

# Operating Instructions

## Sweeping & Suction Machine

### TT/E 900 & 1100



**STOLZENBERG • TWIN TOP**

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## Introduction

About these Operating Instructions.

In this section you will find information on the format of the Operating Instructions and explanations of the used designations and symbols.

These Operating Instructions pertain to the operation of the Sweeping & Suction Machine TT/E.

Our products are subject to continuous improvement; constructive changes that have been made after the printing of these operating instructions could not be taken into account. If you have any questions, feel free to contact our service department.

The Operating Instructions must be read and observed by anybody using or operating the Sweeping & Suction Machine TT/E.

Besides applying the Operating Instructions, the operator is reminded to observe the legislator's accident prevention regulations as well as general rules of professional and safe working methods.

## Symbols Used in the Text

The following designations and/or symbols are used in the Operating Instructions to indicate information of special importance.

**Danger!**

Safety information that must be observed to prevent danger to persons are pointed out by this sign.

This sign is used where immediate danger of death or severe injury is at hand.

**Caution!**

This symbol is used in cases of danger of minor injuries.

**Please Observe!**

This picture signifies danger of damage to the device or other objects.



It points out instructions that ought to be observed by anybody using the Sweeping & Suction Machine.

- A dot in front of the text signifies:  
this is what you have to do.
- A dash in front of the text signifies:  
This item is part of an enumeration.

## Safety Information

The Sweeping & Suction Machine TT/E is designed and built in accordance with state of the art know-how and standard safety regulations. In spite of this, physical danger to the operator or third parties or the impairment of the Sweeping & Suction Machine or other valuable objects may arise during operation.

Always use the Sweeping & Suction Machine in a flawless condition and in a way that accords with general rules of operational and personal safety, and always observe these Operating Instructions!

Eliminate malfunctions that may impair operational safety immediately!

Keep Operating Instructions ready at hand wherever the Sweeping & Suction Machine is used!

In addition to the Operating Instructions, observe the generally applicable legal or other binding guidelines for accident prevention and environmental protection!

Do not modify, expand, or reconstruct the Sweeping & Suction Machine in any way without explicit approval by the manufacturer.

Replacement parts must comply with the specifications defined by the manufacturer. This will always be the case if only original replacement parts are applied.

Observe the prescribed maintenance intervals and those stated in these Operating Instructions!

Be sure to dispose of operational and auxiliary materials as well as replacement parts in a safe and environmentally sound way!

Prevent manipulation by unauthorized persons, for example by removing the ignition key after use.

## Correct Application

The Sweeping & Suction Machine is intended exclusively for cleaning hard surfaces of dry sweepings. e. g. : parking lots, industrial buildings, warehouses, sidewalks.

**The machine must absolutely not be used to sweep up inflammable or explosive material.**

Any application different from or exceeding this definition is incorrect.

The manufacturer is not to be held responsible for any damage arising from such applications.

Any risk is to be assumed by the operator.

The Sweeping & Suction Machine is not suitable for taking up cords, strings, wires or similar materials.

Correct application includes the observation of Operating Instructions as well as inspection and maintenance intervals.

## Device Description

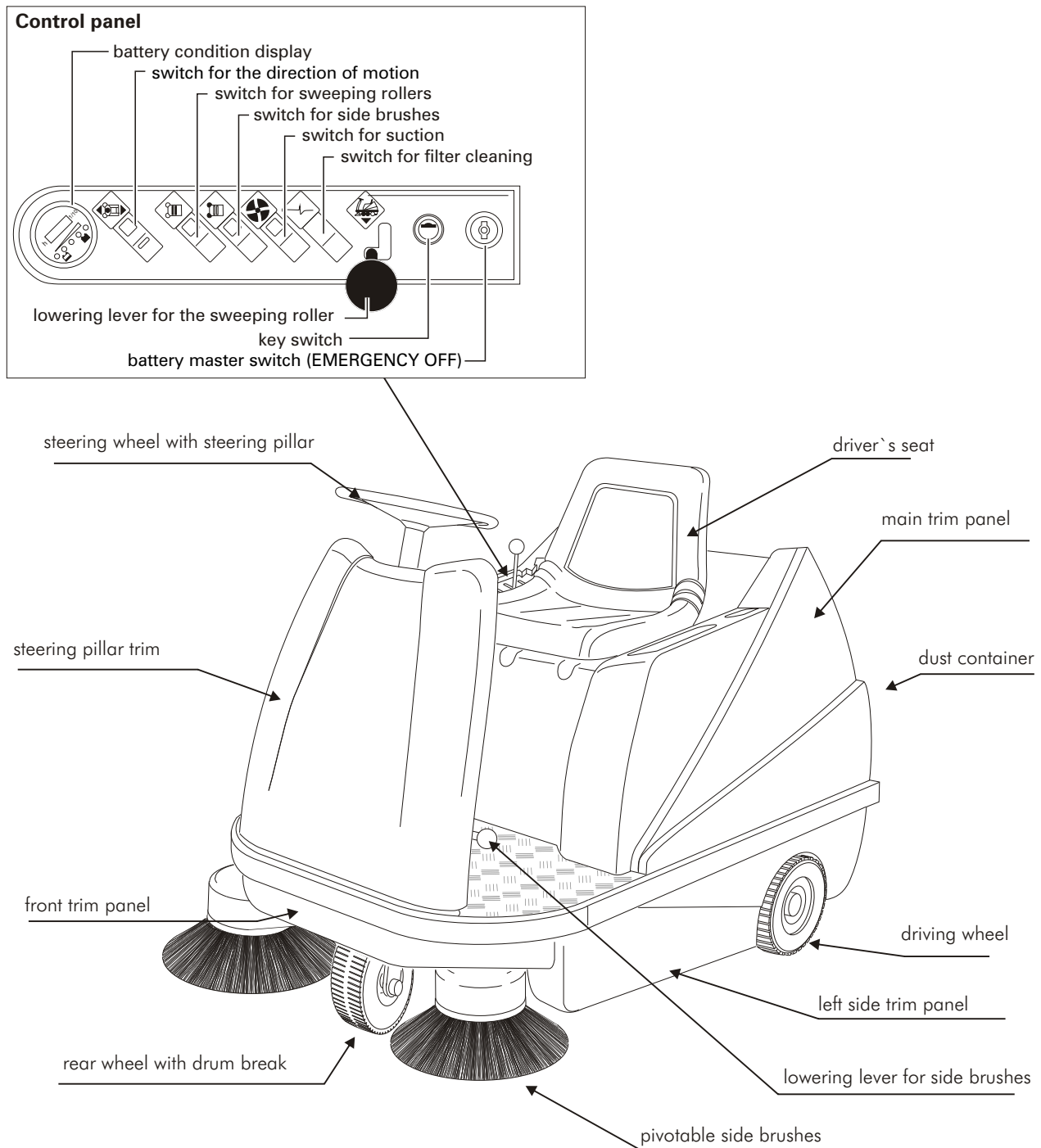
The Sweeping & Suction Machine is driven by electric motors.

