

USE AND MAINTENANCE MANUAL



ABILA 17-20-45-50 E

ED. 11-2009

EN

ORIGINAL
INSTRUCTIONS
Doc. 10016898
AB Version



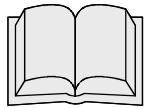
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Symbols used in the manual



Open book symbol with an "i"
Indicates the need to consult the User Manual



Open book symbol
Used to tell the operator to read the manual before using the machine



Warning symbol
Carefully read the sections marked with this symbol, for the safety of the operator and the machine



Disposal symbol
Read the sections displaying this symbol carefully, to dispose of the machine



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On consignment of the machine

When the machine is delivered 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 been damaged 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.

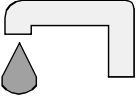
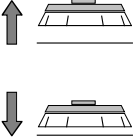

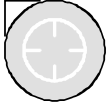
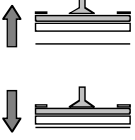
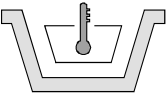
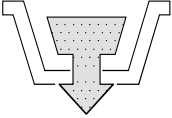
The machine must only be used for this purpose. Even the best machines will only work well if used correctly and kept in good working order. We therefore suggest you read this instruction booklet carefully and read it again whenever difficulties arise while using the machine. If necessary, remember that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



TECHNICAL DESCRIPTION	UM	ABILA 17E	ABILA 20E	ABILA 50E	ABILA 45E 2009	ABILA 50E 2009
Power supply voltage	V	220-230	220-230	220-230	220-230	220-230
Frequency	Hz	50	50	50	50	50
Working width	mm	420	500	500	420	485
Squeegee width	mm	660	755	755	662	760
Work capacity, up to	m ² /h	1470	1750	1750	1750	1750
Brush diameter	mm	1x420	1x500	1x500	1x420	1x485
Brush speed	rpm	140	140	240	240	240
Pressure on the brushes	kg	max 20	max 20	max 20	max 20	max 20
Brush motor, rated power	W	400	400	750	750	750
Type of advance		semi-aut.	semi-aut.	semi-aut.	semi-aut.	semi-aut.
Maximum forward speed	km/h	3.5	3.5	3.5	3.5	3.5
Maximum gradient		2%	2%	2%	2%	2%
Suction motor, rated power	W	550	550	550	450	450
Suction vacuum	mbar	150	150	150	150	150
Solution tank	l	33	33	33	33	33
Recovery tank	l	40	40	40	40	40
Machine length	mm	1085	1160	1226	1226	1226
Machine height	mm	960	960	960	960	960
Machine width (without squeegee)	mm	455	530	455	455	455
Power supply cable	m	20	20	20	20	20
Machine weight (empty and without batteries)	kg	70	70	70	70	70
Machine weight in running order	kg	145	145	110	110	110
Sound pressure level (EN ISO 11201)	dB (A)	<65	<65	<65	<65	<65
Hand vibration level	m/s ²	1.00	1.00	1.00	1.00	1.00



SYMBOLS USED ON THE MACHINE

	<p>Tap symbol Indicates the tap lever Indicates the tap indicator light ON</p>
	<p>Symbol denoting base rise/fall Indicates the base rise/fall lever</p>
	<p>Represents the voltage indicator light</p>
	<p>Symbol denoting suction motor Indicates the suction motor switch</p>
	<p>Symbol denoting squeegee rise/fall Indicates the squeegee lever</p>
<p>RESET</p>	<p>Indicates the ammetric switch that protects the brush motor Used beneath the handlebars, to indicate the resetting of the ammetric switch</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

The regulations illustrated below must be carefully followed in order to avoid harm to the operator and damage to the machine.

