R-SCRUB ULTRA C



PROFESSIONAL SCRUBBING MACHINES

USE AND MAINTENANCE MANUAL

ORIGINAL INSTRUCTION DOC. 10068695 - Ver. AA - 02-2017

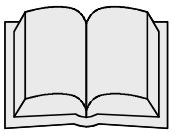
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Symbols used in the manual



Open book symbol with an "i":
Indicates the need to consult the instruction manual.



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



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



Warning symbol:
Indicates danger of gas exhalation and leakage of corrosive liquids.



Warning symbol:
Indicates operator should take safety measures to avoid damage to limbs.



Warning symbol:
Indicates the danger of fire.
Do not go near with free flames.



Warning symbol:
Indicates that the packed product should be handled with suitable lifting means that comply with the legal requirements.



Disposal symbol:
Carefully read the sections marked with this symbol for the disposal of the machine.

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On consignment of the machine

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

Introductory comment

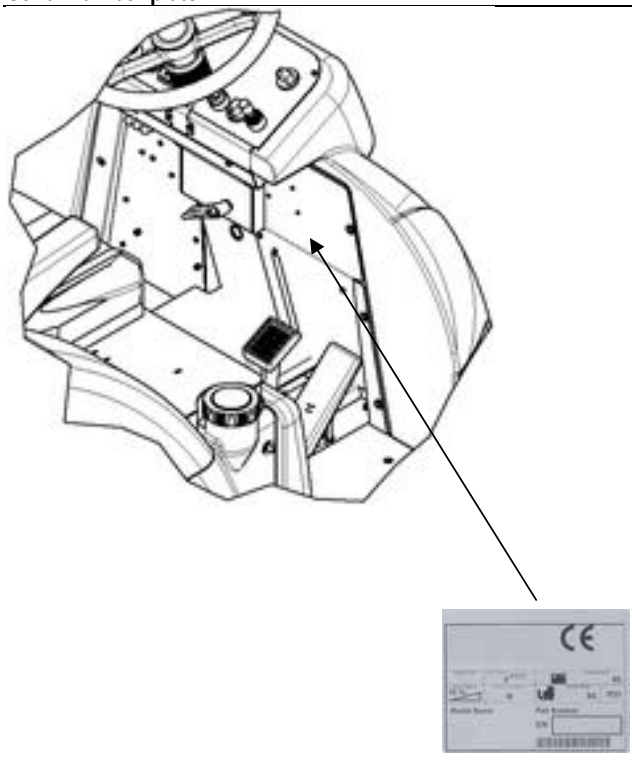
The R-SCRUB ULTRA C are floor scrubbing machines which, by means of the mechanical action of the rotating brush and the chemical action of a water/detergent solution, can clean any type of flooring. As they advance, they also collect any removed dirt as well as the detergent solution not absorbed by the floor.
The machine must only be used for this purpose. Even the best machines will only work well if used correctly and kept in good working order. We therefore suggest you read this instruction booklet carefully and read it again whenever difficulties arise while using the machine. If necessary, remember that our customer assistance service (organised in collaboration with our dealers) is always available for advice or direct intervention.

Intended use

The scrubbing machine is designed exclusively for the professional cleaning of surfaces and floors in industrial, commercial and public environments. The machine is only suitable for use in closed (or at least covered) places.

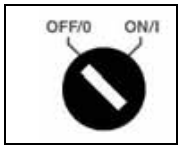
The machine is not suitable for use in the rain, or under water jets. It is FORBIDDEN to use the machine in places with a potentially explosive atmosphere, for picking up dangerous dusts or inflammable liquids. In addition, it is not suitable as a means of transport for people or objects.

Serial number plate

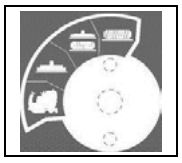


TECHNICAL DESCRIPTION	UM	R-SCRUB ULTRA C
Working width (without side brush)	mm	970
Working width (with side brush)	mm	1080
Squeegee width	mm	1265
Working capacity, up to	m^2/h	8640
Side disc brush	No. / ∅ mm	1 / 340
Side disc brush rotations	rpm	218
Side disc brush motor	V / W	36 / 650
Maximum pressure on the disc brush	kg	27.5
Cylindrical brush (front)	∅ mm	150
Cylindrical brush (rear)	∅ mm	280
Front cylindrical brush rotations	rpm	960
Rear cylindrical brush rotations	rpm	520
Cylindrical brush motor	V / W	36/2000
Maximum pressure on the cylindrical brushes	kg	55
Traction motor	V / W	36/2000
Traction wheel (diameter / width)	∅ mm	310 x 100
Maximum forward speed	km/h	8
Maximum gradient with full load	%	10%
Vacuum motor	No./(V/W)	2/(36/670)
Suction vacuum	mbar	190
Rear elastic wheels (diameter / width)	∅ mm	370 x 140
Solution tank	l	280
Recovery tank	l	285
Detergent tank (CDS version only)	l	15
Steering diameter	mm	3420
Machine length	mm	2075
Machine height	mm	1569
Machine width (without squeegee)	mm	1192
Battery compartment (w x L x h)	mm	880x600x450
Rated battery voltage	V	36
Battery weight (max)	kg	510
Machine weight (empty and without batteries)	kg	830
Gross weight in running order (machine + batteries + water + operator)	kg	1200
Sound pressure level (ISO 11201)	dB (A)	-

SYMBOLS USED ON THE MACHINE



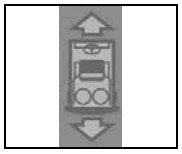
Symbol for the main switch or key switch (only on versions with a battery-operated motor)
Used on the instrument panel, to indicate the key switch for machine operation on (ON-I) or off (OFF-0)



Base/squeegee operating symbols
Used to indicate the I-DRIVE programs selector



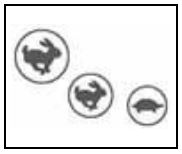
Symbol denoting pressure applied to the brushes
Used to indicate the knob for increasing the brush pressure



Label showing the direction of movement - forward or reverse
Used to indicate the direction of the machine



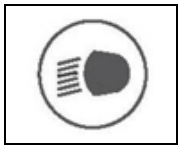
Symbol denoting acoustic alarm
Indicates the acoustic alarm button



Symbol denoting forwards and backwards speed selector
Used on the instrument panel, to indicate the speed of the forwards or backwards movements of the machine



Side brush movement symbol
Used on the instrument panel, to indicate the side brush lever. Sideways movements of the lever correspond with sideways movements of the side brush



Symbol denoting front/rear lights
Used on the instrument panel, to indicate the lights control switch

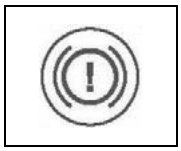


Symbol denoting ammetric check of the brush motor
Used on the instrument panel, for the red indicator light showing the brush motor is under pressure (force)

SYMBOLS USED ON THE MACHINE



Symbol denoting incorrect functioning
Used on the instrument panel to indicate the red warning light showing incorrect machine functioning



Symbol denoting brake
Used on the instrument panel to indicate the red warning light showing the absence of oil in the work braking system



Symbol denoting brake
Used on the instrument panel to indicate the red warning light showing parking brake on



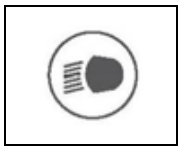
Symbol denoting solution tank empty
Used on the instrument panel to indicate the red warning light showing a low level of water/detergent solution in the solution tank



Symbol denoting full recovery tank
Used on the instrument panel to indicate the red warning light showing that the dirty water level has reached a critical level



Symbol indicating main switch is on
It is used on the instrument panel to indicate the green warning light showing that the main key switch is in operation



Symbol indicating lights are on
Used on the instrument panel to indicate the green warning light showing that the front lights are on



Symbol denoting solenoid valve open
Used on the instrument panel to indicate the green light showing operation of the solenoid valve

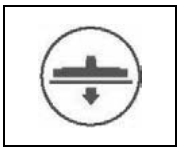


Symbol indicating brush motor in operation
Used on the instrument panel to indicate the green warning light showing the brush motor is in operation

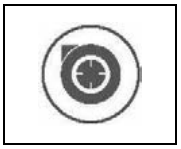
SYMBOLS USED ON THE MACHINE



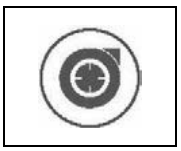
Symbol for sideways movements of the side brush
Used on the instrument panel to indicate the green warning light, showing that the side brush has returned to its normal position



Symbol indicating movement of the squeegee unit
Used on the instrument panel to indicate the green warning light showing the brush head has reached its operating position



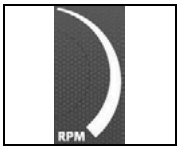
Symbol denoting left-hand suction motor
Used on the instrument panel to indicate the green warning light showing that the left-hand suction motor is in operation



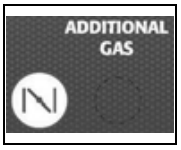
Symbol denoting right-hand suction motor
Used on the instrument panel to indicate the green warning light showing that the left-hand suction motor is in operation



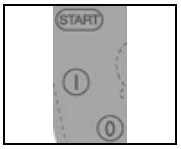
Symbol of main switch ON (only on versions with internal combustion engine)
Used on the front right-hand panel to indicate the green warning light, showing that the main key switch is ON



Symbol for the combustion engine rpm potentiometer (only on versions with internal combustion engine)
Used on the front right-hand panel to indicate the knob for commanding the potentiometer (and hence for adjusting the combustion engine rotations)



Starter button symbol (only on versions with internal combustion engine with LPG)
Used on the front right-hand panel to indicate the button that injects LPG in the combustion engine carburettor

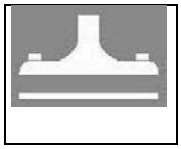


Symbol for the main switch or key switch (only on versions with internal combustion engine)
Used on the instrument panel, to indicate the key switch for machine operation on (I) or off (O)



Symbol for the switch used to select the type of fuel (only on versions with internal combustion engine with LPG)
Used on the front right-hand panel to indicate the switch for selecting the type of fuel to be injected into the combustion engine carburettor

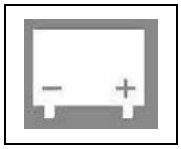
SYMBOLS USED ON THE MACHINE



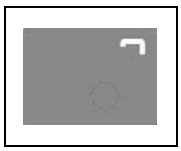
Label warning that squeegee should be cleaned every day



Label warning that recovery tank and solution tank should be cleaned every day



Symbol indicating the position for inserting the battery charger connector (only on battery versions)



Symbol denoting tap regulation
Used on the central panel of the steering cover, to indicate the tap lever to regulate the water



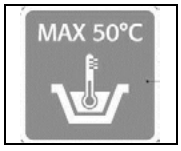
Label warning operator to take safety measures to avoid damage to limbs



Label indicating the position of the suction motor thermal circuit breakers



Label indicating the position of the quick release coupling for filling the solution tank



Label indicating the maximum temperature of the water used to fill the solution tank

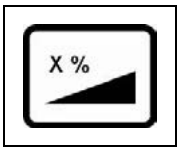


Label indicating the position of the solution tank drain pipe

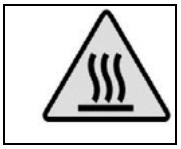
SYMBOLS USED ON THE MACHINE



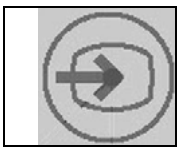
Label indicating the position of the recovery tank drain pipe



Indicates the maximum gradient



Indicates the risk of burns due to the hot surface



Indicates the display service screen confirmation button



Indicator showing battery charge level on the upper line and hour meter on the lower line



Indicator showing the type of hour meter (total) on the upper line and the type of service (none) on the lower line



Indicator showing the type of technology of the batteries used (lead)

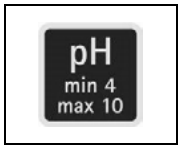


Label with instructions for the use of standard or concentrated detergents (CDS system only)

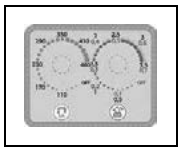


Label with warnings on the type of detergent to use (CDS system only)

SYMBOLS USED ON THE MACHINE



Label with Ph value of the detergent to use (CDS system only)



Symbol indicating regulation of water and detergent quantity (CDS system only)
Used on the left-hand panel, to indicate the knobs for adjusting the percentage level of detergent dissolved in the water, and the level of water distributed on the brushes



Detergent symbol (CDS system only)
Used on the detergent tank cap, to indicate the presence of chemical substances

GENERAL SAFETY REGULATIONS

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

WARNING:

- Read the labels on the machine carefully. Do not cover them for any reason and replace them immediately if they become damaged.
- The machine must be used exclusively by authorised and trained personnel.
- The machine is designed for dry use only.
- Do not use the machine on surfaces with an inclination greater than the one shown on the plate.
- The machine is not suitable for cleaning rough or uneven floors. Do not use the machine on slopes.
- If the power supply cable of the battery charger is damaged, contact an Authorised service centre immediately.
- In the event of danger, quickly intervene on the handle located on the battery connector.
- For all maintenance interventions, switch off the machine and disconnect the battery connector and/or the power supply cable.
- Children must be supervised to ensure they do not play with the device.
- During the working of the machine, pay attention to other people and especially to children.
- Only use the brushes supplied with the machine, or those specified in the "CHOOSING AND USING THE BRUSHES" paragraph of the instruction manual. The use of other brushes could compromise safety levels.

WARNING:

- The machine is not suitable for use by children and persons with reduced physical, mental and sensory capabilities, or people who lack experience and knowledge.
- The machine must not be used or stored outdoors, in damp conditions or directly exposed to rain.
- The storage temperature must be between -25°C and +55°C; do not store outdoors in damp conditions.
- Conditions of use: °°room temperature between 0°C and 40°C with relative humidity between 30 and 95%.
- The socket for the machine's power cable (electric version) or for the battery charger power cable (battery version) must be correctly earthed.
- Adapt the speed to the adhesion conditions.
- Do not use the machine as a means of transport.
- The machine does not cause harmful vibrations.
- Do not use the machine in an explosive atmosphere.
- Do not vacuum inflammable liquids.
- Do not use the device to collect dangerous powders.
- Do not mix different types of detergent as this may produce harmful gases.
- The machine is not suitable for cleaning carpets.
- Do not place any liquid containers on the machine.
- Avoid working with the brushes when the machine is standing still, so as not to damage the floor.
- In the event of a fire, use a powder extinguisher. Do not use water.
- Do not knock against shelving or scaffolding, where there is a danger of falling objects. The operator must always be equipped with the appropriate safety devices (gloves, shoes, helmet, goggles, etc.).
- The machine is designed to carry out the washing and drying operations simultaneously. Different operations should only be carried out in areas where the passage of unauthorised persons is prohibited. Signal the presence of damp floors with suitable signs.
- If the machine does not work properly, check this is not caused by failure to carry out routine maintenance. Otherwise, ask for intervention of the authorised technical assistance centre.
- If you need to replace any components, request the ORIGINAL spare parts from an Authorised dealer and/or Retailer.
- Restore all electrical connections after any maintenance interventions.
- Before using the machine, check that all the hatches and covers are positioned as shown in this Use and

Maintenance Manual.

- Do not remove the guards that can only be removed with the aid of tools, except for maintenance work (see the relevant paragraphs).
- Do not wash the machine with direct water jets or with pressurised water, nor with corrosive substances.
- To prevent scaling in the solution tank filter, do not fill the tank with detergent solution many hours before using the machine.
- Do not use acid or basic solutions that could damage the machine and/or harm people.
- Have the machine checked by an authorised technical assistance centre every year.
- When disposing of consumable materials, observe the laws and regulations in force.
- When your machine has reached the end of its long working life, dispose of the materials it contains (especially oils, batteries and electronic components) in an appropriate manner, taking into account that the machine itself was constructed using 100% recyclable materials.
- The batteries must be removed from the machine before its disposal. The batteries must be disposed of in a safe manner, fully observing the laws and regulations in force.

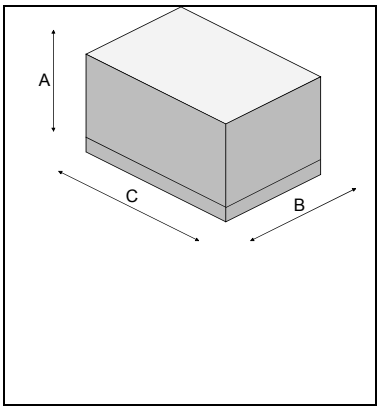
MACHINE PREPARATION

1. HANDLING THE PACKAGED MACHINE

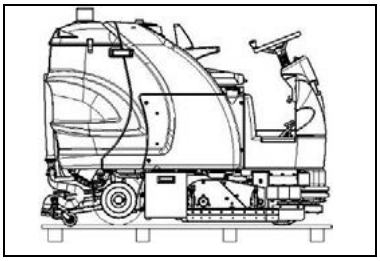
The machine is contained in specific packaging with a pallet for the handling with fork trucks. The packages cannot be placed on top of each other.
The total weight of the machine with packaging is 930kg (without batteries).

The dimensions of the packaging is as follows:

A: 1800 mm
B: 1340 mm
C: 2150 mm



1. Remove the outer packaging
2. The machine is fixed to the pallet with wedges which block the wheels
3. Remove the wedges
4. Use a chute to get the machine down from the pallet, pushing it backwards. Do not assemble the rear squeegee before unloading the machine, and avoid violently jolting the brush base. To assemble the squeegee, read the “ASSEMBLING THE SQUEEGEE” paragraph



5. Keep the pallet for any future transport needs



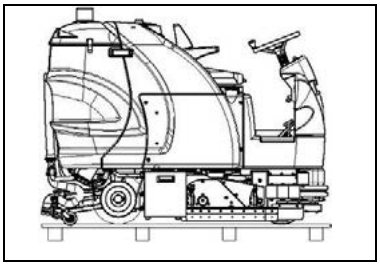
WARNING: If the product is delivered in cardboard containers, handle the packed product with suitable lifting means that comply with the legal requirements.



WARNING: During this operation, check there are no people or objects near the machine.

