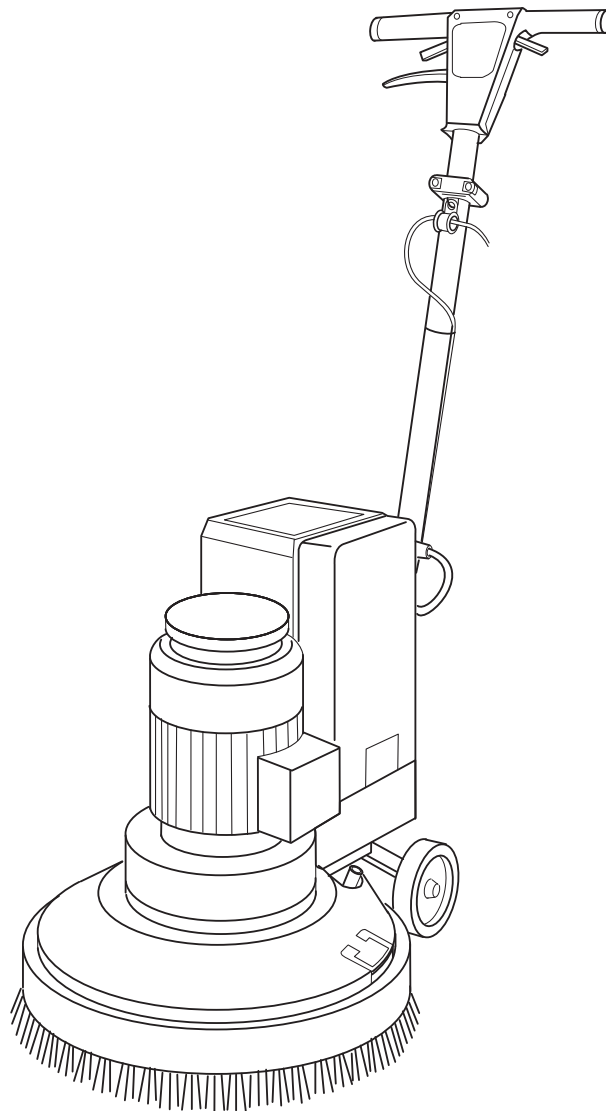


**E 505 S Ex**

# **Operating Manual Single brush machine and Accessories**



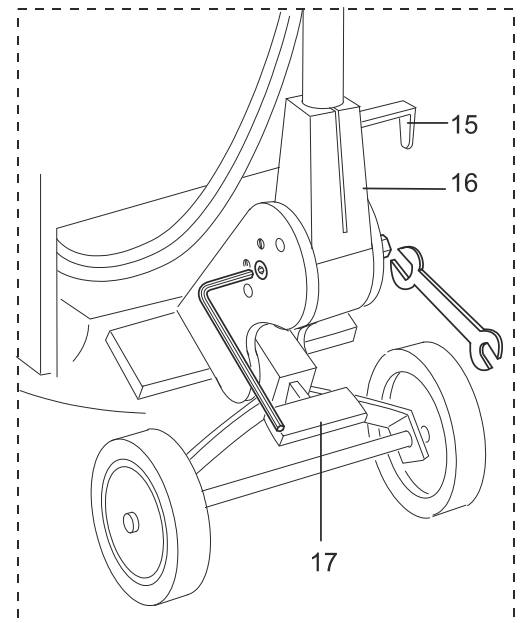
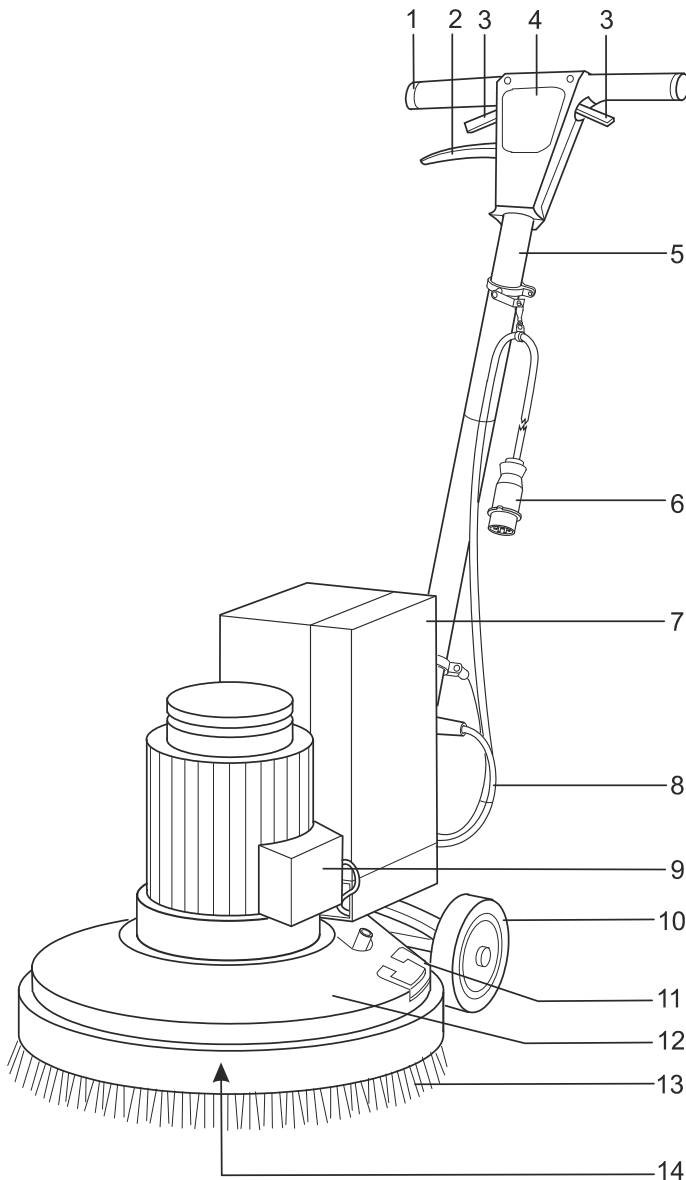
Read these instructions  
carefully before  
operating the machine!



This machine is intended  
for industrial and professional  
use only!

## Table of contents

<b>1. Safety</b> .....	4
<b>2. Description</b> .....	6
<b>3. Delivery</b> .....	6
<b>4. Inserting the cleaning tool</b> .....	6
<b>5. Starting the single brush machine</b> .....	7
<b>6. Equipment for floor cleaning and maintenance</b> .....	9
<b>7. Transporting the single brush machine</b> .....	9
<b>8. On finishing work</b> .....	9
<b>9. Care, maintenance and repair</b> .....	10
<b>10. General recommendations</b> .....	11
<b>11. Technical data</b> .....	11



## List of reference numbers

- |   |                   |    |                 |
|---|-------------------|----|-----------------|
| 1 | Handle bar        | 10 | Wheel           |
| 2 | Positioning lever | 11 | Carrying handle |
| 3 | Control lever     | 12 | Machine body    |
| 4 | Switch housing    | 13 | Cleaning tool   |
| 5 | Handle            | 14 | Drive disc      |
| 6 | Mains plug        | 15 | Cable hook      |
| 7 | Control unit      | 16 | Handle holder   |
| 8 | Connection cable  | 17 | Foot pedal      |

## 1. Safety

### 1.1. Dangers of the machine

This Columbus E 505 S Ex single brush cleaning machine, which is protected against exploding, is designed and manufactured in accordance with today's latest technological developments and the relevant safety regulations. Safety for use in explosive areas where there may be ignitable gases, steam and vapours according to the ATEX guideline RL 94/9/EC, Appendix III has been approved by the EC design certificate SNCH 04 ATEX 3606.

However, improper use can result in danger to persons and damage to the machine and other objects. When working with the single brush machine please pay careful attention to other persons near by, especially to children.

### 1.2. Safety instructions in this operating manual

Safety instructions in this manual are marked as follows:



#### **Danger!**

Indicates an immediate danger. Death or serious injuries may result from non-observance.



#### **Caution!**

Indicates a potentially dangerous situation. Injuries may result if such situations are not avoided



#### **Important!**

Indicates important information on using the equipment. Non-observance may lead to damage.

