



# Operating manual

**Sweepmaster P900 R (6502.15)**  
**Sweepmaster B900 R (6502.20)**

## 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.

Your own safety, as well as the safety of others, depends essentially on your ability to control the machine. Please read this original operating manual before you use the device for the first time, act accordingly and keep these instructions for future reference or subsequent users. To guarantee safe working with the machine, please read the Safety Notes chapter before putting it into service.

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 machine or the operating manual.

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

Valid as from: April 2014

**Hako GmbH**  
**23843 Bad Oldesloe, Germany**  
**Hamburger Str. 209-239**  
**Phone +49 4531 806-0**

### Intended use

The Sweepmaster is a sweeper designed for commercial use and intended exclusively for collecting dry and wet dirt in manufacturing plants, warehouses, car parks and pedestrian zones. 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. The sweeper must not be used for collecting poisonous, flammable or other substances that are hazardous to health. Intended use also includes compliance with the operating, maintenance and servicing conditions specified by the manufacturer. The Sweepmaster may be used, maintained and repaired only by persons who are familiar with this work and instructed about the dangers. 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 does not accept liability for damage resulting from unauthorised modifications to the machine.

## Introduction

### 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: Natural 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 if the damage is immediately confirmed by the haulage contractor and the damage report is sent to our authorised Hako dealer together with the consignment note.

### Disposal

Make the device inoperable. It must not be a source of danger for playing children.

Dispose of the device according to local regulations. For further information on proper handling and recycling, please contact the Hako dealer from whom you purchased the device.



Used batteries with the recycling symbol contain reusable commodities. At the same time, however, the heavy metals they contain pose a major threat to human health and the environment. Never open or damage batteries. Do not touch, inhale or swallow the contents of batteries. Health hazard! Do not allow batteries to enter the environment. Risk of contamination of soil and water! 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 of old batteries must be agreed with the authorised Hako dealer as required in § 6 and § 8 of the German Battery Law (BattG).

## Table of contents

<b>Introduction</b> . . . . .	<b>2</b>	<b>3</b>	<b>Use</b> . . . . .	<b>19</b>	engine . . . . .	34		
Foreword . . . . .	2	3.1	Functional description . . . . .	19	3.6.5	Moving the machine . . . . .	34	
Intended use . . . . .	2	3.1.1	Sweeping roller . . . . .	19	3.6.6	Switching the electric motor on and off . . . . .	35	
Notes on warranty . . . . .	3	3.1.2	Side brush . . . . .	19	3.6.7	Sweeping . . . . .	35	
Acceptance of the machine . . . . .	3	3.1.3	Filter system / Dust extraction . . . . .	20	3.6.8	Stopping and parking . . . . .	35	
Disposal . . . . .	3	3.1.4	Shaking system . . . . .	20	<b>4</b>	<b>Technical data</b> . . . . .	<b>36</b>	
<b>1</b>	<b>Safety information</b> . . . . .	<b>6</b>	3.1.5	Steering . . . . .	20	<b>5</b>	<b>Maintenance and servicing</b> . . . . .	<b>42</b>
1.1	Safety and warning symbols . . . . .	6	3.1.6	Wheels . . . . .	20	5.1	Maintenance instructions . . . . .	42
1.2	General notes . . . . .	7	3.1.7	Brake . . . . .	20	5.2	General Sweepmaster information . . . . .	43
1.3	Operating instructions . . . . .	7	3.1.8	Travel drive . . . . .	20	5.2.1	Dismantling and installing the sweeping roller . . . . .	43
1.4	Maintenance instructions . . . . .	8	3.1.9	Battery systems . . . . .	21	5.2.2	Adjusting the sweeping level . . . . .	43
1.5	Special risks . . . . .	11	3.1.10	Deep discharge indicator . . . . .	22	5.2.3	Sealing strips for the brush compartment . . . . .	45
1.6	Environmental protection instructions . . . . .	11	3.1.11	Plug connection coding . . . . .	23	5.2.4	Adjusting the folding apron . . . . .	45
1.7	Labels on the machine . . . . .	12	3.2	Controls . . . . .	25	5.2.5	Replacing the side brush . . . . .	46
<b>2</b>	<b>Operation</b> . . . . .	<b>16</b>	3.3	Control panel Sweepmaster P900 R . . . . .	27	5.2.6	Removing the plate filter . . . . .	47
2.1	Instruction . . . . .	16	3.4	Control panel Sweepmaster B900 R . . . . .	30	5.2.7	Basic cleaning of the plate filter . . . . .	48
2.1.1	General information . . . . .	16	3.5	Emptying the dirt hopper . . . . .	32	5.3	Sweepmaster P900 R . . . . .	49
2.1.2	Filling fuel . . . . .	16	3.6	Working . . . . .	33	5.3.1	Engine . . . . .	49
2.1.3	Checking the engine oil level . . . . .	17	3.6.1	Before starting the engine . . . . .	33			
2.1.4	Putting batteries into service . . . . .	17	3.6.2	Starting the engine . . . . .	33			
2.1.5	Inserting batteries . . . . .	18	3.6.3	Sweeping . . . . .	34			
			3.6.4	Stopping and turning off the engine . . . . .	34			

## Table of contents




5.3.2	Checking the engine oil level .....	49
5.3.3	Air filter .....	50
5.3.4	Hydraulic system .....	51
5.3.5	V-belt drive .....	53
5.3.6	Electrical system .....	56
5.3.7	Maintenance plan .....	57
5.4	Sweepmaster B900 R .....	58
5.4.1	Electrical system .....	58
5.4.2	Brake .....	58
5.4.3	V-belt drive .....	59
5.4.4	Maintenance plan .....	61
	<b>EC Declaration of Conformity .....</b>	<b>63</b>

## Safety information

### 1 Safety information

#### 1.1 Safety and warning symbols

All places concerning your safety, the safety of the device and of the environment are provided with these warning symbols in the operating manual.

Symbol		Damage for ...	Definition
Safety instructions		persons or property	Safety instructions for avoiding dangerous situations due to inaccurate or omitted compliance with instructions or specified work sequences.
Note		the machine	Important notes for handling the device for maintaining its suitability for use.
Environmental danger		the environment	Environmental danger due to the use of substances from which a health and environmental risk proceeds.

## Safety information

### 1.2 General notes

- 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 read carefully the operating manual you receive as well as further separate instructions for (additional) attachments and observe them in all aspects in your work.
- The machine may be used, maintained and repaired only by persons who have been instructed by Hako experts.
- This device may not be used by persons (including children) with reduced physical or mental abilities or by persons without sufficient experience and skills.
- You should pay special attention to the safety instructions. For errors in operating the machine can be avoided and trouble-free operation can be guaranteed only with precise factual knowledge.
- The operating manual must be available constantly at the place of use of the machine and should therefore be

kept carefully on the device.

- 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.
- Spare parts must correspond to the original parts with regard to safety.

### 1.3 Operating instructions

- Check the machine for operating safety before every start-up! Remove faults immediately!
- Before starting work, the operator must familiarize himself with all equipment, operating and actuating elements as well as with their function. It is too late to do this 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 device may be driven on.
- When working with the machine, pay

special attention to third persons, especially children.

- The machine is not suitable for removing liquids, dusts or materials that are dangerous, combustible or explosive.
- This machine must not be used as a dust-eliminating machine with a dust filter insert (separator) for eliminating dusts that are hazardous to health.
- The machine must not be used in potentially explosive atmospheres.
- To prevent unauthorised use of the machine, remove the key.
- Check the machine and its work equipment for correct condition and operating safety before use. The machine must not be used if it is not in order.
- Before start-up, adjust the driver's seat so that the roadway and the rear work area are completely visible.
- 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 seat contact switch is monitored

## Safety information

electronically. Any manipulation can lead to automatic locking of the machine.

- Before turning the machine on, always switch off all drives.
- The machine may be started, put into motion and stopped only from the driver's seat.
- Ensure that there is sufficient ventilation (dust and exhaust gases) when performing sweeping tasks in enclosed rooms.

Risk of intoxication!

- The vehicle speed must always be adapted to the surrounding conditions and the load condition. Three-wheeled vehicles have lower driving stability than four-wheeled vehicles, therefore:

Sudden steering movements at high speed or too high speeds when turning can cause the vehicle to tilt over. Turn the machine only on level surfaces, never on slopes.

Drive up and down slopes in a straight line.

Avoid sudden turns when driving uphill or downhill or across slopes. There is a risk of tilting over in an inclined position!

- Do not use the machine on surfaces with a slope that exceeds the slope indicated on the machine.
- Never exceed the permissible total weight and the permissible axle loads. Monitor the filling level of the dirt hopper at regular intervals.
- Only shake the filter when the dirt hopper is in the closed position.
- Do not exceed the maximum load of the hopper!
- With a creeping machine, check the zero point position of the accelerator pedals.
- When driving on a slope, use the brake to slow down the machine; in an emergency, switch off the machine with the key.

### **Sweeppmaster P900 R**

- Do not let the engine run in enclosed spaces! Risk of intoxication!
- Pay attention to hot parts, e.g. cooling water, exhaust manifold, etc.
- If there is a noticeable smell of exhaust gas, stop the engine immediately and determine the cause. Check the exhaust system at regular intervals.

### **1.4 Maintenance instructions**

- Daily and weekly maintenance work must be done 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.
- Pay attention to rotating parts when undertaking cleaning and maintenance work. There is a risk of crushing!
- 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 a year).
- Spare parts must at least comply with the technical requirements specified by the manufacturer. This is guaranteed by original spare parts.
- Only use sweeping rollers and side brushes approved by the manufacturer (see Technical data). The use of other sweeping rollers and side brushes may compromise safety.



## Safety information

- Turn the machine off for cleaning and maintaining the machine as well as before replacing parts. Remove the key.
- The dirt hopper must be cleaned at regular intervals to prevent the accumulation of bacteria.
- The machine is protected against spray water (IPX3). Cleaning the machine with a high-pressure cleaner or steam jet is not allowed.
- If the Sweepmaster is jacked up with a jack, it must be additionally supported appropriately.
- There must be no persons on a jacked up or raised Sweepmaster.
- When changing wheels, use wheel chocks to additionally secure the vehicle against rolling away. If possible, always change wheels on firm and level ground.
- Do not remove or mount tyres or repair them on a rim. When working on the tyres and the rim, always go to an authorised workshop that employs specifically trained personnel and has special safety tools. Never undo the bolts of two-piece rims while the wheel is mounted on the vehicle and there is air in the tyres. Risk of serious injury!
- Do not perform any welding, drilling, sawing or grinding work on parts of the frame. Damaged parts may be replaced only by an authorised Hako workshop.
- Use only original fuses. If stronger fuses are used, the electrical system can be destroyed and there can be fires.
- Always disconnect the minus pole of the battery when working on the electrical system.
- Never leave batteries discharged, always recharge them as quickly as possible.
- Only refill distilled water.
- Never top up battery acid when the cells are in perfect condition.
- To avoid leakage currents, always keep the battery clean and dry and protect it from contamination such as metal dust.
- Battery acid is highly corrosive (keep away from children). Wear safety goggles when checking the acid level. In case of acid splashes into the eye, rinse with water for approx. 15 minutes and consult a doctor immediately. When handling the battery, use suitable protective means (e.g. protective gloves, protective finger guards). Do not use naked flames (risk of explosion).
- There is a risk of crushing and shearing when installing, removing and replacing the battery.
- Fluids (fuel, hydraulic oil) escaping under high pressure can penetrate the skin and cause severe injuries. If coming into contact, consult a doctor immediately to prevent infections. Caution when draining hot oil – risk of burns.
- Thoroughly check the brake systems at regular intervals! Adjustment and repair work at the brake system must only be carried out by authorised Hako workshops or approved brake services.
- Thoroughly check the hydraulic systems at regular intervals. Adjustment and repair work at the hydraulic system must only be carried out by authorised Hako workshops.
- Check hydraulic lines and hoses for damage and leaks at regular intervals. Replace damaged lines and hoses immediately.

