



 EQUIPMENT

 PARTS

 RENTALS

 SERVICE

 SUPPLIES

USE AND MAINTENANCE MANUAL

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HAMMERHEAD®

650RDX / 700RSX / 750RDX

USE AND MAINTENANCE MANUAL



650/750RDX
700RSX

ED. 05-2014

EN

ORIGINAL
INSTRUCTIONS
Doc. 10048566
AA Version



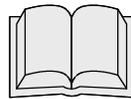
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Symbols used in the manual



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 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 machine disposal



CONTENTS

CONTENTS.....	3
ON CONSIGNMENT OF THE MACHINE.....	5
INTRODUCTORY COMMENT.....	5
INTENDED USE.....	5
SERIAL NUMBER PLATE.....	5
TECHNICAL DESCRIPTION.....	6
TECHNICAL DESCRIPTION.....	7
SYMBOLS USED ON THE MACHINE.....	8
GENERAL SAFETY REGULATIONS.....	12
MACHINE PREPARATION.....	13
1. HANDLING THE PACKED MACHINE.....	13
2. HOW TO UNPACK THE MACHINE.....	13
3. HOW TO MOVE THE MACHINE.....	13
4. INSTRUMENT PANEL COMPONENTS (650RDX versions).....	14
5. INSTRUMENT PANEL COMPONENTS (700RSX versions).....	14
6. STEERING COLUMN COMPONENTS.....	15
7. FOOTBOARD COMPONENTS.....	15
8. SIDE COMPONENTS OF THE MACHINE.....	16
9. REAR COMPONENTS OF THE MACHINE.....	16
10. BATTERY TYPE.....	17
11. BATTERY MAINTENANCE AND DISPOSAL.....	17
12. FITTING THE BATTERIES INTO THE MACHINE.....	17
13. CONNECTING THE BATTERIES AND BATTERY CONNECTOR.....	18
14. CONNECTING THE BATTERY CHARGER (VERSIONS WITH BC).....	18
15. HOUR METER.....	19
16. BATTERY CHARGE LEVEL INDICATOR.....	20
17. WORKING FORWARD SPEED.....	20
18. FILLING THE SOLUTION TANK WITH WATER.....	20
19. DETERGENT SOLUTION.....	22
20. ASSEMBLING THE SQUEEGEE.....	22
21. WASHING THE BRUSH HEAD CASING ASSEMBLY (650RDX versions).....	23
22. ASSEMBLING THE BRUSHES (650RDX versions).....	23
23. ASSEMBLING THE BRUSH (700RSX versions).....	24
24. PARKING BRAKE – SERVICE BRAKE.....	25
25. BLINKING LIGHT (OPTIONAL).....	25
PREPARING TO WORK.....	26
26. PREPARING TO WORK.....	26
WORK.....	27
27. STARTING TO WORK.....	27
28. DETERGENT REGULATION.....	30
29. REGULATING THE FORWARD MOVEMENT SPEED.....	30
30. "ECO" DEVICE.....	31
31. BRUSH HEAD UNIT EXTRA PRESSURE (650RDX versions).....	31
32. OVERFLOW DEVICE.....	32
AT THE END OF THE WORK.....	33
DAILY MAINTENANCE.....	35
33. EMPTYING THE RECOVERY TANK.....	35
34. EMPTYING THE SOLUTION TANK (650RDX versions).....	35
35. EMPTYING THE SOLUTION TANK (700RSX versions).....	36
36. CLEANING THE SQUEEGEE BODY.....	37
37. CLEANING DISC BRUSHES (650RDX versions).....	38
38. CLEANING THE CYLINDRICAL BRUSH (700RSX versions).....	39
39. CLEANING THE DEBRIS HOPPER (700RSX versions).....	40
40. CLEANING THE RECOVERY TANK FILTER.....	41



