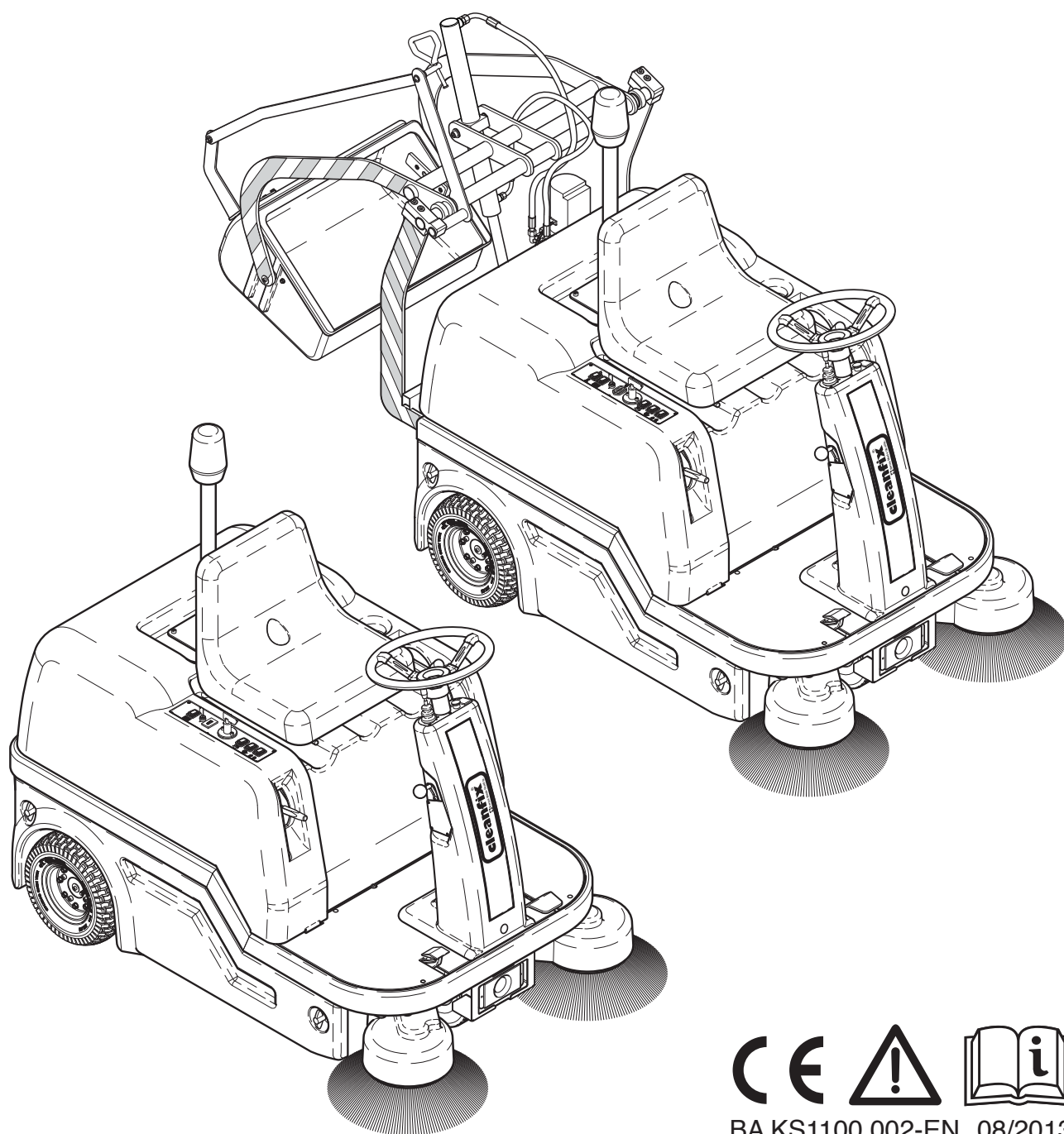


KS 1100 B HD

KS 1100 B



Englisch



BA KS1100.002-EN 08/2013

Contents

Introduction	Page
To these operation instructions.....	2
Symbols used in this manual.....	2
Safety indications.....	3
Appropriate use.....	3
Product description.....	4
Operating panel.....	4
Safety instructions.....	5
Applications.....	5
Safety devices.....	6
Initial start-up, standard, optional.....	6
Operation.....	7
Safety instructions.....	7
Adjust the driver's seat, driving / Start.....	7
Driving forward, reverse, acoustic signal (optional).....	7
Sweeping operation, safety, operating the sweeper.....	8/9
Operation of extraction, filter cleaning, parking.....	9
Dust bin emptying, removing + installing dust box.....	10
Hydraulic high dump.....	10
Filter replacement, expansion, installation.....	11
Machine cleaning.....	12
Maintenance and Service.....	12
Safety instructions.....	12
Side brushes.....	13
- Side brushes exchange, installation side brush.....	13
- Side brushes readjustment.....	13
Cylindrical brush.....	14
- Cylindrical brush exchange, Installation of the cylindrical brush.....	14
- Cylindrical brush readjustment.....	15
Battery.....	16
- Safety instructions for the use of batteries.....	16
- Battery charging.....	17
Brakes, Adjust the brakes, the brake control function.....	18
Functionality of the brake, Other adjustment.....	18
Fuses, safety information.....	19
Wheels and steering, broom drive.....	19
Maintenance Table.....	20
Errors and solutions.....	21
Circuit diagram KS 1100 B.....	22
Circuit diagram KS 1100 B HD.....	23
Technical Data KS 1100 B.....	24
Technical Data KS 1100 B HD.....	25
Applied Standards, Product label, Disposal, environmental protection.....	26
Declaration of Conformity.....	27
Service, Spare Parts.....	28

Introduction

To this Operation Instructions and Maintenance Manual

In this paragraph you will find information about how this manual is structured and explanations for the used signs and symbols.

This manual contains instructions on how to use the ride-on-sweeper KS1100 B and KS 1100 B HD.

Our products are being improved continuously, for this reason we cannot include all technical adaptations within this manual by the date of printing. If you should have any questions, please feel free to contact our Service for explanations and advice.

This Operation Instructions and Maintenance Manual has to be read and been understood by all persons who will use or operate or maintain this ride-on-sweeper KS1100.

Besides the Operation Manual and the laws and rules abiding in the country of use the applicant should take all necessary measures to apply and take into consideration all existing Health and Safety measures to prevent accidents and allow for professional on the job conditions.

Symbols used in the manual

Following symbols and descriptions are used in this manual for very important indications.



Danger!

All dangers for persons which could lead to serious Injuries or even death are marked by this symbol and safety instructions.



This symbol is used for hints which indicate how to use the ride-on-sweeper.



Caution!

This symbol stands for possible dangerous situations or when light injuries could occur.



This symbol in the text indicates that this job has to be done



Attention!

This symbol is used to indicate dangers which can damage machines or auxiliary equipment.



A dash in front of the text means: This is part of an itemization

Introduction

Safety indications

The ride-on-sweeper KS1100 ist built according to the latest standards and safety regulations. All the same it can never be foreclosed that life threatening dangers can occur for the user or for third parties or restrictions for the ride-on-sweeper and damage to material assets may happen.

For this reason the Ride-on-Sweeper must only be used when in perfect condition, used in a proper and foreseen way. At all times the Ride-on-Sweeper should be used taking all Health and Safety regulations into consideration, the user be made aware of dangers which can occur by properly reading and understanding this Operation Instructions and Maintenance Manual.

All errors which may affect any aspects of Health and Safety must be solved immediately. Always keep this Manual at the site where the Ride-on-Sweeper is being used for quick reference! Observe and consider all other applicable rules and laws which abide for accident prevention an for protection of the environment!

Do not execute any changes, add or rebuild any components on the Ride-on-Sweeper without prior consent of the Manufacturer.

Spare parts must abide to the technical requirements stated by the manufacturer. This is always assured by the purchasing of Original spare parts.

Always follow and indicated maintenance intervals of the supplier or the indicated maintenance jobs and intervals mentionend in this Operation Instructions and Maintenance Manual.

Please make sure that all waste items are disposed of in safe and ecological way of all operational supply items, additives or replacement parts.! Prevent use by unauthorized persons, e.g. by pulling out the keys after use.

 **Transport weight KS 1100 B = 525 kg.**

 **Transport weight KS 1100 B HD = 597,5 kg.**

 **The sweeper must be stored indoors.**



It may only be cleaned surfaces which are under the angle of inclination of 15%.



Handarm vibration $a_{hv} = 2,1 \text{ m/s}^2$
Seat vibration $a_{hv} = 0,7 \text{ m/s}^2$

 **This original manual has been checked by the manufacturer.**

Appropriate use

The ride-on-sweeper is only designed for sweeping dry wastes on paved floors e.g. car parks, industrial halls, storage halls, pavements.

Never ever use the machine under any circumstances whatsoever to sweep flammable or explosive material.

Any other use or unauthorized use which is not according to the specifications and determination are prohibited.

The manufacturer cannot be made responsible and will not be liable for any damages or consequential damages resulting out of such a use.

The applicant will bear such risks and hazards.

The ride-on-sweeper is not intended for sweeping of strings, ropes, wires or similiar objects.

For appropriate use according to the sweepers designation it is important to abide to this manual and to comply with all inspection and maintenance instruction.

Product description

The ride-on-sweeper is driven by electro-motors. The KS1100 does the sweeping job by means of 2 swivel side brushes which brush the wastes to the central cylindrical brush which is positioned parallel to the driving direction. The cylindrical brush then throws over the top all wastes into the waste bin behind. The dust which is raised and dispersed can be disposed of if required by the vacuum motor which sucks away the dust to the multi-layer filter unit integrated at the back of the machine. This multi-layer filter can be cleaned by means of activating the electrical vibrating unit.

