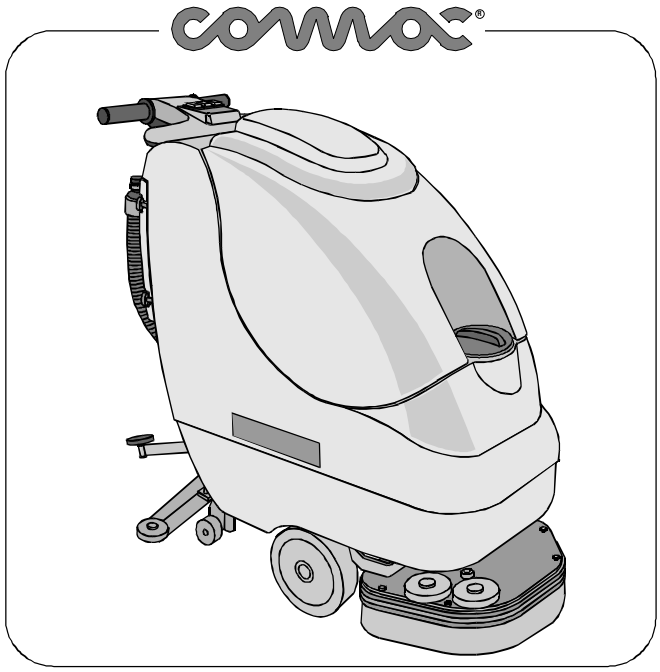

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ABILA 42-52

07/2002

Codice 75124001

SUMMARY

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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 have been received and moreover to find out that the machine has not suffered damage during transportation. If damage has occurred, get the shipping agent to verify immediately the amount and nature of the damage suffered and at the same time inform our claim department. It is only by prompt action of this type that compensation for damage may be successfully claimed.

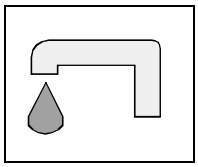
Foreword

This is a sweep-scrubbing machine which, using the mechanic abrasive action of two rotary brushes and the chemical action of a solution water-detergent, is able to clean any type of floor, picking up during its advance movement, the removed dirt and the detergent solution which has not been absorbed from the floor.

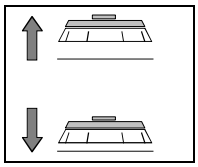
The machine must be used only for such purpose. We would impress upon you that any machine will function efficiently and operate successfully, only if used correctly and maintained in fully efficient working order. We therefore suggest you to read this instruction booklet carefully and re-read it whenever difficulties arise in the course of machine use. Our Service Department is at your disposal for all such advice and servicing as may prove necessary.

TECHNICAL DESCRIPTION	U/M	ABILA 42	ABILA 52
Cleaning width	mm	400	500
Squeegee width	mm	660	660
Working capacity, up to	sqm/h	1400	1750
Brushes diameter	mm	2x210	2x255
Brushes rpm	rpm	340	275
Brushes pressure	kg	20 max	22 max
Brushes motor	V	24	24
Brushes motor	W	400	400
Drive type		Semi-aut.	Semi-aut.
Movement speed	km/h	3.5	3.5
Max gradient		2%	2%
Suction motor	W	370	370
Suction vacuum	mbar	100	100
Solution tank	l	36	36
Recovery tank	l	40	40
Machine length	mm	1060	1100
Machine height	mm	960	960
Machine width (without squeegee)	mm	455	565
Batteries (voltage)	V	24	24
Batteries (capacity)	Ah	50	50
Batteries (compartment)	mm	360x330x250	360x330x250
Batteries weight	kg	40	40
Machine weight (empty and without batteries)	kg	70	72
Acoustic radiation pressure level (EN 60704-1)	db (A)	<65	<65
Vibration level	m/sqs	1.00	1.00

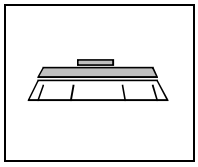
SYMBOLOGY USED ON THE MACHINE



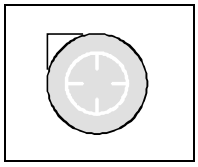
Cock symbol
Indicates the cock lever
Indicates the cock open signal lamp



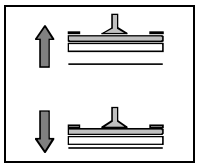
Squeegee base lift/lower symbol
Indicates the base lift lever



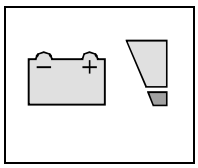
Brush symbol
Indicates the brush motor switch



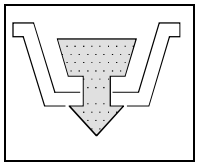
Suction motor symbol
Indicates the suction motor switch



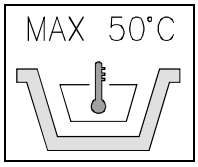
Squeegee lift/lower symbol
Indicates the squeegee lift lever



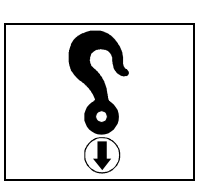
Battery charge level symbol



Indicated the recovery tank outlet pipe

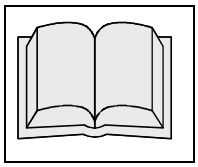


Indicates the detergent solution maximum temperature
It is placed by the solution tank inlet mouth.



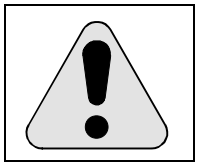
Hooking symbol
Indicates anchoring points and loading direction.

