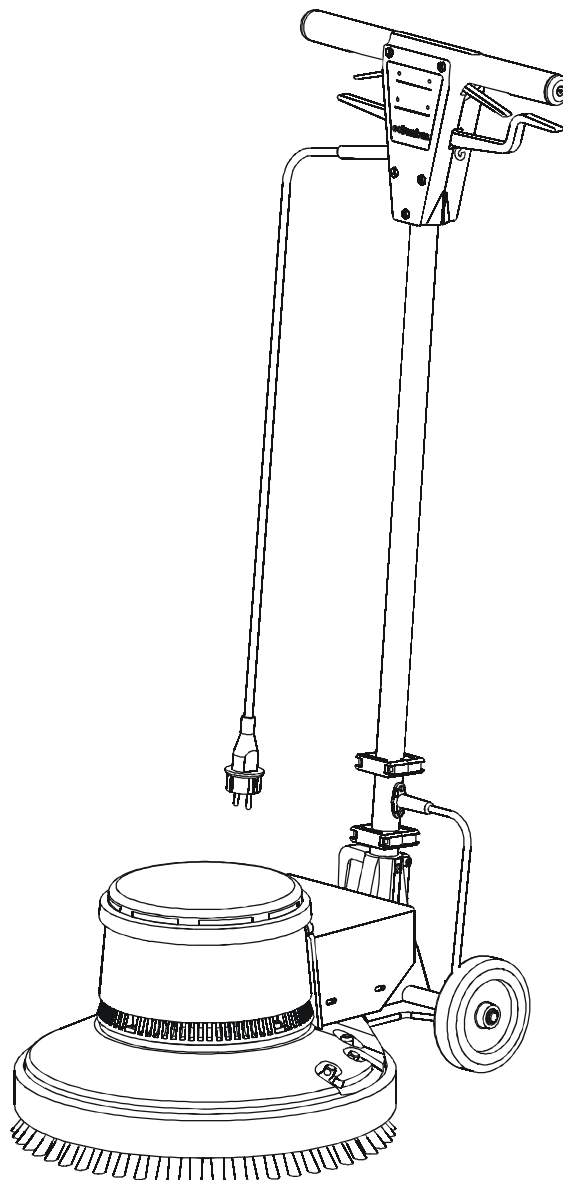


E 400 | S
E 500 | S
E 500 | E
HS 403
HS 403 | S
HS 434

Operating manual Single brush machine and Accessories



Read these instructions
carefully before operating
the machine!



This machine is intended for
industrial and professional
use only!

| | |
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1 Introduction

1.1 About the operating manual

The operating manual contains important information for those concerned with the set up and use of the appliance and is designed to ensure safe and proper working with the equipment.

Prerequisite for this is the knowledge of the safety aspects to be observed for installation and use as well as the maintenance of machine. Therefore start reading the operating manual at the chapter "Safety". The subsequent chapters are further main points of information for the personnel.

To avoid improper use, this operating manual should be kept near the machine and must be available at all times for those concerned with the machine. The accident prevention and the general safety regulations must be observed at all times when using the appliance.



NOTE!

The drawings shown in this manual may differ slightly from the actual design of the machine.

1.2 Manufacturer

Address:

G. Staehle GmbH u. Co. KG
Mercedesstraße 15
70 372 Stuttgart
Germany

Contact:

Phone: +49 (0)711 / 95 44-950
e-mail: info@columbus-clean.com
Internet: www.columbus-clean.com

1.3 Liability and warranty

All details and information concerning operation, maintenance and cleaning of the equipment is true according to our existing experience and to the best of our knowledge.

We reserve the right to make technical improvements within the scope of the development of the appliance described in this operating manual.

Translations are correct to the best of our knowledge. However, we cannot accept liability for any translation errors. Legally authoritative is the German version of the operating manual supplied herewith.

The text and illustrations may not be identical to the goods supplied. The drawings and charts are not to scale 1:1.

Please read this operating manual carefully before operating the equipment!

The manufacturer does not accept any liability for damage or failure due to non-observance of this operating manual.

It is not permitted to communicate the information in this operating manual to a third party. Any such action will lead to claims for compensation.

1.4 Explanation of symbols

Important hints, such as safety instructions, are indicated with appropriate symbols. These instructions must be followed exactly to avoid accidents or damage to the appliance.



WARNING!

This symbol is used to indicate all safety instructions in this operating manual whose non-observance could result in injury or death. Please follow these safety instructions exactly and take particular care in these cases.

**WARNING! Danger of electric shock!**

This symbol draws attention to the risk of an electric shock. By non-observance of these safety instructions there is a danger of injury or death. Such work may only be carried out by a properly trained electrician.

**ATTENTION!**

The attention symbol marks all safety instructions in this operating manual, which must be kept because non-observance could lead to damage and/or malfunction of the appliance.

**NOTE!**

This symbol draws attention to hints and other useful information contained in the operating manual. All hints should be heeded to ensure the effective use of the appliance.

1.5 Spare parts

Use only original spare parts and accessories from the manufacturer.

**ATTENTION!**

The use of wrong or faulty spare parts from other manufacturers may result in damage to the appliance.

Despite this, should spare parts other than original parts from the manufacturer be used, or parts obtained from elsewhere, all obligations entered into by the manufacturer or his representations, such as warranties, maintenance contracts, etc., will immediately become null and void.

1.6 Copyright

This operating manual is to be treated confidentially. It may only be used by the persons for whom it is intended. Communication to a third party is only permitted with the written consent of the manufacturer.

All documents are protected by copyright law.

Passing on or duplication of documents, in whole or in part, or utilization or communication of the content is not permitted, unless expressly agreed. Offences are punishable and will lead to claims for compensation.

We reserve all rights to enforce our legal protection rights.

1.7 Disposal

- Consumable materials, conservation and cleaning products must be disposed of according to current environmental protection regulations.
- Any liquid which leaks out must be contained and disposed of in accordance with environmental regulations or better recycled where possible.
- Dispose of the machine by returning it to one of the subsidiaries of the manufacturer and not via public waste disposal.

2 Safety

This chapter contains an overview of all important safety aspects.

In addition, the individual sections contain specific safety instructions on how danger can be avoided, indicated by the appropriate symbols. Furthermore, the pictograms, signs and instructions on the appliance must be observed and kept in readable condition.