## Safety information

### **Sweepmaster P900 R**

- Let the engine cool down before undertaking cleaning and maintenance work. There is a risk of burns at hot surfaces!
- Only use air and oil filters approved by the manufacturer (see Technical data). The use of other filters may compromise safety.
- When transporting the machine, turn off the engine.
- Check the exhaust system at regular intervals.

## Safety information

### 1.5 Special risks

#### Protective devices

- Never operate the Sweepmaster without effective protective devices (this also includes locking of the side door)!

#### Refuelling (Sweepmaster P900 R)

- Extreme caution is required when handling fuel – high risk of fire! Never refuel close to naked flames or ignitable sparks! Do not smoke during fuelling! Turn off the engine, remove the key and apply the parking brake before refuelling. Never refuel in enclosed spaces! Wipe away any spilt fuel immediately.

#### Electrical system

- Only use original fuses with the specified current.
- In the event of malfunctions in the electrical system, switch off the machine immediately and rectify the malfunction.
- Work on the electrical system may be done only in accordance with electrical engineering standards by a specialist trained for this work.
- Regularly inspect/check the electrical equipment of the machine. Defects such as loose connections or

damaged cables must be removed immediately.

- Observe the operating manuals provided by the battery manufacturer.
- Do not place metal objects or tools on batteries – risk of short circuit!
- Ensure that sufficient ventilation is provided in the charging area when charging the batteries – risk of explosion!  
Open the seat hood during the charging process.

### 1.6 Environmental protection instructions

- Adequate knowledge is required for the safe handling of substances which could represent a risk to health and the environment.
- Observe the applicable laws and local regulations when disposing of detergents, see the Federal Water Act (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 of old batteries

must be agreed with the authorised Hako dealer as required in § 6 and § 8 of the German Battery Law (BattG).

## Safety information

### 1.7 Labels on the machine

The following safety and instruction labels are affixed well legibly to the vehicle. Renew missing or illegible labels immediately.

Company logo (Fig. 1/1) front and rear



Parking brake (Fig. 1/2)



Folding apron (Fig. 1/3)



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

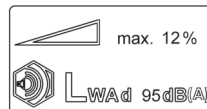


Brake (Fig. 1/5)

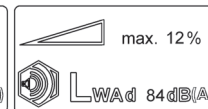


Sound power / Slope (Fig. 1/6)

Sweepmaster P900 R



Sweepmaster B900 R



## Safety information

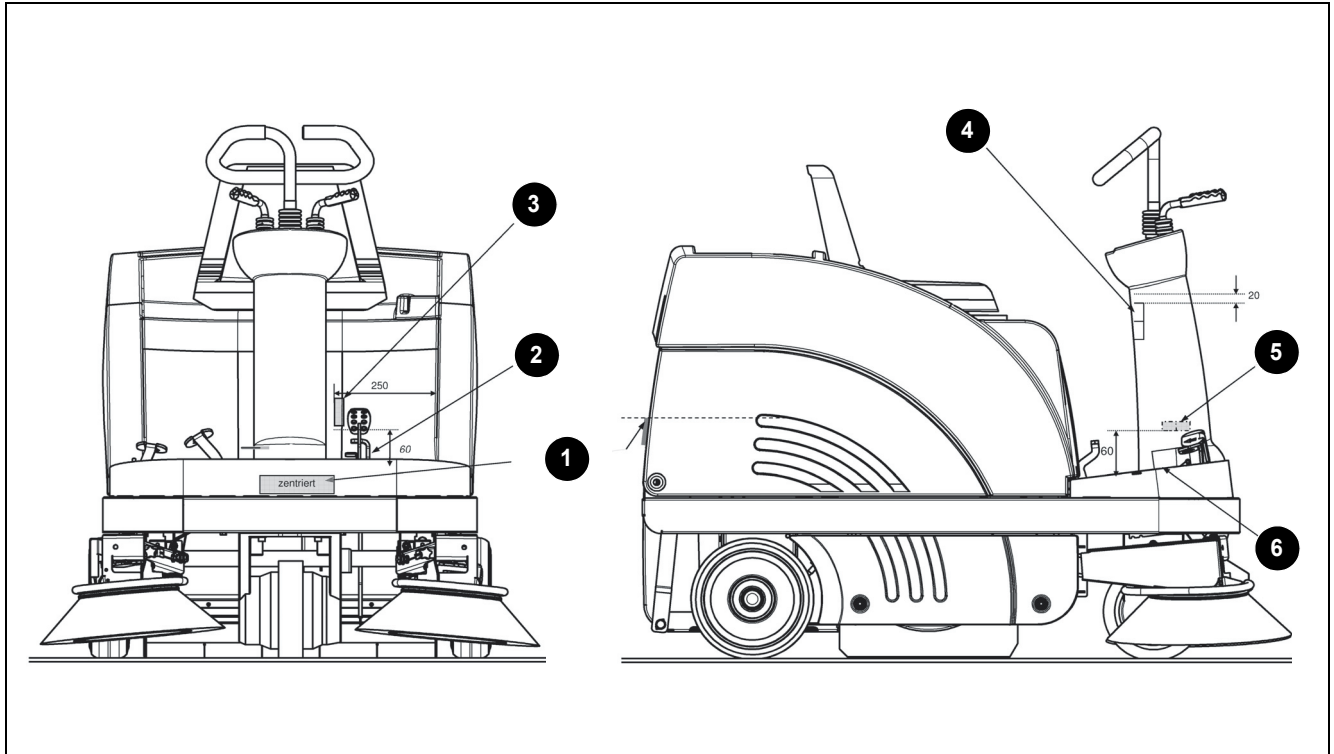


Fig. 1

## Safety information

Rotating parts  
(Fig. 2/1)



Sweeping roller wear compensation  
(Fig. 2/2)



Type plate (Fig. 2/3)



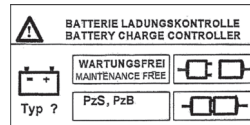
Machine type (Fig. 2/4)

**Sweepmaster P900 R**  
**Sweepmaster B900 R**

High-pressure cleaner (Fig. 2/5)



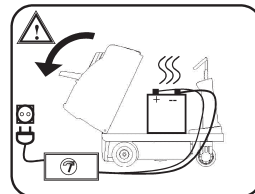
Battery setting (Fig. 2/6)



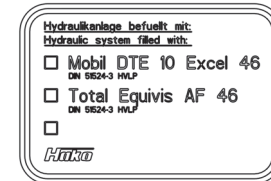
24V sticker (Fig. 2/7)

**24V**

Battery charging (Fig. 2/8)



**Sweepmaster P900 R**  
Hydraulic oil (Fig. 2/9)



Hot surface (Fig. 2/10)



6 bar (Fig. 2/11)

**6 bar**

## Safety information

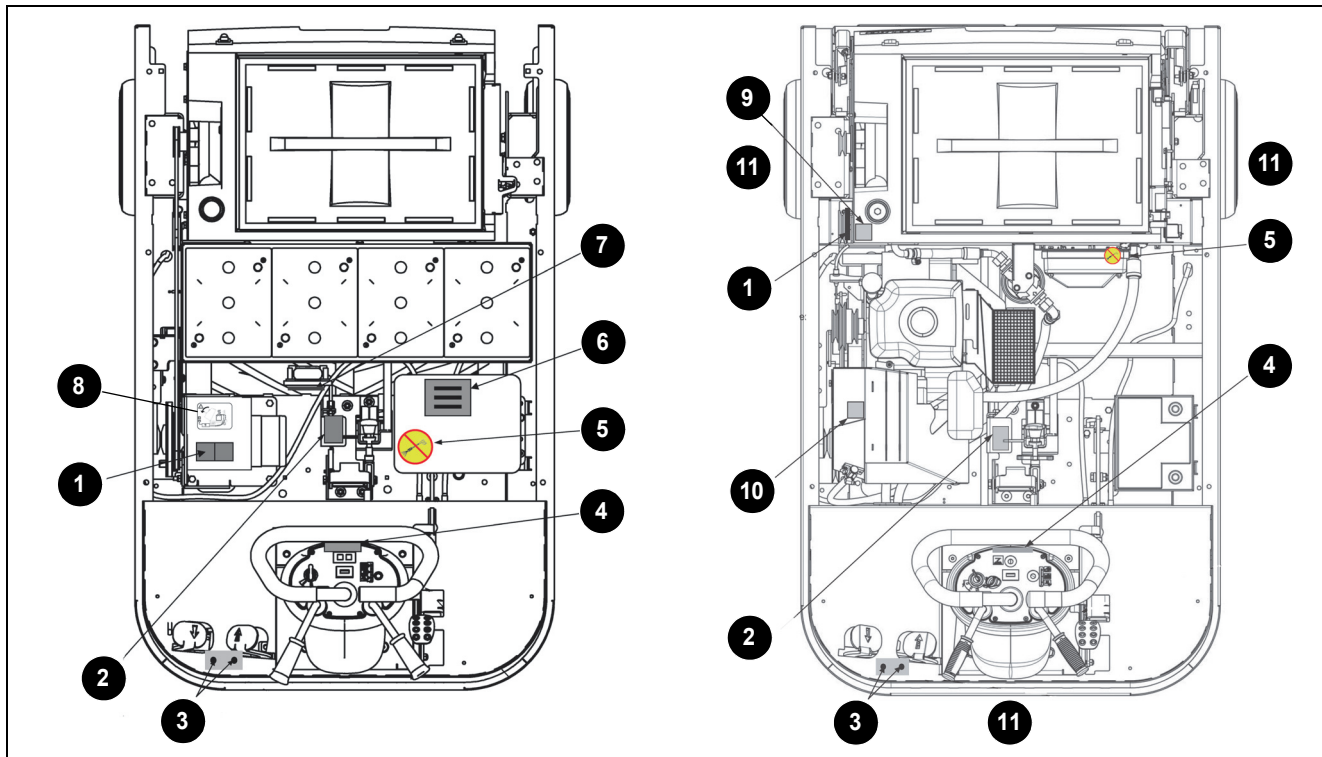


Fig. 2

## 2 Operation

### 2.1 Instruction

Instruction is required before the first start-up. The first-time instruction of the machine must 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.

#### 2.1.1 General information



Smoking or handling with fire is not allowed when filling fuel tanks and working on or in the vicinity of components that contain fuel. Only fill fuel tanks when the engine is turned off.

### Sweepmaster P900 R



Do not use Sweepmaster P900 R at ambient temperatures above 40 °C. Do not start it at temperatures < - 5 °C.