### 1.3. Safety instructions for mains operated machines



**Please observe that the mains power cable to the Columbus E 505 S Ex machine is not damaged by squeezing, jerking, chafing, scouring or the like. The power cable and connecting leads must be checked regularly for damages (e.g. scouring marks, wear, scorch marks, etc.). Always unplug the machine before carrying out any care, maintenance or repair work or before changing the scrubbing brush. Do not use the single brush machine when the connecting leads or the mains supply cable etc. are not faultless. The single brush machine may not be modified in any way.**

**Repairs and service of the single brush machine may only be carried out by the manufacturer G. Staehle GmbH & Co. Columbus Cleaning Machines, 70372 Stuttgart, Germany, or by persons or companies authorized by them..**

### 1.4. Intended use

The Columbus E 505 S Ex single brush machine, is exclusively for industrial use, e.g. in plants, petrochemicals industry, tank farms and storehouses or warehouses with dangerous goods.

The Columbus E 505 S Ex single brush machine is only suitable for wet cleaning of hard floor surfaces and must only be used with the following tools.

- **columbus scrubbing brush Art.No. 20034247**
- **columbus pad driver Art.No. 20987230 with**
- **columbus scrubbing pad Art.No. 20787000\***

\* can only be ordered as 20787030 as a packaging unit with 10 pieces.

The cleaning tool may only be mounted on the machine manually and not mechanically. To avoid electrostatic charges or unacceptable high friction temperatures, due to friction between the bristles and the floor, the Columbus tools must never be used on dry floors or operated in dry condition.

Never scrub the floor in the same spot for a longer period of time. To avoid sparks occurring, the Columbus E 505 S Ex single brush machine must not be pushed into other objects or dragged along them.



The Columbus E 505 S Ex single brush machine is an electric device according to the ATEX 2014/34/EU, conforming to Appliance Category II 2G (Zone 1 and Zone 2), suitable for the Material Groups IIA to IIC according to EN 60079 with Temperature Class T3 (195 °C). The admissible ambient temperature limits are +10 °C to +40 °C.



**Attention:** If the appliance is left in the sun for longer periods of time, the housing surfaces of the appliance components may become too hot.

Please monitor these conditions for the single brush machine constantly to ensure that the appliance is only used within the specified ranges. Only the components (cleaning tools) specified by the manufacturer may be used. The use of other tools is not permitted and can cause an explosion.

Only use non-flammable chemical additives.

The Columbus E 505 S Ex single brush machine, conforming to EN 60529, Class IP 55, may not be stored outside over a longer period of time. The machine may be used in light rain but be sure to dry the appliance thoroughly after use.

The Columbus E 505 S Ex single brush machine must only be used for the purpose intended. Proper use implies compliance with the instructions contained in the manufacturer's operating, maintenance and repair manuals.

The Columbus E 505 S Ex single brush machine must only be used by properly trained staff, i.e. with the authorization of the owner of the appliance. The Columbus E 505 S Ex single brush machine must only be maintained or repaired by properly trained persons approved by the manufacturer, or by the manufacturer himself.

The local accident prevention regulations which apply and other generally recognized health & work safety regulations must be observed. Unauthorized changes, modifications etc. to the single brush machine nullify entirely any liability of the manufacturer, including for any damage which may result.

### **1.5. Product liability**

The attention of the operator or owner of the Columbus E 505 S Ex single brush machine is expressly drawn to the fact that the appliance may only be used for the intended purpose and be maintained by the manufacturer, & Co. Columbus Cleaning Machines, 70372 Stuttgart, Germany, according to his specifications.

In case the machine is not properly used, this is the sole responsibility of the machine operator and any liability of the single brush machine manufacturer will cease.

### **1.6. Sources of dangers**

Always avoid any risk of running over the power supply cable. There may be danger of a fatal accident occurring or risk of an explosion, if the power cable is run over by the rotating scrubbing brush or becomes entangled. Under no circumstances may the appliance be placed on top of the power cable.

Never switch the machine with on the handle in the vertical position, as it is impossible to apply enough holding force in this position, due to the too short leverage distance (counter-torque).

The single brush machine is only intended for use on flat surfaces with a maximum gradient of 2 %. Never use the single brush machine in heavy rain. It is also recommended not to use the appliance for cleaning (scrubbing) in puddles (water-level max. 10 mm).