Model TT/E 900 operates by using a pivotable side brush to convey the sweepings to the two sweeping rollers arranged parallel to the direction of motion. These project the sweepings overhead into the dust container positioned behind it.

Optionally two side brushes may be installed.

Model TT/E 1100 is equipped with two pivotable side brushes. If necessary, the dust stirred up by the sweeping rollers is caught by the dust suction unit in a lamellar filter inside the machine.

The lamellar filter is cleaned by an electrically controlled filter cleaning device.



## Safety Devices

The Sweeping & Suction Machine only can be started if

- the battery master switch (EMERGENCY OFF) and the ignition key are both set to the ON position;
- the control panel switch for the direction of motion is in the neutral position.

If the main switch is set to reverse motion, an acoustical signal is heard.

If the fuel pedal is depressed during the starting procedure, the power supply to the driving motor is interrupted.

Power supply to the electric motor is interrupted, if

- the hood is opened;
- the driver's seat is not weighed down;
- the EMERGENCY OFF switch is actuated.

## Initial Startup

The Sweeping & Suction Machine standard delivery is without batteries or charging device.

Optional:

the Sweeping & Suction Machine is supplied with batteries

### Standard:

- Open the transport packaging.
- Take off the complete hood. Lift up hood at back and lift the front spigots of the hood out of the retaining.
- Fit in the batteries.
- Connect the batteries. Compare technical data circuit diagram.
- Replace the hood panel.
- Mount the side brushes (cf. Mounting the Side Brushes, page 15).

The Sweeping & Suction Machine is ready for use.

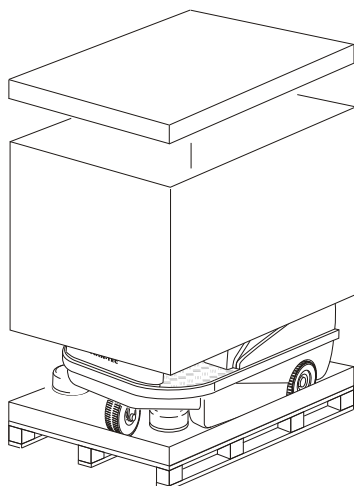
- Drive the Sweeping & Suction Machine over a ramp out of the transport packaging.



Use a unit ramp. The ramp must be designed in such a way as to allow the rear wheel as well as the drive wheels to travel across it.

If this is not observed, damages to the Sweeping & Suction Machine mechanics will occur.

### Elements of the Transport Packaging.



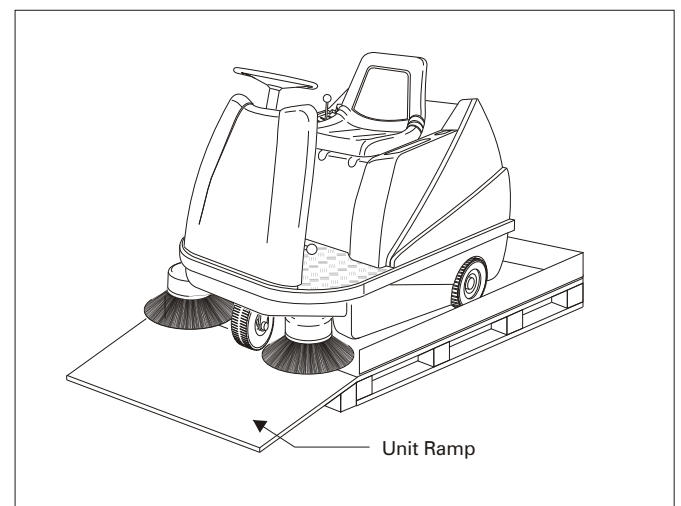
### Optional:

The Sweeping & Suction Machine is equipped with batteries.

- Open the transport packaging.
- Open the hood
- Lock hood securely using the hood arrester.

The hood is equipped with drill holes at the bottom

- Fit the hood arrester into the corresponding drill hole.
- Connect the positive pole of the battery..
- Close the hood.
- Mount the side brushes (cf. Mounting the Side Brushes, page 15).



- Drive the Sweeping & Suction Machine over a ramp out of the transport packaging. (Cf. page 8, Driving)



Use a unit ramp. The ramp must be designed in such a way as to allow the rear wheel as well as the drive wheels to travel across it.

If this is not observed, damages to the Sweeping & Suction Machine mechanics will occur.

The Sweeping & Suction Machine is ready for use.

## Operation

### Safety Information

The Sweeping & Suction Machine may only be operated by dependable persons..  
Only deploy trained and instructed staff.  
The areas or responsibility of staff must be clearly defined  
Examine the Sweeping & Suction Machine before starting and check serviceability and technical safety.

Do not use the machine in case of malfunctions of any kind.  
Only drive on specifically assigned pathways and lots.  
The Sweeping & Suction Machine is designed as a one-man device.  
Carrying along further persons or load is not permitted.


### Adjustment of Driver`s Seat

Loosen the seat arresting device and shift the driver's seat on the seat support to a position that feels comfortable to you.


### Driving

#### Starting the Sweeping & Suction Machine

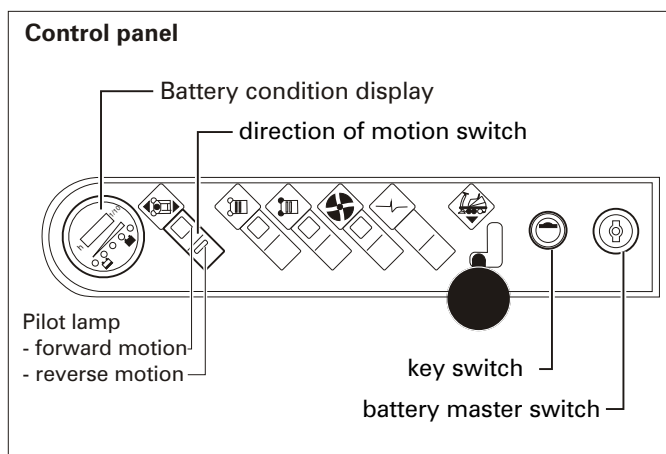
- Sit down in the driver`s seat

 The Sweeping & Suction Machine cannot be started if the driver's seat is not weighed down.


- Check position of direction of motion switch.

 For starting the motor the switch must be in neutral position.

- The direction of motion switch is a toggle switch with three positions.




- Insert the battery master switch into the socket.
- Press it down and turn it clockwise until it is firmly latched.
- Now pull up the battery master switch.
- Insert the key into the key switch.
- Turn the key clockwise.

 On the control panel a red LED starts flashing.  
(This indicates machine ready for operation.)  
After that the LED`s indicating the battery's charging condition light up.

- Depress the brake pedal..
- Release the parking brake.
- Actuate the direction of motion switch.