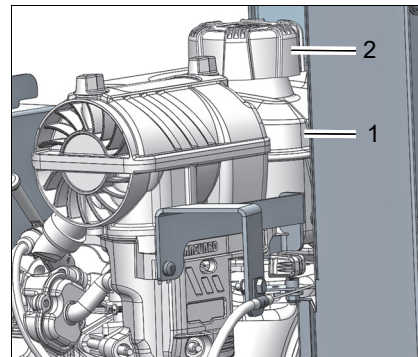
#### 2.1.2 Filling fuel

The fuel tank (Fig. 3/1) is located beneath the folding seat hood.



Only use clean fuel. Only store fuel in approved and sealed containers

- Allow the engine to cool down.
- Fold up the seat hood.
- Make sure the area around the tank cap (Fig. 3/2) is clean!
- Remove the tank cap and check the fuel quantity.
- Fill the tank with standard unleaded petrol. Avoid overfilling!



**Fig. 3**



## Operation

### 2.1.3 Checking the engine oil level

- Engine oil has been filled in the factory.
- However, as a precautionary measure, check the oil level (see section "5.3.2 Checking the engine oil level" ff.).
- A low oil level causes the engine to shut off in order to prevent engine damage.



If oil needs to be topped up, only use clean oil.

Do not use old oil that has been used before!

Only store oil in approved and sealed containers.

### Sweepmaster B900 R

#### 2.1.4 Putting batteries into service

To achieve optimum performance and a maximum service life, batteries must be charged appropriately with commissioning charge after filling. Correct handling and functioning of battery chargers are described in detail in the instructions supplied with each charger.



Since the batteries and the charger must be compatible, only use the batteries and the chargers specified by us. We shall only grant a full warranty if these units are used.

For further information on putting batteries into service and battery maintenance and servicing, refer to leaflet 88-60-2556 "Information on drive batteries".

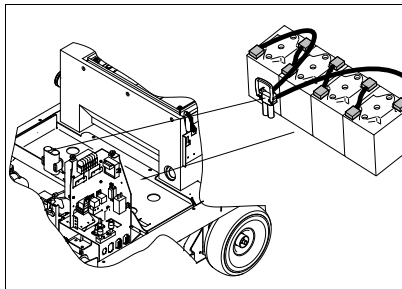


Do not use Sweepmaster B900 R at ambient temperatures above 40 °C.  
Do not start it at temperatures < 0 °C.

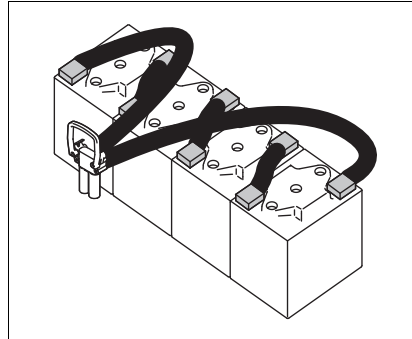
## Operation

### 2.1.5 Inserting batteries

- Turn off the engine and remove the key.
- Hold the machine with the parking brake.
- Fold up the seat hood.
- Insert batteries into the battery tray as shown in the illustration:



**Fig. 4** Inserting batteries



**Fig. 5**  
6 V/175 Ah, PzS  
6 V/180 Ah, GiV,  
maintenance free

- Connect batteries to the wiring harness according to the circuit diagram.
  - Connect the charging plug of the battery connecting cable to the charging cable and charge the batteries appropriately with commissioning charge.
  - After charging the batteries, connect the charging plug to the connector plug.
- The electrical connection is established and Sweepmaster B900 R is ready for use.

### 3 Use

#### 3.1 Functional description

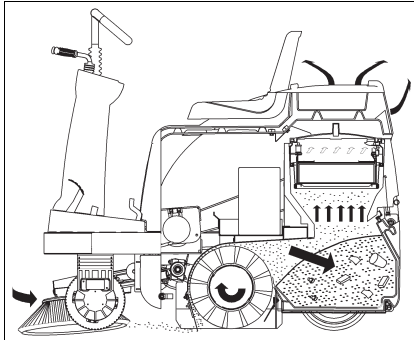


Fig. 6

The side brushes are used to collect dirt at borders and to enlarge the working width as well as to increase the area performance on large surfaces.

The sweeping roller transports the dirt into the dirt hopper. The absorbed fine dust is sucked in by the suction fan and separated by the filter system. The air returned to the environment is always clean.



This sweeper operates dust free.

##### 3.1.1 Sweeping roller

The sweeping roller is equipped with 6 rows of bristles arranged in a V shape. The sweeping roller is 700 mm wide and measures 345 mm in diameter.

##### 3.1.2 Side brush

The side brush is located at the front right of the machine (standard version). The operator lifts and lowers it with a hand lever.

The side brush must be slightly inclined to the side.

The swinging range of the side brush arm is limited by move stop screws.

The side brush is driven by a V-belt.

A second side brush can be fitted on the left-hand side for special applications.

### 3.1.3 Filter system / Dust extraction

The filter system is located in the filter case above the dirt hopper. The suction fan transports the fine dust swirled up by the sweeping roller to the plate filter where it is separated. The fine dust settles on the outer surfaces of the filter blades.



In case of excessive quantities of dust, check and clean the plate filter at regular intervals.

### 3.1.4 Shaking system

The dust deposited on the plate filter is partly shaken off by the vibrations when working and falls into the dirt hopper. In order to work absolutely dust free, however, actuate the shaking system at regular intervals.

### 3.1.5 Steering

Steering is effectuated mechanically from the steering wheel to the front wheel by a fork head.

### 3.1.6 Wheels

#### Sweepmaster B900 R

Front wheel: solid tyres

Rear wheels: solid tyres

#### Sweepmaster P900 R

Front wheel: pneumatic tyres 4.00-4

Rear wheels: pneumatic tyres 4.00-4

Special tyres: solid tyres

3 wheels with rim

### 3.1.7 Brake

The Sweepmaster is equipped with a service brake. The service brake has been designed as a shoe brake and also serves as the parking brake. It is located in the rear wheels and is operated by pull cables.

To adjust the brake, there is an adjusting bolt on the right rear wheel.



Work on the brake system must only be carried out by a specialist workshop.

### 3.1.8 Travel drive

The Sweepmaster P900 R is equipped with a hydrostatic travel drive that is driven by the combustion engine via a pump.

The Sweepmaster B900 R is equipped with an infinitely variable electrical travel drive.

### 3.1.9 Battery systems

<b>Sweepmaster B900 R</b>	Piece	Order no.
Block battery 6 V/175 Ah, PzS	4	6458
Charger 24 V/35 A, variable charging characteristic IUlola and IUloU, 230 V AC connection	1	4003
Block battery 6 V/180 Ah, GiV, maintenance free	4	7411
Charger 24 V/35 A, variable charging characteristic IUlola and IUloU, 230 V AC connection	1	4003



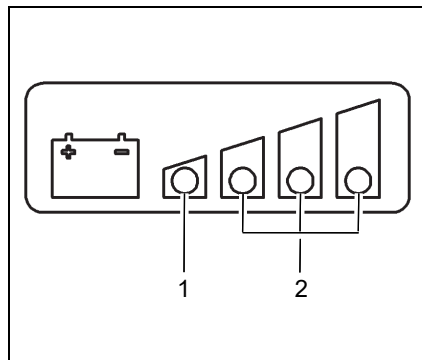
Always disconnect the battery plug before working on the electrical system.

When handling batteries, especially when checking the acid level, it is prohibited to smoke and use an open fire. Ensure sufficient ventilation in the charging area.

Spilled battery acid must never be allowed to enter the sewerage system, but must be neutralised beforehand.

Observe applicable laws and local regulations.

### 3.1.10 Deep discharge indicator



**Fig. 7**      **Deep discharge indicator**

The machine is equipped with a deep discharge indicator to prevent deep discharge of the batteries. The deep discharge indicator is integrated in the electronics.

#### **Battery charging state indicator**

During operation, the electronics of the machine indicate the discharge status of the batteries via one red LED (Fig. 7/1) and three green LEDs (Fig. 7/2).

If all three green LEDs light up, the batteries are fully charged. With increasing discharge, the LEDs extinguish one after the other from right to left. When the last green LED has extinguished, the red LED starts flashing (advance warning of imminent shut-off). After a period of time, the red LED lights up permanently and signals “battery empty” as the battery status. Shortly afterwards, the drive motor is automatically switched off to protect the battery from deep discharge.

The machine can only be restarted with a charged battery.

## 3.1.11 Plug connection coding

The battery plugs on the machines, batteries and stationary chargers must be coded with the coloured coding pins according to battery type and the rated voltage.

The plugs on the charger are factory-coded according to the charging characteristic, meaning the plug coding also has to be modified when changing the charging characteristic (according to the battery type).

Plug housing of the **chargers**:

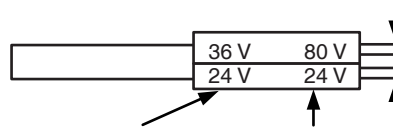
- Grey for wet batteries
- Green for maintenance-free gel batteries

Plug housing of the **machine**:

- Yellow for both types of battery

Bush housing of the **battery**:

- Grey for wet batteries
- Green for maintenance-free gel batteries



Each side of the hexagon is labelled with the rated voltage for the plug (letters upside down)

Correspondingly labelled for rated voltage for sockets

Remove the coding pin by squeezing the ends together with a pair of pointed pliers.

Squeeze together for assembly.

Insert the pin ensuring that the rated voltage can be read through the housing window. Bushes and plugs always have the same rated voltage.

The following three prerequisites must be met for the whole system:

- 1 Voltage coding must be identical for all plugs and bushes

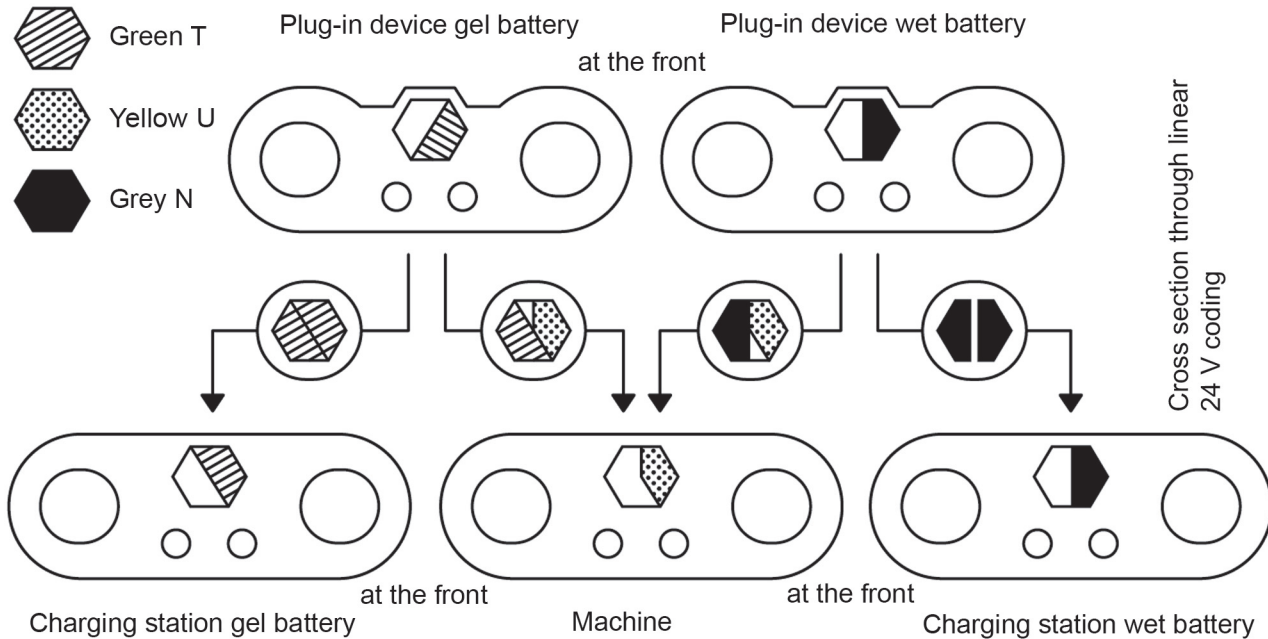
- 2 Colour of the coded pin in the machine = yellow
- 3 Colour of the coded pin in the stationary charger = same as in the battery plug depending on the type of battery



Before initially starting up the machine, charge the used battery fully and appropriately with commissioning charge. Please refer to the operating manual of the charger.

