

USE AND MAINTENANCE MANUAL



E43 PLUS

ED. 03-2022

ENG

ORIGINAL INSTRUCTIONS
Doc. 10113968
Ver. AA



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On consignment of the machine

When the machine is consigned to the customer, an immediate check must be performed to ensure all the material mentioned in the shipping documents has been received, and also to check the machine has not suffered damage during transportation. If this is the case, the carrier must ascertain the extent of the damage at once, informing our customer service office. It is only by prompt action of this type that the missing material can be obtained, and compensation for damage successfully claimed.

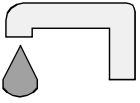
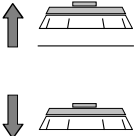
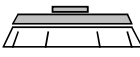
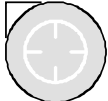
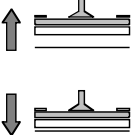

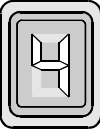
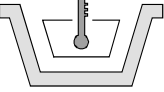
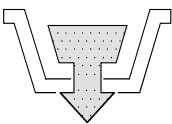
Introductory comment

This is a floor scrubber-dryer which, via the abrasive mechanical action of the two rotating brushes and the chemical action of a water/detergent solution, can clean any type of flooring. As it advances, it also collects the dirt removed and the detergent solution not absorbed by the floor.

The machine must only be used for this purpose. Even the best machines will only work well if used correctly and kept in good working order. We therefore recommend you read this instruction booklet carefully, and consult it whenever difficulties arise while using the machine. If necessary, remember that our customer assistance service (organised in collaboration with our dealers) is always available for advice or direct intervention.

TECHNICAL DESCRIPTION	U/M	E43 PLUS
Working width	mm	420
Squeegee width	mm	660
Working capacity, up to	m ² /h	1470
Brush diameter	mm	1x420
Brush speed	rpm	140
Pressure on the brushes	kg	max 20
Brush motor, rated power	W	400
Traction motor, rated power	W	-
Forward speed type		semi-aut.
Maximum forward speed	km/h	3.5
Maximum gradient		2%
Suction motor, rated power	W	370
Suction vacuum	mbar	100
Solution tank	l	33
Recovery tank	l	40
Machine length	mm	1085
Machine height	mm	960
Machine width (without squeegee)	mm	455
Battery voltage	V	24
Maximum battery capacity	Ah	77
Battery compartment	mm	360x330x250
Batteries weight	kg	56
Machine weight (empty and without	kg	70
Sound pressure level (EN ISO 11201)	dB	< 65
Hand vibration level	m/s ²	1.00

SYMBOLS USED ON THE MACHINE

	<p>Tap symbol Indicates the tap lever Indicates the tap indicator light ON</p>	
	<p>Symbol denoting brush head rise/fall Indicates the base rise/fall lever</p>	
	<p>Brush symbol Indicates the brush motor switch</p>	
	<p>Symbol denoting suction motor Indicates the suction motor switch</p>	
	<p>Symbol denoting squeegee rise/fall Indicates the squeegee lever</p>	
	<p>Battery symbol</p>	
	<p>Battery charge level indicator Also indicates the position of the tap (off = tap closed, on = tap open)</p>	
<p>MAX 50°C</p> 	<p>Indicates the maximum temperature of the detergent solution Located near the solution tank inlet</p>	
	<p>Indicates the recovery tank drainage tube</p>	

GENERAL SAFETY REGULATIONS

Before using the machine, please carefully read and observe the instructions contained within the following document, as well as those in the document supplied with the machine itself "GENERAL SAFETY REGULATIONS" (document code 10083659).

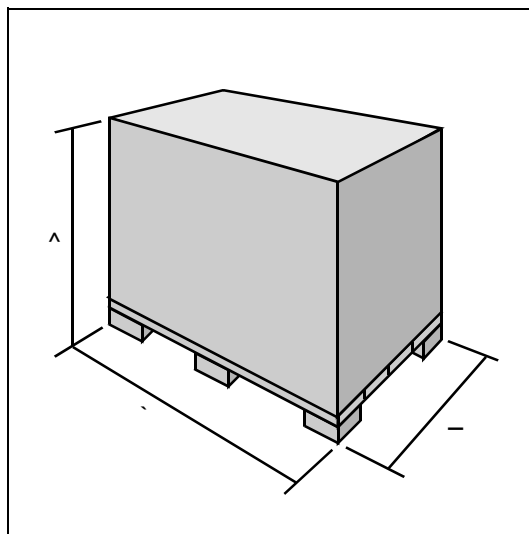
MACHINE PREPARATION

HANDLING THE PACKED MACHINE

The machine is contained in specific packaging with a pallet for the handling with fork trucks. It is not possible to place more than two packages on top of each other. The total weight is: 136kg