#### - Forward motion:

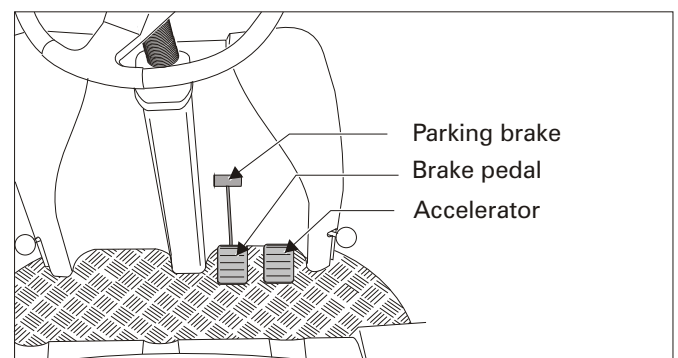
- Push the direction of motion switch forward.

 Optical signal:  
- Green pilot lamp on the switch

#### - Reverse motion:

- Push the direction of motion switch backward.

 Optical signal:  
- Red pilot lamp on the switch,  
Acoustical signal:  
- Beeper



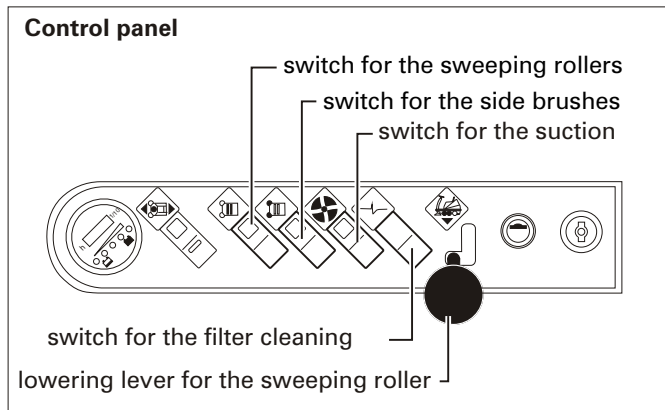
The speed of the Sweeping & Suction Machine can be adjusted with infinite variability by depressing the accelerator.



## Sweeping


### Safety Information

Do not switch on suction when sweepings are wet.  
This will cause damage to the suction device and the filter.  
Provide good aeration when using the machine in closed rooms or buildings.  
Do not sweep up materials that may cause health impairment.



#### Operating the Sweeping Rollers

- Start the Sweeping & Suction Machine
- Unlatch the lowering lever of the sweeping roller.
- Switch the toggle switch for the sweeping rollers to ON position.

 The pilot lamp on the switch lights up.  
The sweeping rollers begin rotating.

#### Stopping Sweeping Rollers Operation


- Switch toggle switch for the sweeping rollers to OFF position
- Pull lowering lever of the sweeping rollers towards yourself
- Let the lever snap in arresting position



#### Operating the Side Brushes

The side brushes are fixed to swingers.  
Whenever the side brushes hit an obstacle they swing back under the vehicle to avoid damages.

- Start the Sweeping & Suction Machine.
- Unlatch the lowering lever of the side brushes.
- Push the lever down.
- Switch toggle switch for the side brushes to ON position.

 The pilot lamp on the switch lights up.  
The side brushes begin to rotate.

#### Stopping Side Brush Operating.

- Switch toggle switch for the side brushes to OFF position.
- Pull up the lowering lever for the side brushes.
- Let the lever snap in arresting position



#### Operating the Suction

The suction prevents dust formation during sweeping operations.

- Start the Sweeping & Suction Machine.
- Switch the toggle switch for the suction to ON position.



The pilot lamp on the switch lights up.  
The suction begins operating.



#### Please observe!

Do not switch on suction when sweepings are wet.  
This will cause damage to the suction device.

- To turn off suction operation switch the toggle switch for the suction to OFF position.



#### Operating the Filter Cleaning Device

The filter cleaning device prevents the lamellar filter from being blocked by debris.



#### Switch off suction.

**Wait until ventilation wheel stands still.**

Apply filter cleaning device at regular intervals.

Depress the toggle switch for the filter cleaning device for about 5 to 10 seconds.

The filter cleaning device begins operation..

## Turning Off the Sweeping & Suction Machine

- Depress the brake pedal..
- Lock the brake by pulling the locking lever towards the driver's seat.



When the brake now is relieved the brake pedal must remain in depressed position..

- Set position of direction of motion switch to neutral position.



Medium position.

All of the pilot lamps on the switch are off.

- Switch off all actuators.
- Lift up the side brushes and arrest the lowering lever for the side brushes.
- Lift up the sweeping rollers and arrest the lowering lever for the sweeping rollers.
- Turn the key counterclockwise and remove it from the key switch.
- Turn the battery master switch counterclockwise and remove it from the socket.

### Danger



Incorrect handling of the Sweeping & Suction Machine may lead to severe harm to persons or objects!

Make sure the Sweeping & Suction Machine is not used by unauthorized persons.  
 Never leave the Sweeping & Suction Machine unattended in ready for operation condition.  
 Remove the battery master switch and the key in the key switch when leaving the Sweeping & Suction Machine. (e.g. at the end of work or for technical reasons)  
 Keep the battery master switch and the key in a place separate from the Sweeping & Suction Machine.

## Emptying the Dust Container

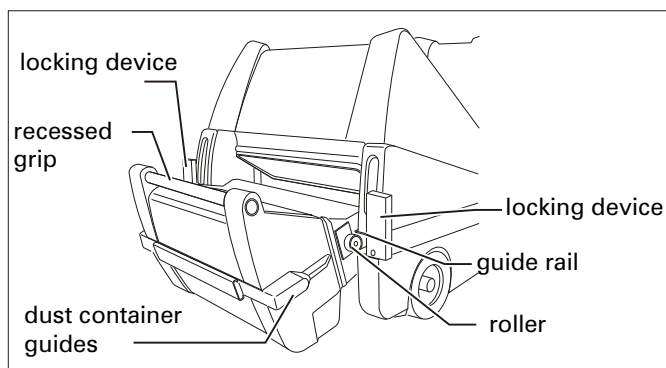
The dust container is the place where the sweepings are collected. It is positioned at the back of the Sweeping & Suction Machine.



The dust container must be emptied regularly and especially after each use.

### Removing the Dust Container

- Turn the dust container locking upward.
- Pull out the dust container from the Sweeping & Suction Machine by the gripping handle until the front dust container guide rails are free.



At the back of the dust container two guiding rollers are installed to make the removal more easy.

- Lower the dust container to the ground



A number of rollers and a recessed grip are positioned at the bottom of the dust container.

- Remove the dust container completely from the Sweeping & Suction Machine.
- In order to empty the dust collecting box use the free hand to take hold of the recessed grip. .
- The sweepings are discharged through the opening at the bottom of the dust bin.
- Empty sweepings into appropriate containers only.



### Reinserting the Dust Container

- Place the dust container before the dust container retaining.
- Bring the dust container's front guides up to the same level as the guide rails.
- Slide the dust container into the Sweeping & Suction Machine.
- Turn the locking device downward.

