

# *E75 R PLUS* *E85 R PLUS*



SCRUBBING MACHINES

## *USE AND MAINTENANCE MANUAL*



ORIGINAL INSTRUCTION DOC. 10113977 - Ver. AA - 2022-03



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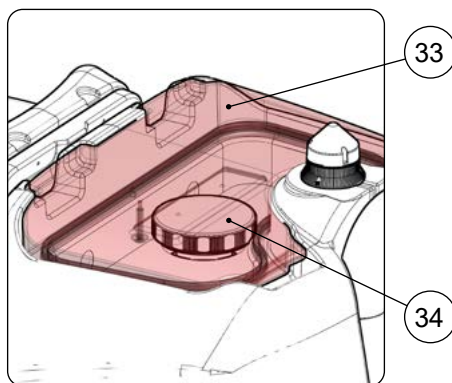
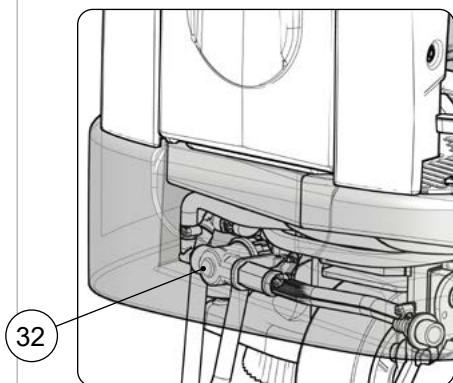
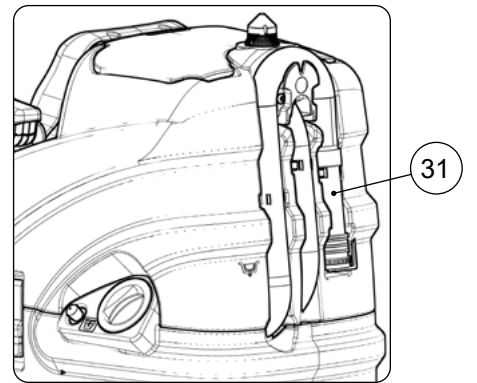
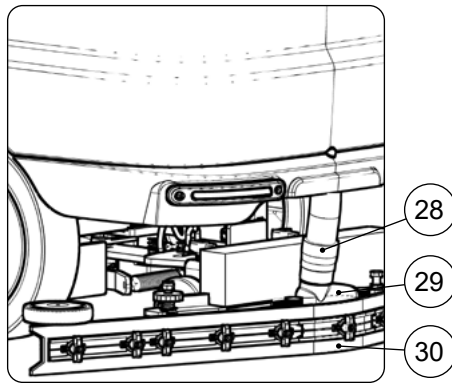
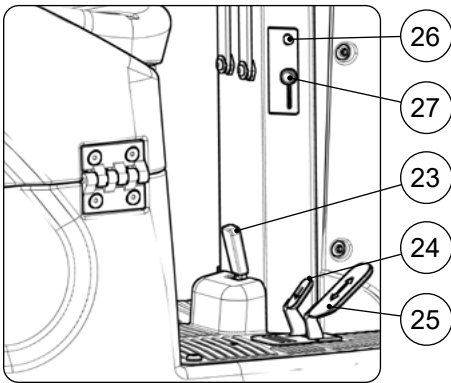
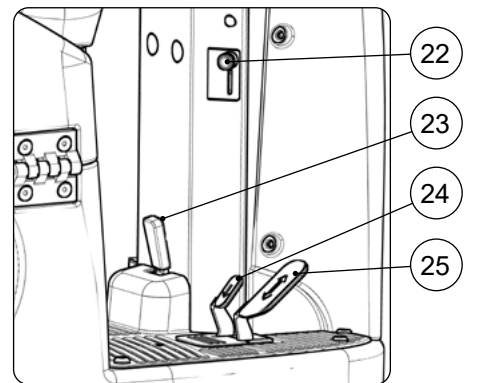
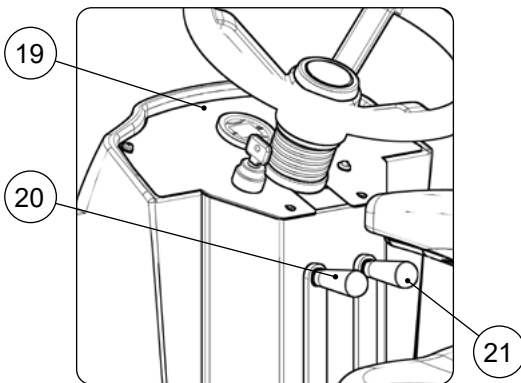
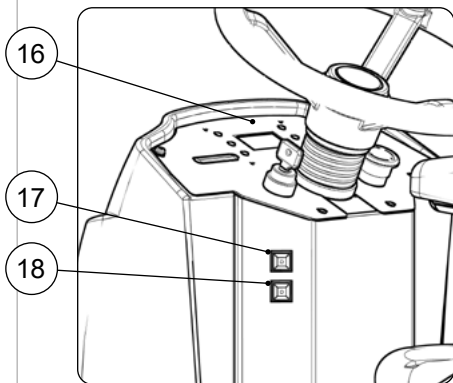
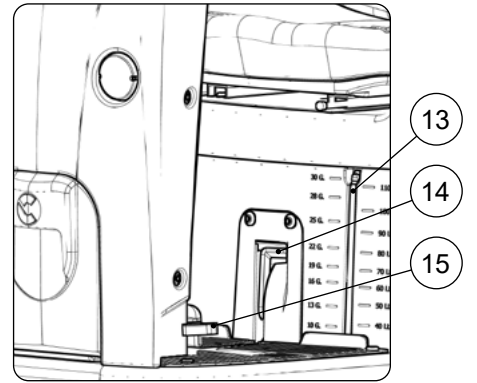
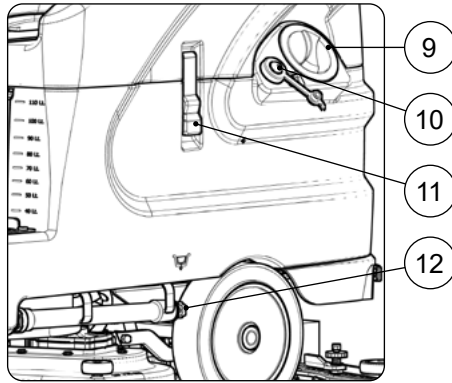
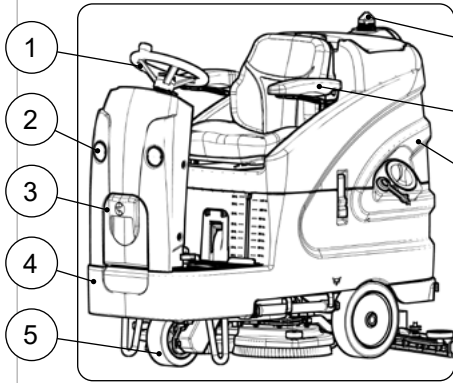
## GENERAL SAFETY REGULATIONS

Before using the machine, please read the following document carefully and follow the instructions contained herein, along with the instructions in the document supplied with the machine itself, "GENERAL SAFETY REGULATIONS" (document code 10083659).

## SYMBOLS USED IN THE MANUAL

	<b>Open book symbol with an "i":</b> Indicates the need to consult the instruction manual.
	<b>Open book symbol:</b> Tells the operator to read the user manual before using the device.
	<b>Covered place symbol:</b> The operations preceded by this symbol must always be carried out in a dry, covered area.
	<b>Information symbol:</b> Indicates additional information for the operator, to improve the use of the device.
	<b>Warning symbol:</b> Carefully read the sections preceded by this symbol meticulously following the instructions indicated for the safety of the operator and the device.
	<b>Danger symbol (corrosive substances):</b> The operator should always wear protective gloves to avoid the risk of serious injury to the hands caused by corrosive substances.
	<b>Danger symbol (battery acid leakage):</b> Indicates the danger of leaking acid or acid fumes from the batteries while they are being recharged.
	<b>Danger symbol (moving carriages):</b> Indicates that the packed product should be handled with suitable carriages that conform to legal requirements.
	<b>Mandatory room ventilation symbol:</b> Informs the operator that the room must be ventilated while the batteries are being recharged.
	<b>Symbol indicating the compulsory use of protective gloves:</b> Indicates that the operator should always wear protective gloves, to avoid the risk of serious injury to his hands from sharp objects.
	<b>Symbol indicating the compulsory use of tools:</b> Informs the operator of the need to use tools not included with the machine.
	<b>Symbol indicating a treading ban:</b> Informs the operator that it is forbidden to tread on machine components, as this could lead to serious injury.
	<b>Recycling symbol:</b> Tells the operator to carry out the operations in compliance with environmental regulations in force in the place where the appliance is being used.
	<b>Disposal symbol:</b> Carefully read the sections marked with this symbol for disposing of the appliance.

## MAIN MACHINE COMPONENTS



The machine's main components are the following:

1. Steering wheel.
2. Headlight (automatic versions).
3. Detergent canister compartment carter (versions with automatic dosing system).
4. Solution tank.
5. Driving wheel.
6. Blinking light.
7. Operator seat.
8. Recovery tank.
9. Solution tank filler shaft cap.
10. Solution tank rapid filling hose cap.
11. Recovery tank rotation stop.
12. Solution tank drain pipe.
13. Solution tank capacity level hose.
14. Extra pressure pedal.
15. Service brake pedal.
16. Control panel (automatic versions).
17. Headlight switch (automatic versions).
18. Courtesy light switch (automatic versions).
19. Control panel (manual versions).
20. Squeegee control lever (manual versions).
21. Brush head control lever (manual versions).
22. Knob for water flow activation/deactivation in the machine's water system (automatic versions).
23. Parking brake activation/deactivation lever.
24. Reverse activation pedal.
25. Forward movement pedal.
26. Horn button. (manual versions).
27. Knob for detergent solution flow adjustment in the machine's water system (manual versions).
28. Squeegee body vacuum tube.
29. Squeegee unit vacuum nozzle.
30. Squeegee body.
31. Recovery tank drainage hose.
32. Water system filter.
33. Recovery tank lid.
34. Vacuum motor air intake filter.

## GENERAL DESCRIPTION

### PURPOSE AND CONTENT OF THE MANUAL

The aim of this manual is to provide customers with all the information needed to use the machine in the safest, most appropriate and most autonomous way. This includes information concerning technical aspects, safety, operation, downtime, maintenance, spare parts and scrapping. The operators and qualified technicians must carefully read the instructions in this manual before carrying out any operations on the machine. If in doubt about the correct interpretation of instructions, contact your nearest Customer Service Centre to obtain the necessary clarifications.

### TARGET GROUP

This manual is written both for operators and for qualified machine maintenance technicians. Operators must not perform operations that should be carried out by qualified technicians. The manufacturer is not liable for damages resulting from failure to comply with this veto.

### STORING THE USE AND MAINTENANCE MANUAL

The Use and Maintenance Manual must be stored in its special pouch close to the machine, protected from liquids and anything else that could compromise its legibility.

### 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

Any floor scrubbing machine can only work properly and effectively if used correctly and kept in full working order by performing the maintenance operations described in the attached documentation. 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 assistance service (organised in collaboration with our dealers) is always available for advice or direct intervention.

### IDENTIFICATION DATA

For technical assistance or to request replacement parts, always give the model, the version and the serial number (written on the relevant plate).

### TECHNICAL DESCRIPTION

The **E75 R PLUS** or **E85 R PLUS** is a floor scrubbing machine that can handle a wide variety of floors and types of dirt by using the mechanical action of two disc brushes and the chemical action of a water-detergent solution. As it advances, it collects the dirt removed and the detergent solution not absorbed by the floor.

**The machine must only be used for this purpose.**

## INTENDED USE

This scrubbing machine was designed and built for the cleaning (scrubbing and drying) of smooth, compact flooring in the commercial, residential and industrial sectors by a qualified operator in proven safety conditions. The scrubbing machine is not suitable for cleaning rugs or carpet floors. It is only suitable for use in closed (or at least covered) places.

**ATTENTION:** the machine is not suitable for use in the rain, or under water jets.

**IT IS FORBIDDEN:** to use the machine for picking up dangerous types of dust or inflammable liquids in places with a potentially explosive atmosphere. In addition, it is not suitable as a means of transport for people or objects.

## SAFETY

Operator cooperation is paramount for accident prevention. No accident prevention programme can be effective without the full cooperation of the person directly responsible for machine operation. The majority of occupational accidents that happen either in the workplace or whilst moving are caused by failure to respect the most basic safety rules. An attentive, careful operator is most effective guarantee against accidents and is fundamental in order to implement any prevention programme.

## REGULATIONS

All references to forwards and backwards, front and rear, right and left indicated in this manual should be understood as referring to the operator in a driving position with his hands on the steering wheel.

## DEFINITION OF LEVELS OF WARNING

**DANGER:** indicates an imminent dangerous situation that, unless avoided, will result in death or serious injuries.

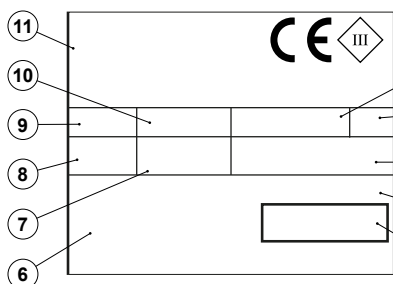
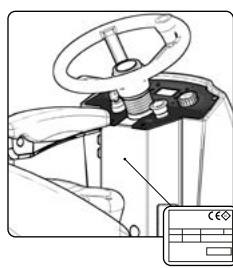
**WARNING:** Indicates a potentially dangerous situation that, unless avoided, could cause death or serious injury.