- Read the labels on the machine carefully. Do not cover them for any reason and replace them immediately if they become damaged
- The machine must be used exclusively by authorised, trained personnel
- During the working of the machine, pay attention to other people and especially to children
- Do not mix different types of detergent as this may produce harmful gases
- Do not place any liquid containers on the machine
- The storage temperature must be between -25°C and +55°C
- Conditions of use: room temperature between 0°C and +40°C with relative humidity between 30 and 95%
- Do not use the machine in an explosive atmosphere
- Do not use the machine as a means of transport
- Do not use acid solutions that could damage the machine and/or harm people
- Avoid working with the brushes when the machine is standing still, so as not to damage the floor
- Do not vacuum inflammable liquids
- Do not use the device to collect dangerous powders
- In the event of a fire, use a powder extinguisher. Do not use water
- Do not knock against shelving or scaffolding, where there is a danger of falling objects
- Adapt the speed to the adhesion conditions
- Do not use the machine on surfaces with an inclination greater than the one shown on the plate
- The machine is designed to carry out the washing and drying operations simultaneously. Different operations should only be carried out in areas where the passage of unauthorised persons is prohibited. Signal the presence of damp floors with suitable signs
- If the machine does not work properly, check this is not caused by failure to carry out routine maintenance. Otherwise, request the intervention of the **COMAC** technical service
- If you need to replace any components, request the ORIGINAL spare parts from a **COMAC** dealer and/or Authorised Retailer
- Use only original **COMAC** brushes indicated in the paragraph "CHOOSING AND USING THE BRUSHES"
- For all cleaning and maintenance interventions, disconnect the machine from the power supply
- Restore all electrical connections after any maintenance interventions
- Do not remove any protection devices which require the use of tools in order to be removed
- Do not wash the machine with direct water jets or with pressurised water, nor with corrosive substances
- After every 200 hours of operation, have the machine checked by a **COMAC** assistance centre
- To prevent the formation of scale in the solution tank filter, do not fill the tank with detergent solution many hours before using the machine
- Before using the machine, check that all the hatches and covers are positioned as shown in this Use and Maintenance Manual
- Before removing the recovery tank, check it is empty
- When disposing of consumption materials, observe the laws and regulations in force
- When your **COMAC** machine has reached the end of its long working life, dispose of the materials it contains (especially oils, batteries and electronic components) in an appropriate manner, and bearing in mind that the machine itself was constructed using 100% recyclable materials



MACHINE PREPARATION

HANDLING THE PACKED MACHINE

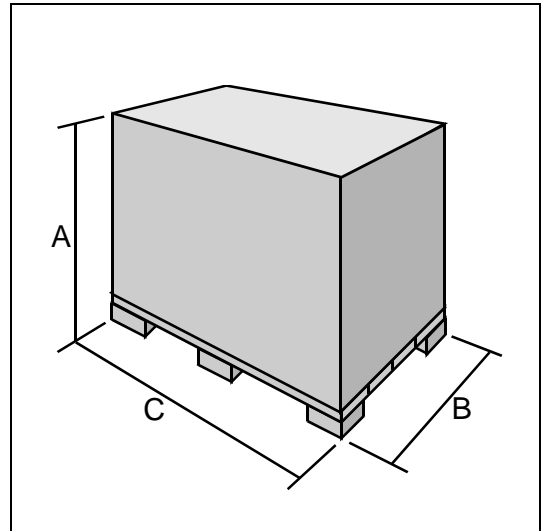
The machine is contained in specific packaging with a pallet for the handling with fork trucks. It is not possible to place more than two packages on top of each other.

The total weight is:

1. Abila17 E: 136kg
2. Abila20 E: 138kg
3. Abila50 E: 138kg
4. Abila2009 45 E: 138kg
5. Abila2009 50 E: 138kg

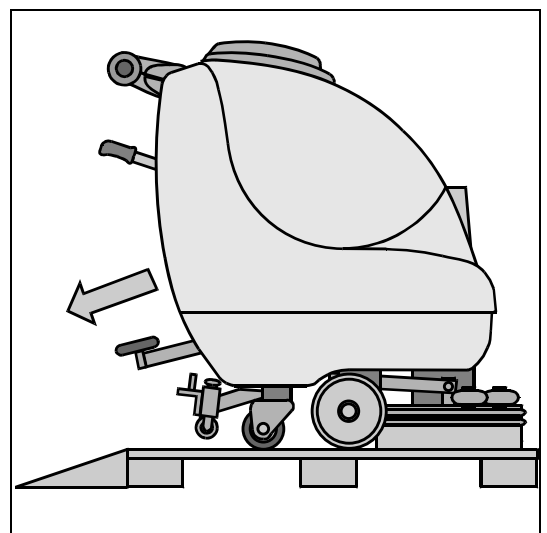
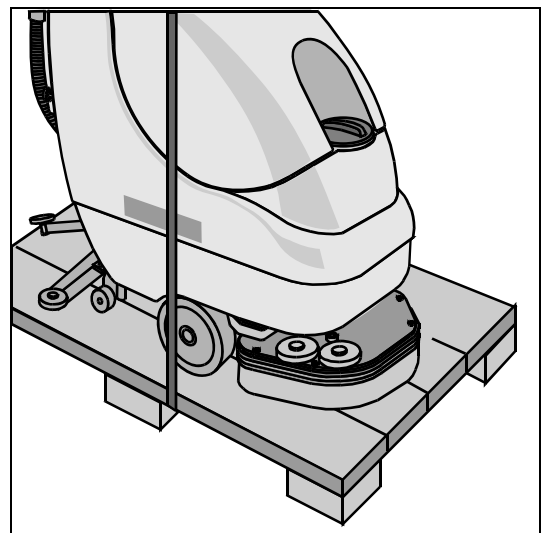
The overall dimensions of the package are:

	ABILA
A	1250 mm
B	610 mm
C	1150 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 base
4. Keep the pallet for any future transport needs.

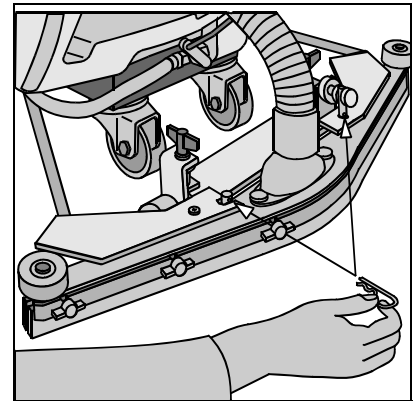




MACHINE PREPARATION

ASSEMBLING THE SQUEEGEE

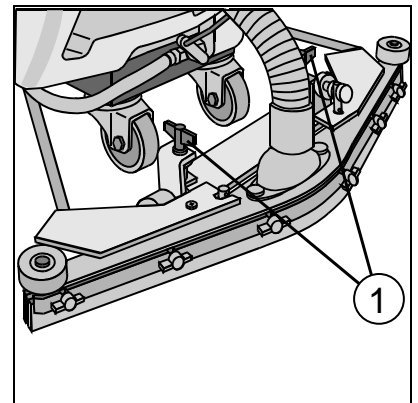
For packaging reasons, the squeegee is supplied disassembled from the machine, and must be assembled as shown in the figure, inserting the clip into the small column of the squeegee. Insert the squeegee tube in the special sleeve.



ADJUSTING THE SQUEEGEE HEIGHT

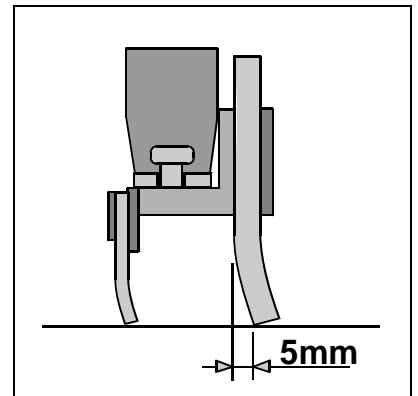
The height of the squeegee must be adjusted on the basis of the state of wear and tear of the rubber. To do this, turn the wing nuts (1) anticlockwise to raise the squeegee, and clockwise to lower it.

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

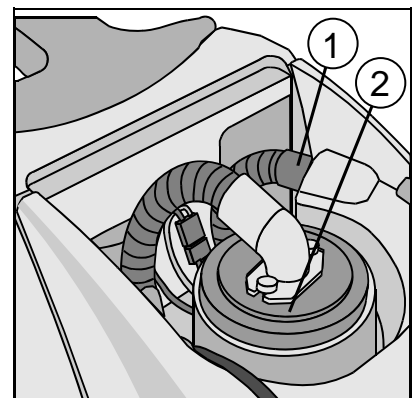
During working operation, the rear rubber is tilted slightly backwards (by about 5mm) in a uniform way for its whole length. If it is necessary to increase the bend of the rubber in the central part, you must tilt the squeegee backwards, rotating the adjuster (1) anticlockwise. To increase the bend of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