SYMBOLOGY USED ON THE MACHINE



Open book symbol
Indicates to the operator to read the manual before using the machine.

SYMBOLOGY USED IN THE MANUAL



Warning symbol
Carefully read the sections marked with this symbol, for the security of both the operator and the machine.

MACHINE PREPARATION

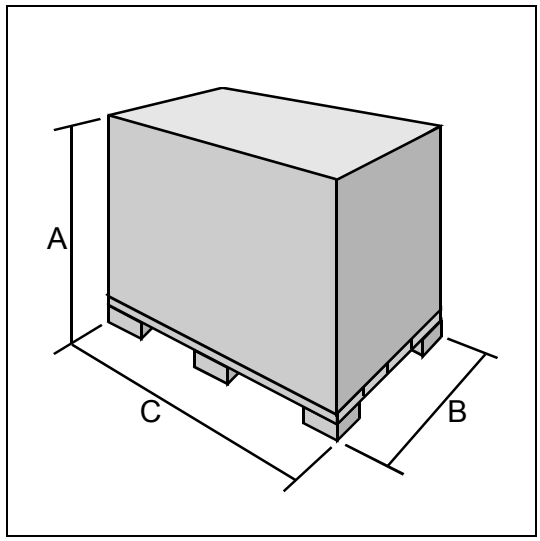
MOVING THE PACKED MACHINE

The machine is contained in specific packing with a platform so that a forklift can move it. No more than two packing crates can be stacked on each other

The total weight is : -Abila 42: 136 Kg
-Abila 52: 138 Kg

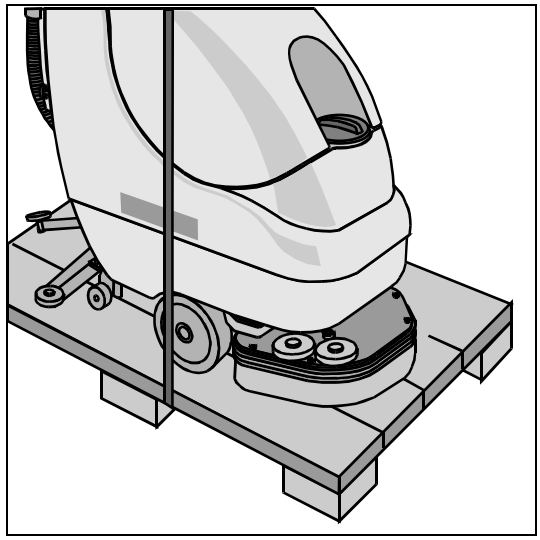
Packing dimensions are the following:

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

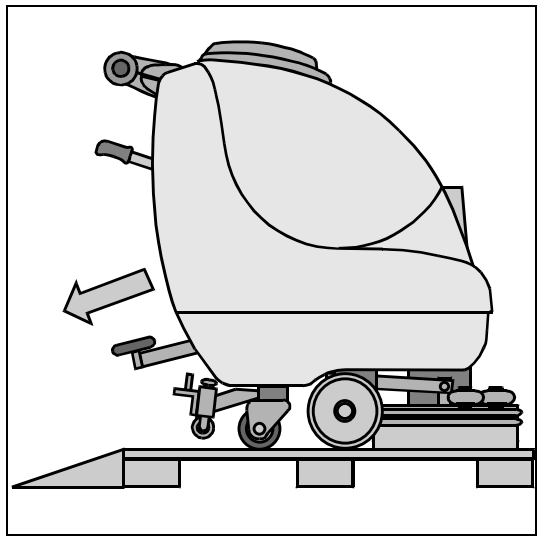


HOW TO UNPACK THE MACHINE

1. Remove outer packing.
2. The machine is strapped to its platform.
3. Remove the strap.



4. Use a ramp to lower the machine off the platform, pushing it backward in reverse. Avoid violent blows against the base.
5. Keep the packing platform since it may become necessary to transport the machine again.



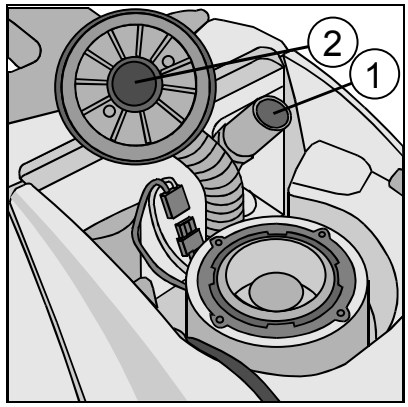
MACHINE PREPARATION

INSTALLING THE BATTERY

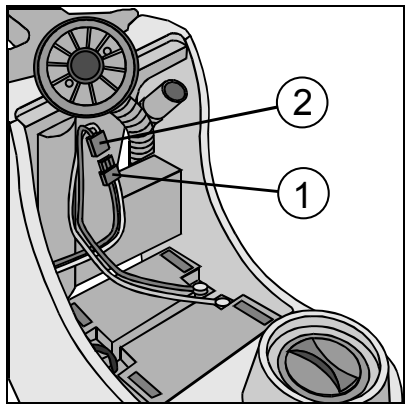
Battery must be housed in the battery compartment below the recovery tank, and must be handled using special hoisting equipment with suitable grasping systems and designed to support the battery weight.
The battery must also conform to the requirements given in CEI 21-5 standards.

WARNING! Strictly comply with all the instructions given by the battery manufacturer or retailer regarding battery maintenance and daily recharging.
Specialists must carry out all installation and maintenance procedures.