## Replacement of Filter

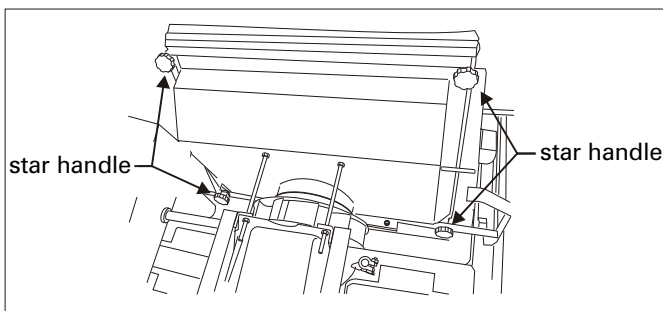
The filter removes fine dust.

The filter is cleaned by an electrical vibrating device.

### Removal

- Open the hood. .
- Lock hood securely using the hood arrester.

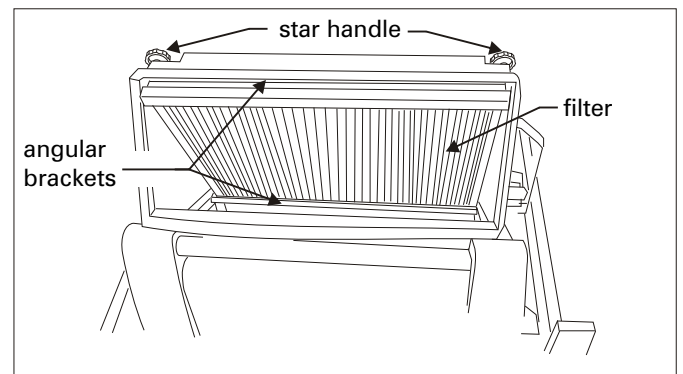
The filter is held in the fixture by 4 star handles.



- Loosen the top two star handles.
- Swing up the top angular bracket.
- Loosen the bottom two star handles.
- Pull the filter out of the fixture.

### Reinsertion

- Place the filter into the lower angular bracket.
- Swing the upper bracket over the filter..
- Tighten the top star handles slightly.
- Tighten star handles evenly crosswise so that the filter snugly fits all around the seal.
- Adjust the bolts and the nuts in a way that, provides the filter with the best possible sealing inside the casing.



## Cleaning

The Sweeping & Suction Machine is a machine with electrical system components.



**Please observe!**

Moisture damages the electronic controls of the machine.

Moisture may lead to leak current and short-circuits.

Do not use high-pressure cleaning devices.

The Sweeping & Suction Machine may only be dry-cleaned.

## Service and Maintenance

### Safety Information

The battery master switch (EMERGENCY OFF switch) must be switched off and pulled out whenever work of any kind is being done on the Sweeping & Suction Machine. This is necessary to avoid accidental machine starting.

The open hood always has to be secured by the hood arresting device. Guide the hood arresting into the drill hole at the bottom of the hood.

When working on the electrical system the negative pole of the battery always has to be disconnected..

Only use appropriate and flawless tools for maintenance work.

Every twelve months or after each 200 operating hours an inspection by a trained and authorized person must be carried out (preferably by the manufacturer or an expert appointed by him).

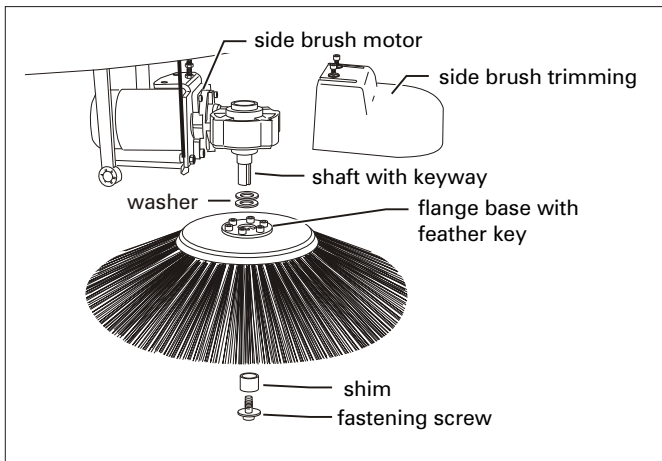
The results of the inspection have to be recorded in writing and must be saved at least until the next inspection.

## Side Brushes

### Replacing the Side Brush

#### Dismounting the Side Brush

- Turn off the Sweeping & Suction Machine.
- Pull up the lowering lever for the side brushes.
- Arrest the lowering lever.
- Lift up the side brush motor in order to get easy access to the fastening screws at the lower center of the side brush.



- Loosen the fastening screw (hexagon socket 5 mm) at bottom center of each side brush.
- Pull the side brush down and off.
- Replace the side brush.

#### Mounting the Side Brush

- Fasten the flange plate to the side brush.
- Slide the washers onto the shaft of the side brush motor.

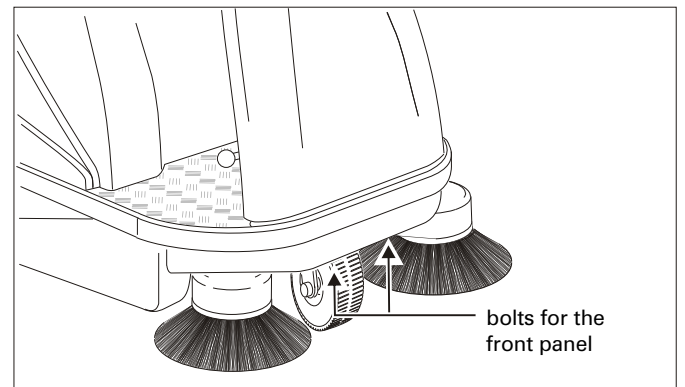
The flange plate is equipped with a feather key. The side brush motor shaft is equipped with a keyway.

- Turn the side brush until the feather key fits snugly into the keyway..
- Slide the shim over the shaft of the side brush motor.
- Fasten the side brush to the shaft of the side brush motor by use of the fastening screw.

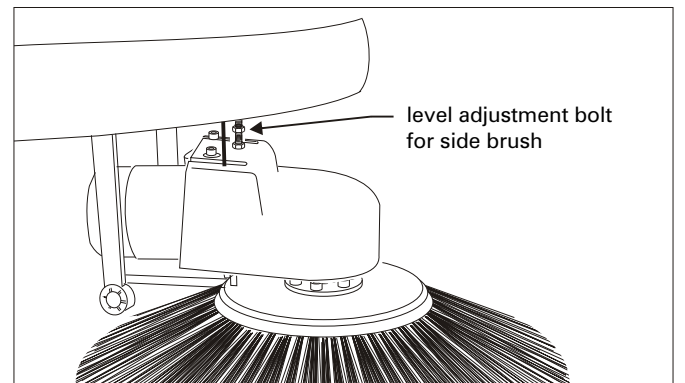
### Adjustment of the Side Brush

Operational wear necessitates additional adjustment of the side brushes.

- Turn off the Sweeping & Suction Machine. .
- Unlatch the lowering lever of the side brushes.
- Push down the lowering lever.
- Loosen the bolts of the front panel.
- Remove the front panel.



- Loosen the bolt of the side brush level adjustment.
- Move the side brush to the desired position. .
- Tighten the bolt of the side brush level adjustment.



