

Introduction

Preface

Dear customer,

We hope that the excellent qualities of the machine justify the faith you have shown in us by purchasing the product. In order to ensure that you can work with the machine safely, please read the chapter on safety before starting it up.

Your safety, and that of others, is dependent on your ability to control the machine. Therefore, read the operating manual thoroughly before operating the machine for the first time.

The operating manual contains all the important information you need to operate, maintain and service the machine. Sections of this operating manual which are relevant to safety are marked by the hazard label.

If you have any questions with regard to the machine or operating manual, you can contact your Hako service partner at any time.

We would like to emphasize that no legal claims can be asserted in respect of any work described in this manual. Please pay attention that only original spare parts are used for any necessary maintenance and repair work. Only original spare parts can guarantee long, reliable equipment operation. We reserve the right to make technical improvements.

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Intended use

The Sweepmaster B500 is a sweeping machine conceived exclusively for sweeping up dry and wet refuse from areas such as production plants, warehouses, car parks and pedestrian precincts. In addition, the Sweepmaster B500 can also be used to remove dry dirt from carpets. Any use beyond this is regarded as improper use. The manufacturer is not considered liable for any damage resulting from improper use; the user is solely responsible for all the risks. Intended use also includes maintaining and observing the operating, maintenance and repair conditions prescribed by the manufacturer.

The Sweepmaster B500 may only be operated, serviced and repaired by personnel who are familiar with the work involved and are aware of the risks. The applicable accident prevention laws must be observed and any generally accepted health and safety directives must be maintained. The manufacturer is not deemed liable for any damage resulting from unauthorized modifications to the machine.

Introduction

Information on the warranty

As a fundamental rule, the regulations in the purchase agreement apply.

There are no rights to claims for compensation under the terms of warranty when the damage is a result of failure to observe the stipulations concerning service and maintenance. Maintenance work must be completed by an authorized Hako service center and confirmed in the "maintenance logbook"; this serves as proof of rights to claims under the terms of warranty.

The following are excluded from the terms of warranty: normal wear and tear and damage caused by overuse, fuses, improper handling or unauthorized modifications. Claims under the terms of warranty are also annulled when damage occurs to the machine as the result of the use of parts and accessories not explicitly approved by us or to the failure to observe maintenance procedures.

Acceptance of the machine

Inspect the vehicle immediately on delivery for signs of transport damage.

These will be replaced when the damage is immediately confirmed by the haulage contractor and the damage report is sent to our authorized sales partner together with the consignment note.

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Safety information

1 Safety information

1.1 Safety and Warning Symbols

All paragraphs in this manual referring to your personal safety, the safety of your machine and the environment protection are attributed one of the following warning symbols:

Symbol	Hazardous for ...	Description
Safety Provisions 	persons and goods	Safety Provisions in dangerous situation caused by misuse inaccurate adherence of instructions or prescribed work routine.
CAUTION 	the machine	important information on handling the machine in order to maintain operability.
Ecological hazard 	the environment	due to use of substances representing an inherent danger to health of environment

Safety information

1.2 General information

- In addition to the information provided in this operating manual, all the legally applicable health and safety provisions must be observed.
- Before starting up the machine for the first time, read the operating manual supplied with it thoroughly as well as any separate manuals provided with additional or attachment devices and observe all the information during work.
- The equipment may only be operated, serviced and repaired by personnel trained by Hako technical experts.
- Particular attention should be paid to the information regarding safety. Technical expertise is the key to preventing errors when operating the machine and ensuring trouble-free operation.
- The operating manual must always be kept at the operating location of the machine and, as a result, should be kept in a safe place on the equipment.
- If the equipment is sold or rented out, these documents should be transferred to the new owner/operator.

The transfer should be confirmed!

- The warning labels attached to the machine provided important information concerning safe operation. Illegible or missing labels must be replaced by new ones.
- For reasons of safety, always use original spare parts.

