



Scrubmaster B75 R (7175)

Operating Manual

Part number: 88-10-3046 - 3954-00

Valid as from: 10.2016

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 vehicle. Please read this **original operating manual** before you use the vehicle for the first time, act accordingly and keep these instructions for future reference or subsequent users. The operating manual contains all important information for operation, maintenance and care. 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 vehicle or the operating manual.

We would expressly advise you that no legal claims may be asserted based on the contents of these 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.

Hako GmbH

23843 Bad Oldesloe, Germany

Hamburger Str. 209-239

Phone +49 4531 806-0

Issue:

Index	Book number	Revision number	Valid as from:
0	88-10-3046	3273-33	09.2015
1	88-10-3046	3451-01	04.2016
2	88-10-3046	3589-00	10.2016
3	88-10-3046	3954-00	05.2018

Intended use

Scrubmaster B75 R 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 B75 R 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: _____

	Introduction.....	2
1	Safety instructions	8
1.1	Warning and danger symbols	8
1.2	General safety instructions	9
1.3	Operating safety instructions	9
1.4	Maintenance instructions	11
1.5	Information about special risks	12
1.6	Environmental protection instructions and disposal	14
1.7	Labels on the machine	15
2	Operation.....	18
2.1	Overviews	18
2.1.1	Front view	19
2.1.2	Rear view	21
2.1.3	Control panel	22
2.1.4	Display panel	23
2.2	Controls and display elements	25
2.2.1	Control panel	25
2.2.2	Controls at the machine	29
2.3	General principle of operation	31
2.3.1	Solution tank	31
2.3.2	Brush head	31
2.3.3	Squeegee	32
2.3.4	Waste water tank	32
2.3.5	Drain hose for waste water	32
3	Putting into service	33
3.1	Instruction	33
3.2	Before putting into service	33
3.3	Checklist – before machine start-up	33
3.3.1	Installing the mains cable	34
3.3.2	Adjusting the driver's seat	34
3.4	Cleaning	35
3.4.1	Turning on the machine	35
3.4.2	Useful cleaning tips	36
3.4.3	Turning off the machine	36
3.4.4	Checklist – after cleaning	37
3.5	Loading and transporting	38
3.6	Service information	39

4	Technical data.....	41
5	Maintenance and Servicing	44
5.1	Maintenance certificate	45
5.2	Maintenance plan	46
5.3	Battery system	49
5.3.1	Type of battery	49
5.3.2	Battery management system (BMS)	50
5.3.3	Checking the charging state	50
5.3.4	Charging the batteries (7175.1x/.2x)	51
5.3.5	Checking the charging process (7175.1x/.2x)	52
5.3.6	Information on quick-charging technology (only 7175.30)	53
5.3.7	Table – charging times for quick-charging technology (only 7175.30)	53
5.3.8	Charging the battery (only 7175.30)	54
5.3.9	Replacing batteries (all variants)	55
5.3.10	Maintaining drive batteries	55
5.3.11	Disposing of batteries	55
5.4	Solution tank	56
5.4.1	Filling the solution tank	56
5.4.2	Emptying the solution tank	57
5.4.3	Cleaning the solution tank	58
5.4.4	Cleaning the fresh water filter	59
5.5	Waste water tank	60
5.5.1	Emptying the waste water tank	60
5.5.2	Cleaning the waste water tank	61
5.5.3	Cleaning the suction filter	62
5.5.4	Checking the gasket at the drain hose	62
5.5.5	Checking the gasket in the tank cap	62
5.6	Brush head	63
5.6.1	Cleaning the brushes	63
5.6.2	Replacing the brushes/pads	64
5.6.3	Decoupling the brushes/pads	64
5.6.4	Coupling the brushes/pads	65
5.6.5	Replacing the deflecting roller	65
5.6.6	Replacing the sealing strip of the brush head	65
5.7	Squeegee	66
5.7.1	Cleaning the squeegee	66
5.7.2	Replacing the sealing strips	67
5.7.3	Adjusting the sealing strips	68

5.8	Options	70
5.8.1	On-board chemical metering system	71
5.8.2	Working spotlight	72
5.8.3	Warning device forwards gear	72
5.8.4	Coarse dirt sieve of waste water tank	72
5.8.5	Wiper and squeegee 760	73
5.8.6	Tray	73
5.8.7	Automatic filling unit	74
5.8.8	Fleet-Recorder Standard	75
	EC Declaration of Conformity.....	77

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 heeded.



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.

**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.

1.2 General safety instructions

- Apart from the instructions in this operating manual, the general safety and accident prevention regulations of the legislation must be taken into account.
- Before the machine is put into service, 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 fresh water and waste water tanks contains silver ions in nanoparticle form.
- 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, the operator must familiarise himself with all the equipment, controls and actuating elements as well as with their function! It is too late to do this during operation!

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.
- Never use the machine at places where objects can fall down.
- When working with the machine, pay special attention to third persons, especially children.
- When driving over thresholds, raise the brush head.
- Only use cleaning agents suitable for automatic machines (foam retarded) and observe the application, disposal and warning instructions provided by the cleaning agent 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 wood dust, e. g. beech and oak dust, is also prohibited – health hazard!
- For reasons of safety, the driver's seat is equipped with a seat contact switch. The machine can only be started when the driver is sitting on the driver's seat. The function of the seat contact switch must not be bypassed.
- The machine must not be used in potentially explosive atmospheres.
- It is not permitted to transport other people or heavy objects.
- During transportation, raise the squeegee and the brush head. Adjust your way of driving to local conditions.
- Drive slowly on wet surfaces, particularly in bends, due to the risk of skidding.
- The machine may be used only on level surfaces with a maximum slope of 2 %.
- Warning! Never use the machine on sloping surfaces.
- Manipulating the switches and protective devices is forbidden.

After operation

- Always remove the key when leaving the machine to prevent unauthorised use.
- After use, park the machine in a dry, indoor location with the brush head and squeegee raised.

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.
- To prevent unauthorised use, remove the key.
- Cleaning the machine with a high-pressure cleaner or steam jet is not allowed.
- Application of aggressive and corrosive cleaning agents is not allowed.
- After cleaning, let the machine air dry, e.g. over the weekend.
- Only put the machine into service when all the protective devices are attached and in protection position.

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 must be done only in accordance with electrical engineering standards by a specialist trained for this work.
- Regularly inspect/check the electrical system. 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 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 may 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 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. 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 cleaning agents, 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 as required in § 6 and § 8 of the German battery law (BattG)!

1.7 Labels on the machine

The following safety and instruction labels are affixed to the machine in a clearly visible and legible manner.



Attention

Renew missing or illegible labels immediately!



Fig. 1:

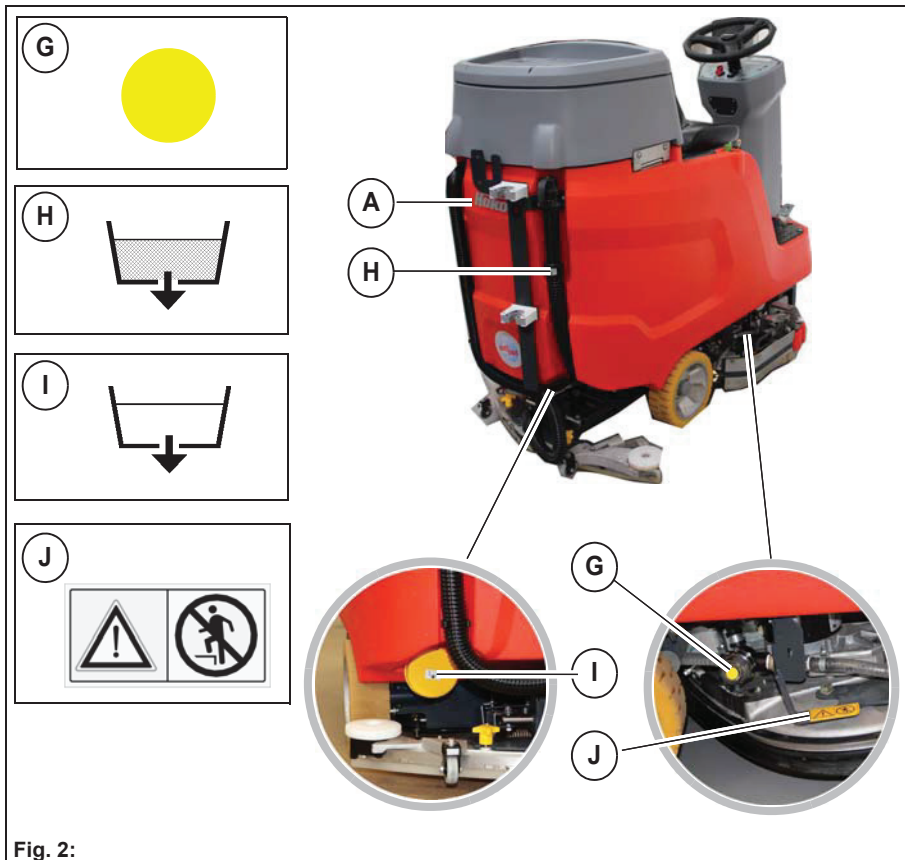


Fig. 2:

Label – Logo Fig. 1-A

The Hako logo is located at the front on the steering column and at the rear on the hopper.

Label – Type plate Fig. 1-B

The type plate is located on the left hand side of the chassis in front of the rear wheel.

Labels

- Read and observe the operating manual Fig. 1-C1
- Maximum permissible slope 2 % Fig. 1-C2
- Never clean the machine with a high-pressure cleaner Fig. 1-C3

The label is located on the left hand side next to the driver's seat.

Label – 24 V Fig. 1-D

The label is located on the left hand side of the battery compartment.

Label – Maintenance-free batteries Fig. 1-E

The label is located on the left hand side of the battery compartment.

Label – Explosive gases Fig. 1-F

The label is located on the right hand side of the battery compartment.

Label – Maintenance parts (yellow dot) Fig. 2-G

The yellow dot is located on the cover of the fresh water filter.

Label – Drain waste water Fig. 2-H

The label is located on the drain hose.

Label – Drain fresh water Fig. 2-I

The label is located on the cover of the maintenance opening.

Label – Keep off! Fig. 2-J

The label is located on the plate of the brush head.

2 Operation

2.1 Overviews

The description in chapter 2 contains information on the function and handling of the individual controls on the vehicle. The controls always have the same item number in all chapters.