**ATTENTION:** Indicates a potentially dangerous situation that, unless avoided, could cause slight or moderate injuries.

**N.B.:** instructs the reader to pay particular attention to the topic that follows.

## SYMBOLS USED ON THE MACHINE

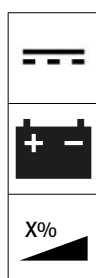
### SERIAL NUMBER PLATE



The serial number plate is located at the rear of the steering column, and indicates the machine's general characteristics, including its serial number. The serial number is a very important piece of information and should always be provided together with any request for assistance or when purchasing spare parts. The serial number plate contains the following:

1. The weight of the batteries that power the machine (expressed in kg).
2. The IP protection rating of the machine.
3. The gross weight of the machine (expressed in kg).
4. The machine ID code.

5. The machine serial number.
6. The machine ID name.
7. The nominal power consumed by the machine (expressed in W).
8. The maximum grade that the appliance can handle during work activities (expressed in %).
9. The year of machine manufacture.
10. The nominal voltage of the machine (expressed in V).
11. The commercial name of the machine, and the manufacturer's address.



#### Direct current symbol:

It is used on the machine's registration plate to indicate that it is powered by a DC power supply.

#### Battery symbol:

Used on the machine's registration plate to indicate the mass of the batteries used to power the machine (expressed in kg). The value refers to the batteries that the manufacturer offers, see paragraph. "TYPE OF BATTERY TO BE USED" on page 13

#### Maximum gradient symbol:

Used on the machine serial number plate, to indicate the maximum gradient that can be safely handled in working mode.

## SYMBOLS PRINTED ON THE MACHINE



### **Solution tank drain pipe symbol:**

Located on the rear part of the machine, to identify the solution tank drainage tube.



### **Recovery tank drainage hose symbol:**

Located on the rear part of the machine, to identify the recovery tank drainage tube.



### **Cap/filter position symbol:**

Applied to the rear of the machine to indicate the position of the solution tank filter - cap.



### **Symbol of maximum temperature for filling the solution tank:**

Located on the side of the machine to indicate the maximum temperature of the water for filling the solution tank safely.

## LABELS ON THE MACHINE



### **Detergent flow activation /deactivation label:**

Used near the driver's seat to indicate how to position the knob for activating or deactivating the water flow in the circuit of the machine's water system.



### **Detergent solution flow adjustment label (manual versions):**

This is used near the driver's seat to indicate how to move the knob to adjust the flow of detergent solution within the circuit of the machine's water system.



### **Label indicating the need to read the Use and Maintenance Manual:**

Applied in the vicinity of the steering column in order to remind the operator to read the user and maintenance manual before using the machine.



### **Label indicating that the reading of the use and maintenance manual is compulsory:**

This is used in the rear part of the steering column to warn the user to read the use and maintenance manual (the present document) before using the machine for the first time.



### **Label prohibiting the vacuuming of flammable or incandescent substances:**

This is used in the rear part of the steering column to warn the user that there is an absolute obligation not to vacuum flammable or incandescent substances..



### **Gas leakage warning label during battery charging:**

This is used in the rear part of the steering column to warn the user to keep harmful and flammable gases from generating during the battery charge cycle.



### **Solution tank filter daily care warning label:**

This is used in the front left side of the machine to warn the user to clean the solution tank filter after each use of the machine.



### **Battery daily care and charging warning label (versions without battery charger on board):**

Located in the rear part of the steering column to tell the user how to recharge the batteries; the daily care of the machine is explained in the lower part.



### **Battery charging warning label (versions with battery charger on board):**

This is used in the rear part of the steering column to warn the user how to recharge the batteries with the on-board battery charger.



### **Symbol denoting pressure applied to the brushes.**

Used near the operator seat to indicate the pedal to increase the pressure on the brushes.



### **Label warning about the risk of crushed hands:**

Indicates danger to hands due to crushing between two surfaces.



### **Parking brake label:**

Used on the machine to indicate the parking brake control lever.



### **Label indicating the need to read the Use and Maintenance Manual:**

Used in the brush head body, and indicates the prohibition to approach the brush head while the brush is moving.



### **Pedal labels that indicate the forward and reverse direction of the machine.**

Used to indicate the direction of the machine.



### **pH label (versions with on-board automatic detergent dosing system):**

Affixed above the detergent canister to indicate the pH range of the chemical product to be utilized.



**Label with instructions for using standard or concentrated detergents (versions with automatic integrated detergent dosing system):**

Affixed near the detergent canister to explain how to use the chemical detergent automatic dosing system.



**Label with warnings for using the water system with the automatic integrated detergent dosing system (versions with automatic integrated detergent dosing system):**

This is used on the machine to warn the user on which chemical products to use.



**Light control symbol:**

Affixed near the driver's seat to indicate the activation - deactivation buttons for the working lights and the courtesy lights.

## SYMBOLS ON THE CONTROL PANEL (automatic version)



**Main switch symbol:**

Located on the control panel to indicate in which direction to turn the key to activate or deactivate the machine's general switch.



**i-drive selector symbol:**

Indicates the command knob for the i-drive program selector.



**Open book caution symbol:**

Used in the control panel to tell the operator to read the manual before using the machine.

## SYMBOLS ON THE CONTROL PANEL (manual version)



**Main switch symbol:**

Located on the control panel to indicate in which direction to turn the key to activate or deactivate the machine's general switch.



**Open book caution symbol:**

Used in the control panel to tell the operator to read the manual before using the machine.



**Indicator light for activation of extra pressure on the brushes (M versions):**

This is used on the control panel to indicate the extra pressure on the brushes activation indicator light.



**Parking brake indicator light (M versions):**

This is used on the control display to indicate that the parking brake is engaged.

## SYMBOLS ON THE CONTROL PANEL (automatic version)



**ECO-MODE symbol:**

Used on the control panel to indicate the button that activates or deactivates the ECO-MODE of the machine.



**Buzzer symbol:**

Indicates the buzzer command button.



**Detergent solution quantity regulation symbol:**

Used on the control panel to indicate the button regarding the regulation of the detergent solution level within the machine's water circuit.



**Detergent percentage regulation symbol (versions with on-board automatic detergent dosing system):**

Used on the control panel to indicate the button regarding the regulation of the detergent percentage within the machine's water circuit.



**Brush release symbol:**

Used on the control panel to indicate the button for automatic uncoupling of the brushes.



**Forward speed level regulator symbol:**

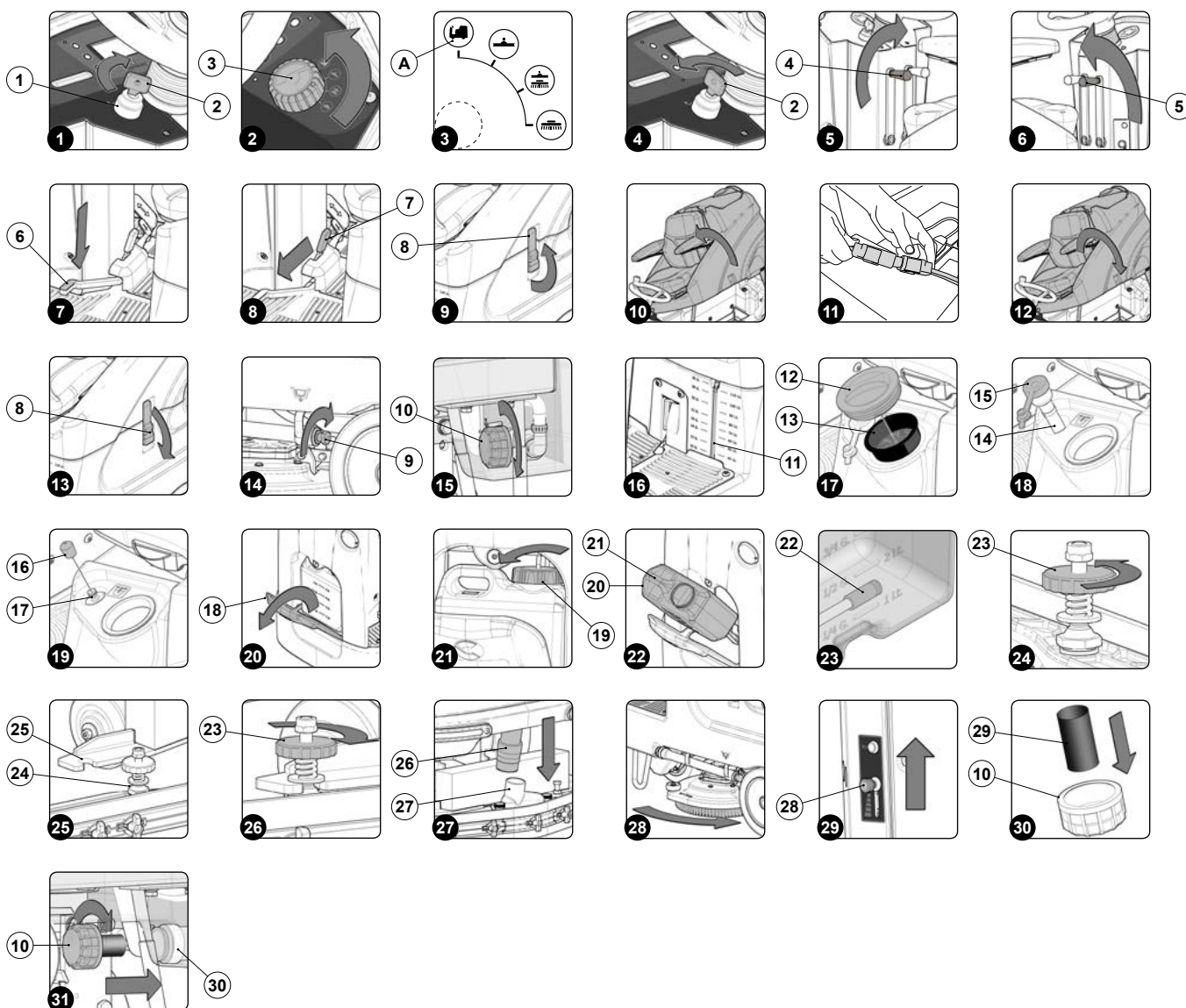
Used on the control panel, to indicate the button that allows you to regulate the movement speed of the machine.



## TECHNICAL DATA

TECHNICAL DATA	SI [KMS]	E75 R PLUS	E85 R PLUS
Nominal input power [IEC 60335-2-72; IEC 62885-9]	kW	1,81	1,81
Gradeability when working with GVW (maximum period of use 20 seconds)	%	10	10
Machine weight during transport [IEC 62885-9]	kg	355	355
GVW [IEC 60335-2-72; IEC 62885-9]	kg	476	476
Sound pressure level (ISO 11201) - $L_{pa}$	dB (A)	61.5	61.5
Uncertainty $K_{pa}$	dB (A)	1.5	1.5
Body vibration level (ISO 2631)	m/s <sup>2</sup>	0,5	0,5

## PREPARATION OF MACHINE



## HANDLING THE PACKAGED MACHINE


The machine's overall weight including packaging is 268 Kg or 591 lb.

The overall dimensions of the package are:

Length = 1600mm or 63in

Width = 730mm or 29in

Height = 1630mm or 64in

 **ATTENTION:** it is recommended that all the packaging components be kept for any future machine transportation.



**ATTENTION:** Move the packaged product with handling trolleys that comply with legal requirements regarding size and mass of the packaging.

## HOW TO UNPACK THE MACHINE

The machine is shipped in specific packaging. To remove it, proceed as follows:

1. Place the lower part of the outer packaging in contact with the floor.



**N.B.:** Use the pictograms printed on the box as reference.

2. Remove the outer package.



**WARNING:** The machine is contained in specific packaging materials, whose elements (plastic bags, staples, etc.) can pose potential hazards, and must not be left within reach of children, disabled persons, etc.



**CAUTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

3. Insert a ramp in the rear part of the machine.



**ATTENTION:** The ramp gradient must not be such as to cause damage to the machine as it comes down.

4. The machine is fastened to the platform with wedges, remove these wedges.

5. Take the machine off the pallet via the ramp.



**CAUTION:** during this operation, check there are no people or objects near the machine.

## HOW TO MOVE THE MACHINE

To transport the machine safely, proceed as follows:

1. Check that the solution tank and the recovery tank are empty; if this is not the case, empty them. See paragraphs "EMPTYING THE SOLUTION TANK" on page 29 and "DRAINING THE RECOVERY TANK" on page 27.
2. Place the machine on the transport vehicle.
3. Carry out the steps necessary to secure the machine (see paragraph "MACHINE SAFETY" on page 12).



**WARNING:** secure the device according to the directives in force in the country of use (ex. 2014/47/EU), so that it cannot slide or tip over.

## MACHINE SAFETY

The procedure for securing the machine, thus allowing the operations to be performed under conditions of complete safety, is as follows:

1. Check that the recovery tank empties, otherwise see paragraph "DRAINING THE RECOVERY TANK" on page 27.
2. Sit on the driver's seat.
3. For the automatic versions, insert the key (2) in the main switch (1) on the control panel. Bring the main switch (1) to position "I" by turning the key a quarter turn clockwise (**Fig.1**).
4. For the automatic versions, select the "TRANSFER" program, then turn the knob (3) on the control panel (**Fig.2**) as far as icon (A) (**Fig.3**).