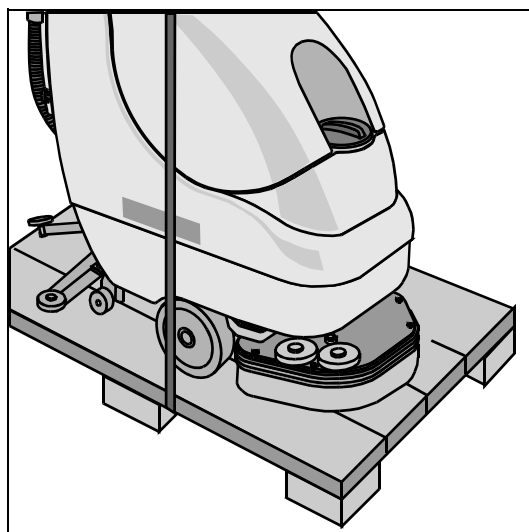
The overall dimensions of the package are:

- A :** 1260 mm
- B:** 660 mm
- C:** 1230 mm

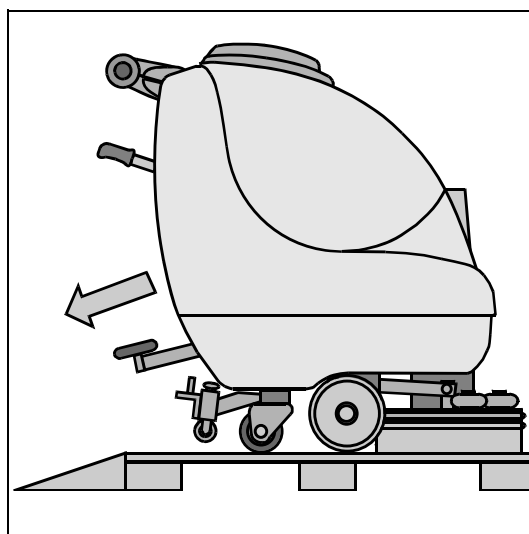


HOW TO UNPACK THE MACHINE

1. Remove the outer packaging
2. The machine is fixed to the pallet by means of a strap
3. Remove the strap



4. Use a chute to get the machine down from the pallet, pushing it backwards. Avoid violent blows to the brush head
4. Keep the pallet for any future transport needs.



MACHINE PREPARATION

TYPE OF BATTERY

To power the machine you can use:

- two lead traction batteries with tubular plates and free electrolyte;
- two airtight traction batteries with gas recombination gel technology.

Each battery consists of elements connected in series so as to provide the clamps with a voltage of 24V.

The maximum dimensions of each battery are:

- width: 195mm, length: 360mm, height: 250mm

The maximum weight of each of the two batteries is 20kg.

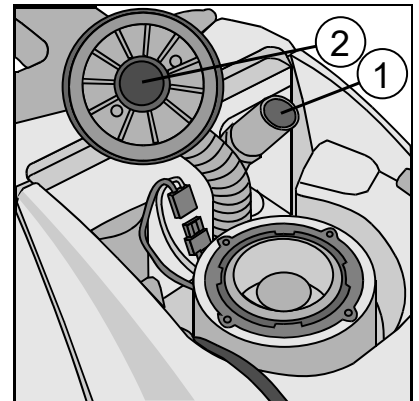
To obtain a voltage of 24V, they must be connected together in series by specialised personnel trained at the Comac Technical Assistance Centre

FITTING THE BATTERIES INTO THE MACHINE

The batteries must be housed in the special compartment beneath the recovery tank. They should be handled using lifting equipment that is suitable in terms of both weight and hook-up system. They must also satisfy the requirements of Standard CEI 21-5.

To insert the batteries you must:

- NK Open the recovery tank cover, bringing it forwards.
- OK detach the squeegee tube (1) from the recovery tank.
- PK unthread the suction cap (2) by rotating it anticlockwise.
- QK detach the "recovery tank" drainage tube from its hook.
- RK remove the recovery tank.

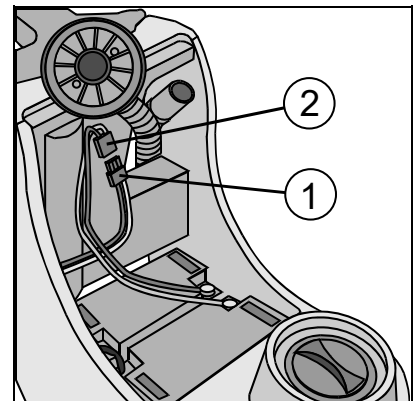


SK Position the batteries.

TK Connect the battery connector (2) to the machine connector (1).

UK Reassemble all the elements

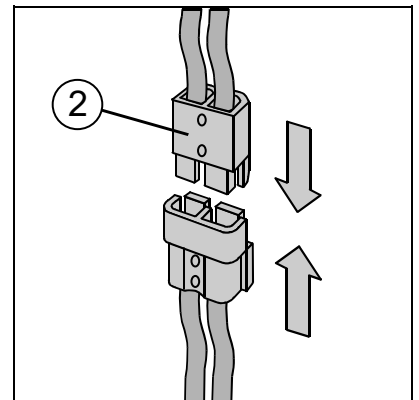
WARNING! all installation and maintenance operations must be carried out by specialized personnel.



CONNECTING THE BATTERY CHARGER

Beneath the recovery tank cover there is the battery connector (2), in which the battery charger connector must be inserted. The coupling connector of the battery charger is consigned inside the bag containing this instruction booklet, and must be be assembled on the cables of the battery charger as indicated in the instructions.