Battery installation procedure:
1. Open the recovery tank lid forward.
2. Disconnect the squeegee cable (1) from the recovery tank.
3. Remove the suction cap (2) by turning it in anticlockwise sense.
4. Disconnect the “recovery tank “ outlet pipe from the proper hook.
5. Remove the recovery tank.



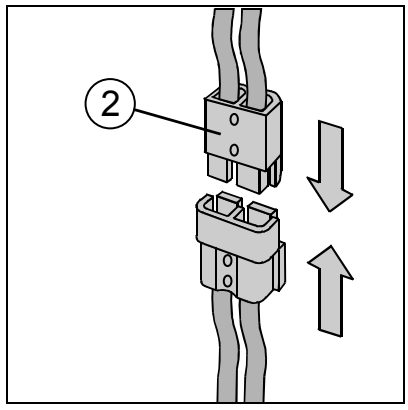
6. Place the battery.
7. Connect the battery connector (2) to the machine connector (1).
8. Reassemble everything.



CONNECTING THE BATTERY CHARGER

The battery connector (2), in which the battery charger connector is to be inserted, is placed under the recovery tank cap. The battery charger connector is delivered inside the bag containing this instructions booklet, and must be fitted to the battery charger cables according to instructions.

WARNING! This procedure is to be carried out by specialists. A wrong or defective connection of the cables to the connectors can cause serious damages persons and things.



MACHINE PREPARATION

BATTERY RECHARGING

Make sure that the battery charger is suitable to the installed battery, both in capacity and in type (lead/acid or GEL and equivalent).

WARNING! Never charge a GEL battery with an unsuitable battery charger. Strictly follow the instructions provided by the battery and battery charger manufacturer.

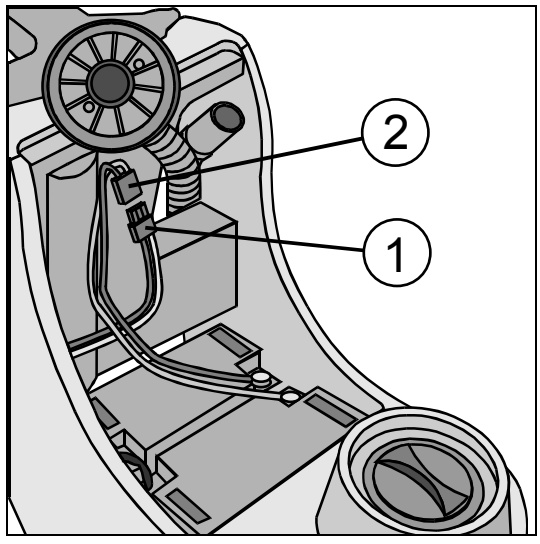
In order to avoid permanent damages to the battery, they should never be totally discharged. To do this, they should be recharged within a few minutes after the battery discharge signal starts to flash.

NOTE: Never left the battery completely discharged, not even if the machine is not being used.

WARNING! For the daily recharging of the battery it is necessary to strictly follow the instructions provided by the manufacturer or dealer. Specialists must carry out all installing and maintenance procedures. Danger of exhalation of gas and emission of corroding substances. Danger of fire: keep away from flames.

CONNECTING BATTERY CONNECTOR

The battery connector (2) must be connected to the machine connector (1).

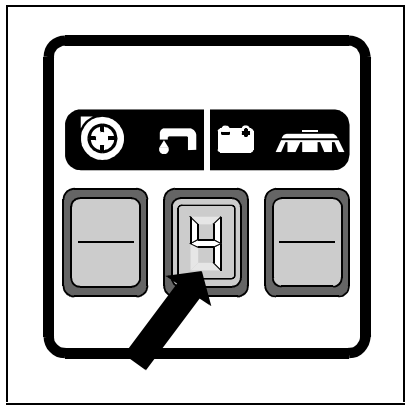


MACHINE PREPARATION

BATTERY CHARGE LEVEL GAUGE

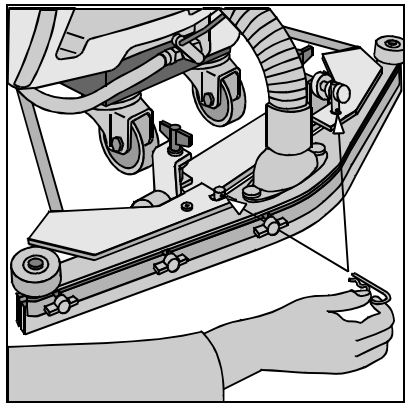
The batteries' indicator is digital with 4 fixed positions and a blinking one. The numbers, which appear on the display, show the approximate charge level.
4 = maximum charge, **3** = charge 3/4, **2** = charge 2/4, **1** = charge 1/4,
0 = (blinking) discharged batteries)

WARNING! Some seconds after that "0" blinks, the brush motor automatically switches off. Anyway, the machine can finish to dry before recharging the batteries.



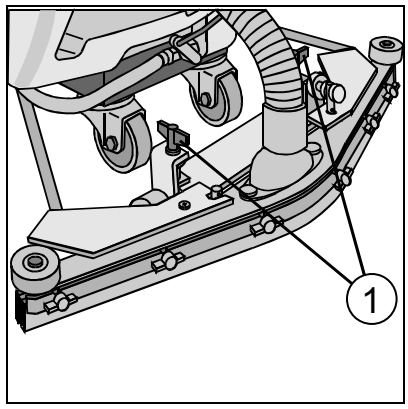
INSTALLING THE SQUEEGEE

The squeegee is supplied separately from the machine, due to packing reasons. It must be installed as shown in the picture, threading the retaining pin into the squeegee column. Put the squeegee suction tube into its sleeve.