**N.B.:** in this way, both the brush head body and the squeegee body will move to their idle position.

5. Bring the main switch to position "0" by turning the key (2) a quarter turn anti-clockwise (**Fig.4**). Remove the key from the main switch.
6. For the manual versions, raise the squeegee body off the floor and turn the lever (4) on the steering column clockwise (**Fig.5**).
7. For the manual versions, raise the brush head body off the floor and turn the lever (5) on the steering column anti-clockwise (**Fig.6**).
8. Engage the parking brake, then press the brake pedal (6) fully down (**Fig.7**) and lock it in place by turning the pedal stop lever (7) anti-clockwise (**Fig.8**).
9. Unhook the tank rotation stop lever (8) (**Fig.9**) and turn the recovery tank to its maintenance position (**Fig.10**).
10. Disconnect the battery connector from the machine's main system connector (**Fig.11**).
11. Rotate the recovery tank into the working position (**Fig.12**). Use the lever (8) to block its rotation (**Fig.13**).



## TYPE OF BATTERY TO BE USED


The batteries must meet the requirements laid out in the norms: DIN/EN 60254-2 and IEC 254-2-2 (L range).

**To carry out the work well the machine must have a 24V power supply;** we recommend using four 24V 180Ah/C<sub>5</sub> traction batteries.

## BATTERY MAINTENANCE AND DISPOSAL


For battery maintenance and recharging, respect the instructions provided by the battery manufacturer.


When the batteries reach the end of their working life, they must be disconnected by expert, trained personnel then removed from the battery compartment with the aid of suitable lifting devices.

 **N.B.:** dead batteries are classified as dangerous waste and as such must be delivered to an authorized body for disposal.

## INSERTING THE BATTERIES INTO THE MACHINE

The batteries must be housed in the special compartment inside the machine and should be handled using lifting equipment that is suitable in terms of both weight and its coupling system.

 **ATTENTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

 **ATTENTION:** to prevent an accidental short circuit use insulated tools to connect the batteries, and do not place or drop metal objects on the battery. Remove rings, watches and any clothing with metal parts that may come into contact with the battery terminals.


The various phases for inserting the batteries in the battery compartment are as follows:


1. Carry out the steps necessary to secure the machine, see paragraph "MACHINE SAFETY" on page 12.
2. Unhook the tank rotation stop lever (8) (**Fig.9**) and turn the recovery tank to its maintenance position (**Fig.10**).


 **N.B.:** for battery maintenance and daily recharging, respect the indications provided by the manufacturer or retailer.

 **ATTENTION:** all installation and maintenance operations must be carried out by specialized personnel.


 **N.B.:** before installing the battery, clean the battery compartment.


 **N.B.:** Check that the connectors on the cables supplied are functioning correctly.

 **ATTENTION:** check that the characteristics of the battery that you are looking to use are appropriate for the type of work to be performed.

 **ATTENTION:** Check the battery charge and the condition of the contacts on the battery.

 **N.B.:** you are advised to only lift and move the batteries with lifting and transportation means suitable for the specific weight and size


 **ATTENTION:** the lifting hooks must not damage the blocks, connectors or cables.


 **N.B.:** Before inserting the batteries into the machine, remember to cover the terminals with a little grease to protect them against external corrosion.

3. House the batteries in the compartment, positioning the poles "+" and "-" opposite each other.

## CONNECTING THE BATTERIES TO THE MACHINE'S ELECTRICAL SYSTEM

 **N.B.:** The batteries should be connected so as to obtain a total voltage of 24V.

 **ATTENTION:** It is recommended that the electrical connection operations be carried out by specialized and trained personnel.


 **ATTENTION:** to prevent an accidental short circuit use insulated tools to connect the batteries, and do not place or drop metal objects on the battery. Remove rings, watches and any clothing with metal parts that may come into contact with the battery terminals.


The various phases for inserting the batteries in the battery compartment are as follows:


1. Using the supplied jumper cable, connect the batteries to the "+" and "-" poles in series.
2. Connect the battery connector cable to the "+" and "-" poles in order to obtain the terminal voltage of 24V.
3. Connect the battery connector to the electrical system connector.

## RECHARGING THE BATTERIES


The batteries must be charged prior to first use, and whenever they no longer provide sufficient power.


 **ATTENTION:** The control board and the battery charger, if present on board, are set for lead-acid batteries; contact the nearest ICE assistance centre to modify the setting if you want to use gel batteries.

 **ATTENTION:** to avoid any permanent damage to the batteries, it is essential to avoid their complete discharge; begin recharging them within a few minutes of noting the "discharged batteries" signal.

 **ATTENTION:** Never leave the batteries completely discharged, even if the machine is not being used.

1. Bring the machine to the battery recharging area.
2. Carry out the steps necessary to secure the machine, see paragraph "MACHINE SAFETY" on page 12.


 **ATTENTION:** park the machine in an enclosed place, on a flat and level surface; near the machine there must be no objects that could either damage it, or be damaged through contact with it.

 **ATTENTION:** the room used to recharge the batteries must be adequately ventilated to prevent the accumulation of gases that leak from batteries.


3. Unhook the tank rotation stop lever (8) (**Fig.9**) and turn the recovery tank to its maintenance position (**Fig.10**).


### A. Recharging the batteries without the built-in battery charger:


- Disconnect the battery connector from the machine's main system connector (**Fig.11**).


 **ATTENTION:** the following operations must be carried out by qualified personnel. An incorrect connection of the connector may cause a malfunction of the device.

- Connect the external battery charger cable to the battery connector.

 **N.B.:** the coupling connector of the battery charger is consigned inside the bag containing this instruction booklet, and must be assembled on the cables of the battery charger as indicated in the instructions.


 **ATTENTION:** before connecting the batteries to the battery charger, make sure it is suitable for the batteries used.


 **N.B.:** carefully read the use and maintenance instructions of the battery charger that is used for charging.

 **CAUTION:** keep the recovery tank open for the duration of the battery recharging cycle to allow gas fumes to escape.

- Once the recharge cycle has been completed, disconnect the battery charger's cable from the battery connector.
- Connect the battery connector to the machine's main system connector.
- Rotate the recovery tank into the working position (**Fig.12**). Use the lever (8) to block its rotation (**Fig.13**).

### B. Recharging the batteries with the built-in battery charger:


 **ATTENTION:** the following operations must be carried out by qualified personnel. An incorrect connection of the connector may cause a malfunction of the device.

 **N.B.:** carefully read the use and maintenance instructions of the battery charger that is used for charging.

- Plug the battery charger cable into the mains socket.
- Connect the battery charger power cable with the cable on the battery charger itself.

 **CAUTION:** before connecting the batteries to the battery charger, make sure it is suitable for the batteries used.

 **N.B.:** the battery charger power cable is delivered inside the bag containing this instruction booklet.

 **CAUTION:** keep the recovery tank open for the duration of the battery recharging cycle to allow gas fumes to escape.

- When the recharge cycle is complete, disconnect the battery charger supply cable from the cable on the battery charger itself.
- Rotate the recovery tank into the working position (**Fig.12**). Use the lever (8) to block its rotation (**Fig.13**).

## FILLING THE SOLUTION TANK WITH WATER

Before filling the solution tank, carry out the following steps:

1. Take the machine to the usual place for filling the solution tank.
2. Carry out the steps necessary to secure the machine, see paragraph "MACHINE SAFETY" on page 12.
3. Make sure the solution tank drainage cap (9) is closed; if it isn't, close it (**Fig.14**).
4. Make sure the water system filter cap (10), on the front left-hand side of the machine, is closed; if it isn't, close it (**Fig.15**).
5. Fill with clean water, at a temperature no higher than 50°C (122°F) and no lower than 10°C (50°F).
6. Check the water level via the tube (11) underneath the operator's seat (**Fig.16**).


The tank can be filled with water in the following ways:

### A) filling through the side inlet:

- Remove the cap (12) on the side of the machine (**Fig.17**), and fill the solution tank using a hose or bucket.
- Before filling the tank, check that the filter (13) is correctly positioned above the filler opening (**Fig.17**).

### B) filling through the quick filling pipe:

- Remove the filler hose (14) from its seat (**Fig.18**), then remove the closure cap (15) and insert the water filler hose.
- Remember to remove the cap (12) so the air can be properly vented.

 **N.B.:** the filler pipe (14) supports the water filler pipe.


### C) filling through the optional quick filling kit:

- Remove the cap (16) positioned above the quick coupling (17) (**Fig.19**), then insert the water filler hose in the quick coupling.
- Remember to remove the cap (10) so the air can be properly vented.


## DETERGENT SOLUTION


**For versions without automatic management system of chemical products, fill the solution tank with clean water and then proceed as follows:**

1. Bring the machine to the area designated for refilling the solution tank.
2. Carry out the steps necessary to secure the machine, see paragraph "MACHINE SAFETY" on page 12.
3. Remove the cap (12) on the side of the machine (**Fig.17**) and add the liquid detergent in the concentration indicated and according to the instructions provided on the label by the detergent manufacturer.
4. Before pouring the liquid detergent into the tank, check that the filter (13) is correctly positioned above the filler opening (**Fig.17**).

 **N.B.:** To prevent the formation of an excessive amount of foam that could damage the vacuum motor, use the minimum percentage of detergent required.


 **CAUTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.


 **ATTENTION:** always use detergents whose manufacturer's label indicates their suitability for scrubbing machines. Do not use acid or alkaline products or solvents without this indication.


 **N.B.:** 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.

**For versions with automatic management system of chemical products, fill the solution tank with clean water and then proceed as follows:**

1. Bring the machine to the area designated for refilling the solution tank.
2. Carry out the steps necessary to secure the machine, see paragraph "MACHINE SAFETY" on page 12.
3. Open the front hatch (18) of the machine (**Fig. 20**).
4. Remove the cap (19) from the detergent canister (20) (**Fig.21**).
5. Grip the handle (21) on the detergent canister (20) to remove it from its compartment in the steering column (**Fig.22**).
6. Fill the canister with the required detergent, as per the instructions given on the label supplied with the machine.

 **CAUTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

 **N.B.:** 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.

 **ATTENTION:** always use detergents whose manufacturer's label indicates their suitability for scrubbing machines. Do not use acid or alkaline products or solvents without this indication.

**⚠ ATTENTION:** the dosing system is suitable for frequent maintenance cleaning. Acid or alkaline maintenance detergent can be used with pH values between 4 and 10 and that do not contain: oxidising agents, chlorine or bromine, formaldehyde, mineral solvents. The detergents used must be suitable for use with scrubbing machines. Wash the circuit with water after use if the system is not used daily. The system can be excluded. In case of sporadic use of detergents with pH between 1-3 or 11-14, use the floor scrubbing machine in the traditional way by adding the detergent in the clean water tank and excluding the dosing circuit.

7. Make sure the cap (19) is properly tightened to avoid any leakage of liquid while working. Make sure the detergent suction filter (22) is correctly positioned on the bottom of the canister (**Fig.23**).
8. Grip the handle (21) on the detergent canister (20) to replace it in its compartment in the steering column.
9. Close the machine's front hatch (19).

## ASSEMBLING THE SQUEEGEE BODY

For packaging reasons, the squeegee body comes disassembled from the machine. To assemble it on the squeegee body support, proceed as follows:

1. Carry out the steps necessary to secure the machine, see paragraph "MACHINE SAFETY" on page 12.



**CAUTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

2. Unscrew the knobs (23) in the squeegee body pre-assembly (**Fig.24**).
3. Insert the left-hand pin (24) on the squeegee body in the left-hand slit (25) in the squeegee support (**Fig.25**), making sure that the washer and spring adhere in the upper part of the squeegee support.
4. Repeat the same operation for the right pin.
5. Tighten the knobs (23), making sure that the washer and spring adhere in the upper part of the squeegee support (**Fig.26**).
6. Insert the vacuum tube (26) in the sleeve (27) in the squeegee body (**Fig.27**).



**N.B.:** Although the squeegee comes pre-adjusted, it is nevertheless advisable to read the section entitled "ADJUSTING THE SQUEEGEE BODY RUBBER BLADES" on page 16.

## ASSEMBLING THE BRUSH HEAD BODY BRUSHES

The machine is supplied without brush head brushes. To insert them into the brush holder plates in the brush head body, perform the following:

1. Carry out the steps necessary to secure the machine, see paragraph "MACHINE SAFETY" on page 12.



**CAUTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

2. Stand on the left side of the machine.
3. Insert the brush in its seat on the plate beneath the brush head, turning it until the three buttons enter the slots on the plate.
4. Turn in increments until the button is pushed towards the coupling spring and is locked in place (**Fig.28**).



**N.B.:** Image 28 indicates the direction of rotation for coupling the left brush; the right brush must be turned in the opposite direction.

5. Repeat the operations described for the right-hand front brush as well.

## INSERTING WATER SYSTEM FILTER

Before using the machine for the first time the water system filter needs to be reset, for shipping reasons the filter cartridge and the cap have been removed. To insert the filter cartridge in the water system filter body proceed as follows:

1. Take the machine to the maintenance area.
2. Carry out the steps necessary to secure the machine, see paragraph "MACHINE SAFETY" on page 12.



**CAUTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

3. Shut off the output flow from the tap and shift the knob (28) on the left-hand side of the steering column (**Fig.29**) upwards.
4. Move to the front of the machine and insert the filter cartridge (29) in the housing on the cap (10) (**Fig.30**).