WARNING! This process must be carried out by qualified personnel. The incorrect or imperfect connection of the cables to the connector can seriously harm people and damage objects.



MACHINE PREPARATION

RECHARGING THE BATTERIES

Check the battery charger is suitable for the batteries installed, in terms of both capacity and type (lead/acid or GEL and equivalents).



CAUTION: Never recharge GEL batteries with an unsuitable battery charger. Follow the instructions given by the battery/battery charger manufacturer with the utmost attention.

In order not to cause permanent damage to the batteries, it is essential to avoid their complete discharge: arrange the recharge within a few minutes of the switching on of the "discharged batteries" blinking light.

NOTES: Never leave the batteries completely flat, even if the machine is not being used.

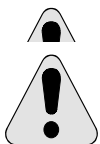
WARNING! For the daily recharging of the batteries, you must fully respect the indications provided by the manufacturer or retailer. All installation and maintenance operations must be carried out by specialized personnel. Danger of gas exhalation and leakage of corrosive liquids. Danger of fire: Keep naked flames at a safe distance.

BATTERY INDICATOR

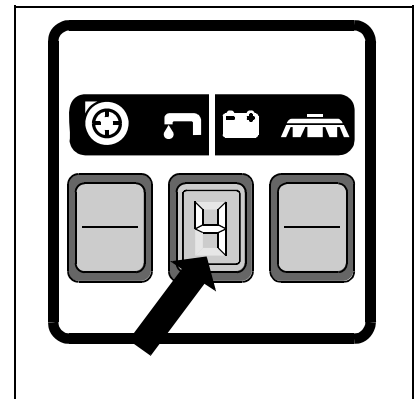
The battery indicator is digital, with 4 fixed positions and a flashing one. The numbers that appear on the display show the approximate charge level.

4 = maximum charge, **3** = 3/4 charge, **2** = 2/4 charge, **1** = 1/4 charge,

0 = discharged batteries (flashing)

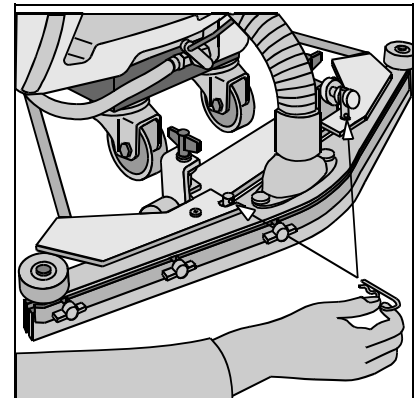


WARNING! A few seconds after the appearance of the flashing "0", the brush motor switches off automatically. With the remaining charge it is possible to complete the charging process before starting the recharge.



ASSEMBLING THE SQUEEGEE

For packaging reasons, the squeegee is supplied disassembled from the machine, and must be assembled as shown in the figure, inserting the clip into the small column of the squeegee. Insert the squeegee tube in the special sleeve.

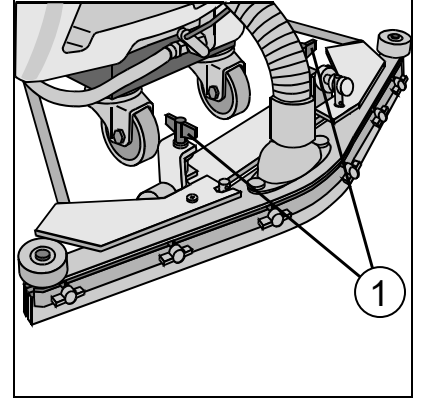


MACHINE PREPARATION

ADJUSTING THE SQUEEGEE HEIGHT

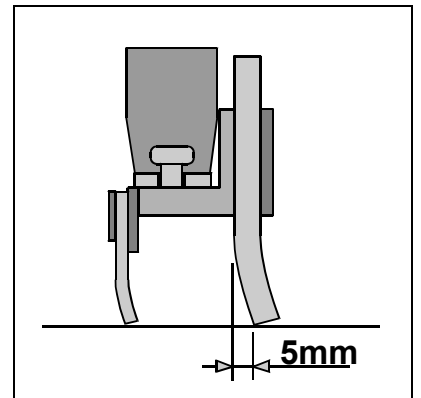
The height of the squeegee must be adjusted on the basis of the state of wear and tear of the rubber blades. To do this, turn the wing nuts (1) anticlockwise to raise the squeegee, and clockwise to lower it.

Remarks: the right and left wheels must be adjusted to the same level, so the squeegee can work parallel to the floor.