Operator panel (without overhead discharge)

Emergency-Off / Main Switch

Battery charge—Status indication

ON /OFF
switch with key

Switch for filter
cleaning

Switch for filter cleaning device

2 Position key „Lifting“:
lifting/lowering

ON / OFF Key (0 or 1)

Battery status indicator (LEDs)

Vacuum motor switch

Switch for cylindrical
brush motor

Switch for swivel side
brush motors

Operator panel (with overhead discharge)

Main Power Key ON/OFF
or Emergency OFF

Switch for Vacuum motor

Switch for Cylindrical
brush motor

Switch for swivel side
brush motors

Safety instructions

Applications

- Parking spaces
- Schoolyard
- Petrol station
- Underground park
- Shopping centres
- Warehouses



Extra large hopper,
ideal use by means of
overthrow system

Simple emptying

Filter, side brushes and
cylindrical brush are easily
accessible without the use
of tools

Adjustable seat to allow an ergonomic

Steering column with steering
wheel and operator panel with:
- Light switch - forwards / backwards
lever! - Drive backwards-alarm
(optional)

Left and right lever on the
steering column to lift
and sink both side brushes

Brake pedal with with
footoperated parking
brake

Accelerator

Head light

Front wheel
with brake

360° turning
circle for perfect
manoevrability

Two self-swivelling side-
brushes for large sweepways

Excellent climbing ability 20%

Handle to lift and drop the
cylindrical brush

User-friendly Operator panel

Large, non-marking wheels

Solid stainless steel frame as
bump protection with impact
resistant cover

Side covering (behind is access for
Adjustment of the cylindrical brush

Safety devices

The Ride-On-Sweeper starts only when,

- the battery mains switch (emergency.- Off) And the start switch with key is in ON-position;
- Someone sits in the driving seat and the seat contact is activated and additionally the accelerator pedal is pressed down.

If the direction level (forwards/backwards) at the steering column is in backwards position, then an acoustic signal is activated. (optional)

Initial- Start-Up

The Ride-on-Sweeper is delivered as standard version without batteries and without charger.

Optional:


The Ride-On-Sweeper can be delivered with batteries and charger. The Ride-on-Sweeper can be delivered with hydraulisch overhead waste-box emptying.

Standard

- Open the transport packing.
- Remove the complete main cover. Lift the main cover at the back and secure the open position by using the support holder.
- Place the batteries inside the machine.
- Connect the batteries to the power supply according to the Technical Data and Circuit diagram/Wiring plan.
- Close the main cover again and put the support holder back into position.
- Mount the side brushes (page 13)

The Ride-On-Sweeper is now functional and ready for operation.

- Drive the Ride-On-Sweeper out of the transport packing down from the wooden pallet by using the ramp.

 Make sure to use the closed ramp.



The ramp must be designed in such a way that not only the front wheel, but also the rear-drive-wheels can drive onto, over and down and off the ramp.

If these instructions are not followed then

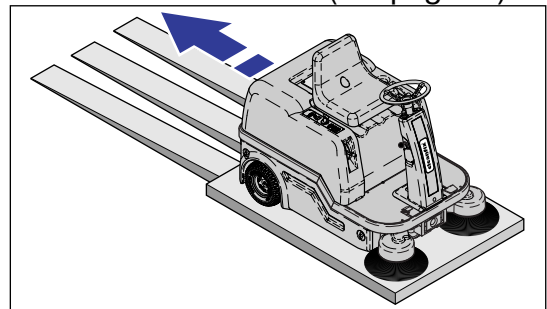
the mechanical functions of the Ride On-Sweeper could be considerably damaged. The power supply respectively the start procedure must be interrupted in the following cases:


Hence, the following is essential:

- The main cover can only be opened if the Main switch is in OFF position, i.e. the lever is turned in OFF position which then allows free opening.
- The side covers and other screwed / bolted machine parts are only allowed to be removed if the EMERGENCY-OFF switch is turned to OFF position and the key has been removed!

Optional:

- The Ride-On-Sweeper is equipped with batteries.
- Open the transport packing.
- Open the main cover of the machine.
- Secure the open position of the main cover with the cover support rod. The cover has drill holes on the underside.
- Stick the cover support rod into the drill hole.
- Connect the Plus-pole of the battery.
- Close the main cover.
- Mount the side brushes (see page 13)



- Drive the Ride-On-Sweeper over the ramp and out of the transport packing.
-  Make sure to use a closed ramp.



The ramp must be designed in such a way that not only the front wheel, but also the rear-drive-wheels can drive onto, over and down and off the ramp.

If these instructions are not followed then the mechanical functions of the Ride On-Sweeper could be considerably damaged. The Ride-on-Sweeper is now functional.

Operation

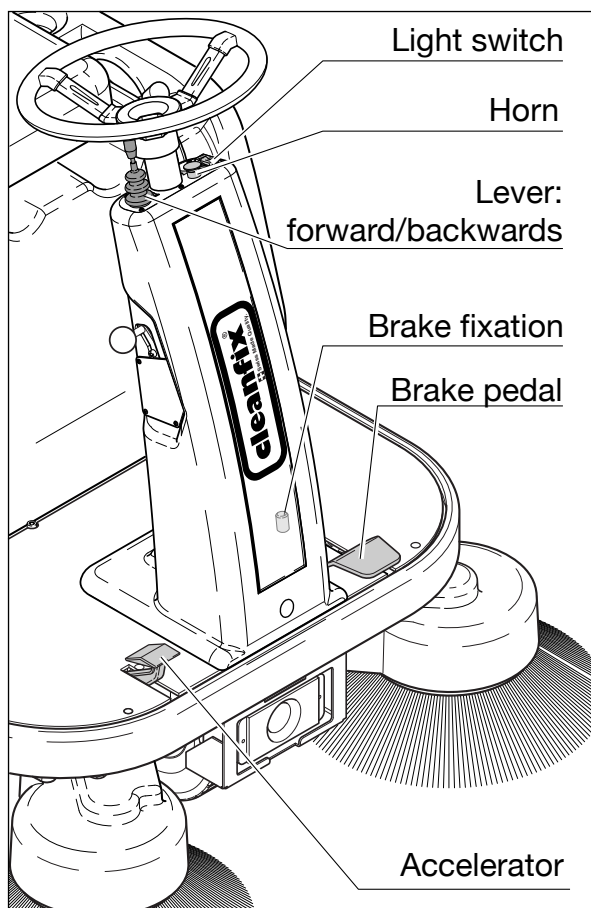
Safety instructions

The Ride-on-Sweeper can only be used by reliable persons. Only trained and well instructed persons shall be used. The responsibilities must be clearly fixed. Always check the Ride-On-Sweeper before any drive and test the functionality and technical safety.

Do not use the machine if it should have a defect. Only drive on the tracks and areas which are strictly assigned for the Ride-on-Sweeper. The Ride-On-Sweeper is strictly designed for only one person to use. The transportation of more than one person is strictly forbidden.

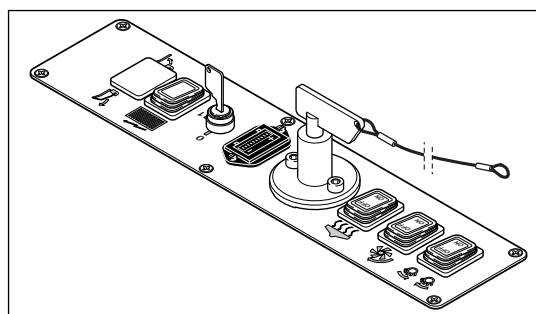
Adjustment of the driver seat

Undo the seat fixation and move the driver seat on the it's seat console until you have found the suitable sitting position.



Drive operation / Starting the Sweeper

- Seat yourself on the drivers seat. The Ride-on-Sweeper cannot be put into operation, if the drivers seat is not exposed to weight pressure to switch the contact.
- Check the position of the switch of the lever on the operator panel.
- The Filter cleaning switch must be in OFF (AUS) position.



- The red Main Switch must be in ON (EIN) position.
- The Key switch must be ON
- Check the battery charge status- - indication on the operator panel. The luminous LED's shine in sequence and then show the effective charging status of the batteries.
- Press the brake.
- Release the emergency-brake fixation (next to the brake)

- Driving forwards:

- Move the lever switch to the front for actuation „drive forwards“. Only when the accelerator has been pressed down, then the Ride-on- Sweeper will start driving.

- Driving backwards:

- Move the lever switch to the back for actuation „drive backwards“. Only when the accelerator has been pressed down, then the Ride-on-Sweeper will go backwards.

An acoustic signal is optional

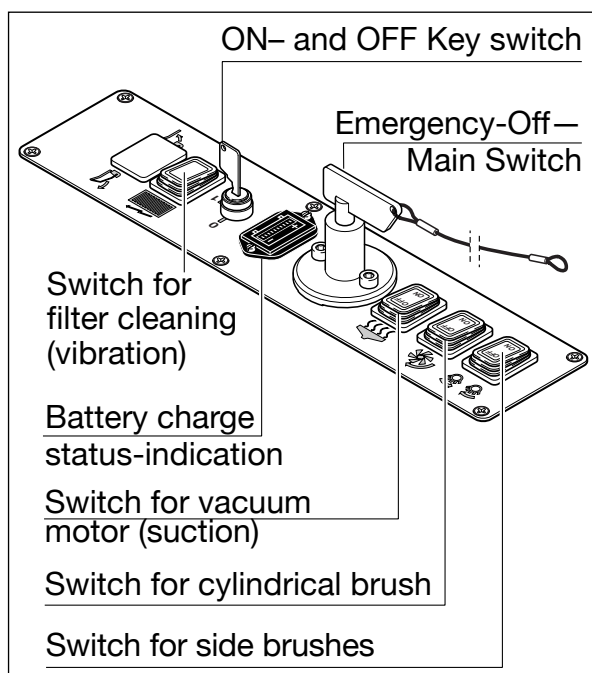
- The speed of the Ride-on-Sweeper can be chosen variably when pressing down the accelerator.