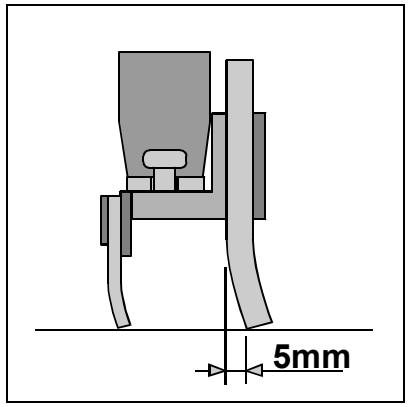
SQUEEGEE HEIGHT ADJUSTING

The squeegee height is to be regulated according to rubbers wearing. To adjust this: rotate the wing nuts (1) anticlockwise to lift the squeegee and clockwise to lower it.
Note: The right and left wheels must undergo the same regulation, to allow the squeegee to work parallel to the ground.



SQUEEGEE INCLINATION ADJUSTING

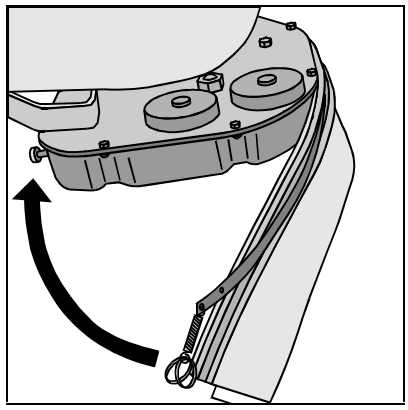
During the running, the back rubber is to be lightly inclined backwards (about 5 mm, on its whole length). Should it be necessary, you can increase the rubber central inclination by inclining backwards the squeegee body, turning the regulator anticlockwise (1). To increase the bending of the rubber on the squeegee sides, turn the register clockwise. Once the regulation is finished, lock the block nut.



MACHINE PREPARATION

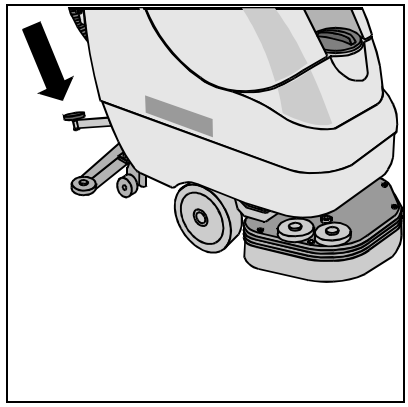
INSTALLING THE SPLASH-GUARD

The splashguard is supplied separately from the machine, for packing reasons, and is to be installed as shown in the picture.

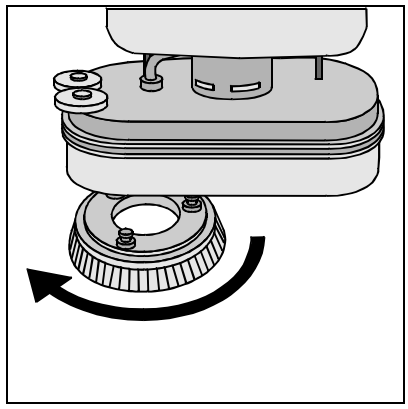


INSTALLING THE BRUSH

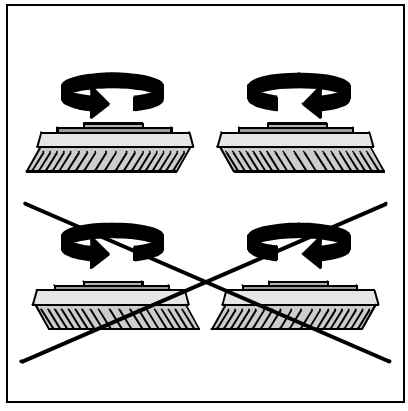
1. Lift the brush base by acting on the pedal.



2. Keeping the base lifted, thread the brushes on their seat on the hole under the base, turning them until the three buttons enter the holes in the plate. Snap-shut the button on the coupling spring to block it.
   The picture shows the rotation direction just for the right brush: for the left one, turn on the opposite direction.



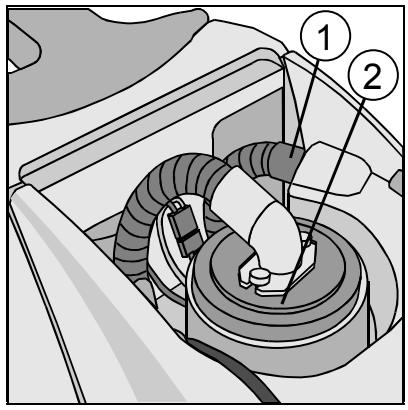
We recommend to exchange daily the right brush with the left brush and vice versa. If the brushes are not new, and their bristles are twisted, you would better reassemble them in their original position, to avoid any overloads on the motor or excessive vibrations.



MACHINE PREPARATION

RECOVERY TANK

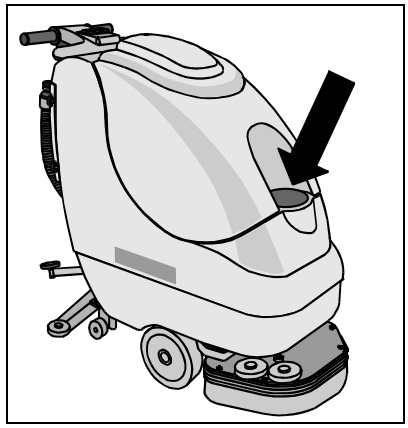
Open the lid and check that plug (2) is properly anchored (it must not pull out when it is lifted, otherwise turn it clockwise), and that suction tube (1) is inserted in its seat, in the back of the machine, and closed.