Fig. 3:

2.1.1 Front view

Item	Designation
1	Steering wheel
2	Mains cable on-board charger
3	Driver's seat
4	Cover with vacuum system
5	Filling opening solution tank
6	Level indicator solution tank
7	Solution tank
8	Foot lever brush decoupler
9	Brush head
10	On-board chemical metering system (option)
11	Parking brake
12	Operating brake
13	Travel drive
14	Working spotlights (option)
15	Steering column
16	Warning device forwards gear (option)



Fig. 4:

2.1.2 Rear view

Item	Designation
17	Suction filter
18	Waste water tank
19	Coarse dirt sieve (option)
20	Maintenance opening solution tank
21	Adjusting lever fresh water metering
22	Accelerator pedal
23	Wiper (option)
24	Fresh water filter
25	Squeegee
26	Drain hose waste water
27	Manual suction tool, including holder (option)
28	Suction hose squeegee
29	Tray (option)
30	Automatic filling unit (option)
31	Battery
32	Seat console

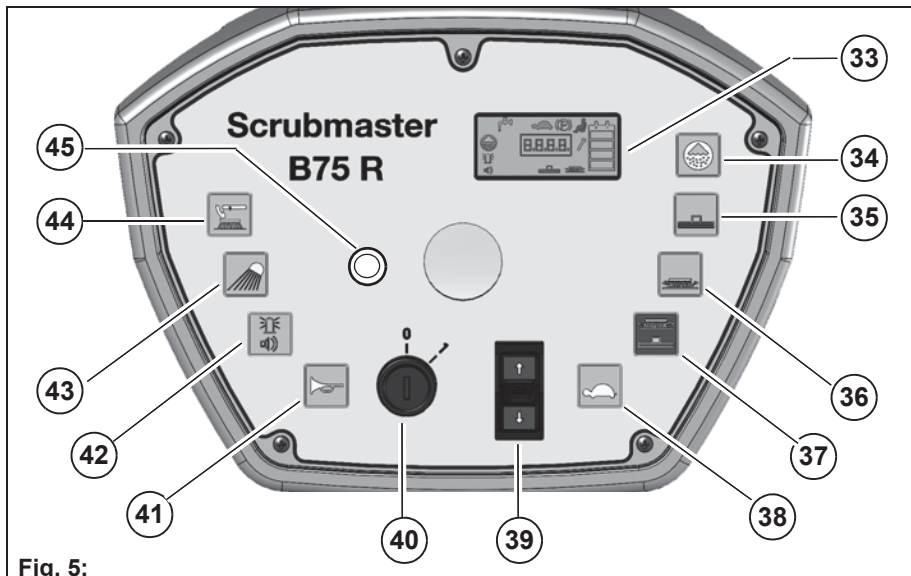


Fig. 5:

2.1.3 Control panel

Item	Designation
33	Display panel
34	Button – chemical metering system (option)
35	Button – squeegee / manual suction tool (option)
36	Button – brush head
37	Button – brush head and squeegee
38	Button – speed reduction forwards gear
39	Driving direction switch
40	Key switch
41	Button – signal horn
42	Button – warning device forwards gear (option)
43	Button – working spotlights (option)
44	Button – brush decoupling (only 7175.1x)
45	Release button – Fleet-Recorder Standard (option)

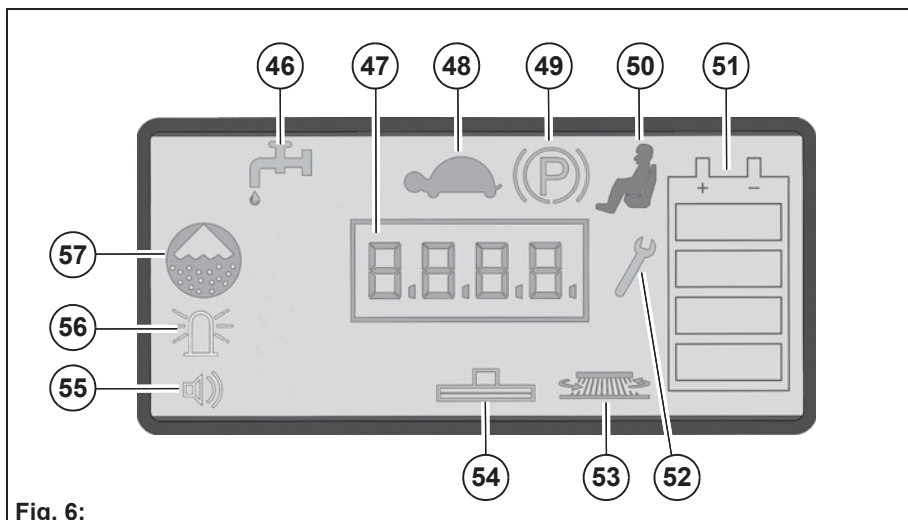


Fig. 6:

2.1.4 Display panel

Item	Designation	Meaning
46	Fresh water supply	The symbol is displayed when the fresh water supply is switched on and the brush head is lowered.
47	Number field	Display panel for: -Operating hours meter -Service code -Release indicator for Fleet-Recorder option -Counter for brush decoupling
48	Speed reduction	The symbol is displayed when the machine is driving at reduced speed.
49	Operating brake/ Parking brake	The warning symbol appears if the operating brake/parking brake is actuated.
50	Seat contact	The warning symbol flashes if the driver gets up from the driver's seat during operation. Main functions, e.g. scrubbing, vacuuming and driving, are no longer possible.

51	Indicator – battery management system (BMS) and charging process	If the machine is ready for use, the current charging state of the batteries is displayed. When the battery is charged, the charge control indicator appears in the display panel (7175.1x/.2x).
52	Service indicator	The symbol is displayed in case of a system fault. A warning signal is additionally output and a service code displayed in the number field, see section 3.6.
53	Brush head	The symbol is displayed when the brush head is lowered.
54	Suction turbine drive	The symbol is displayed when the suction turbine drive is switched on. After switching off the suction function, the suction turbine continues to run for 15 seconds as standard. The symbol flashes during this time.
55	Acoustic warning signal (option)	The symbol is displayed when the acoustic warning signal is switched on.
56	Warning lamp (option)	The symbol is displayed when the optical warning signal is switched on.
57	Chemical metering (option)	The symbol is displayed when chemical metering is switched on.

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.



Key switch Fig. 5-40

The electrical system is switched on and off with the key switch.

- Position 0: The electrical system is switched off. The key can be pulled out.
- Position 1: The electrical system is switched on.
 - The software version is displayed for approx. 1 second in the number field **Fig. 6-47**, possibly followed by the last service code for approx. 3 seconds. The operating hours meter is then displayed.
 - The current charging state of the batteries is displayed in the BMS display panel **Fig. 6-51**.



Driving direction switch Fig. 5-39

The driving direction is selected with the driving direction switch.

Only select a driving direction when the machine is at standstill.

- Gear lever forwards: Forwards gear
- Gear lever 0: Neutral position
- Gear lever backwards: Reverse gear



Note

A warning signal is output when in reverse gear. The maximum speed when reversing is half of the maximum speed when driving forwards.



Speed reduction button Fig. 5-38

The maximum speed when driving forwards is reduced by approx. 50 % with this button.

- Push the button: Speed reduction ON
- Push the button again: Speed reduction OFF



Signal horn button Fig. 5-41

The signal horn is switched on and off with this button.

- Push the button: Signal horn ON
- Release the button: Signal horn OFF



Squeegee button Fig. 5-35

The squeegee is lowered/raised and the suction turbine switched on and off with this button.

- Push the button: The squeegee is lowered and the suction turbine switched on.



Note

The suction turbine drive works independently of the driving direction. The squeegee is raised automatically when reversing.

- Push the button again: The squeegee is raised. The symbol for the suction turbine drive begins to flash in the display panel. After a delay time of approx. 15 seconds, the suction turbine is switched off.



Note

When working with the manual suction tool option, the squeegee button is used to switch this option on and off. In this case, the squeegee is not lowered. The parking brake must be actuated!



Brush head button Fig. 5-36

The brush head is lowered and raised with this button.

- Push the button: The brush head is lowered. When actuating the accelerator pedal, the brush drive and the water supply are switched on.
- Push the button again: The brush drive and the water supply are switched off. The brush head is raised.



Note

If the accelerator pedal is not actuated, the brush drive and the water supply are switched off.



Brush head and squeegee button Fig. 5-37

The brush and suction turbine drive are switched on and off simultaneously with this button.

- Push the button: The brush head and the squeegee are lowered. The brush drive, water supply and suction turbine are switched on when the accelerator pedal is actuated.
- Push the button again: The brush head is raised. The brush drive and the water supply are switched off. The squeegee continues to run for approx. 15 seconds to absorb residual water.



Chemical metering button (option) Fig. 5-34

Chemical metering is switched on and off with this button.

- Push the button: Chemical metering ON
- Push the button again: Chemical metering OFF



Warning device button (option) Fig. 5-42

Two functions can be selected with this button:

- Push the button once: Warning lamp flashes
- Push the button twice: Warning lamp flashes. A warning signal is additionally output when driving forwards.
- Push the button again: Warning device OFF



Working spotlights button (option) Fig. 5-43

The working spotlights can be switched on and off with this button.

- Push the button: Working spotlights ON
- Push the button again: Working spotlights OFF



Brush decoupling button Fig. 5-44 (only 7175.1x)

The brush can be decoupled with this button.

Push the button for approx. 5 seconds until the four consecutively flashing symbols in the display panel have gone out.

After decoupling, the upper and lower symbol row flash alternately. The machine is not ready for use. To complete brush decoupling, acknowledge the process with the key switch OFF/ON.

2.2.2 Controls at the machine

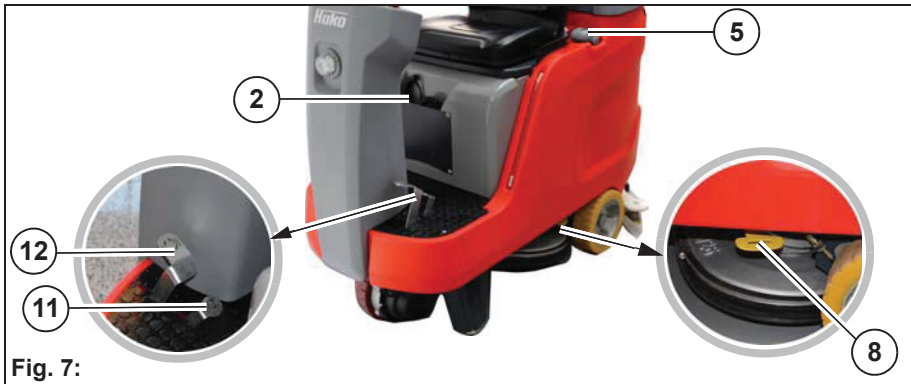


Fig. 7:

Mains connection Fig. 7-2

The mains connection supplies voltage to the charger.

