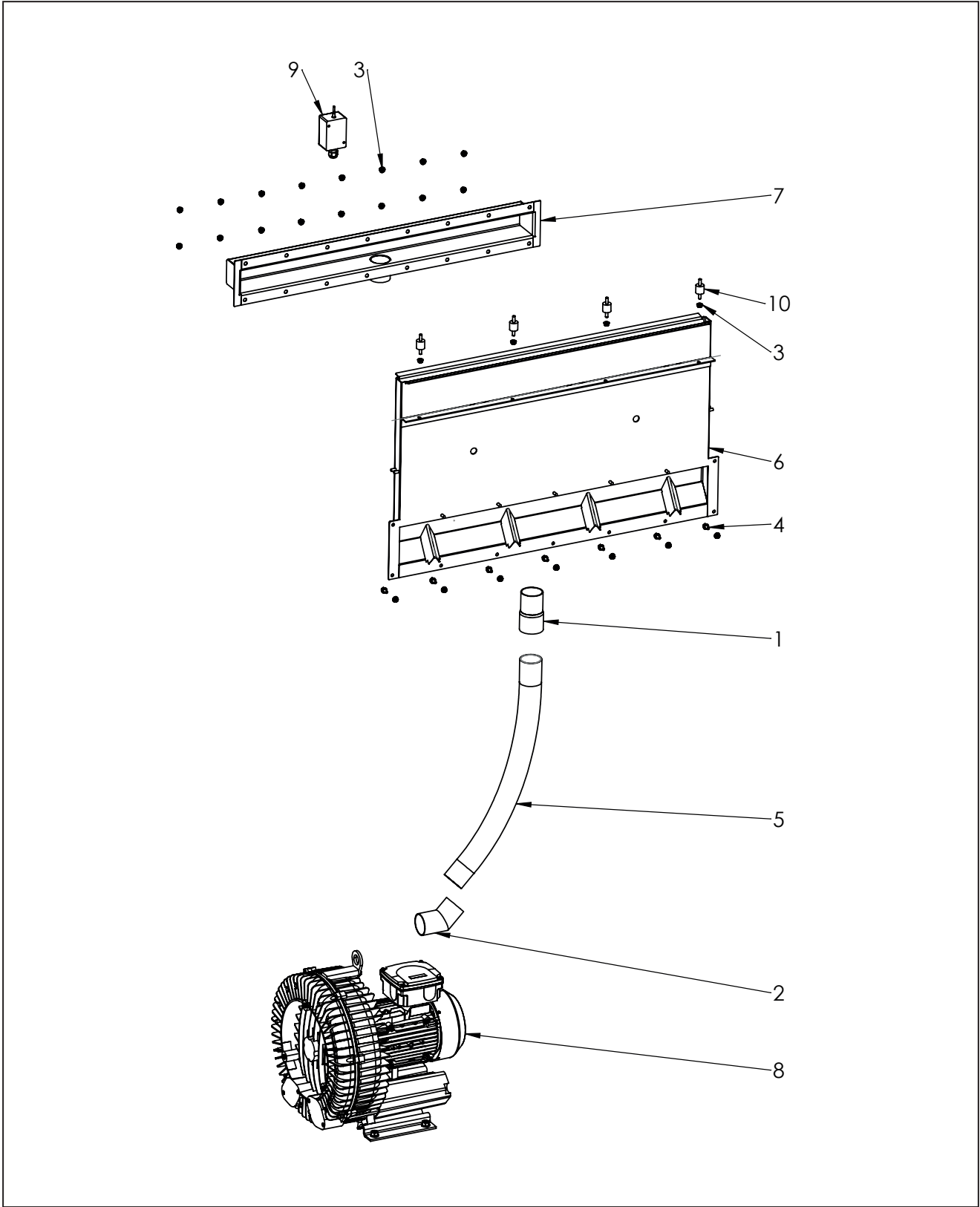


Fig. 10 - 9 Drying shaft assembly, exploded view

Pos-No.	Article No.	Drawing number	Designation 1	Designation 2	Qty
1	38927	-1	"Suction Hose connection socket PVC Ø51mm"		1
2	38926	-1	"Suction Hose connection elbow PVC Ø50mm curved 40°"		1
3	386307	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M6 stainless steel "	27
4	386211	-xxx	"Hexagon head screw serrated with flange"	"like DIN 6921 M6x12 stainless steel "	7
5	x	-1	"Blow hose Unit Ø571?mm PVC black	"superelastic 740mm with connections"	1
6	602712	MR-000-005-005	Drying shaft assembly	Matcleaner	1
7	602706	MR-000-002-003	Air nozzle assembly	Matcleaner	1
8	569800	-1	"Side channel blower 3AC 400V 50Hz"	2,2kW 5,6A	1
9	5147058	-1	Thermometer Outside	"in terminal-box PT100 -30...+60°C 0-10V"	1
10	270300	-1	"Buffer Rubber-metal 20/20 Typ A M6"	55 Shore	4