Observation of the safety instructions permits optimal protection of the personnel and third parties from hazards and ensures safe and reliable operation of the equipment.

2.1 Introduction

The appliance conforms to the current standard of technology and operational safety.

However, dangers can arise from this appliance if it is used by not properly trained personnel, used improperly or used for a purpose other than that intended.

Every person, who is asked to work with or carry out work on the appliance, is required to read the operating manual and have understood it before working with the equipment. This also applies to people who have already worked with such an appliance or a similar one or who were trained by the manufacturer.

Knowledge of the content of the operating manual is a prerequisite for protecting personnel for danger and avoiding mistakes and thus ensure safe and reliable operation of the appliance.

To avoid danger and ensure optimal performance, no modifications or changes may be made to the equipment, unless they have been expressly approved by the manufacturer.

All safety signs and operating instructions on the appliance must always be kept in a clearly readable condition. Damaged or unreadable signs must be replaced immediately.

The settings and ranges of values shown in the operating manual must be adhered to.

The employer is advised to obtain confirmation from the operator that he/she had read and understood the operating manual.

2.2 Responsibility of the owner / operator

The appliance may only be used when it is in a safe condition and in perfect working order. The owner/operator is responsible for ensuring reliable operation of the equipment. The instructions given in the operating manual are to be respected in full and without reservations!

The statements about the work safety refer to the directives of the European Union, valid at the time of manufacture of the appliance. During the entire working life of the equipment, the owner/operator is obliged to compare the above mentioned safety protection measures with those currently in force and heed any new rules which may have been introduced subsequently. Outside the European Union, the work safety laws and local regulations valid where the equipment is used must be respected.

2.3 Proper use

Operational safety of the appliance is only assured when the equipment is used according to the instructions contained in the operating manual.

The single brush machine is only designed for scrubbing, polishing, cleaning waterproof and abrasion resistant floor and shampooing textil coverings inside buildings.

The vac unit available as an accessory can be used to suck in dry polish dust and swarf.

The surfaces to be cleaned must be flat and not exceed an inclination of more than 10 percent. You must not go over uneven bumps, such as thresholds and steps, when cleaning. The machine may not be used in damp locations.

'Proper use' also means observing the correct procedures concerning set up, operation, maintenance and cleaning instructions.

Every use of the appliance which goes beyond this and/or other use is forbidden and will be regarded as improper use! Claims for damage, of whatever kind, resulting from improper use against the manufacturer and/or his representatives are excluded. The operator alone is liable for all damage which may arise from improper use.

2.4 Work safety

Danger to persons and/or the equipment can be avoided by following the work safety instructions.

Non-observance of these instructions can put people or objects at risk through mechanical or electrical factors or through the equipment breaking down.

Non-observance of the safety regulations will result in the loss of any right to claim for damage.

2.5 Protective clothing

When working on and with the appliance the following must be worn:

- Solid closed shoes with non-skid soles
- Close-fitting working clothes (resistant to tearing, no wide sleeves, no rings or other jewellery, etc.)

2.6 Dangers resulting from the equipment

The appliance has undergone a risk assessment. The design and layout of the equipment resulting from this corresponds to the current state-of-the-art.

However, a certain residual risk always remains!

The appliance needs to be used responsibly and carefully. Improper use or use by unauthorized persons can endanger other people.



WARNING! Risk of injury!

Improper use of the equipment can cause serious injuries through crushing, running over or contacting people with the rotating brushes, pad holder. Thus the following rules should be observe:

- The appliance may not be used on floors with an inclination of more than 10%.
- Move the appliance cautiously, taking care to avoid other people and objects in the vicinity.
- When working with the appliance never put other people at risk.
- When working, ensure that other people – especially children – never come into contact with the appliance.
- Unauthorized persons should not have access to the appliance.



ATTENTION!

Improper use can cause considerable damage to the appliance, floor covering as well as other objects. When using the appliance, never run over thresholds, steps, carpets or objects which could get caught, such as cables.

The friction of the brush on the floor aids the forward motion of the appliance. When the appliance is switched on, it may move forward by itself in any direction.



WARNING! Risk of injury!

The uncontrolled forward motion of the appliance can cause serious injuries through crushing, running over or falling over. Thus the following rules should be observed:

- Never let go of the handle when the machine is running.
- Before leaving go of the handle, always first switch off the machine.
- Never switch on the machine with the guide bar in a vertical position.
- Always guide the machine with both hands.

The appliance is equipped with a rotating brush or a pad holder.



WARNING! Risk of injury!

Rotating brushes or pad holders can cause serious injuries if they come into contact with anyone. Thus the following rules should be observed:

- Never touch rotating brushes or pad holders.
- Never touch other people with the rotating brushes or drive plates.
- Before you do touch brushes or pad holders, always switch off the appliance and wait until the parts have come to a complete stop.



WARNING! Danger of electric shock!

Electricity can cause serious injuries. If the insulation or individual components are damaged, there may be a risk of a fatal electric shock. Therefore:

- Before working on the appliance always unplug it!
- Make sure that the mains power cable is not damaged by squeezing, jerking, chafing, etc.
- Do not drive over the mains power cable.
- Always check the mains lead for damage before plugging in the appliance.
- Before replacing cables, plugs, couplings, fuses or sockets, check for conformity with the technical data specified by the manufacturer.



WARNING! Risk of injury by slipping!

When working with the appliance, always wear non-skid safety shoes and ensure that any cleaning fluid which has leaked out has been cleaned up completely.

When cleaning floors with the appliance, cleaning agents can be used.



WARNING!

Cleaning agents can be hazardous to health. Thus the following rules should be observed:

- Ensure that the cleaning agent does not come into contact with the skin or the eyes.
- Keep to the concentrations specified in the cleaning agent manufacturer's guidelines.
- Follow the instructions in the cleaning agent manufacturer's safety data sheet.

2.7 Operating personnel

The appliance may only be operated and maintained by approved, properly trained and instructed personnel. The personnel must have been specially instructed about the dangers which could arise.

"Instructed persons" are those who have been informed about the tasks they have to perform and about possible hazards if the equipment is used incorrectly; where necessary, they have been taught about the appropriate protection measures and the precautions to be taken.