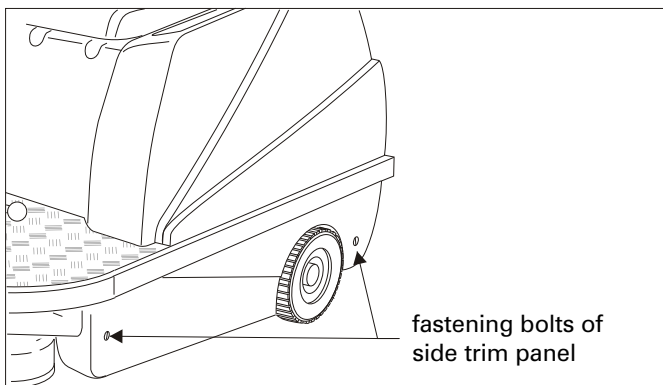
- Fasten the front panel.

## Sweeping Rollers

### Sweeping Rollers Replacement

#### Dismounting the Sweeping Rollers

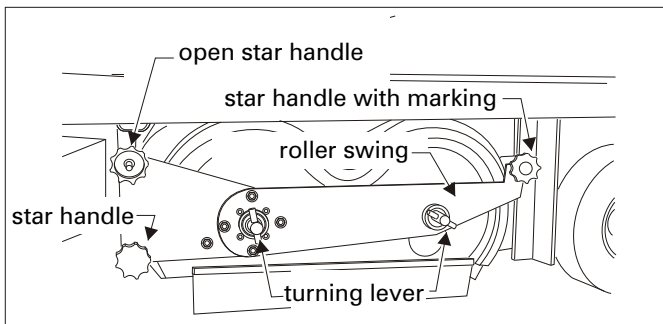
- Turn off the Sweeping & Suction Machine.
- Switch off the EMERGENCY OFF to avoid accidental starting.
- Pull lowering lever of the sweeping rollers.
- Arrest the lowering lever.
- Loosen the bolts of the left side trim panel facing in driving direction.



- Remove the side panel.

The roller swing is held in place by three star handles.

- Loosen the star handles.
- Remove the roller swing.



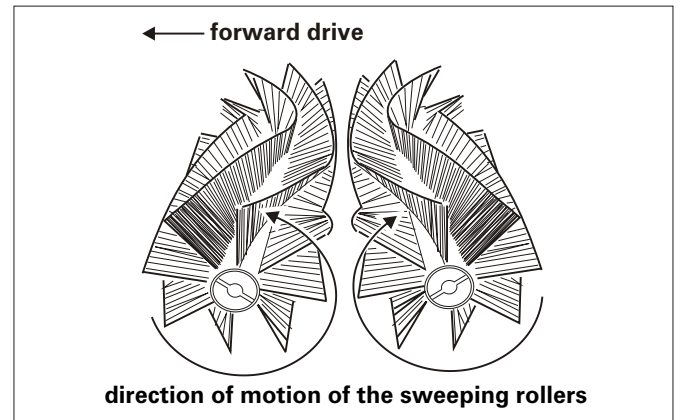
- Pull the sweeping rollers out of the machine and remove any debris, cords, etc., from the roller tunnel and from the pick-up pins.

#### Installing the Sweeping Rollers

- Push the sweeping rollers under the machine.

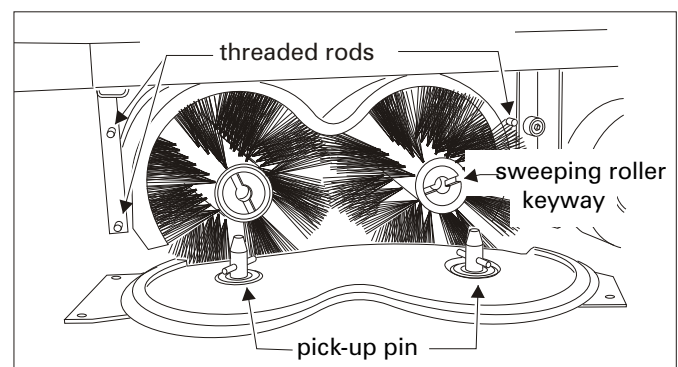


**Observe the sweeping rollers' sense of rotation while sliding them in.**



Each roller end is equipped with a keyway. Turn the sweeping roller until the pick-up pin of the rear roller swing fits into the keyway of the sweeping roller. Slide the sweeping rollers in as far as possible. Set the front roller swing onto the free sweeping roller ends.

The roller swing is equipped with two turning levers.. Each turning lever end is equipped with one pick-up pin.



- Turn the turning lever until the pick-up pin fits into the keyway of the sweeping rollers.
- Push the roller swing over the threaded rods.
- Make sure the sweeping rollers are fitted on both sides by the keyway into the pick-up pins and that all star handles are firmly tightened.



The star handle marked by a white dot is equipped with an inlay. This star handle must be screwed onto a right-hand thread.

- Fasten the side trim panel.



## Setting the Sweeping Rollers Sweeping Contour Adjustment

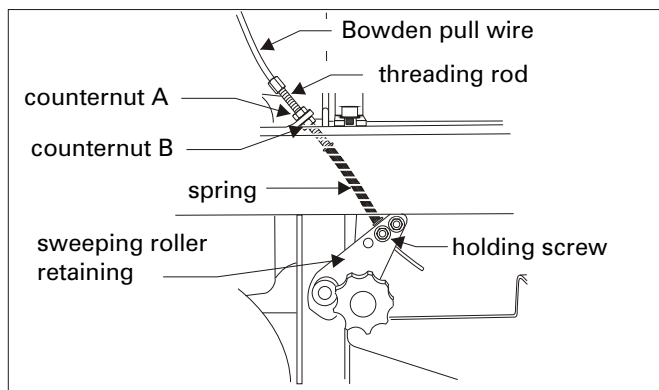
For best cleaning results and to ensure the highest possible device efficiency, the sweeping rollers are equipped with a sweeping contour. The sweeping contour should be set to approx. 50-60 mm at the rear roller.

### Establishing the Sweeping Contour:

Drive the Sweeping & Suction Machine to an area to be cleaned. Switch on the sweeping rollers without moving the sweeping machine. Allow the sweeping rollers to run for about one or two minutes without moving. Lift the sweeping rollers. Stop sweeping rollers operation and drive forward a few meters. The sweeping track visible on the ground is the sweeping contour.

### Adjusting the Sweeping Contour

- Switch off the Sweeping & Suction Machine.
- Pull lowering lever of the sweeping rollers.
- Arrest the lowering lever.
- Open the hood.
- Secure the hood position by the hood arresting device.
- Guide the hood arresting into the holes at the bottom of the hood.
- Remove the right side trim panel facing in the direction of motion.



### Increasing the Sweeping Contour by Lowering Sweeping Rollers

- Loosen counternut A on the threading rod of the Bowden pull wire.
- Turn counternut A counterclockwise.
- Now lock counternut A in place by counternut B

### Decreasing Sweeping Contour by Lifting Sweeping Rollers

- Loosen counternut B
- Turn counternut B clockwise by a few more threads.
- Lock counternut B in position by counternut A.