ADJUSTING THE SQUEEGEE INCLINATION

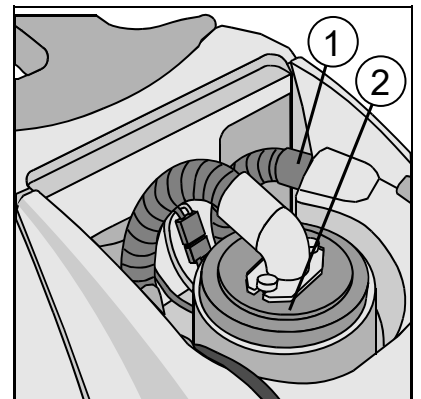
During working operation, the rear rubber blade is slightly tilted backwards (by about 5mm) in a uniform way for its whole length. If it is necessary to increase the bend of the rubber in the central part, you must tilt the squeegee backwards, rotating the adjuster (1) anticlockwise. To increase the bend of the rubber at the sides of the squeegee, rotate the adjuster clockwise. When fully adjusted, fix the lock nut.



RECOVERY TANK

Open the cover and check the suction cap (2) is correctly blocked (insert the notches in their housings, rotating the cap clockwise) and correctly connected to the tube leading to the suction motor.

In addition, check the squeegee tube (1) is correctly inserted in its housing, and that the drainage tube cap (in the rear part of the machine) is closed.



DETERGENT SOLUTION

Fill the solution tank with clean water at a temperature no greater than 50°C and add liquid detergent in the proper concentration, following the instructions of the manufacturer. The formation of excess foam could damage the suction motor, so use only the minimum amount of detergent necessary. Reassemble the cap.



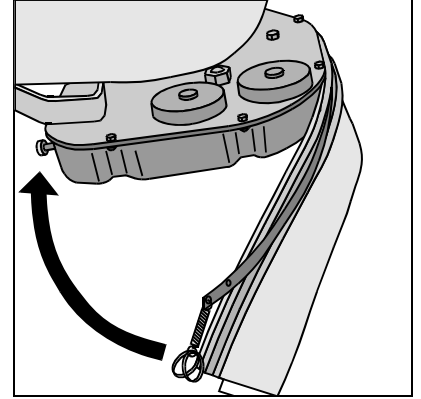
WARNING! always use low-foam detergent. To avoid the production of foam, put a minimum quantity of antifoam liquid in the recovery tank before starting to clean. **Do not use pure acids.**



MACHINE PREPARATION

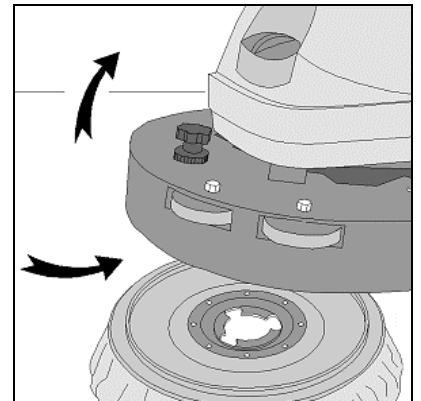
ASSEMBLING THE SPLASH GUARD

For packaging reasons, the splash guard is supplied disassembled from the machine, and must be assembled as shown in the figure.

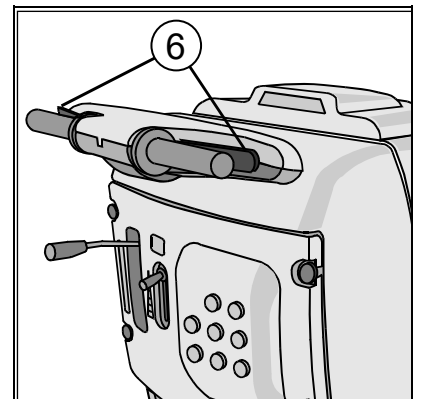


ASSEMBLING THE BRUSH

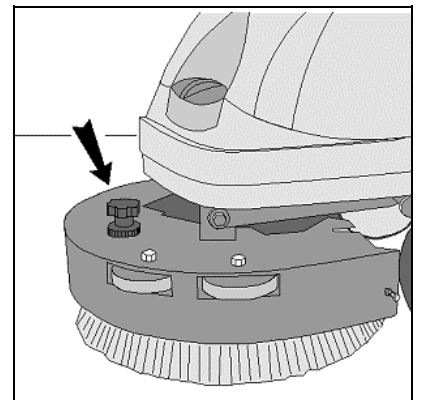
1. Raise the base by means of the appropriate pedal.
2. With the brush head up, position the brush in line with the coupling on the machine.
3. Lower the base by means of the pedal.



4. Using the "man present" lever (6), the brush is automatically hooked up.



5. To alter the machine forwards speed, use the knob shown in the figure.

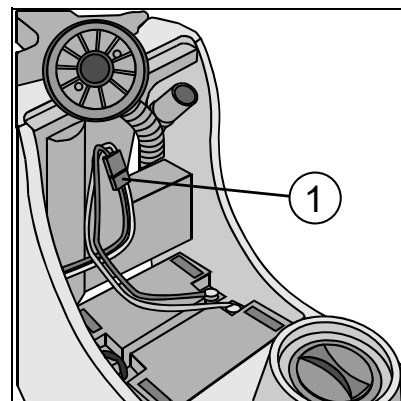


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WORK

PREPARING TO WORK

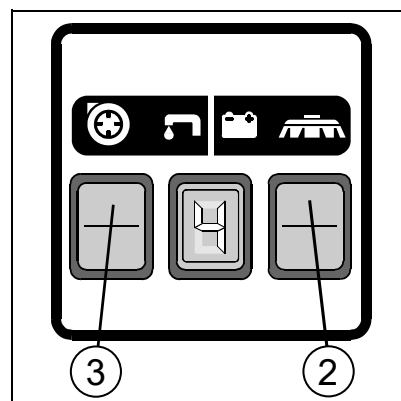
NK Connect the connector (1) to the batteries



OK Turn the key of the main switch (only on BT machines) to position "1" (clockwise).

