Scrubmaster B25 (7155)

Operating manual

Part number 88-10-3357 - 4665-20
Valid as from: 01.2023

Introduction

Foreword

Dear Customer,

We are certain that the excellent qualities of the machine will justify the faith you have shown in us by your purchase.

To guarantee safe working with the machine, please read the Safety Notes chapter before putting it into service.

Your own safety, as well as the safety of others, depends essentially on your ability to control the machine. Please read this **original operating manual** before you use the machine for the first time, act accordingly and keep it for future reference or subsequent users. The operating manual contains all important information for operation, maintenance and servicing. We have provided the places in this operating manual concerning your safety with a danger pictogram. Your authorised Hako dealer is available at all times to answer further questions about the machine or the operating manual.

We would expressly advise you that no legal claims may be asserted based on the contents of this operating manual. In the case of necessary repair work, please make sure that only original spare parts are used. Spare parts must be original spare parts to guarantee safety. We reserve the right to make changes in the interests of further technical development.

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Issue:

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Intended use

The Scrubmaster B25 is a scrubber-drier for the wet cleaning of hard indoor floor surfaces. This machine is intended for commercial use, e.g. in shopping centres, swimming pools, shops, airports, schools and hotels. Any use extending beyond this is not intended use. The manufacturer is not liable for any damage resulting from this and the user alone bears the risk. Intended use also includes compliance with the operating, maintenance and servicing conditions specified by the manufacturer.

The Scrubmaster B25 may be used, maintained and repaired only by persons who are familiar with this work and instructed about the dangers.

The relevant accident prevention regulations as well as the other generally recognised safety engineering and occupational medical rules must be complied with.

The machine corresponds by virtue of its design and construction as well as in the version distributed by us to the usual health and safety requirements of the EC Directives (see Declaration of Conformity). This declaration loses its validity in the event of a modification to the machine not authorised by us. The manufacturer is not deemed liable for any damage resulting from unauthorised modifications to the machine.

Notes on warranty

The terms defined in the purchase agreement apply. Claims for compensation in relation to damage are excluded from the terms of the warranty when the damage is the result of the failure to observe rules concerning servicing and maintenance. Maintenance work must be carried out by an authorised Hako service workshop and confirmed in the “Maintenance Report”, which serves as a warranty logbook.

The following are excluded from the terms of warranty: wear and tear through overuse, defective fuses, improper handling and use and unauthorised modifications. Claims under the terms of the warranty are also annulled when damage occurs to the machine resulting from the use of parts or accessories not explicitly approved of by us or from failure to observe maintenance rules.

Acceptance of the machine
Inspect the machine immediately on delivery for signs of transport damage. You will be compensated for transport damage provided you immediately have the damage confirmed by the transport company and send in the damage report together with the consignment note to us.

Machine data
Your machine is described clearly by the following data. Please always quote these data in correspondence or when making a telephone query to your authorised Hako dealer or our company.

- Machine type: _____
- Manufacturing no.: _____
- Start-up on: _____

Your nearest authorised Hako dealer:

- Address: _____
  _____
  _____
- Telephone: _____

1 Safety instructions

1.1 Warning and danger symbols

Important tasks concerning the safety of the operator and machine are named as follows in this operating manual and emphasised by symbols.

Danger
Indication of a direct danger with high risk, in which death or severe physical injury can occur if it is not avoided.

Warning
Indication of a possible danger with average risk, in which death or severe physical injury can occur if it is not avoided.

Caution
Indication of a danger with low risk, in which light to medium severe physical injury or material damage can occur if it is not avoided.

Attention
Attention indicates a hazard that can lead to technical damage when not observed.

Environmental danger
Environmental danger due to the use of substances from which a health and environmental risk proceeds.

Note
Indication of information that facilitates more effective and economical use of the machine.

1.2 General safety instructions

Note

Before starting up the machine, read the following safety instructions and act accordingly. Machine operating errors can be avoided and trouble-free operation can be guaranteed only with precise factual knowledge.

- Before starting up the machine, please carefully read the operating manual you receive as well as further separate instructions for additional implements or attachments and observe them in all aspects of your work.
- The machine may be used, maintained and repaired only by persons who have been instructed by Hako experts.
- The machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or by persons lacking the required experience and knowledge.
- The operating manual should always be available at the machine's place of use and should therefore be stored with the machine.
- Please hand over these documents to the new owner/operator on sale or rental of the device. Have the hand-over confirmed!
- The labels attached to the machine provide important information for safe operation. Renew labels that are no longer legible or present.
- With Hako-AntiBac® machine variants, the plastic inner surface of the solution and waste water tanks contains silver ions in nanoparticle form.
- Ambient temperature during machine operation: 0 °C to 45 °C.
  Ambient temperature during machine storage: -20 °C to 60 °C.
- Spare parts must be original spare parts to guarantee safety.

1.3 Operating safety instructions

Before putting into service

- Before initially starting up the machine, charge the used battery fully and appropriately with commissioning charge. Please observe the operating manual of the charger and the operating manual of the battery manufacturer. Hako assumes no liability for battery damage resulting from insufficient commissioning charge.
- Check the machine for operating safety before every start-up! Eliminate faults immediately.
- Before starting work, operators must familiarise themselves with all equipment, operating and actuating elements as well as with their function!

During operation

- Sturdy and slip-proof shoes must be worn when working with the machine.
- Only those surfaces approved by the contractor or its authorised representative for use of the machine may be driven on.
- When working with the machine, pay special attention to third persons, especially children.
- When driving over thresholds, raise the brush unit.
- Only use detergents suitable for automatic machines (foam retarded) and observe the application, disposal and warning instructions provided by the detergent manufacturer.
- The machine is not suitable for removing liquids, dusts or materials that are dangerous to health, combustible or explosive. It is also prohibited to collect burning objects, e.g. glowing cigarettes. The collection of dry wood dust, e.g. beech and oak dust, is also prohibited – health hazard!
- The machine must not be used in potentially explosive atmospheres.
- Warning! The machine should only be used on level surfaces with a maximum slope of 2 %.
- Manipulating the switches and protective devices is forbidden.

1.4 Maintenance instructions

- Daily and weekly maintenance work must be done in accordance with the maintenance plan by the operating staff. In all other maintenance work, please contact your nearest Hako service centre.
- The maintenance work and maintenance intervals specified in the operating manual must be complied with.
- Use suitable tools for the cleaning and maintenance work.
- Have the machine checked for safe condition by an expert in accordance with the accident prevention regulations at appropriate intervals (we recommend at least once yearly).
- Spare parts must at least comply with the technical requirements specified by the manufacturer. This is guaranteed by original spare parts.
- Turn the machine off for cleaning and maintaining the machine as well as before replacing parts.
- Cleaning the machine with a high-pressure cleaner or steam jet is not allowed.
- Application of aggressive and corrosive detergents is not allowed.
- After cleaning, let the machine air dry, e.g. over the weekend.