2. HOW TO MOVE THE MACHINE

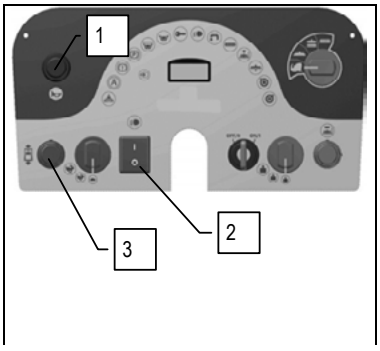
1. Make sure the solution tank and the recovery tank are empty
2. Make sure that the detergent can is empty (CDS version)
3. Check that the brush head and squeegee are in the raised position
4. Place it on a pallet using a chute
5. Check that the key switch is in the "0" position and remove the key
6. Engage the parking brake
7. Secure the machine to the pallet using wooden wedges



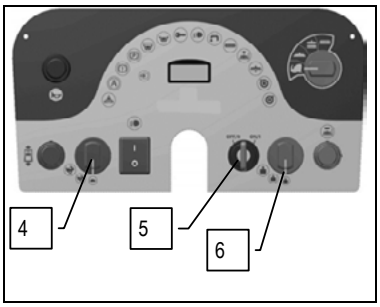
3. INSTRUMENT PANEL COMPONENTS

The instrument panel components are identified as follows:

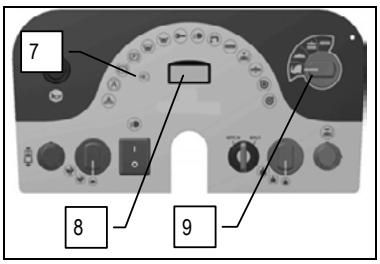
1. Horn button
2. Toggle switch for turning the machine lights on/off
3. Knob to control direction of machine movement (forward/reverse)



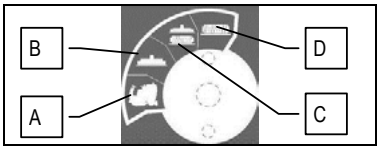
4. 3-way switch to set working speed
5. Main key switch (battery versions)
6. 3-way switch to set force applied to brushes during operation



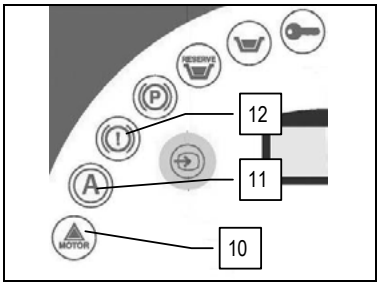
7. Display service confirmation button
8. Battery level / hour-counter display
9. Working program adjustment switch, I-Drive device



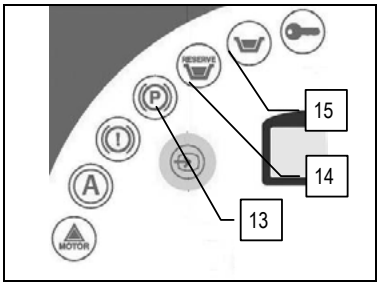
Choose the desired operating program with the I-Drive device:
A. Transfer: movement of the machine without working
B. Drying: use the squeegee only
C. Washing / Drying: use both the brushes and the squeegee
D. Washing only: use brushes only



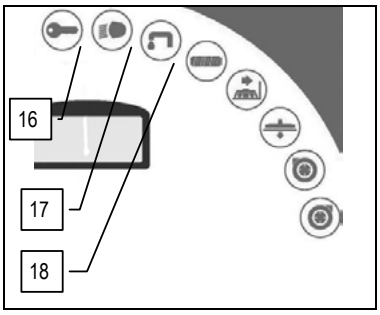
10. Red warning light indicating that the motor brush head is working under pressure (force)
11. Red warning light indicating that there is a malfunction in the machine traction
12. Red warning light indicating low brake oil level (down to reserve)



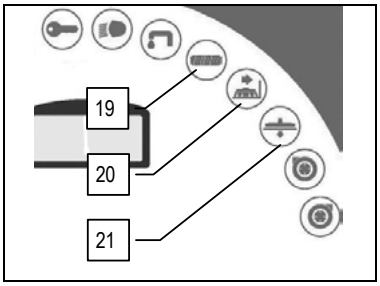
13. Red warning light indicating that the parking brake is on
14. Red warning light indicating that the level of detergent solution (version without CDS) or the water level (version with CDS) is low (down to reserve)
15. Red warning light indicating that the level of dirty water in the recovery tank has reached a critical level for correct operation of the suction motors



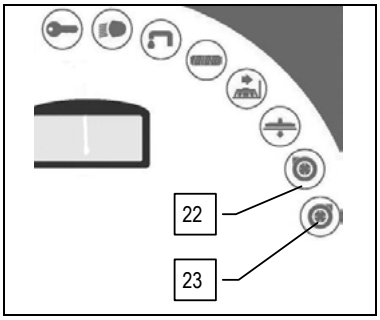
16. Green warning light indicating that the main switch of the machine is active
17. Green warning light indicating that the machine headlights are on
18. Green warning light indicating that the solenoid valve is in operation



19. Green warning light indicating that the brush head motor is in operation
20. Green warning light indicating that the side brush has returned to its normal position
21. Green warning light indicating that the squeegee unit has reached its operating position



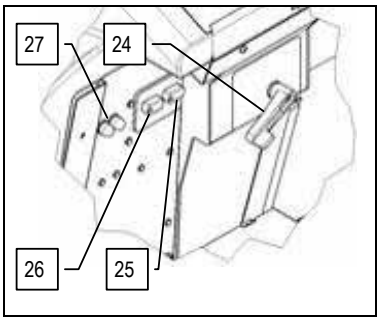
22. Green warning light indicating that the left-hand suction motor is in operation
23. Green warning light indicating that the right-hand suction motor is in operation



4. STEERING COLUMN COMPONENTS

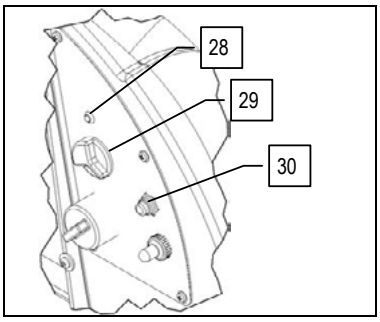
The components of the steering column (left side) are as follows:

24. Solution/water control lever
25. Detergent adjustment knob (CDS version)
26. Water adjustment knob (CDS version)
27. Safety thermal circuit-breakers on the suction motors, and one on the side brush motor

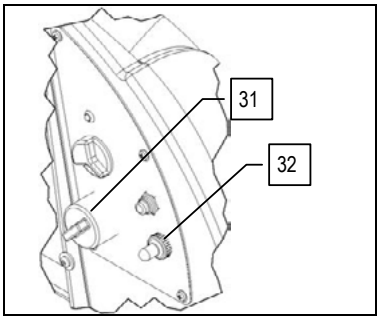


The components of the steering column (right side) are as follows:

28. Green warning light indicating that the main switch of the machine is active (on versions with combustion engine)
29. Knob for adjusting the combustion engine rpm (on versions with combustion engine)
30. Button for injecting LPG into the combustion engine carburettor at switch-on (on versions with combustion engine)



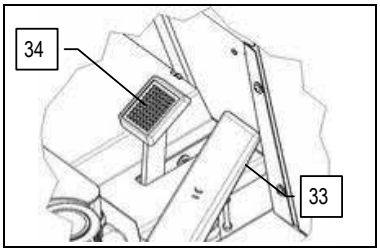
31. Main key switch (on versions with combustion engine)
32. 2-way switch for selecting the type of fuel to be injected into the combustion engine carburettor (on versions with combustion engine)



5. FOOTBOARD COMPONENTS

The components at the front right of the footboard are identified as follows:

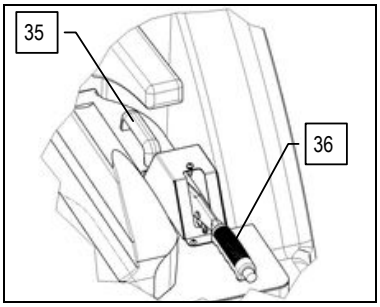
33. accelerator pedal
34. Brake pedal



6. SEAT MOUNTING PLATE COMPONENTS

The seat mounting plate components are identified as follows:

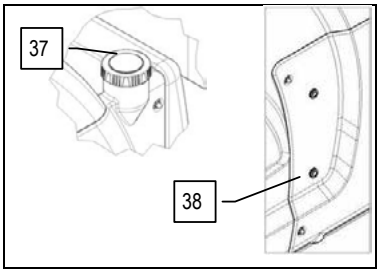
35. Handle for raising seat plate
36. Parking brake lever



7. MACHINE'S SIDE COMPONENTS

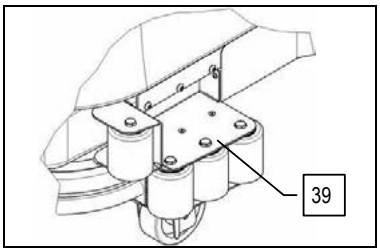
The components on the right-hand side of the machine are identified as follows:

37. Detergent filler cap (CDS version)
38. Detergent level warning light (CDS version)



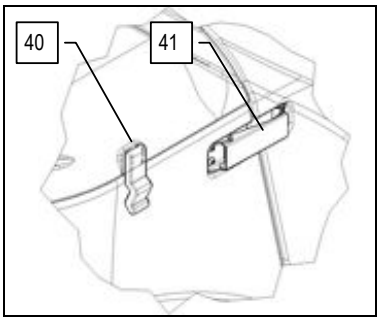
The components on the front/side of the machine are identified as follows:

39. Step to assist getting on to machine



The components on the rear/side of the machine are identified as follows:

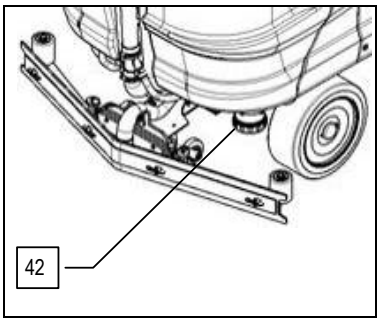
40. Suction cover release hinge
41. Recovery tank release hinge



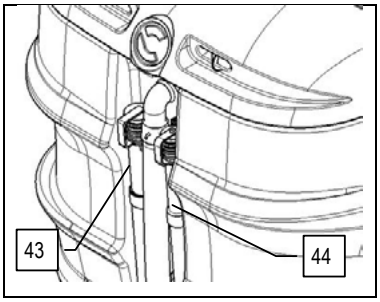
8. MACHINE'S REAR COMPONENTS

The rear components of the machine are identified as follows:

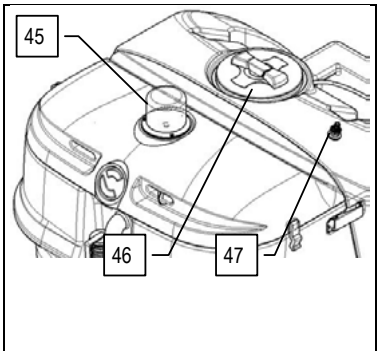
42. Recovery tank discharge cap



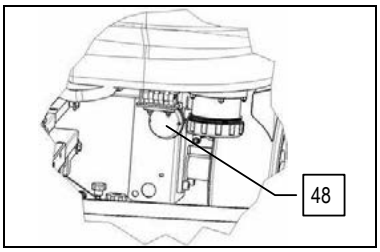
43. Recovery tank drain pipe
44. Solution tank drain pipe



45. Flashing warning light
46. Water/detergent solution filler cap
47. Rapid refill kit (optional)



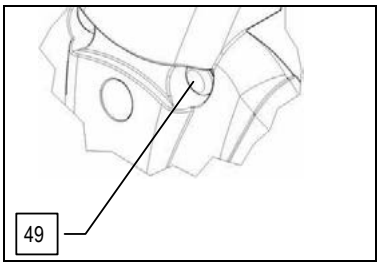
48. Rear lights



9. MACHINE'S FRONT COMPONENTS

The front components of the machine are identified as follows:

49. Headlights

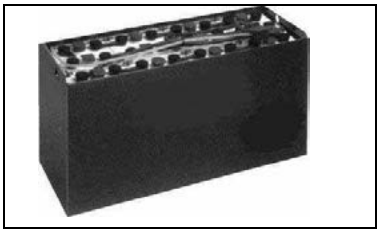


10. TYPE OF BATTERY

To power the machine it is necessary to use:

- liquidelectrolyte lead traction batteries;
- sealed traction batteries with gas recombination or gel technology.

OTHER TYPES MUST NOT BE USED.
The batteries must meet the requirements laid out in the norms: CEI EN 60254-1:2005-12 (CEI 21-5) + CEI EN 60254-2:2008-06 (CEI 21-7).
For a good operating performance, we suggest the use of two 18V 480 Ah battery cases.



11. TYPE OF STARTER BATTERY

As a starter battery, you are advised to use a 12V/35 Ah C5 battery.

OTHER TYPES MUST NOT BE USED.

The battery must meet the requisites indicated in standards CEI EN 50342, CEI EN 60095-2 and CEI EN 60095-4.

12. BATTERY MAINTENANCE AND DISPOSAL

For maintenance and recharging, comply with the instructions provided by the battery manufacturer.
Particular attention must be paid when choosing the battery charger, if not supplied, since there are different kinds according to the type and capacity of the battery.
When the battery reaches the end of its working life, it must be disconnected by expert, trained personnel, then lifted (using the grips and suitable lifting devices) to remove it from the battery compartment. DEAD BATTERIES ARE CLASSIFIED AS DANGEROUS WASTE AND MUST BE DELIVERED TO THE AUTHORISED BODIES FOR CORRECT DISPOSAL.



WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.



WARNING: You are advised to only lift and move the batteries with lifting and transportation means suitable for the specific weight and size.

13. MAINTENANCE AND DISPOSAL OF THE COMBUSTION ENGINE

WARNING: For the maintenance and disposal of the combustion engine, observe the instructions given by the engine manufacturer (for maintenance) and current environmental hygiene norms (for disposal).

14. MAINTENANCE AND DISPOSAL OF THE LPG CYLINDER

WARNING: For the maintenance and disposal of the LPG cylinder, observe the instructions given by the cylinder manufacturer (for maintenance) and current environmental hygiene norms (for disposal).

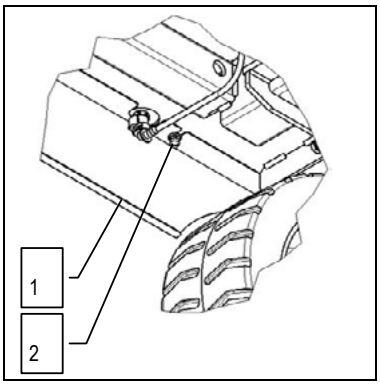
15. HANDLING AND INSERTING THE BATTERIES (BATTERY VERSION)

The batteries must be housed in the special compartment beneath the seat mounting plate. They should be handled using lifting equipment that is suitable in terms of both weight and method of lifting. They must also satisfy the requirements of Standard CEI 21-5. The dimensions of the battery compartment are: 879 mm x 599 mm x H450 mm.

WARNING: For battery maintenance and daily recharging, you must carefully follow the instructions provided by the manufacturer or retailer. All installation and maintenance operations must be carried out by specialised personnel.

To insert batteries proceed as follows:

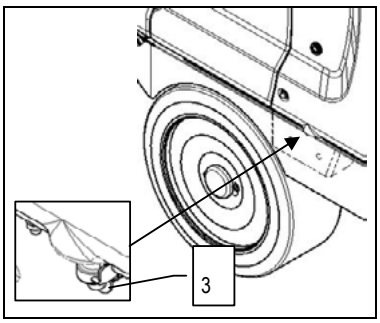
1. Immobilise the machine with the parking brake
2. Make sure the main machine switch is in the “0” position
3. Use a suitable tool to remove the right-hand carter (1) by unscrewing the nuts (2)



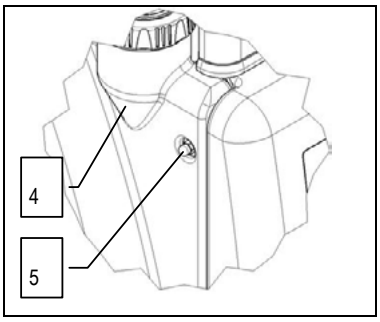
WARNING: You are advised to use airtight batteries only, to avoid the leakage of acids!

WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.

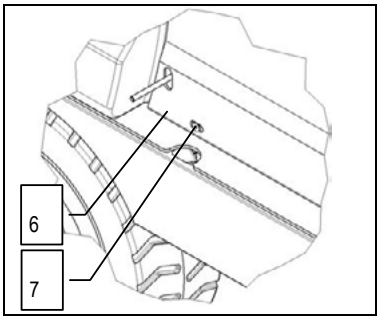
4. Disconnect the quick release coupling (3) located behind the side cover, to prevent damage to the coupling itself (CDS version)



5. Remove the detergent tank (4) by unscrewing the nuts (5)



6. Remove the battery compartment cover (6) by unscrewing the nuts (7)
7. Grip the handle at the side of the seat to raise the seat mounting plate, move it to the end of travel stop
8. Place the batteries inside the battery compartment using transport and handling equipment suitable for the weight and size of the batteries
9. Place the batteries in the battery compartment with the "+" and "-" poles opposite each other





WARNING: You are advised to only lift and move the batteries with lifting and transportation means suitable for the specific weight and size.

16. CONNECTING THE BATTERIES AND BATTERY CONNECTOR (BATTERY VERSION)

1. Connect the batteries in series to the "+" and "-" poles using the supplied jumper cable
2. Connect the battery connector cable to the "+" and "-" poles in order to obtain a voltage of 36V at the connection terminals
3. Connect the battery connector cable to the machine connector



WARNING: You are advised to have the electric connections made by a qualified, ICE-trained technician.



WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.

17. CONNECTING THE BATTERY CHARGER (BATTERY VERSION)

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

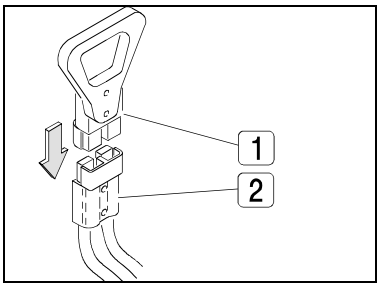


WARNING: Never leave the batteries completely discharged, even if the machine is not being used. Check the battery charger is suitable for the batteries installed, in terms of both capacity and type.

To connect the battery charger you must:

1. Move the machine near to the battery charger
2. Make sure that the key switch in the “0” position
3. Engage the parking brake
4. Grip the handle at the side of the seat to raise the seat mounting plate
5. Disconnect the electrical system connector (1) from the battery connector (2)
6. Connecting the battery charger cable connector

The coupling connector of the battery charger is supplied inside the bag containing this instruction booklet, and must be fitted to the battery charger cables as shown in the instructions.



WARNING: This process must be carried out by qualified personnel. Incorrect connection of the connector may cause machine malfunctions.

7. Connect the rewired cable to the external battery charger
8. After the charging cycle is complete, the battery connector (2) must be reconnected to the electrical system connector (1)

WARNING: Carefully read the use and maintenance instructions of the battery charger that is used for charging.

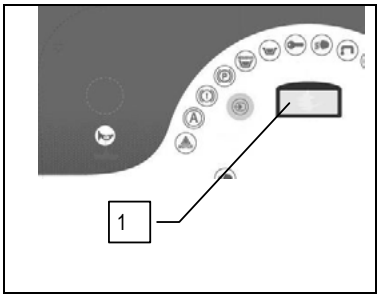
WARNING: Keep the seat mounting plate raised for the whole duration of the battery recharging cycle to allow gas fumes to escape.

WARNING: Danger of gas exhalation and leakage of corrosive liquids.

WARNING: Danger of fire: do not go near with free flames.

18. INDICATOR FOR BATTERY CHARGE LEVEL AND HOUR METER (BATTERY VERSION)

On the instrument panel of the machine there is a monitor (1) indicating (amongst other things) the battery charge status. If the upper line contains 8 light indicators, the battery charge level is 100%. If the edges of the indicators are flashing, this means the batteries are run down.