1.3 Operating information

- Before starting the machine up for the first time, the battery to be used must be fully charged, properly, by implementing the initial battery charge routine. Please pay attention to the operating manual provided with the charging unit as well as the manual from the battery manufacturer. Hako assumes no liability for damage to the battery caused by a fault when the battery is charged for the first time.
- Check the operational safety of the machine each time before starting it up! Clear any faults immediately!
- Before starting work, the operator must be fully familiar with all adjustment, operating and control elements as well as their respective function! It is too late to do this when

the machine is actually in operation!

- Always wear heavy duty, non-slip footwear when working with the machine.
- The machine may only be used on those surfaces which have been approved by the contractor or person appointed by him.
- When using the machine, it is essential to pay attention to third parties, especially children.
- Accelerate the machine immediately after switching on the brush head drive, otherwise imprints of the brush could be produced.
- The machine is not suitable for clearing up hazardous, inflammable or explosive fluids, dust or substances.
- It is forbidden to use the machine in potentially explosive atmospheres.
- The side brush must be raised in order to transport the machine.
- The machine has been conceived for use on level surfaces with a maximum gradient of 2%.

Safety information

1.4 Maintenance information

- Operating personnel must complete the necessary daily and weekly maintenance work. All other maintenance work must be completed at your local Hako service center.
- The maintenance work and maintenance intervals prescribed in the operating manual must be adhered to.
- Suitable tools must be used for cleaning and maintenance work.
- The machine must be inspected by a recognized technical expert in respect of operational safety, within the terms of the applicable accident prevention laws, at reasonable intervals (we recommend at least once a year) and following modification or repairs .
- Spare parts must comply with the minimum technical requirements stipulated by the manufacturer! This is ensured by the use of original spare parts.
- The machine must be switched off prior to cleaning or servicing it or to replacing parts. The drive bar must be out of operation!
- Always disconnect the battery plug before starting any work on the elec-

trical installation.

- When working in the area of the raised hood, it must be hinged open fully to prevent it being knocked shut or further open and down unintentionally.
- It is not permitted to clean the machine with a pressure washer or steam blaster.
- It is not permitted to use aggressive and corrosive cleaning agents.
- Allow the machine to dry after being cleaned, e.g. over the weekend.
- Only start the machine up when all the safety equipment has been installed and brought to its protecting position.

1.5 Particular risks

Electronics

- In the case of defects in the electrical installation, switch the machine off immediately and clear the fault.
- Work on the electrical equipment may only be carried out by electricians who have received the necessary training and in accordance with the electrical engineering regulations.
- The machine's electrical equipment must be inspected/checked at regular intervals. Defects, such as loose connections and cable damage, must be rectified immediately.

Safety information

Batteries

- Observe the information in the operating manual provided by the battery manufacturer.
- It is possible that sparking will occur when connecting the batteries.
- Batteries may only be handled and changed by properly skilled maintenance personnel.
- The machine has been set up for operation using maintenance-free batteries. If other battery types are used, the machine must be set up for use with them by an authorized Hako service center.
- Never lay any metallic objects or tools on batteries - risk of short circuit!
- For further safety information, refer to supplementary sheet 88-60-2556 - notes on driving batteries.

1.6 Environmental protection

- A certain factual expertise is required in order to use substances which could represent a risk to health and the environment.
- Observe the applicable laws and local regulations when disposing of waste.
- Used batteries with the recycling symbol contain reusable commodities. In accordance with symbol with the crossed out bin, these batteries must not be disposed of in domestic waste. The return and recycling of batteries must be agreed on with Hako's authorized dealers in accordance with § 8 BattV (Battery Directive)!

Safety information

1.7 Labels on the machine

The following safety and warning labels are attached to the machine where easily legible. Missing or illegible labels must be replaced immediately.