### **1.7. Special safety instructions**

To prevent damage, subsequent damage or any other kind of damage due to technical malfunction of the Columbus E 505 S Ex single brush machine if a technical fault occurs, it must be switched off immediately and disconnected from the power supply. Drive cautiously over any thresholds or steps to avoid damage to the single brush machine, e.g. damage to the scrubbing brush, the gears or the wheels.

### 1.8. Working position

The correct working position for operating the Columbus E 505 S Ex single brush machine is behind the handle bar.

### 1.9. Approved maintenance personnel

The Columbus E 505 S Ex single brush machine must only be maintained and repaired by the manufacturer G. Staehle, D-70372 Stuttgart or by those approved (and properly trained) by the manufacturer. To ensure that the single brush machine meets all technical requirements and the existing safety regulations during operation, we suggest that you conclude a Columbus G.Staehle Maintenance Agreement.

### 1.10. Conduct in case of emergencies



**Release both levers and keep a firm hold on the single brush machine until the scrubbing brush has stopped. Then immediately pull out the mains plug to disconnect the appliance from the power supply.**

## 2. Description

The Columbus E 505 S Ex single brush machine is used for wet scrubbing of hard surfaces, especially inside buildings.

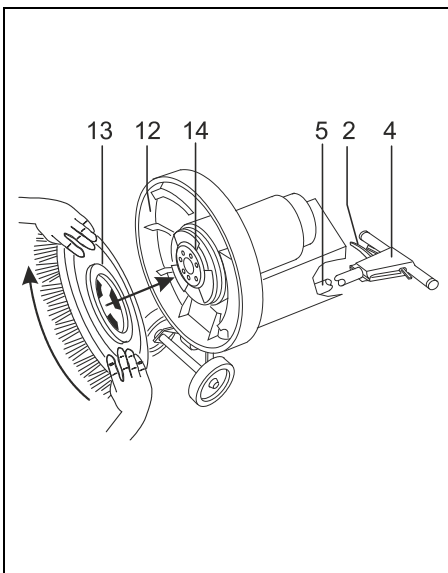
The Columbus E 505 S Ex single brush machine must only be used with the cleaning tools shown in point 6 and point 1.4.

## 3. Delivery

The Columbus E 505 S Ex single brush machine is delivered fully assembled with the handle already attached. The single brush machine is provided with of a mains connection cable with strain relief at the handle. After you have read the operating manual, the single brush machine is ready for use.

## 4. Inserting the cleaning tool

Only use the cleaning tools shown in point 6 and point 1.4.



**Only install the cleaning tool by hand.**



**ATTENTION!**

**First disconnect the mains plug!**

First put the handle (5) in a vertical position. Release the handle (5) by pulling the positioning lever (2) on the switch housing (4). Rotate the handle until it is vertical. Fix in place by releasing the lever.

Release the main body by pressing the pedal situated between the wheels.

Tilt the machine backwards so that the control unit (4) is resting on the floor.

Insert the scrubbing brush (13) into the drive disc (14) with a short, sharp turn to the left; then set the machine upright again

## 5. Starting the single brush machine

**Before starting the single brush machine read this operating manual thoroughly and follow all safety instructions.**

Check to be sure that the electrical values specified on the nameplate and in the operating manual are consistent with the local power supply. The appliance may only be used with an electrical power supply which conforms to the local safety regulations and requirements of the electrical power supplier.

Plug the connect cable into the socket provided in the building. Set the handle at an inclined angle, which is comfortable for working, by pulling the positioning lever (2) and fixing it in place.



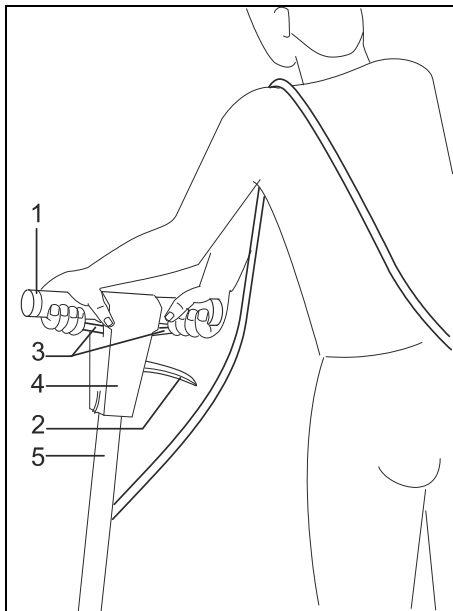
**Before starting the appliance, test the direction of rotating of the single brush machine outside the danger area without the brush**

**The direction of rotating looking at the appliance must be counterclockwise.**

Then snap the cleaning tool into place and check the appliance for e.g. imbalance, vibration, unwanted noise, etc..