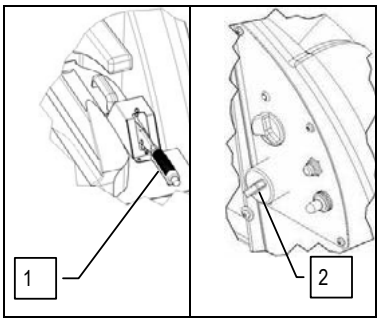


WARNING: A few seconds after the last indicator on the monitor has flashed, the brush motor will automatically switch off. With the remaining charge it is possible to complete the drying process before recharging.

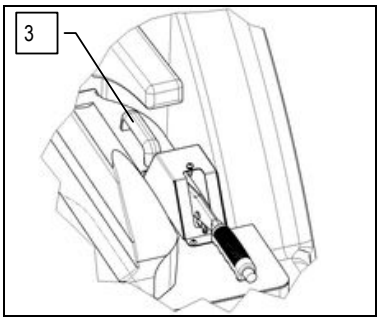
19. FILLING THE FUEL TANK (COMBUSTION ENGINE VERSION)

The machine is supplied without any fuel in the tank of the combustion engine. To fill the tank, proceed as follows:

1. Engage the parking brake (1)
2. Check the main machine switch (2) is in the “0” position. If this is not the case, turn the key by a quarter rotation to the right



3. Lift the handle (3) to access the motor compartment
4. Raise the seat mounting plate by turning it as far as it will go
5. With regard to the safe filling of the combustion engine fuel tank, you must scrupulously observe the indications given in the motor use and maintenance manual (supplied with the machine)



WARNING: The machine does not have a fuel level indicator, so you must always check the level before using it.

WARNING: Gasoline is highly inflammable and may explode.

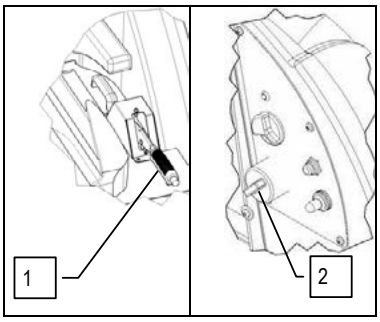
WARNING: Top up the fuel in a well-ventilated area, with the motor switched off. Do not smoke or take any unprotected flames or sparks near the motor while it is being filled, or in the area where the gasoline is stored.

WARNING: During the filling operation, be careful not to spill the fuel. Spilt fuel or fuel vapours could ignite. If any fuel is accidentally spilt, remove it thoroughly before switching on the motor.

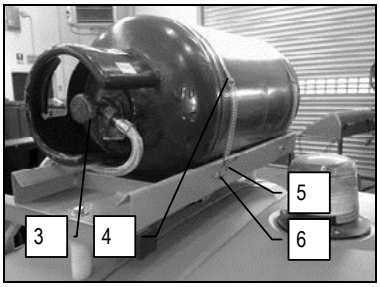
20. CONNECTING THE LPG CYLINDER (COMBUSTION ENGINE VERSION)

The machine is supplied without an LPG cylinder. To connect the cylinder to the machine, proceed as follows:

1. Engage the parking brake (1)
2. Check the main machine switch (2) is in the "0" position. If this is not the case, turn the key by a quarter rotation to the right

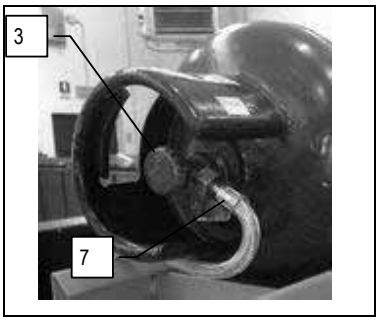


3. Position the cylinder as shown in the figure. If it is in the right place, the tap (3) will be on the left side of the machine
4. Fix the cylinder to its support by means of the straps (4). To do this, hook the spring (5) to the screw (6) on the support



WARNING: Use only cylinders measuring 300x600 (max Ø x height in millimetres) and weighing no more than 23kg.

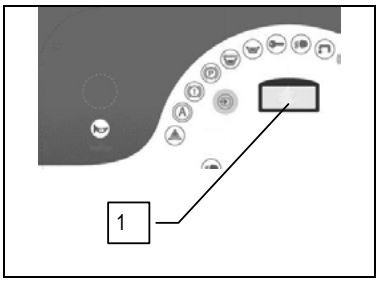
5. Tighten the tube (7) to the tap (3). Remember to insert the seal that's supplied with the cylinder
6. Fully open the cylinder tap (3)



21. HOUR METER (VERSION WITH COMBUSTION ENGINE)

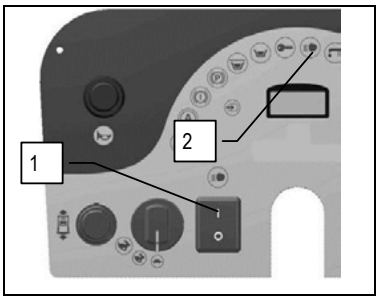
On the instrument panel of the machine there is a display (1) indicating the effective number of working hours. The display shows an upper line (consisting of 8 light indicators) and a lower line (indicating the hours and minutes of operation). The flashing ":" symbol indicates that the hour-counter is counting the machine functioning time.

WARNING: If the border of the light indicators is flashing, this means the combustion engine has not reached its standard work speed. As soon as it does reach this speed, the eight indicators will appear on the display.



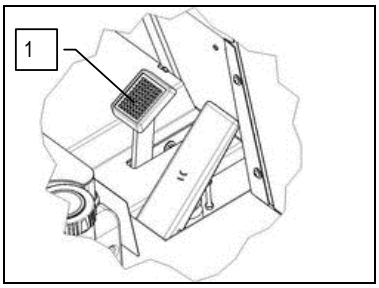
22. TURNING LIGHTS ON/OFF

The machine is equipped with two headlights and a rear spotlight, to help the operator to work in low light. To switch on the headlights simply turn the switch (1) located on the instrument panel to the "I" position and the green indicator light (2) on the instrument panel will immediately illuminate; the lights will remain on until you again operate the switch.

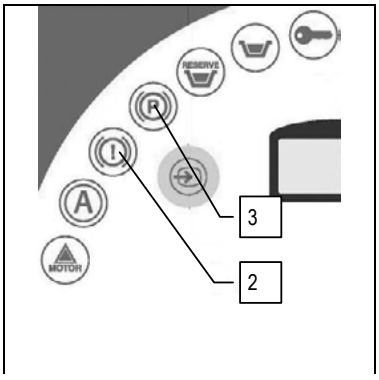


23. SERVICE BRAKE – PARKING BRAKE

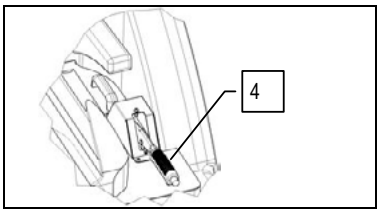
The machine has an electronic braking system. To brake, in normal conditions, just remove your foot from the accelerator pedal. If this service brake is working badly, or if necessary, activate the brake pedal (1) pushing it downwards.



If there is no oil in the braking system, the red warning light (2) on the instrument panel will come on; contact a technician to have the brake oil level checked.

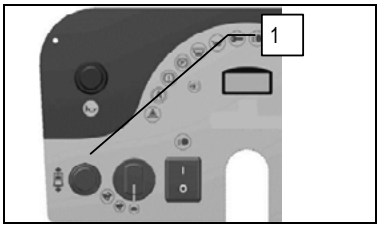


To engage the parking brake pull the lever (4) located near the seat, the red warning light (3) on the instrument panel will come on.

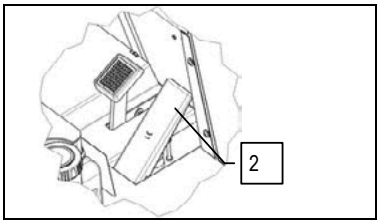


24. WORKING FORWARD SPEED

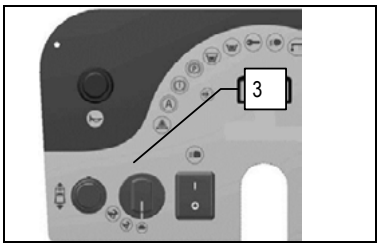
This machine is equipped with electronic traction control. To move the machine, after turning the ignition key to "ON - I", you must select the direction of movement by operating the switch (1) located on the instrument panel.



To set the machine in motion, simply depress the accelerator pedal (2); the machine speed is controlled by varying the pressure on the pedal.



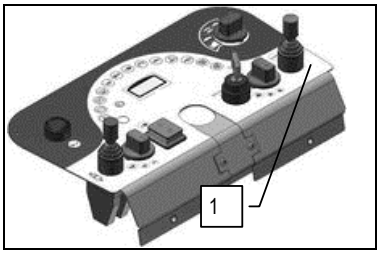
The machine has three pre-set speed levels, to select them simply operate the switch (3) on the instrument panel; the forward speed during operation depends on the amount of dirt to be removed and the type of floor to be cleaned.



WARNING! The reverse speed is lower than the forward speed to comply with current health and safety standards.

25. MOVEMENT OF THE SIDE BRUSH

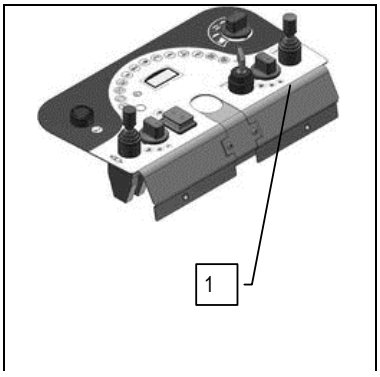
This machine is able to increase the working width by exploiting the right-hand side brush: just move the joystick (1) on the instrument panel to the right. To move it back into its original place, move the joystick (1) to the left.



26. INCREASING THE PRESSURE ON THE BRUSH HEAD UNIT

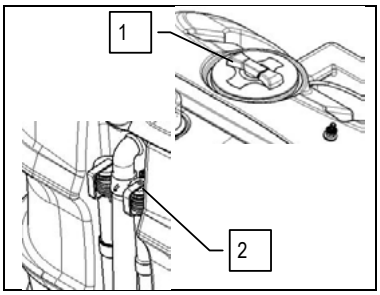
This machine can increase the pressure on the brushes via the joystick (1) located on the instrument panel; it has three different settings:

Step01: the weight exerted on the floor is 10kg;
Step02: the weight exerted on the floor is 45kg;
Step03: the weight exerted on the floor is 55kg.



WARNING! The pressure must be chosen according to the type of floor and the amount of dirt. Increasing the pressure results in greater wear and tear on the brushes and higher power consumption (for further information, read “CHOOSING AND USING THE BRUSHES”).

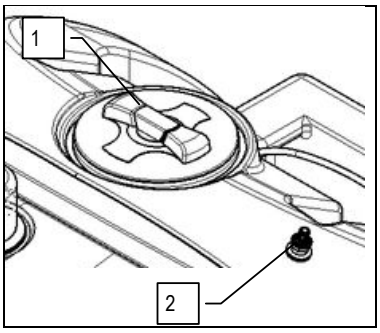
27. SOLUTION TANK



Remove the filler plug (1) at the back of the seat and check that the solution filter is installed properly. Check that the drain pipe cap (2) located at the rear of the machine is properly closed.

WARNING: The recovery tank must be completely empty each time the solution tank is filled.

28. FILLING THE DETERGENT/SOLUTION TANK (VERSION WITHOUT CDS)



Proceed as follows to fill the solution tank:

1. Check that the recovery tank is empty, otherwise empty it
2. Turn the main switch key anticlockwise to the "0" position
3. Engage the parking brake
4. Remove the filler cap (1) and check that the solution filter is fitted correctly
5. Fill it with clean water at a temperature not exceeding 50°C

It is possible to fill the tank without having to constantly watch the water level, using the optional rapid filling system (2); this system is fitted with a float to control overflow. The water pipe (previously modified) is inserted into the quick release coupling; remember to unscrew the cap (1) to allow proper air venting.

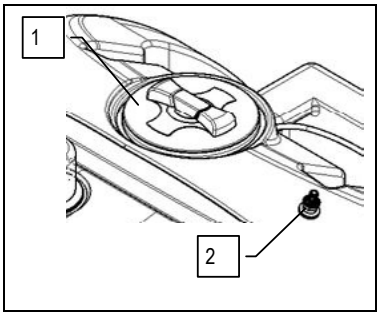
The solution tank has a maximum capacity of about 280 litres. Add the liquid detergent to the tank in the concentration and manner indicated on the detergent manufacturer's label. The formation of excess foam could damage the suction motors, so only use the minimum amount of detergent needed.

WARNING: Always use detergents suitable for scrubbing machines (as indicated on their label). Do not use acid or alkaline products or solvents without this indication.
In addition, you are advised to always use low foam detergents.
Do not use pure acids or detergents with a stronger gradation than that indicated on the label supplied.

WARNING: Protective gloves should always be worn when handling detergents or acid/alkaline solutions, to avoid serious injury to hands.

WARNING: Always use low foam detergent. To avoid the production of foam, before starting to clean, put a minimum quantity of anti-foam liquid into the recovery tank. Do not use pure acids.

29. FILLING THE DETERGENT/SOLUTION TANK (VERSION WITH CDS)

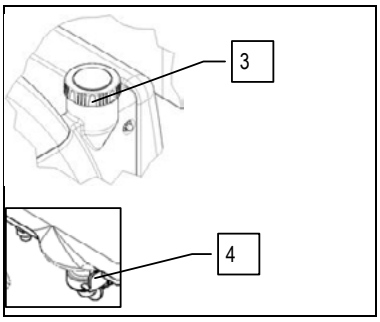


Proceed as follows to fill the solution tank:

1. Turn the main switch key anticlockwise to the "0" position
2. Engage the parking brake
3. Remove the filler cap (1) and check that the solution filter is fitted correctly
4. Fill it with clean water at a temperature not exceeding 50°C

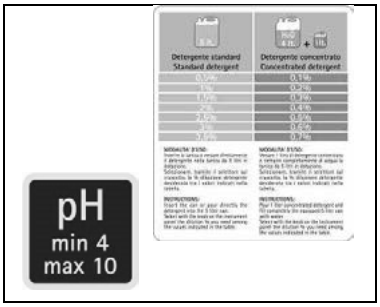
It is possible to fill the tank without having to constantly watch the water level, using the optional rapid filling system (2); this system is fitted with a float to control overflow. The water pipe (previously modified) is inserted into the quick release coupling; remember to unscrew the cap (1) to allow proper air venting.

5. Check that the quick coupling (4) under the detergent tank is properly inserted.
6. Unscrew the cap (3) of the tank on the right-hand side of the machine and fill with liquid detergent as indicated on the label supplied with the machine. Check the screw cap is well closed, to avoid any liquid leaking out while the machine is being used.



To regulate the water/detergent mixture, carefully read the "REGULATING THE DETERGENT WITH THE CDS SYSTEM" paragraph.

WARNING: The DS automatic dosing system is designed to work with any liquid detergent. For this reason, the percentage of detergent in the solution is subject to a maximum error of 5% compared with the nominal value selected.

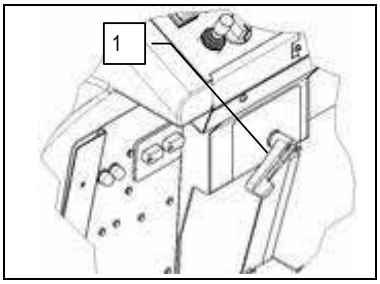


WARNING: The dosing system is suitable for frequent maintenance cleaning.
Acid or alkaline maintenance detergent tank be used with pH values between 4 and 10 and that do not contain: oxidising agents, chlorine or bromine, formaldehyde, mineral solvents.
The detergents used must be suitable for use with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

WARNING: Always use detergents suitable for scrubbing machines (as indicated on their label). Do not use acid or alkaline products or solvents without this indication.
In addition, you are advised to always use low foam detergents.
Do not use pure acids or detergents with a stronger gradation than that indicated on the label supplied.

WARNING: Protective gloves should always be worn before handling detergents or acidic or alkaline solutions to avoid serious injury to hands.

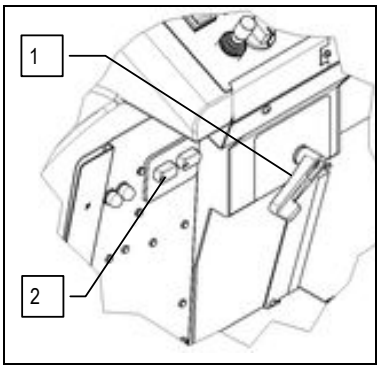
30. DETERGENT REGULATION (VERSION WITHOUT CDS)



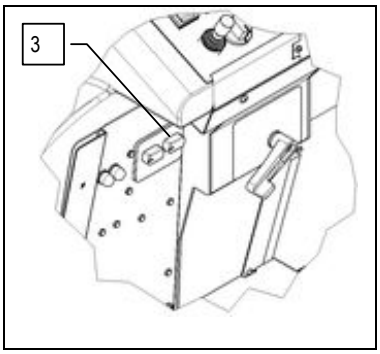
First, fully open the tap in the rear part of the machine by turning the lever (1) anticlockwise. Choose the required work programme using the I-Drive device; press the accelerator pedal to operate the brushes, the machine starts to move and the detergent solution starts to come out. In the first few metres, check that the quantity of solution is sufficient to wet the floor, but not so much that it goes beyond the splash guard. The amount of detergent released can be adjusted by turning the lever (1): turn it clockwise to reduce the flow and anticlockwise to increase it. If turned fully to the right the flow of detergent is stopped. Bear in mind that the correct amount of solution is always depends on the nature of the floor, the degree of dirt and the forward speed.

31. DETERGENT REGULATION (VERSION WITH CDS)

First, fully open the tap in the rear part of the machine by turning the lever (1) anticlockwise. Choose the required work programme using the I-Drive device; press the accelerator pedal to operate the brushes, the machine starts to move and the detergent solution starts to come out. During the first few metres make the following adjustments:



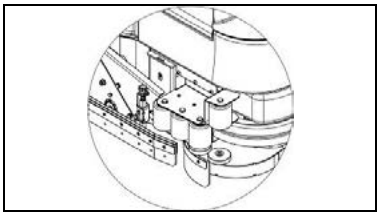
1. Regulate the flow of detergent solution to the brushes by rotating the left-hand knob (2) clockwise. The quantity of solution varies from a minimum of 55 litres/hour to a maximum of 230 litres/hour, with 7 set measurement points. The right solution flow should be proportional to the degree of dirt on the floor. In addition, remember that the time available for continuous working depends on the quantity of water in the tank: For example, the work autonomy with a full tank (about 280 litres) and the selector (2) set at 55, is about 4 hours



2. Regulate the percentage of detergent in the solution by rotating the right-hand knob (3) clockwise. The lower value is equal to 0.5% (for standard detergents) or 0.1% (for a concentrated detergent, diluted as indicated on the label supplied with the machine), while the higher value is equal to 3.5% or 0.7%, with 7 set points. Use high detergent percentages to remove very greasy dirt from the floor

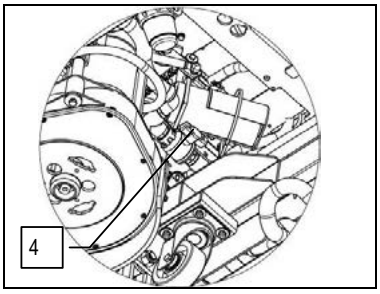
To avoid any tampering with the set regulation, you can remove the two switches and cover the two holes with the plastic caps supplied with the machine.