Company logo (Fig. 1/1)



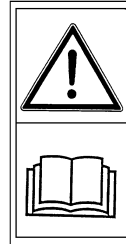
Rating plate (Fig. 1/2)



Filter shaker (Fig. 1/3)



Read and observe the operating manual (Fig. 1/4)



Maximum permissible gradient (Fig. 1/5)



Wear compensator for side brush (Fig. 1/6)



Wear compensator for rotary brush (Fig. 1/7)



Safety information

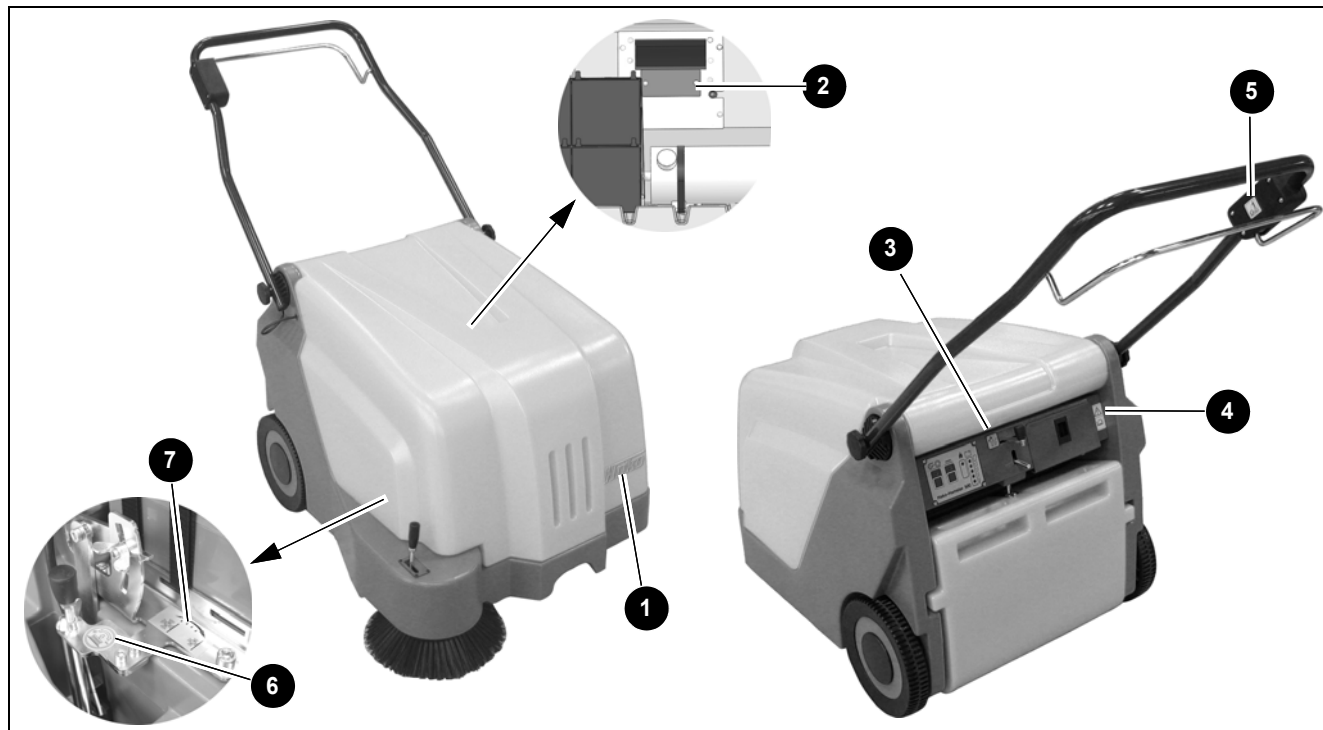


Fig.1

Starting Up

2 Starting Up

2.1 Unpacking and assembling

Open the box, two people are required to remove the machine from the protective foil and place it on the floor.

1. Fix the side brush (Fig. 2/1) to the axle of the side brush drive using the wing bolt and washer supplied.
2. Loosen the two knurled screws (Fig. 2/2) holding the handle a few revolutions until the handle can be raised and positioned. Set the handle to a height comfortable for the user and then tighten the knurled screws.
3. Loosen the locking bolt holding the hood (Fig. 2/3) and pivot the hood open.
4. Fix the disassembled cable lug (Fig. 2/4) to the corresponding battery contact. It is possible that sparking will occur when connecting the batteries!
5. Close the hood and lock in place with the bolt.
6. The Sweepmaster B500 is now ready to operate.