**N.B.:** The O-ring gasket in the filter cartridge should be inserted into its seat in the cap.

5. Screw the cap (10) onto the body of the detergent solution filter (30) (**Fig.31**).

## ADJUSTMENT OF DRIVING POSITION

The proper adjustment of the driving position provides a greater sense of comfort when using the machine.

**Correct position on the seat:** make sure you sit upright and that your back and that your lower back and spine are at 90°.

**Seat adjustment:** The seat should always be positioned using the pedals as a reference. To adjust the seat, use the lever located under it.

- i** **N.B.:** The distance should be adjusted so that with the pedals fully pressed to the floor the knees are slightly bent (about 120°).
- i** **N.B.:** Adjust the distance of the seat so that when pressing the brake pedal it goes as far as it can. This operation should be done with the machine running so as to pressurise the braking system.
- i** **N.B.:** If the knee is not bent enough, it is too far from the steering wheel, if however the knee is bent almost 90° then it is too close to the steering wheel.
- i** **N.B.:** The feet should be positioned keeping the heels on the footboard; the part of the foot directly below the toes should push the pedals.
- i** **N.B.:** The ideal position is that which allows you to grip the steering wheel correctly with the palms slightly lower than the shoulders. With a good grip on the steering wheel, the elbows should be bent by about 120°. They should be at least 30 cm between the middle of the steering wheel and our breastbone. In any case, this distance should be no more than 45 cm.

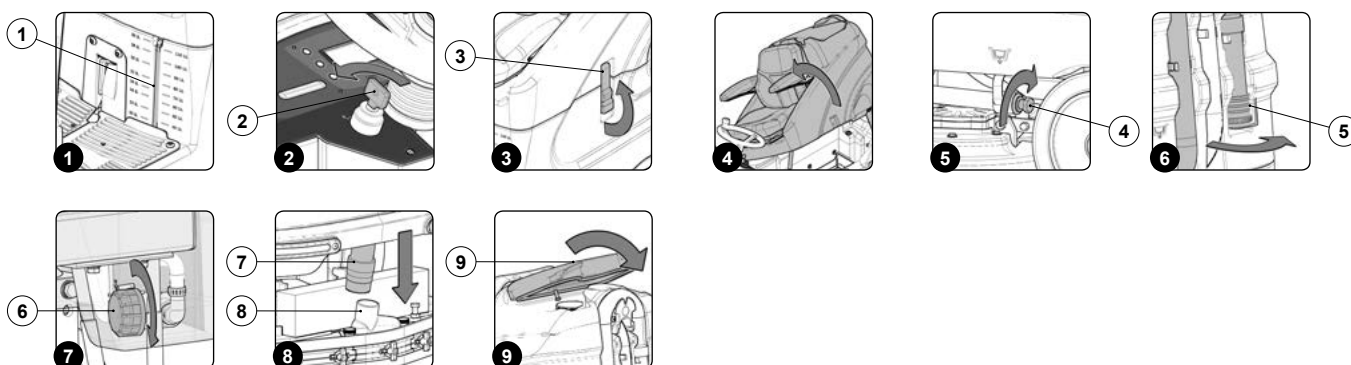
**Adjusting the armrests (optional):** the armrests should be inclined to make using the machine comfortable.

- i** **N.B.:** To adjust the armrest use the runner located under it.
- i** **N.B.:** Taking the right armrest as a reference, if the wheel is turned outwards the inclination of the armrest is increased. Taking the left armrest as a reference, if the wheel is turned inwards the inclination of the armrest is increased.

**Wear the seatbelt correctly (optional):** The machine has a sub-abdominal safety device that allows the operator to be anchored to the driver's seat. To secure the safety belt, you must first be sitting in the driver's seat; take the mobile part of the belt, wrap it round the abdomen and insert the mobile part in the slit in the fixed part.

- i** **N.B.:** Adjust the horizontal part of the belt so it is as tight as possible on the pelvis. The belt should be pulled and put as low as possible on the pelvis bone, and not on the belly.

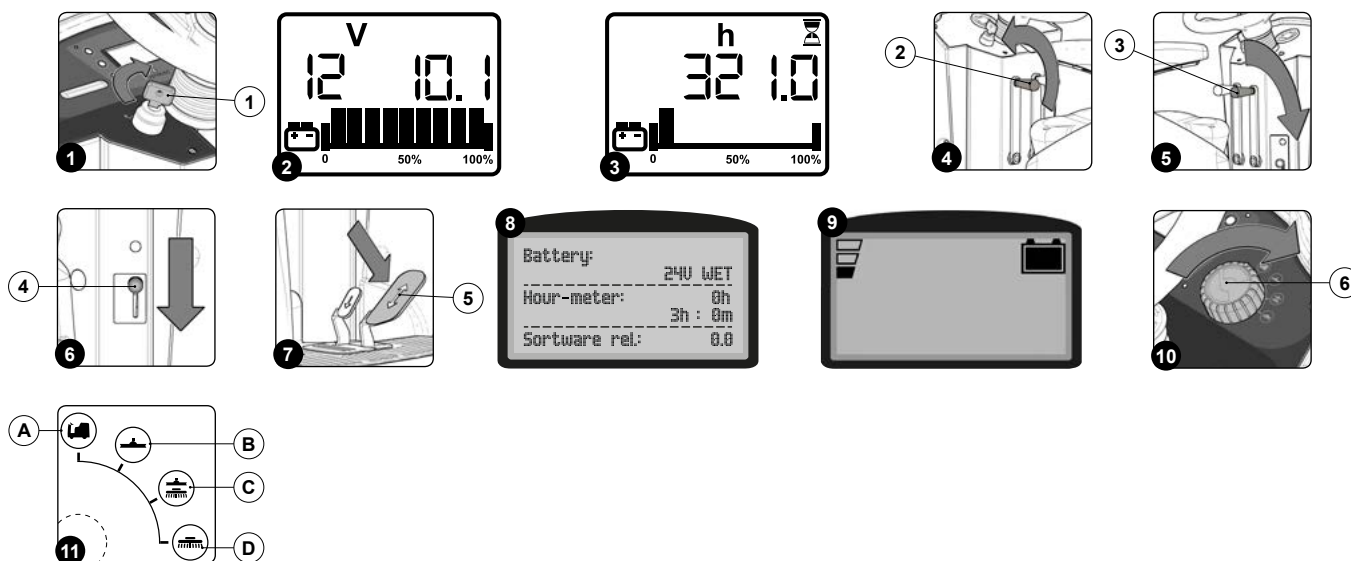
## PREPARING TO WORK



Before beginning to work, it is necessary to:

1. Make sure the recovery tank is empty; if not, empty it completely. See paragraph "DRAINING THE RECOVERY TANK" on page 27.
  2. Check that the quantity of detergent solution in the solution tank is correct for the type of work to be carried out; if not, refill the solution tank. See paragraph "FILLING THE SOLUTION TANK WITH WATER" on page 15 and paragraph "DETERGENT SOLUTION" on page 15.
  3. Check the level tube (1) located near the operator's seat (**Fig.1**).
  4. Check that the squeegee rubber blades are in a suitable condition for performing the work; if this is not the case, replace them. See paragraph "REPLACING THE SQUEEGEE BODY RUBBER BLADES" on page 30.
  5. Check the brush is in good working condition, otherwise replace it, see paragraph "REPLACING THE BRUSH HEAD BODY BRUSHES" on page 30.
  6. Check that the machine is off, otherwise set the main switch to position "0" by turning the key (2) a quarter turn anti-clockwise (**Fig. 2**). Remove the key from the instrument panel.
  7. Unhook the tank rotation latch (3) (**Fig.3**) and turn the recovery tank into the maintenance position (**Fig.4**).
  8. Connect the battery connector to the machine's main system connector.
- ⚠ ATTENTION:** This process must be carried out by qualified personnel.
9. Rotate the recovery tank into the work position. Block the rotation with the latch (3).
  10. Check that the solution tank drainage pipe cap (4) is closed. If this is not the case, close it (**Fig.5**).
  11. Make sure the cap of the recovery tank drainage tube (5) is closed. If it isn't, close it (**Fig.6**).
  12. Make sure the water system filter cap (6) is closed. If it isn't, close it (**Fig.7**).
  13. Make sure the vacuum tube (7) is correctly connected to the sleeve (8) in the squeegee body. If it isn't, connect it (**Fig.8**).
  14. Check that the recovery tank cover (9) is correctly positioned, otherwise position it correctly in the upper part of the recovery tank (**Fig.9**).

## STARTING WORK



**To start working with a manual machine version, proceed as follows:**

1. Carry out all the checks listed in the chapter "PREPARING TO WORK" on page 17.
2. Sit on the driver's seat.
3. Move the main switch to position "I" and turn the key (1) a quarter turn clockwise (**Fig.1**).
4. At switch-on, a number of screens appear in sequence on the display.

**i N.B.:** In the first screen the nominal battery voltage programmed into the control board is displayed on the left of the screen, and on the right, the minimum inhibit temperature appears (**Fig.2**).

**i N.B.:** The second screen displays the hours of work completed by the machine (**Fig.3**).

5. The steps for a complete scrubbing and drying cycle are explained below, read the chapter WORKING PROGRAMS.
6. Lower the squeegee body, turn the lever (2) on the rear of the steering column anticlockwise (**Fig.4**).
7. Lower the brush head body, turn the lever (3) on the rear of the steering column clockwise (**Fig.5**).
8. Check to make sure that the detergent solution tap is completely open. If this is not the case shift the knob (4) on the right side of the steering column (**Fig.6**) downwards.
9. Press the drive pedal (5) (**Fig.7**) to begin moving the machine.

**i N.B.:** Once the drive pedal is pressed, the brush head body and the squeegee body will begin to descend into their working positions.

**i N.B.:** Once the brush head body and the squeegee body have reached their working positions, the relative motors will enter into function, and the solenoid valve will dispense the detergent solution.

**i N.B.:** During the first few meters of work, check that the amount of detergent solution being supplied is appropriate to the work to be carried out; if not, adjust this. See paragraph "REGULATING THE DETERGENT SOLUTION" on page 22.

10. The machine will now begin to work with full efficiency until the battery is flat or until the detergent solution has finished.

**To begin working with an automatic machine, proceed as follows:**

1. Carry out all the checks listed in the chapter "PREPARING TO WORK" on page 17.
2. Sit on the driver's seat.
3. Move the main switch to position "I" and turn the key (1) a quarter turn clockwise (**Fig.1**).
4. At switch-on, a number of screens appear in sequence on the display:
  - The first screen displayed indicates the logo of the manufacturer of the machine.
  - The second screen displayed indicates the name of the machine.
  - The third screen displayed (**Fig.8**) indicates the characteristics of the machine's programming.
  - The forth screen displays (**Fig.9**) identifies the work panel.

5. The steps for a complete scrubbing and drying cycle are explained below, read the chapter WORKING PROGRAMS.
6. Use the knob (6) (**Fig.10**) to select one of the following working programs (**Fig.11**):

- A. Transfer
- B. Drying
- C. Scrubbing with drying
- D. Scrubbing without drying

- Check to make sure that the detergent solution tap is completely open. If this is not the case shift the knob (4) on the right side of the steering column (**Fig.6**) downwards.
- Press the drive pedal (5) (**Fig.7**) to begin moving the machine.

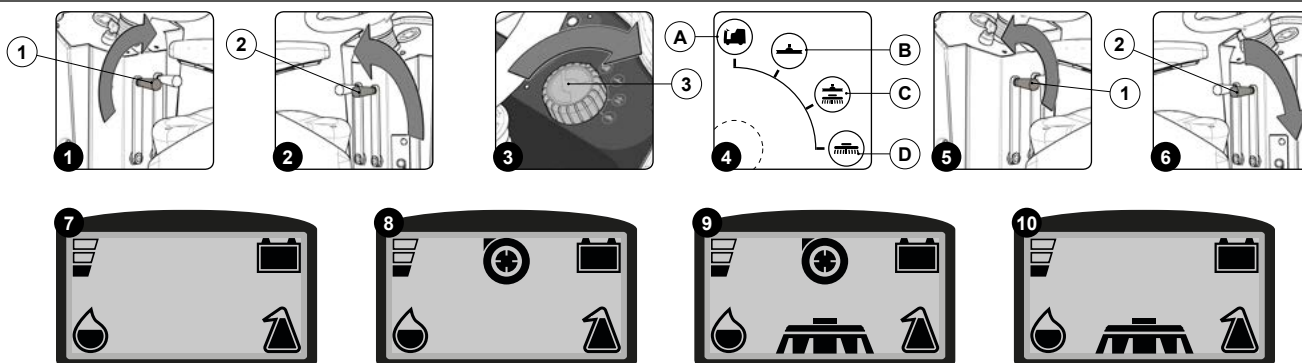
- i** **N.B.:** Once the drive pedal is pressed, the brush head body and the squeegee body will begin to descend into their working positions.
- i** **N.B.:** Once the brush head body and the squeegee body have reached their working positions, the relative motors will enter into function, and the solenoid valve will dispense the detergent solution.
- i** **N.B.:** During the first few meters of work, check that the amount of detergent solution being supplied is appropriate to the work to be carried out; if not, adjust this. See paragraph "REGULATING THE DETERGENT SOLUTION" on page 22.

- The machine will now begin to work with full efficiency until the battery is flat or until the detergent solution has finished.

## OVERFLOW DEVICE

The machine is equipped with a mechanical device (float) under the recovery tank lid that, when the recovery tank is full, shuts off the air to the suction motor intake to protect it; the sound of the suction motor will then be deeper. To empty the recovery tank, see paragraph "DRAINING THE RECOVERY TANK" on page 27.