WARNING: Verify that the tap lever (1) is fully open; the lever is located at the rear of the steering column.



ATTENTION: before regulating the solution, check there is detergent in the inner can, and that the side water tap is turned on.

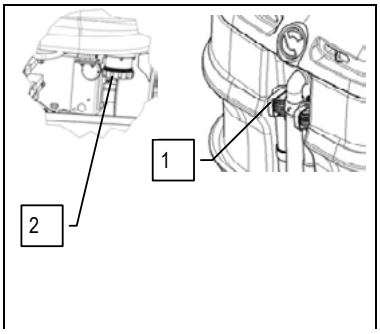
To resolve any malfunctioning of the CDS system, contact the ICE assistance centre.



WARNING: If the CDS system fails to function, or you want to work without this device, turn the lever of the tap (4) - on the front right-hand side of the machine - clockwise. Also turn the knobs (2) and (3) anticlockwise, to the “OFF” position.

32. RECOVERY TANK

Make sure the recovery tank is empty, otherwise empty it completely.
Check the cap of the drainage tube (1) (on the rear of the machine) is correctly closed.
Check that the drain pipe cap (2) at the rear of the machine is correctly closed.

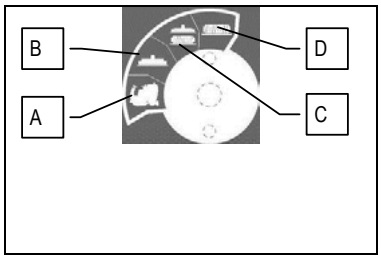


MACHINE PREPARATION

33. ASSEMBLING THE SQUEEGEE

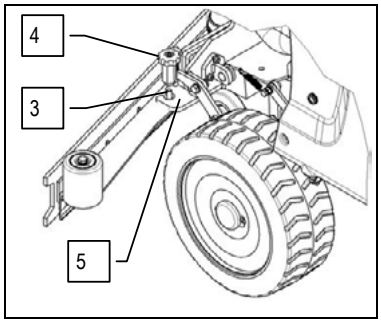
The squeegee, that for reasons of packaging comes disassembled from the machine, must be assembled while assembling the machine. Proceed as follows for assembly:

1. Make sure the squeegee unit is raised, and that the selected work programme is "Transport" (position A)
2. Turn the main switch key anticlockwise to the "0" position
3. Engage the parking brake located on the left side of the machine
4. Remove the key from the instrument panel



5. First insert the right-hand pin of the squeegee (3) into the right-hand slot of the squeegee support and screw the stud (4) on to the pin, making sure they fit tightly into their seats on the squeegee support (5)
6. Insert the left-hand pin of the squeegee into the left-hand slot of the squeegee support and screw the stud on to the pin, making sure they fit tightly into their seats on the squeegee support
7. Insert the suction hose into the squeegee coupling and secure it with the clamp; also verify correct insertion of the suction hoses from the brush head cover

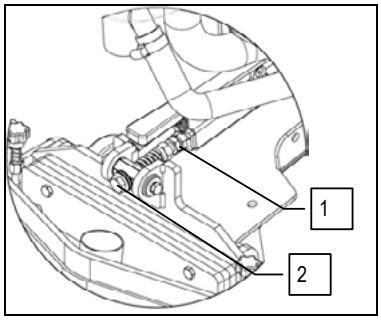
WARNING: These operations must be carried out using protective gloves to avoid any possible contact with the edges or tips of metal objects.



34. ADJUSTING THE SQUEEGEE INCLINATION

During working operation, the rear rubber is slightly tilted backwards (by about 5mm) in a uniform way for its whole length. If you need to increase the bend of the rubber in the central part, you must tilt the squeegee unit. To do this, proceed as follows:

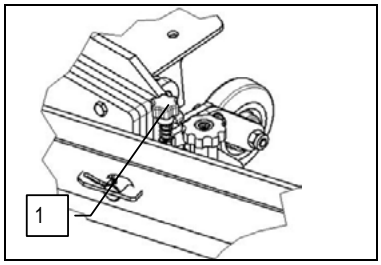
1. Loosen the locknut (1)
2. Turn the screw (2) anticlockwise to increase the bend of the rubber in the central part of the squeegee. To increase the bend of the rubber at the sides of the squeegee, turn the screw (2) clockwise
3. When fully adjusted, fix the locknut (1)



35. ADJUSTING THE SQUEEGEE HEIGHT

The height of the squeegee must be adjusted on the basis of the state of wear and tear of the rubber. To do this, turn the knob (1) anticlockwise to raise the squeegee, and clockwise to lower it.
Remarks: the right and left wheels must be adjusted to the same level, so the squeegee can work parallel to the floor.

WARNING: These operations must be carried out using protective gloves to avoid any possible contact with the edges or tips of metal objects.



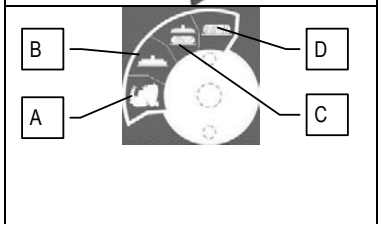
36. ASSEMBLING THE CYLINDRICAL BRUSHES

To assemble the cylindrical brushes of the brush head body, proceed as follows:

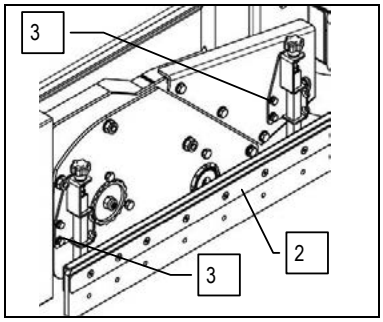
1. Lift the brush head unit by operating the joystick (1), the selected work programme must be "Transport" (position A)
2. Turn the main switch key anticlockwise to the "0" position
3. Engage the parking brake located on the left side of the machine
4. Remove the key from the instrument panel

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

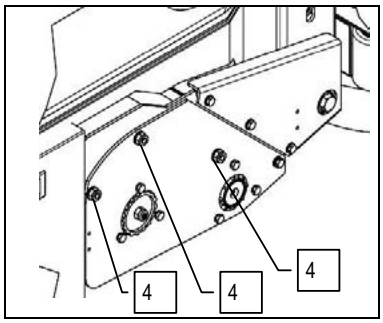




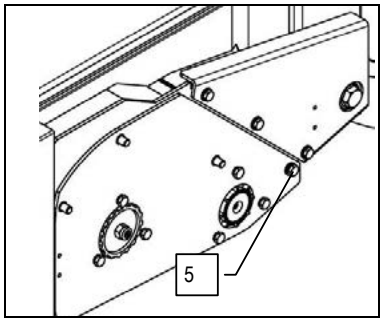
5. Use a suitable tool to remove the right-hand splash guard pre-assembly (2), loosening the screws (3) that fix it to the brush head



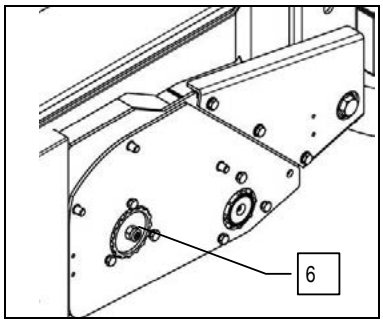
6. Remove the nuts (4) from the right-hand carter



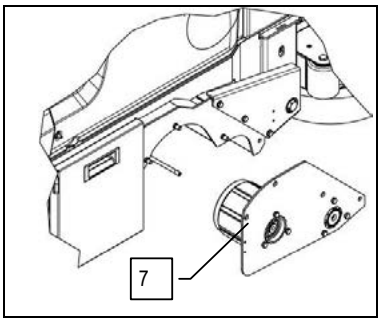
7. Remove the screw (5) from the right-hand carter



8. Remove the nut (6) and washer from the rear brush tie-rod



9. Remove the right-hand carter (7) from the brush head unit, and place it on the ground



10. Push the rear brush into the tunnel until it couples with the drive hub on the opposite side of the tunnel

WARNING: Pay attention to the direction of the brush bristles during assembly, the point of the brush viewed from the above should be towards the front of the machine.

11. Push the front brush into the tunnel until it couples with the drive hub on the opposite side of the tunnel

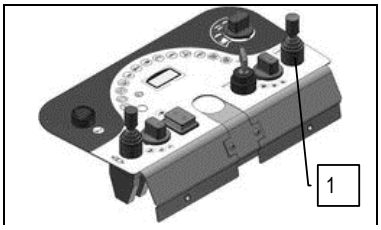
WARNING: Make sure the brushes are correctly connected. If they are not, the machine may not work properly.

WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.

37. SIDE BRUSH ASSEMBLY

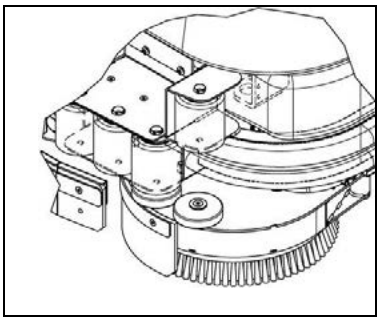
To assemble the side brush, proceed as follows:

1. Check the side brush is in its standard (resting) position. If this is not the case, use the lever (1) on the instrument panel to move it to the left
2. Turn the main switch key anticlockwise to the "0" position
3. Engage the parking brake located on the left side of the machine
4. Remove the key from the instrument panel



WARNING: During this operation, verify that there are no people or objects near the brush.

5. With the brush head up, insert the brush in the brush-holder plate seat, and turn it clockwise until the three studs are inserted in the notches on the plate itself. Turn, so the stud is pushed towards the coupling spring and the plate is locked in place



WARNING: Check the brush is correctly inserted. If they are not, the machine may not work properly.

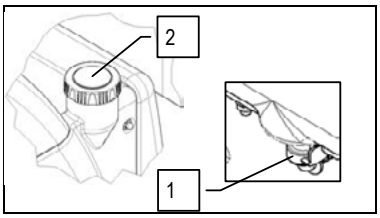
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.

38. DETERGENT PUMP PRIMING (VERSIONS WITH CDS)

Before starting work the detergent pump must be primed, to do so proceed as follows:

1. Check that the main switch is in the “Off – 0” position
2. Check that the battery connector is disconnected from the machine connector
3. Check the parking brake is correctly engaged
4. Make sure the recovery tank is empty, otherwise empty it completely
5. Check that the quick release coupling (1) under the detergent tank is properly fitted

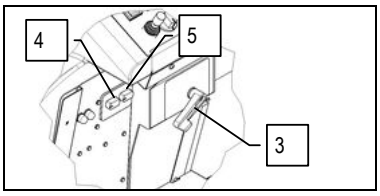
6. Unscrew the cap of the detergent canister (2) and fill it with the desired product



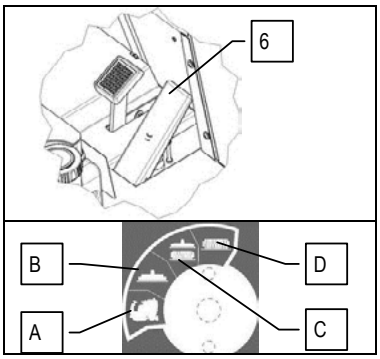
WARNING: Always use low foam detergent. To avoid the production of foam, before starting to clean, put a minimum quantity of anti-foam liquid into the recovery tank. Do not use pure acids**.**

7. Refit the cap of the detergent tank
8. Check there is clean water in the solution tank

9. Check the water tap (3) is fully turned on
10. Check that the by-pass tap is in the “dosing system” position
11. Turn the water flow rate adjustment knob (4) to the maximum position
12. Turn the detergent percentage adjustment knob (5) to the maximum position
13. Insert the battery connector into the machine connector
14. Place the main switch in position “ON – I”
15. Disengage the parking brake



16. Make sure that the work programme is set to "Work" (position C)
17. Press the accelerator pedal (6) gently to activate the brush head and the dosing system
18. Wait a few moments, keeping the accelerator pedal gently depressed (normally 20 to 40 seconds) to allow engagement of the system
19. Proceed with the desired adjustment for normal cleaning



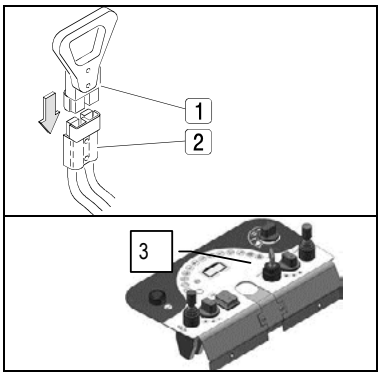
39. CHECKING THE COMBUSTION ENGINE

WARNING: Always check the motor before using it (and read the relevant use and maintenance manual). In this way, you will avoid any accidents or damage to the motor.

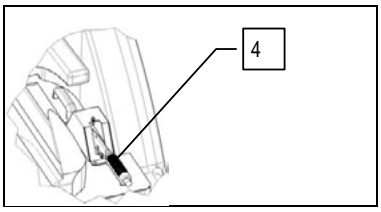
40. MACHINE PREPARATION

If you have a battery version, before starting to work you must:

1. Make sure the recovery tank is empty, otherwise empty it completely
2. Check that the main switch (3) of the machine is set to "0"
3. Connect the battery connector (1) to the electric system connector (2)
4. Sit on the driver's seat



5. Check the parking brake is released (4)
6. Turn the key of the main switch a quarter of a turn clockwise (to position 1). Immediately, on the instrument panel, the display will turn on indicating the charge level of the batteries



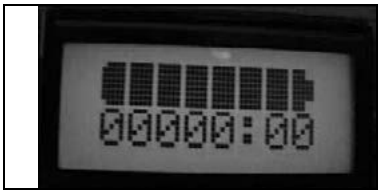
7. With switch-on, three consecutive screens are displayed on the monitor. The first screen shows (on the top line) what type of hour-counter has been set; in this case it is a total hour-counter (to display a different type - for instance partial - contact the qualified, ICE-trained personnel). The bottom line shows the "service" setting (in this case there is no setting)



8. The second screen displays what battery technology has been set for machine operation; in this case it is lead batteries (to set another type of battery - for instance gel - contact the qualified, ICE-trained personnel)



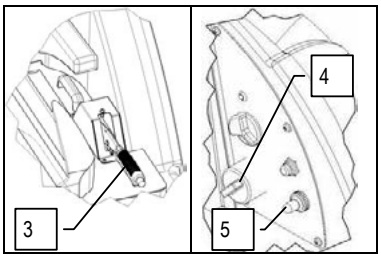
9. The third and last screen (known as "work") displays the battery charge status and the total functioning time. When the batteries supplied are fully charged, the upper line contains 8 light indicators that represent a battery. As the batteries gradually run down, the indicators go out and, with the batteries completely run down, only the battery outline flashes. The bottom line indicates the hours and minutes of functioning. The flashing ":" symbol indicates that the hour-counter is counting the machine functioning time



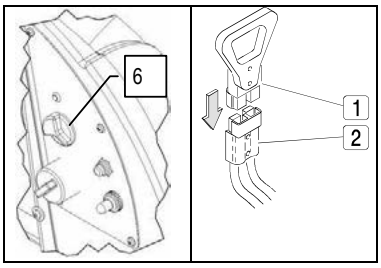
WORK

If you have a combustion engine version, before starting to work you must:

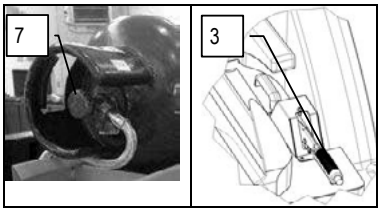
1. Make sure the recovery tank is empty, otherwise empty it completely
2. Check the parking brake is engaged; if it is not, engage it by means of the lever (3) near the left side of the seat
3. Check the main machine switch (4) is set to "0"
4. Check the fuel selector (5) is on LPG



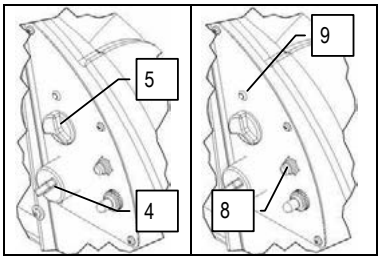
5. Turn the motor rotation adjustment knob (6) anticlockwise, as far as it will go
6. Raise the seat mounting plate and connect the generator connector (1) to the electric system connector (2)
7. Check the fuel level; if it is low, top up the tank (as indicated in “FILLING THE FUEL TANK”)



8. Open the tap (7) on the LPG cylinder
9. Bring the seat mounting plate back to its working position, and sit on the seat
10. Disengage the parking brake (3)
11. Inject LPG into the system by repeatedly pressing the button (8) at least three times



12. Turn the main switch key (4) clockwise by a quarter of a turn (to position 1). Bring the motor ignition switch to the START position (turning the key further to the right), and keep it there until the motor starts up; you can now release the key





WARNING: Do not use the starter for more than 5 seconds at a time. If the motor does not start up, release the key and wait for 10 seconds before making a new attempt.

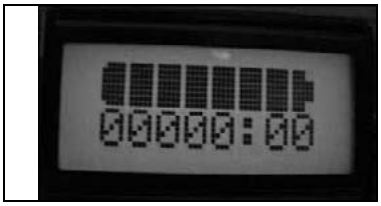
13. The green indicator light (9) will immediately come on, indicating that the main switch has been enabled



WARNING: No indicator light will be illuminated on the command panel (on the instrument panel) until the combustion engine has reached its working speed.

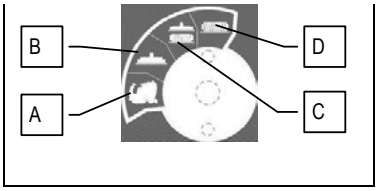
14. Turn the motor rotation adjustment knob (5) clockwise, as far as it will go

15. When the combustion engine is at full speed, the "work" screen of the control display will show the generator charge status and the total operating time. When the machine generator is working correctly, the upper line consists of 8 light indicators in the form of a battery. The bottom line indicates the hours and minutes of functioning. The flashing “:” symbol indicates that the hour meter is counting the machine functioning time



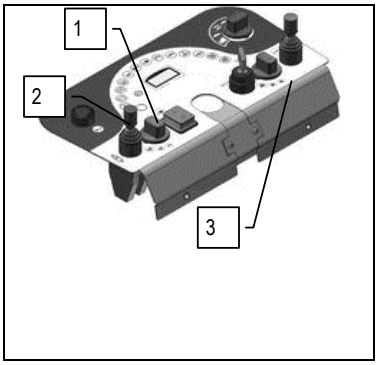
WORK

After starting up the machine, proceed as follows:



1. Choose the desired operating program with the I-Drive device:
A. Transfer: movement of the machine without working
B. Drying: use the squeegee only
C. Washing / Drying: use both the brushes and the squeegee
D. Washing only: use brushes only

2. Choose the forward operating speed by operating the knob (1) on the instrument panel

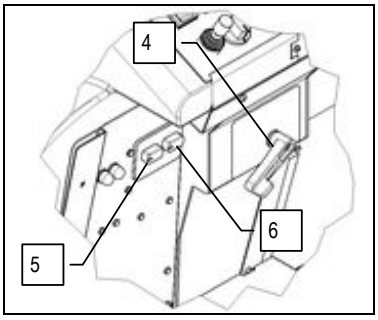


This machine can operate at three different speeds: via the knob (1) located on the instrument panel you have three different settings:

Step01: the maximum speed is 3.9 km/h;
Step02: the maximum speed is 5.7 km/h;
Step03: the maximum speed is 8 km/h.