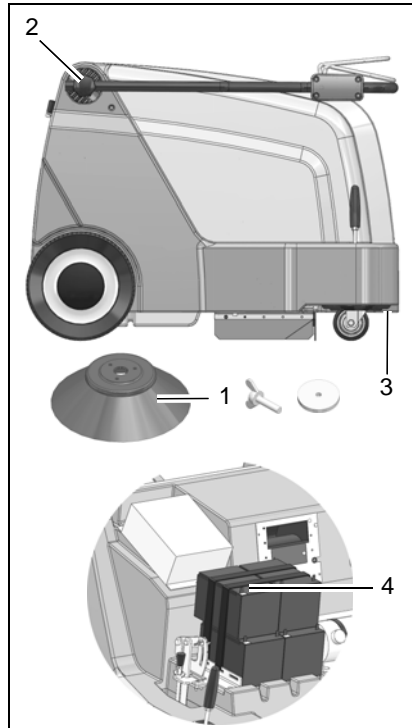


Fig.2

2.2 Instruction

Instructions to operators are required before putting the machine into service. Only technicians from your local, authorized Hako dealer are allowed to provide initial instruction on how to use the machine. The manufacturing plant notifies the dealer immediately after delivering the machine and the dealer will contact you to arrange a date for providing the initial instruction.

2.3 Initial battery charge



Before starting the machine up for the first time, the batteries to be used must be fully charged, properly, by implementing the initial battery charge routine. Hako assumes no liability for damage to the battery caused by a fault when the battery is charged for the first time.

Starting Up

2.4 Prior to starting up

Carry out the following checks before starting the machine:

1. Check the charge status of the batteries.
2. Mount Lint filter for carpet, see chapter 5.7.3.
3. Check the levels of wear on the rotary brush and side brush.
4. Check the fill level of the sweepings container.

2.5 Operation

Please read the Safety Information in Chapter 1. Before switching the machine on, ensure that the drive bar (Fig. 3/3) on the handle has not been actuated.

1. Switch the machine on using the (Fig. 3/1) button: rotary brush drive, dust vacuum and side brush drive are ready to operate.
2. Lower the side brush to its working position using the lever (Fig. 3/4). When working without the side brush: do not lower the side brush and press the button (Fig. 3/2) for the side brush once. The green control lamp goes out.

3. Actuate the drive bar (Fig. 3/3) on the handle: the machine starts to work.



Start work immediately after actuating the drive bar, otherwise imprints could be produced on the floor. Release the drive bar when driving over thresholds.

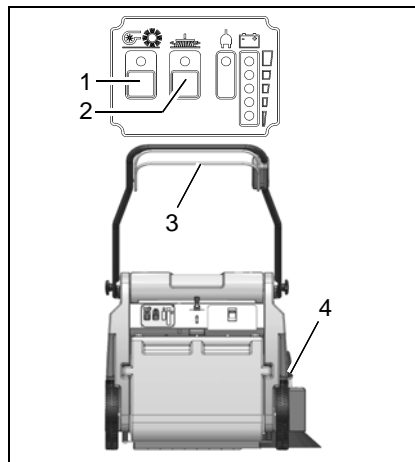


Fig.3

2.6 Stopping the machine

When the drive bar is released, the rotary brush drive, dust vacuum and side brush drive switch off automatically.

2.7 After completing work

1. Drive to an appropriate maintenance area.
2. Stop the machine. Raise the side brush to its idle position and switch the machine off.
3. Actuate the filter shaker.
4. Empty the sweepings container.
5. Check the brush space for accumulations of dirt.
6. Check the charge status of the batteries.



It is not permitted to clean the machine with a pressure washer or steam blaster.

3 Operation

3.1 Method of operation

The Sweepmaster B500 is a machine designed to sweep and clean waste from hard floors and carpets.