Tab. 10 - 8 Parts list drying shaft assembly

10.10 Electric components

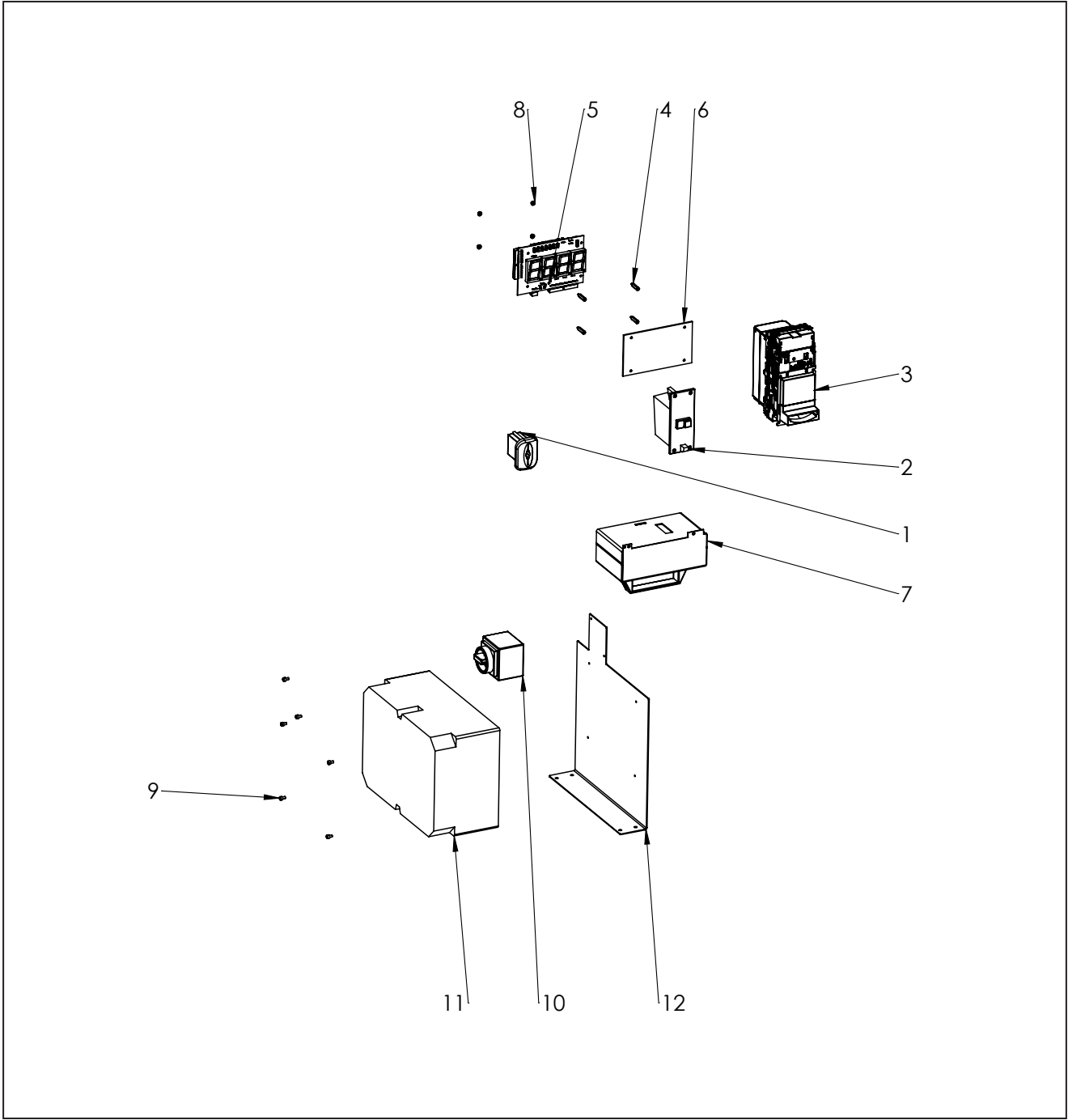


Fig. 10 - 10 Electric components, exploded view

Pos-No.	Article No.	Drawing number	Designation 1	Designation 2	Qty
1	601188	-1	Key-Reader Next Worldkey	RFID/MIFARE/MDB	1
2	400100	STB-099-161-001	"Electronic coin-acceptor EMP800.13 V6 CC-TALK"	EUR	1
3	531626	-1	"Note reader NV9 cc-talk 104- USB "	"12V DC with PA190 front plate vertical"	1
4	253902	STB-099-114-001	"plate M4x25,0mm SW7 brass for control"	Etronic IV	4
5	350960	STB-099-520-001	"Control- and display board CWE6 4-digit"	"12/24V without de- vice-specific programming"	1
6	57360	STB-099-118-002	"plexiglass slitting 180x 105 mm red for"	Etronic IV	1
7	300534	-1	Cash box unit with accessories		1
8	386305	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M4 stainless steel "	4
9	584561	-xxx	"Hexagon socket button head screw"	"DIN-EN-ISO 4762 M5x8 stainless steel"	6
10	204610	-1	Main-Switch 25 A all-poles	V2N 05/HS-T24/2-D-MRG	1
11	3915	STB-099-349-001	"Terminal-Box MatCleaner/RimCleaner/HDE 12-18-24kW"		1
12	602658	MR-003-041-004	"Control box console stainless steel"	Matcleaner	1