"Qualified persons" are those who, through their training, knowledge and experience as well as their knowledge of the relevant regulations, are able to do the tasks conferred on them and to recognize the potential dangers.

If the persons concerned do not have the necessary knowledge, then training is required accordingly.

The responsibilities for operating and servicing the equipment must be clearly defined and adhered to, so that misunderstandings which could affect safety are avoided.

The appliance may only be operated and maintained by people who can be expected to perform their work reliably. Their approach to work must in no way endanger other people, the environment or the equipment.

People under the influence of drugs, alcohol or medication which affects their reactions, are not allowed to work on or with the appliance **in any way**.

When choosing personnel, the youth employment laws of the country concerned must be taken into account with regard to minimum age requirements and any occupation-specific rules relating to this.

It is the responsibility of the operator to ensure that no unauthorized person works on or with the appliance. Unauthorized persons, such as visitors, etc., may not handle the appliance. For security reasons they must be kept at an appropriate distance.

It is the duty of the operator to report any changes in the way the appliance works, which could affect safety, immediately to the person responsible..

2.8 Working position

When cleaning floors, the working position of the operator is behind the handle of the appliance. The appliance may only be operated by one person at a time.

2.9 Conduct in the case of danger or accidents

Where there is danger or if an accident occurs, immediately stop the appliance by switching it off at the control panel and secure it against rolling away (see Chapter "Operation").

Ensure that first-aid equipment (first-aid box, eye lotion, etc.) and a fire extinguisher are available nearby.

Staff must be made aware of the procedures to be followed and the location of safety equipment, alarm buttons, first-aid boxes and rescue equipment. This will ensure prompt action in the case of accidents or if dangers arise.

3 Design overview and features

3.1 Appliance overview

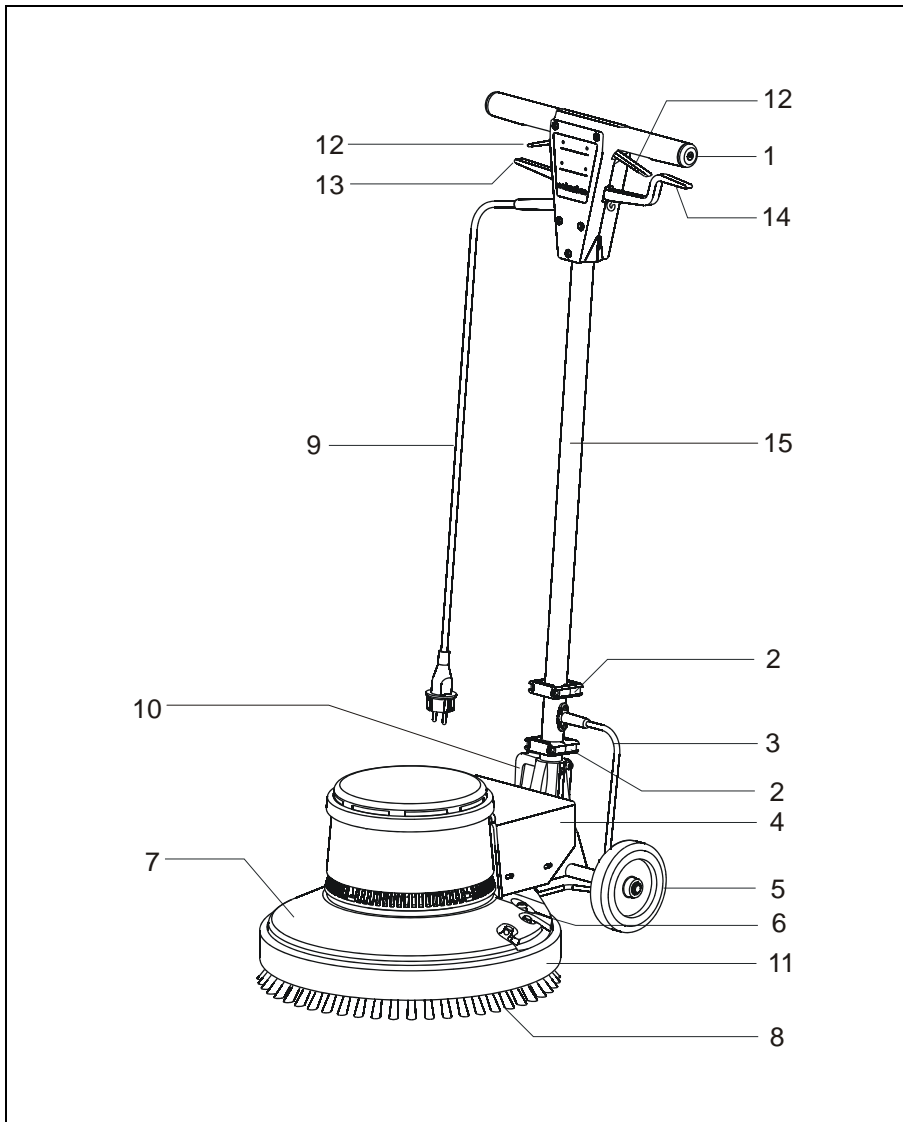


Fig. 1 Appliance overview

Appliance overview:

- 1 switch housing
- 2 fixtures
- 3 connecting cable
- 4 connection box
- 5 wheel
- 6 hose nipple
- 7 machine housing
- 8 cleaning tool
- 9 mains power cable
- 10 cable hook
- 11 bumper
- 12 switch lever
- 13 positioning lever
- 14 dosing lever
- 15 guide tube