Sweeping operation

Safety instructions

Do not switch on the vacuum motor when sweeping wet areas/wastes. This would lead to a clogged filter and damage to the vacuum motor. In closed rooms make sure to have a proper room aeration. Never sweep wastes dangerous to health.

Operator panel (without overhead disposal)



Operation of the cylindrical brush

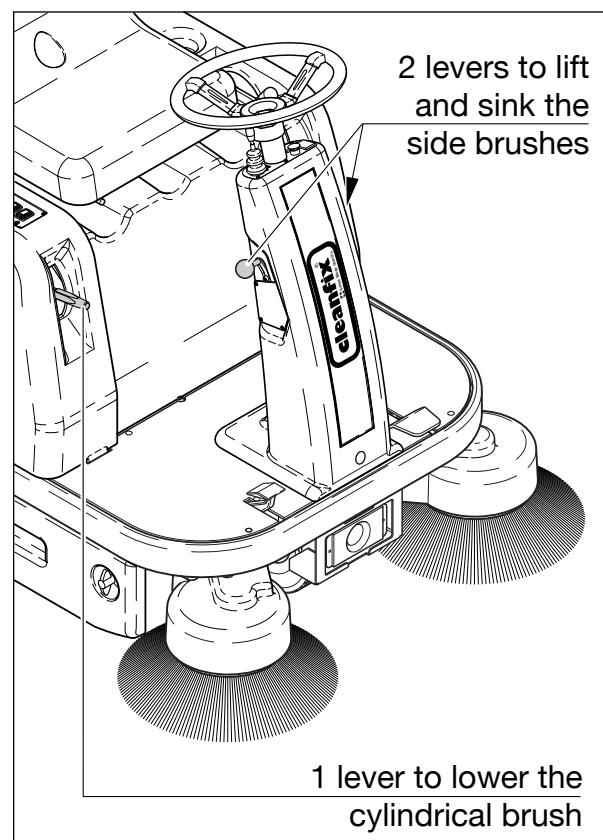
- Start the Ride-on-Sweeper
 - Release the lever to lower the cylindrical brush to the floor.
 - Switch the Tip switch to ON to start the cylindrical brush
- ☞ On the switch a control light will shine.

Stopping Cylindrical brush operation:

- Switch the Tipp switch for the cylindrical brush to OFF.
- Pull the lever for the cylindrical brush upwards and let it sideways fall in the latch.

Operation of the side brushes

- The side brushes are fixed to swivel connections. When the side brushes collide with an obstacle they swivel to the side which prevents damage to the Ride-on-Sweeper.
 - Start the Ride-on-Sweeper.
 - Release both levers which hold both side brushes off the floor. The levers are on the left and right side of the steering pillar.
 - Move the lever downwards.
 - Switch the Tipp switch for side brushes to ON position.
- ☞ On the switch a control light will shine. The side brushes begin to rotate.

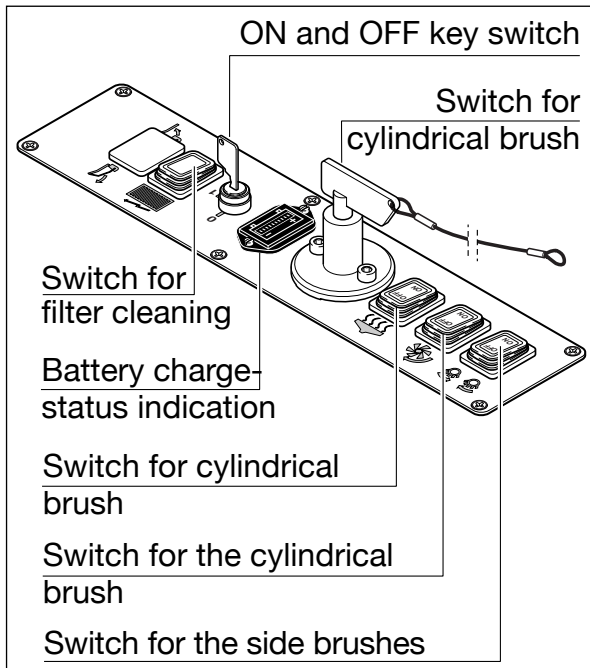


Ending the side brush operation:

- Switch off the Tipp switch for the side brushes
- Pull both lever of the side brushes upwards and let it fall in each latch.
- Engage the lever.

Sweeping operation

Operator panel (without overhead disposal)



Vacuum operation

Vacuum operation helps preventing Dust accumulation when sweeping.

- Start the Ride-on-Sweeper
 - Switch on the Tipp switch for the suction motor.
- ☞ **A control light will shine on the switch. The suction operation begins.**



Attention !

Do not switch on the vacuum motor when cleaning wet areas/ wastes. It will cause damage to the vacuum motor.

- To end the vacuum operation switch the Tipp switch to Vacuum motor OFF.

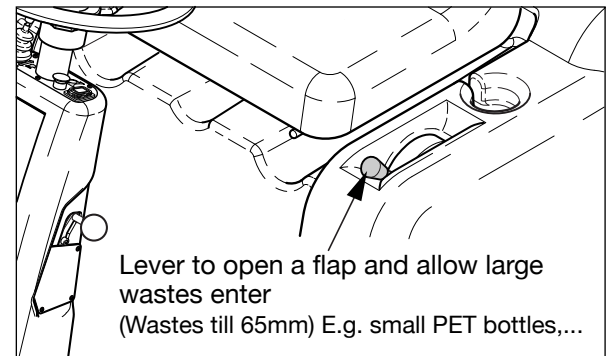
Filter cleaning operation

The filter cleaning—vibration device prevents that lamellas of the filter do not clogg up with dust.

- ☞ **Switch off the vacuum operation. Wait until the ventilator wheel stops and stands still.**

Press the Tipp switch 5-10 seconds long for the filter cleaning.

The filter cleaning begins to work.



Switching off the Ride-on-Sweeper

- Press the brake pedal
 - Secure the brake by pressing additionally the small brake pedal („hand-brake) into the latch.
- ☞ **If the brake is released afterwards, then the brake pedal must be kept pressed down.**
- Switch off all power supply
 - Lift up both side brushes by using both levers on the steering column.
 - Latch the lifting / lower level for the cylindrical brush.
 - Turn the key into position 0 = OFF and take the key out.



Turn the battery main switch OFF and take it out of the holder.



Danger !

Inappropriate use of the Ride-on-Sweeper can lead to severe injuries to persons and heavy damage to the equipment!

Prevent unauthorized persons to use the Ride-on-Sweeper.

Never leave the operational Ride-on- Sweeper unsupervised.

Pull out the battery mains switch key and the key of the ON/OFF switch when leaving the machine unattended.


(e.g. at the end of a job or days work the key should be removed)

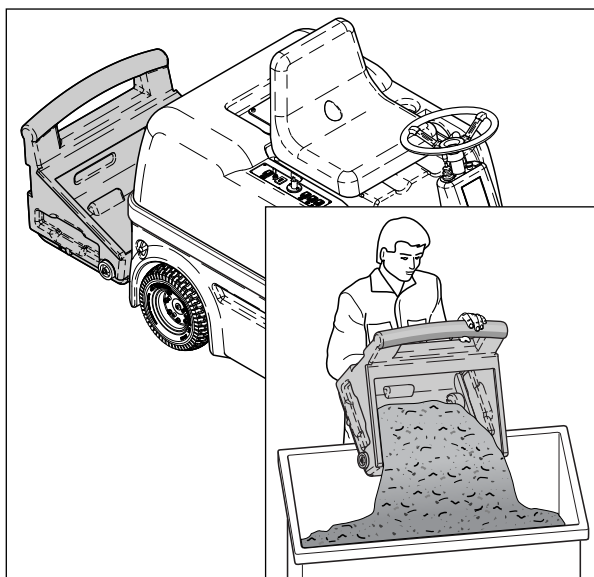
Keep the Mains Switch key and ON/OFF key switch in separate places.

Operation

Waste box emptying

The waste box is used to collect all swept wastes. It can be found at the back of the machine.

 **The Waste box / hopper must be emptied regularly but latest after each use.**



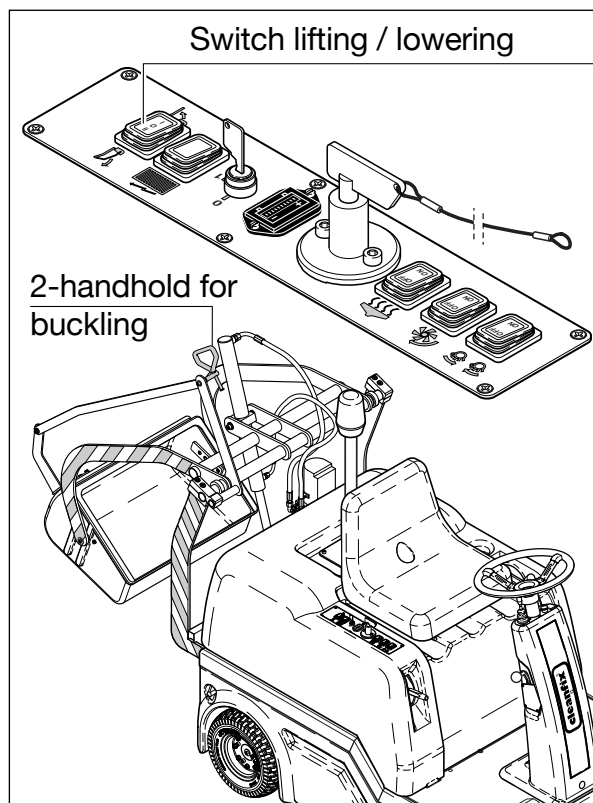
Manual Emptying of the Waste Box

- Turn upwards both steel swivelcatches which release the waste box. They can be found on both sides foteh waste box.
- Pull out the waste box along the rails, by pulling upwards and holding the handle of the waste box.
- The waste box can easily be removed and put back inside the machine again.
- Pull out the waste box completely.
- To empty the waste box grab inside the grip of the handle.