Tab. 10 - 9 Parts list elektric components

10.11 Assembly left side

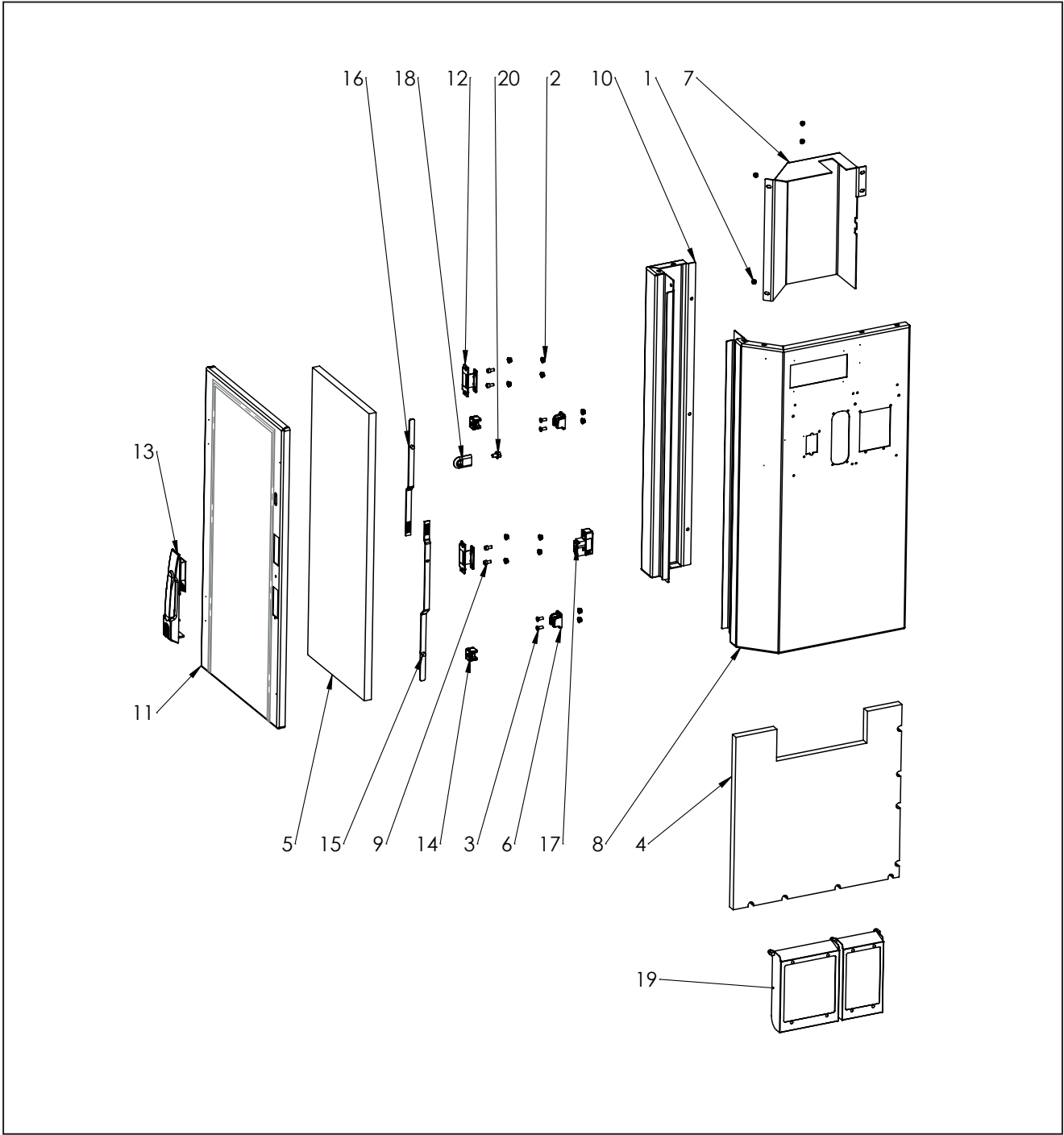


Fig. 10 - 11 Assembly left side, exploded view

Pos-No.	Article No.	Drawing number	Designation 1	Designation 2	Qty
1	386306	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M5 stainless steel "	4
2	386307	-xxx	Hexagon flange nut serrated	"like DIN 6923 DIN-EN 1661 M6 stainless steel "	12
3	386201	-xxx	"Cross recessed countersunk head screw"	"DIN 965 DIN-EN-ISO 7046 M6x16 stainless steel"	4
4	579023	MR-004-006-002	Noiseflex insulation mat cut Proof PU20mm	MatCleaner with washbasin	1
5	579023	MR-004-006-002	Noiseflex insulation mat cut Proof PU20mm	MatCleaner with washbasin	1
6	583402	STB-099-240-001	Catch owner		2
7	602680	MR-003-049-002	"Coverage CWE + financial devices stainless steel"	Matcleaner	1
8	602500	MR-001-001-006	Side part left stainless steel	Matcleaner	1
9	38581	-xxx	"Hexagon socket head cap screw"	"DIN 912 DIN-EN-ISO 4762 M6x12 stainless steel"	4
10	602533	MR-001-011-004	Side part left 2 stainless steel	Matcleaner	1
11	602726	MR-000-014-002	Door assembly 1	Matcleaner	1
12	399603	STB-099-237-001	Hinge	"for SafeTerminal, Vacuum Cleaner, LCE, HSC-ST"	2
13	39971	STB-099-238-001	Handle with push button		1
14	4004	STB-099-239-001	Metal-Bar Lock		2
15	583603	STB-099-514-001	Locking rod below 434mm	LCE-Terminal	1
16	583505	STB-099-515-001	Locking rod above 315mm	LCE-Terminal	1
17	403701	-001	Lock-Cylinder	Vacuum-Cleaner, HSC-ST	1
18	395403	STB-099-142-001	pad lock 1.4301 stainless steel	„pad lock st.st. like drawing RAH-03-010“	1
19	534243	SWS-000-051-001	Splashguard-cover-Unit	Coin checker/key reader/ bank note reader/CCV isolated	1
20	386214	-xxx	"Hexagon head screw serrated with flange"	like DIN 6921 M8x12 stainless steel	1