WEEKLY MAINTENANCE	42
41. CLEANING THE RECOVERY TANK	42
42. CLEANING THE SOLUTION TANK (650RDX versions)	42
43. CLEANING THE SOLUTION TANK (700RSX versions)	43
44. CLEANING THE WATER SYSTEM FILTER	44
45. CLEANING OF THE VACUUM HOSE (650RDX versions)	45
46. CLEANING OF THE VACUUM HOSE (700RSX versions)	46
EXTRAORDINARY MAINTENANCE	48
47. REPLACING THE SQUEEGEE RUBBER	48
48. REGULATING THE SQUEEGEE	49
49. REPLACING THE DISC BRUSHES (650RDX versions)	49
50. REPLACING THE CYLINDRICAL BRUSH (700RSX versions)	50
51. REPLACING THE BRUSH HEAD CASING (650RDX versions)	51
TROUBLESHOOTING	52
52. INSUFFICIENT WATER ON THE BRUSHES	52
53. THE SQUEEGEE DOES NOT DRY PERFECTLY	52
54. THE MACHINE DOES NOT CLEAN WELL	52
55. EXCESSIVE FOAM PRODUCTION	52
56. THE VACUUM CLEANER DOES NOT FUNCTION	52
57. THE BRUSH MOTOR DOES NOT WORK (650RDX version)	52
58. THE BRUSH MOTOR DOES NOT WORK	53
59. IT IS IMPOSSIBLE TO RAISE OR LOWER THE BRUSH HEAD OR SQUEEGEE	53
60. THE MACHINE DOES NOT START	53
61. ELECTRIC FUSES AND THERMAL CUT-OUTS	53
DISPOSAL	54
CHOOSING AND USING THE BRUSHES	55
NYLON BRUSH	55
ABRASIVE BRUSH	55
THICKNESS OF THE BRISTLES	55
PAD HOLDER	55
TABLE FOR CHOOSING THE BRUSHES	55
NOTES	55

ON CONSIGNMENT OF THE MACHINE

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

INTRODUCTORY COMMENT

650RDX or 700RSX is a floor scrubbing machine that is able to clean a wide variety of types of flooring and types of dirt by using the mechanical action of two disc or cylindrical brushes, depending on the model, and the chemical action of a water-detergent solution. As it advances, it also collects the dirt removed and the detergent solution not absorbed by the floor.

The machine must be used only 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.

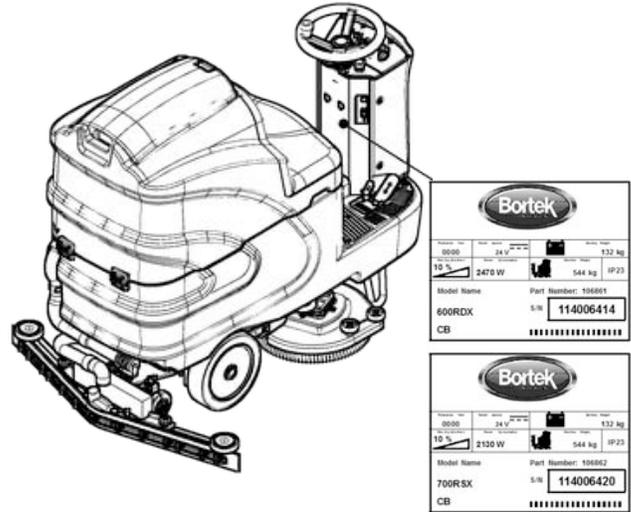
INTENDED USE

The floor 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 for picking up dangerous dusts or inflammable liquids within places with a potentially explosive atmosphere. In addition, it is not suitable as a means of transport for people or objects.

SERIAL NUMBER PLATE

The serial number plate is located at the rear of the steering column, and it contains the general characteristics of the machine, and in particular the machine's serial number. The serial number is extremely important information that should always be supplied together with a request for assistance or when purchasing parts.