SOLUTION TANK

Fill the solution tank with clean water at a temperature not in excess of 50°C. Add liquid detergent in the amounts and using the procedures recommended by the detergent manufacturer. Use only a minimal percentage of detergent to prevent formation of an excessive quantity of foam, as this could damage the suction motor. Close the cap.

WARNING! Always use low-foam detergent. Introduce a small amount of anti-foam detergent in the recovery tank before start working, to be sure to prevent foam formation. **Never use pure acids.**



GENERAL SECURITY RULES

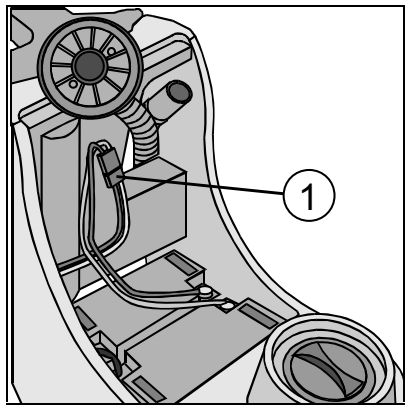
Please carefully follow the listed below rules in order to avoid harm to the operator and damage to the machine:

- ❒ Read the labels on the machine carefully. Never cover them for any reason and always immediately replace them if they are damaged
- ❒ The machine is to be used by authorised and trained personnel only
- ❒ Pay attention to other people and particularly to children while the machine is working
- ❒ Never mix different types of detergents: this could generate noxious gases
- ❒ Never sets containers of liquids on the machine
- ❒ Machine storage temperature must be between -25°C and +55°C
- ❒ Operating conditions: room temperature between 0°C and +40°C with respective humidity between 30 and 95%
- ❒ Never use the machine in an explosive environment
- ❒ Never use the machine to transport goods
- ❒ Never use acid solutions, which could damage people or the machine
- ❒ Avoid running the brushes with the machine stopped: this could damage the floor
- ❒ Never aspirate flammable liquids
- ❒ This appliance is not suitable for picking up hazardous dust
- ❒ Use a powder fire extinguisher in case of fire. Do not use water
- ❒ Do not hit against shelving or scaffolding when there is a danger of falling objects
- ❒ Suit operating speed to traction conditions
- ❒ ATTENTION: Never exceed the maximum slope limits: this could cause instability
- ❒ The machine must perform washing and drying operations simultaneously. Any other operations must be done in zones where the presence of unauthorised persons is prohibited. Signal wet floor with suitable signs
- ❒ Whenever the machine has operating troubles check to make sure these are not due to insufficient ordinary maintenance Should not it be the case, enquire with your nearest **COMAC** assistance centre
- ❒ When replacing machine parts, always ask for ORIGINAL spare parts from your Authorized Agent and/or Retailer
- ❒ Use only original **COMAC** brushes indicated in the paragraph “CHOICE AND USE OF BRUSHES”
- ❒ Always cut out the electric power supply to the machine whenever maintenance is performed
- ❒ ATTENTION: Restore all electrical connections after any maintenance operation
- ❒ Never remove guards that require tools for removal
- ❒ Never wash the machine with direct pressurised jets of water or with corrosive substances
- ❒ Have your nearest **COMAC** service centre checks the machine every 200 operating hours
- ❒ To avoid encrustations on the solution tank filter, do not fill it with the detergent solutions many hours before using the machine
- ❒ Before using the machine, make sure that all the doors and coverings are positioned as shown in this use and maintenance booklet
- ❒ Check that the recovery tank is empty before removing it
- ❒ Carry off consumption materials according to the laws in force
- ❒ When, after years of precious work your **COMAC** machine will be ready to be “pensioned”, organise the carrying off of its composing materials, in particular oils, batteries and electronics components. Please remember that the machine has been built using totally recyclable materials

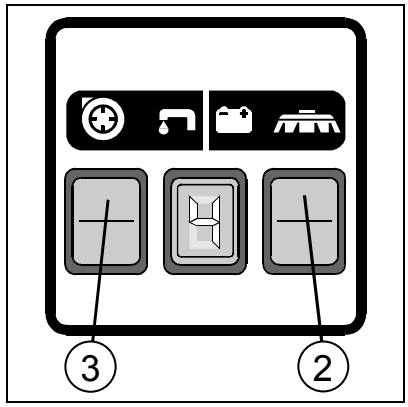
WORK

WORK PREPARATION

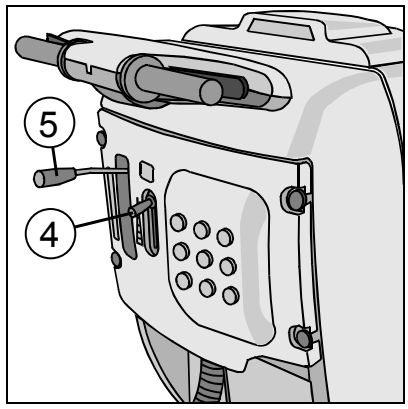
1. Connect the connector (1) to the battery.