3.2 Appliance overview / rear side

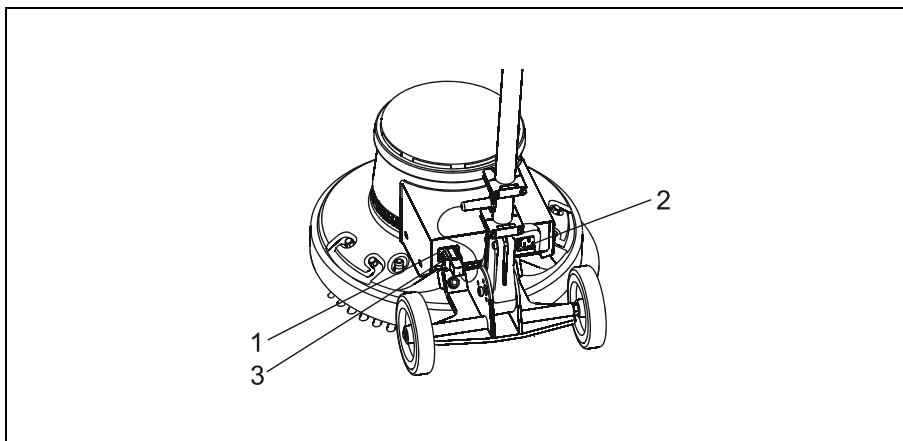


Fig. 2 Appliance overview / rear side

Rear side:

- 1 power socket
- 2 power plug
- 3 connecting cable

3.3 Switch housing

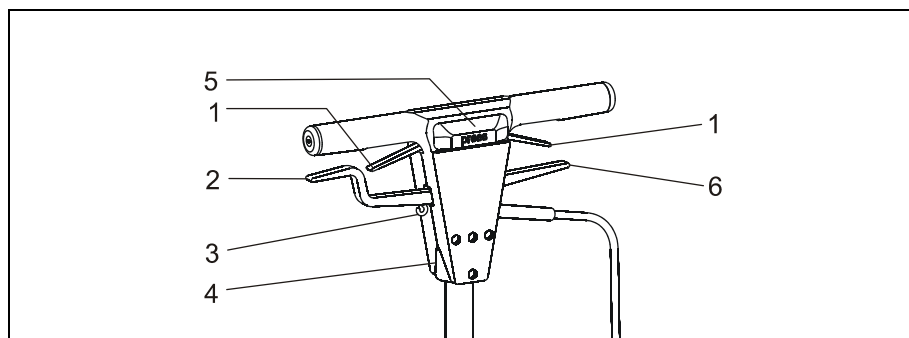


Fig. 3 Switch housing

Switch housing:

- 1 switch lever
- 2 dosing lever
- 3 hook
- 4 holding slot
- 5 push button
- 6 positioning lever

3.4 Appliance description / functions

The appliance is suitable for scrubbing, polishing and cleaning waterproof and abrasion resistant floor and shampooing textil coverings inside buildings. With the optional vac unit it is also suitable for vacuuming of dry, non-noxious polishing dusts.

The operator has to push the appliance forward over the floor area to be cleaned by means of the handle. The rotary action of the brush cleans the floor and at the same time aids the forward movement of the appliance

4 Technical data

| Model | | E 400 S | E 500 S | E 500 E | HS 403 | HS 403 S | HS 434 |
|---------------------|-------------------|-----------|-----------|-----------|--------|------------|--------|
| Rated voltage | V / Hz | 230/50 | 230/50 | 230/50 | 230/50 | 230/50 | 230/50 |
| Rated power | W | 1200 | 1800 | 1200 | 1200 | 1800 | 1500 |
| Working width | cm | 40 | 50 | 50 | 40 | 40 | 43 |
| max. working height | cm | 26 | 32 | 26 | 28,5 | 33 | 34 |
| Brush speed | 1/min | 140 | 140 | 140 | 300 | 300 | 400 |
| Surface pressure | N/cm ² | 0,37 | 0,33 | 0,30 | 0,31 | 0,32 | x |
| power supply cable | m | 12 | 12 | 12 | 12 | 12 | 12 |
| Dimensions | | | | | | | |
| L | cm | 41,5 | 48 | 48 | 41 | 41,5 | 45 |
| W | cm | 54,5 | 63 | 63 | 55 | 55 | 56 |
| H | cm | 120 | 121,5 | 120 | 120 | 121,5 | 117 |
| Noise level | d(B)A | 57 | 63 | 63 | 67 | 63 | 57 |
| Tests | | CE | CE | CE | CE | CE | CE |
| Safety class | | I | I | I | I | I | I |
| Weight | kg | 40 | 50 | 42 | 40 | 45 | 33 |

We reserve the right to make technical changes to the product to improve product performance and for further development.

5 Transport, packaging and storage

5.1 Safety advice



WARNING! Risk of injury!

During transport or loading and unloading there is a risk of injury from falling parts. The appliance may be damaged or ruined if transported in the wrong way. For this reason the following safety advice should be observed:

- Never transport loads above peoples heads.
- Always take great care when moving the appliance.

5.2 Transport inspection

We recommend that you check the whole delivery for completeness and possible transport damage as soon as it arrives. Where damage is suspected, only conditionally accept the goods (e.g. on the delivery papers) giving details of any suspected damage. Inform the manufacturer immediately.

5.3 Packaging

The appliances are despatched in different packaging.

The most commonly used packaging materials are wood, cardboard and plastic (foil and expanded polystyrene), but other materials such as tightening straps are also used. Packaging materials may also include materials to protect the goods from moisture or frost (e.g. silica gel bags, antifreeze, etc.)

Unless specifically agreed that the packaging material should be returned, the packaging material remains with the customer.



ATTENTION!

Environmentally friendly disposal conform to the relevant environmental protection regulations must be assured. If necessary, a specialized recycling firm should be entrusted with the task of disposing of the packaging material.

5.4 Storage

After unloading, the packages must be stored in accordance with the relevant markings on the outside until assembly takes place.

Packed appliance components and attachments should not be unpacked.

The following regulations apply to storage:

- Store dry. Relative humidity: max. 60 %
- The packages must not be stored outside in the open air.
Furthermore it must be guaranteed that the warehouse floor stays dry during the storage period.
- Protect against direct sunlight. Storage temperature 15 to 25 °C
- Store in dust-free surroundings.
- Avoid mechanical vibration and damage.
- When storing for more than about 3 months, check that the protective measures taken are adequate.
In aggressive surroundings, the protective measures may need to be renewed.

6 Assembly



WARNING! Risk of injury!

The appliance may put people and objects at risk. Work on and with the appliance may only be carried out by properly qualified personnel in accordance with all the safety instructions mentioned in the chapter of "Safety"!

Before any assembly work is carried out, switch off the appliance completely and pull out the mains plug.