## WORKING PROGRAMS



## TRANSFER

With the machine set to the transfer working program, it can be moved from one work area to another. The only main actuator active is that of the traction motor/wheel.

**To activate the "transfer" program on a manual machine, proceed as follows:**

- Raise the squeegee body and rotate the lever (1) on the back of the steering column clockwise (**Fig.1**).
- Raise the brush head body, turn the lever (2) on the back of the steering column anticlockwise (**Fig.2**).

**To activate the "transfer" program on an automatic machine, proceed as follows:**

- Use the knob (3) (**Fig.3**) to select the "transfer" working program (A) (**Fig.4**).

- i** **N.B.:** The screen that will appear on the control display is the one shown in **Fig.7**.

## DRYING

With the machine in the drying working program, it is possible to dry the previously washed portion of the floor.

**To activate the "drying" program on a manual machine, proceed as follows:**







- Lower the squeegee body and rotate the lever (1) on the back of the steering column anti-clockwise (**Fig.5**).
- Raise the brush head body, turn the lever (2) on the back of the steering column anticlockwise (**Fig.2**).

- i** **N.B.:** If reversing with this program active, remember to lift the squeegee by turning the lever (1) clockwise. (**Fig.1**).



**To activate the "transfer" program on an automatic machine, proceed as follows:**

1. Use the knob (3) (**Fig.3**) to select the "transfer" working program (B) (**Fig.4**).

-  **N.B.:** The main actuators active are those of the traction motorwheel and the suction motor.
-  **N.B.:** When the drive pedal is pressed, the squeegee is brought into working position (in contact with the floor) and the suction motor will start working in full working order.
-  **N.B.:** If the machine is stopped and the drive pedal is released during the operation, the squeegee body will remain in contact with the floor for a few seconds, after which it will raise up from the ground to go back to its rest position. For all these phases the suction motor will continue to operate, only after a few seconds that it has returned to its work position will it switch off, this is to allow the motor to collect all the liquid in the vacuum hose.
-  **N.B.:** During these phases, the symbol of the suction motor on the instrument panel display will blink, and it will only stop when the squeegee is in its rest position and the suction motor is off.
-  **N.B.:** If reverse is carried out with this program active, the squeegee will move to the rest position, the suction motor will keep working for a pre-set time and then it will switch off.
-  **N.B.:** The screen that will appear on the control display is the one shown in **Fig.8**.



**The drying without scrubbing operation should only be carried out if the machine was previously used to carry out a scrubbing without drying operation.**

## SCRUBBING WITH DRYING








With the selector in the scrubbing with drying mode it is possible to both scrub and dry the floor at the same time.

**To activate the scrubbing with drying working program with a manual machine version, proceed as follows:**

1. Lower the squeegee body and rotate the lever (1) on the back of the steering column anti-clockwise (**Fig.5**).
2. Lower the brush head body and rotate the lever (2) on the back of the steering column clockwise (**Fig.6**).

**To activate the "scrubbing with drying" program on an automatic machine, proceed as follows:**

1. Use the knob (3) (**Fig.3**) to select the "transfer" working program (C) (**Fig.4**).

-  **N.B.:** The screen that will appear on the control display is the one shown in **Fig.9**.
-  **N.B.:** The main actuators active are those of the traction hub motor brush head gearmotors and suction motor .
-  **N.B.:** When the drive pedal is pressed, both the brush head and the squeegee will move to the working position, and as soon as it is in contact with the ground the brush head gearmotors and the suction motor start working in full working order.
-  **N.B.:** If the machine stops and the foot pedal is released during the operation, the brush head body will start to rise to return to the rest position, and after a period of time the gearmotors will switch off. The squeegee body will stay in contact with the floor for a few seconds, after which it will raise up from the ground and return to its rest position.
-  **N.B.:** For all these phases the suction motor will continue to operate, only after a few seconds that it has returned to its rest position will it switch off, this is to allow the motor to collect all the liquid in the vacuum hose.
-  **N.B.:** During these phases, the symbol of the suction motor on the instrument panel display will blink, and it will only stop when the squeegee is in its rest position and the suction motor is off.
-  **N.B.:** If reverse is carried out with this program active, the squeegee will move to the rest position, the suction motor will keep working for a pre-set time and then it will switch off.

## SCRUBBING WITHOUT DRYING

With the selector in scrubbing without drying mode, it is possible to scrub the floor without vacuuming the detergent solution applied.

**To activate the "scrubbing without drying" program on a manual machine, proceed as follows:**

1. Raise the squeegee body and rotate the lever (1) on the back of the steering column clockwise (**Fig.1**).
2. Lower the brush head body and rotate the lever (2) on the back of the steering column clockwise (**Fig.6**).

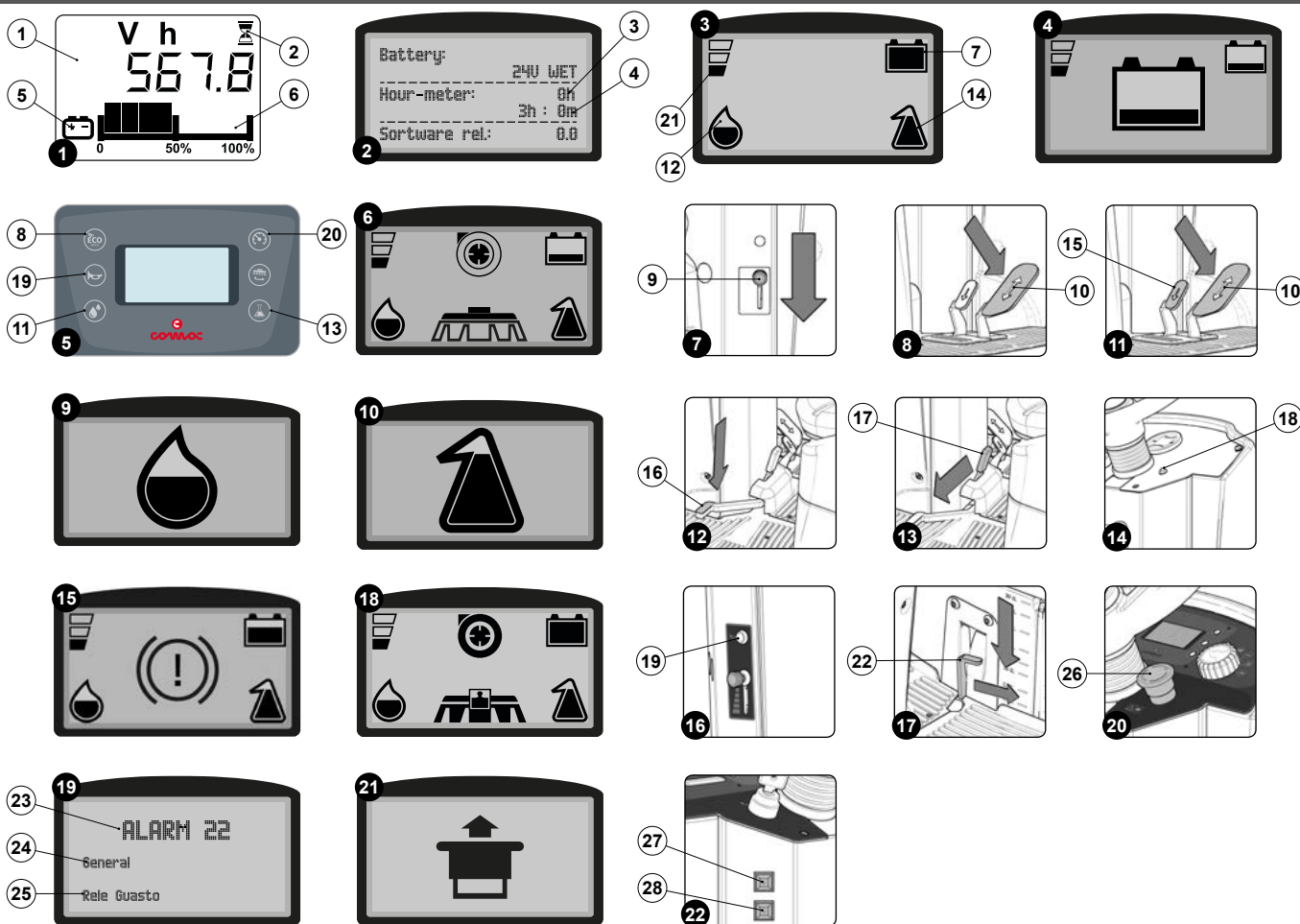


To activate the "scrubbing without drying" program on an automatic machine, proceed as follows:

1. Use the knob (3) (Fig.3) to select the "transfer" working program (D) (Fig.4).

- i** N.B.: The screen that will appear on the control display is the one shown in Fig.10.
- i** N.B.: The main actuators active are those of the traction hub motor and the brush head gearmotors.
- i** N.B.: When the drive pedal is pressed, the brush head will move to the working position, and as soon as it is in contact with the ground the brush head gearmotors start working in full working order.
- i** N.B.: If the machine is stopped and the drive pedal released during the work, the brush head body will start to rise in order to return to its idle position, and after a period of time the gearmotors will switch off.

## ADDITIONAL FUNCTIONS



## HOUR METER

To check the time the manual machine is used, proceed as follows:

The control display is located on the control panel, and the screen that appears after the start-up screen displays the total elapsed usage time (1) (Fig.1).

- i** N.B.: The digits that precede the "." symbol identify hours, whilst the digit that follows it indicates hour decimals (an hour decimal corresponds to six minutes).
- i** N.B.: When the "hour glass" symbol (2) is flashing, it indicates that the hour meter is counting the machine operating time (Fig.1).

The usage time of the automatic machine can be checked in the following way:

The control panel contains a display, and the third screen that appears after machine start-up shows machine operating hours in the central part. The first row shows the total machine usage time (3), and the second row the partial usage time (4) (Fig.2).

- i** **N.B. :** The numbers followed by the letter “h” identify the hours, while the numbers followed by the letter “m” identify the tenths of an hour (a tenth of an hour corresponds to six minutes).

## BATTERY CHARGE LEVEL INDICATOR

To check the charge level of the batteries in the manual machine, proceed as follows:

In the lower part of the control panel display, there is a graphic symbol (5) indicating the charge level of the batteries (**Fig.1**).

- i** **N.B.:** When the batteries on the machine are fully charged, the row at the bottom contains nine illuminated indicator bars (6) (**Fig.1**). As the batteries gradually run down, the indicator bars are no longer illuminated.
- i** **N.B.:** When the minimum remaining charge is reached, the graphic symbol (6) will start to flash and will turn off after a few seconds, after which the symbol (5) will start to flash. In these conditions, the machine must be taken to the designated battery charging area.
- i** **N.B.:** A few seconds after the battery charge reaches the critical level, the brush motors switch off automatically. With the remaining charge it is possible to complete the drying process before starting the recharge.
- i** **N.B.:** A few seconds after the battery charge reaches the discharge level, the suction motor switches off automatically.

The charge level of the batteries in an automatic machine can be checked as follows:

At the top right of the control panel display (work screen), there is a graphic symbol (7) indicating the charge level of the batteries (**Fig.3**).

- i** **N.B.:** When the batteries on the machine are fully charged, there will be five illuminated indicator bars (7) (**Fig.3**). As the batteries gradually run down, the indicator bars are no longer illuminated.
- i** **N.B.:** When the minimum remaining charge is reached, the graphic symbol will start to flash then, after a few seconds, it will appear in larger dimensions in the middle of the screen (**Fig.4**). In these conditions, the machine must be taken to the designated battery charging area.
- i** **N.B.:** When the battery charge level reaches the minimum, the brush motors will switch off automatically. With the remaining charge it is possible to complete the drying process before starting the recharge.
- i** **N.B.:** A few seconds after the battery charge level has reached the minimum, the suction motor switches off automatically. With the remaining charge, it is still possible, however, to move the machine to the location designated for its recharging.

## ECO-MODE (automatic versions)

Eco Mode sets a working configuration that reduces noise and saves energy, water and detergent.

## ACTIVATING/DEACTIVATING ECO-MODE (automatic versions)

To activate and deactivate Eco-Mode while using the machine, press the button (8) on the control panel (**Fig.5**).

- i** **N.B.:** Eco Mode reduces the speed of the brush gearmotors and the suction motor, thus reducing the energy consumption of the machine.
- i** **N.B.:** Eco Mode can only be used with the following working programs: drying; scrubbing with drying and scrubbing without drying.
- i** **N.B.:** When the Eco-mode function is active, the symbols of the suction motor or brush, or both (depending on the working program selected) will appear as mere outlines on the control display (**Fig.6**).


## REGULATING THE DETERGENT SOLUTION


To adjust the detergent solution in versions without an automatic dosing system on board, proceed as follows:


1. Open the water flow from the tap at maximum, then shift the knob (9) on the rear part of the steering column downward (**Fig. 7**).
  2. When the drive pedal (10) is pressed (**Fig.8**), the brush gearmotors will start to work and the solenoid valve will distribute detergent solution on the brushes.
  3. During the first few metres, check to make sure that the quantity of solution is sufficient to wet the floor, but not so much as to come out of the splash guard. The detergent leakage can be adjusted using the knob (9) on the steering column.
- i** **N.B.:** When the knob (9) is moved downwards, the amount of detergent solution on the brushes increases. When the knob (9) is moved upwards, the amount of detergent solution is reduced.