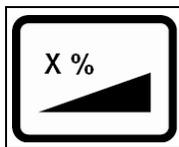


TECHNICAL DESCRIPTION	UM [SI]	650RDX	750RDX	700RSX
Working width	mm	650	750	690
Squeegee width	mm	970	970	970
Working capacity, up to	m ² /h	3900	4500	4100
Disc brushes	Nr / Æ	2/340	2/390	
Cylindrical brushes	Nr / Æ			1/210
Brush rotations	Revs/min.	170	170	520
Brush motor	V/W	24/450	24/450	24/560
Maximum pressure on the brushes (min/max)	kg	30/60	30/60	20
Traction motor	V/W	24/310	24/310	24/310
Traction wheel	Ø mm	220	220	220
Forward speed	km/h	0÷6	0÷6	0÷6
Maximum gradient with full load	%	10	10	10
Vacuum motor	V/W	24/310	24/310	24/310
Suction vacuum	mmH ₂ O	160	160	160
Rear elastic wheels	Ø mm	300	300	300
Solution tank	l	110	110	110
Recovery tank	l	125	125	125
Detergent tank (CDS version only)	l	5	5	5
Steering diameter	mm	1910	1910	1910
Machine length (without squeegee)	mm	1495	1495	1495
Machine height (without optional blinking light kit)	mm	1320	1320	1320
Machine width (without squeegee)	mm	680	770	805
Battery compartment dimensions (l x w x h)	mm	384x520x340	384x520x340	384x520x340
Rated battery voltage	V	24	24	24
Battery weight (max)	kg	136	136	136
Machine weight (empty and without batteries)	kg	213	213	233
Machine weight during transport (machine + batteries + brushes + squeegee)	kg	350	350	370
Machine weight in running order (machine + batteries + water + brushes + squeegee + operator)	kg	420	420	440
Sound pressure level (ISO 11201)	dB (A)	<70	<70	<70
Uncertainty K _{pA}	dB (A)	1.5	1.5	1.5
Hand vibration level (ISO 5349-1)	m/s ²	<2.5	<2.5	<2.5
Body vibration level	m/s ²	<0.5	<0.5	<0.5

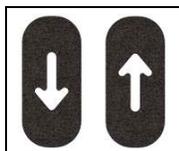


TECHNICAL DESCRIPTION	UM [scs]	650RDX	650RDX	700RSX
Working width	in	25.66	38.19	27.24
Squeegee width	in	38.29	38.29	38.29
Working capacity, up to	ft ² /h	41980	4500	44128
Disc brushes	Nr / ∅ in	2 / 13.42	2 / 15.35	
Cylindrical brushes	Nr / ∅ in			1/8.29
Brush rotations	Revs/min.	170	170	520
Brush motor	V/W	24/450	24/450	24/560
Maximum pressure on the brushes (min/max)	lbs	66.14/132.28	66.14/132.28	44.09
Traction motor	V/W	24/310	24/310	24/310
Traction wheel	∅ in	8.68	8.68	8.68
Forward speed	mph	0÷3.75	0÷3.75	0÷3.75
Maximum gradient with full load	%	10	10	10
Vacuum motor	V/W	24/310	24/310	24/310
Suction vacuum	inH ₂ O	6.31	6.31	6.31
Rear elastic wheels	∅ in	11.84	11.84	11.84
Solution tank	gallons	29.02	29.02	29.02
Recovery tank	gallons	32.98	32.98	32.98
Detergent tank (CDS version only)	gallons	1.32	1.32	1.32
Steering diameter	in	75.4	75.4	75.4
Machine length (without squeegee)	in	59.02	59.02	59.02
Machine height (without optional blinking light kit)	in	52.11	52.11	52.11
Machine width (without squeegee)	in	26.85	30.31	26.85
Battery compartment dimensions (l x w x h)	in	15.16x20.52x 13.422	15.16x20.52x 13.422	15.16x20.52x 13.422
Rated battery voltage	V	24	24	24
Battery weight (max)	lbs	299.83	299.83	299.83
Machine weight (empty and without batteries)	lbs	469.58	469.58	513.68
Machine weight during transport (machine + batteries + brushes + squeegee)	lbs	771.62	771.62	815.71
Machine weight in running order (machine + batteries + water + brushes + squeegee + operator)	lbs	926	926	970
Sound pressure level (ISO 11201)	dB (A)	<70	<70	<70
Uncertainty K _{pA}	dB (A)	1.5	1.5	1.5
Hand vibration level (ISO 5349-1)	m/s ²	<2.5	<2.5	<2.5
Body vibration level	m/s ²	<0.5	<0.5	<0.5

SYMBOLS USED ON THE MACHINE



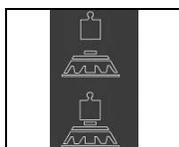
Indicates the maximum gradient.



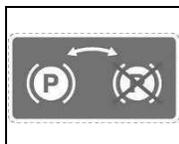
Pedal labels that indicate the forward and reverse direction of the machine.
Used to indicate the direction of the machine.



Water quantity regulation symbol.
Used on the steering column to indicate the knobs for adjusting the quantity of water distributed in the machine's water system.