1.5 Information about special risks

Electrical system

- If the electrical system is faulty, always turn off the machine and eliminate the fault.
- Work on the electrical system may be done only in accordance with electrical engineering standards by a specialist trained for this work.
- Regularly inspect/check the electrical system of the machine. Defects such as loose connections, loose nuts of electrified bolts, electrical components or damaged cables must be eliminated immediately.
- Only use original fuses with the specified current. If stronger fuses are used, the electrical system can be destroyed and there can be fires.

Batteries

- Observe the operating manuals and safety instructions provided by the battery manufacturer.
- Never connect or disconnect batteries when the machine is turned on.
- Make sure that the batteries are never fully discharged; recharge them as quickly as possible.
- Only instructed maintenance personnel must handle and replace batteries.
- Only batteries approved by Hako may be used at the intended position.
- Danger! Make sure that the insulation of the battery cables is not damaged. The battery cables should not rub against anything. If the insulation is defective, no longer use the machine and have the battery cables replaced by the Hako customer service immediately.
- Caution! Always make sure that the batteries are clean and dry to avoid creeping currents and corrosion damage. Protect the batteries, in particular, against conductive contamination, e.g. metal dust.
- Risk of short circuits and spark formation! Never place tools or other electrically conductive objects on the battery!
- Do not remove insulating caps and covers, if necessary re-install them after carrying out work on the battery cables.
- Caution! Explosive gases can develop when charging the batteries. Avoid smoking, fire or naked light in the vicinity of batteries. Ensure sufficient ventilation when charging the batteries.
- For further safety instructions, see Hako supplementary sheet 88-60-2556 – information for drive batteries.

Power connection and mains plug
Danger!

- Only connect the machine to an electrical connection installed by an electrician in accordance with IEC 60364-1.
- We recommend connection to a fused socket with a residual current circuit breaker (max. 30 mA).
- We recommend use of splash water protected sockets according to DIN VDE 0620-1.
- Make sure that the socket is dry!
- Only touch the mains plug and the mains cable with dry hands.
- Never insert the mains plug into the socket when the floor is wet or damp.
- Never dip the mains cable or mains plug in water or other liquids or clean it under running water.
- Damp mains plugs or mains plugs that have become wet must no longer be used. Water can enter the mains plug. Only qualified electricians must carry out recommissioning.
- Check the mains cable regularly for damage. If damage is detected, the machine must no longer be used. Have a qualified electrician replace the mains cable.
- Make sure that no water or liquid can come into contact with live parts of the machine. If water has still entered parts, immediately disconnect the mains plug and have the machine checked by the authorised Hako service.

1.6 Environmental protection instructions and disposal

If the end of use of the machine or of its components is reached and this is handed over for scrapping, the components must be correctly disposed of. Further information about disposal is available through the competent local authorities and the authorised Hako dealers.

	Do not dispose of products with this symbol in domestic waste. Disposal takes place through local collecting points or the manufacturer.
	Recycle used materials with this symbol according to their labelling and do not dispose of them in domestic waste.

- Observe the applicable laws and local regulations when disposing of dirt, waste water and detergents, also see the German Water Resources Law (WHG).
- Used batteries with the recycling symbol contain reusable commodities. In accordance with the symbol showing the crossed-out garbage bin, these batteries must not be disposed of in the domestic waste. Return and recycling have to be arranged with the authorised Hako dealer!
- Observe the local regulations when disposing of the AntiBac® tanks, e.g. take the AntiBac® tanks to a suitable disposal site or incineration plant.

1.7 Labels on the machine

The following safety and instruction labels are affixed to the machine in a clearly visible and legible manner. Renew missing or illegible labels immediately!

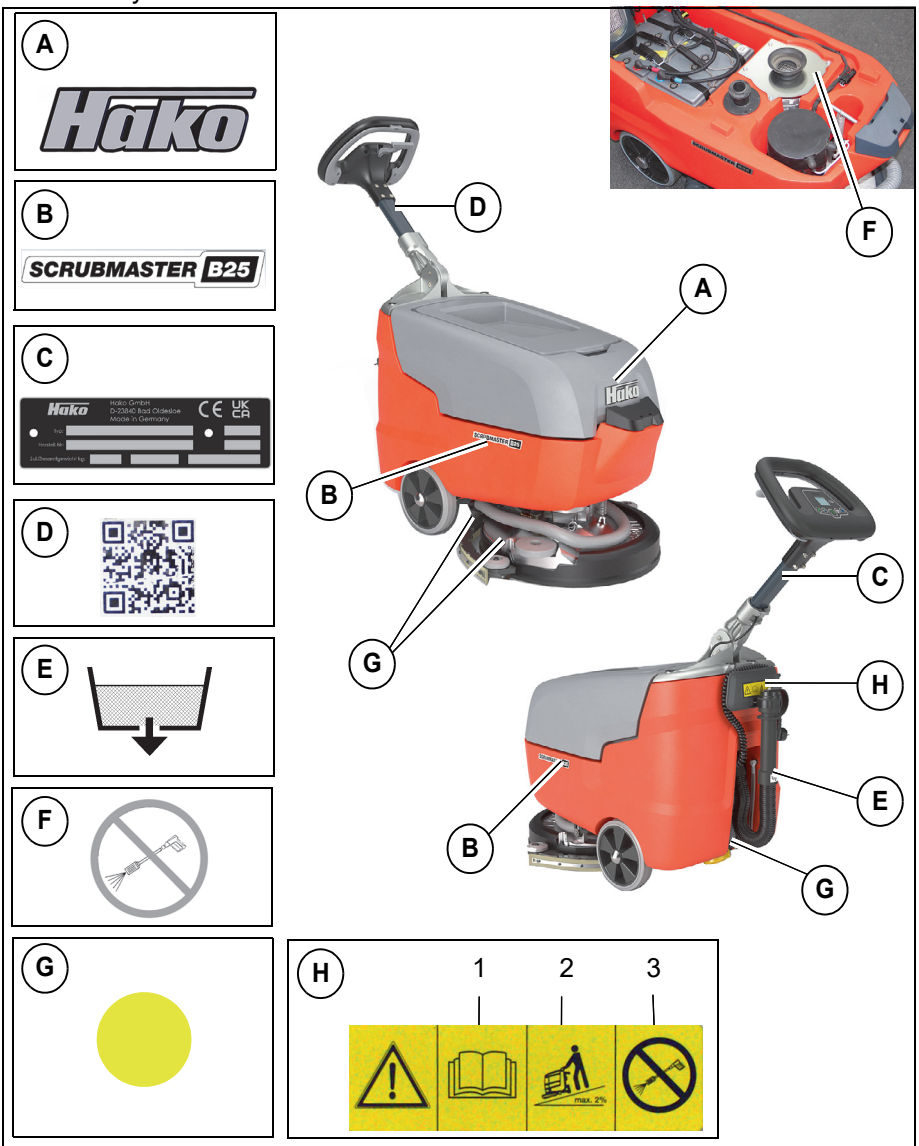


Fig. 1

Hako company logo
The Hako company logo **Fig. 1-A** is located on the front of the waste water tank.