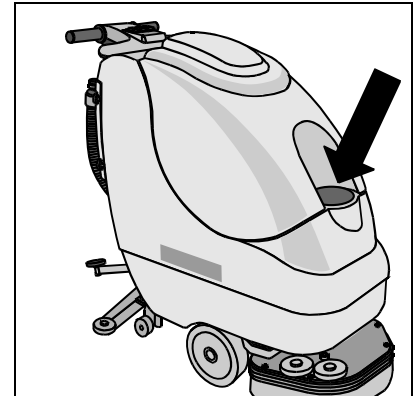


MACHINE PREPARATION

DETERGENT SOLUTION

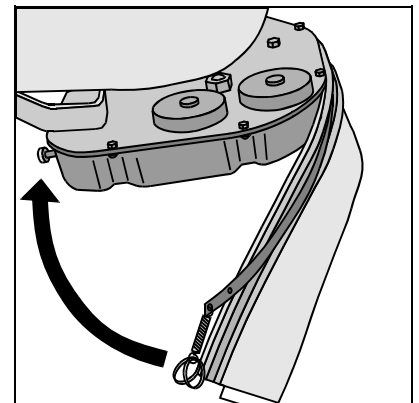
Fill the solution tank with clean water at a temperature no greater than 50°C and add liquid detergent in the proper concentration, following the instructions of the manufacturer. The formation of excess foam could damage the suction motor, so use only the minimum amount of detergent necessary. Reassemble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

WARNING! always use low foam detergent. To avoid the production of foam, before starting to clean, put a minimum quantity of antifoam liquid into the recovery tank. **Never use pure acid.**



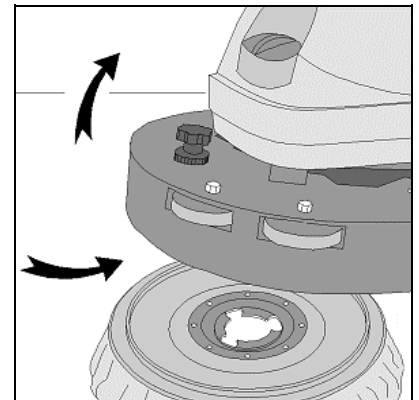
ASSEMBLING THE SPLASH GUARD

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

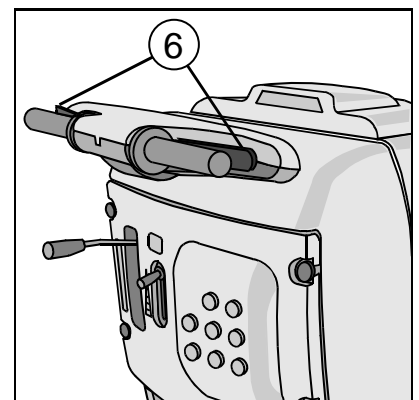


ASSEMBLING THE BRUSH ABILA 17-20

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



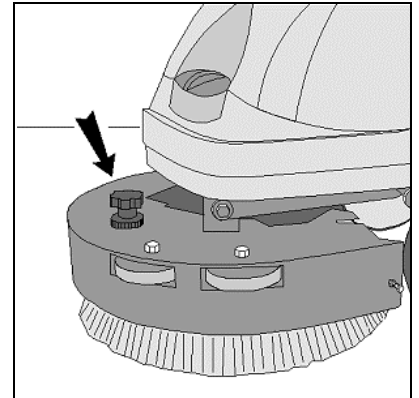
4. Using the "man present" lever (6), the brush is automatically hooked up.