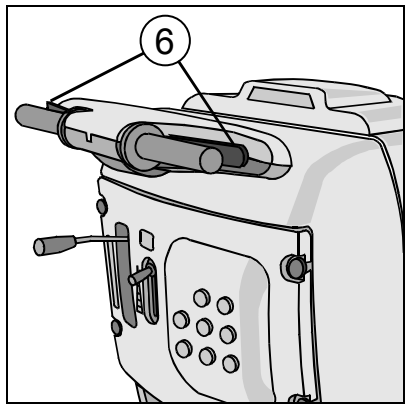
2. Press the brush switch (2)
3. Press the suction switch (3)



4. Act on the cock lever (4) to adjust the detergent solution quantity: it should be enough to regularly wet the floor but not as much as to flow out the splashguard. Please not the right solution quantity depends on floor type, on dirt importance and on speed.
5. Release the pedal and let the base lower.
6. Lower the squeegee acting on the lever (5).



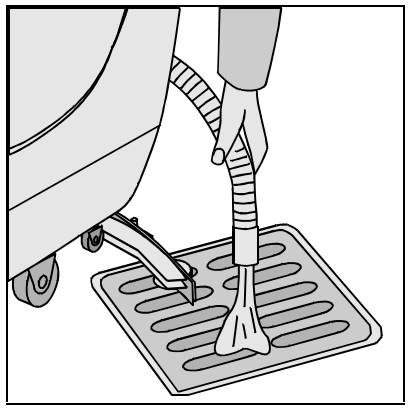
7. Acting on the deadman lever (6) the brushes start turning and the squeegee starts drawing in.
8. During the first few metres check that the amount of water is sufficient and that the squeegee dries the floor perfectly.



WORK

OVERFLOW DEVICE

The machine is supplied with float that trips whenever the recovery tank is full, closing the suction tube. In this case you should empty the recovery tank by removing the outlet pipe cap.



WARNING! Always wear gloves during this procedure, to avoid any contact with dangerous substances.

TRACTION

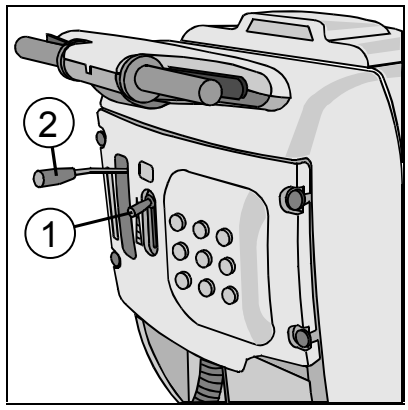
The brush obtains the traction of this machine: its inclination while working allows dragging the machine along.

WARNING! While going into reverse, even briefly, make sure that the squeegee is lifted.

UPON COMPLETION OF WORK

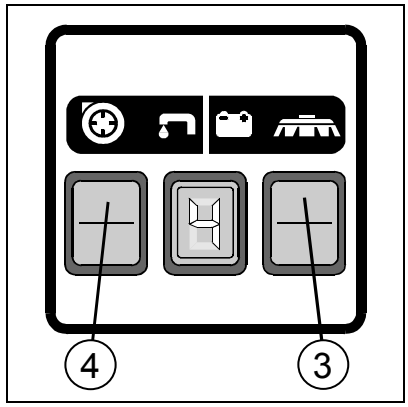
At the end of the work, and before performing any type of maintenance:

1. Close the cock by lever (1).
2. Raise base by pedal.
3. Raise squeegee by lever (2)



4. Turn off the brush switch (3).
5. Turn off suction motor switch (4).

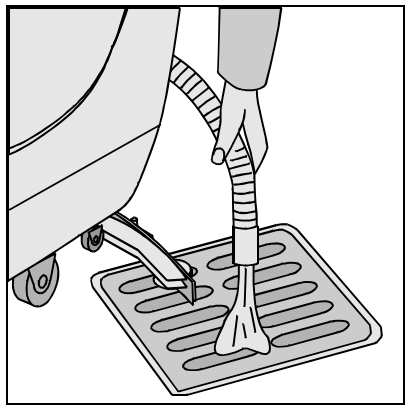
WARNING! If after having switched off the brush switch (3) the display of the battery indicator remains on, this means that, the solution cock is open. Close the water cock through the lever (1) in order to avoid leakage of the detergent solution.



6. Move the machine to the water disposal point.

7. Hold the pipe placed on the back of the machine.
8. Remove the outlet cap and empty the tank.

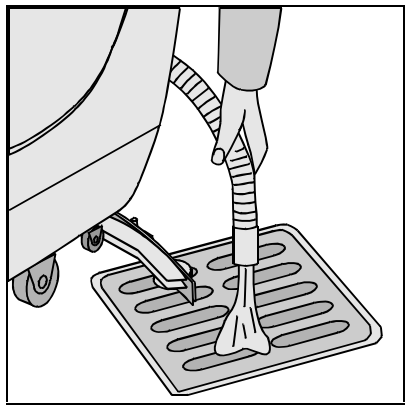
WARNING! Always wear gloves during this procedure to avoid any contact with dangerous substances.