Tab. 10 - 10 Parts list assembly left side

11.1 Title page

100 of 114

Inhaltsverzeichnis

[illegible]

	Datum	16.01.2024	Mattenreinger Erst durch	Ehre GmbH	Inhaltsverzeichnis : 1 - 12	III + Blatt 2 Blatt 12	3
letzte Änderung	Lipawellek Datum	16.01.2024	Lipawellek Name	Urspr.	Erstellt durch		

[illegible]

300199 • 2/2024 • H.S.

11.4 SPS1 Inputs / Outputs Overview

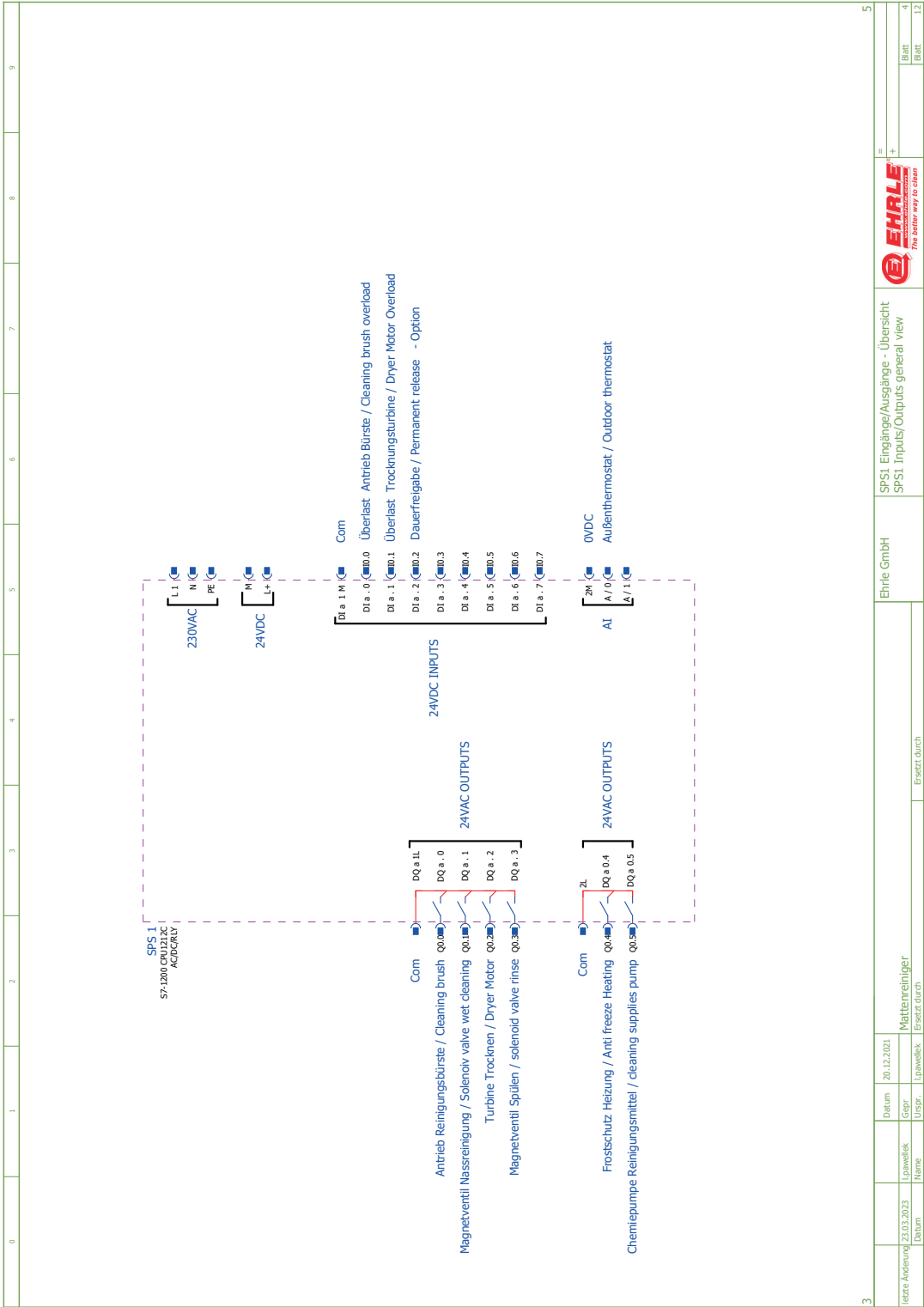


Fig. 11 - 4 SPS1 Inputs / Outputs, circuit diagram (page 4 of 12)