MACHINE PREPARATION

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

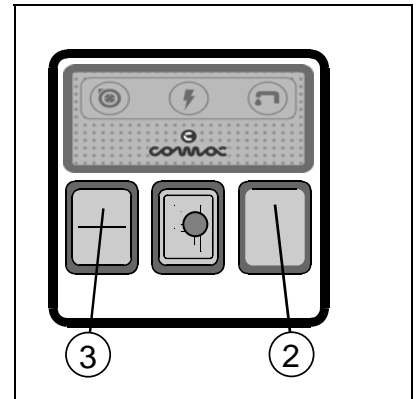




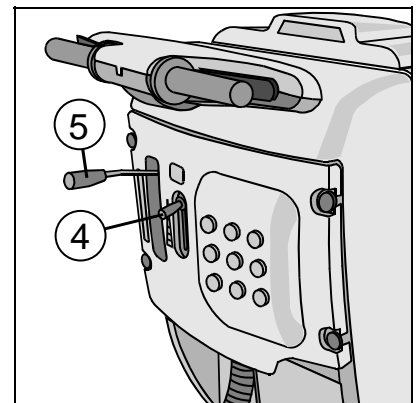
WORK

PREPARING TO WORK

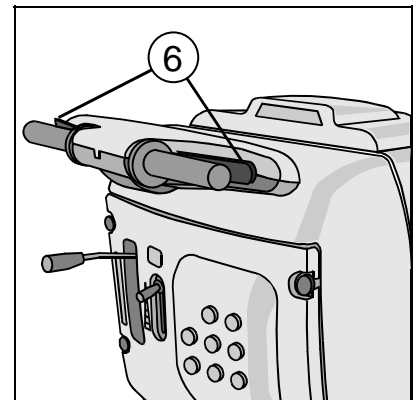
1. Connect the plug to the power supply.
2. press the suction switch (3)
3. Press the switch of the solenoid valve (2), if present (OPTIONAL)



4. 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.
5. Release the pedal to lower the base.
6. Lower the squeegee by means of the lever (5)



7. Via the "man present" lever (6), the brush begins to rotate and the squeegee begins to suck in.
8. During the first metres, check there is sufficient solution and that the squeegee dries perfectly.



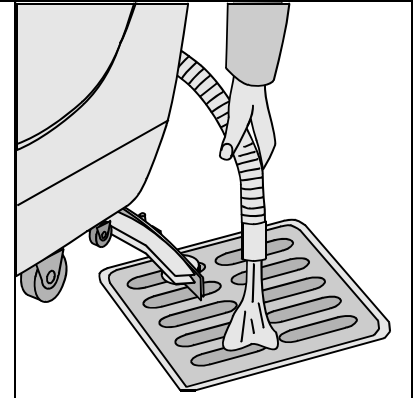


WORK

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

The traction of these machines is obtained by means of the brush which, working slightly inclined, is able to drag the machine forwards.

WARNING! When making even brief reverse movements, check the squeegee is raised.

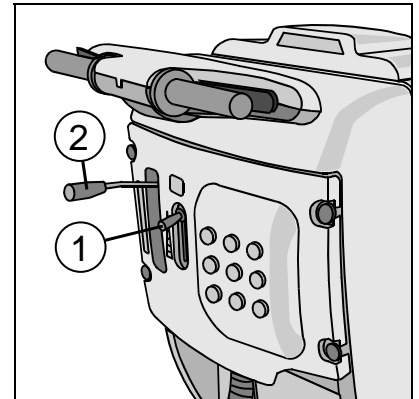




AT THE END OF THE WORK

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

1. Close the tap by means of the lever (1).
2. Raise the base by means of the pedal.
3. raise the squeegee by means of the lever (2)



PREPARING TO WORK

4. Turn off the switch of the solenoid valve, if present (3).
5. Turn off the suction motor switch (4).



WARNING! If the light of the solenoid switch is still turned 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) to prevent detergent solution leaking out.

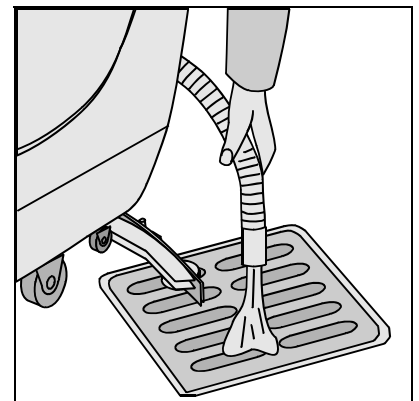
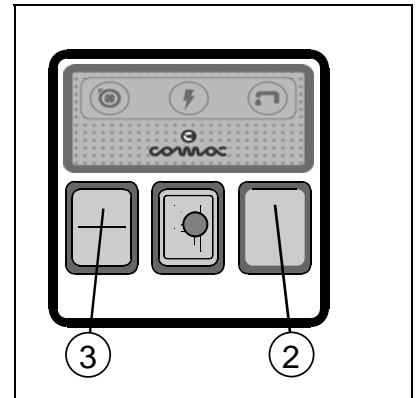
bring the machine to the place provided for draining the water

6. grasp the tube on the rear of the machine
7. Remove the drainage cap and empty the tank.