Filling opening fresh water Fig. 7-5

The solution tank is filled via a hinged filling opening.

Optionally, the solution tank can be filled via the automatic filling unit, see section 5.8.7.

Foot lever brush decoupler Fig. 7-8

By actuating the brush decoupler, the rotating brushes can be disassembled quickly and without tools.

Locking lever parking brake Fig. 7-11

The parking brake stops the machine from rolling away accidentally.

Engage the parking brake:

1. Push down the operating brake **Fig. 7-12** fully.
2. Engage the locking lever of the parking brake with the rear part of the foot.

Release the parking brake:

Actuate the operating brake pedal.

Operating brake pedal Fig. 7-12

When the accelerator pedal is released (forwards or reverse) the machine comes to a stop due to the braking effect of the travel drive. If this braking effect is not sufficient, the operating brake can be applied in addition.

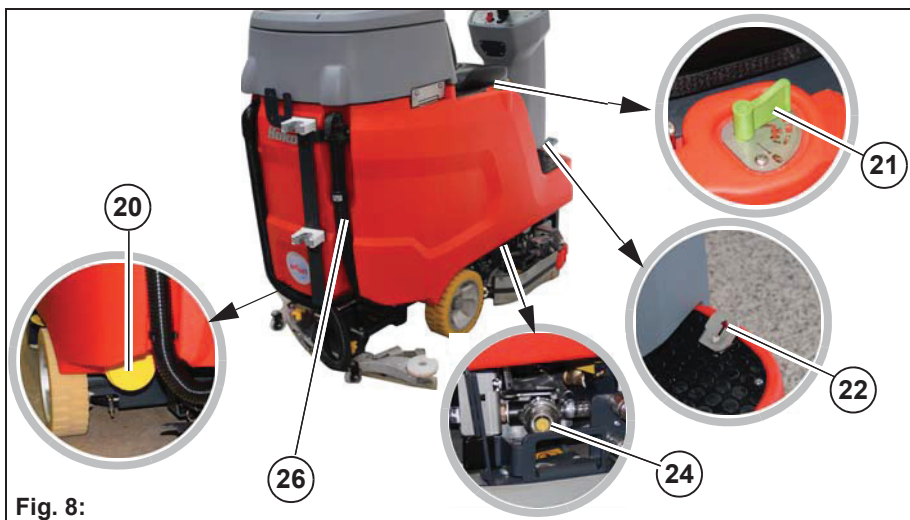


Fig. 8:

Maintenance opening Fig. 8-20

The maintenance opening is used to drain the fresh water and clean the solution tank.

Adjusting lever fresh water metering Fig. 8-21

Metering of the fresh water to the brush head is set using the adjusting lever. The water quantity can be set between 0.8 l/min and 3.3 l/min.

Accelerator pedal Fig. 8-22

The accelerator pedal is used to drive forwards or reverse and continuously adjust the speed at the same time.



Note

Set the driving direction in advance with the driving direction switch Fig. 5-39.

If the accelerator pedal is released, it automatically returns to the zero position and the machine stops.

Fresh water filter Fig. 8-24

When supplying water from the solution tank to the brush head, the fresh water is cleaned by the filter insert.

Drain hose waste water Fig. 8-26

The absorbed waste water is drained with the drain hose of the waste water tank.

2.3 General principle of operation

Scrubmaster B75 R is a ride-on scrubber-drier for wet cleaning hard floor surfaces.

In cleaning mode, the cleaning solution is supplied from the solution tank to the rotating brushes in the brush head. Fresh water metering takes place manually via an adjusting lever. When the machine is moving forwards, the used cleaning agent is absorbed by the squeegee and conveyed into the waste water tank.



Fig. 9:

2.3.1 Solution tank

The solution tank **Fig. 9-5** is filled via a hinged opening. The solution tank has a capacity of 75 litres. The level can be determined via a transparent hose **Fig. 9-6**. Fresh water metering can be set via an adjusting lever **Fig. 8-21**.

2.3.2 Brush head

The brushes in the brush head **Fig. 9-9** are driven by an electric motor. The brush head is lowered with the brush head button **Fig. 5-36**. When actuating the accelerator pedal, the brush motors and the water supply are switched on. The floor is cleaned by the rotating brushes and the supply of cleaning solution. For maintenance purposes, the brushes can be decoupled via the foot lever brush decoupler **Fig. 7-8**.

2.3.3 Squeegee

The movable, hinged squeegee **Fig. 9-25** is lowered and switched on with the squeegee button **Fig. 5-35**. The squeegee withdraws the waste water from the floor using a sealing strip. The suction turbine vacuums the waste water from the floor. If the machine passes through narrow sections, e. g. checkout areas, the squeegee can be removed by loosening the star-shaped handle and hooked into the cover **Fig. 10-A** of the waste water tank.

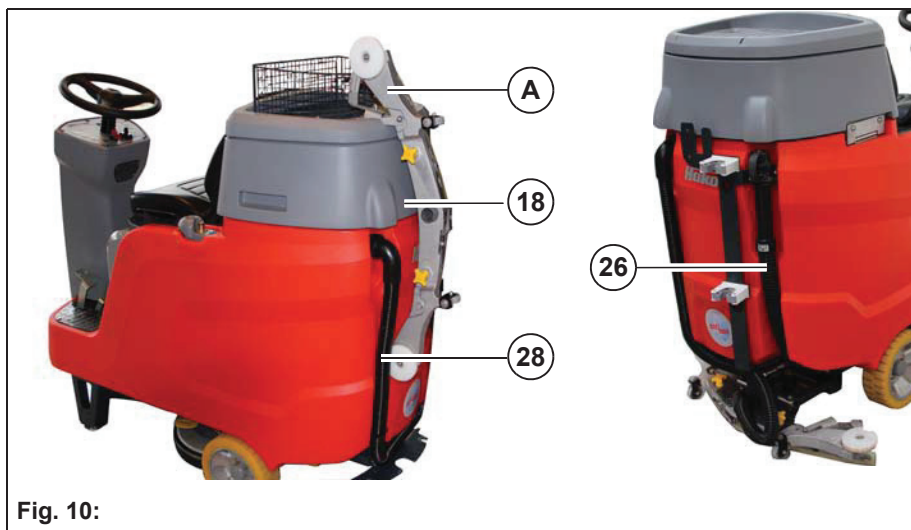


Fig. 10:

2.3.4 Waste water tank

The vacuumed waste water is conveyed via a suction hose **Fig. 10-28** from the squeegee into the waste water tank **Fig. 10-18**. A manual suction tool is optionally available for cleaning and water absorption in difficult-to-reach positions.

2.3.5 Drain hose for waste water

The waste water is drained from the waste water tank with the drain hose **Fig. 10-26**.

3 Putting into service

3.1 Instruction

Instruction is required before the first start-up. The first-time instruction of the machine may be provided only by a specialist of your authorised Hako dealer. This person will be notified immediately after delivery of the machine from the factory and will contact you to make an instruction appointment.

3.2 Before putting into service



Attention

- Before initially starting up the machine, charge the used batteries 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.
- Before the machine is initially put into service, install the country-specific Hako mains cable.
- Check the machine for operating safety before every start-up! Eliminate faults immediately.
- Before starting work, the operator must familiarize himself with all equipment, operating and actuating elements as well as with their function.

3.3 Checklist – before machine start-up

No.	Description
1	Checking the parking area for signs of leaks. Cables and tanks must not show any sign of leaks or damage
2	Installing the mains cable, see section 3.3.1
3	Mounting the brushes and squeegee, see chapter Maintenance
4	Adjusting the driver's seat, if necessary, see section 3.3.2
5	Checking the battery charge and recharge it as required, see chapter Maintenance
6	Emptying the waste water tank and clean it as required, see chapter Maintenance
7	Filling the solution tank (see chapter Maintenance) and add cleaning agent according to the manufacturer's specifications

3.3.1 Installing the mains cable

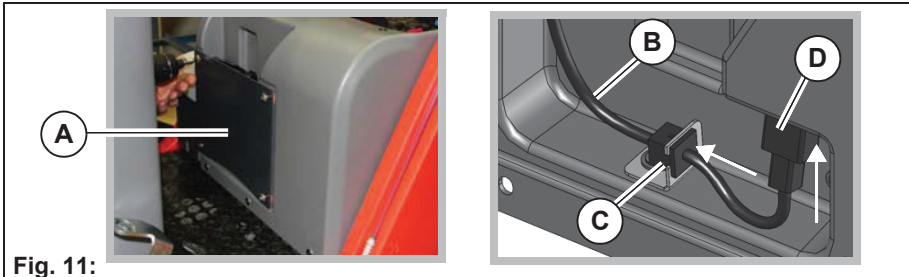


Fig. 11:

1. Remove the cover **Fig. 11-A**.
2. Route the cable of the mains plug **Fig. 11-B** through the opening in the bracket **Fig. 11-C**. Ensure that the side of the strain relief without a latch faces the front towards the opening.
3. Press the strain relief into the bracket until all latches have engaged.
4. Plug the mains plug **Fig. 11-D** straight and firmly into the holder.
5. Reinstall the cover using the available screws.

3.3.2 Adjusting the driver's seat



Attention

For reasons of safety, the driver's seat is equipped with a seat contact switch. The function of the seat contact switch must not be bypassed.

The driver's seat can be adjusted to three positions.



Fig. 12:

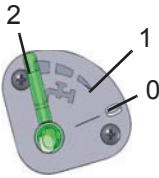
1. Open the seat console.
2. Loosen the screws and remove the washers. Hold the seat while doing this.
3. Set the seat to the desired position.
4. Tighten the screws and washers at the respective position.

3.4 Cleaning

No.	Description
1	Turn on the machine
2	Select the driving direction via the driving direction switch
3	Select the cleaning programme
4	Loosen the parking brake and actuate the accelerator pedal. The brushes and water supply are switched on.
5	Adjust the fresh water quantity as required using the adjusting lever of the fresh water metering system.



Attention



Make sure that the adjusting lever has been opened sufficiently. Water supply only starts from mark (1) onwards!