Insertion of the waste box

- Place the waste box in front of the entrance of the waste box opening at the back of the Ride-on-Sweeper.
- Lift the waste box to the height where it can enter the opening to the guiding rails.

- Slide the waste box inside again
- As soon as the waste box is completely inside the machine the steel-swivel catches can easily be moved downwards to lock position.



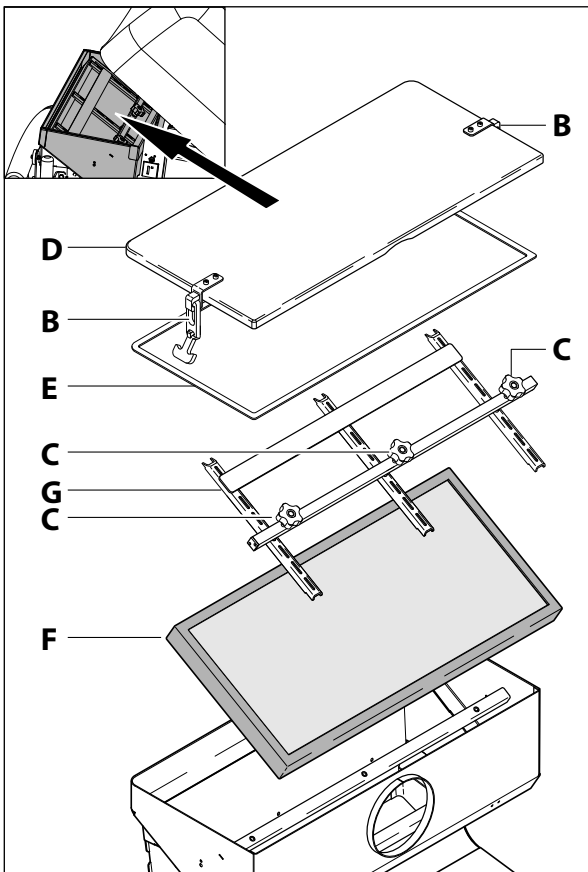
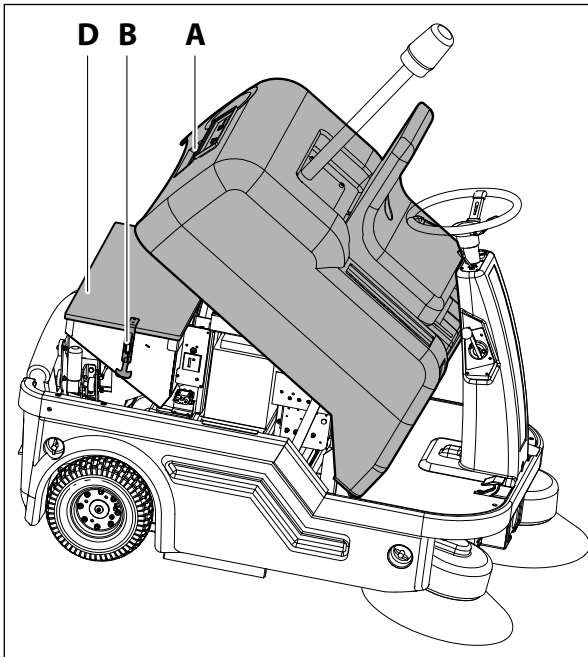
Hydraulic Overhead Waste Emptying

- When the waste box is full or ready for emptying proceed according to the Stepps 1 to 4 at the switches:
- First switch on the ON/OFF switch for overhead waste box emptying.
- Then tip the rocker switch to Pos.1 (lift the waste box) and then let go the rocker switch to middle position, i.e. „hold“
- Now drive the Ride-on-Sweeper to the foreseen waste container, close enough backwards so that the waste box is above the open waste container.
- Pull the handhold for buckling (2)
- Push the handhold back to the home position (3)
- Now you can press the rocker switch „lower waste box“, pos.4.

Operation

Filter exchange

The integrated lamella filter separates the fine dust. The lamella filter is cleaned by electric activation of vibration unit.



Dismantling

- Open the main cover. (A).
- Secure the main cover with the support rod in top position.
- The filter box cover (D) is held and secured by two rubber latches (B).
- The inner lamellar filter plate with the filter holder and the 3 star handles (C) and held fixed.
- Loosen both rubber mounts (B) and remove the air box- Cover (D) with seal (E) up and away.
- Loosen the 3 star handles (C) to the frame with plate filter is free. Pull the plate filter (F) from the filter box.

✎ **Always replace the complete frame with lamella-filter.**

Mounting

- Insert the new lamella filter frame (F).
- Filter holder (G) and use disk filter clamp with the 3 star knobs.
- The air box lid (D) onto the filter box with seal (E).
- On each side of the air box lid, the rubber-mount (B) down into place and tighten.
- Carefully release the support rod holding the machine cover and let it down slowly and close.

Machine cleaning

The Ride-on-Sweeper is a machine with electrical components.



Attention !

Humidity damages electronic components.

Humidity can lead to creeping current and short circuits.

Never use high-pressure cleaners.

Maintenance and Service

Safety instructions



Attention !

Before doing any work on the Ride-on-Sweeper it is compulsory to first **TURN-OFF** and the Main Switch (Emergency-Off Switch) and **REMOVE THE KEY** in order to prevent unforeseen switching-on of the machine.

The opened main cover is to be secured by the support rod. Place the support rod for the main cover in a safe and stable position.

Whenever working on electric and electronic parts of the machine it is compulsory to first disconnect the negative terminal/pole of the battery!

Only use appropriate and faultless tools and equipment for your maintenance and service work.

Every twelve (12) months, resp. 200 Operation hours, it will be necessary to have professional inspection of the Ride-on-Sweeper by an authorized and competent person (primarily by the manufacturer or an authorized dealer or trained specialist).

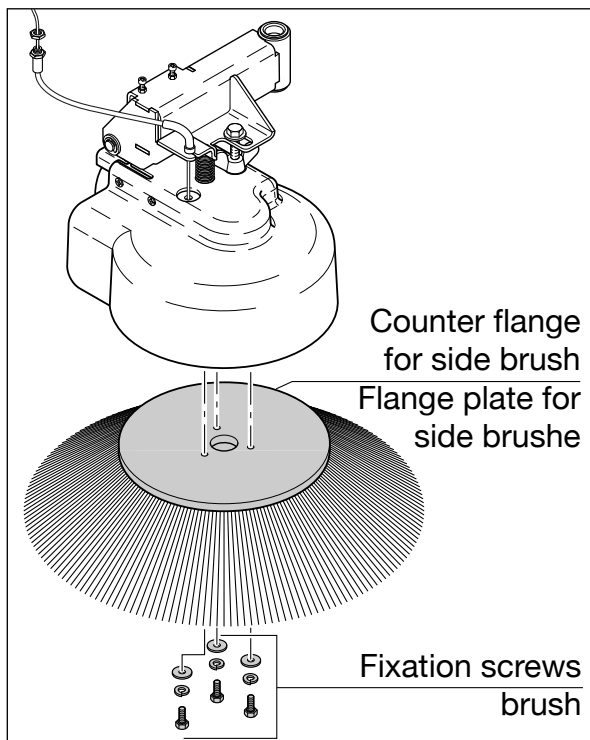
The results of this inspection must be kept to record in writing and to be saved at least until the next inspection takes place.

Side brushes

Side brushes exchange

Removal of the side brushes

- Switch off of the Ride-on-Sweeper.
- Pull the levers of the side brushes upwards.
- Locate both levers in their positions.
- Lift the side brush motor upwards in order to get better access to the side brushes.
- Unscrew the three fixation screws in the centre of each side brush.
- Pull downwards each side brush.
- Replace the side brushes.



Mounting the Side Brushes

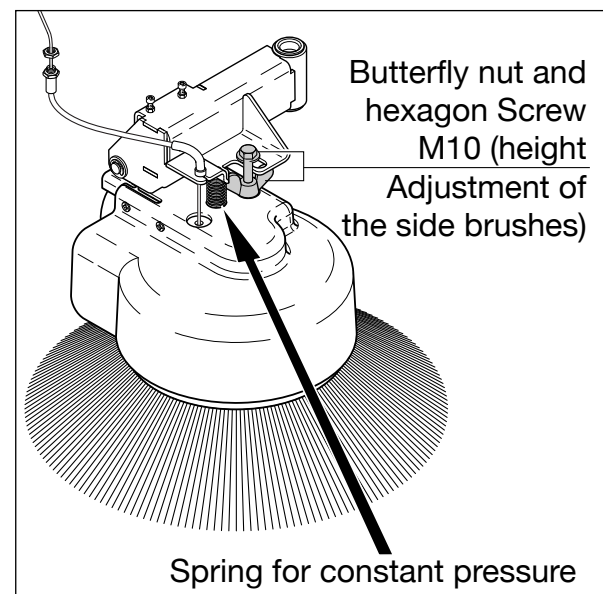
- Turn the 3 screw holes of the flange plate of the side brushes exactly over the position of the 3 holes of the counter flange on the side-brush-motor.
- Screw the three fixation screws in the centre of the side brush that it connects and lifts the brush upwards to

the counter flange coming from the side brush motor and is fixed tightly.