Label: Machine type:
The label **Fig. 1-B** is located on both sides of the solution tank.

Type plate
The type plate **Fig. 1-C** is located on the steering bar.

Label: QR code
The label **Fig. 1-D** is located on the steering bar.

Label: Waste water drain
The label **Fig. 1-E** is located on the drain hose of the waste water tank.

Label: Never clean the machine with a high-pressure cleaner.
The label **Fig. 1-F** is located in the vicinity of the suction turbine beneath the waste water tank.

Label: Maintenance parts (yellow dot)
The yellow dot **Fig. 1-G** is located:
- on the cap of the fresh water filter,
- on the wear indicator of the brush unit,
- on the squeegee holder.

Label:
- Read and observe the operating manual Fig. 1-H1
- Maximum permissible slope 2 % when cleaning Fig. 1-H2
- Never clean the machine with a high-pressure cleaner Fig. 1-H3
The label is located on the holder of the charging cable.

Printing: Do not dispose of AntiBac® tanks in domestic waste – observe the information stipulated in the operating manual!
The printing is located on the AntiBac® tanks.

2 Operation

2.1 Overviews

2.1.1 Front and rear view

Fig. 2

Item	Designation
1	Operating handle
2	Bar
3	Tank cap of waste water tank
4	Waste water tank
5	Filling opening for solution tank
6	Solution tank
7	Suction hose
8	Rotating brush unit
9	Squeegee
10	Control panel
11	Mains plug on-board charger
12	Drain hose for waste water
13	Level indicator for solution tank
14	Fresh water filter
15	Draining opening for fresh water
16	Suction filter

2.1.2 Control panel

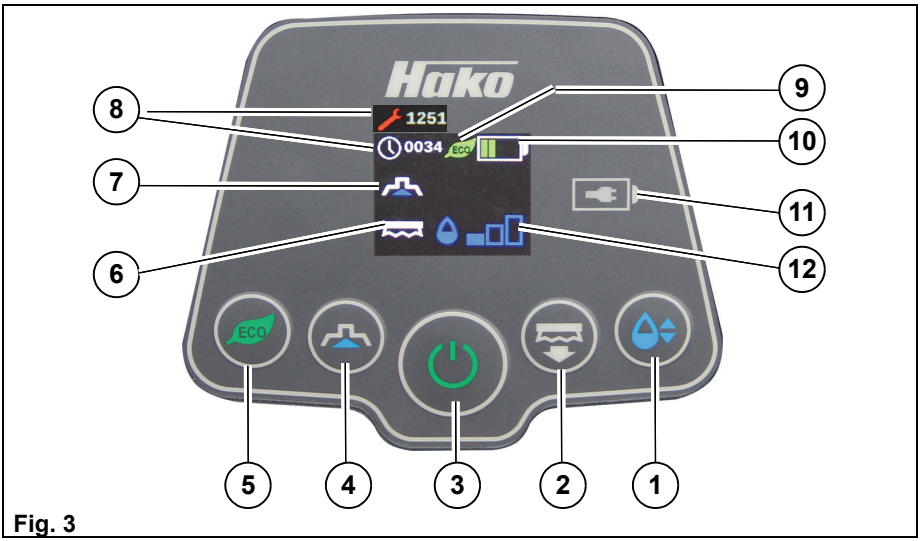


Fig. 3

Item	Designation
1	Button – fresh water dosing
2	Button – rotating brush decoupling
3	Button – ON/OFF
4	Button – suction turbine
5	Button – ECO mode
6	Symbol – brush drive
7	Symbol – suction turbine
8	Indicator – operating hours meter / service code
9	Symbol – ECO mode
10	Indicator – battery charging state
11	Indicator – charging mode
12	Indicator – water quantity

2.2 Controls and display elements

2.2.1 Control panel

The individual functions of the buttons on the control panel are described below. The respective activated functions are visible as corresponding symbols in the display panel.

ON/OFF button Fig. 3-3
The machine is turned on and off with this button.

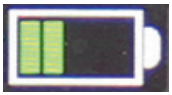
- Press the button for approx. 3 seconds: The machine is turned on.
  Note
  If the machine is not operated immediately, it goes into *Machine lock* mode after approx. 10 seconds. The *Lock* symbol appears on the display panel. Briefly press the ON/OFF button again to deactivate the machine lock.
- Press the button for approx. 3 seconds: The machine is turned off.

Suction turbine button Fig. 3-4
The suction turbine is switched on and off irrespective of the brush drive with this button.

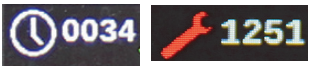
ECO mode button Fig. 3-5
ECO mode is switched on and off with this button.
The volume, power consumption, suction performance and brush speed are all reduced in ECO mode.

Brush decoupling button Fig. 3-2
The rotating brush is decoupled with this button.
1. Tilt the machine backwards into the park position.
2. Press and hold the button until the rotating brush has been decoupled.
   - The remaining time until decoupling is indicated on the display panel.

Fresh water dosing button Fig. 3-1
The fresh water quantity can be set or switched off in three levels with this button.
Push the button to increase the water quantity by one level. After reaching level 3, push the button again to deactivate the water supply. Pushing the button again activates the water supply with the lowest water quantity (level 1).



Charging state indicator Fig. 3-10
The charging state of the battery is indicated on the display panel during operation. The number of bars shown indicates the charging state:
- Five green bars visible: Battery is 100 % charged.
- Four green bars visible: Battery is approx. 80 % charged.
- Three green bars visible: Battery is approx. 60 % charged.
- Two green bars visible: Battery is approx. 40 % charged.
- One green bar visible: Battery is approx. 20 % charged.
- One yellow bar visible: Machine can only be operated for approx. 2 minutes.
  Charge the battery immediately!
- One red bar visible: Battery is empty. All functions are switched off.



Operating hours meter / Service code indicator Fig. 3-8
The current status of the operating hours is displayed.
If a service case occurs, the red spanner appears with a four-digit service code, see section 5.10.

Charging status indicator Fig. 3-11
The symbol flashes green during the charging process.
The symbol is permanently green when the battery is fully charged.

2.2.2 Controls

Fig. 4

Starting handle Fig. 4-1
All drives that are ready for operation are switched on and off with the starting handle. If the starting handle is released during operation, all the drives are switched off. The vacuum system then runs for another 5 seconds to suck up any residual moisture.

Locking lever for operating bar adjustment Fig. 4-2
Actuating the locking lever unlocks the lock and the operating bar can be moved to the required position. The operating bar engages in the nearest position after releasing the locking lever.