### Further Possible Adjustment:

Take off side trim panel to the right facing in direction of motion.

- Loosen the holding screw.
- Move sweeping roller retaining to desired position.
- Tighten up the holding screw again and mount the side trim panel.

### For your Information:

Original roller diameter: 285 mm.

When diameter has decreased to 245 mm, the roller needs to be replaced.

## Battery

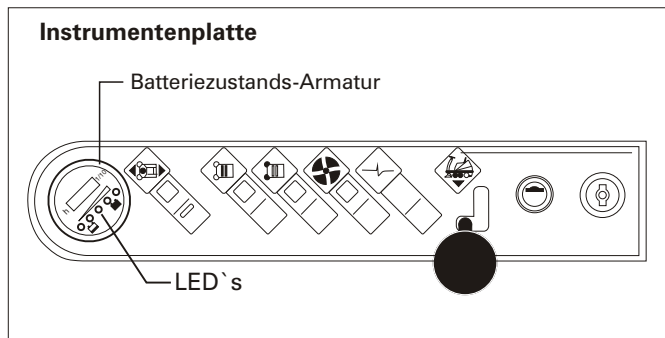
### Safety Information for Battery Handling

When servicing the batteries, please absolutely observe the following warning information and safety regulations:

Battery acids are strongly caustic. Wear safety gloves and eye protectors. Do not tilt battery for this will result in acid leaking through degassing openings.  
Never replenish unimpaired battery cells.  
When filling level is too high, battery acid will spill out of the degassing openings.  
Rinse any acid spray from eyes or skin immediately with clear water. Then visit a doctor without delay.  
Use only distilled water to replenish battery cells.  
Keep away children from the battery and the battery acid as well as from the charging device

Avoid spark formation while handling cables and electrical devices.  
Never short-circuit battery poles.  
Danger of injury by highly charged sparks.  
Always keep batteries in a clean and dry place to avoid leak current.  
Only charge batteries in well ventilated rooms.  
Don't smoke and keep away open flames and electric sparks, because the charging process produces a highly explosive combustible mixture.  
In order to prevent health impairment do not smoke, eat, or drink in the vicinity of the battery charging device.

Four batteries supply the Sweeping & Suction Machine with electrical power. The charging condition of the batteries is indicated by the battery condition display on the control panel.



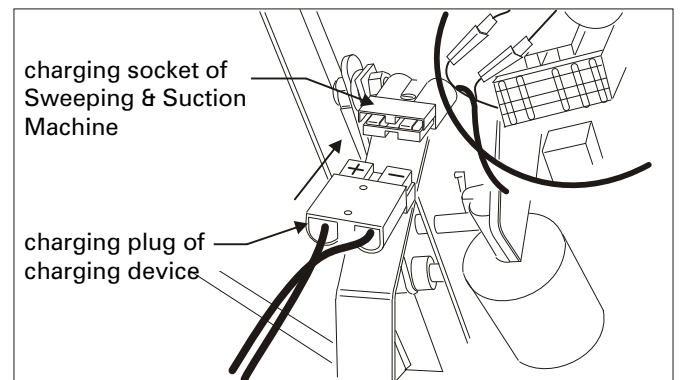
When the Sweeping & Suction Machine is switched on the red LED flashes five times. Subsequently the electronic system of the Sweeping & Suction Machine carries out a self-testing operation of the battery charging state. The result of this self-testing is displayed by the 5 LED's.

**Information provided by LED indicators on the battery condition display:**

| lit LED                      | charging condition of battery           |
|------------------------------|---|
| Red Yellow Green Green Green |   |
| ⬤ ⬤ ⬤ ⬤ ⬤                    | condition fully charged                 |
| ⬤ ⬤ ⬤ ⬤ ○                    | operating/charging condition uncritical |
| ⬤ ⬤ ⬤ ○ ○                    | operating/only for a short time longer  |
| ⬤ ⬤ ○ ○ ○                    | operating/soon critical                 |
| ⬤ ○ ○ ○ ○                    | operating/critical                      |

### Charging the Batteries

- Turn off the Sweeping & Suction Machine.
- Open the hood.
- Secure the hood position by the hood arresting device.
- Guide the hood arresting into the holes at the bottom of the hood.
- Connect the charging device to the charging plug of the Sweeping & Suction Machine.
- Connect the mains plug of the charging device to a power supply socket.



The charging process lasts for approx. 10 hours when the batteries have been completely used up (with the device originally provided by the manufacturer). The original charging device of the manufacturer can/should remain connected after charging is completed, because it is equipped with a charge saver allowing it to provide highest possible battery capacities even after long periods of standstill.

Be careful only to use the Sweeping & Suction Machine if there is enough voltage left in the batteries. The machine automatically switches itself off, if the batteries are discharged to such a degree that damages may arise (exhaustive discharge protection). In this case: Switch off all consumers and let the machine stand for about one or two minutes. Switch on the machine again and drive to the charging device (without sweeping operation!) Charge batteries immediately to avoid possible damages.

## Brake

### Danger



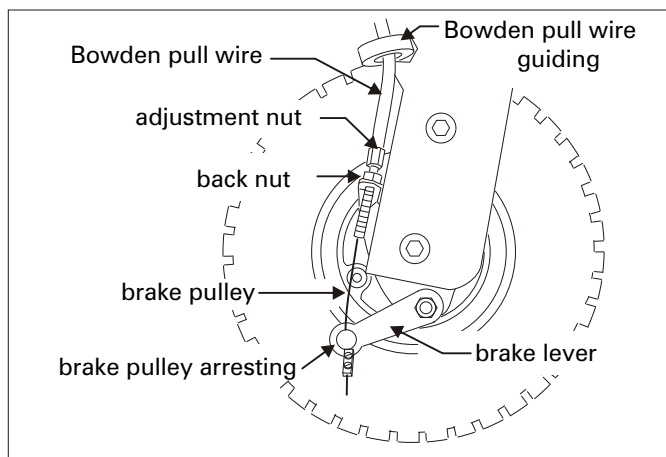
**The brake is a component affecting operational safety. All work pertaining to the maintenance and replacement of brake parts must be executed by professionally trained personnel.**

The brake (drum brake) acts on the rear wheel and is controlled via Bowden pull wire by the brake pedal.

The brake adjustment is situated on the right side of the rear wheel facing in driving direction.

### Adjusting the Brake

- hold the adjustment nut of the Bowden pull wire in place with a wrench.
- Loosen the back nut of the Bowden pull wire.
- Push the brake lever upward until the brake lever is obstructed.
- Hold the brake lever in this position.
- Tighten the back nut of the Bowden pull wire.



**Now conduct a brake check.**

### Brake Check

#### Free Movement of Rear Wheel

You must be able to move the Sweeping & Suction Machine by pushing when the brake is released. The rear wheel must not be blocked.

Brakes that are set too tightly damage the brake drum.

#### Correct Operating of Brake

Carefully drive a few meters at moderate speed.