Hako assumes no liability for battery damage resulting from insufficient commissioning charge.

### Coding system in the charging plug-in device for wet and dry batteries Example 24 V





### 3.2 Controls

- 1 Actuator for folding apron
- 2 Lock for service brake / parking brake
- 3 Pedal for service brake / parking brake
- 4 Accelerator pedal, reverse
- 5 Accelerator pedal, forwards
- 6 Control panel
- 7 Seat adjustment

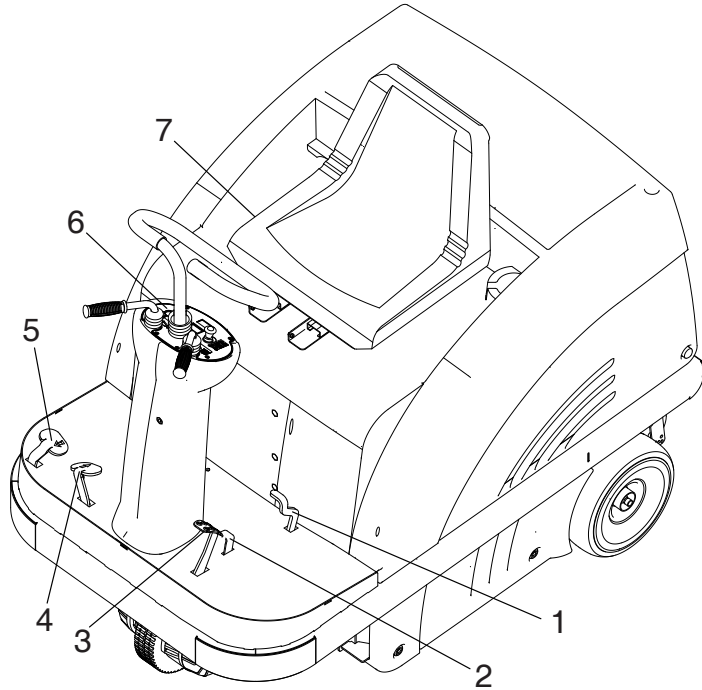


Fig. 8 Controls

## Use

### 1 Actuator for the folding apron

It is used to open and close the folding apron for collecting coarse dirt.

### 2 Lock for service brake / parking brake

It is used to lock the service brake / parking brake. If locked, the service brake works as a parking brake. Release the lock by operating the service brake pedal (Fig. 8/3).

### 3 Pedal for service brake / parking brake

It is used to actuate the service brake at the rear wheels. Before leaving the machine, apply the service brake and engage the lock.

### 4 Accelerator pedal, reverse

The accelerator pedal is used to drive in reverse and continuously adjust the speed at the same time. If the accelerator pedal is released, it automatically returns to the zero position and the machine stops.

### 5 Accelerator pedal, forwards

The accelerator pedal is used to drive forwards and continuously adjust the speed at the same time. If the accelerator pedal is released, it automatically returns to the zero position and the machine stops.

### 6 Control panel

see section 3.3

### 7 Seat adjustment

It is used to adjust the seat position to the height of the respective driver.

### 3.3 Control panel Sweepmaster P900 R

- 1 Suction fan / Shaking system knob
- 2 Sweeping roller lever
- 3 Side brush lever
- 4 Ignition lock
- 5 Operating hours meter
- 6 Choke flap knob

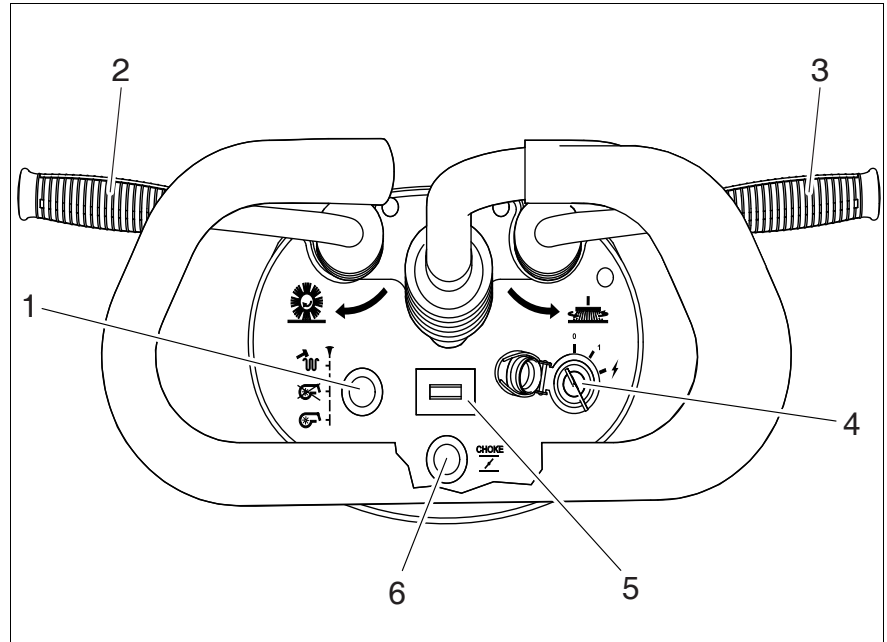
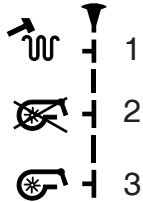


Fig. 9 Control panel

## Use



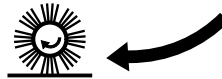
### 1 Suction fan / Shaking system knob

Knob position (from top to bottom)

- 1 Shaking system switched on  
(hold the knob in place)
- 2 Vacuuming inactive  
(open the flap before sweeping wet surfaces or collecting wet dirt)
- 3 Vacuuming active  
(close the flap before sweeping dry surfaces or collecting dry dirt)



Switch off the sweeping roller prior to shaking. Repeated interruption of the shaking process increases the filter cleaning result.  
At Sweepmaster P900 R, the combustion engine should be turned off.



### 2 Sweeping roller lever

It is used to lower and raise the sweeping roller as well as to switch the sweeping roller and the side brush on and off.

- Lower the sweeping roller and switch on the sweeping roller and the side brush = push the lever forwards
- Raise the sweeping roller and switch off the sweeping roller and the side brush = pull the lever towards you



### 3 Side brush lever

It is used to lower and raise the side brush.

- Lower the side brush  
= push the lever forwards
- Raise the side brush  
= pull the lever towards you

## Use



### 4 Ignition lock

It is used to turn the ignition on and off, to start and stop the engine and to secure it against unauthorised use.



For reasons of safety, Sweepmaster P900 R is equipped with a seat contact switch. The engine can only be started when the driver is sitting on the driver's seat. If contact with the seat is interrupted while the engine is running, the combustion engine must be restarted at Sweepmaster P900 R.



### 5 Operating hours meter

Is used to display the operating hours.

The meter only works when the driver is sitting on the driver's seat and the ignition is turned on.

### CHOKE



### 6 Choke flap knob

It is used to actuate the choke flap (cold start aid)

- Knob pressed down  
Choke flap not actuated
- Knob pulled up  
Choke flap actuated for cold start



Do not actuate the choke flap with a warm engine.

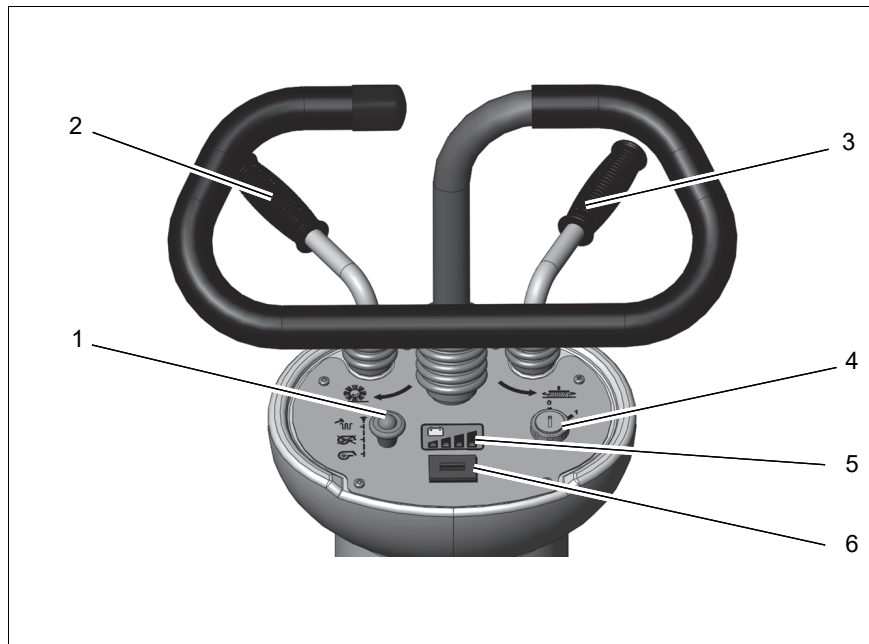


At temperatures below zero, it takes a few minutes for the machine to reach its final speed.

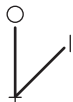
## 3.4 Control panel Sweepmaster B900 R

- 1 Suction fan / Shaking system knob
- 2 Sweeping roller lever
- 3 Side brush lever
- 4 Key switch
- 5 Deep discharge indicator
- 6 Operating hours meter

The levers pos. 1-3 and the operating hours meter pos. 6 are identical with the controls of Sweepmaster P900 R. For this reason, these levers and indicators are not described here.



**Fig. 10** Control panel



#### 4 Key switch

It is used to switch the electrical system on and off and to protect it against unauthorised use, as well as to acknowledge the triggered seat contact switch.



For reasons of safety, Sweepmaster B900 R is equipped with a seat contact switch. The engine can only be turned on when the driver is sitting on the driver's seat. If contact with the seat is interrupted while the engine is running, turn the key switch off and then back on at Sweepmaster B900 R.



Sweepmaster B900 R must not be started at temperatures below 0 °C to protect the electric motors.