104 of 114



11.7 SPS Analog Inputs

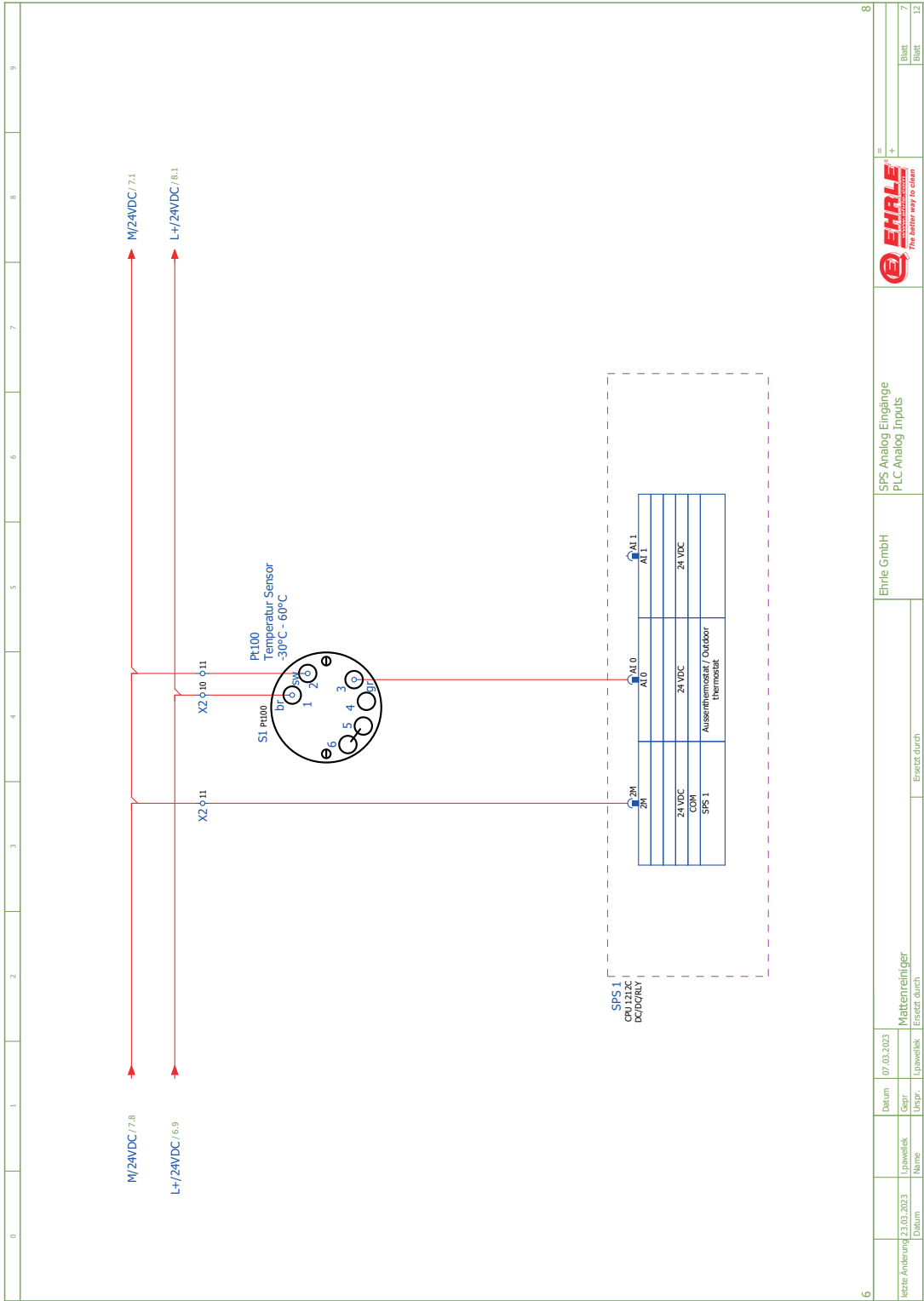


Fig. 11 - 7 SPS Analog Inputs, circuit diagram (page 7 of 12)