- Position 0: Water supply OFF
- Position 1: Water supply MINIMUM
- Position 2: Water supply MAXIMUM

3.4.1 Turning on the machine



Attention

- Before operating the machine, read and observe the safety instructions in chapter 1.
- The machine can only be put into service when the driver is sitting on the driver's seat.
- The travel drive can only be started when the accelerator pedal is not actuated when turning the machine on.

1. Disconnect the mains plug from the socket and place it in the storage recess.
2. Turn the machine on with the key switch.
3. Release the parking brake.
4. Select the driving direction with the driving direction switch.
5. Actuate the accelerator pedal.

3.4.2 Useful cleaning tips

Sweep the floor before carrying out wet cleaning. This not only enhances the cleaning effect but also reduces wear of the machine's working tools.

If the floors are really dirty or wax needs to be removed, treat the floor twice. In the first step, scrub the floor with a cleaning agent suitable for the degree of soiling; the squeegee remains raised for this.

Leave the cleaning agent for approx. 5 to 10 minutes; subsequently scrub the floor again and work with a lowered squeegee.



Note

- Use only cleaning agents 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 metering of the cleaning agent. Correct metering saves money and protects the environment. Strong foam formation is a sign of excessive metering and impairs machine operation.

3.4.3 Turning off the machine

1. Slowly bring the accelerator pedal to the zero position. The machine slows down to standstill. A better braking effect is achieved when the machine is slowed down by applying the brake.
2. Bring the driving direction selector switch to the zero position.
3. Switch off the cleaning functions.
4. Turn off the machine with the key switch and hold it with the parking brake.



Note

Remove the key when leaving the machine to prevent unauthorised use.

3.4.4 Checklist – after cleaning



Environmental danger

Observe the applicable laws and local regulations when disposing of cleaning agents.

No.	Description
1	Drive to a suitable maintenance location
2	Turn off the machine, remove the key and engage the parking brake
3	Empty and flush the waste water tank
4	Check the fresh water filter (adjusting lever for fresh water metering must be set to 0)
5	Check the sealing strips and suction hose
6	Check the functions and settings
7	Charge the battery
8	Clean the machine. If the machine is not used over a longer period of time, the solution tank must be fully emptied.



Attention

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

3.5 Loading and transporting



Attention

- When loading and transporting the machine to the work site, the squeegee and brush head must be raised.
- When loading the machine, reverse it (empty drive) up the ramp (maximum slope 18 %).
- Risk of skidding! Drive extremely carefully, especially on wet ramps.

Loading

When loading the machine, observe its weight, see Section 4 *Technical data*.

Transporting

When transported on a vehicle or trailer, the machine must be secured against tilting and rolling away. Tie the machine down tightly. To do this, use tension belts to secure the machine on the supports **Fig. 13-A** at the front and on the eyes **Fig. 13-B** at the rear.

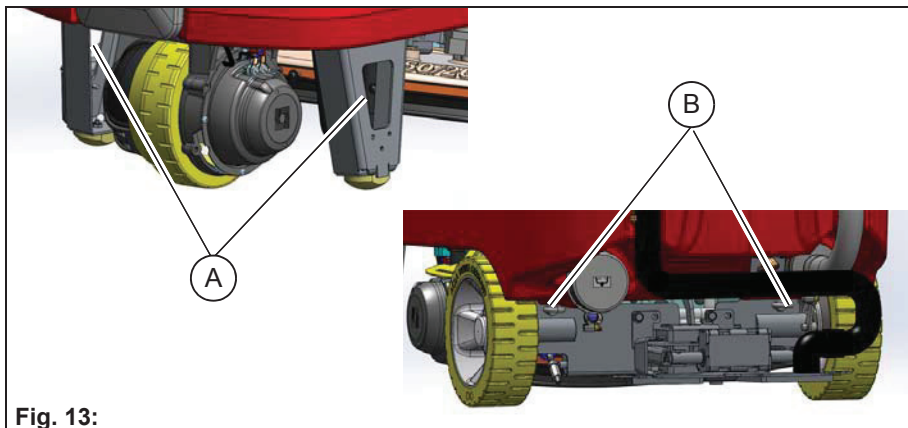


Fig. 13:

3.6 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).

The dots of the service code flash. 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 key switch OFF/ON.

Service code	Fault	Cause	Remedy
1.2.5.2.	Brushes stop	Foreign particles between brush and shaft	Inspect the brushes for foreign particles and remove them if necessary
1.2.6.1.	Brushes stop	<ul style="list-style-type: none"> Foreign particles block the brush Brush is not positioned correctly in the holder 	Inspect the brushes for foreign particles and remove them if necessary
1.2.6.3.	Brush lift system, brush and suction turbine have been switched off	<ul style="list-style-type: none"> Foreign particles between brush head and machine Foreign particles between squeegee and machine Squeegee jammed 	<ul style="list-style-type: none"> Inspect the brush head for foreign particles and remove them if necessary Inspect the lift system for foreign particles and remove them if necessary Make the squeegee accessible
1.4.6.3.	Suction turbine stops	<ul style="list-style-type: none"> Foreign particles in the suction turbine Faulty suction turbine 	Contact the customer service
3.2.6.5.	Service code indicator when turning on the machine	Low capacity of the internal back-up battery of the machine control	Contact the customer service
3.2.6.6.	Service code indicator when turning on the machine	Discharged capacity of the internal back-up battery of the machine control	Contact the customer service

Continued service information

Service code	Fault	Cause	Remedy
3.3.1.1.	Service interval expired		See maintenance plan
3.4.1.2.	Driving not possible	Error in the drive control	Turn the machine OFF/ON, contact the customer service if necessary
3.4.5.1.	Cleaning function switches off	<ul style="list-style-type: none"> • Drive wheel becomes sluggish due to foreign particles • Drive motor overheats 	<ul style="list-style-type: none"> • Remove foreign particles • Let the engine cool down
3.6.6.4.	Driving and cleaning not possible	Seat permanently loaded	Relieve seat
5.8.7.0.	Batteries are not being charged	<ul style="list-style-type: none"> • Cables on the battery poles loose or detached • Incorrect type of battery installed 	Contact the customer service
5.8.7.1.	Batteries are not being charged	<ul style="list-style-type: none"> • Mains plug not inserted correctly • Incorrect type of battery installed 	Insert the mains plug correctly
Flashing number field	Driving not possible	<ul style="list-style-type: none"> • Seat not occupied • Start sequence not observed 	<ul style="list-style-type: none"> • Occupy seat • Observe start sequence

4 Technical data

Dimensions

Name	Unit	7175.1x	7175.2x	7175.30
Length of machine with squeegee	mm	1475	1475	1475
Width of machine with squeegee	mm	785	885	885
Width of machine without squeegee	mm	700	750	750
Height of machine	mm	1215	1215	1215

Working width

Brush head	mm	550	650	650
Squeegee	mm	760	860	860

Weights

Weight (empty, without batteries)	kg	234	244	244
Total weight (ready for use)	kg	377	max. 453	389

Driving performance

Driving speed transportation (forwards/reverse)	km/h	6/3	6/3	6/3
Climbing capacity when cleaning	%	2	2	2
Climbing capacity when loading (reverse)	%	18	18	18
Ramp angle/Slope angle	%	18	18	18
Turning circle (with squeegee)	mm	1795	1795	1795

Wheels

Wheel diameter	mm	250	250	250
Specific wheel contact pressure front/rear	N/mm ²	0.67/0.43	0.67/0.43	0.67/0.43

Tank contents

Name	Unit	7175.1x	7175.2x	7175.30
Solution tank	Litre	75	75	75
Waste water tank	Litre	75	75	75

Brush head

Number of brushes	Piece	1	2	2
Brush speed	rpm	180	180	180
Brush contact pressure	kg	29	35	35

Vacuum system

Air quantity	m ³ /h	110	110	110
Vacuum (maximum)	mbar	170	170	170

Electrical system

Nominal voltage	V	24	24	24
Nominal output (max.) (P1)	W	1800	2520	2520
Power consumption drive motor (P1) S2-40 min	W	530	530	530
Power consumption vacuum motor (P1)	W	528	528	528
Power consumption brush motor (P1)	W	720	2x720	2x720
Protection class		III	III	III
Type of protection		IPX3	IPX3	IPX3

On-board charger

Nominal voltage	V	100-230	120-230	
Nominal output	W	440	750	
Protection class		II	II	

Noise emission value

The sound power level (L_{wAd}) measured under the customary conditions of use according to DIN EN 60335-2-72 is:	dB (A)	77
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)	61
Measuring uncertainty (K_{pA})	dB (A)	3.5

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	≤ 0.5

5 Maintenance and Servicing

General

The operator is instructed fully on delivery of the machine.



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 a driver trained for this, all further Hako system maintenance work may be undertaken only by trained and qualified personnel.

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.

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 working machines (preventive maintenance).
- Minimises operating costs, repair costs, costs for maintenance.
- Assures long life and readiness for use of the machine.



Note

The machine's parts to be serviced are marked with a yellow dot and yellow areas.

5.1 Maintenance certificate

Handover Equipment Trial run Handover to customer Instruction performed on: at _____ operating hours	Hako system maintenance I 125 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance II 250 operating hours Workshop stamp performed on: at _____ operating hours
Hako system maintenance I 375 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance S 500 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance I 625 operating hours Workshop stamp performed on: at _____ operating hours
Hako system maintenance II 750 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance I 875 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance S 1000 operating hours Workshop stamp performed on: at _____ operating hours
Hako system maintenance I 1125 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance II 1250 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance I 1375 operating hours Workshop stamp performed on: at _____ operating hours
Hako system maintenance S 1500 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance I 1625 operating hours Workshop stamp performed on: at _____ operating hours	Hako system maintenance II 1750 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.

Activity / interval
Daily
<ul style="list-style-type: none">• Empty the waste water tank, clean the waste water tank and the suction filter
<ul style="list-style-type: none">• Check the cover gasket of the waste water tank, clean if necessary
<ul style="list-style-type: none">• Check the battery, charge if necessary
<ul style="list-style-type: none">• Fill the solution tank and meter the cleaning agent
<ul style="list-style-type: none">• Check the squeegee, clean if necessary
<ul style="list-style-type: none">• Check the drain hose of the waste water tank for soiling, clean if necessary
Weekly
<ul style="list-style-type: none">• Clean the machine as required
<ul style="list-style-type: none">• Check the sieve insert in the fresh water filter, clean or replace if necessary
<ul style="list-style-type: none">• Check the rotating brush, clean if necessary
<ul style="list-style-type: none">• Check the rotating brushes/pads for wear, replace if necessary
<ul style="list-style-type: none">• Check the sealing strip at the rotating brush head for wear, replace if necessary
<ul style="list-style-type: none">• Check the sealing strips at the squeegee for wear, turn or replace if necessary
<ul style="list-style-type: none">• Check the fresh water supply to the brushes, clean if necessary
<ul style="list-style-type: none">• Clean the suction hose
<ul style="list-style-type: none">• Check the rubber of the lateral wiper, replace if necessary (option)
<ul style="list-style-type: none">• 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.