Depress the brake pedal.

The Sweeping & Suction Machine must stop.

If the brake check should not render a satisfying result the setting procedure must be repeated.

#### Further Setting Possibility:

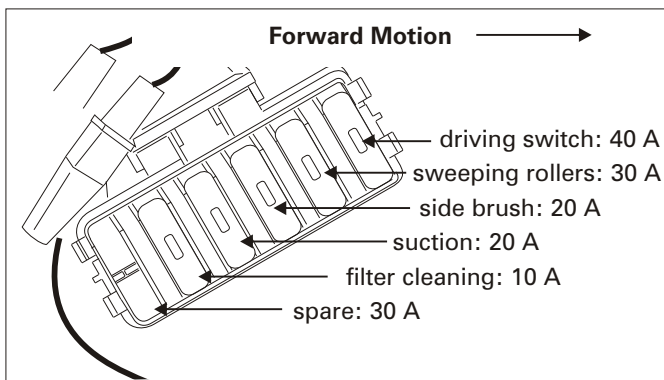
The Bowden pull wire does not allow tightening in the way described above any longer.

- Loosen the brake pulley arresting.
- Lift the brake lever up until it is obstructed.
- Hold the brake lever in this position.
- Pull the brake pulley down and push the brake pulley arresting upward.
- Fasten the brake pulley arresting.
- Carry out the above described brake check.

## Fuses

The Fuse box is positioned on the right side under the hood, facing in driving direction.

The fuses are arranged in the same order as the instruments on the control panel.



Do not repair fuses  
Do not replace fuses by stronger fuses.  
This will damage the system  
It may lead to a short-circuit and  
possibly to a fire

## Sweeping Roller Drive

The sweeping roller drive is situated on the right side of the Sweeping & Suction Machine facing in driving direction.

The sweeping rollers are driven by an electric motor via a chain.

The chain is deflected by a sprocket and guided over the sprockets of the roller drive.

A spring biased chain tensioner keeps the chain tight.

Grease the sprockets at regular intervals.

Cf. Maintenance Chart page 22.

To grease the sprockets, open the hood and remove the side trim panel.

## Steering

The steering transfer to the rear wheel is managed by a chain and two chain sprockets.

Grease the chain sprockets at regular intervals. Cf.

Maintenance Chart page 22.

## Wheels

The Sweeping & Suction Machine is equipped with three wheels.

The standard rear wheel tire is made of solid rubber

The two drive wheels are standard equipped with pneumatic tires.

Optionally the drive wheels are delivered with solid rubber tires.



Defective tires must be repaired or  
replaced by expert shops only.  
Deliver the complete wheel (rim and tire)  
to the tire shop.

## Maintenance Chart

### Daily maintenance

- Check battery acid level, if required replenish distilled water.
- Charge battery.
- Check if machine is damaged or impaired in any way.
- Check condition of dust filter and clean if necessary.
- Empty dust container.

### After each 50 operating hours also

- Check if battery leaks acid.
- Clean and grease battery poles.
- Check if sweeping rollers are worn or cluttered. Replace if required.
- Check sweeping contour, readjust if required.
- Check if side brush adjustment is worn, if required readjust or replace.
- Search brush - roller tunnel for jammed particles and seized up dirt that may narrow the brush tunnel and obstruct free roller brush movement.

### After each 100 operating hours also

- Check cable isolation, replace cables if required.
- Check if cable connections are tight.
- Grease steering chain.
- Grease sweeping roller drive chain.
- Clean dust filter, replace if necessary.
- Search suction for obstacles, clean.
- Conduct trial run to check all operating elements.
- Check if roller drive chain is elongated or loosened.
- Check all bearings for wear.
- Check if seals are damaged or dislocated.

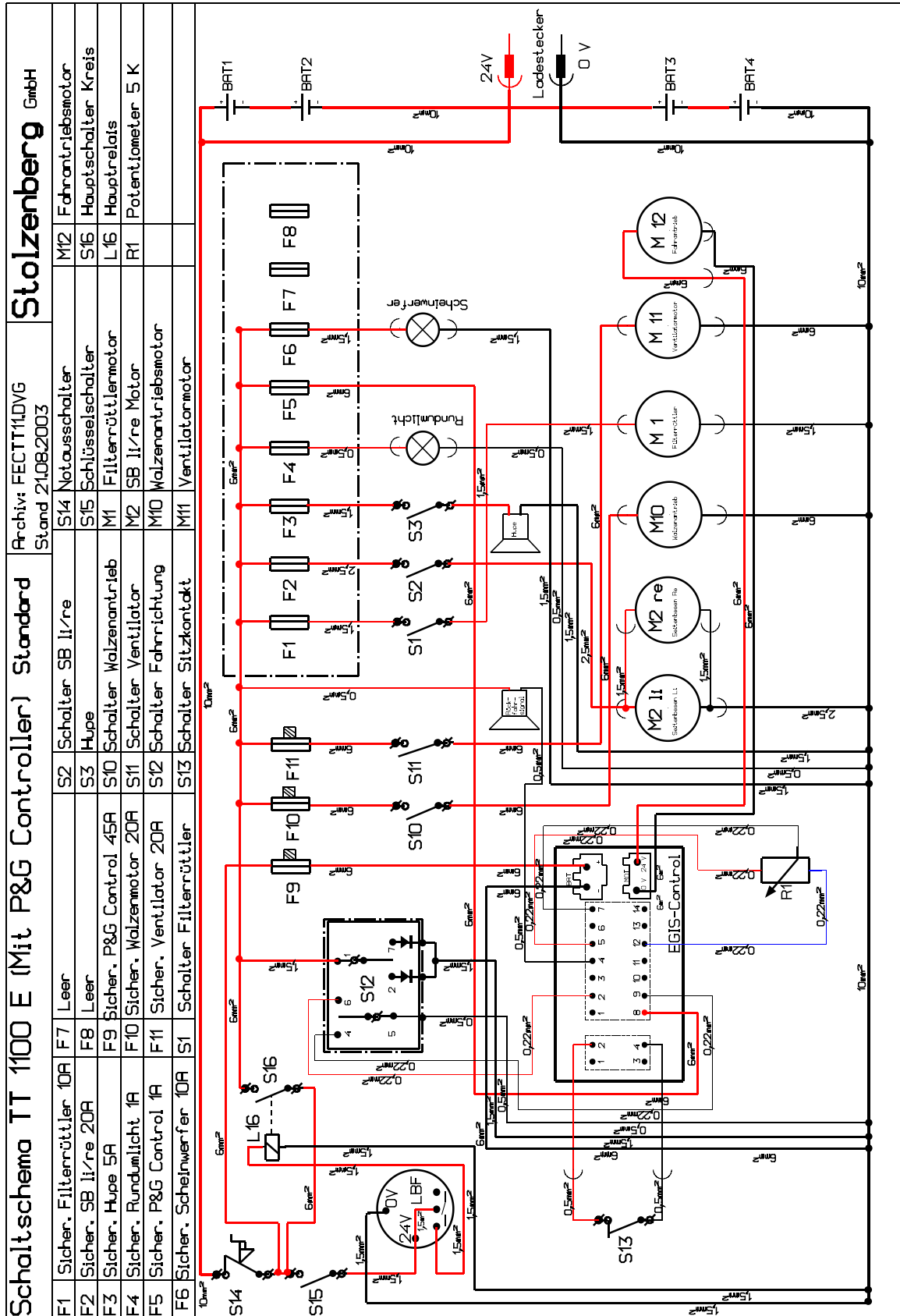
### After each 200 operating hours also

- Check operation of electric motors.
- Check if carbon brushes are worn, replace if required.
- Check steering clearance, tighten chain if required.
- Check all electrical system components whether they are soiled.