11.9 SPS Digital Outputs (page 1)

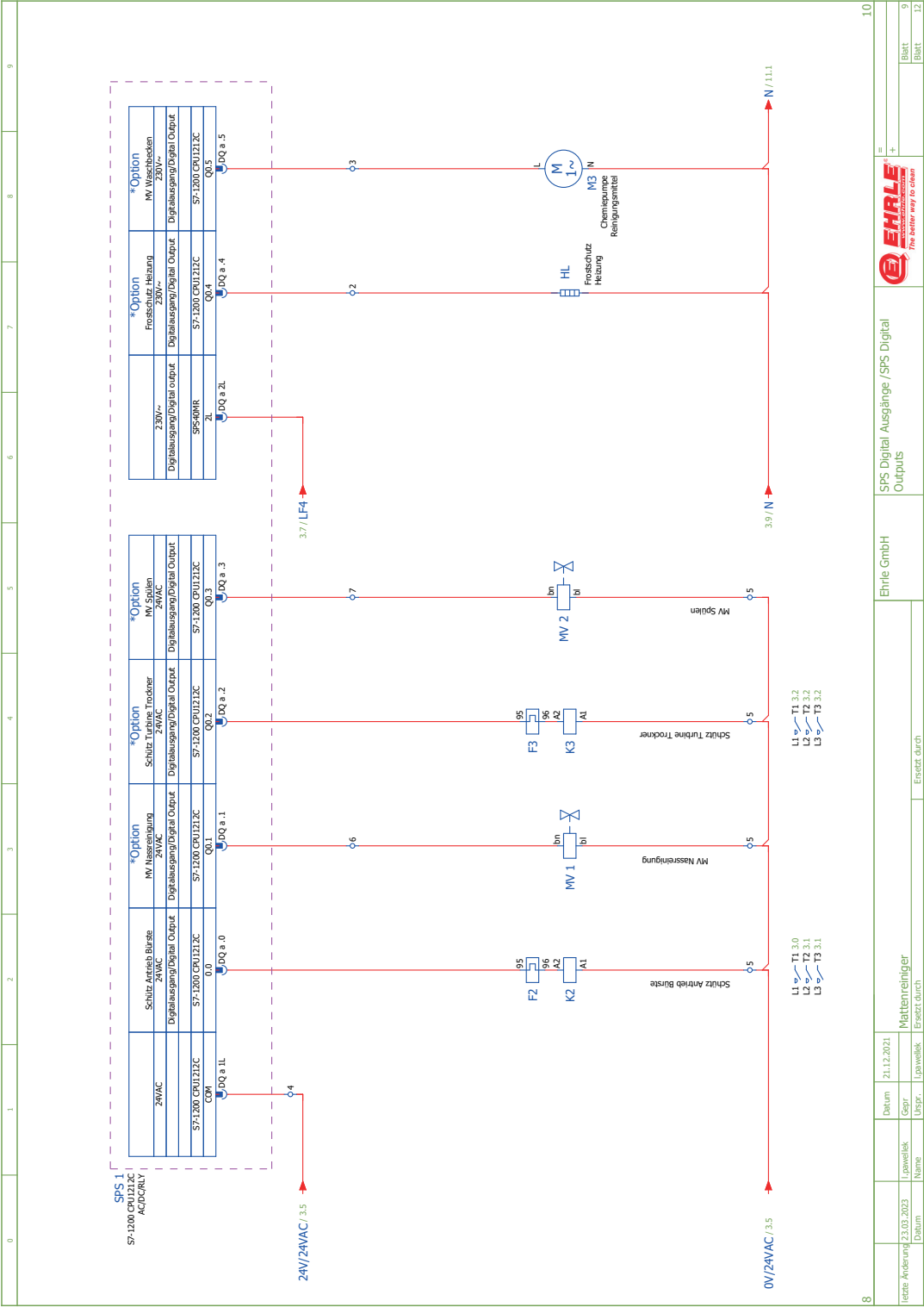


Fig. 11 - 9 SPS Digital Outputs, circuit diagram (page 9 of 12)