#### 6 Battery indicator instrument

It is used to indicate the charging state of the batteries.

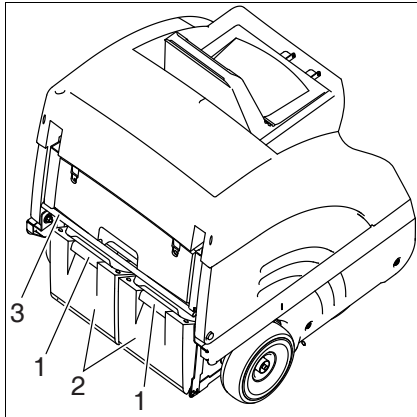
Green field:

- Battery is charged, the Sweepmaster is ready for operation

Red field:

- Flashes: The Sweepmaster can be driven at 50 % of its driving speed for charging. The brush motor stops after 3 minutes.

- Permanently red: Discharge state has been reached, it is still possible to run the machine at half speed, but operation is no longer possible.



**Fig. 11**      **Dirt hopper**

- 1 Recessed grip in the dirt hopper
- 2 Dirt hopper
- 3 Bar to lower/raise the dirt hoppers

### 3.5 Emptying the dirt hopper



Raise the sweeping roller before removing the dirt hopper.

- Fold the bar (Fig. 11/3) upwards  
= The dirt hoppers (Fig. 11/2) are lowered.
- Reach into the recessed grip (Fig. 11/1) of one dirt hopper, raise and pull it out slightly.
- Use the handle to take hold of the dirt hopper for disposal and empty it.
- Empty the second dirt hopper as described above.
- Reinsert the dirt hopper (Fig. 11/2) and fold down the bar (Fig. 11/3).



Clean the dirt hopper at regular intervals!



### 3.6 Working

The driver is requested to read the operating manual carefully. All the operating levers are marked with easy-to-understand symbols that facilitate familiarisation. Pick a space void of traffic and pedestrians or a clear open stretch of road for an initial test drive until you are familiar with all the individual controls and their functions.



Please observe the following safety instructions: When working with the Sweepmaster, observe all the safety measures generally applicable for handling road vehicles and fuels. Transporting people on the Sweepmaster is strictly prohibited. The warning and information signs attached to the Sweepmaster provide important information on safe operation. Adherence helps to guarantee personal safety.

Before commencing work, make sure the Sweepmaster and its work equipments are in proper working order and comply with the provision for safety at work. Never operate the Sweepmaster without effective protective devices.

#### Sweepmaster P900 R

##### 3.6.1 Before starting the engine

Open the seat hood and perform the following checks:

- Check the engine oil level, see page 49.
- Check the fuel quantity, see page 16
- Visually inspect the V-belt, see page 52.
- If necessary, open the fuel valve beneath the fuel tank, see page 52.
- Close the seat hood.

##### 3.6.2 Starting the engine

For reasons of safety, Sweepmaster P900 R is equipped with a seat contact switch. The engine can only be started or only runs when the driver is sitting on the driver's seat.

- All control levers and switches must be in the zero position. Apply the parking brake.
  - Actuate the choke (only with a cold engine).
  - Turn the ignition key slightly to the right – the ignition is turned on.
  - Continue to turn the ignition key and start the engine.
- If the starting procedure has to be repeated or if the engine stops, it can only be restarted after turning off the ignition. An engine re-start interlock in the ignition lock prevents the starter from being actuated while the engine is running.

## Use



**Do not start for more than 10 seconds uninterrupted, pause briefly between each start procedure to conserve the battery.**

- Let the engine warm up a little, while slowly pressing down the choke knob.

### 3.6.3 Sweeping

- Start the engine, see page 3.6.2.



Vacuuming is inactive in the basic setting. Open the flap when sweeping wet surfaces or collecting wet dirt.

- Lower the sweeping roller and the side brush.
- Release the parking brake.
- Slowly operate the accelerator pedal until the desired driving speed has been reached.
- Operate the shaking system to clean the filter at regular intervals.
- Check the contents of the dirt hopper

and empty the hopper, if necessary.

### 3.6.4 Stopping and turning off the engine

- Release the accelerator pedal which returns automatically to the zero position and the machine slows down to standstill.



Sweepmaster P900 R can be braked by counteracting with the accelerator pedal or with the service brake.

- Apply the parking brake.
- Raise the main and side brush.
- Turn off the engine.



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

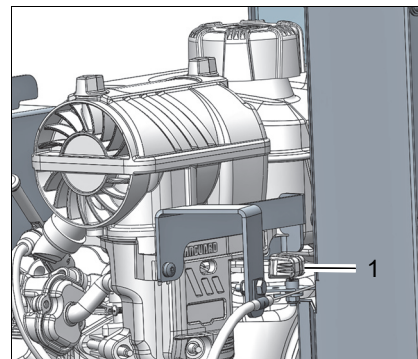
### 3.6.5 Moving the machine

If it should ever become necessary to move Sweepmaster P900 R with the engine turned off, the accelerator pedal must be actuated.



When moving it forwards and backwards, actuate the forward pedal and the reverse pedal respectively.

When transporting Sweepmaster P900 R, the fuel valve (Fig. 12/1) must be closed!



**Fig. 12**

### Sweepmaster B900 R

#### 3.6.6 Switching the electric motor on and off



For reasons of safety, Sweepmaster B900 R is equipped with a seat contact switch. The engine can only be started or only runs when the driver is sitting on the driver's seat. If the seat contact switch is activated while the electric motor is running, turn the key switch off and then back on.

- All control levers and switches must be in the zero position.
- Apply the parking brake.
- Turn the key switch to "I".



When switching on, make sure that the accelerator pedal is in the neutral position.

#### 3.6.7 Sweeping

- Lower the sweeping roller.
- Release the parking brake.
- Slowly operate the accelerator pedal until the desired driving speed has been reached.
- Operate the shaking system to clean the filter at regular intervals.
- Check the contents of the dirt hopper and empty the hopper, if necessary.

#### 3.6.8 Stopping and parking

- Release the accelerator pedal (it returns automatically to the zero position and the machine slows down almost to standstill) and operate the service brake.
- Apply the parking brake.
- Raise the main and side brush.
- Turn the key switch to "0".



Remove the key when leaving the machine.

## Technical data

### 4 Technical data

		Sweepmaster P900 R	Sweepmaster B900 R
<b>Dimensions and weights</b>			
Length with side brush	mm	1520	1520
Width with 1 side brush	mm	1120	1120
Height above steering wheel	mm	1340	1340
Empty weight, incl. accessories	kg	370	460
			(depending on the type of battery)
permissible total weight	kg	600	650
<b>Driving performance and sweeping power</b>			
Forward driving speed	km/h	6.0	6.0
Reverse driving speed	km/h	4.0	4.0
Sweeping speed (recommended: 4 km/h)	km/h	6.0	6.0
Sweeping width without/with 1 side brush	mm	700/970	700/970
with 2 side brushes	mm	1240	1240
Theoretical sweeping power with 1 or 2 side brushes	m <sup>2</sup> /h	5800/7450	5800/7450
without side brush	m <sup>2</sup> /h	4200	4200
Max. climbing capacity (max. 1 minute for Sweepmaster B900 R)	%	12	12

## Technical data

		Sweepmaster P900 R	Sweepmaster B900 R
<b>Filter system</b>			
Filter area	m <sup>2</sup>	2.8	2.8
Plate filter	Piece	1	1
<b>Sweeping roller</b>			
Length/Diameter	mm	700/345	700/345
Wear limit	mm	approx. 290	approx. 290
Speed	rpm	approx. 530 ± 20	approx. 530 ± 20
Sweeping level	mm	50 + 10	50 + 5
Number of bristle rows		6 V shape	6 V shape
Standard bristles		PA	PES
<b>Ground clearance of the sealing strips in the brush compartment</b>			
Sealing strips, left/right/rear	mm	1 / 1 / 4	1 / 1 / 4
Front sealing strip		rests on the ground	

## Technical data

		Sweepmaster P900 R	Sweepmaster B900 R
<b>Side brushes</b>			
Diameter	mm	460	460
Speed	rpm	90	90
Standard bristles		PA	PES
<b>Dirt hopper</b>			
Hopper volume	Litre	2 x 30	2 x 30
<b>Drive wheels</b>			
Pneumatic tyres with inner tube: Tyre size		4.00 - 4 6PR	
Tyre pressure	bar	6	
Solid rubber tyres		Option	4.00 - 4
Wheel bandage			Ø 250 / 60

## Technical data

		Sweepmaster P900 R	Sweepmaster B900 R
<b>Engine</b>			
Manufacturer		Briggs & Stratton	
Type		Vanguard 12 V 6.5 HP	
Method of operation / Number of cylinders		4 stroke / 1 cyl.	
Displacement	ccm	203	
Output at 3600 rpm	KW/HP	4.9/6.5	
Operating speed (with the sweeping roller, side brushes and suction fan switched on)	rpm	2500 ± 50	
Fuel tank contents (standard unleaded petrol)	Litre	4	
Fuel consumption	Litre/h	1	
Engine oil / Filling volume	Litre	15W-40 / 0.55	

## Technical data

		Sweepmaster P900 R	Sweepmaster B900 R
<b>Hydraulic system</b>			
Hydraulic oil, e.g. Mobiloil		DTE 15 M (or an equivalent oil)	
Tank volume	Litre	10	
Travel drive	bar	100	
<b>Electrical system</b>			
Starter battery	V / Ah	12/45	
Light coil power	A	5-6	
<b>Electric drive</b>			
Operating voltage	DC / V		24
Travel drive	kW		0.6
Suction fan motor / Sweeping	kW		0.75
Overall power consumption	kW		1.9



## Technical data

<b>Noise emission values</b>		Sweepmaster B900 R	Sweepmaster P900 R
The sound pressure level (LpA) (at the ear of the driver) measured under customary conditions of use according to DIN EN 60335-2-72 is:	dB (A)	68	76
Measuring uncertainty (KpA):	dB (A)	2	2
The sound power level (LWAd) measured under the customary conditions of use according to DIN EN 60335-2-72 is:	dB (A)	84	95
The sound power level (LWAd) measured under the customary conditions of use according to 2000/14/EC is:	dB (A)	84	95
<b>Vibrations</b>			
Under the customary conditions of use, the weighted effective value of the acceleration to which the body (hand-arm) is subjected to ISO 5349-1 is:	m/s <sup>2</sup>	< 2.5	< 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 ISO 2631-1 is:	m/s <sup>2</sup>	< 0.5	< 0.5

### 5 Maintenance and servicing

#### 5.1 Maintenance instructions

Compliance with the maintenance work recommended by us gives you the certainty of always having an operational, fully functional machine available. Prevention is better than cure – and cheaper!



In accordance with § 57 BGV D29, the sweeper must be inspected as required – but at least once a year – by an authorised expert for operationally safe condition. The results of the inspection must be recorded in writing and kept at least until the next inspection.

If your own workshop is unable to carry out the work according to the maintenance plan, please contact your local Hako dealer who will be happy to carry out this work for you. Factory trained specialists and original spare parts are available there.



When cleaning and servicing the machine and when replacing parts, turn off the engines, remove the ignition key and apply the service brake (parking brake).