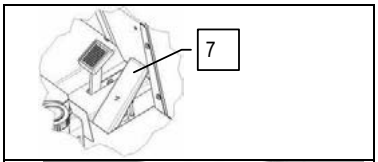
WARNING! The reverse speed is lower than the forward speed to comply with current health and safety standards.

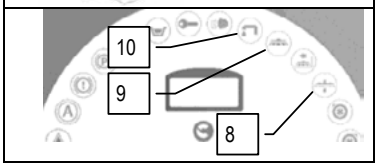
3. Choose the direction of movement by operating the knob (2) on the instrument panel
4. Choose the pressure exerted on the brushes by operating the knob (3) on the instrument panel



5. If the machine does not have the CDS device, move the tap lever (4) anticlockwise and adjust the amount of solution required
6. If the machine is equipped with the CDS dosing system, the tap lever (10) must be turned fully anticlockwise, allowing maximum flow of water. This lever should not be used to make adjustments. To ensure the correct dose on the brushes, use only the knobs for adjusting the amount of water solution (5) and detergent (6). See paragraph "DETERGENT ADJUSTMENT WITH CDS SYSTEM"

To avoid any tampering with the set regulation, you can remove the two switches and cover the two holes with the plastic caps supplied with the machine.

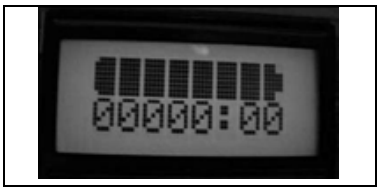




7. When you press the accelerator pedal (7), the machine starts moving, the squeegee is automatically lowered, the warning light (8) will come on automatically to indicate that the squeegee is moving, and the suction motors will start operating. At the same time the brush head is also automatically lowered and the warning light (9) indicating that the brush head motor is in operation will come on automatically. This will happen only if the I-Drive selector is set to work program 3
8. As soon as the brush head is in the work position, the solenoid valve will begin operating and the warning light (10) indicating that the valve is operating will automatically come on

During the first metres, check there is sufficient solution and that the squeegee dries perfectly. The machine will now work normally until the detergent solution runs out, the batteries run down (for the battery version), or the fuel runs out (for the combustion engine version).

For the battery version, as the batteries run out, the battery charge indicators on the command display will go blank. When the batteries are fully discharged, the brush motor automatically switches off, so it is necessary to recharge them as soon as possible.
A residual charge remains available to complete the drying process and to move the machine to the charging point; to do this, choose the "Transfer" programme.

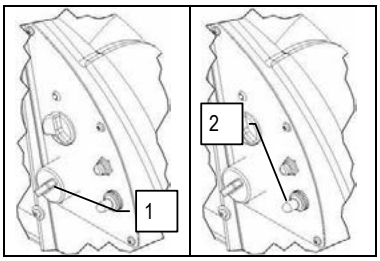


WARNING! The machine (version with combustion engine) is not fitted with an LPG fuel reserve warning light.

If the LPG runs out while you are working, you can carry on with the aid of the gasoline fuel in the tank of the combustion engine.

To select the fuel type, proceed as follows:

1. Turn the main switch key (1) anticlockwise by a quarter of a turn (to position 0)
2. Turn the 2-way fuel selection switch (2) to “GASOLINE”



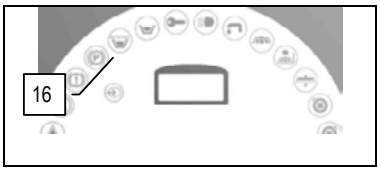
3. Turn the main switch key (1) clockwise by a quarter of a turn (to position 1). Bring the motor ignition switch to the START position (turning the key further to the right), and keep it there until the motor starts up; you can now release the key

WARNING! Only carry out this procedure with the machine switched off, and when you are absolutely sure the LPG cylinder is completely empty (to replace the cylinder, refer to “REPLACING THE LPG CYLINDER”).

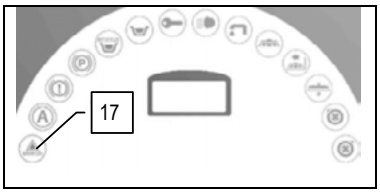
WARNING! The machine (version with combustion engine) is not fitted with a gasoline fuel reserve warning light, so keep an eye on the level of fuel in the combustion engine tank.

To fill the fuel tank, refer to “FILLING THE FUEL TANK”.

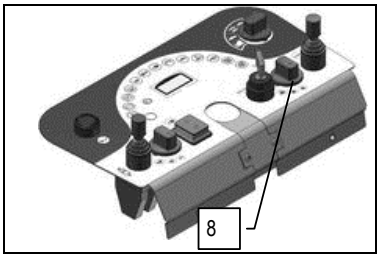
When the level of solution (for versions without CDS) or water (for versions with CDS) is about to run out, the red warning light (16) on the instrument panel will come on; when the solution or water is completely used up, take the machine to the place designated for emptying the recovery tank. On completion of the emptying operation, refill the solution tank.



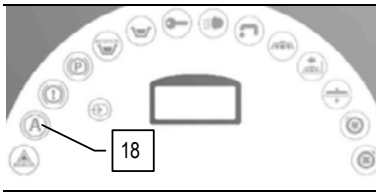
When the brush motor overload limit is exceeded, the red warning light (17) on the instrument panel begins to flash. After a few seconds the motor stops and the indicator light of the brush switch goes off.



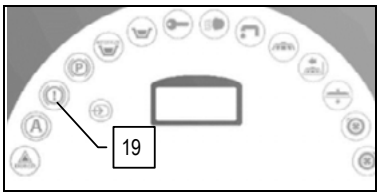
To restart the motor, turn the main switch key off and on again. If the motor stops again, check the reason of the overload in order to prevent damage to the motor. Check to see if the knob (8) to increase the pressure on the brushes has been operated and, if so, turn it anticlockwise as far as it will go.



If the warning light (18) on the instrument panel comes on while you are working, this means there is a fault in the machine traction system. Contact a specialised technician as soon as possible.

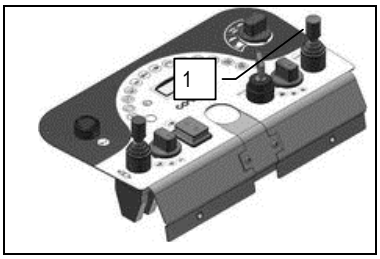


If the warning light (19) on the instrument panel comes on while you are working, this means the brake oil level is low (down to reserve). Top up the level as soon as possible.



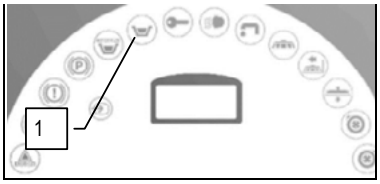
41. MOVEMENT OF THE SIDE BRUSH

This machine is able to increase the working width by exploiting the right-hand side brush: just move the lever (1) on the instrument panel to the right. In this way, the brush is lowered and begins working. To bring the brush back to its safety (standard) position, move the lever (1) to the left.



42. OVERFLOW DEVICE

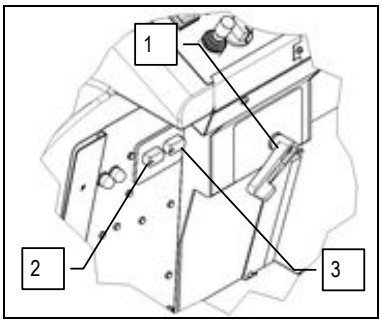
The machine is equipped with an electromechanical device which indicates that the level reached in the recovery tank is dangerous for proper functioning of the suction motors; when it is activated the suction motors are switched off and the green warning light on the button (1) goes out. In this case, raise the squeegee unit and take the machine to the area used for emptying the recovery tank. Then empty the recovery tank using the special drain hose.



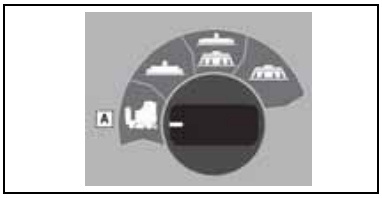
43. AT THE END OF WORK

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

1. Close the tap (1) for machine versions without the CDS system or turn the knobs (2-3) to OFF for machine versions with the CDS system



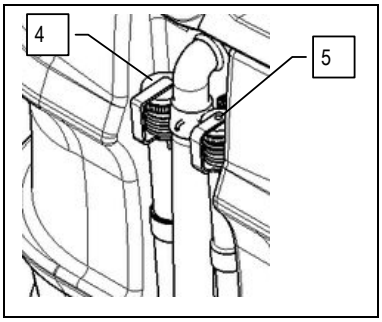
2. Turn the I-DRIVE selector to the “Transfer” position. Both the base and the squeegee rise and after a few seconds the suction motor will turn off



3. Take the machine to the place provided for draining off the dirty water
4. Turn the machine off by turning the key a quarter turn anticlockwise (to the "0" position) and remove it from the instrument panel
5. Engage the parking brake
6. Raise the seat mounting plate and disconnect the electric system connector from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)



WARNING: Before carrying out any type of maintenance, remove the keys from the panel and disconnect the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine).

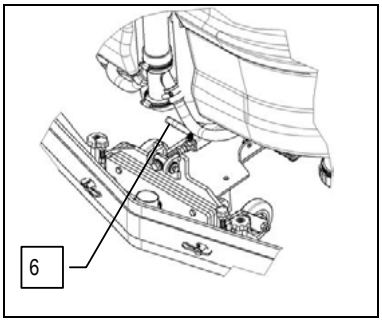


7. Disconnect the recovery tank drainage tube (4) from its housing, unscrew the drainage cap and empty the recovery tank
8. Disconnect the solution tank drainage tube (5) from its housing, unscrew the drainage cap and empty the solution tank

9. Press the release lever (6) to allow rotation of the squeegee support
10. Turn the squeegee unit clockwise
11. Clean the squeegee unit and the rubbers thoroughly with a jet of water
12. After cleaning the squeegee and rubbers, replace the squeegee by turning it anticlockwise, returning it to its original position, making sure that the lever (6) is returned to its normal position

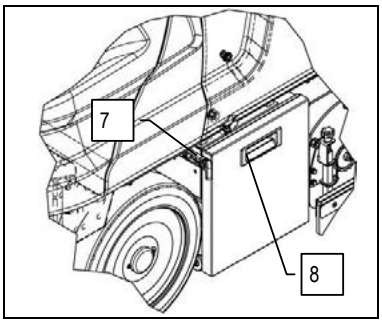


WARNING: This operation must be carried out by using gloves in order to protect against contact with dangerous solutions.



AT THE END OF THE WORK

13. Release the clamp (7) and pull on the handle (8) to remove the debris hopper; place it on the ground, then take it to the appropriate disposal point and empty it





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

14. Insert the debris hopper in the machine, and lock it in place by means of the clamp (7)

15. Raise the seat mounting plate and connect the electric system connector to the battery connector (for battery versions) or to the generator connector (for versions with a combustion engine)
16. Sit on the driver's seat
17. Insert the key in the main switch block, and switch on the machine
18. Disengage the parking brake
19. Park the machine in a closed place, in an area where it cannot cause damage to people or other property, but also be protected from an accidental fall of objects
20. Engage the parking brake
21. Turn the ignition key a quarter turn anticlockwise (position "0") and remove the key

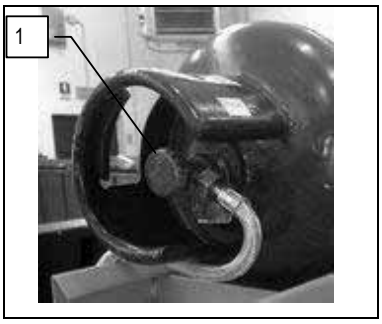
22. Raise the seat mounting plate and disconnect the electric system connector from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)



WARNING: Do not leave the machine unattended without first removing the start-up switch key and applying the parking brake. In addition, do not park the machine in open places or on sloping floors.



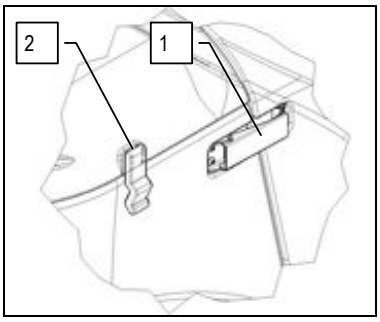
WARNING: For machine versions with a combustion engine powered with LPG, when parking the machine remember to close the cylinder tap (1).



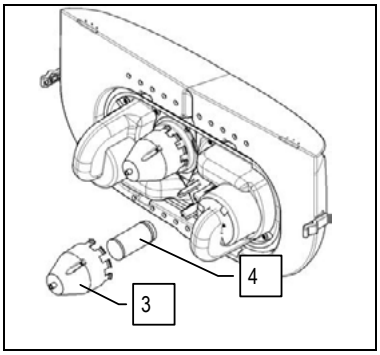
DAILY MAINTENANCE

PERFORM ALL MAINTENANCE OPERATIONS IN SEQUENCE

44. CLEANING THE SUCTION MOTOR FILTER



1. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for the combustion engine version)
2. Ensure that the main switch is in the “0” position
3. Ensure the parking brake is engaged
4. Check the recovery tank is empty (if necessary, empty it)
5. Release the recovery tank stop hinges (1) and rotate as far as possible
6. Release the suction hood stop hinges (2) and rotate as far as possible
7. Remove the suction filter protection (3) by rotating it clockwise
8. Remove the suction filter (4) from its seat
9. Use a jet of water to clean the walls and base of the filter



10. Perform steps 7 to 9 for the second filter of the second suction motor too
11. Refit all the parts

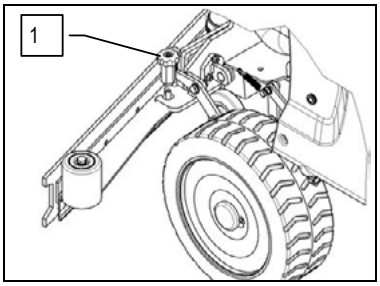


WARNING: These operations must be carried out using gloves to protect against contact with dangerous solutions.



WARNING: Before carrying out any type of maintenance, remove the keys from the panel and disconnect the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine).

45. CLEANING THE SQUEEGEE



Careful cleaning of the whole suction group ensures better drying and cleaning of the floor as well as greater duration of the suction motor. Proceed as follows for cleaning:

1. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for the combustion engine version)
2. Make sure the main switch is in the “0” position
3. Ensure the parking brake is engaged
4. Undo the mounting clamp and remove the suction hose from the squeegee sleeve
5. Disconnect the squeegee by loosening the knobs (1)

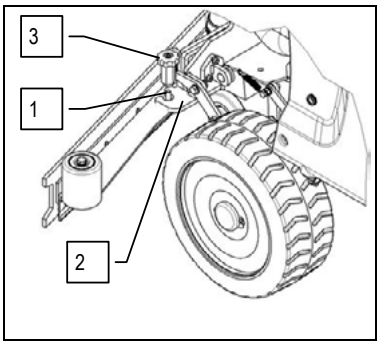
6. Clean the squeegee unit and the rubbers thoroughly with a jet of water, verify that there are no dirt residues in the vacuum chamber of the squeegee



WARNING: This operation must be carried out by using gloves in order to protect against contact with dangerous solutions.

If the front squeegee rubber is worn, suction will be poor and the machine will not dry the floor properly; in this case replace it (see section REPLACEMENT OF FRONT SQUEEGEE RUBBER).
If the rear squeegee rubber is worn, suction will be poor and the machine will not dry the floor properly; in this case replace it (see section REPLACEMENT OF REAR SQUEEGEE RUBBER).

After cleaning, replace the squeegee on its support:

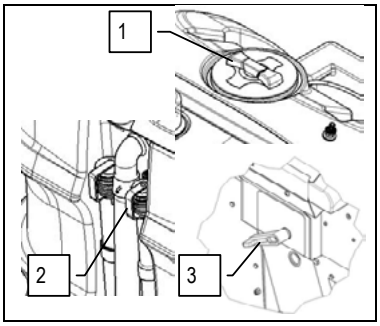


1. Insert the squeegee right-hand pin (1) into the right-hand slot of the squeegee support (2), secure it by means of the handwheel (3)
2. Insert the squeegee left-hand pin into the left-hand slot of the squeegee support, secure it by means of the handwheel
3. Finally, insert the squeegee hose in its sleeve and secure it using the clamp.



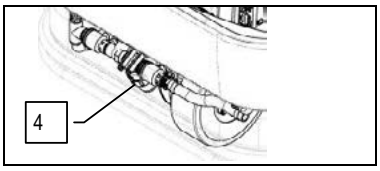
WARNING: These operations must be carried out using gloves to protect against contact with dangerous solutions.

46. CLEANING THE SOLUTION TANK FILTER



Careful cleaning of the detergent/water solution filter ensures a better working capacity. Proceed as follows for cleaning:

1. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for the combustion engine version)
2. Ensure the main switch key is set to “0”
3. Ensure the parking brake is engaged
4. Open the filler cap (1)



5. Disconnect the clean water drain hose (2) from its housing at the rear of the machine, unscrew the cap and empty the tank
6. Close the water tap (3)
7. Unscrew the filter (4) at the front of the machine
8. Remove the internal filter cartridge and rinse everything thoroughly with running water
9. Reassemble all the elements



WARNING: Before carrying out any type of maintenance, remove the keys from the panel and disconnect the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine).



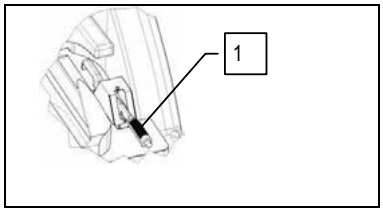
WARNING: These operations must be carried out using gloves to protect against contact with dangerous solutions.