11.10 SPS Digital Outputs (page 2)

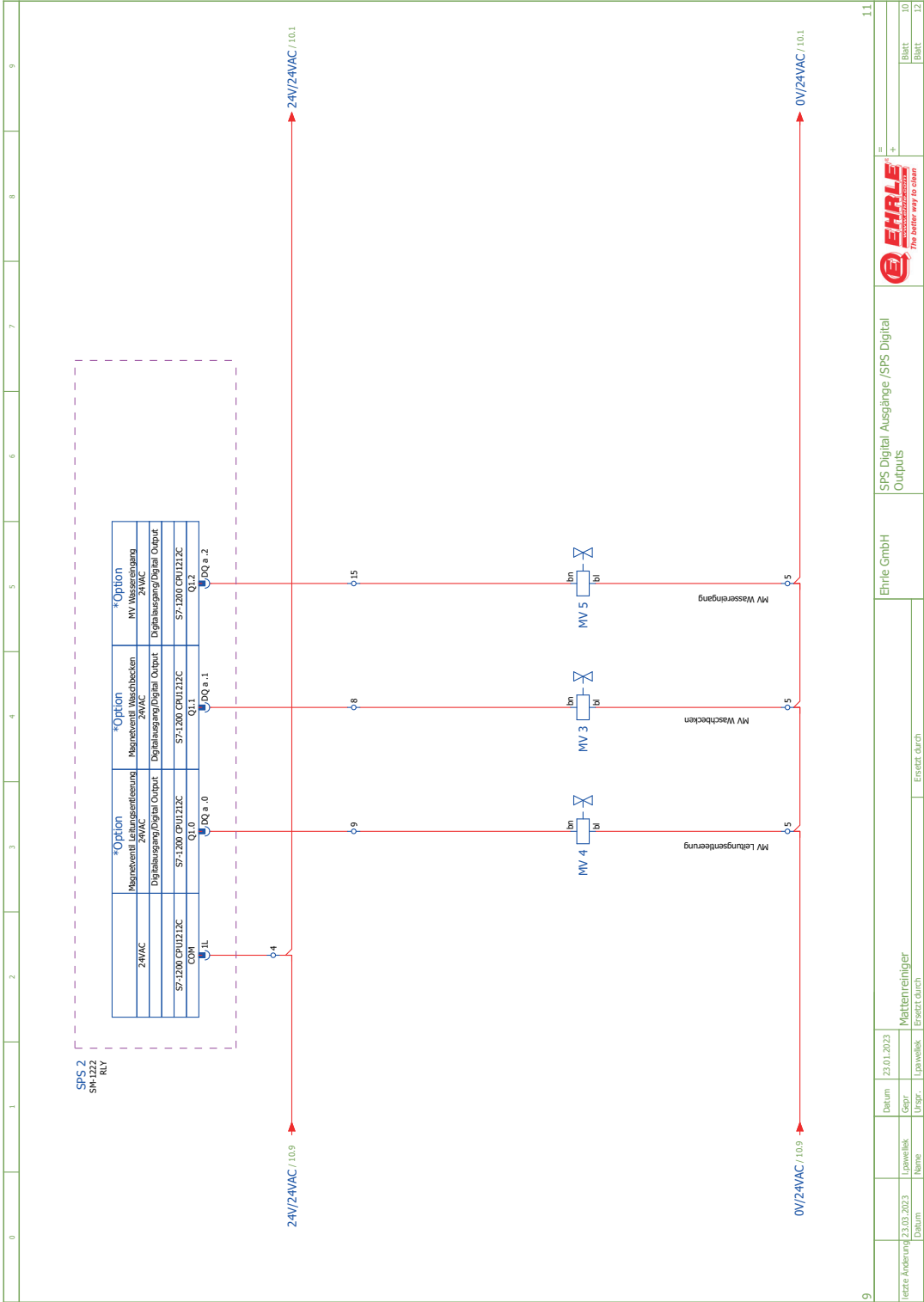


Fig. 11 - 10 SPS Digital Outputs, circuit diagram (page 10 of 12)

11.11 CWE 6 Power Supply

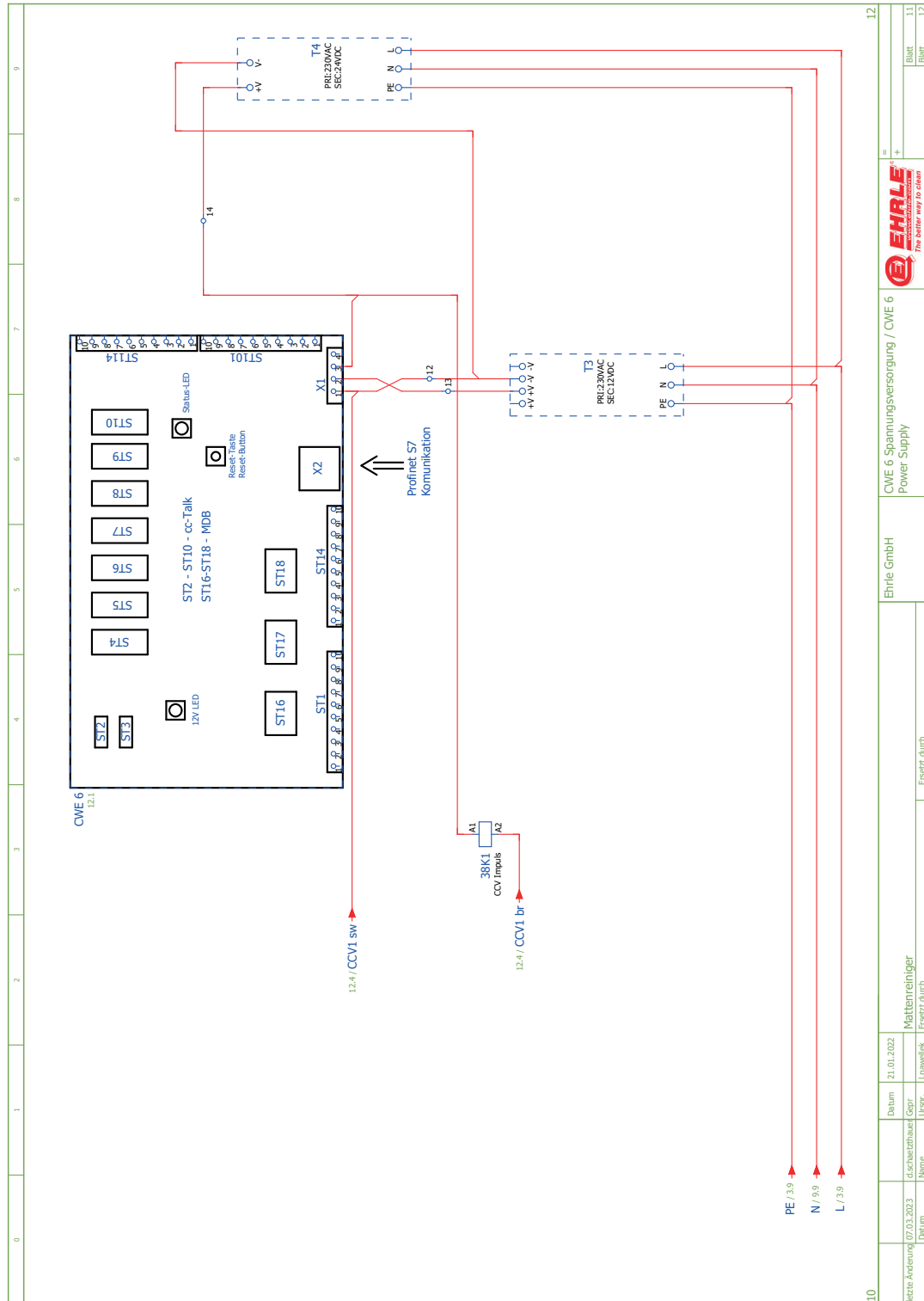


Fig. 11 - 11 CWE 6 Power Supply, circuit diagram (page 11 of 12)