Side brushes adjustment

Due to wear and tear of the side brushes' bristles and the change in floor contact height, it is necessary to readjust the side brushes height from time to time.

- Turn-Off / Switch off the Ride-on-Sweeper.
- Release the levers for both side brushes and push them downwards.
- The side brushes are each fixed by means of two supports. The right support (bowden cable) is to lift or lower the side brushes, the left support (butterfly handle screw) is used to readjust the height of the brushes.

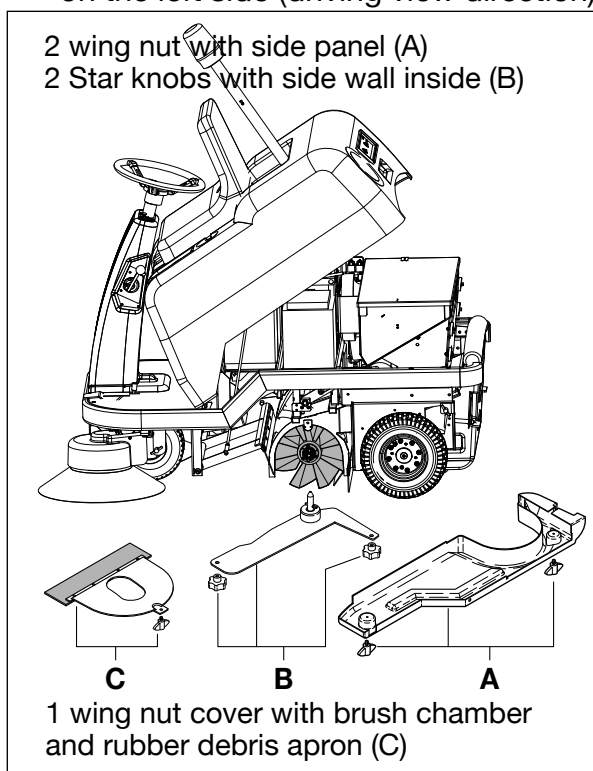


Cylindrical brush

Cylindrical brush exchange

Dismantling the cylindrical brush

- Switch OFF the Ride-on-Sweeper and remove the key.
- Turn-OFF the Main Switch and remove the red key as well in order to prevent unforeseen switching ON again.
- Pull up the lever for the cylindrical brush.
- Locate and fix the lever in the top position.
- Unscrew the two screws with star grip holding the machine-side-cover (A) on the left side (driving view direction)

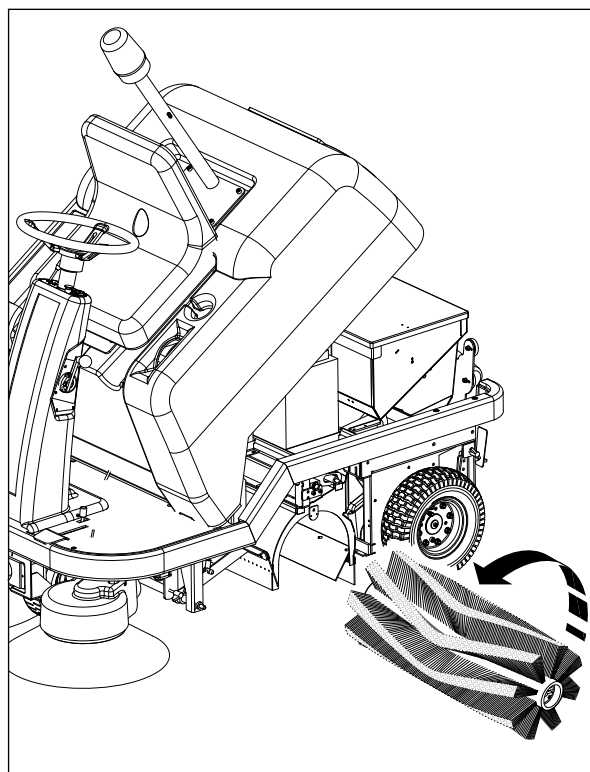


- Remove the machine-side-covers (A). The cylindrical brush is held by total three star grips/handles. Two star grips with screw are for the front cover. One star grip with screw holds the rubber-flap/waste splash protection).
- Unscrew both front star grips and remove the front cover (B).
- Loosen the top wing nut and remove the brush roller cover with rubber dirt apron the bottom (C).

- Pull out the cylindrical brush out of the machine and remove all wastes, strings, tapes etc. from the cylindrical mandrel.

Cylindrical brush fitting

- Push and slide the cylindrical brush (D) under the machine.
- **Pay attention to the driving/turning direction of the cylindrical brush when fitting it into the machine.**
- At the cylindrical brush end there is groove.



- Turn the cylindrical brush until the pickup mandrel of the roller-rocker fits in the groove of the cylindrical brush.
- Push and slide the roller rocker over the threaded rod.
- Make sure, that the cylindrical brush fits perfectly in the grooves on both sides of the carrier and that all star grips are fixed tightly.

Reattach the cover (C), lateral wall (B) and lateral off- clothing (A).

Cylindrical brush

Readjustment of the Cylindrical brush

Sweeping height / Sweeping range

The sweeping height/sweeping range of the cylindrical brush is important to achieve perfect surface cleaning results and for the most effective use of the cylindrical brush.

Checking the sweeping height/range:

Drive the Ride-on-Sweeper on a surface requiring cleaning. Switch-ON the cylindrical brush motor but do not drive onwards. Let the cylindrical brush work 1-2 minutes in standing position. Now lift the lever of the cylindrical brush. Switch-OFF the cylindrical brush motor and drive a few metres forward. The sweep track left behind on the floor is the Sweeping range.

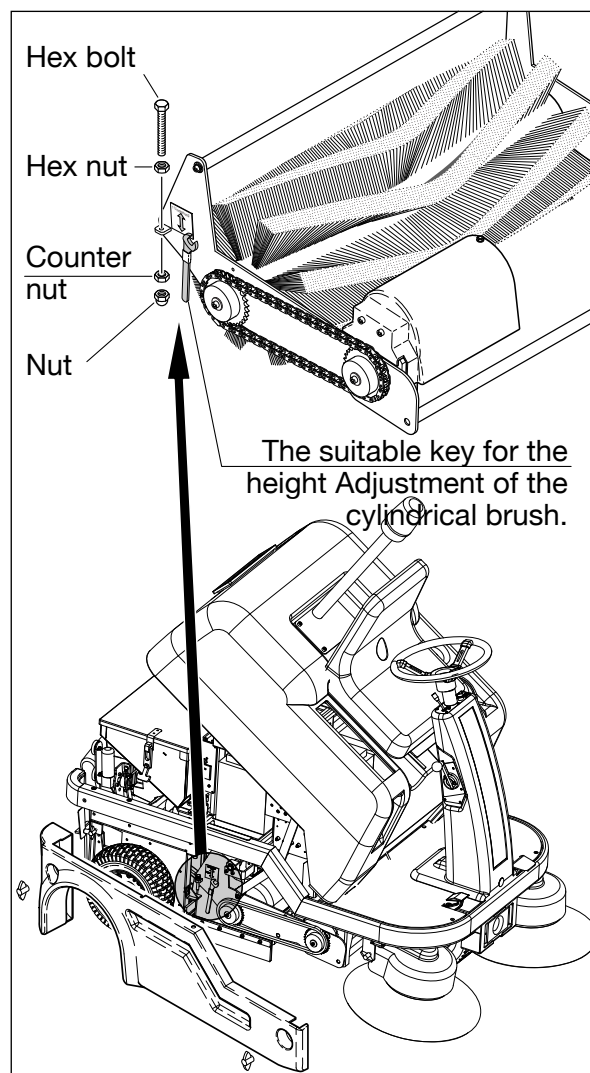
Test-Cleaning

- Keep the safety cover closed
- Take a piece of chalk and draw a line on the floor starting inbetween both side brushes (centre-line) and leading a few metres ahead of the machine.
- Lift-up the cylindrical brush and drive slowly towards the chalk line and then park the machine above this chalk line.
- As soon as the sweeper stands on top of the chalk line, lower the cylindrical brush (release the lever and lead downwards)
- Switch ON the motor for the cylindrical brush and start cleaning. The cylindrical brush should clean about 2 cm

Adjustment of the Sweeping height/ Sweeping range

- Switch-OFF the Ride-on-Sweeper
- Pull the lever upwards which lifts the cylindrical brush
- Open the main cover of the machine
- Secure the main cover in open-position by using the support rod
- Now remove the side cover of the

machine which is on the right-hand side when looking in driving direction.



Further adjustment possibilities:

- Remove the side cover of the machine on the right hand side (driving direction view).
- Release the clamping screw.
- Put the cylindrical brush-support sheet metal into the correct position.
- Refasten the clamping screw and remount the side cover of the machine.

Reference note:

Original diameter of the Cylindrical Brush: 290 mm.

The brush must be replaced when the diameter is below: 250 mm.

Maintenance and Service

Batteriy

Safety instructions for the use of batteries!