47. CLEANING THE DEBRIS HOPPER AND HOPPER SUCTION FILTER

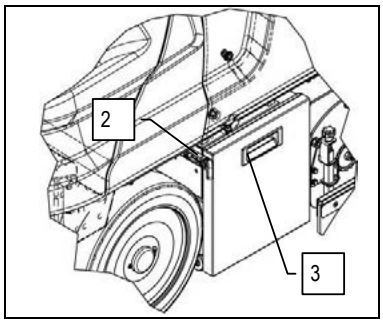
The thorough cleaning of the debris hopper and its filter will ensure better work results. Proceed as follows for cleaning:

1. Make sure the recovery tank is empty, otherwise empty it completely
2. Check that the main switch of the machine is set to "0"
3. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for the combustion engine version)

4. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)



5. Release the clamp (2) and pull on the handle (3) to remove the debris hopper; place it on the ground, then take it to the appropriate emptying point

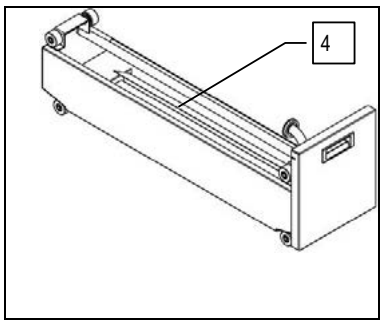




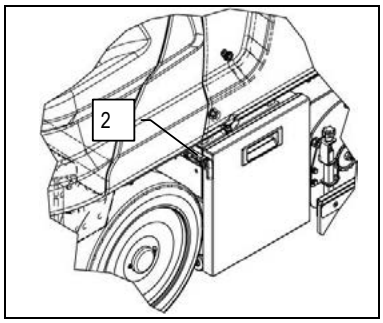
WARNING: This operation must be carried out using gloves to protect against contact with dangerous solutions.

6. Rinse the inside of the hopper with a jet of clean water

7. Take the suction filter (4) out of the debris hopper and clean it under a jet of running water



8. Reassemble the suction filter (4) in the debris hopper
9. Replace the debris hopper in the machine, and lock it in place by means of the clamp (2)



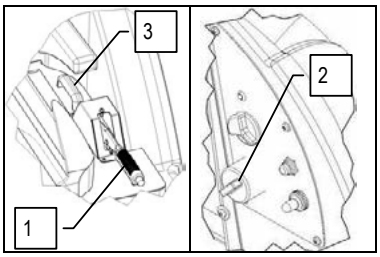
48. DAILY MAINTENANCE - COMBUSTION ENGINE



WARNING: Perform the daily maintenance as explained in the user and maintenance manual of the engine itself. In this way, you will avoid any accidents or damage to the motor.

DAILY MAINTENANCE

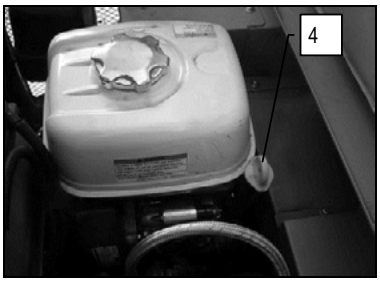
49. CHECKING THE MOTOR OIL LEVEL



Using the combustion engine with insufficient oil may seriously damage it. You are therefore advised to check the level at least once a day, in the following way:

1. Check the parking brake is engaged; if it is not, engage it by means of the lever (1) near the left side of the seat
2. Check the main machine switch (2) is in the "0" position. If this is not the case, turn the key by a quarter rotation to the left.
3. Lift the handle (3) to access the motor compartment

WARNING: To correctly evaluate the oil level, you must scrupulously follow the steps indicated in the I user and maintenance manual of the engine itself.

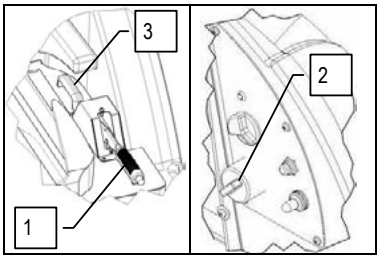


WARNING: If the oil level is below the upper limit notch on the dip-stick, top up with recommended oil as far as the upper limit notch. To do this, use the tube (4). Do not over-fill.

WARNING: Check the oil level when the motor is switched off, and with the machine on an even surface.

WARNING: Refer to the motor use and maintenance manual (supplied with the machine) to check the most suitable type of oil.

50. CHECKING THE AIR FILTER



A dirty air filter will limit the flow of air towards the carburettor, thereby reducing engine performance, so you are advised to check it at least once a day, in the following way:

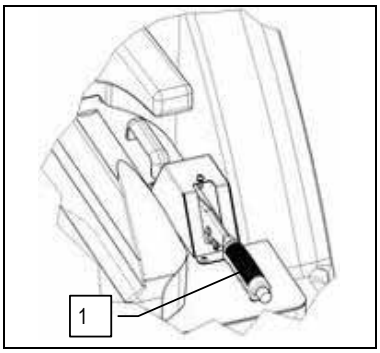
1. Check the parking brake is engaged; if it is not, engage it by means of the lever (1) near the left side of the seat
2. Check the main machine switch (2) is in the "0" position. If this is not the case, turn the key by a quarter rotation to the left.
3. Lift the handle (3) to access the motor compartment

WARNING: To correctly evaluate the degree of cleanliness of the air filter, you must scrupulously follow the steps indicated in the user and maintenance manual of the engine itself.

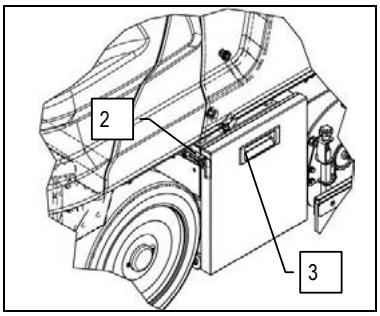
WEEKLY MAINTENANCE

51. CLEANING THE SUCTION HOSE

Whenever suction seems to be unsatisfactory, check that the suction tube is not obstructed. If necessary clean with a jet of water as follows:



1. Connect the electric system connector to the battery connector (for battery versions) or to the generator connector (for versions with a combustion engine)
2. Turn the key switch to the “1” position
3. Turn the I-DRIVE selector to the “Transfer” position. Both the base and the squeegee rise and after a few seconds the suction motor will turn off.
4. Turn the key switch to the “0” position and remove the key from the instrument panel
5. Engage the parking brake by means of its lever (1)
6. Disconnect the electric system connector from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
7. Release the clamp (2) and pull on the handle (3) to remove the debris hopper. Place it on the ground



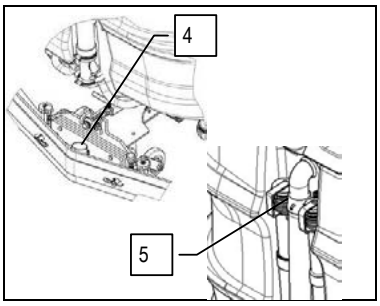


WARNING: Before carrying out any type of maintenance, remove the keys from the panel and disconnect the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine).



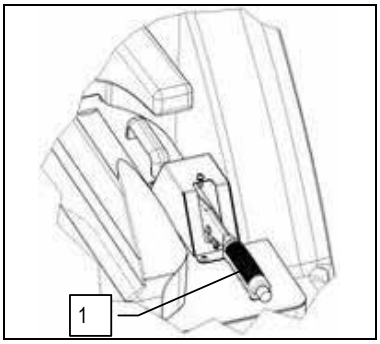
WARNING: This operation must be carried out using gloves to protect against contact with dangerous solutions.

8. Disconnect the suction hose from the squeegee nozzle (4)
9. Disconnect the suction hose from the holder (5) at the rear of the recovery tank
10. Clean the hose with a jet of fresh water entering from the end where it is inserted into the holder at the rear of the recovery tank
11. Refit all the parts

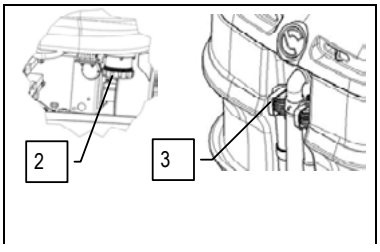


52. CLEANING THE RECOVERY TANK

Proceed as follows for cleaning:



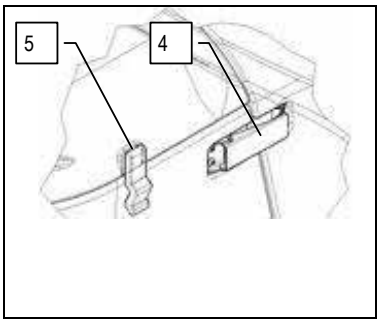
1. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
2. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
3. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)
4. Check the recovery tank is empty (if necessary, empty it)
5. Check the recovery tank drainage tube (2) is firmly attached to the machine, and that the cap is closed
6. Unscrew the recovery tank drain hose cap (3) at the rear of the machine



7. Release the recovery tank stop hinges (4), located at the side of the tank
8. Rotate the recovery tank as far as it will go. Release the suction cover stop hinges (5) on the side of the cover
9. Rotate the suction cover as far as it will go
10. Clean and rinse the recovery tank
11. Refit all the parts



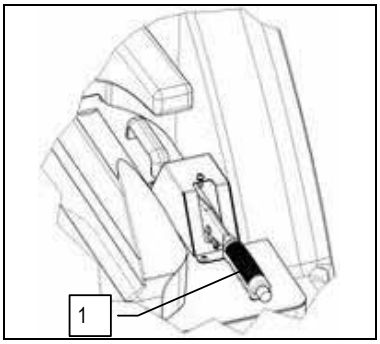
WARNING: These operations must be carried out using gloves to protect against contact with dangerous solutions.



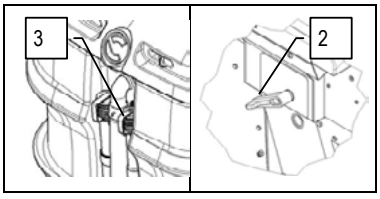
53. CLEANING THE SOLUTION TANK

Proceed as follows for cleaning:

1. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
2. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
3. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)
4. Ensure the solution tank is empty, otherwise empty it



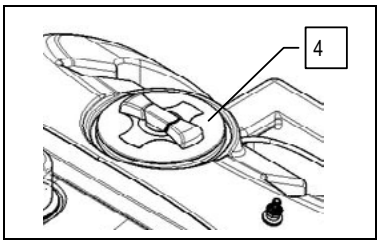
5. Close the water tap (2)
6. Disconnect the solution tank drain hose (3) located at the rear of the machine
7. Unscrew the solution tank drain hose cap



8. Unscrew the solution tank filling plug (4), located behind the operator's seat
9. Rinse the inside of the tank with a jet of water
10. Refit all the parts



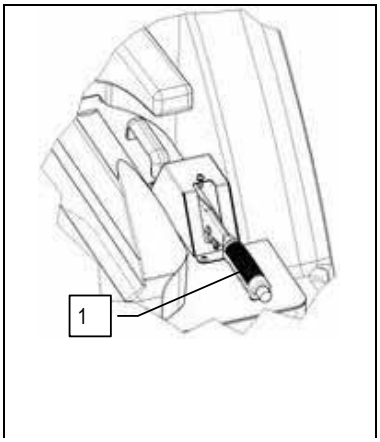
WARNING: These operations must be carried out using gloves to protect against contact with dangerous solutions.



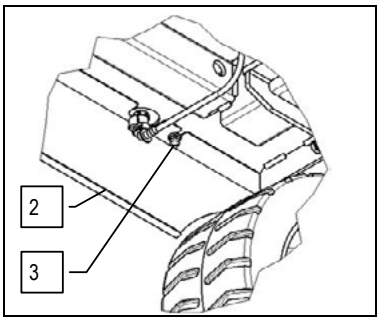
54. CLEANING THE DETERGENT TANK (VERSIONS WITH CDS)

Proceed as follows for cleaning:

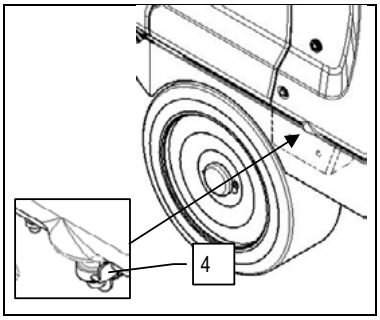
1. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
2. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
3. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)
4. Make sure the detergent solution tank is empty; otherwise, empty it



1. Remove the right-hand carter (2) by unscrewing the nuts (3)



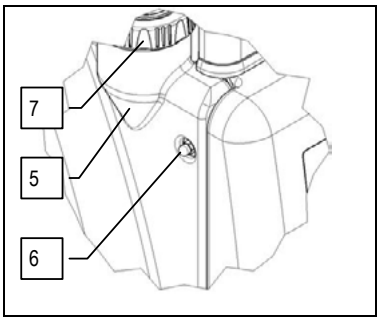
2. Disconnect the quick release coupling (4) located behind the side cover, to prevent damage to the coupling itself



3. Remove the detergent tank (5) by unscrewing the nuts (6)
4. Unscrew the detergent filler cap (7)
5. Rinse the inside of the tank with a jet of water
6. Refit all the parts



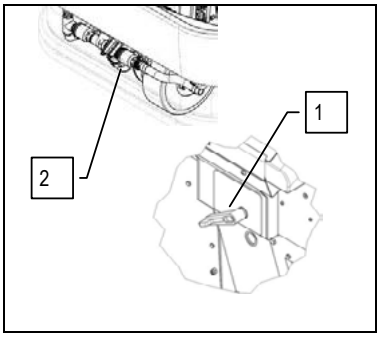
WARNING: These operations must be carried out using gloves to protect against contact with dangerous solutions.



55. CLEANING THE SOLUTION TANK FILTER

Proceed as follows for cleaning:

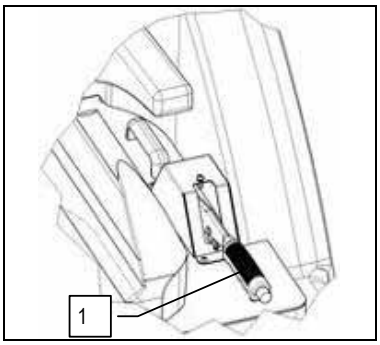
1. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
2. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
3. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)
4. Close the water tap (1)
5. Unscrew the detergent solution filter (2) located at the front of the machine
6. Carefully clean the inside of the filter and the filter cartridge



56. CLEANING THE CYLINDRICAL BRUSHES

Proceed as follows for cleaning:

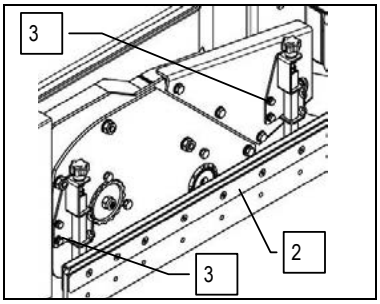
1. Make sure the brush head unit is raised off the ground (if necessary, turn the I-DRIVE selector to the "Transfer" position to raise both the brush head and the squeegee)
2. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
3. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
4. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)



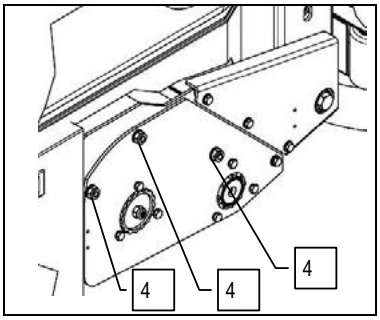
5. Use a suitable tool to remove the right-hand splash guard pre-assembly (2), loosening the screws (3) that fix it to the brush head.



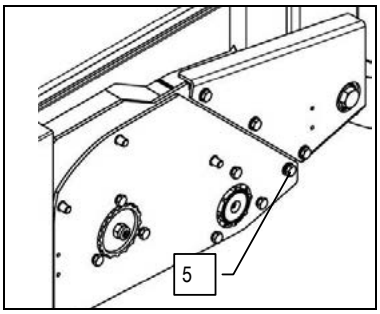
WARNING: These operations must be carried out using gloves to protect against contact with dangerous solutions.



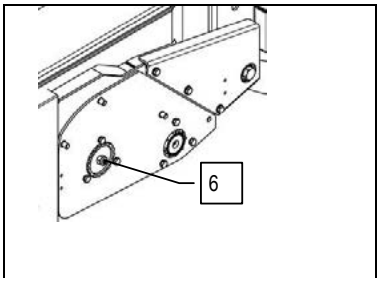
6. Remove the nuts (4) from the right-hand carter



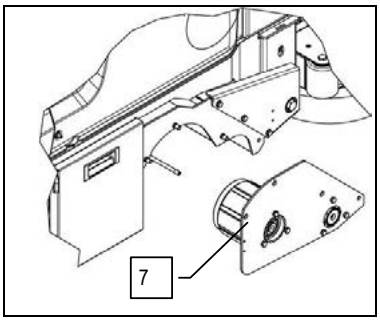
7. Remove the screw (5) from the right-hand carter



8. Remove the nut (6) and washer from the rear brush tie-rod



9. Remove the right-hand carter (7) from the brush head unit, and place it on the ground

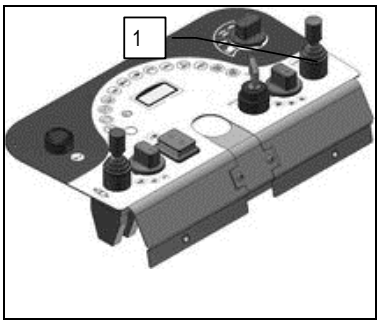


10. Take the rear brush out of the tunnel and rest it on the ground. Clean it with a jet of water
11. Take the front brush out of the tunnel and rest it on the ground. Clean it with a jet of water
12. Refit all the parts

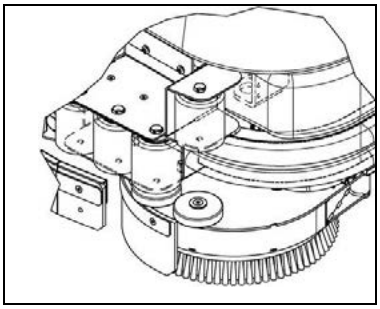
57. CLEANING THE SIDE BRUSH

Proceed as follows for cleaning:

1. Check the side brush is in its idle position (if necessary, turn the I-DRIVE selector to the “Transfer” position and push the lever (1) on the instrument panel)
2. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
3. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
4. Check the parking brake is engaged. If it is not, engage it by means of the lever



5. With the brush head up, release the brush from the brush-holder plate seat, and turn it anticlockwise until the three studs slip out of the notches on the plate itself. Turn, so the stud is pushed away from the coupling spring.
6. Clean it under a jet of running water
7. Refit all the parts



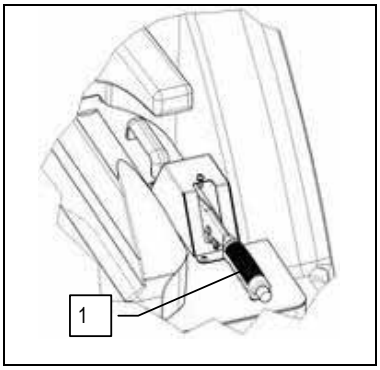


WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.