Note

- Do not set the operating bar too high; always position it in an ergonomically optimised position to avoid fatigue.
- When cleaning corners, it is wise to move the operating bar to the vertical position, thereby making it easier to turn the machine.

Filling opening for fresh water Fig. 4-3
The solution tank is filled via the filling opening with the supplied hose.

Drain hose for waste water Fig. 4-4
The waste water is drained from the waste water tank with the drain hose.

Mains connection Fig. 4-5
The mains connection supplies voltage to the charger.

Draining opening for fresh water Fig. 4-6
The draining opening is used to drain fresh water.

Fresh water filter Fig. 4-7
When supplying water from the solution tank to the brush unit, the fresh water is cleaned by the filter insert.

2.3 General principle of operation

In cleaning mode, the cleaning solution is supplied from the solution tank to the rotating brush in the brush unit. When the machine is moving forwards, the used detergent is absorbed by the squeegee and conveyed into the waste water tank.

Fig. 5

2.3.1 Power flow/travel drive

The forward movement of the machine is optimally supported by the power flow of the brush drive.

Note
Pushing the machine forward forcefully at a speed faster than the propulsion of the power flow leads to high brush wear and a poor cleaning result.

2.3.2 Solution tank

The solution tank **Fig. 5-1** has a capacity of 25 litres and is filled via the filling opening **Fig. 5-2** with the supplied hose. The level can be determined via a transparent hose **Fig. 5-3** at the rear of the machine. Fresh water dosing can be adjusted via a button on the control panel **Fig. 3-1**. The fresh water can be drained via the draining opening **Fig. 5-4**.

2.3.3 Brush unit

Actuating the starting handle switches on the brush motor, the suction turbine and the water supply. The floor is cleaned by the rotating brush **Fig. 5-5** and the supply of cleaning solution. For maintenance purposes, the brush can be decoupled with the brush decoupling button **Fig. 3-2**.

2.3.4 Squeegee

The movable, hinged squeegee **Fig. 5-6** withdraws the waste water from the floor using the sealing strips. The suction turbine vacuums the waste water from the floor.

Note

If the squeegee gets caught on an obstacle, the squeegee is released from the holder to protect it from damage.

- Turn off the machine and re-attach the squeegee.

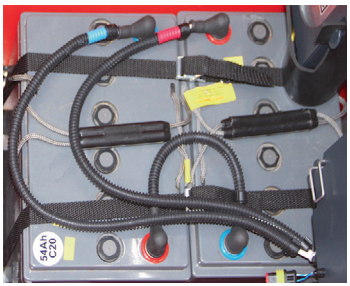
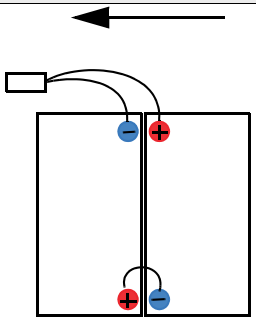
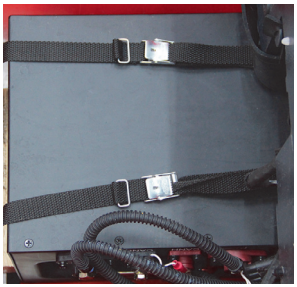
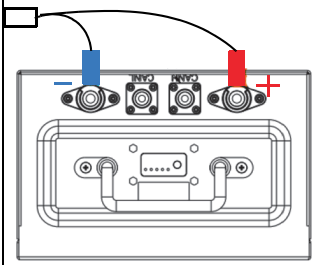
2.3.5 Waste water tank

The vacuumed waste water is conveyed via a suction hose from the squeegee into the waste water tank **Fig. 5-7**.

2.3.6 Batteries

Battery types

The various machine types are equipped with different maintenance-free battery systems. When using other batteries which have been approved by Hako, corresponding settings must be carried out in the configuration menu. These settings should only be carried out by a workshop authorised by Hako!

Battery type/Installation position	Connection diagram Driving direction
2x gel drive battery 12 V/45 Ah, maintenance free  Tightening torque of the battery cable attachment: 6 Nm	
1x 24 V 41 Ah lithium-ion battery, maintenance free  Tightening torque of the battery cable attachment: 15 Nm	

Battery management system (BMS)
The battery management system (BMS) ensures that the battery system is monitored and secure. The BMS is responsible for:
- determining the battery charging state during operation,
- switching off the cleaning functions when the discharge limit has been reached to protect the battery against total discharge

When using other batteries which have been approved by Hako, the BMS must be reset.

Attention
The settings of the BMS should only be carried out by a workshop authorised by Hako!

2.3.7 Maintaining drive batteries

For information on maintaining drive batteries, see Hako supplementary sheet 88-60-2556.

3 Operation

3.1 Before putting into service

Attention

- Before initially starting up the machine, charge the used batteries fully and appropriately with commissioning charge. Hako assumes no liability for battery damage resulting from insufficient commissioning charge.
- Check the machine for operating safety before every start-up! Eliminate faults immediately.
- Before starting work, operators must familiarise themselves with all equipment, operating and actuating elements as well as with their function!

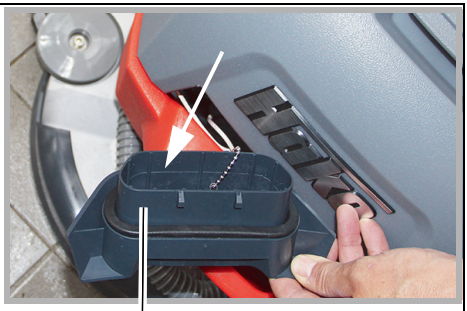
3.2 Before starting up the machine

1. Check the parking area for signs of leaks. Cables and tanks must not show any sign of leaks or damage.
2. Install the brushes and squeegee, see chapter Maintenance.
3. Connect the battery if necessary, see section 2.3.6
4. Check the battery charge and recharge it as required, see chapter Maintenance. Always carry out a commissioning charge before first use.
5. Adjust the operating bar, see section 2.2.2.
6. Fill the solution tank and add detergent according to the manufacturer's specifications.

3.2.1 Filling the solution tank

Note

- Only use detergents suitable for automatic machines (foam retarded). We recommend use of our cleaning and care agents specifically developed for the machine. These products meet the requirements of the German Detergent and Cleaning Agent Act (WRMG).
- Observe correct dosing of the detergent. Correct dosing saves money and protects the environment. Strong foam formation is a sign of excessive dosing and impairs machine operation.



Dosing aid cap	Mixing ratio
0.5	1:400
1	1:200
2	**1:100**
2.5	1:80
4	1:50
8	1:25

Fig. 6

Fill the solution tank before commencing work or as required. The inside of the cap also acts as a measuring cup for the detergent.

1. Place the machine on a level surface.
2. Pull the filling opening cap towards you **Fig. 6-1** and remove it.
3. Connect one end of the supplied hose to the water tap and feed the other end into the filling opening.
4. Fill the solution tank three-quarters full (maximum water temperature 50 °C).