Symbol denoting pressure applied to the brushes.
Used to indicate the pedal to increase the pressure on the brushes.



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



Symbol indicating the maximum temperature of the water used to fill the solution tank.



Symbol indicating the position of the solution tank drain pipe.

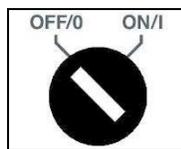


Symbol indicating the position of the recovery tank drainage tube.

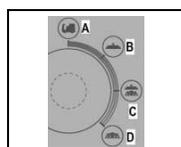


Indicates the risk of crushed hands.

SYMBOLS USED ON THE MACHINE



Main switch symbol (key switch).
Used on the instrument panel, to indicate the key switch for machine operation on (ON/I) or off (OFF/0).



Symbol that the brush head / squeegee are operating.
Used to indicate the I-DRIVE program selector.



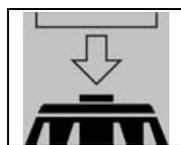
Symbol for ECO mode.
Used on the control panel to indicate the button that activates the ECO mode of the machine.



Horn symbol.
Used on the control panel, to indicate the horn button.



Brush uncoupling symbol (only for 650RDX versions).
Used on the control panel to indicate the button for uncoupling the brushes.



Brush uncoupling symbol (only for 650RDX versions).
Used on the control display to indicate that the brushes are being uncoupled.



Reverse and forward speed level regulator symbol.
Used on the control panel, to indicate the button that allows you to regulate the forward or reverse speed of the machine.



Reverse and forward speed symbol.
Used on the control display, to indicate the level of speed of the forwards or reverse of the machine.

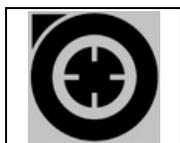


Battery charge level symbol.
Used on the control display to indicate the state of charge of the batteries.

SYMBOLS USED ON THE MACHINE



Battery critical charge level symbol.
Used on the control display to indicate the critical state of charge of the batteries and the need to recharge them.



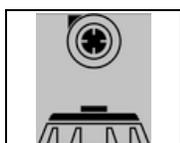
"DRYING" working program.
Used in the control display to indicate that the "DRYING" working program is active, in this case only the vacuum motor is operating.



Symbol for "ECO-DRYING" working program.
Used in the control display to indicate that the "ECO-DRYING" working program is active, in this case only the vacuum motor is operating in economic mode.



"SCRUBBING-DRYING" working program symbol.
Used in the control display to indicate that the "SCRUBBING-DRYING" working program is active, in this case the brush motor, the solenoid valve and the vacuum motor are operating.



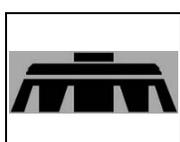
"ECO SCRUBBING-DRYING" working program symbol.
Used in the control display to indicate that the "ECO SCRUBBING-DRYING" working program is active, in this case the brush motor, the solenoid valve and the vacuum motor are operating in economic mode.



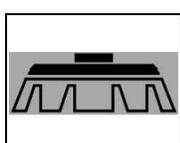
"SCRUBBING-DRYING-EXTRA PRESSURE" working program symbol.
Used in the control display to indicate that the "SCRUBBING-DRYING-EXTRA PRESSURE" working program is active, in this case the brush motor, the solenoid valve and the vacuum motor are operating.



"ECO SCRUBBING-DRYING-EXTRA PRESSURE" working program symbol.
Used in the control display to indicate that the "ECO SCRUBBING-DRYING-EXTRA PRESSURE" working programme is active, in this case the brush motor, the solenoid valve and the vacuum motor are operating, and with the addition of extra pressure on the brushes in economic mode.

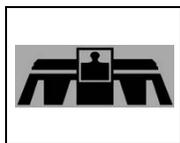


"SCRUBBING" working program symbol.
Used in the control display to indicate that the "SCRUBBING" working program is active, in this case the brush motor and the solenoid valve are operating.

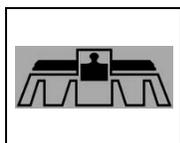


"ECO SCRUBBING" working program symbol.
Used in the control display to indicate that the "ECO SCRUBBING" working program is active, in this case the brush motor and the solenoid valve are operating in economic mode.