11.12 CWE 6 Overview

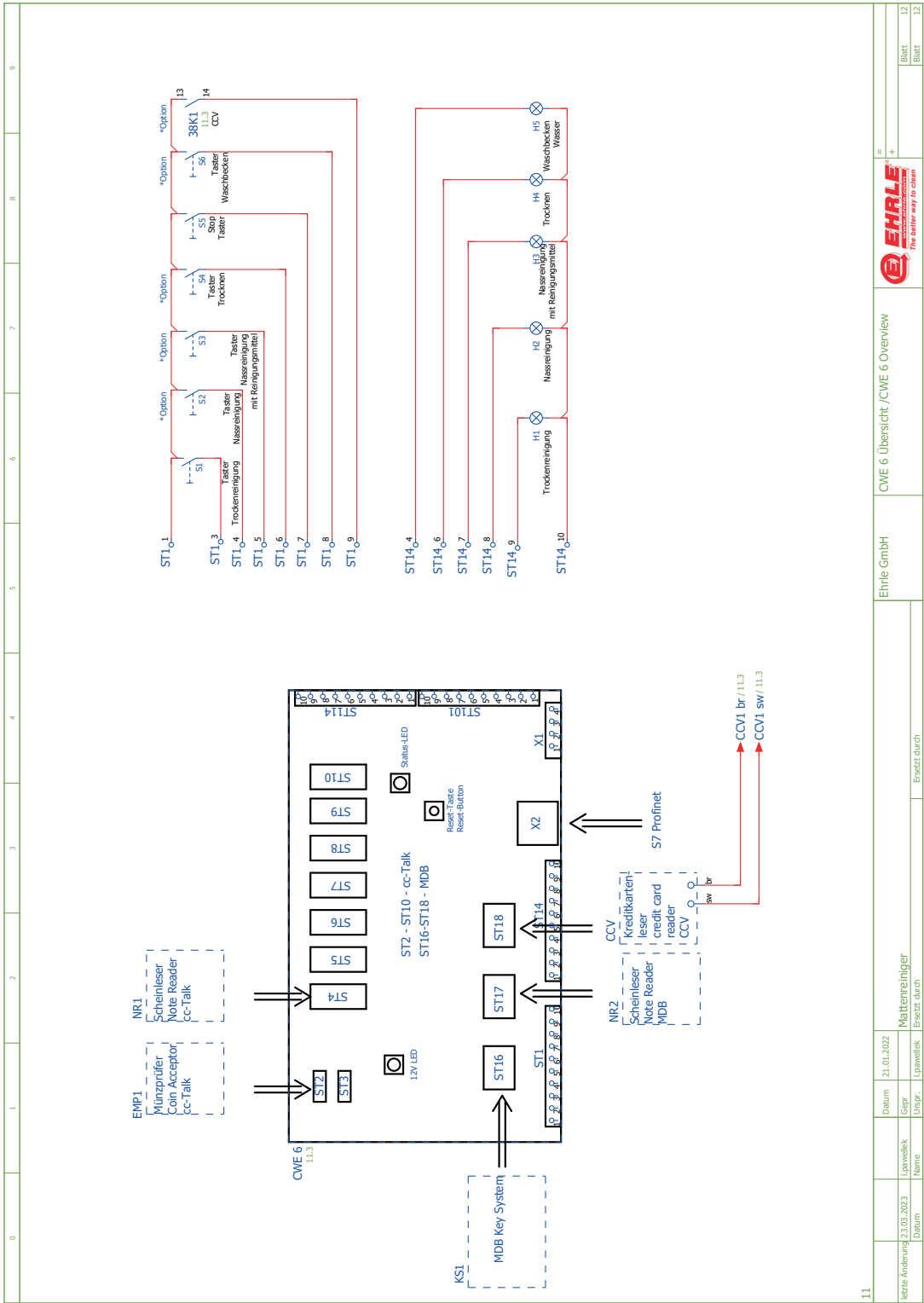


Fig. 11 - 12 CWE 6 Overview, circuit diagram (page 12 of 12)



12 Notes



Proof of customer service

Device type	Manufacturer no.:	Commissioning on:
-------------	-------------------	-------------------

Inspection carried out on:
Findings:

Signature

Inspection carried out on:
Findings:

Signature

Inspection carried out on:
Findings:

Signature

Inspection carried out on:
Findings:

Signature

EHRLE GmbH • 89165 Dietenheim / Germany

EHRLE service near to you? Adresses, phone numbers etc. you will find under www.ehrle.com

Subject to change without notice. Reprint prohibited