6.1 Before assembly

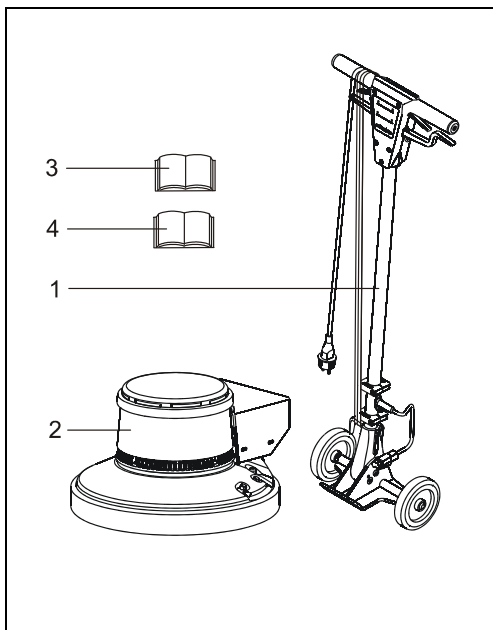


Fig. 4 Scope of delivery

Before assembly, check that all parts required for operation have been delivered.

Scope of delivery

| | |
|---|----------------------------|
| 1 | Guide bar with power cable |
| 2 | Machine body |
| 3 | Operating manual |
| 4 | Spare parts list |

6.2 Assembly of the guide bar

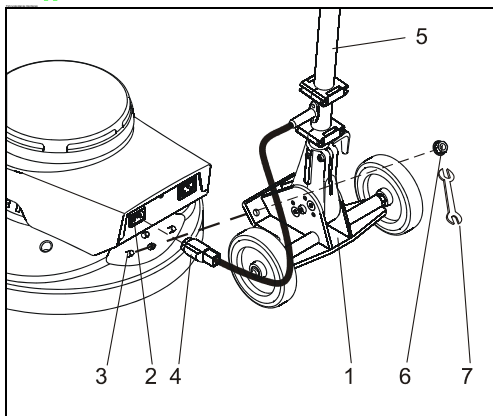


Fig. 5 Assembly of guide bar

1. Unscrew the two nuts (6) from the threaded bolt (3) on the guide bar and machine body. Use a ring or a flat spanner SW 13 (7).
2. Position the holding fixture (1) of the guide bar (5) onto the threaded bolt (3).
3. Fix holding mechanism. Screw the two nuts (6) back on the threaded bolt (3) and tighten them. Make sure that the holder sits flat on the machine body and is tightly fixed.
4. Plug the mains plug (4) into the socket (2) provided.



NOTE!

To bring the guide bar into a different position after assembly, pull the positioning lever and swivel the guide bar into the required position. Then release the positioning lever again.

6.3 Assembly of accessories (Optional)

6.3.1 Assembling the spray device (Optional)



Fig. 5 Spray can

Fill the spray can



ATTENTION!

The wrong detergent can damage the appliance. The following should be observed:

- Only use detergents approved by the manufacturer.
- Never fill the spray can with liquid wax.
- Never fill in liquids that are warmer than 40°C!

1. Hold firm the spray can at the bottom.
2. Rotate the lid (1) counter-clockwise to screw it off.
3. Fill detergent in the spray can.
4. Screw lid on the spray can.

6.3.2 Assembling the spray device

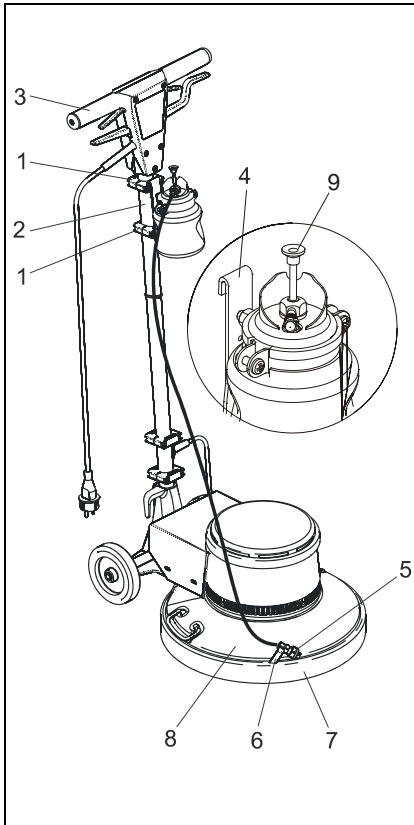


Fig. 7 Assembling the spray device



Risk of injury from rotating parts!

Before carrying out any assembly work, switch off the appliance and pull out the mains plug.

1. Fix the 4 holders (1) at the handle bar (2) with a distance of 85 mm. Use a hexagonal spanner. Make sure that the holders are parallel to the handle.
2. Put the sprayer with the bracket into the holders.
3. Fix the spraying nozzle (5) with the spraying nozzle holder between bumper (7) and housing (8).
4. While working, pump with the level (9) to apply spray medium.



NOTE!

Please observe the correct position of the spray nozzle. The spray nozzle must be directed forward and diagonally to the bottom.



WARNING! Risk of injury by slipping!

Move carefully on floors where detergents have been used.

6.3.3 Assembling the fluid tank (Optional)

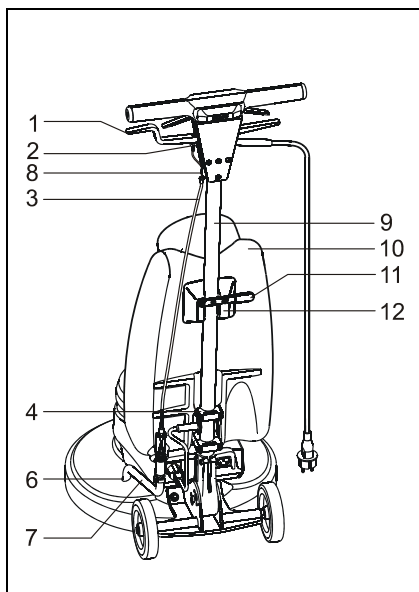


Fig. 8 Assembling the fluid tank



Risk of injury from rotating parts!

Before carrying out any assembly work, switch off the appliance and pull out the mains plug.