Sweepmaster B900 R:  
Disconnect the battery plug.

Please always state the device number specified on the type plate in all enquiries and spare parts orders.

The type plate is located at the front right-hand side underneath the foot mat.



Collect and properly dispose of spilled oil and fuel.

Use suitable tools for maintenance, service and setup work and the like. Spare parts must at least correspond to the original parts with regard to safety. Do not remove or mount tyres or repair them on a rim. Always take the tyres and the rim to an authorised workshop that employs specifically trained personnel and has special safety tools. Always disconnect the minus terminal of the battery or disconnect the battery plug when working on the electrical system.

## Maintenance and servicing

### 5.2 General Sweepmaster information

#### 5.2.1 Dismantling and installing the sweeping roller

The sweeping roller can be accessed from the left-hand side and is removed as follows:

- Lower the sweeping roller.
- Remove the ignition key and secure the machine with the parking brake.
- Remove the cover.

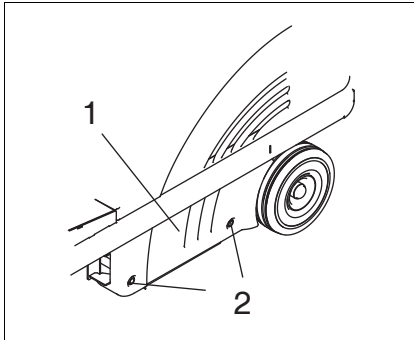


Fig. 13 Removing the cover

- Open the locks (Fig. 13/2) with the square key provided in the accessories kit (turn anticlockwise).
- Remove the cover (Fig. 13/1).

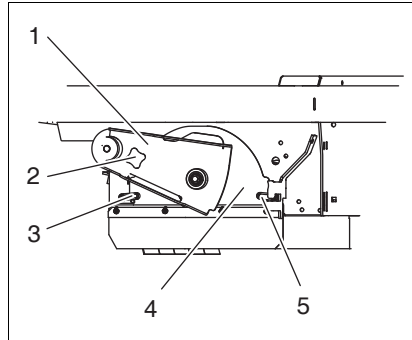


Fig. 14 Removing the sweeping roller

- Loosen and remove the star knob (Fig. 14/2).
- Remove the sweeping roller holder (Fig. 14/1).
- Turn the lever (Fig. 14/3 + 5) upwards to unlock.
- Remove the plate with the sealing strip (Fig. 14/4).
- Pull out the sweeping roller.

Assemble the sweeping roller in reverse order.

#### 5.2.2 Adjusting the sweeping level

An adjustment device allows adaptation to the respective sweeping conditions. The sweeping roller should be set as described below for normal use and with regard to low wear.

The sweeping level must be checked every 125 operating hours and is carried out as follows on smooth and level ground:

## Maintenance and servicing



Before the check:  
Mark the level surface with chalk to check the sweeping roller adjustment.

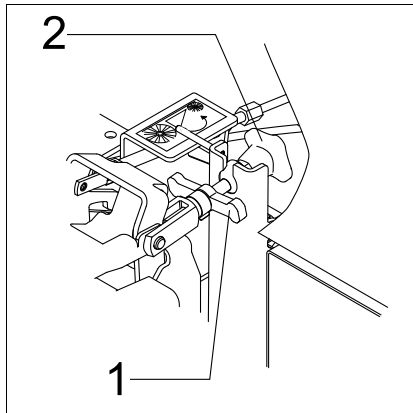
Sweepmaster P900 R: Check the air pressure in the tyres (6 bar).

- Lower the sweeping roller and allow it to rotate briefly while stationary.
- Raise the sweeping roller and move the Sweepmaster slightly forwards. If the sweeping roller is adjusted correctly, a parallel sweeping line must be visible on the ground (sweeping level).

The width of the sweeping level should be as follows:

- Sweepmaster P900 R = 50 mm
- Sweepmaster B900 R = 50 mm

The width of the sweeping level is adjusted at the star knob (Fig. 15/2) as follows:



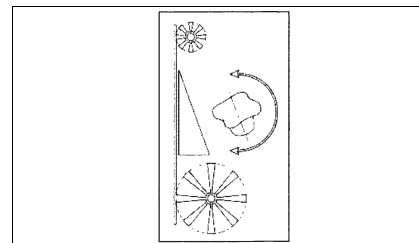
**Fig. 15**      **Brush adjustment**

- Open the seat hood
- Undo the lever (Fig. 15/1)
- Turn the star knob (Fig. 15/2)  
left = wider sweeping level  
right = narrower sweeping level
- Engage the lever (Fig. 15/1)



With each complete rotation of the adjusting wheel, the sweeping level increases or decreases by approx. 10 mm.

Sweepmaster B900 R:  
If the sweeping level is exceeded, the protective device of the engine can be activated.



**Fig. 16**      **Sweeping level**

## Maintenance and servicing

### 5.2.3 Sealing strips for the brush compartment

The sealing strips must be in perfect condition to ensure proper functioning of the sweeper, in particular to achieve the prescribed vacuum in the brush compartment, a clean sweeping pattern and minimum wear on the sealing strips (check the sealing strips in the brush compartment regularly for wear and damage).

Check the sealing strips every 125 operating hours.

Replace defective sealing strips immediately.

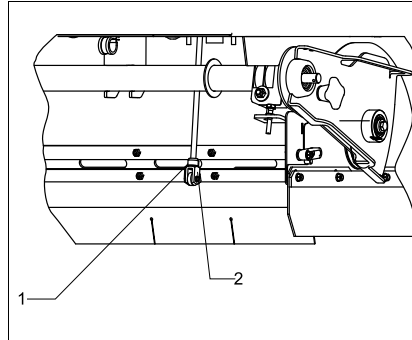
The ground clearance of the lateral and rear sealing strips is adjustable (elongated holes in the sealing strips).

Ground clearance Sides approx. 1 mm  
Rear approx. 4 mm

At Sweepmaster B900 R, the adjustment should be carried out with the battery pack installed.

The front sealing strip (folding apron) is not height-adjustable, it rests on the ground and is dragged along.

### 5.2.4 Adjusting the folding apron



**Fig. 17** Adjusting the folding apron

- Turn off the engine and remove the key
- **Sweepmaster B900 R:** Disconnect the battery plug
- Remove the cover (as described in Section "Dismantling and installing the sweeping roller")
- Remove the ES pin (Fig. 17/2)
- Turn the fork head (Fig. 17/1) to change the adjustment

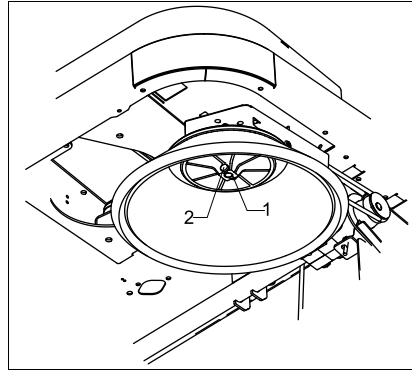
The adjustment should always be selected so that the sealing strip of the folding apron is not pulled in by the sweeping roller when operating the machine.

### 5.2.5 Replacing the side brush

The side brush is located at the front right of the machine (standard version). Lifting and lowering is done with the lever, see Page 27.

Check the side brush every 125 operating hours.

The side brush should be slightly inclined towards the front and the outside. The swinging range of the side brush arm is limited by move stop screws. The side brush is driven by a V-belt. A second side brush can be fitted for special applications.



**Fig. 18** Replacing the side brush

Remove the side brush as follows:

- Turn off the engine and remove the key
  - Hold the machine with the parking brake
  - Sweepmaster B900 R: Disconnect the battery plug
  - Side brush must be in the upright position
  - Undo the hexagon nut (Fig. 18/1) and remove it along with the washer
  - Remove the bolt (Fig. 18/2)
  - Remove the side brush
- Assembly is in reverse order.

## Maintenance and servicing

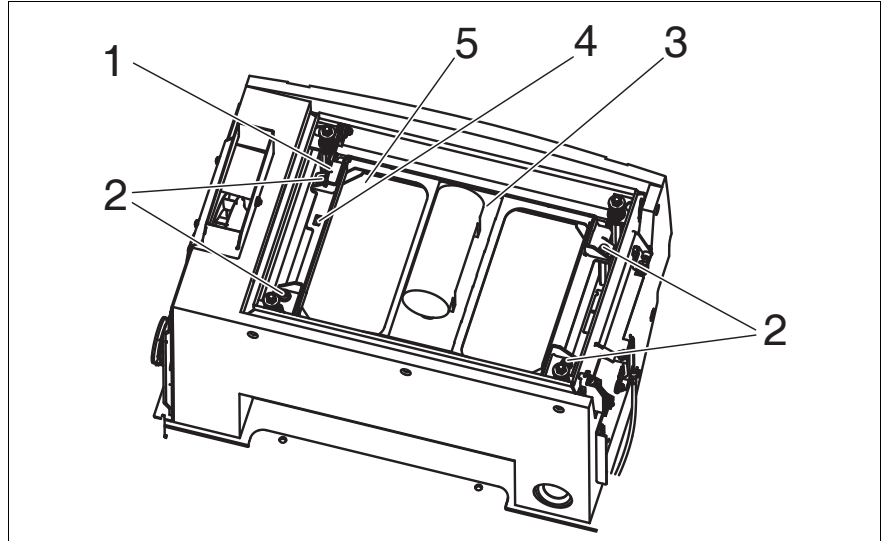
### 5.2.6 Removing the plate filter

Check the plate filter every 125 operating hours.

Remove the plate filter as follows:

- Open the seat hood.
- Remove the hood.
- Undo and remove the cylinder head bolts (Fig. 19/2).
- Fold up the frame with the electric motor (Fig. 19/3).
- Hook in the frame at the specified position (Fig. 19/4).
- Remove the plate filter (Fig. 19/5).

Assembly is in reverse order.



**Fig. 19** Plate filter

- 1 Locking hook
- 2 Cylinder head bolts
- 3 Frame with agitating motor
- 4 Hook-in opening locking hook
- 5 Plate filter

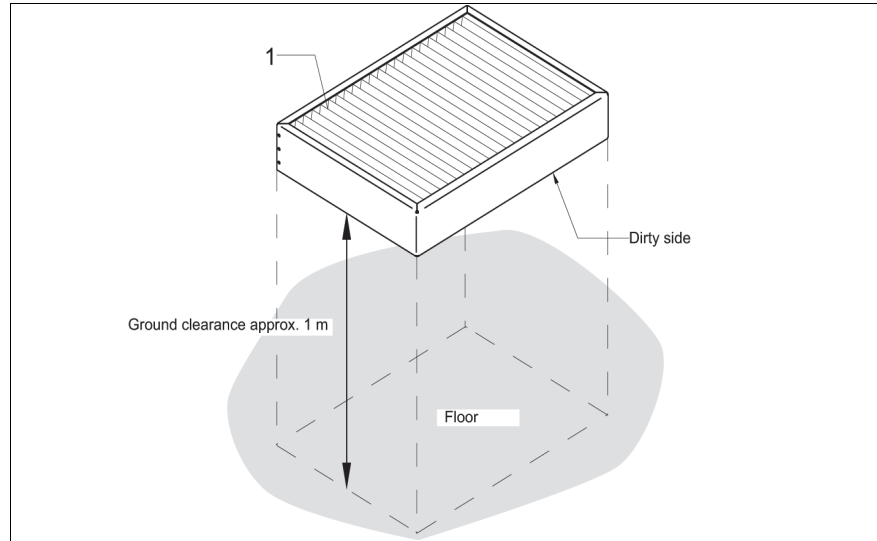
## Maintenance and servicing

### 5.2.7 Basic cleaning of the plate filter

Allow the plate filter (Fig. 20/1) to fall horizontally onto a smooth floor from a height of approx. 1 m as shown in Fig. 20.