The side brush (Fig. 4/1) sweeps the dirt from corners to a position in front of the rotary brush (Fig. 4/2). The rotary brush sweeps the larger particle dirt overhead into the sweepings container (Fig. 4/3). The finer dust picked up is drawn up by the suction turbine, fed into the filter system (Fig. 4/4) and filtered out. Only dust-free air is fed back into the ambient air.

The machine is equipped with maintenance-free batteries (Fig. 4/5), a specially adapted, fully automatic battery charger (Fig. 4/6) and a total discharge signal transducer to protect it against total discharge.



Please refer to the spare parts catalogue on our internet site at www.hako.com for accessories, such as brushes and rotary brushes.

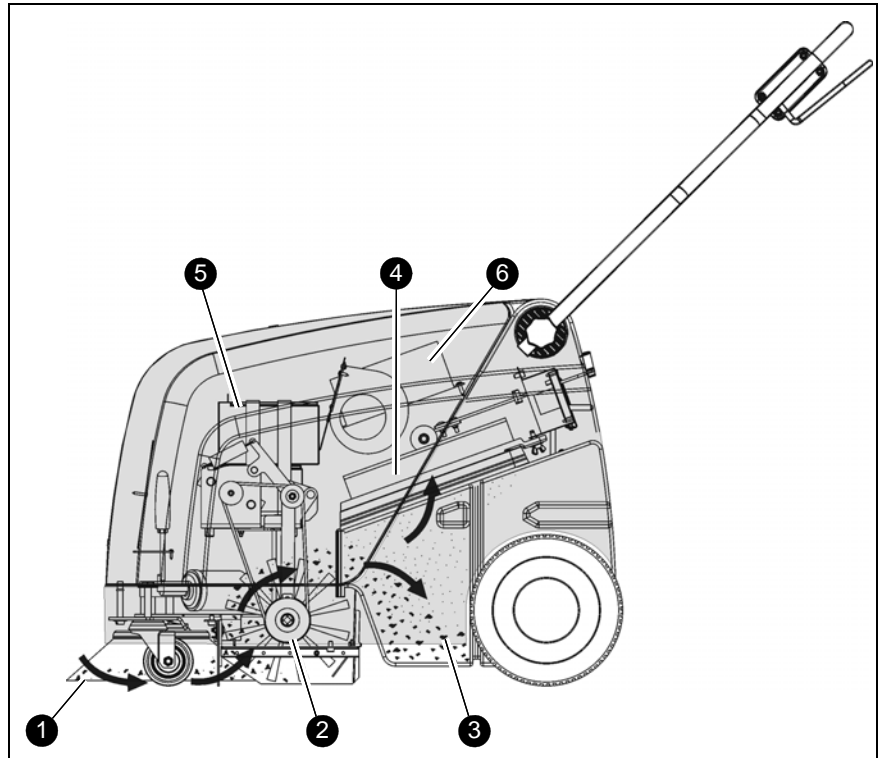


Fig.4

Operation

3.2 Operating and indicator elements

3.2.1 Operating panel

- 1 Control lamp for rotary brush drive, side brush drive and suction turbine
- 2 ON/OFF button for rotary brush drive, side brush drive and suction turbine
- 3 Control lamp for side brush drive
- 4 ON/OFF button for side brush drive
- 5 Control lamp for battery charger operation
- 6 Charge control indicator
- 7 Drive bar