PK Press the brush switch (2)

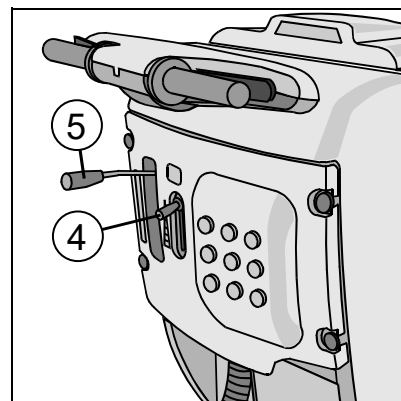
OK press the suction switch (3)



RK By means of the tap lever (4), regulate the quantity of detergent solution - it must be sufficient to wet the floor evenly, but not so much that it leaks from the splash guard. Remember, however, that the correct quantity of solution always depends on the type of floor, the degree of dirtiness and the speed used.

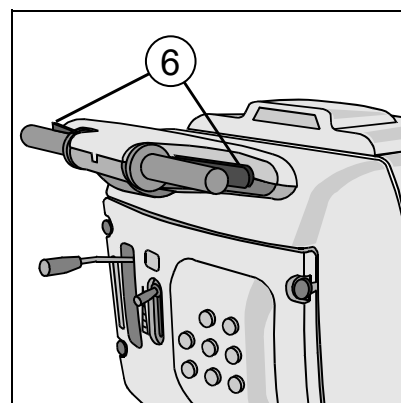
SK Release the pedal to lower the base

TK Lower the squeegee by means of the lever (5)



UK Via the "man present" lever (6), the brushes begin to rotate and the squeegee begins to suck in.

VK During the first metres, check there is sufficient solution and that the squeegee dries perfectly.



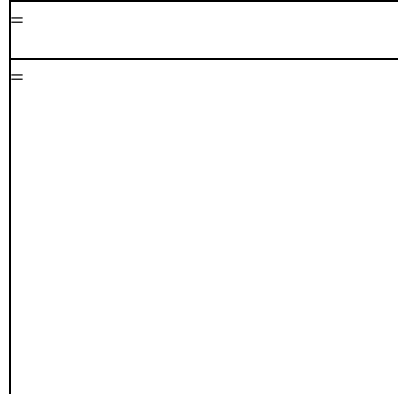
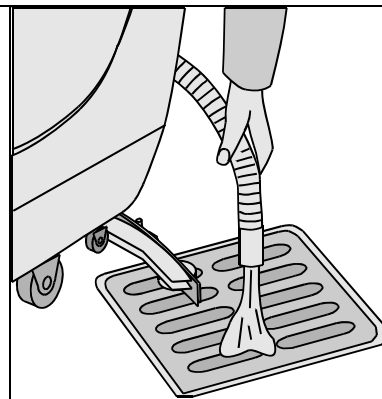
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WORK

OVERFLOW DEVICE

The machine is fitted with a float which intervenes when the recovery tank is full, causing the suction tube to close. In this case, it is necessary to empty the recovery tank, removing the drainage tube cap.

WARNING! This operation must be carried out wearing gloves to protect against contact with dangerous solutions.



FORWARD MOVEMENTS (machines without traction)

The traction of these machines is obtained by means of the brush(es) which, working slightly inclined, drag the machine forwards. To move the machine, you must raise the brush base and then move it via the knobs on the handlebars.



WARNING! when making even brief reverse movements, verify that the squeegee is raised. =

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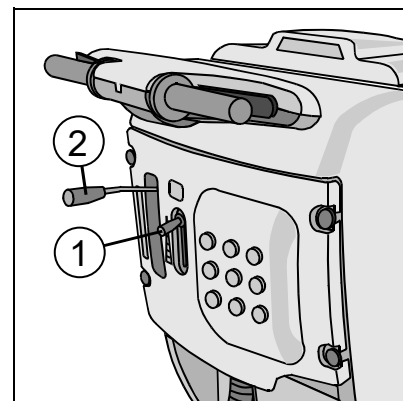
AT THE END OF THE WORK

At the end of the work, and before carrying out any type of maintenance:

NK Close the tap by means of the lever (1).

OK Raise the base by means of the pedal.

PK raise the squeegee by means of the lever (2)

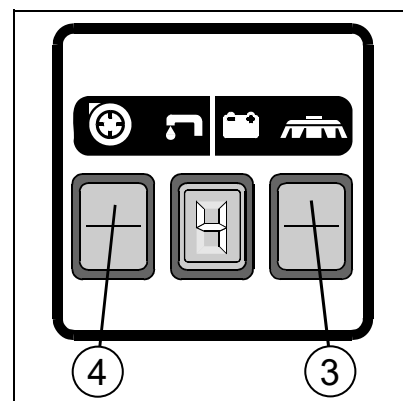


OK Turn off the brush switch (3).