1. Insert the holding device of the fluid tank (10) into the upper fixture (4) of the guide tube (9).
2. Push the upper part of the fluid tank against the guide tube until the snap connection (12) snaps into place.
3. Secure the connection with the swivel bracket (11). To do this, turn the swivel bracket to the right until it is in a horizontal position. Then let it snap into place.
4. Fit the Bowden cable (3) in the hook (2) of the dosing lever. Push the Bowden cable into the switch housing guide (8). Apply a slight tension to the Bowden cable using the adjusting screws.
5. Push the tube (7) onto the hose nipple (6) on the machine body.
6. Bring the tank into the optimal filling position by lowering the guide tube (9).

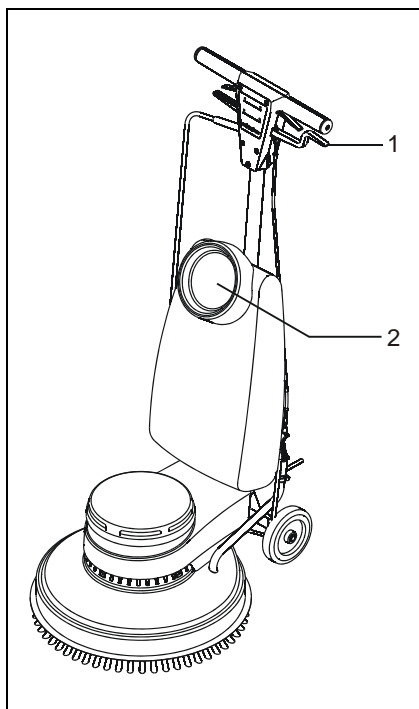


Fig. 9 Filling the fluid tank



WARNING! Risk of injury!

Never exceed the maximum filling quantity of the tank. This could cause the machine to topple over!



WARNING! Risk of injury!

Only use cleaning agents approved by the manufacturer. Under no circumstances may cleaning fluids be used which contain easily combustible, inflammable, poisonous, health endangering, corrosive or irritating materials.



ATTENTION!

The wrong cleaning agent can damage the appliance.

The following must be observed:

- Only use cleaning agents approved by the manufacturer.
 - Never fill with fluids which are warmer than 40 °C!
7. Fill cleaning fluid through the filling opening (13) of the fluid tank. Regulate the cleaning fluid during operation by pulling the dosing lever (1).

6.3.4 Assembling the suction ring / vac unit (Optional)

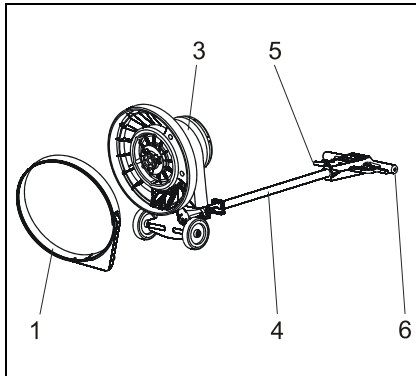


Fig. 10 Assembling the vac unit

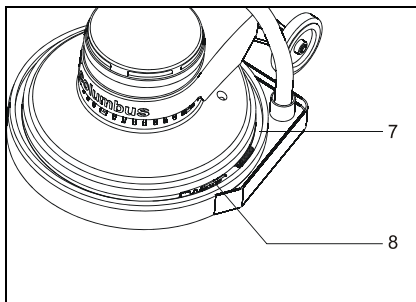


Fig. 11 Assembling the suction ring

Assembling the suction ring



Risk of injury from rotating parts!

Before removing the cleaning tool unplug the device!

Wear protective gloves!

1. Put the guide bar into a vertical position. To do this, pull the positioning lever (5) and swivel the guide bar (4) to the front. Then release the positioning lever again.
2. Tilt the machine backwards until the switch housing (6) rests on the floor.
3. Put on the suction ring (1) on the machine body (3). The bristles point away from the machine. The hose closure clip (8) must point to the left in the direction of travel.
4. Close the hose closure clip (8).
5. Point the suction device (7) to between the suction ring (1) and the machine body (3).

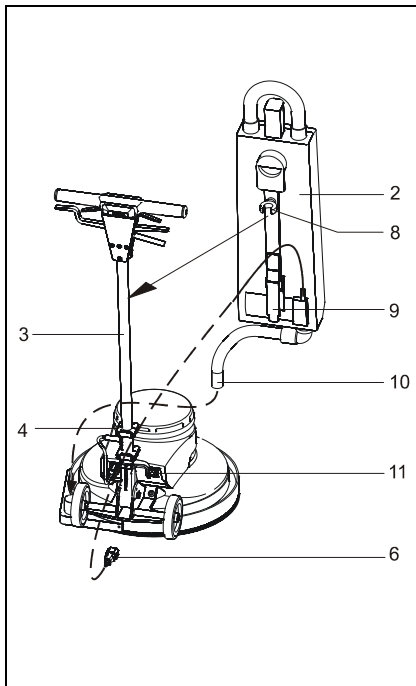


Fig. 12 Assembling the suction bin

Mounting the suction tank

1. Push the mounting bracket (9) of the tank into the upper fixture (4) of the guide bar (3).
2. Press the upper part of the tank tightly against the guide bar until the snap connection (8) snaps in place.
3. Push the plug (6) into the socket (11) on the right side of the appliance.
4. Plug the inlet hose of the tank (10) into the opening connection of the suction ring (5).



NOTE!

Once the single brush machine has been switched on, the vac unit starts automatically after a delay of about one to two seconds.



NOTE!

For further information on the vac unit (e.g. changing the paper bag) please see the accompanying operating manual.

7 Operation



WARNING! Risk of injury!

The appliance may put people and objects at risk. Work on and with the appliance may only be carried out by properly qualified personnel in accordance with all the safety instructions given in the Chapter "Safety"!

Every operator must first read through the whole operating manual – especially all the instructions in the chapter on "Safety" – and have understood it before operating the appliance.



WARNING! Danger of electric shock!

Make sure that the electrical connection values are consistent with those on the type plate of the appliance. The single brush machine must only be used on appropriately fused electric circuits.

7.1 Tasks before starting cleaning

7.1.1 Checks before starting



ATTENTION!

The appliance must be in proper working order, otherwise the appliance or the floor surface to be cleaned may be damaged or ruined.