Activity / interval
Every 125 hours
<ul style="list-style-type: none"> • Check the battery and the charger • Check the vacuum capacity and sound level of the suction turbine • Check the lateral steering stop on the left and right-hand side • Check the cover gasket of the waste water tank, replace if necessary • Check the gasket at the drain hose, replace if necessary • Check the transparency of the level indicator hose, replace if necessary • Check the rear wheel mounting screws, re-tighten if necessary (42 Nm) • Check the condition of tyres • Check correct functioning of the operating and parking brake, readjust if necessary • Check the electrical system (lighting, fuses and relays), replace parts if necessary • Check the leak tightness of the gasket at the inspection cover, replace if necessary • Check the sieve insert of the fresh water filter for damage, replace if necessary • Check the cover gasket of the fresh water filter, replace if necessary • Check the sealing strip/slot strip of the squeegee, turn or replace if necessary • Remove fluff and dirt from the air inlet grilles of the brush motors • Check the supporting rollers at the squeegee, replace if necessary • Check the optical condition of the machine (corrosion and labels) • Trial run and function test

Hako system maintenance II:

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

Activity / interval
Every 250 hours
<ul style="list-style-type: none">• All maintenance work according to Hako system maintenance I• Check the deflecting rollers of the brush head for ease of operation, replace if necessary• Check the squeegee attachment, reset if necessary• Check the suction hose for damage and firm seating, replace if necessary• Check the drain hose of the waste water tank, replace if necessary• Check the suspension and bearing assembly of the wheel motor for ease of movement, replace wear parts if necessary• Trial run and function test

Hako system maintenance III/S (safety check)


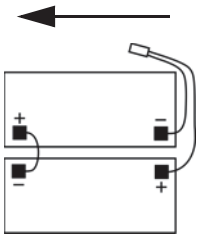

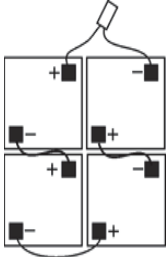

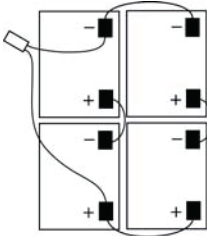
Performance by an expert of an authorised Hako workshop by reference to the machine-specific system maintenance. Performance of all legally stipulated safety-relevant tests according to the BGV specifications.

Activity / interval
Every 500 hours
<ul style="list-style-type: none">• All maintenance work according to Hako system maintenance II• Read the error memory and evaluate the error messages• Check electrical performance (drive motor, brush motor and suction turbine)• Remove coal dust from the drive and brush motors and check the carbon brushes for ease of movement and wear, replace carbon brushes if necessary (at the latest after 1000 operating hours)• Check the brake linings and Bowden cables of the brake system for wear, re-tighten Bowden cables or replace brake linings if necessary• Replace the backup battery of the electrical control and set a real-time clock• Trial run and function test

5.3 Battery system

5.3.1 Type of battery

The machines 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!

Variant	Type of battery	Connection diagram
7175.1x	2x drive battery 12V/115Ah AGM maintenance-free 	Driving direction: 
7175.2x	4x drive battery 6V/180AH GiV maintenance-free 	
7175.30	4x AGM/Optima YellowTop S4,2 maintenance-free 	

5.3.2 Battery management system (BMS)

The battery management system (BMS) ensures the battery 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!

5.3.3 Checking the charging state



Fig. 14:

During operation, the charging state of the batteries is displayed in the display panel **Fig. 14-51**. Different numbers of fields are displayed depending on the charging state:

- Four fields visible: Battery is fully charged
- Three fields visible: Battery is charged to approx. 2/3
- Two fields visible: Battery is charged to approx. 1/3
- One field visible: Cleaning functions are switched off after 3 minutes
- One field is flashing and a signal is output: Machine can only be further operated at reduced speed.

Charge the batteries immediately!

5.3.4 Charging the batteries (7175.1x/.2x)



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. Please observe the operating manual of the charging device and the operating manual of the battery manufacturer. 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.
- The seat console must remain open when charging the batteries.

The batteries are loaded via the integrated on-board charger. The batteries can already be charged if one segment of the charging state indicator **Fig. 14-51** has gone out, at the latest, however, after the cleaning functions have been switched off (one field flashes).

1. Place the machine on a level surface and turn it off.
2. Remove the mains plug **Fig. 3-2** from the tray and plug it into a 230 V socket.
3. The charging process now starts automatically.



Note

Always charge the batteries after each application. If the battery is not used for a longer period of time, interim charge the batteries.

5.3.5 Checking the charging process (7175.1x/.2x)

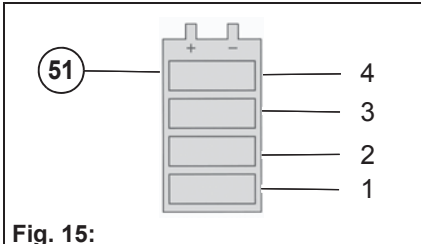


Fig. 15:

During the charging process, the charging progress is displayed in the display panel **Fig. 15-51**:

- Field 1 permanently ON, running light in fields 2,3 and 4:
Main charge <50 % charged battery capacity
- Fields 1 and 2 permanently ON, running lights in fields 3 and 4:
Main charge >50 % charged battery capacity
- Fields 1, 2 and 3 permanently ON, field 4 flashes: Recharge
- All fields permanently ON: End of charging process








Note

- The battery should always be charged without being interrupted.
- During the charging process it is not possible to turn on the machine.
- An error is present when the battery symbol flashes in connection with a field, see operating manual of the charger.

5.3.6 Information on quick-charging technology (only 7175.30)

- The daily operating period of the battery can be extended by using quick-charging technology, i.e. by using free time for interim charging.
- At the beginning of the charging process, additional capacity, which is available immediately, is charged at a very high charge current for 25 minutes. Quick charges are possible when two or three segments are displayed.
- For a full charging process, the machine remains connected to the quick-charger. Change-over from quick to normal charging takes place automatically.
- Charge the batteries fully after completing the daily cleaning tasks.

5.3.7 Table – charging times for quick-charging technology (only 7175.30)

Battery charging state indicator	Charging state	Cleaning time	Charging time	Additional cleaning time
	4 segments: Battery full	approx. 100 minutes		
	3 segments:	approx. 65 minutes		
	2 segments:	approx. 30 minutes	25 minutes quick charging	+ 50 minutes
	1 segment flashing	3 minutes		
	Battery discharged	0 minutes	<ul style="list-style-type: none"> • Part charge * 25 minutes • Part charge * 60 minutes • Full charge * 5 hours 	50 minutes 66 minutes see 1st line

*Part charge includes up to 25 minutes of quick charging

5.3.8 Charging the battery (only 7175.30)



Attention

- The number of quick charging processes is limited to four a day. More frequent utilisation may result in excessive heat and premature failure of the batteries.
- Only charge the battery with the supplied quick-charger!

Note



- An error is present when the battery symbol flashes in connection with a field, see operating manual of the charger.

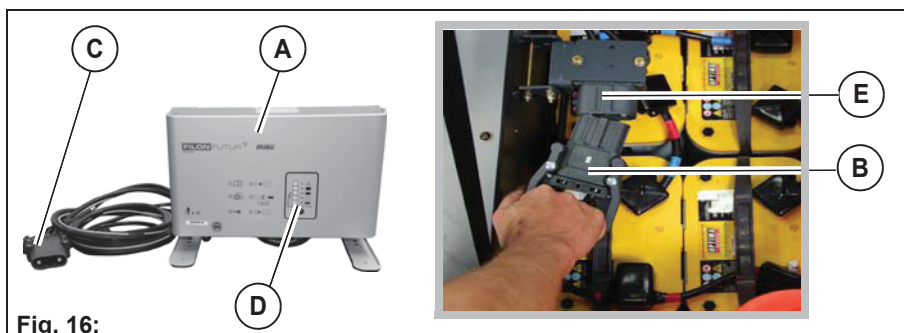


Fig. 16:

The batteries are charged with the charger **Fig. 16-A**. The batteries can already be charged when one segment in the charging status indicator **Fig. 14-51** has gone out.

1. Place the machine on a level surface and turn it off.
2. Disconnect the battery plug **Fig. 16-B** on the machine.
3. Connect the battery plug of the machine to the charger **Fig. 16-C**.
4. Switch on the quick-charger. For charging times, please refer to the table, see section 5.3.7.
5. During the charging process, the battery charging status is displayed in the display **Fig. 16-D** of the quick-charger. In the meantime, the charging control indicator **Fig. 14-51** in the display panel is not active!
6. Terminate the charging process:
 - Switch off the quick-charger
 - Disconnect the battery plug from the charger and reconnect it to the machine **Fig. 16-E**.

5.3.9 Replacing batteries (all variants)

**Attention**

- Only use batteries approved by Hako at the intended position!
- Only Optima YellowTop S4,2 must be used for variant 7175.30, otherwise the battery might be damaged.
- Only use maintenance-free, sealed batteries!
- Use suitable lifting equipment when inserting/replacing batteries.
- When changing the type of battery, the battery holder in the battery compartment might have to be adjusted to prevent slipping.
- The batteries should only be replaced by qualified service personnel!

**Note**

For reasons of safety, we recommend that an authorised Hako workshop carries out these tasks.

5.3.10 Maintaining drive batteries

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

5.3.11 Disposing of batteries

Used batteries with the recycling symbol contain reusable commodities. They must not be disposed of in domestic waste, see Chapter 1 *Environmental protection instructions and disposal*.

5.4 Solution tank



Fig. 17:

5.4.1 Filling the solution tank

Fill the solution tank **Fig. 19-7** before commencing work or as required.