The dirty side of the plate filter must face the floor.



**Fig. 20** Basic cleaning of the plate filter

1 Plate filter



## Maintenance and servicing

### 5.3 Sweepmaster P900 R

#### 5.3.1 Engine

The engine is an undemanding and robust four-stroke engine. The maintenance work to be carried out regularly is described below.



When cleaning and servicing the machine and when replacing parts, turn off the engines and remove the ignition key. Use suitable tools for maintenance, service and setup work and the like. Spare parts must at least correspond to the original parts with regard to safety.

#### 5.3.2 Checking the engine oil level

Check the oil level with the machine in a horizontal position as follows:

- Open the seat hood.
  - Pull out dip stick (Fig. 21/1) and wipe it with a cloth.
  - Push the dip stick back in and then pull it out again.
  - The oil level must reach the upper mark (A), top up if necessary.
  - Push the dip stick back in.
  - Remove the sealing cap (Fig. 21/2) and top up engine oil. Avoid over-filling!
- For the engine oil grade and filling quantity, see Technical data.
- Reinstall the sealing cap.



An excessively low oil level leads to engine damage!

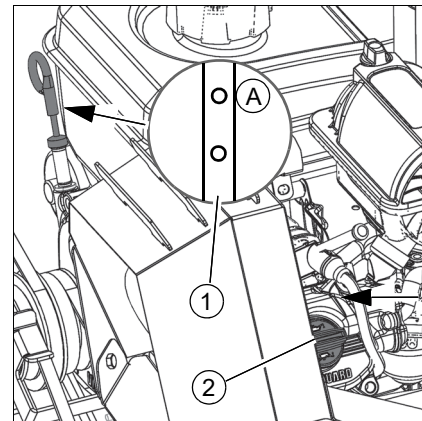


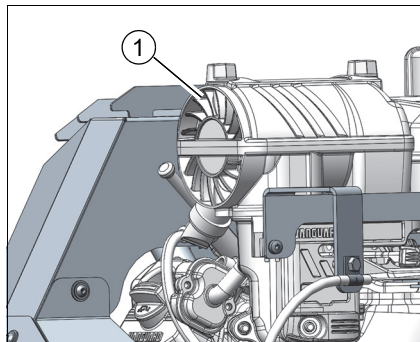
Fig. 21

Dip stick

## Maintenance and servicing

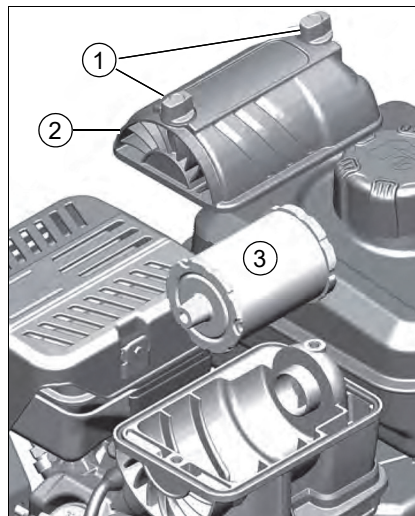
### 5.3.3 Air filter

The air filter (Fig. 22/1) is located in the engine compartment. The filter insert must be cleaned every 125 operating hours, or at shorter intervals if there is a lot of dust.



**Fig. 22** Air filter

1 Air filter



**Fig. 23** Filter insert

1 Fastening elements

2 Cover

3 Filter insert

### Cleaning the filter insert



A dirty filter insert leads to a drop in performance and heavy smoke development in the engine. Never let the engine run without a filter insert.

- Undo the fastening elements (Fig. 23/1) and remove the cover (Fig. 23/2).
- Remove the filter insert (Fig. 23/3) and dry-clean it, replace if necessary.
- Install the filter insert and install the cover with the fastening elements. Check for tight fit!

## Maintenance and servicing

### 5.3.4 Hydraulic system

The hydraulic units are maintenance free. Maintenance work concentrates on filter changes.

Premature failures can be prevented by regular monitoring and periodic maintenance.



We recommend that you have all work on the hydraulic system that goes beyond the frame carried out only by factory-trained specialists.

#### Hydraulic oil

The machine is filled at the factory with one of the following hydraulic oils:

- Mobil DTE 10 Excel 46 (HVLP, zinc free)
- TOTAL EQUIVIS AF 46 (HVLP, zinc free)
- Panolin HLP Synth 46 (HEES, biodegradable)

The designation of the hydraulic oil used in your machine is stated on the adhesive label (Fig. 23/1) on the hydraulic tank. Mixing different hydraulic oils is not permitted. This may reduce the efficiency and reliability of your machine. Hydraulic components could be damaged. Always use the identical oil for topping up. If all of the hydraulic oil is replaced, the usual procedures must be noted (e.g. flush several times, maximum residual hydraulic oil content: 2 %).

The above-mentioned hydraulic oils are coordinated with the climatic conditions in central Europe. If the machine is used under other climatic conditions, hydraulic oil in a different viscosity class must be used if necessary. Contact Hako if you wish to use a different hydraulic oil.

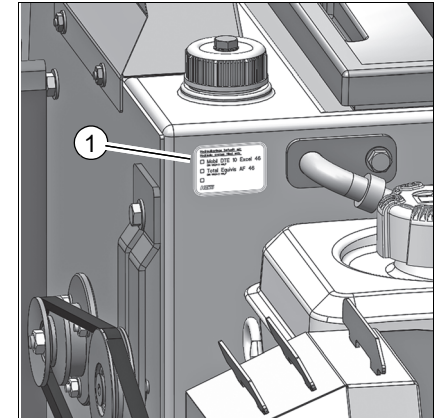


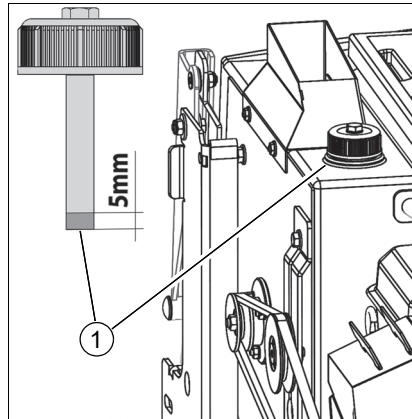
Fig. 24

Hydraulic oil tank

## Maintenance and servicing

### Topping up hydraulic oil

- Unscrew the sealing cap with the dip stick (Fig. 24/1)
- Wipe it with a clean cloth
- Screw in the sealing cap with the dip stick up to the stop
- Unscrew the sealing cap with the dip stick and measure the hydraulic level
- The correct oil level is reached when the lower end of the dip stick is wetted with oil at least 5 mm



**Fig. 25**      **Hydraulic oil**

## Maintenance and servicing

### 5.3.5 V-belt drive

Sweepmaster P900 R

Check the V-belt drive every 125 operating hours.

- 1 V-belt for suction fan (40 Hz)
- 2 Tensioning roller
- 3 V-belt pulley
- 4 V-belt for hydraulic pump (75 Hz)
- 5 Belt guide
- 6 V-belt for brushes
- 7 Belt pulley for hydraulic pump
- 8 Tensioning / Coupling roller
- 9 Tensioning roller lever
- 10 Tension spring
- 11 Belt pulley for sweeping roller
- 12 V-belt for the sweeping roller
- 13 Belt pulley
- 14 V-belt for the side brush
- 15 Hexagon nut
- 16 Bolts
- 17 Tensioning roller lever
- 18 Cylinder head bolt
- 19 Lever for tensioning the hydraulic pump
- 20 Tensioning roller lever

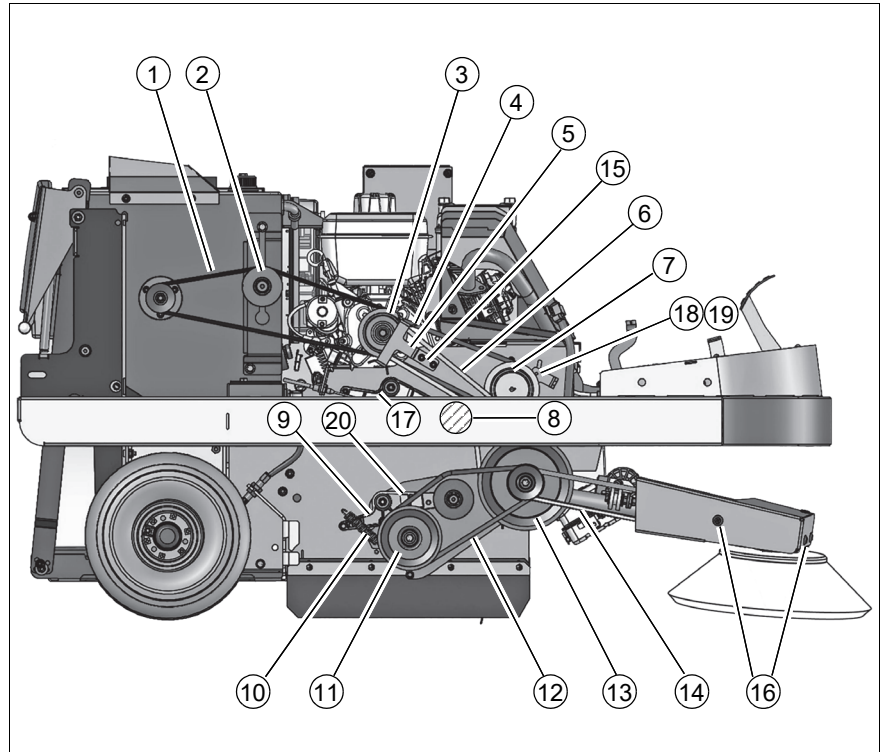


Fig. 26

V-belt drive

## Maintenance and servicing

### Replacing the V-belt for sweeping roller

- Turn off the engine and remove the key
- Hold the machine with the parking brake
- Remove the cover at the bottom right (turn the locks anticlockwise with a square key)
- Release the tension spring (Fig. 26/10) with your left hand and use your right hand to remove the V-belt from the tensioning roller
- Remove the V-belt (Fig. 26/12)

Assemble in reverse order.

### Replacing the V-belt for the side brush

- Turn off the engine and remove the key
- Hold the machine with the parking brake
- Remove the cover at the bottom right (turn the locks anticlockwise with a square key)
- Remove the V-belt for the sweeping roller (as described in Section "Replacing the V-belt for sweeping roller")
- Undo and remove the bolts (Fig. 26/16) on the sheet metal cover
- Remove the sheet metal cover
- Press the side brush from the front towards the device, the V-belt (Fig. 26/14) is slackened
- Remove the V-belt (Fig. 26/14)

Assembly is in reverse order.