5. Add detergent to the tank according to the manufacturer's regulations.
   The filling opening cap **Fig. 6-2** acts as a dosing aid.
   Fill the cap twice up to the mark with detergent (250 ml), corresponds to a dosing of 1:100 in a fully filled solution tank (see table). Fill the solution tank with fresh water up to the maximum filling level.

3.3 Cleaning

1. Tilt the machine forwards from the park position.
2. Put the machine into operating mode with the ON/OFF button on the control panel.
3. Use the starting handle to switch on the cleaning functions.
4. Adjust the fresh water quantity with the button on the control panel.
5. Push the machine forwards.
   The power flow of the brush unit drive supports the propulsion.

3.4 Turning off the machine

1. To suck up any residual water before turning off the machine, the water supply can be switched off with the *fresh water dosing* button.
2. Let go of the starting handle. The cleaning functions are switched off. The vacuum system then runs for another 5 seconds to suck up any residual moisture.
3. Turn off the machine with the ON/OFF button.

3.5 After cleaning

Environmental danger

Observe the applicable laws and local regulations when disposing of detergents.

Attention!

Do not use a high-pressure cleaner or steam cleaner to clean the machine.

Fig. 7

1. Drive to a suitable maintenance location.
2. Turn off the machine.
3. Carry out all the prescribed daily or weekly maintenance work, see section 5.2.
4. Park the machine in the park position **(Fig. 7)** in a dry indoor location, if possible with the fresh water and the waste water cap open.

3.6 Loading and transporting

Attention
Risk of skidding! Take extra care on wet ramps.

Loading the machine via a ramp
Lower the operating bar to a flat position and pull the machine backwards up the ramp.

Transporting

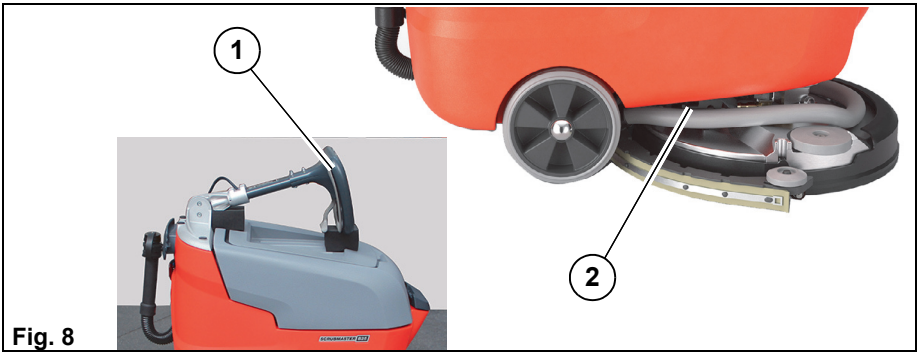


Fig. 8

When transported on a vehicle or trailer, the machine must be fully and firmly secured against tilting and rolling away.

1. Tilt the operating bar all the way to the front **Fig. 8-1**.
2. Use tension belts to secure the machine on the right and left to the hooks in front of the wheels **Fig. 8-2**.

4 Technical data

Dimensions		
Length of machine (bar folded in/working position)	mm	970/1200
Width of machine (without/with squeegee)	mm	520/610
Height of machine (bar folded in/working position)	mm	840/1100
Working width		
Brush unit	mm	430
Squeegee	mm	610
Sweeping capacity		
Theoretical sweeping capacity	m²/h	1700
Weights		
Weight (empty, with Li-Ion/lead acid battery)	kg	75/88
Total weight (ready for use with Li-Ion/lead acid battery)	kg	100/113
Tank contents		
Solution tank	Litre	25
Waste water tank	Litre	25
Brush		
Brush speed	rpm	150
Brush contact pressure	kg	33
Electrical system		
Nominal voltage	V	24
Nominal output (max.) (P1)	W	770
Power consumption vacuum motor (P1)	W	285
Power consumption brush motor (P1)	W	480
Type of protection		IP X3
On-board charger		
Nominal voltage	V	100...230
Nominal output	W	300

Protection class		2

Noise emission value

		Standard operation	ECO mode
The sound power level (L_{WAd}) measured under the customary conditions of use according to DIN EN 60335-2-72 is:	dB (A)	88	84
The sound pressure level (L_{pA}) (at the ear of the driver) measured under the customary conditions of use according to DIN EN 60335-2-72 is:	dB (A)	70	67
Measuring uncertainty (K_{pA})	dB (A)	2	2

Vibration

Under the customary conditions of use, the weighted effective value of the acceleration to which the upper limbs (hand-arm) are subjected to according to DIN EN ISO 5349 is:	m/s^2	≤ 2.5
Under the customary conditions of use, the weighted effective value of the acceleration to which the body (feet or seat surface) is subjected to DIN EN ISO 2631-1 is:	m/s^2	≤ 2.5

5 Maintenance and servicing

Attention
Before undertaking servicing and maintenance work, read and observe the safety instructions in chapter 1 of this operating manual!

Compliance with the maintenance work recommended by us gives you the certainty of always having an operational machine available.

Daily and weekly maintenance and repair work can be undertaken by an operator trained for this purpose. For all other maintenance work, please contact your nearest Hako service centre or authorised Hako dealer.
Any warranty claim is null and void if this is not complied with and damage results.
Please always state the serial number in all enquiries and spare parts orders, see section 1.7 – type plate.

5.1 Hako system maintenance

The Hako system maintenance specifies in single modules the special technical work to be done and the periods of time for the maintenance activities. Parts to be replaced for the individual maintenance tasks are determined.
Hako system maintenance:
- Assures the reliable readiness for use of the Hako cleaning machines (preventive maintenance).
- Minimises operating costs, repair costs, costs for maintenance.
- Assures long life and readiness for use of the machine.

Hako system maintenance I (every 250 hours, at least once a year):
Performance by an expert of an authorised Hako workshop by reference to the machine-specific system maintenance.

Note
Maintenance parts in the machine are marked with a yellow dot and yellow areas.

Maintenance certificate

Handover Equipment Trial run Handover to customer Instruction performed on: at _____ operating hours	Hako system maintenance I 250 operating hours Workshop stamp performed on: at _____ operating hours
Hako system maintenance I 500 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance I 750 operating hours Workshop stamp performed on: at _____ operating hours
Hako system maintenance I 1000 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance I 1250 operating hours Workshop stamp performed on: at _____ operating hours

5.2 Maintenance plan

Hako system maintenance customer:
Work to be performed by the customer by reference to the servicing and maintenance instructions specified in the operating manual.