- **Warranty is only applicable if Original Cleanfix batteries and chargers are used.**
- **It is compulsory to read and pay attention to the Operation and Safety Instructions of the Original battery and charger manufacturer! Abide to all recommendations and advices of the local authorities in the country of application before using the batteries and charger.**
- **Batteries should never be left standing and discharged, they should always be immediately recharged.**
- **In order to prevent creeping current it is highly important to keep the batteries in clean, dry storage place. Keep them also clean of other wastes such metall-dust.**
- **Do not leave tools or other equipment on top of the battery due to the danger of short-circuits and the danger of explosion.**
- **Never ever use a flame or spark or smoke near to a battery or in a battery charging room. Danger of explosion.**
- **Do not touch any machine parts which become hot, e.g. Drive motor (Risks of burns)**
- **Be careful when handling battery acids! Abide to the corresponding Safety Instructions!**
- **Used batteries have to be disposed of ecologically in accordance to the EC-Directive 91/157 EWG.**

Maintenance and Service

Battery

Description

Four Gel batteries type Dryfit each 6 V / 180 Ah provide the Ride-on-Sweeper KS1100 with power. The charging status of the batteries can be read on the battery indication on the Operator Panel.

Signification of the LED lights on the battery status panel

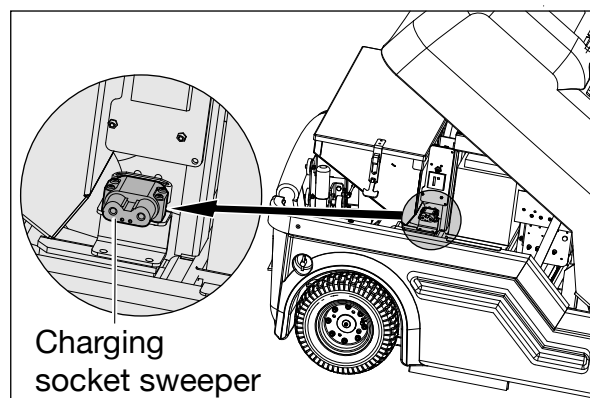
When switching ON the Ride-on-Sweeper immediately the LEDs start blinking, nicely one after another, beginning at the minus/negative terminal and blinks along to the plus/positive terminal. The result of this self-test is indicated by the 10 LED's..

1 LED = Working status / charging status is critical...until....

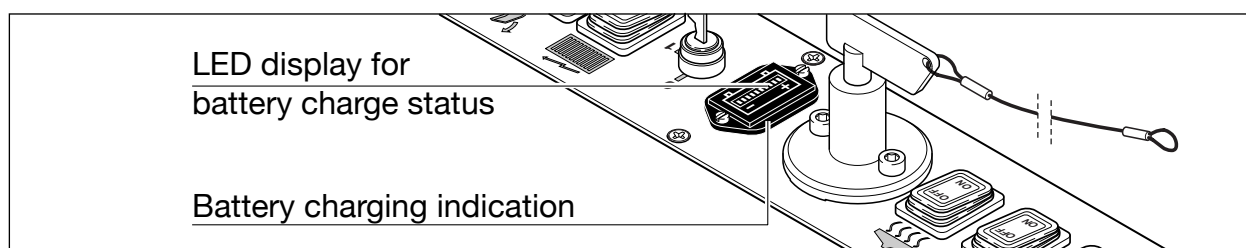
10 LED's = Work status / charge status is not critical, charging completed

Charging the batteries

- Switch-OFF the Ride-on-Sweeper
- In view of driving direction, on the right hand side, Above the rear wheel is the socket connection for battery charging
- Open the cover and connect the plug of the charger to the battery socket on the Ride-on-Sweeper
- Now connect the power cable of the battery charger to a power supply socket.
- The charging cycle requires approx. ?? hours if the battery was totally discharged and to be recharged only by an Original Battery Charger (Original Manufacturer)
- The Original-Charger of the Manufacturer should be connected as it allows to maintain the charging status/trickle charge and therefore always for the maximum capacity of the batteries even after a long standing time.
- Make sure to only put your Ride-on-Sweeper into operation, if the battery charge status is sufficient. The Ride-on-Sweeper will switch off automatically if the batteries are discharged down to a critical level which could cause damage. (low voltage/deep discharge disconnect) In such a case all consumer loads must be completely disconnected and switched OFF for one to two minutes. Thereafter they can be reconnected and then the machine must driven immediately to the charger for battery charging before damage occurs. Strictly only use the drive motor (do not switch on brush/vacuum motor).



Operator panel (without overhead emptying)



Maintenance and Service

Brake



Danger !

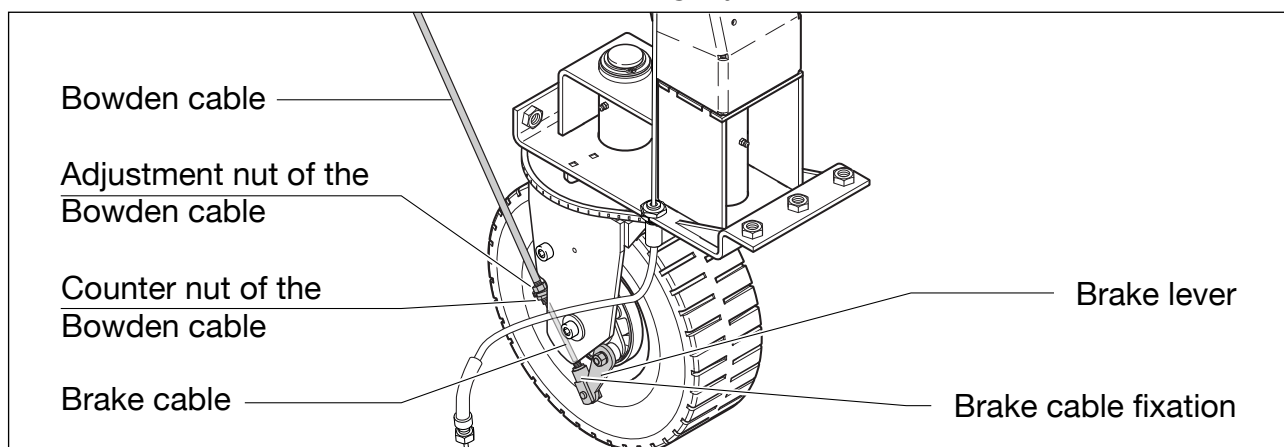
The brake is a safety relevant building component! All work for maintenance/ service or exchange have to be done by qualified and trained personell.

The brake (drum brake) affects the front wheel and is activated via the brake pedal and bowden cable.

Adjustment of the brakes can be done on the right hand side of the front wheel (view driving direction).

Readjustment of the brakes

- Fix the adjustment nut of the bowden cable with a wrench.
- Release the counter nut of the bowden cable.
- Press the brake upwards until brake feels resistance.
- Hold the brake in this position.
- Turn the counternut of the bowden cable tightly.



Functional Test of the Brakes

Front wheel—free room of movement. The Ride-on-Sweeper should be able to be pushed forwards easily if the brakes are unlocked. During this motion the front wheel should move easily and not block. If the brakes are adjusted too tightly then damage could occur to the drum brakes.

Functionality of the brake

Drive carefully a few metres at low speed. Press the brake pedal, the Ride-on-Sweeper should stop. If the functional test does succeed as foreseen, then repeat the adjustment procedure.

Further adjustment possibility:

The Bowden cable cannot be adjusted as described above.

- Release the brake cable fixation and lift the brake lever until it has resistance and then hold the brake lever in this position.
- Pull the brake cable through downwards and push the brake cable fixation upwards.
- Fasten the brake cable fixation in this position.
- Proceed with the functional tests as described above

Maintenance and Service

Fuses

Safety information

There is an integrated contact in the drivers seat.

The Ride-on-Sweeper cannot be driven or other switch functions used unless someone is seated and the seat contact is activated.

The fuse box is on the right side of the Ride-on-Sweeper under the main machine cover, underneath the cylindrical-brush lever.



**Never repair fuses.
Never replace fuses by
stronger ones (for higher
Amps).**

**This would lead to damage to the
electrical equipment.**

It can lead to a short circuit and under the circumstances even lead to a fire.

Relays

F = Filter cleaning

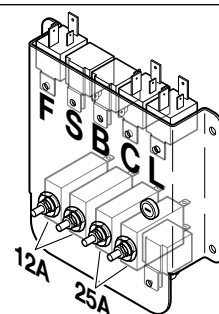
S = Side brushes

B = Blower/Vacuum pump

C = Cylindrical brush

L = Light

Safety fuses



Wheels and Steering

The steering of the front wheel is actuated by a chain and chain pinion. The Ride-on-Sweeper has total three wheels. The wheels of the Ride-on-Sweeper are Gel-wheels and help ease the adjustment of the cylindrical brush and side brushes. (air filled wheels loose air and cause the machine to have different operation heights)

The wheels and steering have to be greased regularly with a grease gun/grease press.

For this maintenance job please abide to the Maintenance chart on the following page.

Cylindrical brush drive

The cylindrical brush drive is on the right side of the Ride-on-Sweeper (drive direction view) The cylindrical brush is driven via a chain by an electric motor. The chain is diverted over a chain wheel and driven by chain wheels of the cylindrical brush. A spring-loaded chain tensioner holds the chain under tension.

Grease the chain wheels in regular intervals.
See the Maintenance Chart on the next page.

In order to grease the chain wheels, open the machine's main cover and remove the side covers. Please refer to the Maintenance Chart on the next page.

Maintenance Table

Daily Maintenance

- Charge the battery
- Check the machine for visible damage or functional errors
- Check the state of the lamella-filter and clean it
- Empty the waste box (hopper)

Additionally every 50 Operation hours

- Clean and grease the battery terminals/poles.
- Check the condition of the Gel-wheels.
- Check the Cylindrical brush and see if worn out or if clogged by waste parts. If necessary exchange the Cylindrical brush.
- Check the working height and cleaning range of the brushes. If necessary adjust.
- Check the Side brushes and see if worn out or if clogged. If necessary replace or readjust.
- Check the cylindrical brush tunnel for stuck waste parts or clogged up dirt, which narrow the brush tunnel and constraint the free movement of the cylindrical brush.