RK Turn off the suction motor switch (4).



WARNING! If the battery indicator display is still switched on after you have turned off the brush switch (3), this means the tap is turned on: turn off the tap via the lever (1) prevent detergent solution leaking out.



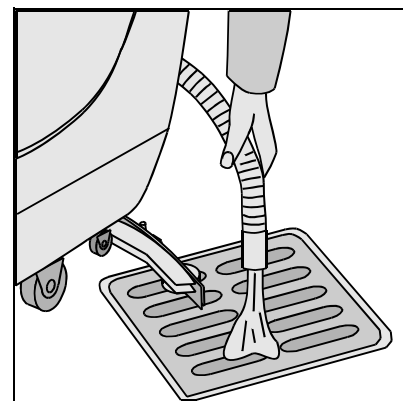
SK Take the machine to the location designated for draining the water.

TK grasp the tube on the rear of the machine.

UK Remove the drainage cap and empty the tank.

WARNING! This operation must be carried out wearing gloves to protect against contact with dangerous solutions.

VK disassemble the brush and clean it with a jet of water (to disassemble the brush, see "DISASSEMBLING THE BRUSH" below)

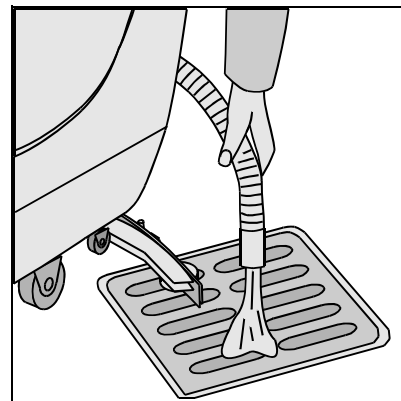


DAILY MAINTENANCE

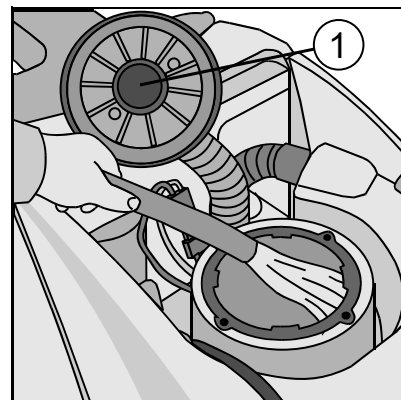
CLEANING THE RECOVERY TANK

1. Grasp the recovery tank drainage tube.
2. Remove the drainage cap and empty the tank.

WARNING! This operation must be carried out wearing gloves to protect against contact with dangerous solutions.

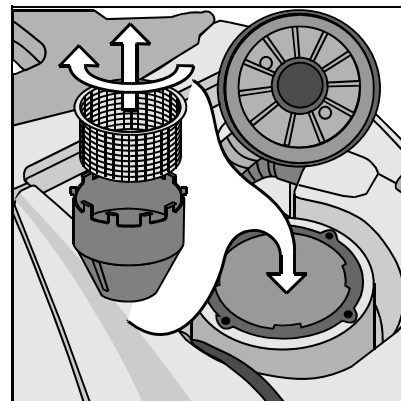


3. Raise the recovery tank cover.
4. Unthread the suction cap (1) by rotating it anticlockwise.
5. Remove the filter and relative protection.
6. Rinse the tank with a water jet.



CLEANING THE VACUUM FILTER

1. Raise the cover.
2. Unthread the suction cap by rotating it anticlockwise.
3. Unthread the filter.
4. Use a jet of water to clean the walls and brush head of the filter.
5. Carry out the cleaning operations carefully.
6. Refit all the parts.

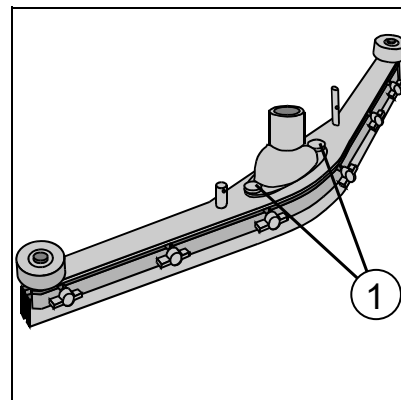


CLEANING THE SQUEEGEE

Check the squeegee is always clean, for better drying results.