Daily
• Empty the waste water tank, clean the waste water tank, suction filter and float ring below the suction filter.
• Check the cover seal of the waste water tank, clean if necessary
• Check the seal at the drain hose, replace if necessary
• Check the rotating brush, clean if necessary
• Check the rotating brush/pad for wear, replace if necessary
• Check the battery charge, charge if necessary
• Check the squeegee, clean if necessary
• Check the drain hose of the waste water tank for soiling, clean if necessary
Weekly
• Clean the machine as required
• Clean the solution tank
• Check the sieve insert in the fresh water filter, clean if necessary
• Check the sealing strips at the squeegee for wear, turn or replace if necessary
• Clean the suction hose
• Perform a trial run and function test

Hako system maintenance I
Performance by an expert of an authorised Hako workshop by reference to the machine-specific system maintenance.

Every 250 hours, at least once a year
Battery and charger • Check the battery and the charger • Check proper functioning of the charger immobiliser • Check the battery fixation (tension belts) • Check the cables and connections of the battery and the charger for wear and corrosion
Electrical system • Make sure the latest software version is installed, update software if necessary • Check the cables for tight fit and damage
Operating bar • Check the bar adjustment for ease of movement, spray the joint with penetrating lubricant if necessary • Check proper functioning of the starting handle
Wheels • Check the wheel bearing clearance of the wheels, replace wheels if necessary
Rotating brush unit and brush motor • Check the electrical connections on the brush motor for tight fit • Check the brush decoupling and coupling function • Check the condition and proper functioning of the driver of the rotating brushes, replace if necessary • Check the rotating brush for wear, replace if necessary • Check the splash shield ring for wear, replace if necessary
Squeegee and vacuum motor • Check the sealing and slot strip of the squeegee, turn or replace if necessary • Check the joint connection at the squeegee • Check the deflecting rollers at the squeegee and brush unit, replace if necessary • Check the supporting rollers of the squeegee for ease of movement and wear, replace if necessary • Check proper functioning of the vacuum motor • Check the suction hose for wear, replace if necessary

Solution tank • Check the fresh water supply, replace worn parts if necessary • Check the level indicator for transparency and proper functioning, replace if necessary • Check the cover and cover seal of the fresh water drain, replace if necessary • Check the sieve insert and cover seal of the fresh water filter for damage, replace if necessary
Waste water tank • Check the cover seal of the waste water tank, replace if necessary • Check the float ring for ease of movement • Check leak tightness and correct functioning of the waste water drain hose, replace if necessary • Check the closure and seal at the drain hose, replace if necessary • Clean the filter sieve
• Perform a trial run and function test

5.2.1 Emptying and cleaning the waste water tank

Empty and clean the waste water tank as required, but at least once a day.

Environmental danger
Observe applicable laws and local regulations when disposing of detergents!

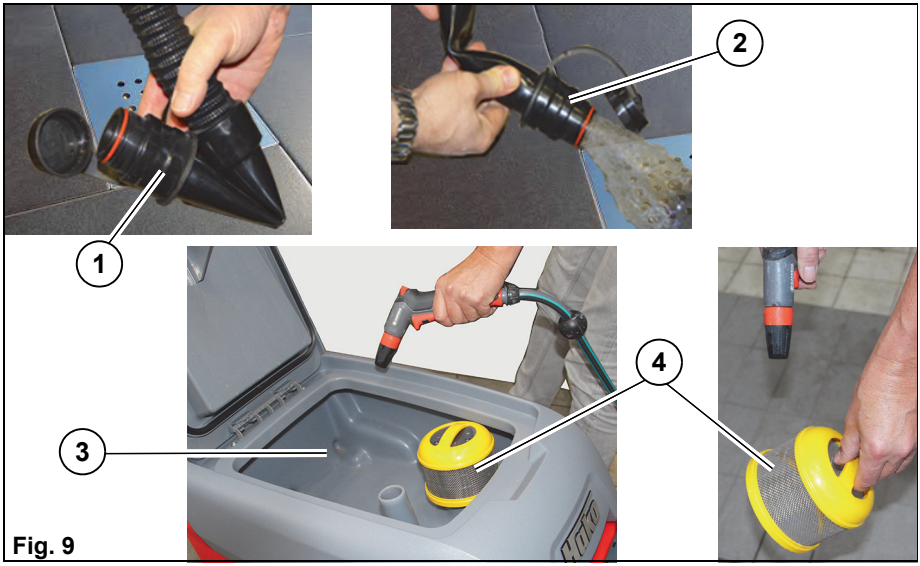


Fig. 9

1. Drive to a suitable disposal centre.
2. Turn off the machine.
3. Tilt the machine backwards into the park position, ensuring the drain hose reaches the drain in the ground.
4. Remove the drain hose from the holder, bend the squeeze nozzle in the front section and unscrew the locking cap **Fig. 9-1**.
5. Return the drain hose to its original position and empty the waste water tank fully **Fig. 9-2**.
6. Open the tank cap. Clean the waste water tank and tank cap thoroughly from the inside with a water hose **Fig. 9-3**.
7. Pull the suction filter upwards and out of the neck and clean it **Fig. 9-4**.
8. Also flush the drain hose and the locking cap.
9. Place the suction filter back on the neck and close the tank cap.
10. Screw tight the locking cap of the drain hose!

5.2.2 Checking the seal in the tank cap

Fig. 10

Check the function of the seal in the tank cap daily and replace the seal if damaged.

5.2.3 Checking the seal at the drain hose

Fig. 11

Check the seal at the drain hose daily and replace it after 125 operating hours at the latest.

5.3 Checking the charging state

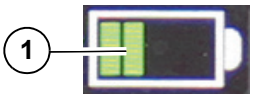


Fig. 12

The charging state of the battery is indicated on the display panel during operation. The number of bars shown indicates the charging state, see section 2.2.1.

5.4 Charging the batteries

Danger

- Explosive gases can develop when charging the batteries. Avoid smoking, fire or naked light in the vicinity of batteries. Ensure sufficient ventilation when charging the batteries. Do not inhale battery gases!
- Danger of explosion due to short circuits and spark formation! Never place tools or other electrically conductive objects on the battery!

Attention

- Before initially starting up the machine, charge the used batteries fully and appropriately with commissioning charge. Hako assumes no liability for battery damage resulting from insufficient commissioning charge.
- Never leave batteries discharged, always recharge them immediately.
- If possible, charge the batteries fully to ensure optimum service life of the batteries. The charger is designed as a continuous charger and retains the charging state of the batteries (trickle charge) after completing the charging process.

Note

- Always charge the batteries after each application. If the machine is not used for a longer period of time, interim charge the batteries.
- The batteries should always be charged without being interrupted.
- During the charging process it is not possible to turn on the machine.

Charging the batteries with the on-board charger

The batteries are charged via the integrated on-board charger. The batteries can already be charged if one segment (bar) of the charging state indicator has gone out, at the latest, however, after the cleaning functions have been switched off (one bar flashes).

1. Park the machine on a level surface, turn it off and tilt it backwards into the park position.
2. Remove the mains plug from the holder and plug it into a 230 V socket.
3. The charging process now starts automatically.
   The green LED on the display panel flashes during the charging process.
   The battery is fully charged when the green LED is lit continuously.