Therefore carry out the following checks before starting work:

1. Visual inspection of the appliance for damage or missing parts.
2. Check that all the operating controls are working properly.
3. Check the cleaning tool is working properly

7.1.2 Selecting the equipment

Equip the single brush machine according to the work to be carried out:

- **Scrubbing:** For scrubbing, a scrubbing brush (or a pad holder with pad) is required.
We also recommend to use the columbus fluid tank (see Chapter „Assembling the accessories“).
- **Polishing:** For polishing, a polishing brush (or a pad holder with polishing pad) is required.
We also recommend vacuuming the floor surface with the vac unit (See Chapter “Assembling the accessories”).
- **Cleaning:** For cleaning, a pad holder with polishing pad and spray unit is required (Chapter “Assembling the accessories”).
- **Shampooing:** For shampooing, a shampoo brush and the fluid tank is required (Chapter “Assembling the accessories”).



NOTE!

To make the shampoo brush more supple, it should be soaked in clear water for about half an hour before use.

7.1.3 Setting the guide bar / moving the appliance

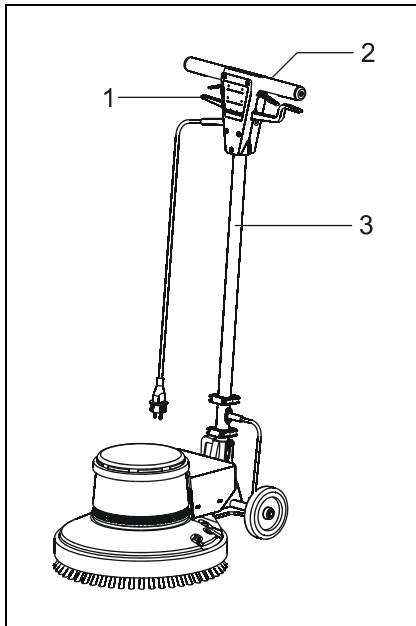


Fig. 13 Setting the guide bar

Setting the handle position

1. Pull the positioning lever (1) and keep holding it.
2. Swivel the guide bar (3) to bring the handle (2) into a comfortable working position.
3. Release the positioning lever.

Moving the appliance from place to place

1. Put the guide bar (3) into a vertical position by swivelling it completely forward.
2. Tilt the appliance backwards using the handle (2).
3. Push the appliance slowly and carefully by the handle (2) to where you want to go.



ATTENTION!

The appliance should always be carried by two people if it needs to be lifted.

7.1.4 Setting the swivel joint

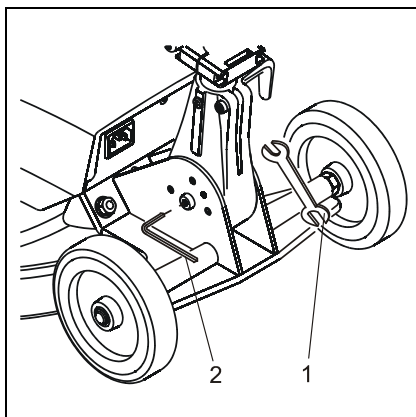


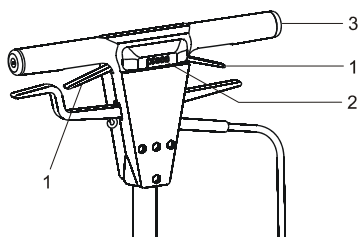
Fig. 14 Setting the swivel joint stiffness

The ease of movement of the guide bar pivot can be adjusted as required. To do this proceed as follows:

1. First release the lock nut on the end of the adjusting screw using a flat or ring spanner SW 13 (1).
2. Set the pivot to the desired stiffness using a size 5 Allen key (2):
 - Turn Allen key anticlockwise if the setting bar is too stiff.
 - Turn Allen key clockwise if the setting bar is too loose.
3. Retighten the lock nut firmly.

7.2 Operation during cleaning work

7.2.1 Switching on and off



Switching on

1. Adjust the guide bar (see above).



WARNING! Risk of injury!

Never switch the machine on with the guide bar in the vertical position as very high forces are required to hold it!

Fig. 15. Switching on and off

**WARNING! Risk of injury!**

When switching on the machine and working with it, always control it with both hands!

2. Press push button (2) at the rear of the switching housing with your thumb and hold it down. (The button stops the appliance being switched on again by mistake).
3. Pull the lefthand or righthand switch lever (1) with the fingers towards the handle (3).
4. The machine is now switched on. You can now release button (2) again.

Switching off**WARNING! Risk of injury!**

Hold the machine firmly with both hands until it comes to a complete rest!

1. Release both levers (1).
2. Keep a firm hold on the handle bar of the appliance until the machine comes to a complete stop.
3. Move the guide bar into a vertical position.

**NOTE!**

The appliance has a thermal fuse which cuts off the motor if there is a danger of overload. The appliance can be switched on again after a cooling-off period of 5 to 10 minutes.

7.2.2 Controlling the appliance

Single brush machines are so called "self-propelling" appliances, i.e. they are operated by slightly raising or lowering the guide bar.

- **To move to the left:** slightly lower the guide bar.
- **To move to the right:** slightly raise the guide bar.

7.3 Using the single brush machine

7.3.1 Manual attachment of the cleaning tool

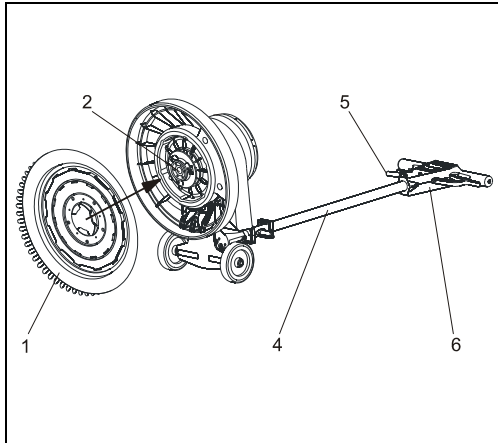


Fig. 16 Manual tool attachment



Risk of injury from rotating parts!

Before attaching or removing the cleaning tool, always unplug the device! Wear protective gloves!

Attaching the cleaning tool

1. Bring guide bar into a vertical position. To do this, pull the positioning lever (5) and push the guide bar (4) forward. Then release the positioning lever again.
2. Tilt the machine backwards so that the switch housing (6) is resting on the floor.
3. Insert the cleaning tool (1) into the drive disc (2). Lock in place using a short, sharp anticlockwise movement.