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

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





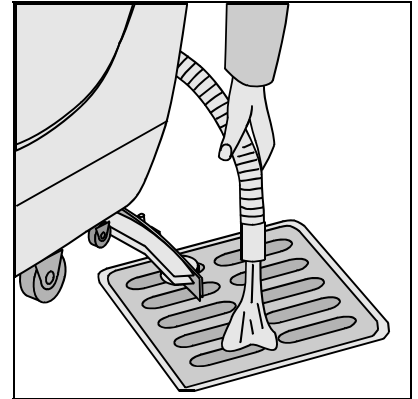
DAILY MAINTENANCE

CLEANING THE RECOVERY TANK

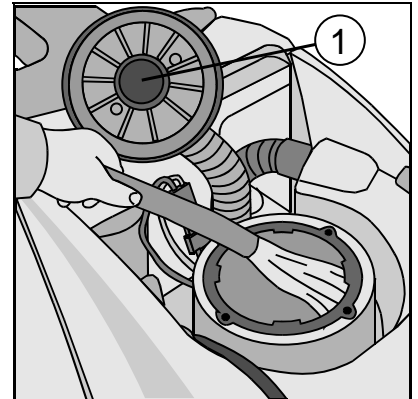
1. Grasp the recovery tank drainage tube.
2. Remove the drainage cap and empty the tank.



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

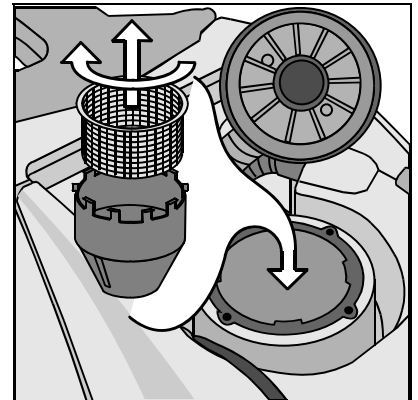


3. Raise the recovery tank cover.
4. Unthread the suction cap (1) by rotating it anticlockwise.
5. Remove the filter and relative protection.
6. Rinse the tank with a water jet.



CLEANING THE SUCTION FILTER

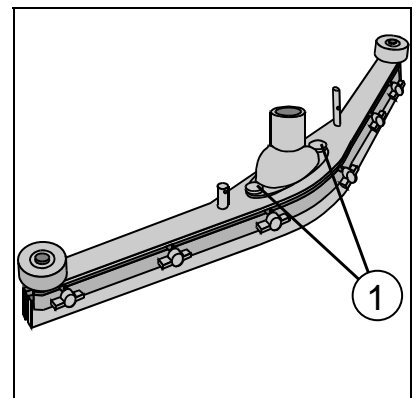
1. Raise the cover.
2. Unthread the suction cap by rotating it anticlockwise.
3. Unthread the filter.
4. Use a jet of water to clean the walls and base of the filter.
5. Carry out the cleaning operations carefully.
6. Reassemble all the elements.