### Replacing the V-belt for the suction fan

- Turn off the engine and remove the key
- Hold the machine with the parking brake
- Open the seat hood
- Undo the hexagon nuts (Fig. 26/15) and remove them along with the belt guide (Fig. 26/5)
- Slacken the V-belt (Fig. 26/6) using the tensioning roller lever (Fig. 26/17) and remove it from the V-belt pulley (Fig. 26/3)
- Undo the tensioning roller (Fig. 26/2), slacken the V-belt (Fig. 26/1) and then remove it

Assemble in reverse order.

## Maintenance and servicing



The following must only be observed during assembly for Sweepmaster B900 R:

Assemble in reverse order.

First tension the V-belt (Fig. 26/4) and then tension the V-belt (Fig. 26/2).

### Replacing the V-belt for the hydraulic pump

- Turn off the engine and remove the key
- Hold the machine with the parking brake
- Open the seat hood
- Undo the hexagon nuts (Fig. 26/15) and remove them along with the belt guide (Fig. 26/5)
- Slacken the V-belt (Fig. 26/6) using the tensioning roller lever (Fig. 26/17) and remove it from the V-belt pulley (3)
- Undo the tensioning roller (Fig. 26/2), slacken the V-belt (Fig. 26/1) and then remove it
- Undo the cylinder head bolt (Fig. 26/18)
- Slacken the V-belt (Fig. 26/4) using the lever (Fig. 26/19) and remove it

## Maintenance and servicing

### 5.3.6 Electrical system

#### Fuses and relays

The fuses F 1 to F 7 are located under the seat hood in the electrical box.

Undo the knurled nuts (Fig. 27/1) and remove the hood (Fig. 27/2).

F1 agitating motor (30 A)  
F2 pre-fuse (20 A), ignition lock  
F3 engine cutoff /  
operating hours meter (5 A)  
F4 agitation/control (5 A)  
F5 Fleet-Recorder (option)  
F7 Fleet-Recorder (option)

Relay (K 3), engine cutoff  
Relay (K 5), agitating motor  
Relay (K 1), starter

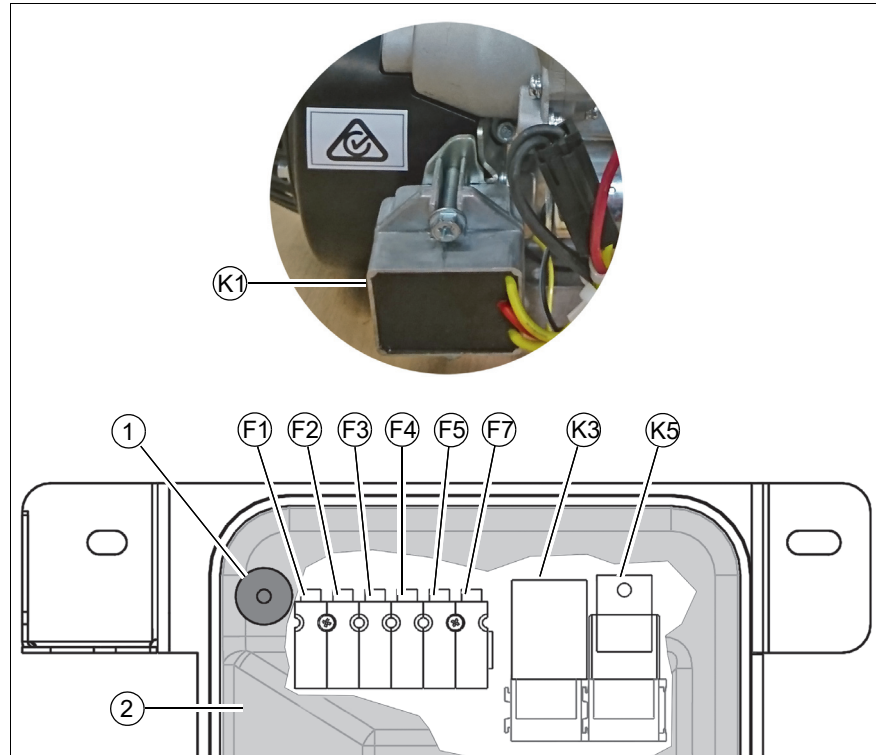


Fig. 27 Electrical system



## Maintenance and servicing

### 5.3.7 Maintenance plan Sweepmaster P900 R

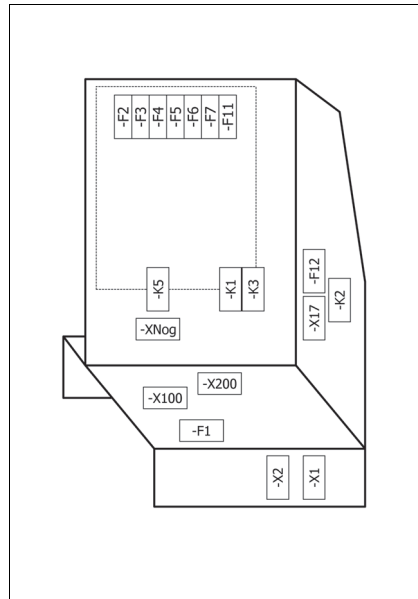
Activity	Interval
	Daily
Checking the engine oil level, refilling engine oil if necessary	o
Checking the fuel quantity, refuelling if necessary (standard unleaded petrol)	o
Checking the engine air filter for dirt and cleaning it if necessary (tap, do not use compressed air), replacing the air filter insert if necessary	o
Checking the tyre pressure (6 bar)	o
Checking the sweeping roller for wear and foreign bodies (e.g. wire, belt), replacing the sweeping roller if necessary	o
Visually inspecting the V-belt	o
Visually inspecting the condition of the machine	o
Performing a trial run and function test	o

## Maintenance and servicing

### 5.4 Sweepmaster B900 R

#### 5.4.1 Electrical system

##### Circuit breakers and fuses



**Fig. 28** Fuses

- F1 power section drive control (63 A)
- F2 pre-fuse (20 A)
- F1 control voltage drive control (10 A)
- F1 control voltage agitation (5 A)
- F5 deep discharge indicator (5 A)
- F6 display of the deep discharge indicator (5 A)
- F7 spare
- F1 agitating motor (30 A)
- F12 brush motor (60 A)



Before leaving the machine, apply the parking brake and remove the key.

#### 5.4.2 Brake

It is located in the rear wheels and is operated by pull cables. On the right rear wheel, there is an adjusting bolt where the brake can be adjusted if necessary.

## Maintenance and servicing

### 5.4.3 V-belt drive

Check the V-belt drive every 125 operating hours.

- 1 Tensioning roller
- 2 V-belt for the suction fan (20 Hz)
- 3 V-belt pulley
- 4 V-belt for the brushes (130 Hz)
- 5 V-belt for the side brush
- 6 Belt pulley
- 7 V-belt for the sweeping roller
- 8 Tensioning roller lever
- 9 Belt pulley
- 10 Tension spring
- 11 Hexagon nut
- 12 Hexagon socket bolt
- 13 Bolts

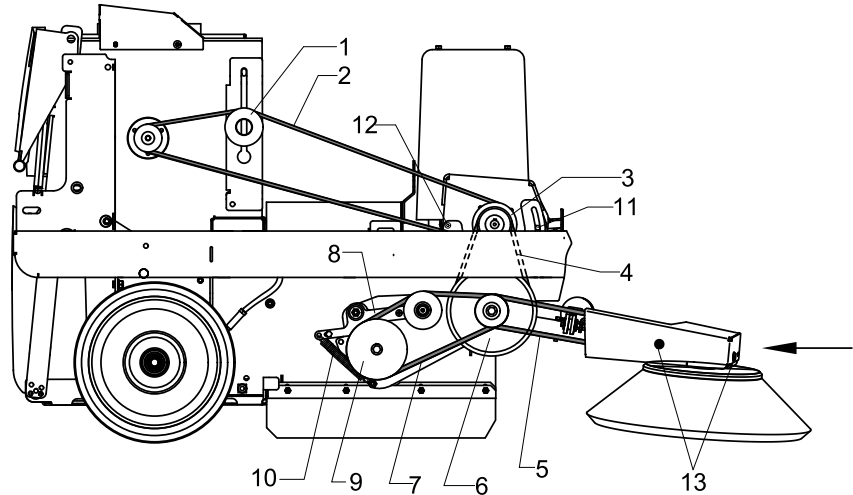


Fig. 29 V-belt drive

## Maintenance and servicing

### Replacing the V-belt for the sweeping roller

- Turn off the engine and remove the key
- Hold the machine with the parking brake
- Disconnect the battery plug
- Remove the cover at the bottom right (turn the locks anticlockwise with a square key)
- Release the tension spring (Fig. 29/10) with your left hand and use your right hand to remove the V-belt from the tensioning roller
- Remove the V-belt (Fig. 29/7)

Assemble in reverse order.

### Replacing the V-belt for the side brush

- Turn off the engine and remove the key
- Hold the machine with the parking brake
- Disconnect the battery plug
- Remove the cover at the bottom right (turn the locks anticlockwise with a square key)
- Remove the V-belt for the sweeping roller (as described in Section "Replacing the V-belt for sweeping roller")
- Undo and remove the bolts (Fig. 29/13) on the sheet metal cover
- Remove the cover
- Press the side brush from the front towards the device, the V-belt (Fig. 29/5) is slackened
- Remove the V-belt (Fig. 29/5)

Assembly is in reverse order.

### Replacing the V-belt for the suction fan

- Turn off the engine and remove the key
- Hold the machine with the parking brake
- Disconnect the battery plug
- Undo the tensioning roller (Fig. 29/1)
- Undo the hexagon nut (Fig. 29/11) and the hexagon socket bolt (Fig. 29/12) and slacken the V-belt (Fig. 29/4)
- Remove the V-belt (Fig. 29/4) from the V-belt pulley (Fig. 29/3)
- Remove the V-belt (Fig. 29/2)

Assemble in reverse order.  
The V-belt must not be tensioned too much.



Observe the following during installation:  
First tension the V-belt (Fig. 29/4) and then tension the V-belt (Fig. 29/2).

## Maintenance and servicing

### 5.4.4 Maintenance plan Sweepmaster B900 R

Activity	Interval
	Daily
Checking the battery acid level, topping up with distilled water if necessary (only with fully charged battery)	o
Checking the sweeping roller for wear and foreign bodies (e.g. wire, belt), replacing the sweeping roller if necessary	o
Visually inspecting the V-belt	o
Visually inspecting the condition of the machine	o
Performing a trial run and function test	o

## Maintenance and servicing

## EC Declaration of Conformity (corresponding to the EC Directive 2006/42/EC)

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

declare in sole responsibility that the following products

**Sweepmaster P900 R**  
**Model: 6502.15**  
**Sweepmaster B900 R**  
**Model: 6502.20**

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

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

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

Bad Oldesloe, 23.01.2018



Ricardo Ruiz Porath  
Product line manager – cleaning technology

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

Ludger Lüttel

# Advanced Technology for a Cleaner, Better Environment



Hako GmbH · Head Office · Hamburger Str. 209-239 · 23843 Bad Oldesloe, Germany  
Tel. +49 4531 806-0 · Fax +49 4531 806-338