**To regulate the water in the water system of the machine (only for versions with an automatic integrated dosing system), proceed as follows:**

1. Open the water flow from the tap at maximum, then shift the knob (9) on the rear part of the steering column downward (**Fig. 7**).
2. When the drive pedal (10) is pressed (**Fig.8**), the brush gearmotors will start to work and the solenoid valve will distribute detergent solution on the brushes.
3. The water flow in the machine's water system is regulated by means of the button (11) on the control panel (**Fig.5**).


 **N.B.:** The control display shows a graphic symbol (12) indicating the level currently being used (**Fig.3**).


 **N.B.:** Press the button (11) once to see the water flow status on the machine in that precise moment (**Fig.9**). Every time the button (11) is pressed again, the water level increases; the flow rate will be zeroed when the maximum level is reached.


 **N.B.:** Press the button again to change the water flow rate; there are eight selectable levels (including the zero level). If the button (11) is kept pressed for more than three seconds, the water flow rate in the machine's water system is reset.

 **N.B.:** The water flow rate level refers to the flow delivered at maximum machine speed, at intermediate speeds, the flow is reduced and is proportional to the value set.

4. The percentage of chemical product in the machine's water system is regulated by means of the button (13) on the control panel (**Fig.5**).

 **N.B.:** The control display shows a graphic symbol (14) indicating the percentage currently being used (**Fig.3**).

 **N.B.:** Press the button (13) once to see the chemical product percentage in the machine in that precise moment (**Fig.10**). Every time the button (13) is pressed again, the percentage increases; it will be zeroed when the maximum level is reached.


 **N.B.:** Press the button again to change the chemical product percentage; there are eight selectable levels (including the zero level). If the button (13) is kept pressed for more than three seconds, the chemical product percentage in the machine's water system is reset.


## MOVEMENT COMMAND PEDALS


The machine is equipped with two direction control pedals:

- To move forward, press pedal (10) (**Fig.8**).
- To move backward, press both pedal (10) and pedal (15) (**Fig.11**).

 **N.B. :** As soon as the machine begins to reverse, the safety buzzer will sound intermittently.

 **N.B. :** If the horn button is pressed while reversing, this will be ignored by the machine, as the intermittent reversing buzzer will take priority.

 **N.B. :** If reverse is selected while the brush head body is in the working position, the delivery of detergent solution will be deactivated, but the brush head body will remain in contact with the ground (applies only for automatic versions).

 **N.B. :** If reverse is selected with the squeegee body in the working position, the squeegee body will automatically be moved into the rest position and the vacuum will be switched off with a delay set by one of the functions of the command board (applies only for automatic versions).

## SERVICE BRAKE


The machine is equipped with a mechanical braking system, located on the front wheel. To brake under normal conditions, just press the service brake pedal (16) (**Fig.12**).

## PARKING BRAKE

The machine is equipped with a mechanical parking brake, located on the front wheel. To engage the parking brake under normal conditions, just press the service brake pedal (16) (**Fig.12**) and shift the parking brake command lever (17) to the left (**Fig.13**).


 **N.B. :** In manual versions, the red indicator light (18) on the control panel will light up as soon as the parking brake is engaged (**Fig.14**).

 **N.B. :** In automatic versions, the relative symbol will fill the control panel screen as soon as the parking brake is engaged (**Fig.15**).

 **N.B. :** When the parking brake is engaged, the traction motor is deactivated.




## BUZZER

If button (19), in the rear part of the steering column on manual versions (**Fig.16**) and on the control panel on automatic versions (**Fig.5**), is pressed, the buzzer is activated continuously.

-  **N.B.** : If the button (19) is pressed during the reverse movement, as a signal priority, only the intermittent buzzer connected to the reverse will be heard.





## ADJUSTING THE MOVEMENT SPEED (automatic versions)

To adjust the movement speed, press button (20) on the control panel (**Fig.5**).

-  **N.B.** : The selected level is represented by the symbol (21) on the control panel display (**Fig.3**).
-  **N.B.** : Each time the button (20) is pressed, the speed level of the machine's movement is increased, once the maximum level has been reached, the speed will start again from the first level. Pressing the button subsequently changes the movement speed of the machine, there are three selectable levels (50% - 75% - 100%).
-  **N.B.** : the reverse speed is lower than the forward speed to comply with current health and safety standards.


## EXTRA-PRESSURE EXERTED ON THE BRUSHES

The function that exerts extra pressure on the brushes is activated via the pedal (22) near the operator's seat (**Fig.17**).

-  **N.B.** : In manual versions, the activation of the extra-pressure function is indicated by the illumination of the green indicator light (18) on the control panel (**Fig.14**).
  -  **N.B.** : In automatic versions, the activation of the extra-pressure function is indicated by the weight symbol superimposed on the brush symbol on the control panel display (**Fig.18**).
  -  **N.B.:** The extra-pressure function can only be activated when the brush head body is in contact with the ground.
-  **WARNING:** If the drive pedal is released when working with the extra-pressure function activated, the brush head body will not return to the rest position, in order to prevent serious damage to the machine.

## ALARM SCREEN (automatic versions)

If an alarm is triggered on automatic versions, the control panel display will show the alarm screen (**Fig. 19**); the screen will remain visible until the error has been resolved.


-  **N.B.** : The first row of the alarm screen shows the error code (23) (**Fig.19**), the second row shows the origin of the error (24), and the third row give a brief description of the type of error (25).

When an error occurs, do as follows:

1. Stop the machine immediately.
2. If the error persists, switch off the machine, wait for at least ten seconds and switch on the machine.
3. If the error persists contact the nearest service centre.

## EMERGENCY BUTTON (automatic versions)

If there are any problems while working, press the emergency button (26) on the control panel (**Fig.20**). This function interrupts all functions active at that moment, in this way both the brush head body and the squeegee body will rise from the floor and automatically switch off with the expected delays.

-  **N.B.** : As soon as the emergency button (26) is pressed, the relative symbol appears on the control display (**Fig. 21**).

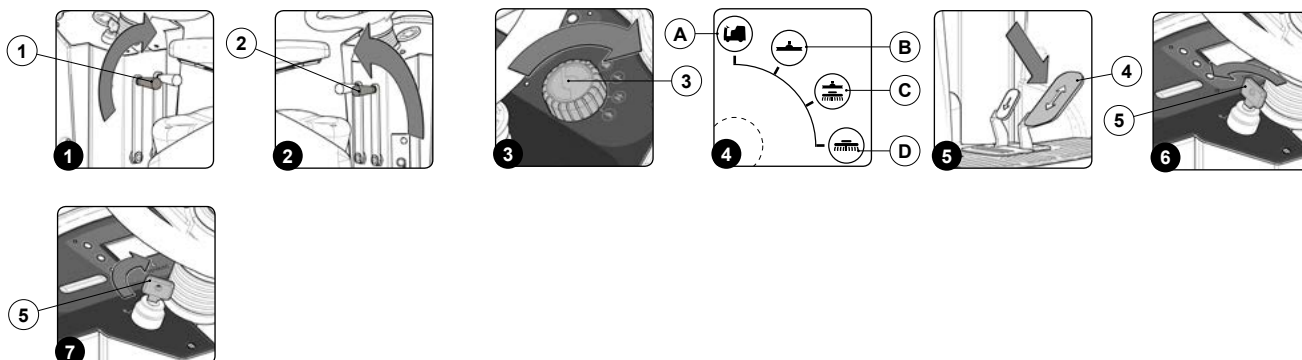
Once you have stopped and turned off the machine and solved the problem, to resume work proceed as follows:

1. Move the battery disconnect switch (26) to the rest position; turn the switch as indicated by the arrows printed on it.
2. Turn the main machine switch to "", turn the key a quarter turn clockwise.

## WORKING LIGHTS - COURTESY LIGHTS (automatic versions)

The default machine has two sidelights at the front of the nose that are activated when the machine is turned on. Press button (27) on the steering column (**Fig.22**) to activate the dipped headlights on the machine; press the button again to deactivate them. Press button (28) on the steering column (**Fig.22**) to activate the courtesy lights on the machine; press the button again to deactivate them.

## AT THE END OF THE WORK



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

1. For manual machine versions, lift the squeegee body, turn the lever (1) located on the rear of the steering column clockwise (**Fig.1**).
2. For manual machine versions, lift the brush head body, turn the lever (2) located on the rear of the steering column anticlockwise (**Fig.2**).
3. For the automatic machine versions, use the knob (3) (**Fig.3**) to select the "transfer" working program (A) (**Fig.4**).
4. Press the drive pedal (4) (**Fig.5**) to begin moving the machine.
5. Take the machine to the maintenance area.

**WARNING:** the place designated for this operation must comply with current regulations concerning safety at work and current environmental protection regulations.

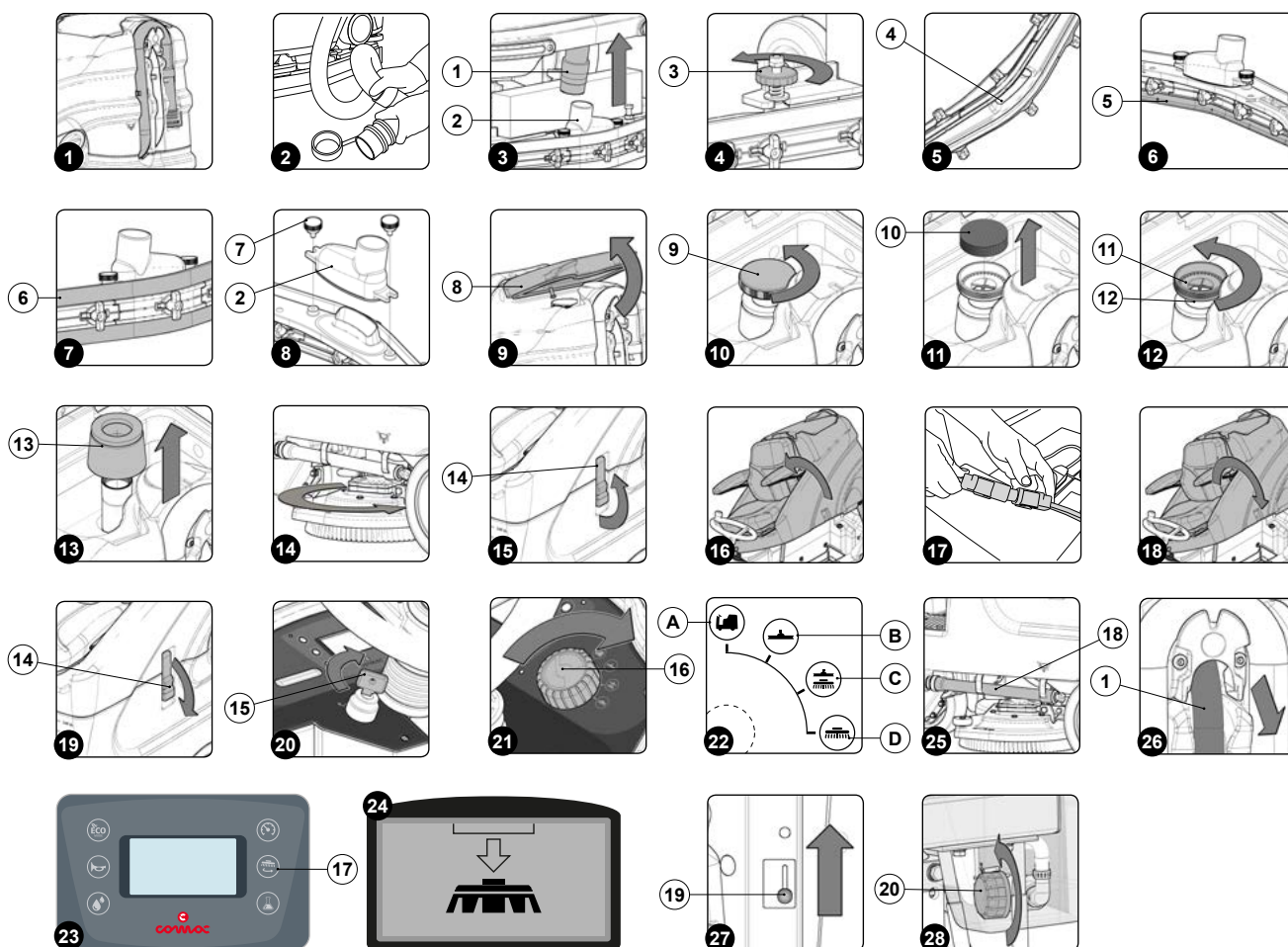
6. Turn off the machine and make a quarter turn anti-clockwise with the key (5) (**Fig.6**). Remove the key from the instrument panel.
7. Carry out all the procedures indicated in the "DAILY" column, under the section entitled "ROUTINE MAINTENANCE" on page 26.
8. Sit on the driver's seat.
9. Insert the key (5) into the main switch on the control panel.
10. Turn on the machine and make a quarter turn clockwise with the key (5) (**Fig.7**).
11. Press the drive pedal (4) (**Fig.5**) to begin moving the machine.
12. Take the machine to the designated machine storage place.

**ATTENTION:** Park the machine in an enclosed place, on a flat surface; near the machine there must be no objects that could either damage it, or be damaged through contact with it.