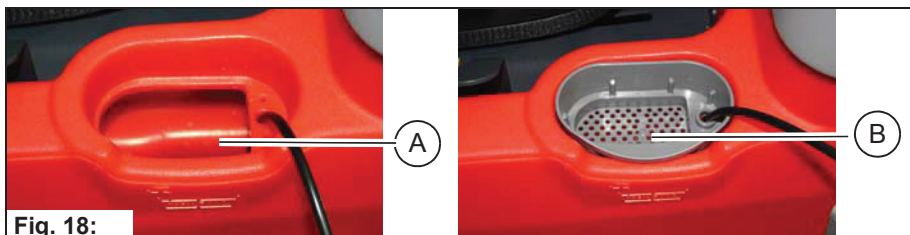


Fig. 18:

1. Place the machine on a level surface.
2. Remove the insert of the filling opening **Fig. 18-A**.
3. Fill the solution tank up to the maximum (1/1) mark **Fig. 17-6** (maximum water temperature 50 °C).
4. Add detergent according to the manufacturer's regulations via the sieve insert **Fig. 18-B**.



Note

Optionally, the solution tank can be filled via the automatic filling unit, see Chapter 5 *Options*

5.4.2 Emptying the solution tank

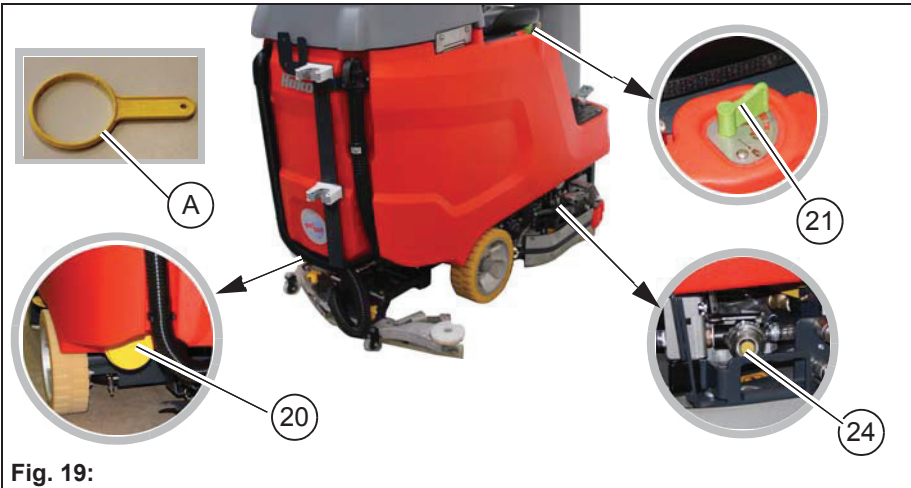


Fig. 19:

There are three options to empty the solution tank:

Emptying the solution tank via the fresh water filter

Position the machine ensuring the fresh water filter **Fig. 19-24** is above a drain in the ground.

1. Set the adjusting lever of the fresh water metering system **Fig. 19-21** to 0.
2. Unscrew the filter cover.
3. Open the adjusting lever of the fresh water metering system as far as possible. The solution tank is emptied via the fresh water filter.

Emptying the solution tank via the maintenance opening

Position the machine ensuring that the maintenance opening **Fig. 19-20** is above a drain in the ground.

1. Turn and remove the cover of the maintenance opening.
2. The solution tank is emptied via the maintenance opening.
3. After emptying the tank, place the cover on the maintenance opening and screw tight.



Note

To facilitate loosening and closing the cover, use the supplied handle **Fig. 19-A**.

Emptying the solution tank via the vacuum system

This method is recommended if no drain is available and the waste water tank is empty.



Fig. 20:

1. Turn off the machine and engage the parking brake.
2. Set the adjusting lever of the fresh water metering system **Fig. 19-21** to 0.
3. Turn and remove the filter cover of the fresh water filter **Fig. 19-24**.
4. Remove the suction hose **Fig. 20-28** from the squeegee and plug it onto the filter housing **Fig. 20-A**.
5. Open the adjusting lever of the fresh water metering system as far as possible.
6. Switch on the suction turbine via button **Fig. 20-35**. The fresh water is conveyed into the waste water tank.

5.4.3 Cleaning the solution tank

1. Empty the solution tank, see section 5.4.2
2. Turn and remove the cover of the maintenance opening **Fig. 19-20**.
3. Thoroughly clean the solution tank with a water hose.
4. After cleaning the tank, place the cover onto the maintenance opening and screw tight.
5. After filling the solution tank, check the cover of the maintenance unit for leak tightness. If necessary, screw the cover tighter.



Note

To facilitate loosening and closing the cover, use the supplied handle **Fig. 19-A**.

5.4.4 Cleaning the fresh water filter

Check the filter sieve **Fig. 21-B** of the fresh water filter **Fig. 19-24** weekly and clean or replace it as required.

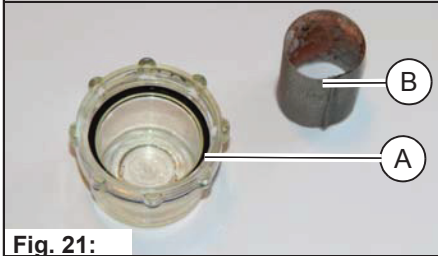
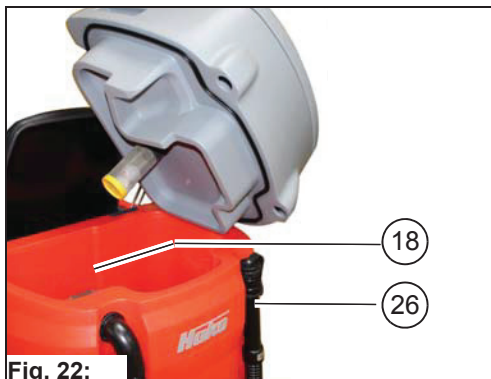


Fig. 21:

1. Set the adjusting lever of the fresh water metering system **Fig. 19-21** to 0.
2. Turn and remove the filter cover **Fig. 21-A**.
3. Remove the filter sieve **Fig. 21-B** from the filter housing and clean it under running water. Replace the filter sieve as required.
4. Reinsert the filter sieve and filter cover.

5.5 Waste water tank



5.5.1 Emptying the waste water tank

Empty the waste water tank **Fig. 22-18** daily, as required or when an acoustic signal is output (increased suction turbine speed).



Environmental danger

Observe applicable laws and local regulations when disposing of cleaning agents!



1. Drive to a suitable disposal centre.
2. Position the machine, ensuring the drain hose **Fig. 23-26** reaches the drain in the ground.
3. Turn off the machine.

4. Remove the drain hose from the holder. Push the suction hose **Fig. 23-A** slightly to the side so that the waste water tank can be emptied fully via the drain hose.
5. Bend the squeeze nozzle in the front section **Fig. 23-B**.
6. Open the cap **Fig. 23-C**.
7. Return the drain hose to its original position **Fig. 23-D** and empty the waste water tank fully.
8. After emptying the tank, close the cap.

5.5.2 Cleaning the waste water tank

Clean the waste water tank daily or as required.

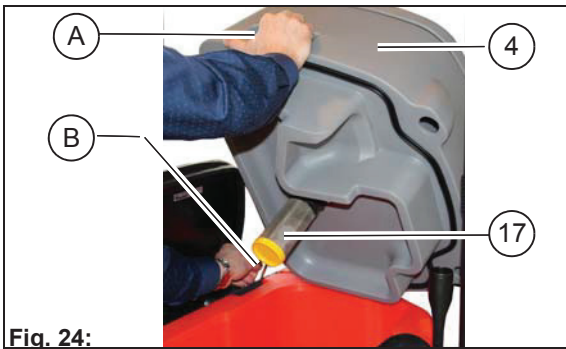


Fig. 24:

1. Empty the waste water tank, see section 5.5.1.
2. Open the tank cap **Fig. 24-4** of the waste water tank.
 - Put one hand in the recessed grip **Fig. 24-A** of the tank cap.
 - Open the tank cap until the support **Fig. 24-B** engages.
3. Remove the drain hose from the holder and position it above a drain in the ground. Open the cap of the drain hose.
4. Flush out the residual dirt with fresh water.
5. Also flush the drain hose.
6. Close the tank cap:
 - Put one hand into the recessed grip **Fig. 24-A** and open the tank cap a little further.
 - Unlock the support **Fig. 24-B** with your left hand and close the tank cap.

5.5.3 Cleaning the suction filter

Check the function of the suction filter **Fig. 24-17** daily and clean it as required.

1. Remove the suction filter from the neck.
2. Clean the suction filter under running water.
3. Mount the suction filter on the neck again.

5.5.4 Checking the gasket at the drain hose



Fig. 25:

Check the function of the gasket at the drain hose **Fig. 25-A** daily, replace it after 125 operating hours at the latest.

After use, check the drain hose for soiling and clean if necessary.