Additionally every 100 Operation hours

- Check the cable insulation. If necessary replace the cable.
- Check that the cable connection is properly fixed.
- Grease the steering chain.
- Grease the drive chain of the Cylindrical brush.
- Check the brake tension, if necessary replace.
- Check the vacuum suction for foreign particles / dirt and clean.
- Test drive to check the functionability of all operational elements and controls (switches, levers, pedals, steering, brushes etc.)
- Check the Cylindrical brush if functions are out of tolerance (expansion/strain).
- Check the state of wear and tear of all bearings.

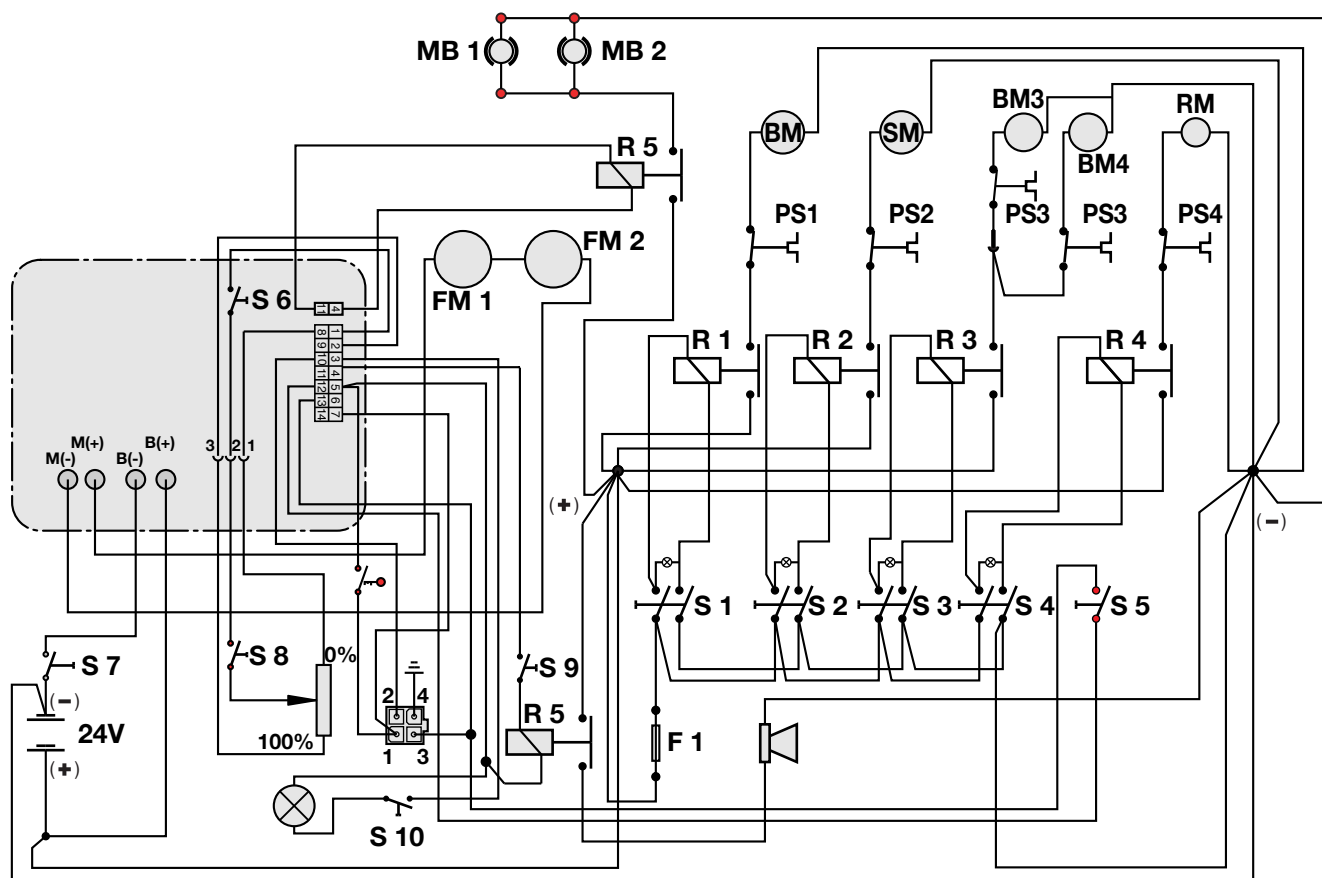
Additionally every 200 Operation hours

- Check the functionability of the electric motor.
- Check the wear and tear of the carbon brushes and if necessary, replace.
- Check the steering and it's play/clearance. If necessary retension the chain.
- Check all electronic parts to see if dusty or dirty and vacuum clean.

Errors and Solutions

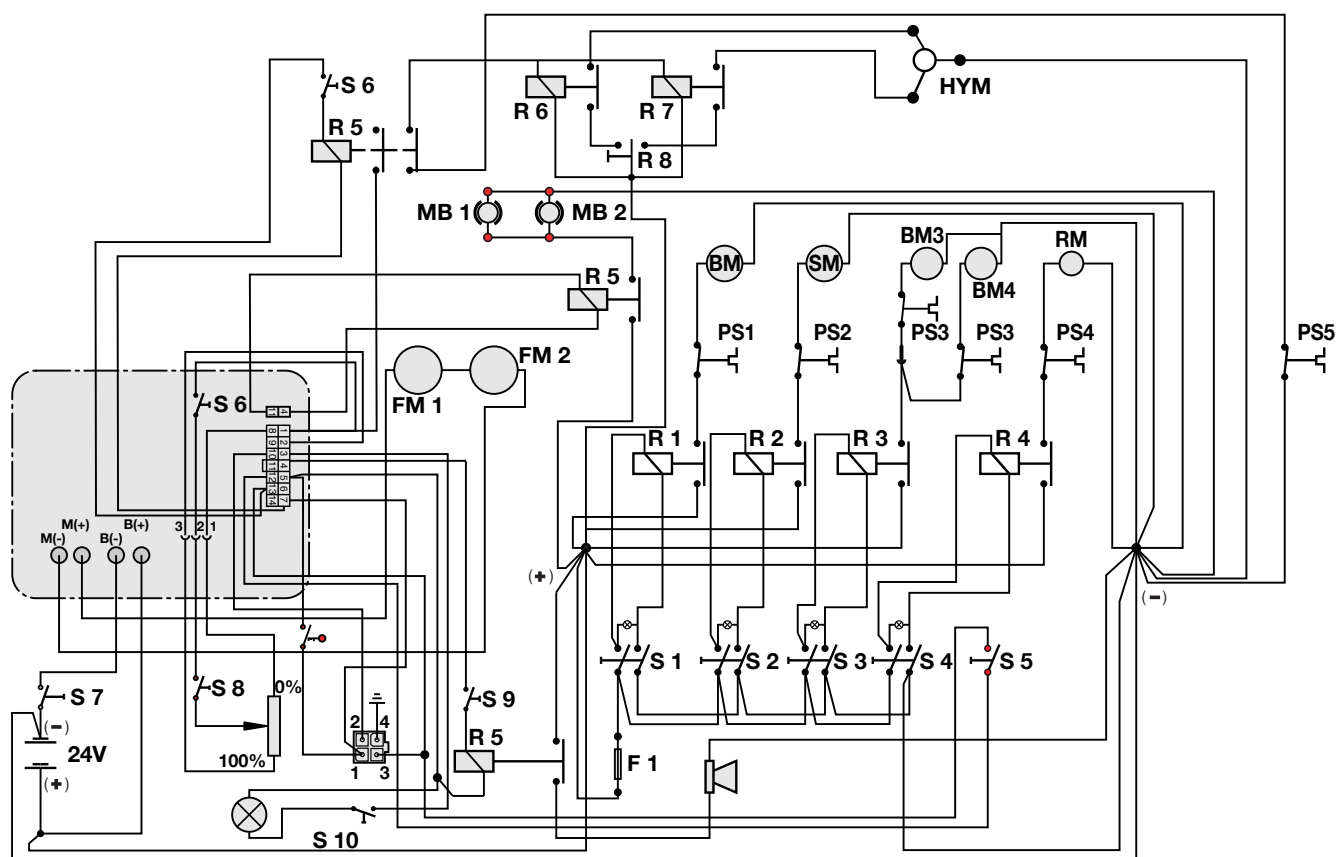
Error	Possible reason	Solution
No function display on the control instruments:	<ul style="list-style-type: none"> • Main Switch/Emergency-OFF switch is not turn ON / activated • Seat contact—is not activated • Error in electrical contact • Battery empty/discharge 	<ul style="list-style-type: none"> • Press/turn ON red Main Switch, Turn Key-Switch to position ON • A person must be seated in the centre of the seat • Check electric contacts • Fully charge the battery
No function of the drive motor although displayed /light on the operator panel	<ul style="list-style-type: none"> • Driving direction lever must be in forwards or backwards position • Fuse defect • Error in electric contact • Control electronic error 	<ul style="list-style-type: none"> • Seat switch AND accelerator must be activated to drive • Change the fuse • Check contacts/terminals • Check indication of red LED
No function of any electric consumers:	<ul style="list-style-type: none"> • Fuse(s) defect • Wrong electrical connection constantly damaging the fuses 	<ul style="list-style-type: none"> • Exchange fuse(s) • Check electrical contacts <p>Check each electrical contact for errors. Especially check the cylindrical brush if clogged/blocked by ropes, bands, strings, wastes.</p>
The sweeping result is not satisfactory:	<ul style="list-style-type: none"> • The side brushes and cylindrical brush were not lowered yet • Side brushes or Cylindrical brush are damaged • The overthrow area is clogged by wastes • Cylindrical brush does not work • Too much dust formation • Saugpumpe ohne Funktion • Filter is very dirty • Filter not correctly positioned • Sealing leakages and hence the suction of false air from outside in the area of the filter chamber 	<ul style="list-style-type: none"> • Let down all three levers to lower the brushes. 2 levers on steering / one near seat • Replace, readjust the damaged brushes • Check if the cylindrical brush cover has caught wastes inside • Is it correctly mounted. Does the drive motor turn? • Switch off side brushes • Check for electric damage • Clean the filter properly • Check if filter is properly fitted and fastened • Check where the sealing is damaged and false air is sucked.
Safety fuse of the Cylindrical brush motor do not last	Cylindrical brush is blocked and clogged by ropes, bands, large objects or other wastes	Dismantle the Cylindrical brush and clean it.
Safety fuse of the Side brush motor do not last	Side brushes are blocked and clogged by ropes, bands, large objects or other wastes	Inspect and check the side brushes and look for function disturbing parts and wastes.
Safety fuse of the Vacuum motor / Blower do not last	The fan wheel is not freely moveable.	Check the fan wheel and repair the blockage.
Safety fuse of the Drive motor do not last	The driving wheels are not running freely	Jack up the Ride-on-Sweeper and inspect the differential influence on the wheels and their free movement.