13. Secure the machine, see paragraph "MACHINE SAFETY" on page 12.

## ROUTINE MAINTENANCE


INTERVAL	MACHINE COMPONENTS	PROCEDURE
DAILY; BEFORE A LONG PERIOD OF INACTIVITY	Squeegee	Clean the vacuum chamber; the squeegee rubber blades; the suction nozzle (read the paragraph "CLEANING THE SQUEEGEE BODY" on page 27).
	Scrubbing brush head body brushes	Clean the brushes in the scrubbing brush head body (see paragraph "CLEANING THE BRUSH HEAD BODY BRUSHES" on page 28).
	Recovery tank	At the end of every working day, empty the recovery tank (see paragraph "DRAINING THE RECOVERY TANK" on page 27). At the end of each working day, after emptying the recovery tank, clean the filters in the vacuum system (see paragraph "CLEANING THE RECOVERY TANK FILTER-FLOAT" on page 27).
	Solution tank	At the end of every working day, empty the solution tank (see paragraph "EMPTYING THE SOLUTION TANK" on page 29).
WEEKLY	Machine water system	Clean the filter of the machine's water system (see paragraph "CLEANING THE WATER SYSTEM FILTER" on page 29).
	Machine vacuum unit	Check that the vacuum duct at the rear of the machine is has been cleaned correctly (see paragraph "CLEANING THE VACUUM TUBE" on page 29). Check the rubber blades in the squeegee body to ensure that they are intact and assess the state of wear; replace them if necessary (see paragraph "REPLACING THE SQUEEGEE BODY RUBBER BLADES" on page 30).
	Scrubbing brush head body brushes	Check the integrity and wear of the brushes in the scrubbing brush head body, replace them if necessary (see paragraph "REPLACING THE BRUSH HEAD BODY BRUSHES" on page 30).
MONTHLY	Squeegee rubber blade levelling	Check that the rubber blades in the squeegee body are level; adjust them if necessary (see paragraph "ADJUSTING THE SQUEEGEE BODY'S RUBBER BLADES" on page 31).






Before performing any routine or extraordinary maintenance operation, proceed as follows:

1. Take the machine to the maintenance area.

 **N.B.:** the place designated for this operation must comply with current regulations concerning safety at work and current environmental protection regulations.

2. Carry out the steps required to secure the machine; see paragraph "MACHINE SAFETY" on page 12.

 **CAUTION:** it is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

## DRAINING THE RECOVERY TANK

Proceed as follows to empty the recovery tank:

1. Release the recovery tank drainage tube (on the back of the machine) from the retainers (**Fig.1**).
2. Bend the end of the drainage tube in order to create a choke and prevent the content from coming out (**Fig.2**), then position the tube on the discharge surface, unscrew the cap, and gradually release the tube.
3. Repeat the operations in reverse order to reassemble all the parts.

## CLEANING THE SQUEEGEE BODY


The careful cleaning of the whole vacuum unit ensures better drying and cleaning of the floor as well as a longer vacuum motor life. To carry out the cleaning of the squeegee body, proceed as follows:


1. Stand at the back of the machine.
2. Remove the vacuum hose (1) from the sleeve in the vacuum nozzle (2) (**Fig.3**).
3. Unscrew the knobs (3) in the squeegee body pre-assembly (**Fig.4**).
4. Remove the squeegee body from the slits in the squeegee connector.
5. Use a jet of water and then a damp cloth to thoroughly clean the vacuum chamber (4) of the squeegee body (**Fig.5**).
6. Use a jet of water and then a damp cloth to thoroughly clean the front rubber blade (5) of the squeegee body (**Fig.6**).
7. Check the wear of the front rubber blade (5) on the squeegee body; if the edge of the rubber blade that is in contact with the floor is worn replace it and see paragraph "REPLACING THE SQUEEGEE BODY RUBBER BLADES" on page 30.
8. Use a jet of water and then a damp cloth to thoroughly clean the rear rubber blade (6) of the squeegee body (**Fig.7**).
9. Check the wear of the rear rubber blade (6) on the squeegee body; if the edge of the rubber blade in contact with the floor is worn, replace it, see paragraph "REPLACING THE SQUEEGEE BODY RUBBER BLADES" on page 30 however the rubber blade can be turned onto another of its four edges.
10. Unscrew the knobs (7) that fix the vacuum nozzle (2) to the squeegee body (**Fig.8**).
11. First with a jet of water and then with a damp cloth, thoroughly clean the vacuum nozzle (2). Also clean the squeegee body support surface.
12. Repeat the operations in reverse order to reassemble all the parts.

## CLEANING THE RECOVERY TANK FILTER-FLOAT

Careful cleaning of the recovery tank filter-float guarantees better cleaning of the floor as well as a longer vacuum motor lifespan. Proceed as follows to clean the recovery tank filter-float:

1. Grip the handle on the back of the recovery tank cover and remove it (8) (**Fig.9**).
2. Unscrew the floating cover (9) (**Fig.10**).
3. Remove the vacuum filter (10) and clean it (**Fig.11**).


 **N.B.:** you are advised to use a jet of air to remove the impurities before cleaning the filter. Position the filter at least 20cm from the air jet.

 **ATTENTION:** do not use highly corrosive products to clean the filter, to avoid damaging it.

4. Unscrew the upper body of the float (11) (**Fig.12**).

 **N.B.:** when removing the upper part of the float, be very careful not to remove the lower part as well (12) (**Fig.12**).

5. Remove the float (13) (**Fig.13**). Rinse the inside with a jet of water. If necessary, use a spatula to remove the sludge that has accumulated at the bottom of the float.

 **N.B.:** If the polyurethane ring on the float body (**Fig.13**) is excessively worn or damaged contact the nearest service centre.


6. Repeat the operations in reverse order to reassemble all the parts and move on to the second float filter.

## CLEANING THE BRUSH HEAD BODY BRUSHES


Careful cleaning of the brush guarantees better cleaning of the floor as well as a longer brush head gearmotor lifespan.


**To clean the brush with manual machine versions, proceed as follows:**

1. Stand on the left side of the machine.
2. Turn the brush in increments to release the button located in the brush, from the coupling spring located in the brush-holder plate (**Fig.14**).

 **N.B.:** Image 14 indicates the direction of rotation for coupling the left brush; the right brush must be turned in the opposite direction.


3. Repeat the operations described for the right-hand front brush as well.
4. Clean the brush under a stream of running water to remove any impurities from its bristles. Check the wear status of the bristles and replace the brushes if they are excessively consumed (the bristles' protrusion must not be less than 10 mm; this distance is indicated on the brush by the yellow band). See paragraph "ASSEMBLING THE BRUSH HEAD BODY BRUSHES" on page 16 to replace the brushes.

 **N.B.:** you are advised to invert the right and left-hand brushes every day.


 **ATTENTION:** If the brushes are not new however, and have deformed bristles, it is better to reassemble them in the same position (the right-hand one on the right, and the left-hand one on the left), to prevent the different inclination of the bristles producing an overload on the brush motor as well as excessive vibrations.


**To clean the brush on automatic machine versions, proceed as follows:**

1. Unhook the tank rotation stop lever (14) (**Fig.15**) and turn the recovery tank to its maintenance position (**Fig.16**).
2. Connect the battery connector to the machine's main system connector (**Fig.17**).
3. Rotate the recovery tank into the working position (**Fig.18**). Use the lever (14) to block rotation (**Fig.19**).
4. Sit on the driver's seat.
5. Insert the key (15) into the main switch on the control panel. Bring the main switch to the "I" position, making a quarter turn clockwise with the key (15) (**Fig.20**).
6. Select the "TRANSFER" program, then turn the knob (16) on the control panel (**Fig.21**) as far as icon (A) (**Fig.22**).


 **N.B.:** in this way, both the brush head body and the squeegee body will move to their idle position.


7. When button (17) on the control panel (**Fig.23**) is pressed for the first time, the confirmation request symbol will appear on the control display (**Fig.24**).
8. Pressing the button (17) again will activate the brush release function.

 **N.B.:** Once the unlock sequence has been activated, it is not possible to activate other functions or move the machine.

 **CAUTION:** During this operation, check there are no people or objects near the brush.

9. Clean the brush under a stream of running water to remove any impurities from its bristles. Check the wear status of the bristles and replace the brushes if they are excessively consumed (the bristles' protrusion must not be less than 10 mm; this distance is indicated on the brush by the yellow band). See paragraph "ASSEMBLING THE BRUSH HEAD BODY BRUSHES" on page 16 to replace the brushes.

 **N.B.:** you are advised to invert the right and left-hand brushes every day.

 **ATTENTION:** If the brushes are not new however, and have deformed bristles, it is better to reassemble them in the same position (the right-hand one on the right, and the left-hand one on the left), to prevent the different inclination of the bristles producing an overload on the brush motor as well as excessive vibrations.

## CLEANING THE RECOVERY TANK

To clean the recovery tank, proceed as follows:

1. Release the recovery tank drainage tube at the back of the machine from the retainers (**Fig.1**), unscrew the cap and place it on the ground (**Fig.2**).
2. Grip the handle on the back of the recovery tank cover and remove it (8) (**Fig.9**).
3. Rinse the inside with a jet of water, if necessary use a spatula to remove the sludge that has accumulated at the bottom of the tank.
4. Repeat the operations in reverse order to reassemble all the parts.



## EMPTYING THE SOLUTION TANK

Proceed as follows to empty the solution tank:

1. Release the solution tank drainage tube (18), on the left-hand side of the machine, from its retainers (**Fig.25**). Remove the cap and place it on the ground.
2. When the solution tank is empty, repeat the operations in the reverse order to reassemble all the parts.

## CLEANING THE VACUUM TUBE

Careful cleaning of the vacuum hose guarantees better cleaning of the floor as well as a longer vacuum motor life. Proceed as follows to clean the vacuum hose:

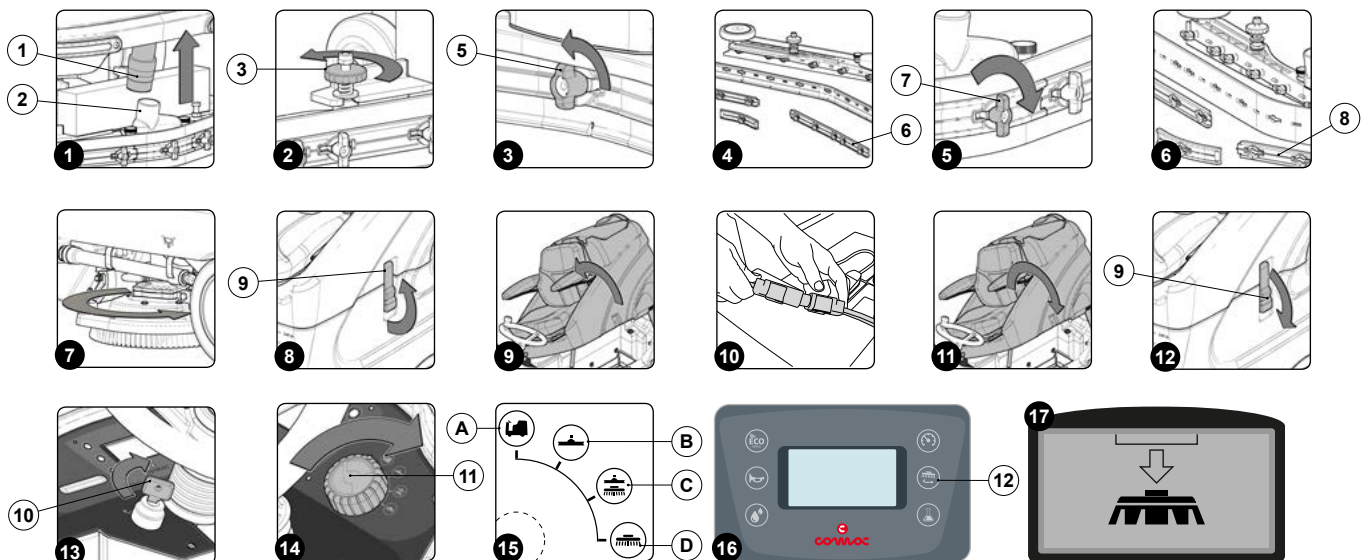
1. Remove the vacuum hose (1) from the vacuum nozzle (2) on the squeegee body (**Fig.3**).
2. Take the vacuum tube (1) out of the hole on the back of the recovery tank (**Fig.26**).
3. The vacuum hose from the retainers present inside the recovery tank.
4. Rinse the inside of the vacuum hose with a jet of running water.
5. Repeat the operations in reverse order to reassemble all the parts.

## CLEANING THE WATER SYSTEM FILTER

In order to clean the water system's filter, do the following:

1. Shut off the tap output flow, then shift the knob (19) on the right-hand side of the steering column downward (**Fig. 27**).
2. Move to the front right-hand side of the machine and unscrew the detergent solution filter cap (20) (**Fig. 88**), then remove the cartridge from the filter body.
3. Rinse the filter cartridge under a jet of water, and use a brush to eliminate any impurities, if necessary.
4. Once the filter cartridge is clean, repeat the operations in the opposite order to reassemble all the parts.

## EXTRAORDINARY MAINTENANCE WORK



Before performing any routine or extraordinary maintenance operation, proceed as follows:

1. Take the machine to the maintenance area.

**N.B.:** the place designated for this operation must comply with current regulations concerning safety at work and current environmental protection regulations.

2. Carry out the steps required to secure the machine; see paragraph "MACHINE SAFETY" on page 12.

**CAUTION:** it is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

## REPLACING THE SQUEEGEE BODY RUBBER BLADES

Ensuring the integrity of the rubber blades in the squeegee body ensures better floor cleaning and drying results, as well as a longer service life for the suction motor.