The appliance is ready for use, if no faults have been detected and if there is no abnormal noise.

### 5.1. Switching the appliance on and off



**Never switch on the machine with the handle in a vertical position! When switching on the machine and working with it (scrubbing), guide it firmly and securely with both hands. Do not become tense or cramped!**

The single brush machine "Columbus" Type E 505 S Ex has a relay in the control unit and a micro-switch in the switch housing (4). By activating the micro-switch with the switch lever (3) the brush drive motor is switched on via the power contactor. When the switch lever is released, the drive motor immediately switches off again.

Then pull the left hand or right hand switch lever (3) with the fingers towards the handle (1). The machine is now switched on. To switch it off, release the left or right lever (3).

Always keep a firm hold on the handle bar (1) of the appliance until the scrubbing brush (13) comes to a complete stop.

## 5.2. Working with the single brush machine

Always work in such a way, that the cable cannot be run over.



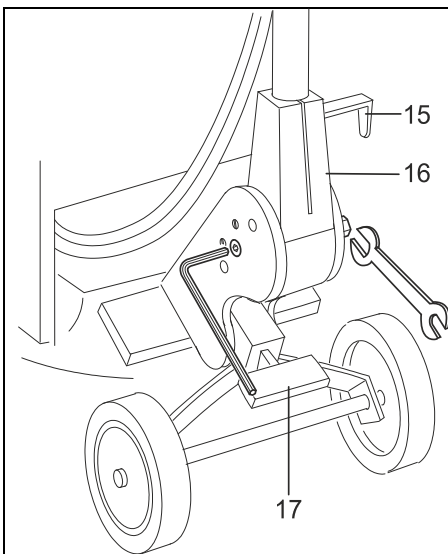
**Running over the power supply cable with the brush or cleaning tool rotating could result in a fatal accident!**

Single brush machines are so called “self-propelled” appliances, i.e. they are controlled by slight raising or lowering the handle fixed in the working position by the control lever.

**To go to the left: press down on the handle bar slightly**

**To go to the right: lift the handle bar slightly.**

## 5.3. Adjusting the handle



The ease of operation, i.e. the resistance of the handle's rotating joint, can be adjusted as required.

To do this, first undo the lock nut at the end of the set screw using an SW 13 spanner (To do this, hold the set screw with an SW5 Allen key).

If the handle is difficult to loosen, turn the set screw anticlockwise using an SW5 Allen key.

If the free-play of the handle is too large, turn the set screw clockwise. Then retighten the lock nut firmly.

## 5.4. Mains supply cable

Check the mains supply cable for damage each time before the equipment is used. Also check the single brush machine for traces of leaking oil from the gears before and after use. Try out the single brush machine outside the danger area before use, to check for any undesirable noises that could indicate damage to the appliance.



## 6. Equipment for floor cleaning and maintenance

The machine must only be used with the following tools.

- **columbus scrubbing brush Art.No. 20034247**
- **columbus pad driver Art.No. 20987230 with**
- **columbus scrubbing pad Art.No. 20787000\***

\* can only be ordered as 20787030 as a packaging unit with 10 pieces.

## 7. Transporting the single brush machine

Die Führungsstange (5) senkrecht stellen und fixieren. Die Einscheibenmaschine leicht nach vorne kippen und das ausklappbare Fahrgestell mit dem Fuß nach unten drücken, bis es einrastet. Dann die Einscheibenmaschine nach hinten kippen. So lässt sie sich die Einscheibenmaschine problemlos mittels der Laufräder (10) transportieren bzw. verschieben.

Links und rechts im Maschinenkörpers (12) befindet sich jeweils ein Tragegriff (11).

Damit kann die Maschine über Rampen, hohe Absätze und dergleichen getragen werden.