To clean it you must:

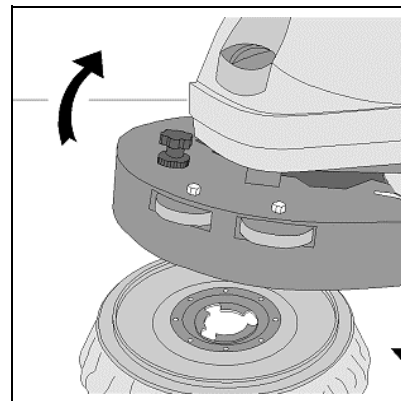
1. remove the tube from the squeegee
2. loosen the knobs (1) shown in the figure
3. remove and clean the nozzle
4. carefully clean inside the squeegee
5. carefully clean the squeegee rubbers
6. Reassemble all the elements



DAILY MAINTENANCE

DISASSEMBLING THE BRUSH

1. Raise the base by means of the pedal (downwards).
With the brush head up, use the "man present" lever to automatically release the brush

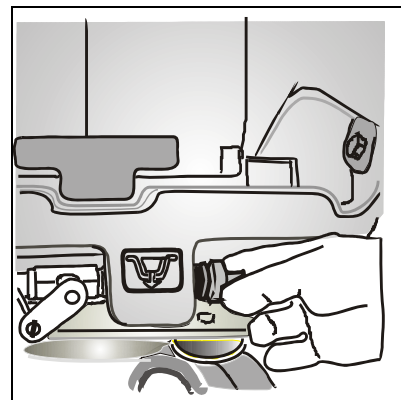


CLEANING OF THE SOLUTION DISCHARGE FILTER

1. Loosen the filter on the lower rear side of the machine
2. Rinse with a jet of water
3. Reassemble all the elements



ARNING! During this operation, check there are no people or objects near the brush.



CLEANING THE SQUEEGEE TUBE

Every week, or whenever suction seems to be unsatisfactory, check the squeegee tube is not obstructed.

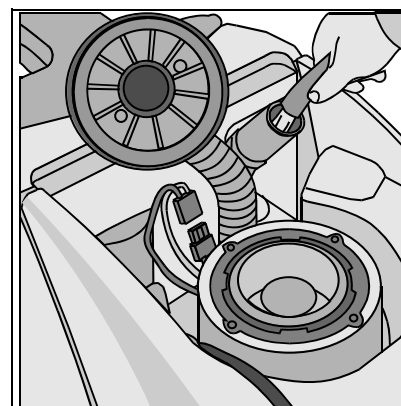
To clean it, proceed as follows:

- NK Unthread the tube from the sleeve on the squeegee
- OK Remove the other end from the recovery tank

PK Wash the inside of the tube with a water jet introduced from the side where it is connected to the tank

OK To reassemble the tube, repeat the above-mentioned operations in the reverse order

WARNING! Do not wash the tube running between the suction unit and the suction cap.



WEEKLY MAINTENANCE

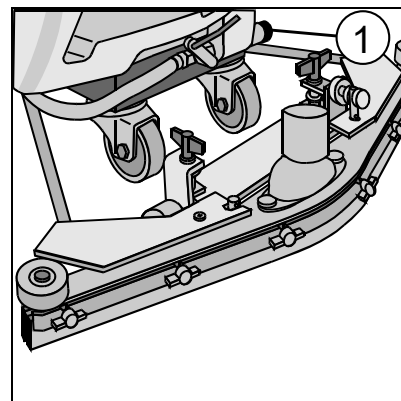
CLEANING THE SOLUTION TANK

NK Loosen the solution tank cap

OK Rinse with a jet of water

PK Remove the drainage cap (1) and empty the tank

WARNING! This operation must be carried out wearing gloves to protect against contact with dangerous solutions.



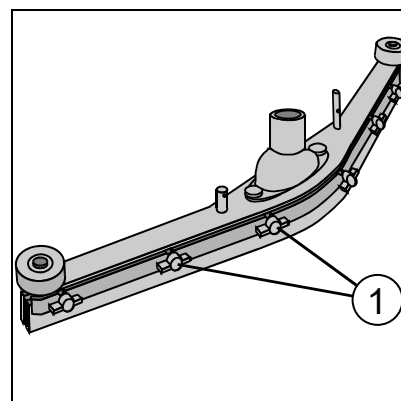
REPLACING THE SQUEEGEE RUBBERS

Verify that the state of wear and tear of the squeegee rubbers and, if necessary, replace them.

To replace it you must:

1. unthread the squeegee tube from the sleeve
2. Remove the pin from the small column
3. dis-assemble the squeegee from its support
4. Loosen, by two turns, the knobs (1) blocking the rubber-pressing blades, and remove them
5. replace the rubbers

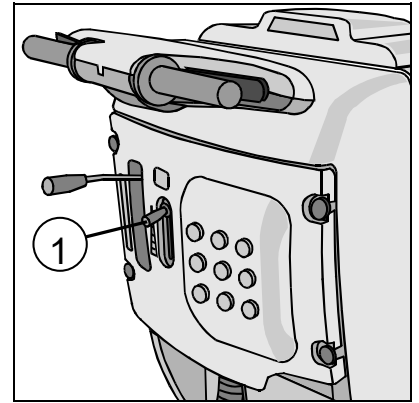
To reassemble the squeegee, repeat the above-mentioned operations in the reverse order



TROUBLESHOOTING

INSUFFICIENT WATER ON THE BRUSHES

Check that the tap (1) is turned on.
Check there is water in the solution tank.