5.5.5 Checking the gasket in the tank cap

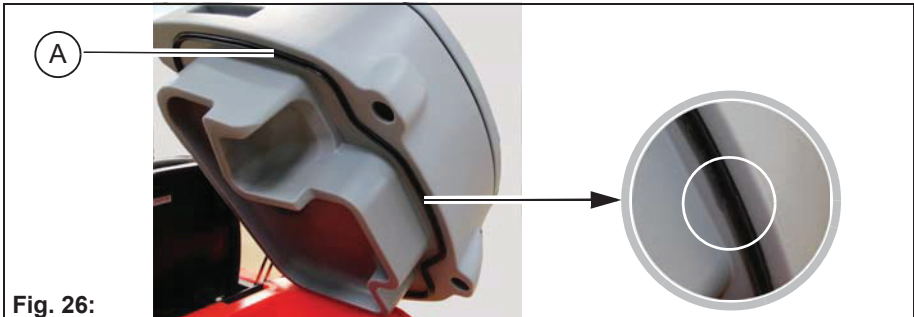


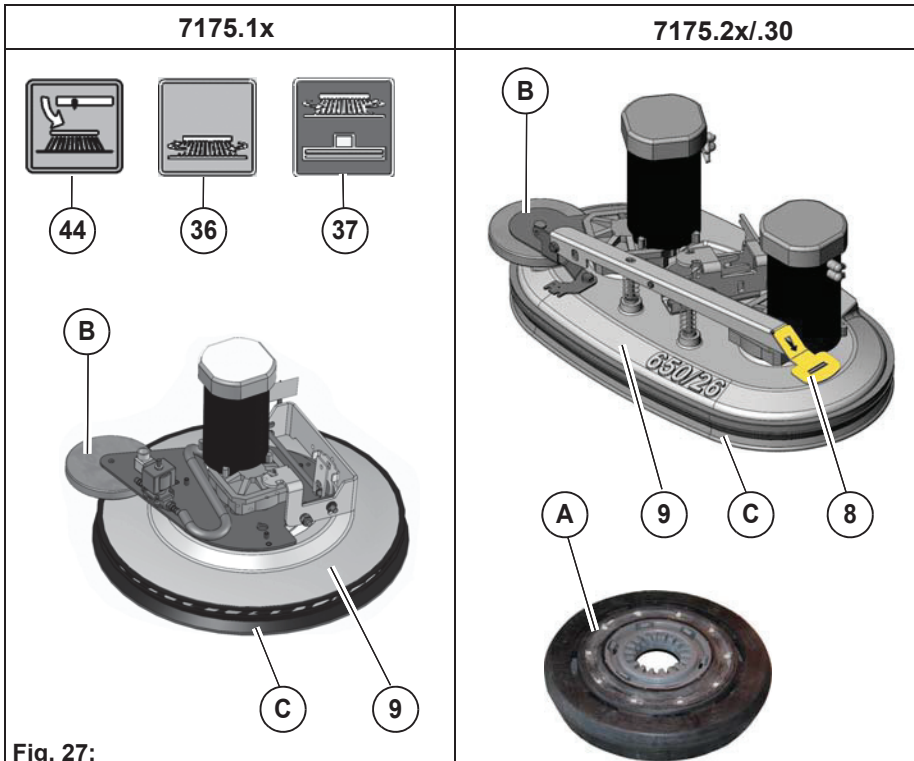
Fig. 26:

Check the function of the gasket in the tank cap **Fig. 26-C** daily and replace it if damaged.

When replacing the gasket:

- Ensure that the installation position is correct.
- Ensure that the gasket is pressed fully into the groove.
- Ensure that the gasket is seated correctly.

5.6 Brush head



5.6.1 Cleaning the brushes

Clean the brushes **Fig. 27-A** in the brush head **Fig. 27-9** daily or as required.

1. Decouple the brush, see section 5.6.3.
2. Thoroughly clean the brush under running water.
3. Couple the brush, see section 5.6.4.



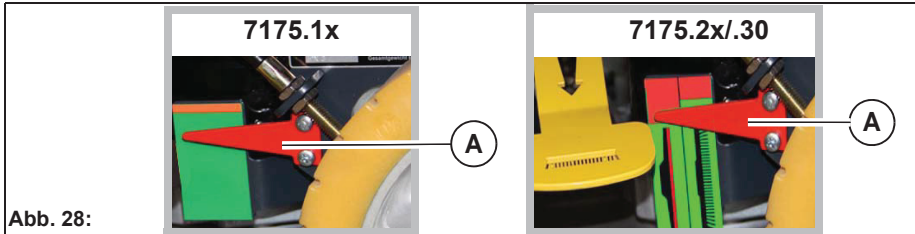
Note

If the brush head has two brushes, make sure that the cleaned brushes are installed on the same side in the brush head where they were removed.

5.6.2 Replacing the brushes/pads

Use the indicator **Fig. 29-A** on the brush head to:

- determine the wear of the brushes/pads (the brush head must be lowered)
- determine whether the brushes/pads have been assembled.



Change the brushes/pads at the latest when the red pointer is in the red zone.

1. Decouple the brush/pad, see section 5.6.3.
2. Insert the new brush/pad, see section 5.6.4.



Attention

If **no** brushes/pads have been assembled, the red pointer is in the red zone of the indicator.

5.6.3 Decoupling the brushes/pads

Variant 7175.1x:

To decouple the brush/pad, push button **Fig. 27-44** for approx. 5 seconds until the four consecutively flashing symbols in the display panel have gone out.



After the brush has been decoupled, the upper or lower symbol bar flashes alternately. The machine is not ready. To complete brush decoupling, acknowledge the process with the key switch OFF/ON.



Variant 7175.2x/.30:

1. Turn off the machine.
2. To decouple the brushes/pads, press down the lever **Fig. 27-8** with your foot.

5.6.4 Coupling the brushes/pads

Variant 7175.1x:

1. Turn on the machine.
2. Actuate the parking brake.
3. Position the brush/pad centrally to the brush head.



Attention

The sealing strip of the brush head must enclose the brush fully and must not fold over!

4. Push the brush head button **Fig. 27-36** or the brush head and squeegee button **Fig. 27-37**.
5. Slightly actuate the accelerator pedal; the brush is coupled automatically.

Variant 7175.2x/.30



Fig. 29:

1. Place the brush/pad underneath the brush head holder.
2. Raise the brush/pad and press it firmly into the holder **Fig. 28**.
3. Turn the brush/pad fully and use your hand to press it again until the brush/pad has engaged completely.

5.6.5 Replacing the deflecting roller

Check the deflecting roller **Fig. 27-B** weekly for damage and replace it as required.

5.6.6 Replacing the sealing strip of the brush head

Check the sealing strip **Fig. 27-C** weekly for wear and replace it as required. To do this, loosen the fastener and remove the sealing strip. Assembly is in reverse order.

5.7 Squeegee

Optimum vacuuming is achieved through:

- Clean and undamaged or not worn sealing strips.
- Correctly set inclination angle and correct height adjustment of the sealing strips.

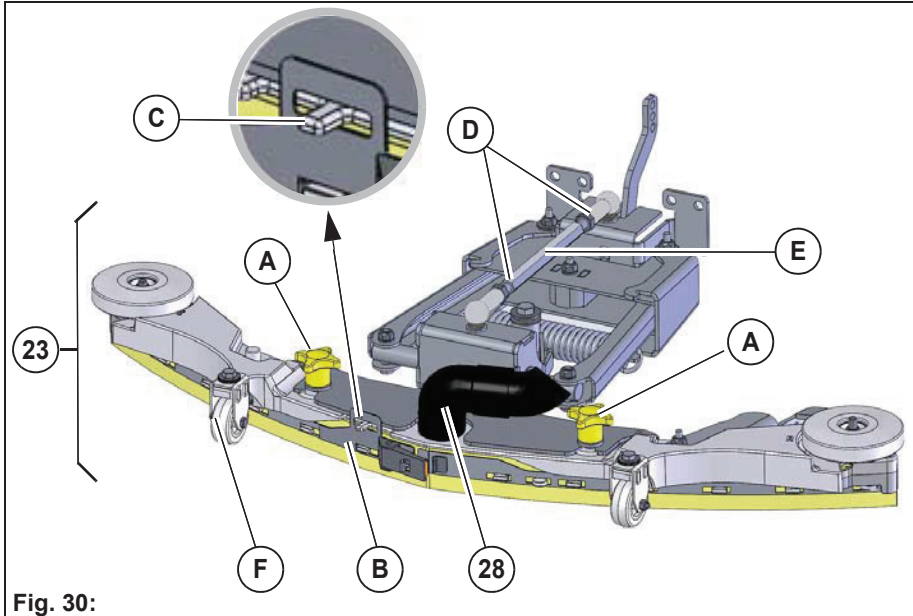


Fig. 30:

5.7.1 Cleaning the squeegee

Check the squeegee **Fig. 30-23** daily for soiling and foreign particles and clean it as required.

1. Pull out the suction hose **Fig. 30-28**, loosen the two star-shaped handles **Fig. 30-A** and remove the squeegee.
2. Thoroughly clean the squeegee and remove foreign particles.
3. Assembly is in reverse order.

5.7.2 Replacing the sealing strips

Check the sealing strip **Fig. 31-G** and slot strip **Fig. 31-H** at the squeegee weekly for wear and intactness. If the used sealing 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.

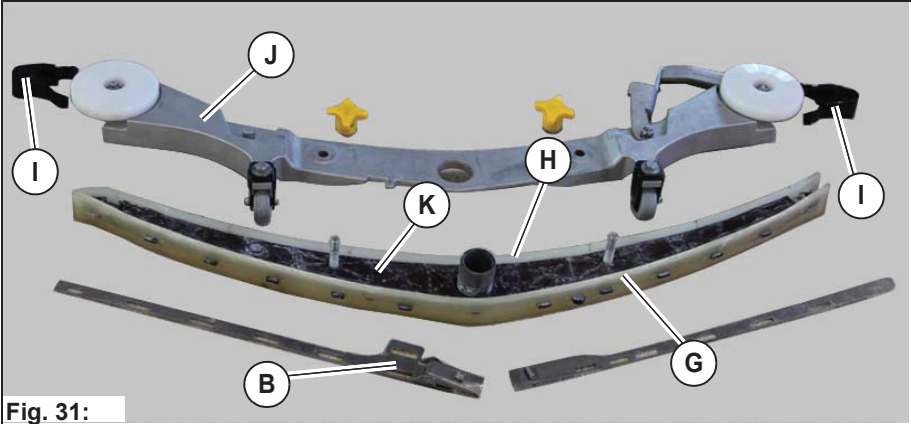


Fig. 31:

1. Pull out the suction hose **Fig. 30-28**.
2. Loosen the star-shaped handles **Fig. 30-A** and remove the squeegee.
3. Press together the protective caps **Fig. 31-I** and pull them out.
4. Loosen the clamping band **Fig. 31-B** and remove it from the catch **Fig. 30-C**.
5. Pull out the aluminium body **Fig. 31-J** from the top.
6. Remove the sealing strip **Fig. 31-G** and slot strip **Fig. 31-H** from the plastic body **Fig. 31-K**.
7. Before turning or replacing the sealing strips, thoroughly clean the plastic body!
8. Assembly is in reverse order.

5.7.3 Adjusting the sealing strips

Inclination adjustment

The correct inclination adjustment is decisive for:

- Ensuring that the sealing strips of the squeegee rest evenly with the complete contact surface on the ground.
- Ensuring that the squeegee runs smoothly and evenly during the suction process.