9. Disassembly the brush and clean it by a jet of water (for the disassembly of the brush see the following “DISASSEMBLY OF THE BRUSH”)

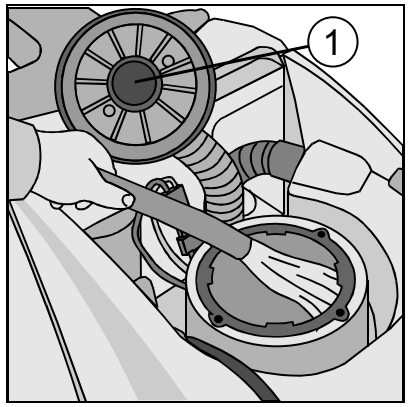
DAILY MAINTENANCE

RECOVERY TANK CLEANING



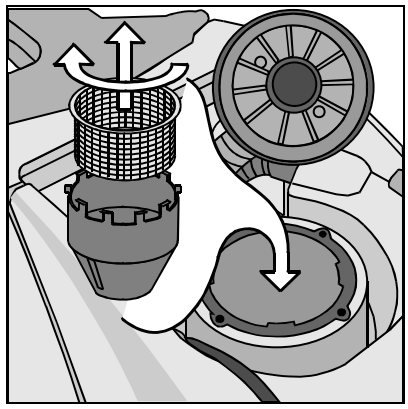
1. Hold the recovery tank outlet pipe.
2. Remove the outlet cap and empty the tank.

WARNING! Always wear gloves during this procedure, to avoid any contact with dangerous substances.



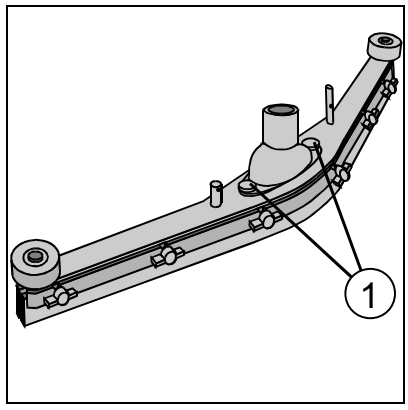
3. Lift the recovery tank lid.
4. Remove the suction cap (1) turning it anticlockwise.
5. Remove the filter and its protection.
6. Rinse the tank with a jet of water.

SUCTION FILTER CLEANING



1. Lift the lid.
2. Remove the suction cap turning in anticlockwise.
3. Remove the filter.
4. Clean the filter walls and bottom by a jet of water.
5. Carry out the cleaning procedures very carefully.
6. Reassemble everything.

SQUEEGEE CLEANING

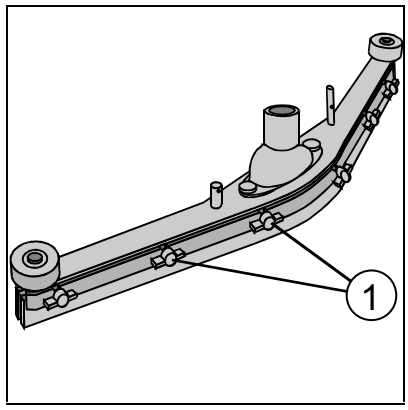


The squeegee must be in perfect working condition to achieve a good drying process. Proceed as follows to clean it:

1. Remove the pipe from the squeegee.
2. Loose the knobs (1) shown in picture.
3. Remove the mouth and clean it.
4. Carefully clean the inside of the squeegee.
5. Carefully clean the squeegee rubbers.
6. Reassemble everything.

DAILY MAINTENANCE

REAR SQUEEGEE RUBBERS REPLACEMENT

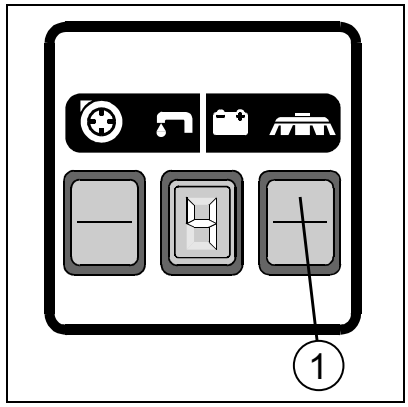


Check the squeegee rubbers wear and replace them if necessary.
Proceed as follows

1. Unthread the squeegee pipe from sleeve.
2. Remove the pin from column.
3. Remove the squeegee from its support.
4. Loosen the wing nuts (1) blocking the rubber blades and take them off.
5. Replace the rubbers

To reassemble the squeegee repeat the above-mentioned operations.

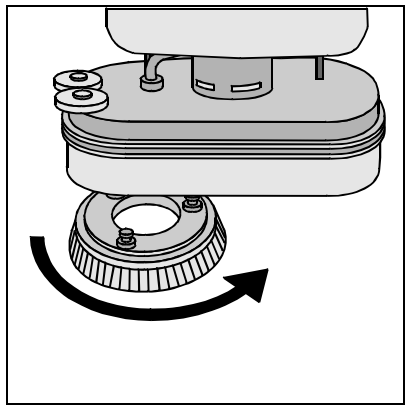
BRUSHES DISASSEMBLY



6. Push lever down to raise the base.
7. Turn key to OFF and remove it from the control panel (1)

WARNING! Removing the brushes with power on may cause injury to the hands.

8. Rotate the brush, with base raised, until it exits form the brush-bearing plate as shown in the picture. The picture shows the direction of rotation for releasing the right brush. Rotate in opposite direction for the left brush.



WARNING! Make sure that no persons or object are nearby the brush during this operation.