THE MACHINE DOES NOT CLEAN WELL

Check the state of wear and tear of the brushes and, if necessary, replace them (the brushes must be replaced when the bristles are about 15mm long).
To replace the brushes, see "DISASSEMBLING THE BRUSHES" and "ASSEMBLING THE BRUSHES".
Use a different kind of brush to the one fitted as standard. For cleaning floors where the dirt is particularly resistant, we recommend the use of special brushes supplied upon request and according to needs (see "CHOOSING AND USING THE BRUSHES").

THE SQUEEGEE DOES NOT DRY PERFECTLY

- NK Verify that the squeegee rubbers are clean
- OK Adjust the inclination of the squeegee (see "SQUEEGEE" under "MACHINE PREPARATION")
- PK Check the suction tube is correctly inserted in its housing on the recovery tank
- OK Disassemble the entire suction unit and clean it
- RK Replace the rubbers, if worn
- SK Check the suction motor switch is turned on
- TK Check wheel adjustment

EXCESSIVE FOAM PRODUCTION

Check that a low foam detergent has been used. If necessary, add a small quantity of anti-foam liquid to the recovery tank.
Remember that, when the floor is not very dirty, more foam is generated. In this case the detergent solution should be more diluted.

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CHOOSING AND USING THE BRUSHES

POLYPROPYLENE BRUSH (PPL)

Used on all types of floors. Good resistance to wear and tear, and hot water (no greater than 60°C.). PPL is non-hygroscopic and therefore retains its characteristics even when working in wet conditions.

NYLON BRUSH

Used on all types of floors. Excellent resistance to wear and tear, and hot water (even over 60°C). The nylon is hygroscopic and so tends to lose its characteristics over time when working in wet conditions.

ABRASIVE BRUSH

The bristles of this type of brush are charged with highly aggressive abrasives. It is used to clean very dirty floors. To avoid floor damage, work only with the pressure strictly necessary.

BRISTLE THICKNESS

Thicker bristles are more rigid and are therefore used on smooth floors or floors with small joints.

On uneven floors or those with deep joints, it is advisable to use softer bristles which can enter the gaps more easily.

Remember that when the bristles are worn and therefore too short, they will become rigid and are no longer able to penetrate and clean deep down. In this case, like with over-large bristles, the brush tends to jump.

PAD HOLDER

The pad holder is recommended for cleaning shiny surfaces.

There are two types of pad holder:

1. The traditional pad holder is fitted with a series of anchor points that allow the abrasive floor pad to be held and dragged while working.
2. The CENTRE LOCK type pad-holder not only has anchor points, but also a snap-type central locking system in plastic that allows the abrasive disc to be perfectly centred and held without any risk of it becoming detached. This type of holder is especially suitable for machines with several brushes, where it is difficult to centre the abrasive discs.

TABLE FOR CHOOSING THE BRUSHES

Machine	No.° of brushes	Code	Type of bristles	ØBristles	Ø Brush	Notes
E43 PLUS	1	405644	PPL	0.3	420	
		405645	PPL	0.6	420	
		405646	PPL	0.9	420	
		405647	Abrasive	1	420	
		405529	Pad holder h=40		420	
		405530	Pad holder h=60		420	

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MACHINE DISPOSAL

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Proceed with scrapping the machine in accordance with the waste disposal regulations in force in the country in which the machine is being used.



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UKCA DECLARATION OF CONFORMITY

The undersigned company:

Industrial Cleaning Equipment Ltd.
Sauber House, Unit 3, Rushington Business Park
Chapel Lane, Totton, Hampshire, SO40 9AH

declares under its sole responsibility that the products

FLOOR SCRUBBING MACHINES

mod. E43 PLUS

comply with the requirements of the following Directives:

- Supply of Machinery (Safety) Regulations 2008.
- Electromagnetic Compatibility Regulations 2016.

They also comply with the following standards:

- BS EN 60335-1:2012+A2:2019
- BS EN 60335-2-72:2012
- BS EN 12100:2010
- BS EN IEC 61000-6-2:2019
- BS EN 61000-6-3:2007+A1:2011
- BS EN 62233:2008

The person authorized to compile the technical file:

Mr. Mark Bresnihan
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Chapel Lane, Totton, Hampshire, SO40 9AH

Chapel Lane, 18/03/2022

Industrial Cleaning Equipment Ltd.

Legal representative
Mark Bresnihan

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COMAC-FIMAP (Shanghai) Co., Ltd.
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Tel. 0800 389 3869 - Fax. 023 8042 8318
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FLOOR SCRUBBING MACHINES

mod. E43 PLUS CB

comply with the requirements of the following Directives:

- Supply of Machinery (Safety) Regulations 2008.
- Electrical Equipment (Safety) Regulations 2016.
- Electromagnetic Compatibility Regulations 2016.

They also comply with the following standards:

- BS EN 60335-1:2012+A2:2019
- BS EN 60335-2-72:2012
- BS EN 12100:2010
- BS EN 60335-2-29:2004+A11:2018
- BS EN IEC 61000-6-2:2019
- BS EN 61000-6-3:2007+A1:2011
- BS EN IEC 61000-3-2:2019
- BS EN IEC 61000-3-3:2019
- BS EN 55014-1:2017+A11:2020
- BS EN 55014-2:2015
- BS EN 62233:2008

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