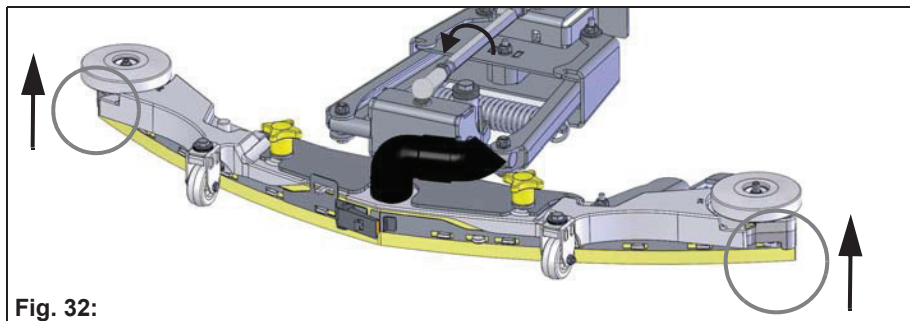


Fig. 32:

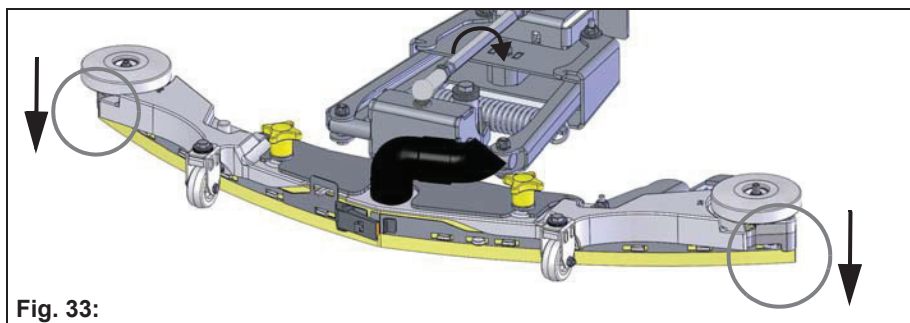


Fig. 33:

1. Place the machine on a level surface and lower the squeegee.
2. Loosen the lock nuts **Fig. 30-D** and turn the threaded bar **Fig. 30-E** to adjust the squeegee ensuring both ends of the sealing strips barely have contact with the ground.
 - Turn the threaded bar counter-clockwise: The distance of the sealing strip to the ground increases at the ends **Fig. 32**.
 - Turn the threaded bar clockwise: The distance of the sealing strip to the ground decreases at the ends **Fig. 33**.
3. Turn on the machine and check the suction pattern. When driving, the sealing strips must be turned over evenly everywhere (centre and outside).
4. Tighten the lock nuts of the threaded bar to 54 Nm.

Height adjustment

The height adjustment (X) of the supporting rollers **Fig. 34-F** has been set to 3 mm in the factory. If striping still occurs despite optimum inclination adjustment, set the distance of the supporting rollers to the lower edge of the sealing strip by adjusting the number of washers under the supporting roller holder.

Number of washers / Distance to the ground (X)	Use
1/2mm	Very smooth floor surfaces, e.g. coated screed, PVC, linoleum
2/3mm	Standard setting
3/4mm	Very uneven floor surfaces, e.g. poorly laid tiles (water does not drain off)

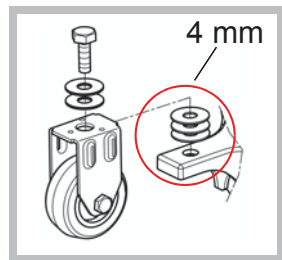
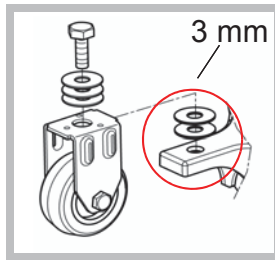
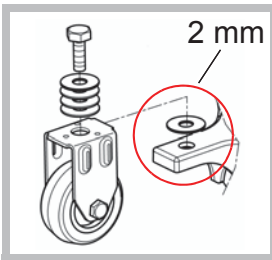
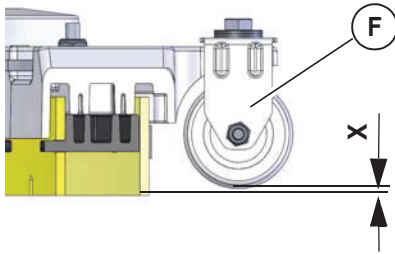


Fig. 34:

5.8 Options

The following options are available for Scrubmaster B75 R.

Item	Designation	Order no.
10	On-board chemical metering system	7678.30
14	Working spotlight	7092.50
16	Warning device forwards gear	7091.50
19	Coarse dirt sieve	7060.50
23	Wiper and squeegee 760	7176.05
27	Hand suction tool, including holder	7036.60
29	Tray	7009.50
30	Automatic filling unit	7743.00
45	Fleet-Recorder Standard	5305.00



Fig. 35:

5.8.1 On-board chemical metering system

The on-board chemical metering system is used for optimum metering of the cleaning agent.



Attention

Only use cleaning agents suitable for automatic machines (foam retarded). We recommend use of our cleaning and care agents specifically developed for the machines. These products meet the requirements of the German Detergent and Cleaning Agent Act (WRMG).

Putting into service

1. Fill the canisters **Fig. 36-A** with cleaning agent.
2. Turn the machine on with the key switch.
3. Switch on the chemical metering system via the button **Fig. 36-34**.
4. Press the quick ventilation switch **Fig. 36-B** at the dosing pump until cleaning agent is available at the non-return valve.

Setting the mixing ratio

1. Remove the grey cover **Fig. 36-C** at the dosing pump.
2. Set the mixing ratio according to the used cleaning chemicals.
3. Basic setting = 1:700

Set the rotary knob between stage 1 and 2, see the table.

Stage	Detergent	Mixing ratio
1	0.1 %	1:1000
2	0.2 %	1:500
3	0.3 %	1:333
4	0.4 %	1:250
5	0.5 %	1:200
6	0.6 %	1:167
7	0.7 %	1:143
8	0.8 %	1:125
9	0.9 %	1:111
10	1.0 %	1:100

Fig. 36:

Maintenance

Check the hose section **Fig. 36-D** in the hose pump (length approx. 23 mm) and replace it if necessary.

5.8.2 Working spotlight

The working spotlight is used to enhance lighting of the working area and must be aligned accordingly.



Use the button to switch the working spotlight on and off.

- Push the button: Working spotlights ON
- Push the button again: Working spotlights OFF

5.8.3 Warning device forwards gear

When activating the warning device forwards gear, the warning lamp flashes and an acoustic signal is output.



Use the button to toggle between two options:

- Push the button once: Warning lamp flashes
- Push the button twice: Warning lamp flashes In forwards gear, a warning signal is additionally output.

Push the button again: Warning device OFF

5.8.4 Coarse dirt sieve of waste water tank

The coarse dirt sieve filters coarse dirt particles from the waste water tank and thus prevents clogging of the drain hose.

5.8.5 Wiper and squeegee 760

This option is recommended when the working area is larger than 790 mm.



Fig. 37:

- To replace the brushes, raise the wiper at the handle **Fig. 37-A** and swivel it to the side.
- If the wiper is not required, it can be hooked at the intended position using the locking lever **Fig. 37-B**.

Maintenance

- Maintenance and servicing squeegee see section 5.7.
- Check the rubber of the wiper weekly for wear and replace it if necessary. The wiper rubber can be used four times.

5.8.6 Tray

The tray is used to transport cleaning utensils.



Note

Before opening the cover of the waste water tank, remove the tray!

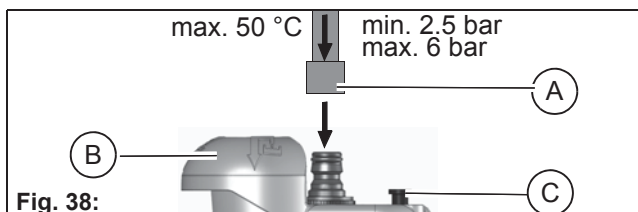
5.8.7 Automatic filling unit

Optionally, the solution tank can be filled via the automatic filling unit.



Attention

According to DIN EN 1717, the automatic filling unit must not be operated without a system separator (operating manual).



1. Fit the water connection **Fig. 38-A**. Do not yet open the water supply!
2. Push the operating button **Fig. 38-B**. The indicator knob **Fig. 38-C** protrudes.
3. Open the water supply – water starts to flow.
4. The filling unit switches off automatically when the tank is full. The indicator knob **Fig. 38-C** no longer protrudes.
5. Close the water supply and remove the water connection. Use a water line fitted with a stop valve!



Note

The machine can also be filled manually through the opening in the operating button **Fig. 38-B**. Check the level in the level indicator **Fig. 35-6**.

5.8.8 Fleet-Recorder Standard

The Fleet-Recorder records operating times and further operating conditions of the machine.



Fig. 39:

Putting into service

1. Turn on the machine with the ignition key **Fig. 39-A**.
 - Red LED of the i-Button Reader ON.
2. Press the i-Button Key **Fig. 39-B** against the i-Button Reader **Fig. 39-C** for one to 2 sec.
 - Red LED OFF.
 - The operating data recording system is active.

If the machine is **not** registered with the i-Button Key, the following condition arises according to the selected option:

Optional	Indicator LED	Machine function*	Data recording
Standard	Red LED ON	Fully functional	The operating data recording is activated or fully suppressed according to the presetting. GPS data is recorded as standard.
Option 5400.00	Red LED ON	Function of the working tools is locked, transportation is possible	
Option 5400.10	Red LED ON, a warning signal is additionally output after approx. 5 seconds	Fully functional	

*deviating machine functions depending on the respective customer configuration possible



Note

Red illuminated LED or warning signal request the activation of the operating data recording system via the I-Button Key!

Ending operation

Turn off the machine with the key switch.

EC Declaration of Conformity

Hako GmbH
Hamburger Str. 209-239
23843 Bad Oldesloe, Germany

declare in sole responsibility that the following products

Scrubmaster B75 R type: 7175

on which this declaration is based correspond with the relevant basic safety and health requirements of the 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, 23.01.2018



Ricardo Ruiz Porath
Product line Manager
Cleaning Technology



Hako: environmentally friendly from the start

We want to leave a clean earth behind. Protecting resources, environment and the climate therefore governs all our activities. Independent Institutes have confirmed this. You will find out more about our commitment on www.hako.com

Everywhere and quite close to you

Our efficient distribution and service network guarantees short journeys and fast help.

Purchasing, rental, leasing

We offer you a multitude of individual and attractive financing and procurement possibilities.

We are here for you day and night

The Hako stand-by and spare parts express service guarantees the highest availability.

Reliable cleanliness

Our machines satisfy your highest demands. Reliability thanks to quality "Made by Hako".



Hako GmbH
Head Office
Hamburger Str. 209-239
23843 Bad Oldesloe
Germany
Tel. +49(0) 4531-806 0
info@hako.com
www.hako.com