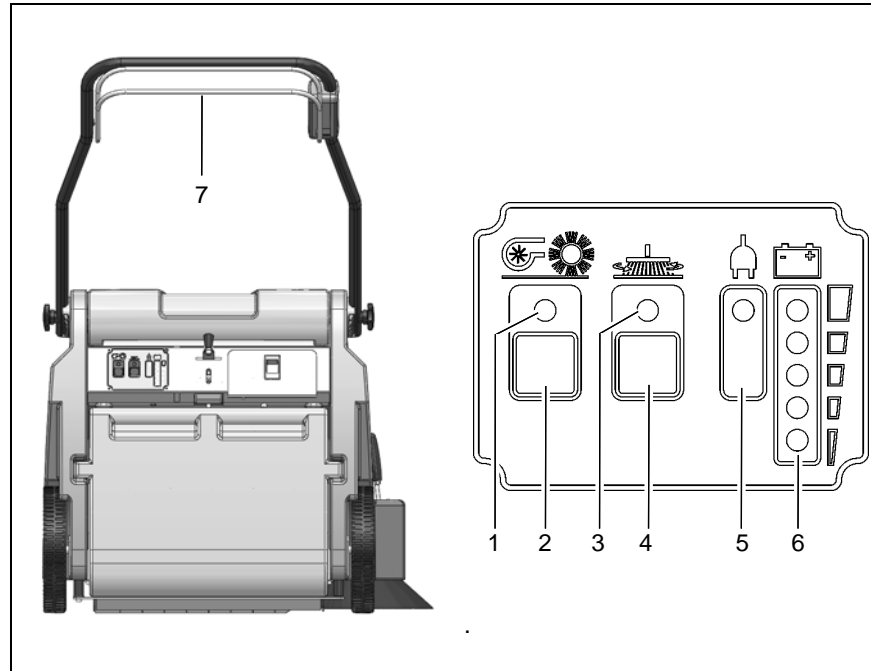


Fig.5

Operation

Control lamp for rotary brush drive, side brush drive and suction turbine (Fig. 5/2)

The green control lamp indicates that the rotary brush drive and suction turbine are ready to operate. If the rotary brush or suction turbine are overloaded, a safety shutdown is triggered and the control lamp flashes.

ON/OFF button for rotary brush, side brush and suction turbine (Fig. 5/1)

The button activates the rotary brush drive, side brush drive and suction turbine so they are ready to operate. The side brush drive can be switched off separately. The suction turbine cannot be switched off separately which prevents the dust vacuum being activated by accident.



To prevent unauthorized use of the machine, switch the machine off using the button (Fig. 5/1).

Control lamp for side brush drive (Fig. 5/4)

The green control lamp indicates that the side brush drive is ready to operate. If the side brush is overloaded, a safety shutdown is triggered and the control lamp flashes.

ON/OFF button for side brush drive (Fig. 5/3)

The button can be used to switch off the side brush drive independently of the rotary brush drive and to activate it for use again.

Control lamp for battery charger operation (Fig. 5/5)

This control lamp indicates that the batteries are being charged.

Charge control indicator (Fig. 5/6)

During the charging process, the machine's electronics system controls the machine is not switched on inadvertently and indicates the charge status. The battery charge status is indicated by 4 green and 1 red LED.

The battery voltage is depicted in 5 levels:

≥ 25.1 V = all green LEDs on
≥ 24.5 V = bottom 3 green LEDs on
≥ 23.9 V = bottom 2 green LEDs on
≥ 22.7 V = bottom green LED on
< 22.7 V = red battery LED flashes

Drive bar (Fig. 5/7)

The drive bar switches all the drives which are ready to operate on or off. The drive bar serves to prevent damage. If the drive bar is released during operation, all the drives are switched off.

Operation

3.2.2 Operating elements on the machine

- 1 Knurled screws for the handle
- 2 Shaking device lever
- 3 Sweepings container lock
- 4 Side brush lever
- 5 Charger cable flap