1. Stand at the back of the machine.
2. Remove the vacuum tube (1) from the sleeve in the vacuum nozzle (2) (**Fig.1**).
3. Unscrew the knobs (3) in the squeegee body pre-assembly (**Fig.2**).
4. Remove the squeegee body from the slits in the squeegee connector.

Proceed as follows for replacing the front rubber blade of the squeegee body:

5. Turn the wing nuts (5) into the horizontal position (**Fig.3**) and remove the front rubber blade compression plates (6) (**Fig.4**).
6. Remove the worn front rubber blade and replace it with the new one.
7. Repeat the operations in reverse order to reassemble all the parts.

Proceed as follows for replacing the rear rubber blade of the squeegee body:

8. Turn the wing nuts (7) into the horizontal position (**Fig.5**) and remove the front rubber blade compression plates (8) (**Fig.6**).
9. Remove the worn front rubber blade and replace it with the new one.
10. Repeat the operations in reverse order to reassemble all the parts.

**i** **N.B.:** Before returning to work, adjust the squeegee body, see paragraph "ADJUSTING THE SQUEEGEE BODY'S RUBBER BLADES" on page 31.

## REPLACING THE BRUSH HEAD BODY BRUSHES

Ensuring the integrity of the brushes in the brush head body guarantees better floor cleaning results as well as a longer service life of the gear motors.

**To replace the brushes in the manual machine versions proceed as follows:**

1. Stand on the left side of the machine.
2. Turn the brush in increments to release the button located in the brush, from the coupling spring located in the brush-holder plate (**Fig.7**).

**i** **N.B.:** Image 7 indicates the direction of rotation for coupling the left brush; the right brush must be turned in the opposite direction.

3. Repeat the operations described for the right-hand front brush as well.
4. See paragraph "ASSEMBLING THE BRUSH HEAD BODY BRUSHES" on page 16 to replace the brushes.

**To clean the brush on automatic machine versions, proceed as follows:**

1. Unhook the tank rotation stop lever (9) (**Fig.8**) and turn the recovery tank to its maintenance position (**Fig.9**).
2. Connect the battery connector to the machine's main system connector (**Fig.10**).
3. Rotate the recovery tank into the working position (**Fig.11**). Use the lever (9) to block rotation (**Fig.12**).
4. Sit on the driver's seat.
5. Insert the key (10) into the main switch on the control panel. Bring the main switch to the "I" position, making a quarter turn clockwise with the key (10) (**Fig.13**).
6. Select the "TRANSFER" program, then turn the knob (11) on the control panel (**Fig.14**) as far as icon (A) (**Fig.15**).

**i** **N.B.:** in this way, both the brush head body and the squeegee body will move to their idle position.

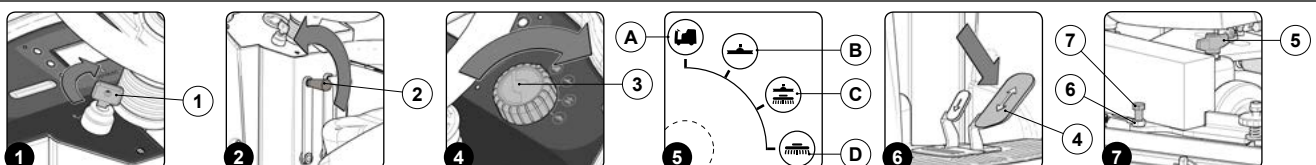
7. When button (12) on the control panel (**Fig.16**) is pressed for the first time, the confirmation request symbol will appear on the control display (**Fig.17**).
8. Pressing the button (12) again will activate the brush release function.

**i** **N.B.:** Once the unlock sequence has been activated, it is not possible to activate other functions or move the machine.

**⚠ CAUTION:** During this operation, check there are no people or objects near the brush.

9. See paragraph "ASSEMBLING THE BRUSH HEAD BODY BRUSHES" on page 16 to replace the brushes.


## ADJUSTMENT INTERVENTIONS



## ADJUSTING THE SQUEEGEE BODY'S RUBBER BLADES


The careful adjustment of the squeegee body rubber blades guarantees better cleaning of the floor.  
To adjust the squeegee body blades, proceed as follows:

1. Sit on the driver's seat.
2. Insert the key (1) into the main switch on the control panel. Set the main switch to "I" (**Fig.1**).
3. For the manual machine versions, lower the squeegee body and rotate the lever (2) in the rear part of the steering column anti-clockwise (**Fig.2**).
4. For the automatic machine versions, select the "DRYING" program then rotate the knob (4) on the control panel (**Fig.3**) as far as icon (B) (**Fig.4**).
5. Press the drive pedal (4) (**Fig.6**) to begin moving the machine.

 **N.B.:** For the automatic machine versions, the squeegee body will only begin to descend to its working position once the drive pedal has been pressed.

 **N.B.:** Once the squeegee body has reached its working position, the suction motor will enter into function.


6. As soon as the squeegee body is in the operating position, carry out the steps required to secure the machine, see paragraph "MACHINE SAFETY" on page 12.


 **ATTENTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

7. Stand at the back of the machine.

### Adjusting the height of the squeegee body:


8. Adjust the height of the rubber blade in relation to the floor by loosening or tightening the knobs (5) (**Fig.7**).

 **N.B.:** By decreasing the distance between the squeegee support and the floor, the rubber blades present in the squeegee's body move closer to the floor.

 **N.B.:** the right-hand and left-hand knobs must be rotated the same number of times, so that the squeegee is parallel to the floor when it is working.

### Adjusting the tilt of the squeegee body:

9. Loosen the lock nut (6) on the squeegee tilt adjustment screw (7) (**Fig.7**).
10. To adjust the tilt of the squeegee body rubber blades in relation to the floor, tighten or loosen the screw (7) until the blades are bent outwards by about 30° in relation to the floor, in an even manner along their entire length.

 **N.B.:** Turning the screw (7) clockwise will increase the tilt of the squeegee body towards the rear of the machine, turn in the opposite direction to rotate the squeegee towards the front of the machine.

11. As soon as the adjustment has been made, tighten the lock nut (6) on the squeegee tilt adjustment screw (7) (**Fig.7**).

## CHOOSING AND USING BRUSHES

### POLYPROPYLENE BRUSH (PPL)

Used on all types of floors. Good resistance to wear and tear, and hot water (no greater than 50°C.). PPL is non-hygroscopic and therefore retains its characteristics even 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 floor pad to be perfectly centred and held without any risk of it becoming detached. This type of pad holder is recommended above all for machines with more than one brush, where the centring of the abrasive discs is difficult.

### RED PAD

Suitable for frequent use on relatively clean floors. Even cleans without water, and polishes by removing marks.

### GREEN PAD

Suitable for removing surface layers of wax and for preparing the flooring for subsequent treatments. For wet use.

### BLACK PAD

Suitable for wet scraping heavy layers of wax. Removes the old finish, and eliminates burrs in concrete.

MACHINE	NO. OF BRUSHES	CODE	TYPE OF BRISTLES	Ø BRISTLES	NOTES
E75 R PLUS	2	427715	PPL	0.3	DISC BRUSH Df=380mm De=390mm (LIGHT BLUE)
	2	427716	PPL	0.6	DISC BRUSH Df=380mm De=390mm (WHITE)
	2	427717	PPL	0.9	DISC BRUSH Df=380mm De=390mm (BLACK)
	2	427719	ABRASIVE	1	DISC BRUSH Df=380mm De=390mm (GREY)
	2	427718	-	-	PAD HOLDER Df=380mm (WITH CENTER LOCK)
E85 R PLUS	2	430696	PPL	0.3	DISC BRUSH Df=410mm De=430mm (LIGHT BLUE)
	2	430697	PPL	0.6	DISC BRUSH Df=410mm De=430mm (WHITE)
	2	430698	PPL	0.9	DISC BRUSH Df=410mm De=430mm (BLACK)
	2	430699	ABRASIVE	1	DISC BRUSH Df=410mm De=430mm (GREY)
	2	431122	-	-	PAD HOLDER Df=410mm (WITH CENTER LOCK)

## DISPOSAL



Dispose of the machine in accordance with the waste disposal regulations in force in the country in which the machine is being used.

## TROUBLESHOOTING

This chapter lists the most common problems linked with the use of the machine. If you are unable to resolve the problems with the information given here, please contact your nearest assistance centre.

PROBLEM	POSSIBLE CAUSE	SOLUTION
THE MACHINE DOES NOT START	The main switch is set to "0".	Make sure that the main switch is set to "I".
	An alarm message has appeared on the control display.	Stop the machine immediately, and contact a specialised service centre.
	The batteries are not correctly connected to each other.	Rotate the recovery tank to the maintenance position and check that the batteries are properly connected to each other; if not, see paragraph "CONNECTING THE BATTERIES TO THE MACHINE'S ELECTRICAL SYSTEM" on page 13.
	The batteries are not correctly connected to the machine's electrical system.	Rotate the recovery tank to the maintenance position and check that the batteries are properly connected to the machine's electrical system; if not, see paragraph "CONNECTING THE BATTERIES TO THE MACHINE'S ELECTRICAL SYSTEM" on page 13.
	The battery charge level is low.	Perform a complete charge cycle; see paragraph "RECHARGING THE BATTERIES" on page 14.
THE BATTERIES ARE NOT CHARGED CORRECTLY	The connector of the battery charger cable is not properly inserted in the battery connector.	Stop the machine immediately, and contact a specialised service centre.
	The plug on the battery charger's power cable is not correctly inserted into the electrical outlet.	Check that the battery charger power supply cable plug is connected to the mains socket.
	The characteristics of the mains power supply do not correspond to those required by the battery charger.	Check that the characteristics in the battery charger plate are the same as those of the mains supply.
	The LEDs of the battery charger blink repeatedly.	Referring to the battery charger use and maintenance manual, check the meaning of the flashing signals that the battery charger emits during the battery recharge stage.
THE MACHINE HAS A VERY LOW WORK AUTONOMY	Check the battery charge level, check the symbol on the command display.	If the battery charge level is critical, perform a complete charge cycle - see "RECHARGING THE BATTERIES" on page 14.
THE MACHINE DOES NOT MOVE	The machine does not start.	Read the section THE MACHINE DOES NOT START.
	There is an issue on the drive pedal.	Stop the machine immediately, and contact a specialised service centre.
INSUFFICIENT DETERGENT SOLUTION ON THE BRUSHES	The quantity of detergent solution in the water system is not sufficient for the work to be carried out.	Check that the amount of detergent solution present in the machine's water system is sufficient for the work to be carried out.
	Detergent solution filter obstructed.	Check that the detergent solution filter is not clogged; if it is, clean it. See "CLEANING THE WATER SYSTEM FILTER" on page 29.
THE MACHINE DOES NOT CLEAN CORRECTLY	The machine does not start.	Read the section THE MACHINE DOES NOT START.
	Not enough detergent solution comes out.	Read the section INSUFFICIENT DETERGENT SOLUTION ON THE BRUSHES.
	The brushes have not been inserted correctly in the machine.	Check that the brushes are correctly inserted inside the machine (see paragraph "ASSEMBLING THE BRUSH HEAD BODY BRUSHES" on page 16).
	The type of brush used is not suitable for the dirt to be cleaned.	Check that the brushes on the machine are adequate for the work to be carried out, contact a technician from the specialist assistance centre for advice.
	The brush bristles are excessively worn.	Check the state of wear of the brush and, if necessary, replace it. See paragraph "REPLACING THE BRUSH HEAD BODY BRUSHES" on page 30.

PROBLEM	POSSIBLE CAUSE	SOLUTION
THE SQUEEGEE DOES NOT DRY PERFECTLY	The vacuum unit is obstructed.	Check that the squeegee is free from obstructions. See paragraph "CLEANING THE SQUEEGEE BODY" on page 27.
		Check that the vacuum tube is free from obstructions. See paragraphs "CLEANING THE SQUEEGEE BODY" on page 27 and "CLEANING THE VACUUM TUBE" on page 29).
		Check that the recovery tank filter-float is free from obstructions. See paragraph "CLEANING THE RECOVERY TANK FILTER-FLOAT" on page 27.
	The cap on the recovery tank drainage tube is not properly positioned.	Check that the cap on the recovery tank drainage tube is positioned properly.
EXCESSIVE FOAM PRODUCTION	The recovery tank lid is not positioned correctly.	Check that the recovery tank lid is properly positioned on the machine.
	The detergent being used is not suitable.	Check that a low foam detergent has been used. If necessary, add a small quantity of anti-foam liquid to the recovery tank.
THE MACHINE DOES NOT VACUUM CORRECTLY	The floor is not very dirty.	Dilute the detergent more.
	The recovery tank is full.	Empty the recovery tank, see paragraph "DRAINING THE RECOVERY TANK" on page 27.
	The vacuum device is obstructed	Read the section THE SQUEEGEE DOES NOT DRY PERFECTLY.



## UKCA DECLARATION OF CONFORMITY

UK  
CA

The undersigned manufacturer:  
COMAC-FIMAP (Shanghai) Co., Ltd.

科迈柯菲迈普（上海）机械有限公司

Through the trustee appointed under the European Community

**Industrial Cleaning Equipment Ltd.**

declares under its sole responsibility that the products

### FLOOR SCRUBBING MACHINES

**model E75 R PLUS; E85 R PLUS**

comply with the provisions of 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

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Chapel Lane, 2022/03/18

**Industrial Cleaning Equipment Ltd.**

Legal representative

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## **FLOOR SCRUBBING MACHINES**

### **model E75 R PLUS CB; E85 R PLUS CB**

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- 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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