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

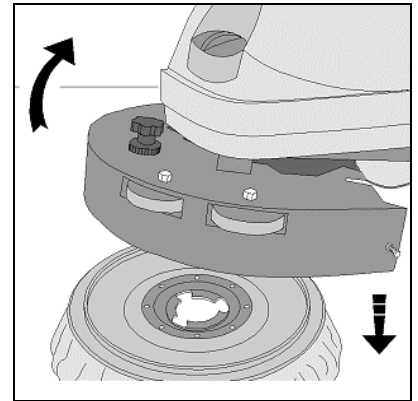




DAILY MAINTENANCE

DISASSEMBLING THE BRUSH ABILA 17-20

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

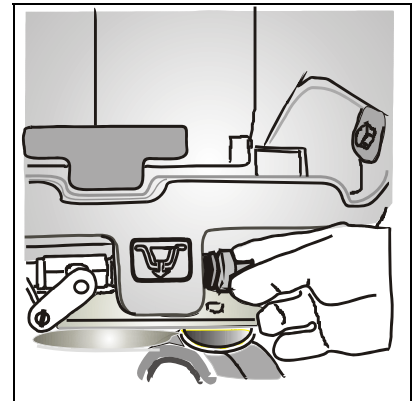


CLEANING THE SOLUTION DRAINAGE FILTER

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



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





WEEKLY MAINTENANCE

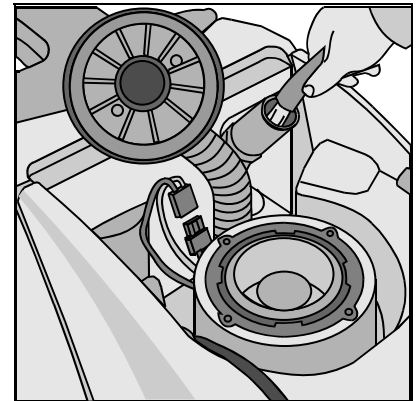
CLEANING THE SQUEEGEE TUBE

Every week, or whenever suction seems to be unsatisfactory, check the squeegee tube is not obstructed. To clean it, proceed as follows:

1. Unthread the tube from the sleeve on the squeegee
2. Remove the other end from the recovery tank
3. Wash the inside of the tube with a water jet introduced from the side where it is connected to the tank
4. 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

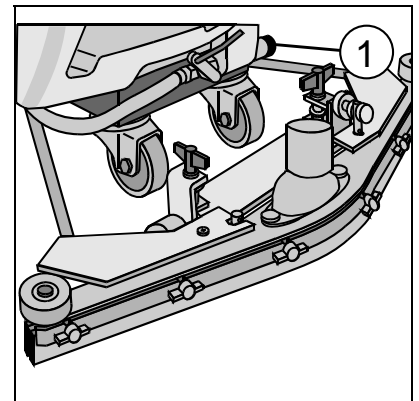


CLEANING THE SOLUTION TANK

1. Loosen the solution tank cap
2. Rinse with a jet of water
3. 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

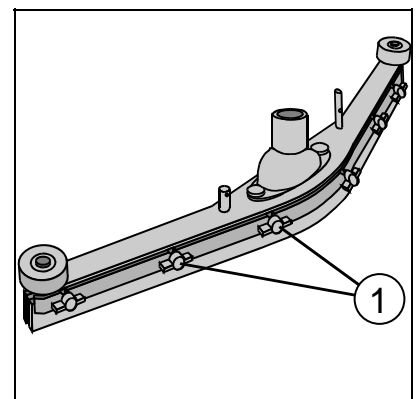


REPLACING THE SQUEEGEE RUBBERS

Check the state of wear and tear of the squeegee rubbers and, if necessary, replace them. To replace them you must:

1. unthread the squeegee tube from the sleeve
2. Remove the pin from the small column
3. disassemble 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

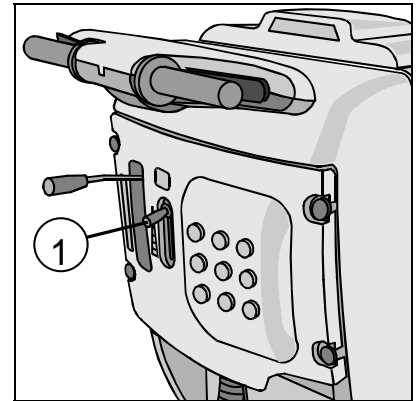




TROUBLESHOOTING

INSUFFICIENT WATER ON THE BRUSH

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 brush and, if necessary, replace it (the brush 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 a special brush supplied upon request and according to needs (see "CHOOSING AND USING THE BRUSH").