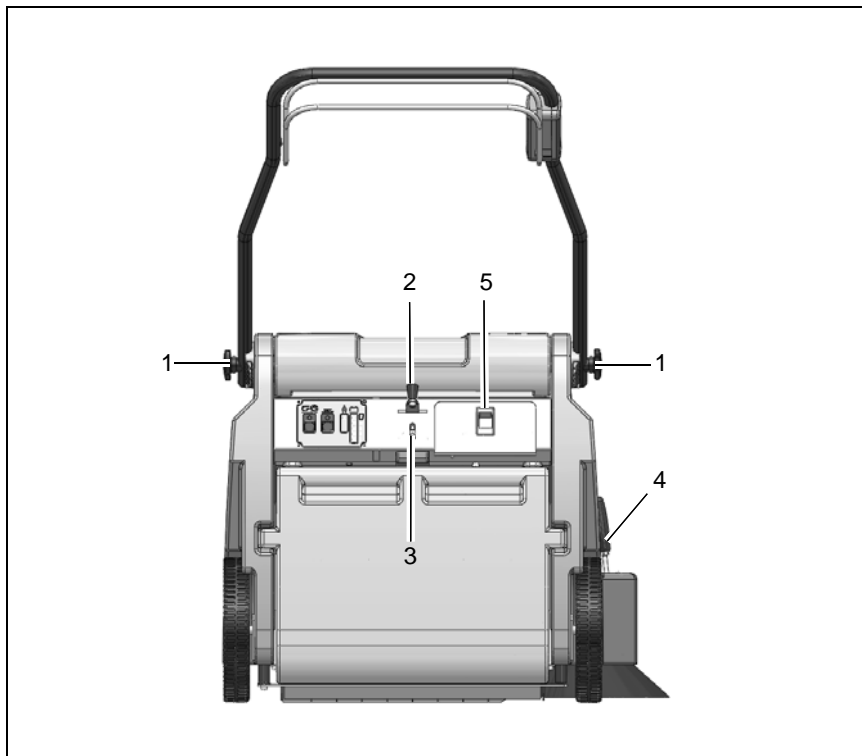


Fig.6

Operation

Knurled screws for handle (Fig. 6/1)

The two knurled screws enable the handle to be adjusted to a comfortable height for the user.

Shaking device lever (Fig. 6/2)

In order to clean the filter in the dust vacuum, switch the shaking device lever several times quickly to the left and right.

Sweepings container lock (Fig. 6/3)

Pull the lock lever up in order to remove the sweepings container.

Side brush lever (Fig. 6/4)

Use the lever to lower or raise the side brush.

Charger cable flap (Fig. 6/5)

The battery charger cable is located behind the flap to the right beside the operating panel. Pull the lock downwards to open the flap.

Technical Data

4 Technical Data

Machine length	cm	80
Machine height (handle folded)	cm	60
Machine width	cm	70
Working width	cm	60
Load capacity, sweepings container	kg	25
Rotary brush width	cm	40
Rotary brush diameter	cm	19
Area coverage, theoretic	m ² /h	2400
Sweepings container volume	Liter	40
Filter surface	m ²	1,1
Nominal voltage	V	24
Power consumption, rotary brush drive	W	210
Power consumption, side brush drive	W	48
Power consumption, suction turbine drive	W	60
Weight without batteries	kg	42
Weight with batteries	kg	56

Technical Data

<p>Noise emission value</p> <p>Sound power level (L_{WA}) measured according to DIN EN 60335-2-72 under maximum working conditions:</p> <p>The sound pressure level (L_{pA}) (at the ear of the operator) measured according to DIN IEC 60335-2-72 under normal working conditions:</p> <p>Measurement inaccuracy (K_{pA}):</p>	<p>dB (A)</p> <p>dB (A)</p> <p>dB (A)</p>	<p>87</p> <p>70</p> <p>2</p>
<p>Vibration</p> <p>The weighted effective value of acceleration, measured in accordance with DIN EN ISO 5349, to which the upper parts of the body (hand-arm) are exposed under normal working conditions:</p>	<p>m/s²</p>	<p>< 2.5</p>

5 Maintenance and Service

General information



It is essential to pay attention to the information in Chapter "Safety Information" before completing any service or maintenance work!

By adhering to the maintenance work recommended by us, you can be sure that the machine is always ready to be put into operation.

Maintenance and repair work necessary on a daily and weekly basis can be carried out by an operator trained to complete the work, all other Hako system maintenance may only be completed by personnel who are correspondingly qualified and trained. Please contact your nearest Hako service center or Hako authorized dealer. Failure to observe this annuls any rights to claims under the terms of guarantee in respect of resulting damage or consequential damage.