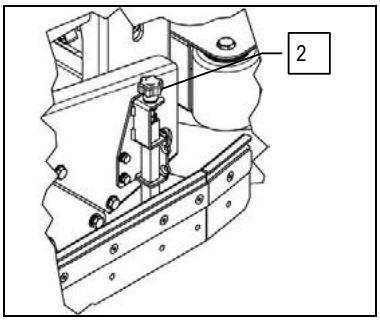
58. ADJUSTING THE HEIGHT OF THE SIDE SPLASH GUARDS

If the side splash guard rubbers in the brush head unit are not well adjusted, they will not channel the solution to the middle of the squeegee. To make the correct adjustment, proceed as follows:

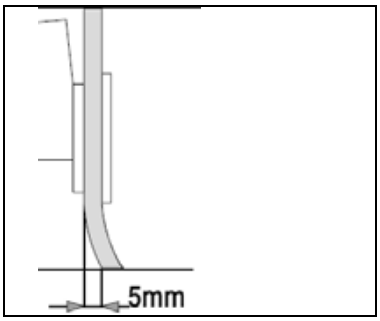
1. Make sure the brush head unit is in its working position (if necessary, turn the I-DRIVE selector to the “Washing” position to lower the brush head)
2. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
3. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
4. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)



5. Turn the knobs (2) on the brush head unit, to adjust the height of the side splash guards



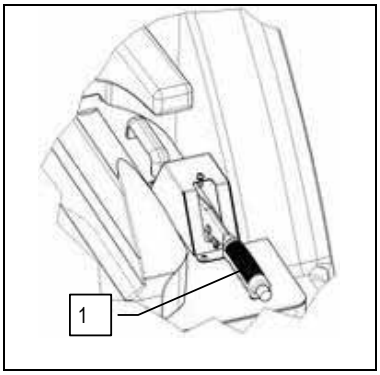
During working operation, the side rubber splash guard is slightly but evenly tilted outwards (by about 5mm) along its whole length.



59. CLEANING THE DETERGENT SOLUTION DISTRIBUTION BASIN

If the detergent solution distribution basin in the brush head unit is clogged with dirt, it will not channel the detergent solution evenly onto the floor, and so the machine will not clean thoroughly. To clean the basin, proceed as follows:

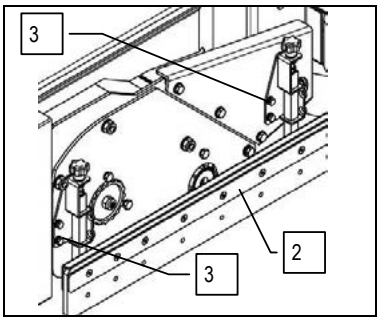
1. Make sure the brush head unit is in its working position (if necessary, turn the I-DRIVE selector to the “Washing” position to lower the brush head)
2. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
3. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
4. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)



5. Use a suitable tool to remove the right-hand splash guard pre-assembly (2), loosening the screws (3) that fix it to the brush head.

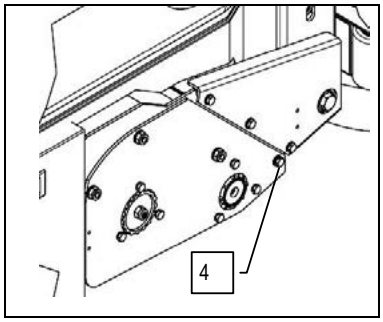


WARNING: These operations must be carried out using gloves to protect against contact with dangerous solutions.

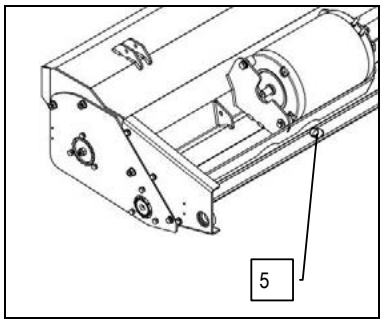


WEEKLY MAINTENANCE

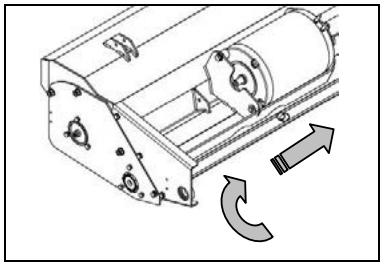
6. Remove the screw (4) from the right-hand carter



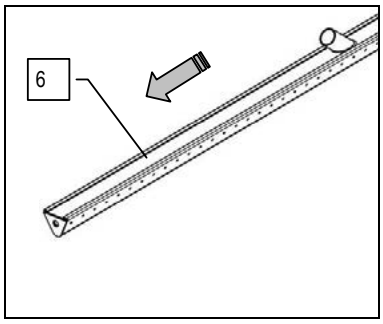
7. Remove the tube (5) connected to the distribution basin cover



8. Push the distribution basin towards the left side of the machine, then lift it and remove it from the brush head unit



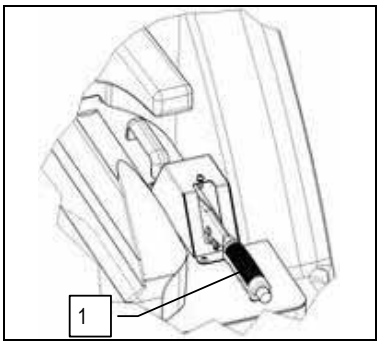
9. Remove the cover (6) from the detergent solution distribution basin
10. Clean the basin with a jet of running water
11. Refit all the parts



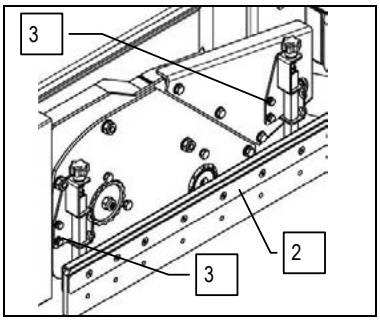
60. REPLACING THE CYLINDRICAL BRUSHES

If the cylindrical brushes in the brush head base are worn, they will no longer clean the floor efficiently. To replace them, proceed as follows:

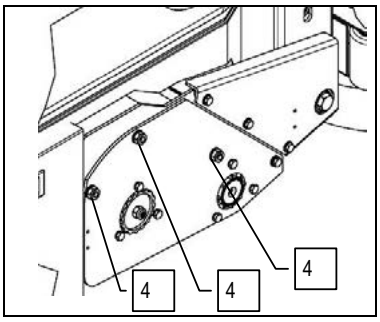
1. Make sure the brush head unit is in its idle position (if necessary, turn the I-DRIVE selector to the “Transfer” position to raise both the brush head and the squeegee)
2. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
3. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
4. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)



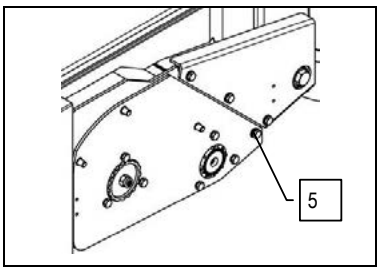
5. Use a suitable tool to remove the right-hand splash guard pre-assembly (2), loosening the screws (3) that fix it to the brush head



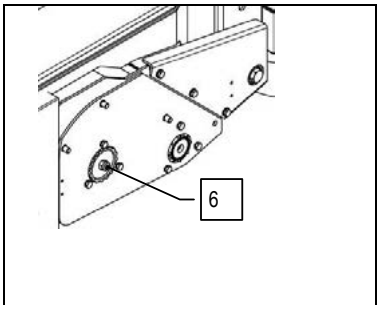
6. Remove the nuts (4) from the right-hand carter



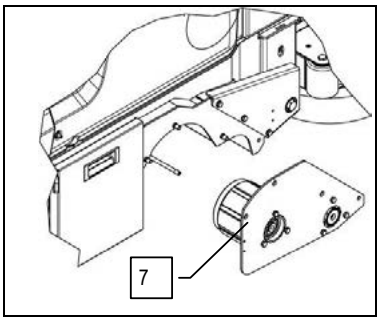
7. Remove the screw (5) from the right-hand carter



8. Remove the nut (6) and washer from the rear brush tie-rod



9. Remove the right-hand carter (7) from the brush head unit, and place it on the ground



10. Take the rear brush out of the tunnel and rest it on the ground. Push the new brush in, until it couples with the drive hub on the opposite side of the tunnel

WARNING: Pay attention to the direction of the brush bristles during assembly, the point of the brush viewed from the above should be towards the front of the machine.

11. Take the front brush out of the tunnel and rest it on the ground. Push the new brush in, until it couples with the drive hub on the opposite side of the tunnel

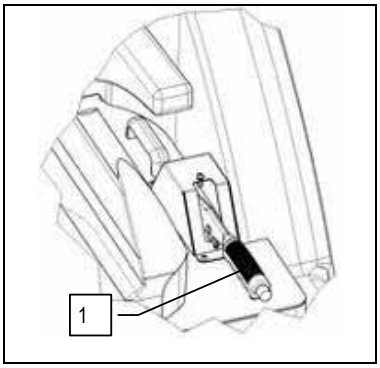
WARNING: Make sure the brushes are correctly connected. If they are not, the machine may not work properly.

WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.

61. REPLACING THE SIDE BRUSH

If the side brush is worn, it will no longer clean the floor efficiently. To replace it, proceed as follows:

1. Check the side brush is in its idle position (if necessary, turn the I-DRIVE selector to the “Transfer” position and push the relevant lever on the instrument panel)
2. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
3. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
4. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)

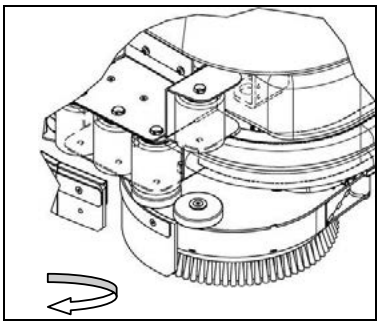


WARNING: During this operation, verify that there are no people or objects near the brush.

5. With the brush head up, release the brush from the brush-holder plate seat, and turn it anticlockwise until the three studs slip out of the notches on the plate itself. Turn, so the stud is pushed away from the coupling spring



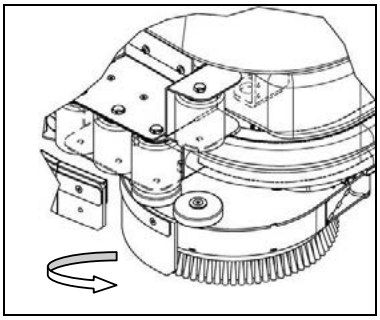
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.



6. With the brush head up, insert the brush in the brush-holder plate seat, and turn it clockwise until the three studs are inserted in the notches on the plate itself. Turn, so the stud is pushed towards the coupling spring and the plate is locked in place



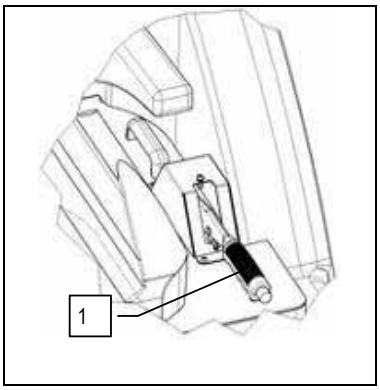
WARNING: Check the brush is correctly inserted. If they are not, the machine may not work properly.



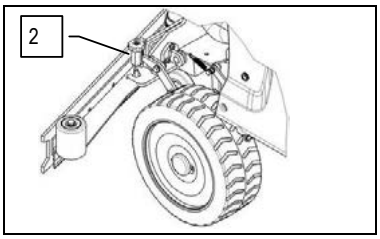
62. REPLACING THE FRONT SQUEEGEE RUBBER

Suction will be poor and the machine will not dry perfectly if the front squeegee rubber is worn. Proceed as follows to replace:

1. Make sure the brush head unit is in its working position (if necessary, turn the I-DRIVE selector to the “Transfer” position to raise both the brush head and the squeegee)
2. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
3. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
4. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)



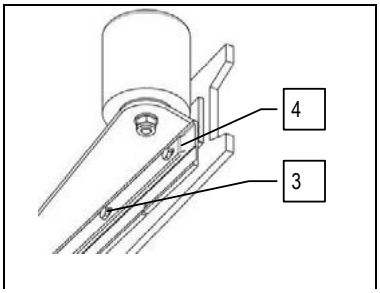
5. Disconnect the squeegee by loosening the knobs (2)



6. Loosen the rubber-pressing blade securing screws (3)
7. Remove the rubber-pressing blade (4), then the rubber, for replacement
8. To replace the rubber, proceed in reverse order



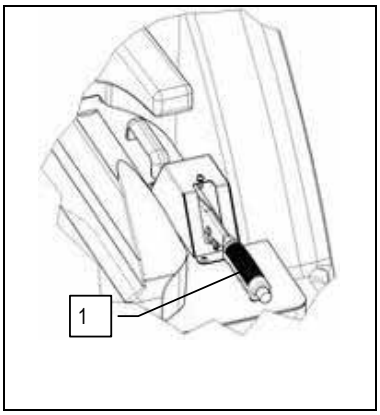
WARNING: These operations must be carried out using gloves to protect against contact with dangerous solutions.



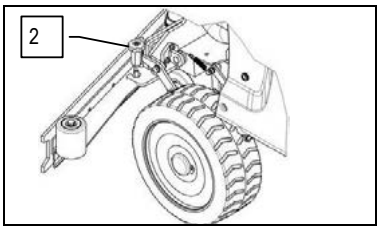
63. REPLACING THE REAR SQUEEGEE RUBBER

If the squeegee rear rubber is worn and does not dry well, it is possible to change the drying edge using one of the 4 edges of the rubber. This can be done with the squeegee removed, proceeding as follows:

1. Make sure the brush head unit is in its working position (if necessary, turn the I-DRIVE selector to the "Transfer" position to raise both the brush head and the squeegee)
2. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
3. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
4. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)



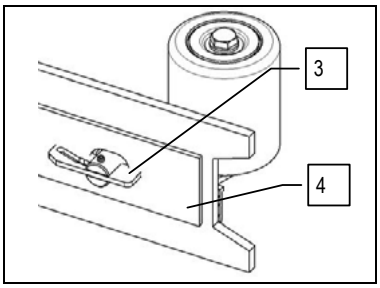
5. Disconnect the squeegee by loosening the knobs (2)



6. Rotate the fixing plates (3)
7. Remove the rubber-pressing blade (4) and then the rubber, to turn it over or replace it
8. To replace the rubber, proceed in reverse order
9. Adjust the height of the squeegee depending on the rubber (see "ADJUSTING THE HEIGHT OF THE SQUEEGEE SUPPORT")



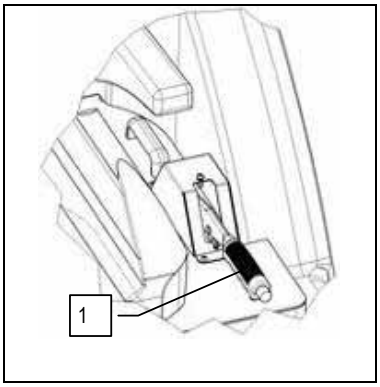
WARNING: These operations must be carried out using gloves to protect against contact with dangerous solutions.



64. REPLACING THE SIDE SPLASH GUARD RUBBER OF THE BRUSH HEAD

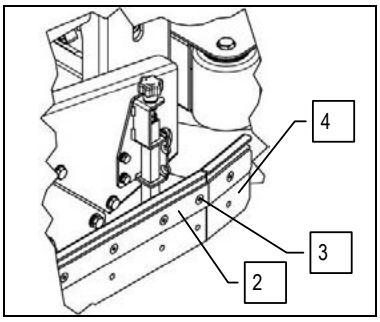
If the splash guard side rubber in the brush head cover is worn and does not dry well, it is possible to change the drying edge (using one of the 4 edges of the rubber).
This operation can be carried out with the side splash guard support removed, proceeding as follows:

1. Make sure the brush head unit is in its working position (if necessary, turn the I-DRIVE selector to the "Washing" position to lower the brush head)
2. Set the main switch to the "0" position by turning the key a quarter turn to the left.
3. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)



4. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)

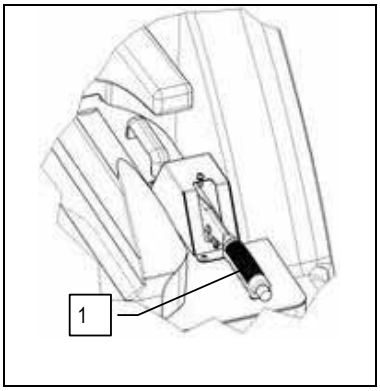
5. Use a suitable tool to remove the rubber-pressing blade (2), loosening the screws (3) that fix it to the splash guard support.
6. Take the rubber (4) out, and turn or replace it
7. To replace the rubber, proceed in reverse order
8. Adjust the height of the splash guard rubber according to the rubber itself (refer to “ADJUSTING THE HEIGHT OF THE SIDE SPLASH GUARDS”)



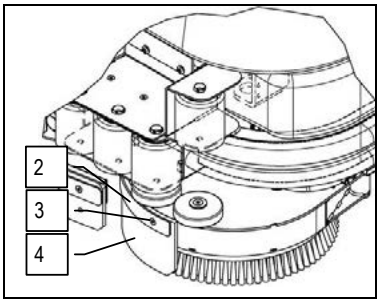
65. REPLACING THE SPLASH GUARD RUBBER OF THE SIDE BRUSH

If the splash guard rubber of the side brush is worn and does not dry well, it is possible to change the drying edge twice. To do this, proceed as follows:

1. Make sure the brush head unit is in its working position (if necessary, turn the I-DRIVE selector to the “Washing” position to lower the brush head)
2. Place the side brush in its “Working” position by means of the relevant lever on the instrument panel
3. Set the main switch to the "0" position by turning the key a quarter turn to the left.
4. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
5. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)



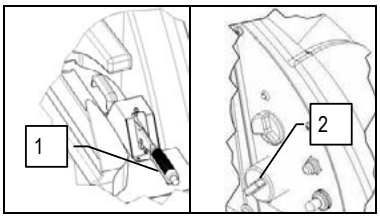
9. Use a suitable tool to remove the rubber-pressing blade (2), loosening the screws (3) that fix it to the side brush head
10. Take the rubber (4) out, and turn or replace it
11. To replace the rubber, proceed in reverse order



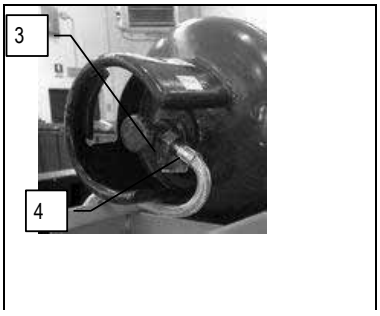
66. REPLACING THE LPG CYLINDER (COMBUSTION ENGINE VERSION)

To replace the LPG cylinder when it is empty, proceed as follows:

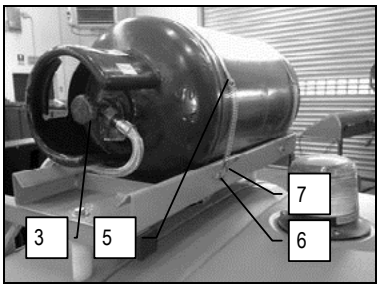
1. Engage the parking brake (1)
2. Check the main machine switch (2) is in the “0” position. If this is not the case, turn the key by a quarter rotation to the right.