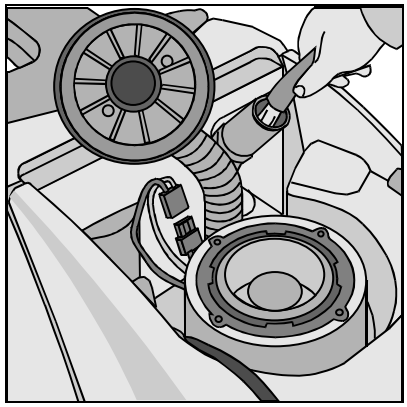
WEEKLY MAINTENANCE

SQUEEGEE PIPE CLEANING

Weekly, or whenever the suction in insufficient, it is necessary to check that the squeegee pipe is not obstructed. Should it be the case, proceed as follows to clean it:

1. Unthread the pipe from the squeegee sleeve.
2. Unthread the other end from the recovery tank.

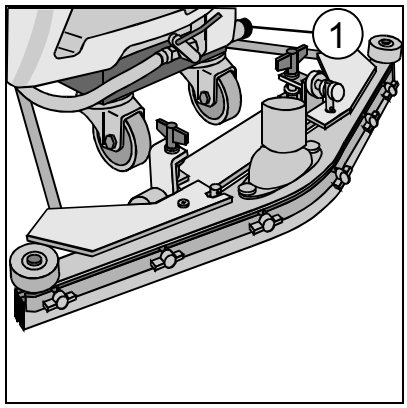
3. Wash the inside of pipe by a jet of water, from the side it is plug to the tank.
4. To reassemble the pipe repeat the above-mentioned operations.



WARNING! Do not wash the pipe connecting the aspirator to the suction cap.

SOLUTION TANK CLEANING

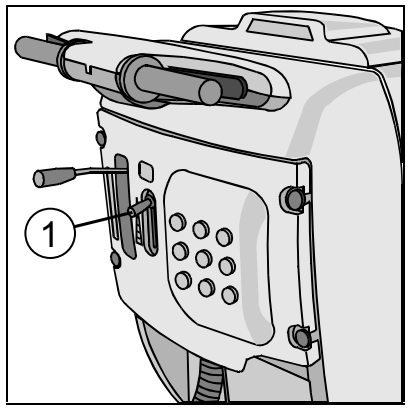
1. Remove the cap from the solution tank.
2. Rinse with a jet of water.
3. Remove the outlet cap (1) and empty the tank



WARNING! Always wear gloves during this procedure, to avoid any contact with dangerous substances.

WORKING CONTROL

INSUFFICIENT WATER TO THE BRUSHES



1. Check that the cock (1) is open.
2. Check that there is water in the solution tank.

THE MACHINE DOES NOT CLEAN PROPERLY

1. Check the brushes wear and replace them if necessary (the brushes must be replaced when bristles are 15 mm high).
   To replace brushes see “BRUSHES DISASSEMBLY” and ”BRUSH ASSEMBLY”.
2. Use another type of brush rather than the standard brush. We recommend, for cleaning exceptionally difficult dirt floors, the use of special brushes, supplied on request and according to your specific needs (see “CHOICE AND USE OF BRUSHES”).

THE SQUEEGEE DOES NOT DRY PERFECTLY

1. Check that the squeegee rubbers are clean
2. Adjust the squeegee inclination (see “SQUEEGEE” in “PREPARING THE MACHINE”)
3. Check that the suction pipe is correctly housed in its seat on the recovery tank.
4. Remove the whole suction unit and clean it.
5. Replace the rubbers if worn.
6. Check that the suction motor switch is turn on.
7. Check the wheels regulation.

FOAM OVER-FORMATION

Check that low-foam detergent is used. Add, if necessary, a small quantity of anti-foam liquid to recovery tank.
Please remember that more foam is generated when the floor to be cleaned it is not very dirty. In this case use a more diluted detergent solution.

CHOICE AND USE OF BRUSHES

POLYPROPYLENE BRUSH (PPL)
It is used on all floor types and offers good resistance to wear and to hot water (not over 60□). PPL is not hygroscopic, then preserves its characteristics even when working on wet floors.

NYLON BRUSH
It is used on all floor types and offers excellent resistance to wear and to hot water (60□ and over). Nylon is hygroscopic and tends, over a period of time, to loose its characteristics when working on wet floors.

TYNEX BRUSH
This brush bristles are impregnated with highly aggressive abrasives. This brush is use to clean very dirty floors. We recommend using only the minimum necessary bare pressure to prevent damages to the floor.

STEEL BRUSHES
Bristles are made of steel wire or flat blades, or are mixed steel and synthetic fibres. The steel brush is used to remove scale from badly uneven floors or floors with wide joints between tiles. Brushes with flat steel bristles (stiffer) are used to clean the toughest scale.

BRISTLES THICKNESS
Thicker bristles are stiffer and should be used on smooth floors with narrow joints between tiles.
We recommend using softer bristles when floors are uneven or have deep joints or raised edges. Softer bristles penetrate easier into joints.
Remember that when brush bristles are worn and become too short they become stiffer and are no longer able to penetrate in depth. This is also because, as when using bristles that are too big, the brush tends to jump and skip.

PAD HOLDER
Pad holder is recommended for cleaning polished surfaces.
There are two types of pad holders:
1. Traditional pad holders with set of anchor stubs that retain and drive the abrasive disk during operation.
2. CENTER LOCK pad holders which, in addition to anchor stubs, also have a plastic snap-in centre lock system. This permits perfect centring of the abrasive disk and ensures it is kept anchored without detaching. This type of pad holder is best for machines with several brushes, where it is difficult to centre the abrasive disks.

LIST FOR THE CHOICE OF THE BRUSHES

Machine	Brushes N□	Code	Bristles type	Bristles ∅	Brush ∅	Remarks
ABILA 42	2	66805020 66805050 66805060 66805120 66705020	PPL PPL PPL TYNEX Pad holder	0.3 0.5 0.9 1	210 210 210 210 200	
ABILA 52	2	66808010 66808040 66808020 66808030 66708010	PPL PPL PPL TYNEX Pad holder	0.3 0.5 0.9 1	255 255 255 255 245	