5.5 Cleaning the solution tank

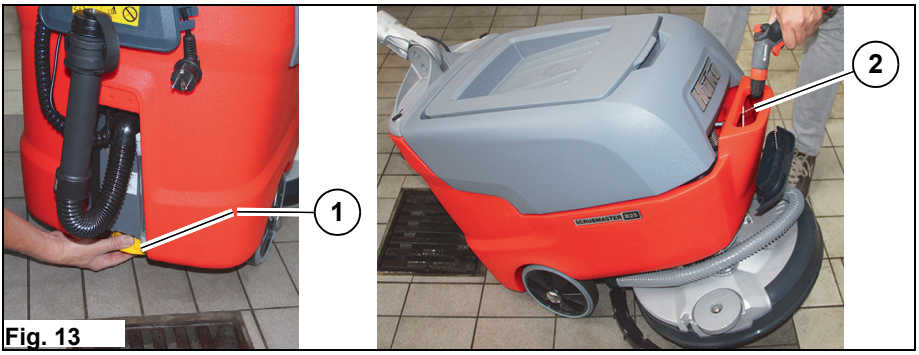


Fig. 13

1. Turn and remove the cover of the maintenance opening **Fig. 13-1**.
   The solution tank is emptied via the maintenance opening.
2. Pull the filling opening cap towards you and remove it.
3. Tilt the machine backwards into the park position.
4. Feed the water hose through the filling opening and rinse the solution tank thoroughly **Fig. 13-2**.
5. After cleaning the tank, place the cover onto the maintenance opening and screw tight.

5.6 Brush unit

Fig. 14

5.6.1 Decoupling the brush/pad

1. Tilt the machine backwards into the park position **Fig. 14-1**.
2. Press the brush decoupling button **Fig. 14-2** for approx. 5 seconds.
   The time until automatic decoupling is indicated on the display panel.

5.6.2 Coupling the brush/pad

1. Turn on the machine.
2. Tilt the machine backwards into the park position **Fig. 14-2**.
3. Position the brush/pad centrally to the brush unit **Fig. 14-3**.
4. Lower the machine onto the brush and actuate the starting handle.
   The brush is coupled automatically.

5.6.3 Cleaning the brush

Clean the brush in the brush unit daily or as required.

1. Decouple the brush, see section 5.6.1.
2. Thoroughly clean the brush under running water.
3. Couple the brush, see section 5.6.2.

5.6.4 Replacing the brush/pad

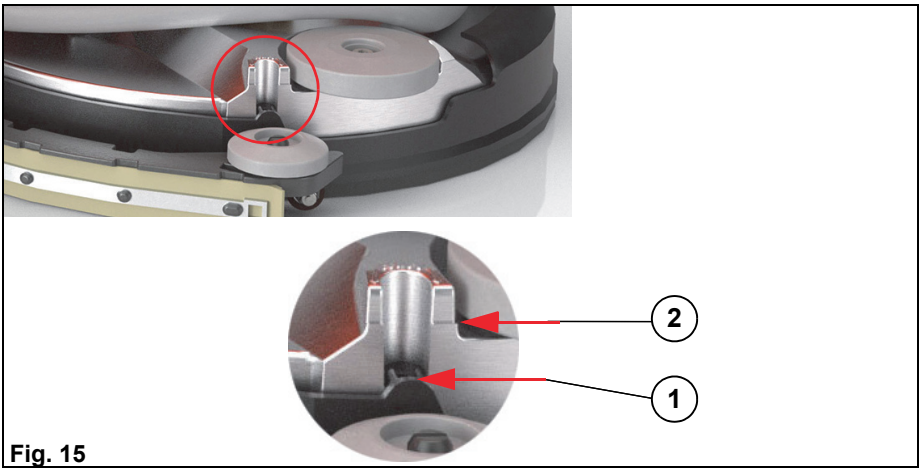


Fig. 15

Check the brush/pad for wear

1. Lower the machine from the park position onto the brush/pad.
2. If the mark on the splash shield ring **Fig. 15-1** is above the mark on the aluminium cover **Fig. 15-2**, the brush/pad must be replaced.

Replacing the brush/pad

1. Decouple the worn brush/pad, see section 5.6.1.
2. Couple the new brush/pad, see section 5.6.2.

5.7 Cleaning the fresh water filter

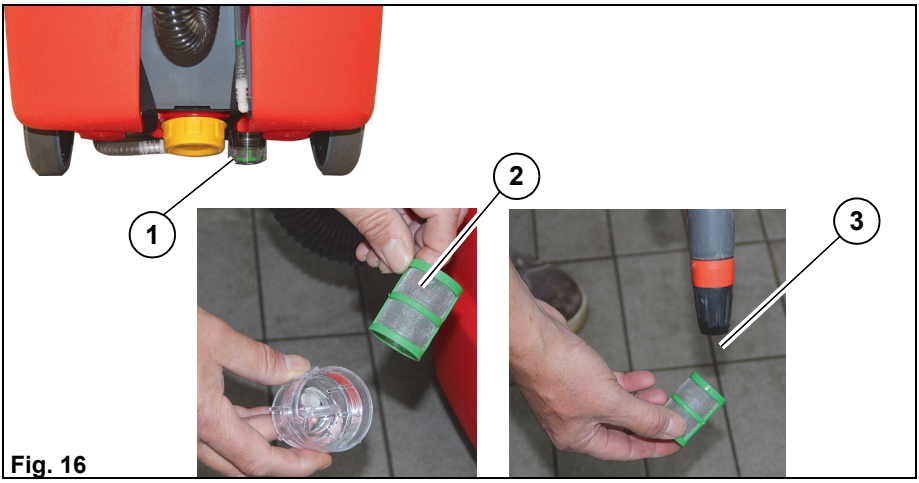


Fig. 16

Clean the sieve insert of the fresh water filter weekly. The fresh water filter is located at the rear right beneath the machine **Fig. 16-1**.

1. Unscrew and remove the fresh water filter.
2. Remove the filter sieve **Fig. 16-2** from the filter housing and clean it under running water **Fig. 16-3**. Replace the filter sieve if it is damaged.
3. Insert the filter sieve into the filter housing and screw the fresh water filter back in.
   Attention!
   Screw in the fresh water filter as far as it will go; otherwise, the water supply to the brush will be interrupted.