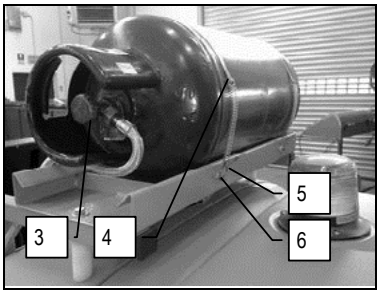
3. Unscrew the tube (4) from the tap (3), remembering to remove the seal between the two elements



4. Fully close the cylinder tap (3)
5. Remove the straps (5) by releasing the springs (6) from the screws (7) on the cylinder support, then take off the cylinder

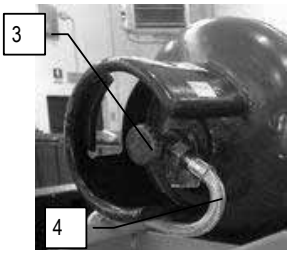


6. Position the new cylinder as shown in the figure. If it is in the right place, the tap (3) will be on the left side of the machine
7. Fix the cylinder to its support by means of the straps (5). To do this, hook the spring (6) to the screw (7) on the support



WARNING: Use only cylinders measuring 300x600 (max Ø x height in millimetres) and weighing no more than 10kg.

8. Tighten the tube (4) to the tap (3). Remember to insert the seal that's supplied with the cylinder
9. Fully open the cylinder tap (3)



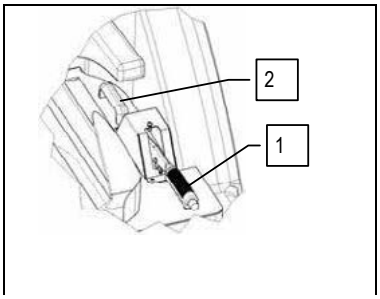
WARNING: The seal between the tap (3) and the tube (4) must be changed every time the LPG cylinder is replaced.
WARNING: The LPG cylinder must not be replaced near flames, cinders or active electric devices.
WARNING: Before replacing the LPG cylinder, make sure the taps (3) of both the old cylinder and the new one are closed.
WARNING: The cylinder and tube (4) must never be exposed to heat sources.

67. REPLACING THE STARTER BATTERY

The battery must be housed in the special compartment beneath the seat mounting plate. It should be handled using lifting equipment that is suitable in terms of both weight and lifting method. It must also meet the requisites of the following standards: CEI EN 50342, CEI EN 60095-2 and CEI EN 60095-4. The dimensions of the battery compartment are: 229 mm x 132 mm x H165mm mm.

If you need to replace the starter battery, proceed as follows:

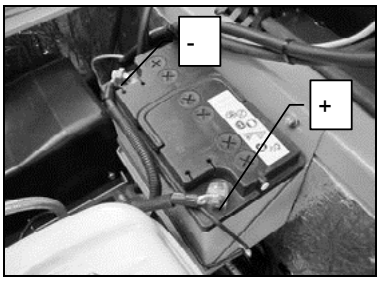
1. Make sure the brush head unit is in its working position (if necessary, turn the I-DRIVE selector to the “Transfer” position to raise both the brush head and the squeegee)
2. Check the electric system connector is disconnected from the battery connector (for battery versions) or from the generator connector (for versions with a combustion engine)
3. Make sure the main switch is in the "0" position. If it is not, turn the key a quarter turn to the left
4. Check the parking brake is engaged. If it is not, engage it by means of the lever (1)



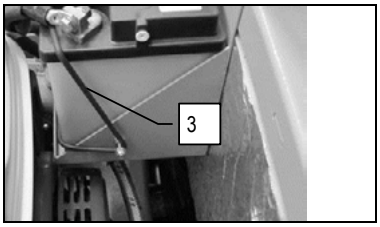
5. Lift the handle (2) to access the motor compartment
6. Turn the seat mounting plate as far as it will go
7. Use a suitable tool to disconnect the battery from the machine system



WARNING: The first cable to be disconnected is the "+" pole, followed by the "-" pole.



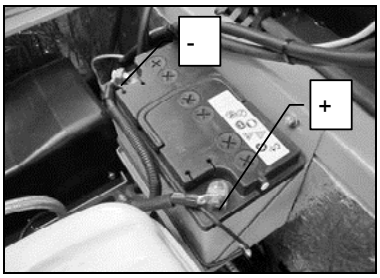
8. Remove the battery clamp (3)
9. Use suitable means to lift the battery out of the machine



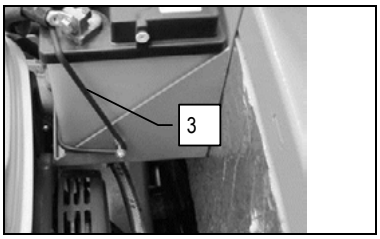
10. Use suitable means to insert the new battery in the machine, positioning it as shown in the figure
11. Use a suitable tool to connect the battery to the machine system



WARNING: The first cable to be disconnected is the "+" pole, followed by the "-" pole.



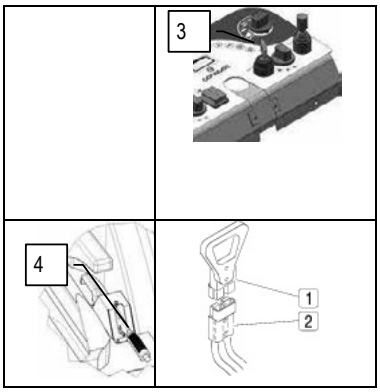
12. Fix the battery to its support with the aid of the clamp (3)



68. WASHING THE DOSING SYSTEM (VERSIONS WITH CDS)

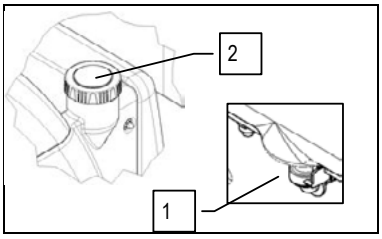
The dosing system should be cleaned when the machine is not used for a long period (more than 48 hours); to do so, proceed as follows:

1. Make sure the squeegee unit is in its idle (raised) position (if necessary, turn the I-DRIVE selector to the "Transfer" position to raise both the brush head and the squeegee)
2. Make sure the electrical system connector (1) is disconnected from the battery connector (2); if necessary, disconnect it
3. Make sure the main switch (3) is in the "0" position. If it is not, turn the key a quarter turn to the left
4. Check the parking brake is engaged. If it is not, engage it by means of the lever (4). Make sure the electrical system connector is disconnected from the battery connector

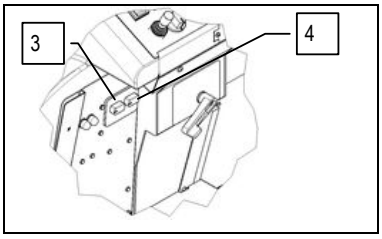


EXTRAORDINARY MAINTENANCE

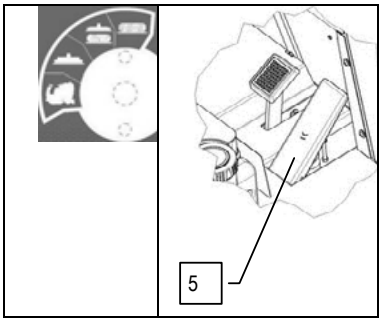
5. Unscrew the cap of the detergent canister (1) and fill it with clean water
6. Refit the cap of the detergent tank
7. Check there is clean water in the solution tank



8. Check that the tap lever is fully opened, the lever is positioned at the rear of the machine
9. Check that the by-pass tap is in the “dosing system” position
10. Turn the water flow rate adjustment knob (3) to the maximum position
11. Turn the detergent percentage adjustment knob (4) to the maximum position
12. Insert the battery connector into the machine connector.
13. Place the main switch in position “ON – I”
14. Disengage the parking brake



15. Make sure that the work programme is set to "Work" (position C)
16. Press the accelerator pedal (5) gently to activate the brush head and the dosing system
17. Wait a few minutes keeping the dead man's levers pressed (normally 2 to 4 minutes) to allow the cleaning of the dosing system
18. Completely empty the solution tank and the detergent canister
19. Park the machine in a safe manner



WARNING: The machine will deliver solution during this operation.

TROUBLESHOOTING

69. THE MACHINE DOES NOT START

1. Check the batteries are charged (battery version)
2. Check the starter battery is charged (combustion engine version)
3. Check the starter battery is connected to the machine system (combustion engine version)
4. Check the electric system connector is connected to the battery connector (battery version)
5. Check the electric system connector is connected to the generator connector (combustion engine version)
6. Check the key switch is ON/I
7. Check there is fuel in the engine tank, and that the LPG cylinder is full (combustion engine version)

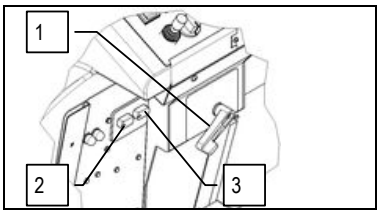
70. THE COMBUSTION ENGINE DOES NOT START



WARNING: If the combustion engine does not start up, check the diagnostics in the motor use and maintenance manual (the booklet supplied with the machine itself).

71. INSUFFICIENT WATER ON THE BRUSHES

1. Check there is water in the solution tank
2. Check that the water/detergent solution release adjustment lever (1) is open
3. Check that the water/detergent selectors (2-3) are open (for CDS versions only)
4. Clean the solution filter located at the front of the machine
5. Make sure the detergent solution distribution tank (on the brush head unit) is not clogged



72. THE SQUEEGEE DOES NOT DRY PERFECTLY

1. Check the squeegee is clean
2. Check the squeegee settings (see “MACHINE PREPARATION”)
3. Clean the entire vacuum unit (see “WEEKLY MAINTENANCE”)
4. Replace the rubbers, if worn

73. THE MACHINE DOES NOT CLEAN WELL

1. Check the state of wear and tear of the brushes and, if necessary, replace them. The brushes should be changed when the bristles are about 15mm long. To replace them, see “REPLACING THE BRUSHES”, or “DISASSEMBLING THE BRUSHES” and “ASSEMBLING THE BRUSHES”. Working with over-worn brushes may cause damage to the floor
2. Use a different kind of brush to the one fitted as standard. For cleaning floors where the dirt is particularly resistant, we recommend the use of special brushes supplied upon request and according to needs (see “CHOOSING AND USING THE BRUSHES”)

74. EXCESSIVE FOAM PRODUCTION

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

75. THE SUCTION MOTOR DOES NOT FUNCTION

1. Check whether the recovery tank is full and, if necessary, empty it
2. Check the float switch on the suction cap is working well (see also “CLEANING THE RECOVERY TANK” under “DAILY MAINTENANCE”)

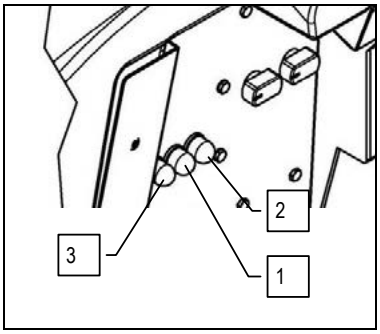
TROUBLESHOOTING

76. THE BRUSH MOTOR DOES NOT WORK

ATTENTION: To avoid damaging the floor, the motor only starts up when the machine is moved forwards

1. Check that the base is lowered during start-up
2. The operator must be properly seated in the driving position
3. Check no thermal protection device has intervened
4. Check the correct connection of the motor to the terminal under the footboards

77. ELECTRIC FUSES AND THERMAL CUT-OUTS



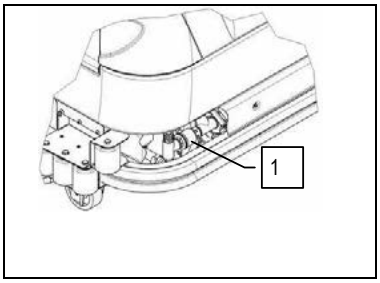
The machine is fitted with the following electrical protection systems:

Power fuses arranged in the electrical box, to protect against short-circuiting.
thermal circuit breakers arranged on the outside of the handlebars, to protect the following motors:

1. 25A circuit breaker (1) for left-hand side suction motor
2. 25A circuit breaker (2) for right-hand side suction motor
3. 20A circuit breaker (3) for the side brush motor

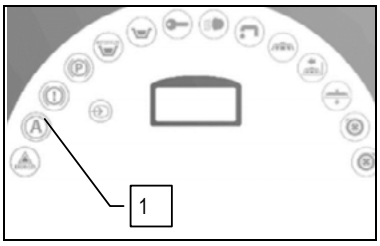
In the event of malfunctioning, check a thermal cut-out has not intervened. If the motor overheats, its thermal cut-out intervenes to block the electricity supply. Wait a few minutes until it has cooled down, then press the specific circuit breaker button to reactivate the power supply and motor operation. If the problem persists, contact the technical assistance centre.

78. THE AUTOMATIC WATER/DETERGENT DOSING SYSTEM DOES NOT WORK



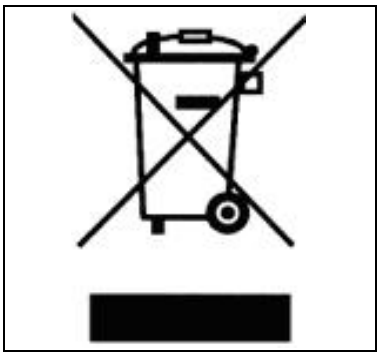
The automatic water/detergent dosing system has been designed with criteria of extreme sturdiness and reliability, but there is a special by-pass system that allows you to use the machine even if the system is out-of-use.
To by-pass the automatic water/detergent dosing system, you must rotate the tap lever (1) on the rear-centre of the base downwards; in this way you can go on working even with the system out-of-use. Remember, however, to put not only water in the solution tank, but the right quantities of both water and detergent. With the dosing system out-of-use, the water flow is regulated via the tap on the steering column.
Contact a ICE authorised dealer to have the system repaired.

79. ALARMS



The machine is fitted with a flashing warning light (1) for diagnosing faults in the traction motor control system. Each sequence (number of consecutive flashes) indicates a particular type of fault. When flashing begins (with an accompanying operating fault), you should contact the technical assistance centre, specifying the number of flashes.

DISPOSAL



To dispose of the machine, take it to a demolition centre or an authorised collection centre.

Before scrapping the machine it is necessary to remove and separate the following materials and send them to the appropriate collection centres in accordance with the environmental hygiene regulations currently in force:

- brushes
- filter
- electric and electronic parts*
- batteries
- plastic parts (tanks and handlebars)
- metal parts (levers and frame)

(*) In particular, to scrap the electric and electronic parts, contact your area distributor.

CHOOSING AND USING THE BRUSHES

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

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

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

THICKNESS OF THE BRISTLES
Thicker bristles are more rigid and are therefore used on smooth floors or floors with small joints.
On uneven floors or those with deep joints, it is advisable to use softer bristles which can enter the gaps more easily.
Remember that when the bristles are worn and therefore too short, they will become rigid and are no longer able to penetrate and clean deep down. In this case, like with 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 holder is especially suitable for machines with several brushes, where the centring of the grinding wheels is difficult.

TABLE FOR CHOOSING THE BRUSHES

Machine	No. of brushes	Code	Type of bristles	Ø Bristles	Ø Brush	Length	Notes
R-SCRUB ULTRA C	1	405618	PPL	1	280	978	Rear brush - black
		405619	NYLON	1.2			Rear brush - black
		405620	ABRASIVE	1 + 0.5			Rear brush
		405621	UNIONMIX				Rear brush
		405622	ABRASIVE	1.5			Rear brush
	1	405624	PPL	0.5	150	987	Front brush - white
		405625	NYLON	0.8			Front brush - white
	1	422189	PPL	0.3	340	-	Side brush - light blue
		422971	PPL	0.6			Side brush - white
		422972	PPL	0.9			Side brush - black
		422981	ABRASIVE	1			Side brush

EC DECLARATION OF CONFORMITY

The undersigned company:
Industrial Cleaning Equipment Ltd.
Sauber House, Unit 3, Rushington Business Park
Chapel Lane, Totton, Hampshire, SO40 9AH
Declares under its sole responsibility that the products

FLOOR SCRUBBING MACHINES
mod. R-SCRUB ULTRA C

comply with the requirements of the following Directives:

- 2006/42/EC: Machinery Directive.
- 2014/35/EC: Low Voltage Directive.
- 2014/30/EC: Electromagnetic compatibility directive.

They also comply with the following standards:
- EN 60335-1: Household and similar electrical appliances - Safety. Part 1: Generic standards.
- EN 60335-2-72: Household and similar electrical appliances. Part 2: Specific standards for automatic machines for floor treatment for commercial and industrial use.
- EN 60335-2-29: Household and similar electrical appliances. Part 2: Special standards for battery chargers.
- EN 12100-1: Safety of Machinery - Basic concepts, general principles for design - Part 1: Basic terminology and methodology.
- EN 12100-2: Safety of Machinery - Basic concepts, general principles for design - Part 2: Technical principles.
- EN 61000-6-2: Electromagnetic compatibility (EMC) - Part 6-2: Generic standards – Immunity for industrial environments.
- EN 61000-6-3: Electromagnetic compatibility (EMC) - Part 6-3: Generic standards — Standard emission for residential, commercial and light-industrial environments.
- EN 61000-3-2: Electromagnetic compatibility (EMC) - Part 3-2: Limits – Limits for harmonic current emissions (Equipment with input current ≤ 16 A per phase).
- EN 61000-3-3: Electromagnetic compatibility (EMC) - Part 3-3: Limits – Restriction of voltage variations and flicker in low voltage power supply systems for devices with a rated current ≤ 16 A.
- EN 55014-1: Electromagnetic compatibility - Regulations for household appliances, electrical devices and similar equipment. Part 1: Emission - Regulation for product family.
- EN 55014-2: Electromagnetic compatibility - Regulations for household appliances, electrical devices and similar equipment. Part 2: Immunity - Regulation for product family.
- EN 62233: Household and similar electrical appliances - Electromagnetic fields - Methods for evaluation and measurement.

The person authorised to compile the technical file:

Mr. Mark Bresnihan
Sauber House, Unit 3, Rushington Business Park
Chapel Lane, Totton, Hampshire, SO40 9AH

Chapel Lane, 01/02/2017

Industrial Cleaning Equipment Ltd.
Legal representative
Mark Bresnihan

Manufacturer:
COMAC S.p.A.
Via Maestri del Lavoro, n°13
c.a.p. 37059 - S. Maria di Zevio (VR) - Verona - Italia
Tel. +39 045 8774222 - Fax. +39 045 8750303
E-mail: com@comac.it
Web: www.comac.it

Mandatory:
Industrial Cleaning Equipment Ltd.
Sauber House, Unit 3, Rushington Business Park
Chapel Lane, Totton, Hampshire, SO40 9AH
Tel. 0800 389 3869 - Fax. 023 8042 8318
E-mail: info@ice-clean.com
Web: www.ice-clean.com

NOTE

NOTE



Industrial Cleaning Equipment Ltd.
Sauber House, Unit 3, Rushington Business Park - Chapel Lane, Totton, Hampshire, SO40 9AH
Service 0800 389 3869 - Facsmile 023 8042 8318 - Email info@ice-clean.com