THE SQUEEGEE DOES NOT DRY PERFECTLY

1. Check the squeegee rubbers are clean
2. Adjust the inclination of the squeegee (see "SQUEEGEE" under "MACHINE PREPARATION")
3. Check the suction tube is correctly inserted in its housing on the recovery tank
4. Disassemble the entire suction unit and clean it
5. Replace the rubbers, if worn
6. Check the suction motor switch is turned on
7. Check wheel adjustment

EXCESSIVE FOAM PRODUCTION

Check that a low foam detergent has been used. If necessary, add a small quantity of antifoam 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.



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). The Polypropylene brush 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.

THICKNESS OF THE BRISTLES

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 overlarge 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 CENTER LOCK type pad holder not only has anchor points, but also a snap-type central locking system in plastic that allows the abrasive floor pad to be perfectly centred and held without any risk of it becoming detached. This type of dragging device is recommended above all for machines with more than one brush, where the centring of the abrasive discs is difficult.

TABLE FOR CHOOSING THE BRUSHES

Machine	No. of brushes	Code	Type of bristles	Ø Bristles	Ø Brush	Notes
ABILA 17 E	1	405644	PPL	0.3	420	LIGHT BLUE WHITE BLACK
		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	
ABILA 20 E	1	405661	PPL	0.45	500	
		405654	PPL	0.7	500	
		405658	Abrasive	1	500	
		423760	Pad holder		500	
ABILA 50 E	1	405661	PPL	0.45	500	
		405654	PPL	0.7	500	
		405658	Abrasive	1	500	
		423760	Pad holder		500	
ABILA2009 45 E	1	405644	PPL	0.3	420	LIGHT BLUE WHITE BLACK
		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	
ABILA2009 50 E	1	427602	PPL	0.6	485	WHITE BLACK LIGHT BLUE
		427604	PPL	0.9	485	
		427605	PPL	0.3	485	
		427708	Abrasive	-	485	
		405542	Pad holder h=60	-	500	



EC DECLARATION OF CONFORMITY

The undersigned company:

COMAC S.p.A.

Via Maestri del Lavoro, 13

37059 Santa Maria di Zevio (VR)

declares under its sole responsibility that the product

SCRUBBING MACHINES

mod. Abila17 E – Abila20 E – Abila50 E – Abila2009 45 E – Abila2009 50 E

complies with the requirements of the following Directives:

- 2006/42/EC: Machinery Directive
- 2006/95/EC: Low Voltage Directive
- 2004/108/EC: Electromagnetic Compatibility Directive

They also comply with the following standards:

- EN 60335-1: Household and similar electrical appliances - Safety. Part 1: Generic norms
- EN 60335-2-72: Household and similar electrical appliances. Part 2: Specific norms for automatic machines for floor treatment for commercial and industrial use
- EN 12100-1: Machine safety - Fundamental concepts, fundamental principles of design - Part 1: Basic terminology and methodology
- EN 12100-2: Machine safety - Fundamental concepts, fundamental principles of design - Part 2: Technical principles
- EN 55014-1: Electromagnetic compatibility - Regulations for household appliances, electrical devices and similar equipment. Part 1: Emission - Regulations for product family.
- EN 55014-2: Electromagnetic compatibility - Regulations for household appliances, electrical devices and similar equipment. Part 2: Immunity - Regulations for product family.
- EN 61000-3-2: Electromagnetic compatibility (EMC) - Part 3-2: Limits – Limits for harmonic current emissions (Equipment with input current ≤ 16 A per phase).
- EN 61000-3-3: Electromagnetic compatibility (EMC) - Part 3-3: Limits – Restriction of voltage variations and flicker in low voltage power supply systems for devices with a rated current ≤ 16 A.
- EN 62233: Household and similar electrical appliances - Electromagnetic fields Methods for evaluation and measurement

The person authorised to compile the technical file:

Sig. Giancarlo Ruffo
Via Maestri del Lavoro, 13
37059 Santa Maria di Zevio (VR) - ITALY

Santa Maria di Zevio (VR), 30/10/2009

COMAC S.p.A.
Legal representative
Giancarlo Ruffo

COMAC spa

Via Maestri del Lavoro, 13 – 37059 Santa Maria di Zevio – Verona – ITALY

Tel. +39 045 8774222 – Fax +39 045 8750303 - E-mail: com@comac.it or info@comac.it - www.comac.it