Always specify the serial number in the case of inquiries and spare parts orders, refer to section 1.7 - Rating plate.

5.1 Hako system maintenance

The Hako system maintenance:

- ensures that the Hako machine is always ready for operation (preventive maintenance),
- minimizes operating costs, maintenance and repair costs,
- ensures the machine has a long service life.

Hako system maintenance provides individual modules explaining the special technical work to be carried out and prescribes the intervals at which the work should be performed. Parts to be replaced for the individual maintenance tasks are defined and provided in spare parts kits.

Hako system maintenance, customer

Work to be carried out by the customer according to the service and maintenance instructions in the operating manual (daily and weekly). The driver/operator receives proper instruction when the machine is delivered.

Hako system maintenance I:

(every 125 operating hours)

Completed by technical experts from an

authorized Hako service center in accordance with the specific machine system maintenance using spare parts kits.

Hako system maintenance II:

(every 250 operating hours)

Completed by technical experts from an authorized Hako service center in accordance with the specific machine system maintenance using spare parts kits.

Hako system maintenance III/S:

(every 500 operating hours, safety check - at least once a year)

Completed by technical experts from an authorized Hako service center in accordance with the specific machine system maintenance using spare parts kits. Completion of all legally prescribed, safety-related tests in accordance with UVV-BGV-TÜV-VDE

Maintenance and Service

5.2 Proof of Maintenance

<p style="text-align: center;">Handover</p> <p>Upgrading Test drive Handover to customer Instruction completed on: at _____ operating hours</p>	<p style="text-align: center;">Hako System Maintenance I 125 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>	<p style="text-align: center;">Hako System Maintenance II 250 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>	<p style="text-align: center;">Hako System Maintenance I 375 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>
<p style="text-align: center;">Hako System Maintenance III/S 500 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>	<p style="text-align: center;">Hako System Maintenance I 625 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>	<p style="text-align: center;">Hako System Maintenance II 750 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>	<p style="text-align: center;">Hako System Maintenance I 875 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>
<p style="text-align: center;">Hako System Maintenance III/S 1000 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>	<p style="text-align: center;">Hako System Maintenance I 1125 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>	<p style="text-align: center;">Hako System Maintenance II 1250 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>	<p style="text-align: center;">Hako System Maintenance I 1375 operating hours Workshop Stamp</p> <p>completed on: at _____ operating hours</p>

Maintenance and Service

5.3 Maintenance Plan Hako system maintenance, customer

Intervals stipulated.

The following maintenance work must be completed by the customer at the in-

Activity	Interval	
	Daily	Weekly
Check the battery charge; recharge if necessary	o	
Empty the sweepings container	o	
Clean the brush space	o	
Check the filter in the dust vacuum; clean, if necessary	o	
Check the rotary brush and side brush; clean, if necessary	o	
Check the sweeping pattern; readjust, if necessary		o
Check the sealing strips on the rotary brush for signs of wear; clean, if necessary		o
Check the gasket on the sweepings container		o
Check the function of the suction turbine		o
Check the sweepings container lock		o
Test drive and function test		o

Maintenance and Service

Hako system maintenance I

The following maintenance work must be completed by an authorized Hako service center.

Activity	Interval
	Every 125 operating hours
Check the rotary brush and side brush; change, if necessary	o
Check the sweeping pattern; readjust, if necessary	o
Check the gasket on the filter supporting frame; change, if necessary	o
Check the function of the drive bar	o
Check the condition of the tires	o
Test drive and function test	o

Maintenance and Service

Hako system maintenance II

The following maintenance work must be completed by an authorized Hako service center.

Activity	Interval
	Every 250 operating hours
All maintenance work in accordance with Hako system maintenance I	o
Check the function of the charger	o
Check the function of the operating panel	o
Check the steering castor in respect of its running surface and bearing play; change, if necessary	o
Check the filter in the dust vacuum; change the filter if necessary	o
Check the running surface of the wheels; change, if necessary	o
Check the sweepings container lock	o
Test drive and function test	o