5.8 Squeegee

5.8.1 Dismantling/Installing the squeegee

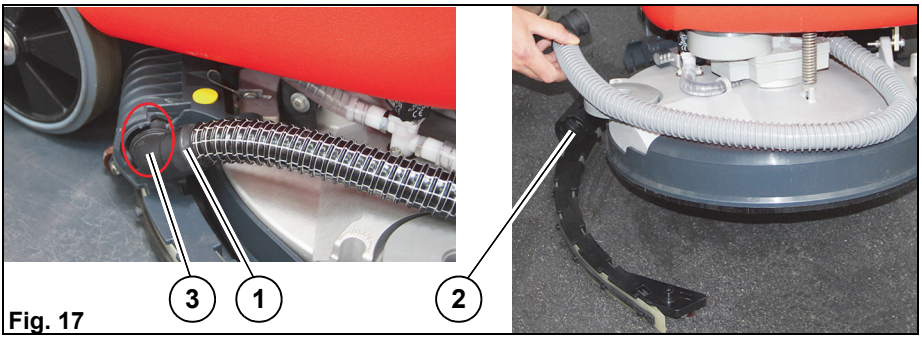


Fig. 17

1. Turn the suction hose vertically upwards and remove it **Fig. 17-1**.
2. Remove the squeegee **Fig. 17-2** from the holder.
3. Install the squeegee in reverse order.

   Note

   The suction hose also secures the squeegee. When turning the suction hose, make sure that the marks correspond **Fig. 17-3**.

5.8.2 Cleaning the squeegee

Fig. 18

Check the squeegee **Fig. 18-1** and the suction channel **Fig. 18-2** daily for soiling and foreign particles and clean them as required.

5.8.3 Replacing the sealing strips

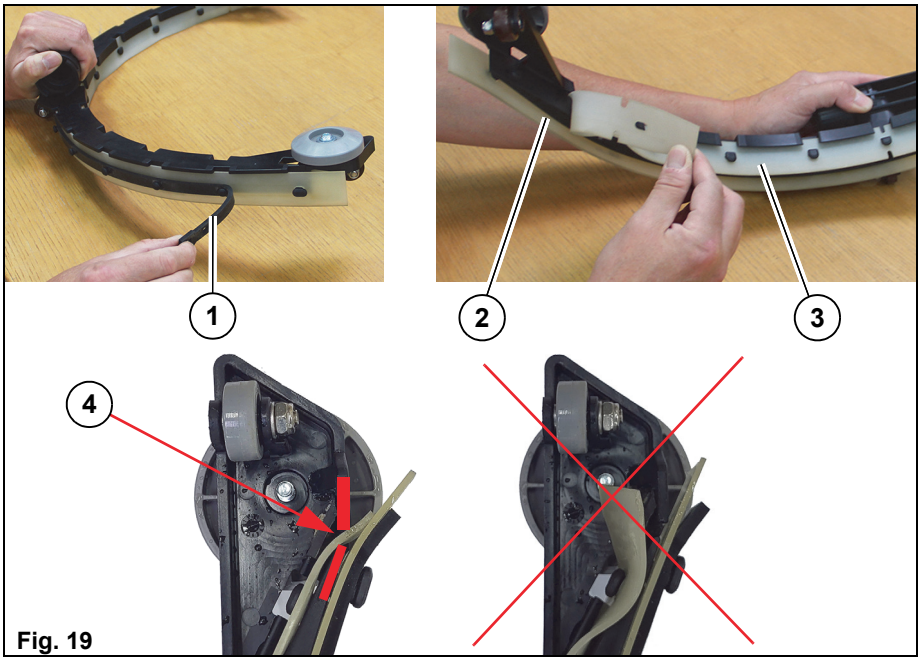


Fig. 19

Check the sealing strip and the slot strip at the squeegee weekly for wear and damage. If the edge of the sealing strip is worn or damaged, turn or replace the sealing strip. Each sealing strip can be used four times before it needs replacing.

1. Turn the suction hose vertically upwards and remove it.
2. Remove the squeegee from the holder.
3. Loosen and remove the rubber strip **Fig. 19-1**.
4. Remove the sealing strip **Fig. 19-2** and the slot strip **Fig. 19-3** from the plastic body.
5. Before turning or replacing the sealing strips, thoroughly clean the plastic body!
6. Installation is in reverse order.
   Attention!
   Make sure that the sealing strips are completely attached to the mushroom heads and that the slot strip is guided through the gap **Fig. 19-4**. Otherwise, the sealing strips might become detached when cleaning.

5.9 Cleaning the suction hose

Fig. 20

Clean the suction hose as required and weekly.

1. Turn the suction hose vertically upwards and remove it from the squeegee **Fig. 20-1**.
2. Remove the drain hose for waste water **Fig. 20-2** from the holder.
3. Lift up the waste water tank with both hands and pull it forwards along with the drain hose **Fig. 20-3**.
   Attention!
   Place the waste water tank down on an elevated surface to ensure that the drain hose is not damaged.
4. Move the machine into the park position and pull out the suction hose from the top **Fig. 20-4**.
5. Rinse the suction hose thoroughly **Fig. 20-5**.
6. Installation is in reverse order.

5.10 Service information

In case problems occur with the machine, a four-digit service code is output in the display panel in addition to the service indicator (tool key).
Eliminate the cause or note down the service code and inform your authorised Hako service partner.
If the cause has been eliminated, the fault must be acknowledged via the OFF/ON button.

Service code	Fault	Cause	Remedy
1251	Brush stops	Foreign particles between the brush and the shaft	Inspect the brush for foreign particles and remove them if necessary
1261	Brush stops	• Foreign particles block the brush	• Inspect the brush for foreign particles and remove them if necessary
		• Brush is not positioned correctly in the holder	• Actuate the brush decoupling system, contact the customer service, if necessary
1463	Suction turbine stops	• Foreign particles in the suction turbine • Suction turbine is damaged	Contact the customer service
1591	No water supply	• Water valve is defective	Contact the customer service
		• Fresh water filter is not screwed in fully	Screw in the fresh water filter as far as it will go
316E / 3251	Power level is faulty	• Cables on battery poles are loose or detached	Contact the customer service
		• Battery is not charged	Charge the battery
3265 / 3266	Service code indicator when turning on the machine	Low capacity of the internal back-up battery of the machine or discharged	Contact the customer service

3311	Service code indicator when turning on the machine. Restart the machine to remove the service code.	Service interval expired	See maintenance plan
5931	Battery fault	• Communication error • Incorrect type of battery	Contact the customer service
5971 / 5972	Battery fault	• Cables on the battery poles loose or detached	Contact the customer service
		• Battery is not charged	Charge the battery

EC Declaration of Conformity

Hako GmbH
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23843 Bad Oldesloe, Germany

declare in sole responsibility that the following product

Scrubmaster B25 type: 7155

to which this declaration relates corresponds with the relevant basic safety and health requirements of EC Directive 2006/42/EC as well as the requirements according to 2014/30/EC and 2014/53/EC.

The following standard(s) and technical specifications was/were referred to for the correct implementation of the safety and health requirements named in the EC Directive:

EN 60335-2-72
EN 55012
EN 61000-6-2

Name of the authorised person who compiles the technical documents for Hako:
Ludger Lüttel

Bad Oldesloe, 22.11.2022

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