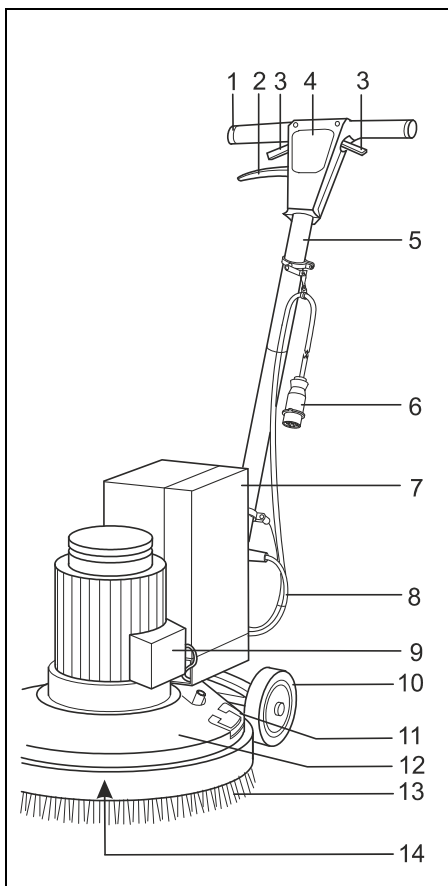


**Zum Tragen immer 2 Personen einsetzen!**

## 8. On finishing work



**After completing work always pull out the mains plug (6) straight away and wind the cable carefully round the cable hook (15) provided for this purpose and the handle (1).**



The cleaning tool (13), should always be removed from the appliance. Release the wheel assembly by pressing the pedal between the wheels. Tilt the machine backwards so that the control unit (4) rests on the floor.

Release the cleaning tool (13) from the drive disc (14) by a short, sharp turn to the right; then set the machine upright again.

Wash the scrubbing brush (13) in clean water.

Wash out very dirty brushes with a suitable detergent and allow to dry completely.

To check for traces of oil from the gears, the single brush machine must be placed or "parked" on a clean piece of cardboard. If there are any traces of oil on the cardboard, the appliance must be switched off and disconnected from the power supply.

Inform the manufacturer immediately.

All dust and dirt must be removed from the appliance including the underside of the drive disc using a moistened cloth. Bristles that are sticking out or phosphor bronze wires extending from the scrubbing brush must be cut off.

Keep the single brush machine in a dry, frost free place until next required.

## 9. Care, maintenance and repair



**Always unplug the machine before carrying out care, maintenance or repair work!**

Follow all safety instructions in this operating manual.

The annual maintenance inspection, as well as repair work of any kind, may only be carried out by properly trained personnel approved by the manufacture.

The machine must only be cleaned with a moistened cloth; if necessary, a mild detergent may be added.

The brush drive motor and the gearing of the machine are maintenance-free.



**Do not open the gear unit!**

Make sure that the ventilation slots on the machine body are not clogged so that good cooling of the motor is assured. The power cable and connection leads must be checked for scouring marks (wear, scorch marks, etc.). The mains plug must be checked regularly for damage.

## 10. General recommendations

Change worn parts (e.g. brushes) regularly. Only use the Columbus cleaning tools shown in point 6 and point 1.4.

## 11. Technical data

	<b>E 505 S Ex</b>	<b>Remarks</b>
Rated voltage	380...400 V / 50 Hz	
Rated power	1000 W	
Working height	50 cm	
Max. working height.	46,5 cm	
Brush speed	130...142 min <sup>-1</sup>	
Surface pressure	0,38N/cm <sup>2</sup>	
Power supply cable	12 m	
Dimensions	48 x 61 x 121,5 cm	
Sound pressure level	71 dB(A)	
Tests	ATEX 2014/34/EU	
Safety class	I	
Weight	58 kg	Incl. Schrubbürste

**G. Staehle GmbH u. Co. KG**  
**columbus Reinigungsmaschinen**

Mercedesstr. 15

D-70372 STUTTGART

Telefon +49(0)711 / 9544-950

[info@columbus-clean.com](mailto:info@columbus-clean.com)

[www.columbus-clean.com](http://www.columbus-clean.com)

70097300

**columbus**