## Disturbances - Disturbance Display and Remedy

| Disturbance   | Possible Cause  | Remedy  |
|---|---|---|
| No operating display at control panel:                                | EMERGENCY OFF not switched on<br>Key switch not switched on<br>Seat contactor or hood contactor not actuated<br>Fault in electrical wiring<br>Battery empty   | Turn EMERGENCY OFF switch into socket<br>Turn key switch and check correct load<br><br>Check plug connections<br>Charge battery   |
| No operation of propelling drive inspite of display at control panel: | Direction of motion switch was set to forward or reverse motion during start<br>Accelerator was depressed at start<br>Fuse 1 defective<br>Fault in electrical connections<br>Problems in electronic control   | Switch to neutral nd then again to desired ia position<br>Release accelerator<br>Replace fuse<br>Check plug connections and compare indikation by red LED at control panel  |
| No operation of one of the electrical consumers:                      | Fuse defective<br>Fault in electric connections<br>Fuses permanently defective  | Replace fuse<br>Check plug connections of corresponding system component:<br>check especially sweeping rollers whether obstructed by bands, cables, strings   |
| Sweeping result unsatisfactory:                                       | Side brush(es) or main sweeping rollers not lowered<br>Side brush(es) or main sweeping rollers worn<br>Trajectory clogged by dirt<br>Sweeping roller(s) do not operate<br>Dust formation too great<br>Suction turbin does not operate<br>Filter heavily polluted<br>Filter not correctly fitted<br>Leakage and subsequent aspiration of false air in the filter chamber | Lower<br><br>Adjust<br><br>Check if roller trim panel is impaired by jammed debris<br>Correctly fitted? Does motor revolve?<br>if required switch off side brushes<br>Check is electrically defective<br>Clean filter<br>check for tight fit<br>check if false air is sucked in |
| Fuses of the sweeping roller do not remain set                        | Brush rollers are jammed by dirt, cords, strings or the like  | Dismount brush rollers and clean them<br>Compare page 16  |
| Fuses of the side brushes do remain set                               | Side brushes are jammed by dirt, cords, strings or the like   | Check side brushes and remove obstacles   |
| Fuse of ator does not remain set                                      | Ator does not move freely   | Check ventilator wheel and remove any obstruction   |
| Fuse of propelling drive does not remain set                          | Drive wheels obstructed   | Jack up the Sweeping & Suction Machine<br>check differential operation of wheels and free running   |

Circuit Diagram Sweeping & Suction Machine TT/E  
03.12.2003





## **Disposal**

Disposal of defective parts, specifically electric component parts, batteries and plastic elements in compliance with legislator's waste disposal regulations.

## Technical Data

### Sweeping & Suction Machine TwinTop TT/E

| Dimension and Weight           |   |
|--------------------------------|---|
| Length:                        | approx. 1.450 mm                            |
| Width:                         | 900 mm                                      |
| Height:                        | approx. 114 mm upper edge of steering wheel |
| Weight:                        |   |
| without batteries              | 210 Kg                                      |
| with batteries                 | 340 Kg                                      |
| Sweeping Width                 |   |
| without side brush             | 700 mm                                      |
| with one side brush            | 900 mm                                      |
| with two side brushes          | 1.100 mm                                    |
| Dust Container Volume          | 90 Ltrs.                                    |
| Turning Radius                 | 1 m   |
| Climbing Capacity              | 20%   |
| Speed                          | 0-6 km/h                                    |
| Filter Area                    | 4 m <sup>2</sup>                            |
| Air Volume of the Dust Suction | 900 m <sup>3</sup>                          |
| supporting frame               | Steel construction, powder coated           |
| Trim Panel Parts               |   |
|                                | impact resistant plastic                    |

| Tires                          |
|--------------------------------|
| Front: 1 solid rubber tire     |
| Back : 2 pneumatic tires       |
| Optional: 2 solid rubber tires |
| Tire size: 260 x 85            |
| Air pressure: 5,5 bar          |

| Brake                 |
|-----------------------|
| Drum brake            |
| Parking brake         |
| Acting on front wheel |

| Electrical Installation                                |
|--|
| Power supply: 4 batteries with je 6V 180 Ah (5h) each. |
| Running time of battery version: >4 h                  |
| Fuses:   |
| Vibrator: 24 V 10A                                     |
| Ventilator: 24 V 30A                                   |
| Side brushes: 24 V 20A                                 |
| Sweeping rollers: 24 V 40A                             |
| Driving switch: 24 V 40A                               |

| Electric Drives  |  |
|------------------|--|
| Propelling drive | differential geared motor 24V, 130 U/min., 400 W |
| Side brushes     | geared motor 24V, 90 U/min., 90 W                |
| Sweeping rollers | 24V, 220 U/min., 400 W                           |
| Suction          | 24V, 3000 U/min., 300 W                          |

|   |
|---|
| Maximum Airborne Sound Level: 70 dB (A)                 |
| Weighted Effective Acceleration Value                   |
| upper extremities are subjected to <2,5m/s <sup>2</sup> |

## Applied Standards

EG Guideline 89/392 EWG  
EN 292  
EN 294  
VDE 0700 T 069

## Product Certification

Nameplate

The nameplate is situated at the back right of supporting frame.



**EG Declaration of Conformity**

in compliance with EG-Guidelinie 89/392/EWG

**The manufacturer:**

**Stolzenberg GmbH & Co. KG  
Hamburger Straße 15 - 17  
D-49124 Georgsmarienhütte**

declares as solely responsible party, that

**the product**

**Sweeping & Suction Machine  
TwinTop TT/E**

this declaration refers to, observes

**the EG-Guidelinie 89/392/EWG**

and correspondes to it regarding all relevant safety and health requirements.

**The Standards and/or technical specifications**

|                   |                |                             |
|-------------------|----------------|-----------------------------|
| DIN EN 60335-1    | EN 929         | EMV Richtlinie 98/37/EG     |
| DIN EN 60335-2-67 | EN 294         | Niederspannungsr. 73/23/EWG |
| DIN EN 60335-2-72 | VDE 0700 T 069 | Geräusch-Richtl. 2000/14/EG |

have been applied in a way that ensures the appropriate implementation of safety and health regulations cited in the EG Guideline.

Osnabrück, dated 27.03.2003

.....  
(Kai Stolzenberg)

## **Service**

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