Removing the cleaning tool:

1. Put the guide bar into a vertical position. To do this, pull the positioning lever (5) and swivel the guide bar (4) to the front. Then release the positioning lever again.
2. Tilt the machine backwards so that the switch housing (6) is resting on the floor.
3. Release the cleaning tool (1) with a short, sharp clockwise turn. Then remove the cleaning tool.

7.3.2 Starting work

1. Prepare the single brush machine as described in the chapter "Tasks before starting cleaning".
2. Adjust the handle
 - **Never use appliance with the guide bar in a vertical position.**
3. Switch on the appliance (see Chapter "Switching on and off").
 - **Always guide the machine with both hands.**
4. Slowly and carefully guide single brush machine over the surface to be cleaned. Control machine through slight lifting or lowering of the guide bar.

• **Moving to the left:** slightly lower the guide bar,

• **Moving to the right:** slightly raise the guide bar.

Pay attention to the following when working with the appliance:

- **Do not run over the mains power cable. Running over the power supply cable with the brush rotating could cause a fatal accident!**
- **Always control the machine with both hands.**
- **Move the appliance cautiously, take care to keep clear of people and objects in the vicinity.**
- **When operating the appliance never put other people at risk.**
- **When cleaning floors with the appliance, never go over thresholds, steps or carpets or objects which might get caught, such as cables. Max. floor gradient 10 %.**
- **Never leave the appliance unattended. Keep unauthorized persons away from the appliance.**

7.3.3 On finishing work

1. When cleaning is finished, switch off the appliance (see Chapter "Switching on and off")
 - **Hold the machine firmly with both hands until it has come to a complete stop!**
2. Bring the guide bar into the vertical position.
3. The cleaning tool must always be removed (see Chapter "Cleaning tool attach/remove")
4. When using a brush: Rinse the brush with clean water. If the brush is very dirty, clean it with a suitable detergent. Allow the brush to dry.
5. When using a fluid tank: Rinse the tank out thoroughly with clear water. Dry the machine with a cloth.
6. Keep the machine in a dry, frost-free place until it is next required.

8 Maintenance



WARNING! Risk of injury!

The appliance may put people and objects at risk. Work on and with the appliance may only be carried out by properly qualified personnel in accordance with all the safety instructions given in Chapter "Safety"!

- Clean the machine with a moistened cloth (if necessary, a mild detergent may be used).
- Take care that the ventilation slots of the motor on the machine body are not clogged so that good cooling of the motor is assured.
- Take care that the bumpers on the machine body fit tightly and are in the right place.
- Check the cables, plug and socket regularly for damage (e.g. wear, scorch marks, etc.).

9 Troubleshooting



WARNING! Risk of injury!

The appliance may put people and objects at risk. Work on and with the appliance may only be carried out by properly qualified personnel in accordance with all the safety instructions given in Chapter "Safety"!

Before troubleshooting, switch off the appliance and pull out the mains plug, where necessary.

| Fault | Possible cause | Remedy |
|---------------------------------|--|---|
| Machine does not work | Mains plug not connected correctly | Check plug on correct connection. |
| | Mains plug not properly in the socket | Push the mains plug properly into the socket |
| | The thermal release caused the motor to switch off | Allow appliance to cool down for 5 to 10 minutes. |
| | Motor faulty | Contact the manufacturer. |
| Machine is not running smoothly | Cleaning tool is contaminated | Check cleaning tool on dirt. If necessary disconnect or wash with water. |
| | Cleaning tool is worn out unevenly | Fit a new cleaning tool. |
| | Cleaning tool is not centred in the catch | Check the correct positioning of the cleaning tool. If necessary, centre the cleaning tool on the drive disc. |
| Machine gyrates, out-of-balance | Cleaning tool is not assembled correctly. | Check the correct positioning of the cleaning tool. If necessary remove and refit the cleaning tool. |

10 Accessories

The following accessories can be obtained from the manufacturer:

- Scrubbing brushes of different brush strengths
- Drive plates for pads
- Vacuum units with suction ring for vacuuming dry, non-poisonous dusts
- Container tanks for cleaning and floor care fluids
- Cleaning and floor care products for different applications
- Spray device
- Pads
- Extension cable

Detailed information about our accessories can be found in our price list.

11 Declaration of Conformity

in terms of the EU Machine directive 2006/42/EG



The manufacturer
G. Staehle GmbH u. Co. KG
Mercedes Strasse 15
D-70372 Stuttgart

herewith declares that the product specified in the following complies with the provisions of the above directive – including the relevant modifications at the time of the declaration.

| | | |
|----------|-----------------------------|---------------------------|
| Product: | Single brush machine | |
| Types: | E 400 S | 230 V, 1200 W |
| | E 400/1800 R,S | 230 V, 1800 W |
| | E 500 S | 230 V, 1800 W |
| | E 500 E | 230 V, 1200/1500 W |
| | HS 403 | 230 V, 1200 W |
| | HS 403 S | 230 V, 1800 W |
| | HS 434 | 230 V, 1500 W |

The following harmonised standards have been applied:

| | |
|-------------------|--|
| EN 60335-1 | Household and similar electrical appliances – Safety - Part 1: General requirements |
| EN 60335-2-67 | Safety of household and similar electrical appliances - Part 2-72: Particular requirements for floor treatment and cleaning machines for industrial and commercial use |
| EN 12100-1 | Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology |
| EN 12100-2 | Safety of machinery – Basic concepts, general principles for design - Part 2: Technical principles |
| DIN EN ISO 13857 | Safety of machinery – Safety distance to prevent danger zones being reached by the upper limbs |
| EN/IEC 61000-3-2 | Electromagnetic compatibility |
| EN/IEC 61000-4-11 | |
| EN 55014-2 | |
| EN 55014-1 | |

The following EU directives have also been complied with:

| | |
|------------|---------------|
| 2014/30/EU | EMC Directive |
|------------|---------------|

Stuttgart, 01.06.2019

Dipl. Ing.(BA) Erich Stockmann, Head of Design and Development

Authorised Documentation Representative: Dr. M. Baumgärtel

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