Circuit diagram Ride-on-Sweeper KS1100 B



Pos.	Designation	Item No.
R 1	Brush motor relay 30 A	080.394
R 2	Relay 30 A naturally aspirated	080.394
R 3	Side brush motor relay 30 A	080.394
R 4	Relais motor filter cleaning 20 A	500.982
R 5	Hydraulic pump relay 30A	080.394
S 1	Switch for brush motor	P...241
S 2	Suction motor switch	P...241
S 3	Switch side brush	P...241
S 4	Switch motor filter cleaning	P...241
S 5	Switch drive forward / backwards	800.515
S 6	Switch drivers seat	
S 7	Main switch	P...244 A
S 8	Switch drive motor	P...241
S 9	Switch Horn	800.527
S 10	Switch light	P...241
FM 1	Switch traction motor left	080.177
FM 2	Switch traction motor right	080.172
BM	Brush motor	080.510
SM	Vacuum motor	080.253
BM 3	Switch side brush Motor left	080.335
BM 4	Switch side brush Motor right	080.335
RM	Motor filter cleaning	080.235
PS 1	Protection switch side brush motor 25A	470.355
PS 2	Protection switch suction motor 25A	470.355
PS 3	Protection switch side brush motor 6A	470.355
PS 4	Protection switch motor filter cleaning 5A	470.355

Circuit diagram Ride-on-Sweeper KS1100 B HD



Pos.	Designation	Item No.
R 1	Brush motor relay 30 A	080.394
R 2	Relay 30 A naturally aspirated	080.394
R 3	Side brush motor relay 30 A	080.394
R 4	Relais motor filter cleaning 20 A	500.982
R 5	Hydraulic pump relay 30A	080.394
R 6	Relay flashing beacon	080.394
R 7	Light relay	080.394
R 8	Relay Hydraulic motor	080.392
HYM	Hydraulic motor	080.839
S 1	Switch for brush motor	P...241
S 2	Suction motor switch	P...241
S 3	Switch side brush	P...241
S 4	Switch motor filter cleaning	P...241
S 5	Switch drive forward / backwards	800.515
S 6	Switch drivers seat	
S 7	Main switch	P...244 A
S 8	Switch drive motor	P...241
S 9	Switch Horn	800.527
S 10	Switch light	P...241
FM 1	Switch traction motor left	080.177
FM 2	Switch traction motor right	080.172
BM	Brush motor	080.510
SM	Vacuum motor	080.253
BM 3	Switch side brush Motor left	080.335
BM 4	Switch side brush Motor right	080.335
RM	Motor filter cleaning	080.235
PS 1	Protection switch side brush motor 25A	470.355
PS 2	Protection switch side brush motor 25A	470.355
PS 3	Protection switch side brush motor 6A	470.355
PS 4	Protection switch motor filter cleaning 5A	470.355
PS 5	Breaker hydraulic motor	470.355

Technische Daten KS 1100 B

Drive/Power supply	Batterie 24V (180 Ah)
Running time (max.)	4,5 hours
Sweeping width with side brushes	1100 mm
Working width of Cylindrical brush	700 mm
Ø side brushes	440 mm
Theoretical Sweeping performance	8000 m ² /h
Practical Sweeping performance 70% of theoretical	5600 m ² /h
Net cleaning area performance upto m ² /3h	16800 m ²
Volume of the Waste box (hopper)	60 l
Filter surface	3,9 m ²
Filter cleaning	electrical filter shaker
Maximum speed	0 - 7,2 km/h
Dimensions (L x B x H)	1550x1000x1220 mm
Oversize waste retaining flap	available
Max. climbing rate	can overcome upto 20%
Vacuum/Blower motor	300 W
Cylindrical brush motor	500 W
Side brush motor	2 x 90W
Drive motor	2 x 400W
Air volume of the vacuum system	900 m ³ /h
Turning circle	240 cm
Empty weight	462,5 kg
Front axle load	217,5 kg
Rear axle load	380 kg
Rear left wheel load	195 kg
Rear right wheel load	185 kg
Warranty weight 390 kg empty weight + »75 kg Driver + 60 kg debris	525 kg

Technische Daten KS 1100 B HD

Drive/Power supply	Batterie 24V (180 Ah)
Running time (max.)	4,5 hours
Sweeping width with side brushes	1100 mm
Working width of Cylindrical brush	700 mm
Ø side brushes	440 mm
Theoretical Sweeping performance	8000 m ² /h
Practical Sweeping performance 70% of theoretical	5600 m ² /h
Net cleaning area performance upto m ² /3h	16800 m ²
Volume of the Waste box (hopper)	60 l
Filter surface	3,9 m ²
Filter cleaning	electrical filter shaker
Maximum speed	0 - 7,2 km/h
Dimensions (L x B x H)	1650x1000x1220 mm
Oversize waste retaining flap	available
Max. climbing rate	can overcome upto 20%
Vacuum/Blower motor	300 W
Cylindrical brush motor	500 W
Side brush motor	2 x 90W
Drive motor	2 x 400W
Air volume of the vacuum system	900 m ³ /h
Turning circle	240 cm
Empty weight	462,5 kg
Front axle load	217,5 kg
Rear axle load	380 kg
Rear left wheel load	195 kg
Rear right wheel load	185 kg
Warranty weight 462,5 kg empty weight + »75 kg Driver + 60 kg debris	597,5 kg

Product label

Machine plate

The machine plate is on the right front side (view driving direction) underneath the main cover of the machine. The sticker is next to the fuses. In order to have access to the machine type sticker, first lift up the main cover and support it with the rod inside the machine in open position.



TRADE MARK OF
CLEANFIX AG
STETTENSTRASSE
CH-9247 HENAU

Made in Switzerland

Typ: **KS 1100** Nr. **9025 001**
24V DC 1800W

Total weight: **467 kg**
Gradient: max. **15 %**



TRADE MARK OF
CLEANFIX AG
STETTENSTRASSE
CH-9247 HENAU

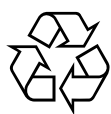
Made in Switzerland

Typ: **KS 1100** Nr. **9024 001**

max. Front axle load: **213,0 kg** Weighed,
max. Rear: **312,0 kg** with driver
Total weight: **525,0 kg** and sweepings



Disposal, environmental protection



The packaging material can be recycled. Please do not throw the packaging material into household waste; please send it for recycling.



Old appliances contain valuable materials that can be recycled; these should be sent for recycling.. Batteries, oil, and similar substances must not enter the environment. Please dispose of your old appliances using appropriate collection systems.

Declaration of Conformity

Product: **Ride on sweeper**

Type: **KS 1100**

From serial code: 9001 and following

Basics

Low Voltage: 60335-1 (ed.3), am1, am2; 60335-2-72 (ed.2); am1

Emissions: EN 55014-1:00+A1:01+A2:02; CISPR 14-1:05 (ed.5)

Immunity: EN 55014-2-97+A1:01; CISPR 14-2:97+A1:01 (cons. ed. 1.1)
EN 61000-6-2:05; IEC 61000-6-2:05 (ed.2)

EMF: EN 50366:03+A1:06; IEC 62233:05:05 (ed.1)

Harmonics: EN 61000-3-2:06; IEC 61000-3-2:05 (ed.3)

Voltage fluctuations: EN 61000-3-3:95+A1:01+A2:05; IEC 61000-3-3:94+A1:01
+A2:05 (cons. ed. 1.2)

We, **Cleanfix Reinigungssysteme AG** declare in own responsibility that the above named product, referred to by this declaration above, with the mentioned standard (s) or other normative document (s) matching.

Pursuant to the provisions of the guidelines:

Low Voltage:	2011/65/EU
For machines	2006/42/EC - 98/37/EC
For electromagnetic compatibility	2004/108/EN

Henau, 17.04.2013

Cleanfix Reinigungssysteme AG

Stettenstrasse 15

CH – 9247 Henau

Tel. +41 71 955 47 47 • Fax +41 71 955 47 60

www.cleanfix.com • info@cleanfix.com



Roland Flück

Director of Development

Service and Spare parts

Cleanfix Reinigungssysteme AG

Stettenstrasse 15

CH – 9247 Henau-Uzwil

Schweiz

Tél. +41 71 955 47 47

Fax +41 71 955 47 60

info@cleanfix.com

For spare parts visit our website:: **www.cleanfix.com**

Authorized Cleanfix Dealer:

- Company:.....
- Contact person:.....
- Address:
- Postal code and Town:.....
- Country:.....