SYMBOLS USED ON THE MACHINE



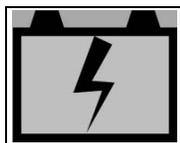
"SCRUBBING-EXTRA PRESSURE" working program symbol.
Used in the control display to indicate that the "SCRUBBING-EXTRA PRESSURE" working program is active, in this case the brush motor and the solenoid valve are operating, but with the addition of more pressure on the brushes.



"ECO SCRUBBING-EXTRA PRESSURE" working program symbol.
Used in the control display to indicate that the "ECO SCRUBBING-EXTRA PRESSURE" working program is active, in this case the brush motor and the solenoid valve are operating, but with the addition of more pressure on the brushes in economic mode.



Parking brake symbol.
Used in the control display to indicate that the parking brake is engaged.



Battery charger symbol.
Used in the control display to indicate that the battery charger is operating and is carrying out the recharge cycle.



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 exclusively used by authorised, trained personnel.
- 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 case of danger, disconnect the battery connector on the rear of the machine.
- 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 scrubbing 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 PACKED 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.

Gross weight of machine with packaging is:

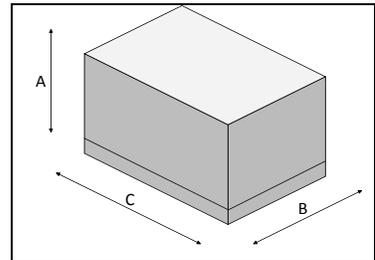
650RDX: 268 kg (without batteries)

750RDX: 268 kg (without batteries)

700RSX: 288 kg (without batteries)

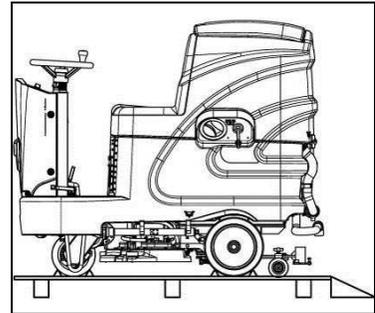
The dimensions of the packaging are as follows:

A: 1635 mm
B: 730 mm
C: 1600 mm



2. HOW TO UNPACK THE MACHINE

1. Remove the outer package.
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 head. To assemble the squeegee, read the section "ASSEMBLING THE SQUEEGEE".



5. Keep the pallet for any future transport needs.



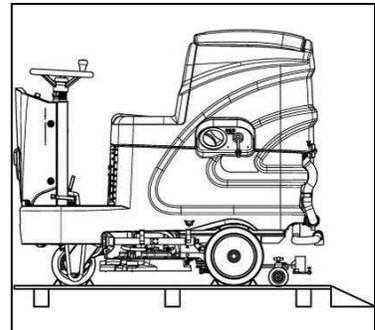
WARNING: If the product is delivered in cardboard containers, handle the packed product with suitable lifting means that comply with the legal requirements



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

3. HOW TO MOVE THE MACHINE

1. Using a chute, mount the machine on the pallet. Carry out this operation with the rear squeegee and the brushes detached from the machine.
2. Check the solution tank and recovery tank are empty; if necessary, empty them.
3. Make sure that the main switch of the machine is in the "0" position; if not, position it to "0".
4. Disconnect the electric system connector from the battery connector.
5. Secure the machine to the pallet using wooden wedges.
6. Engage the parking brake.

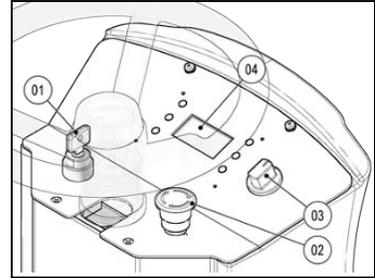


MACHINE PREPARATION

4. INSTRUMENT PANEL COMPONENTS (650RDX versions)

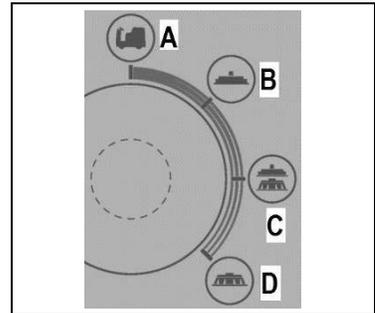
The instrument panel components are identified as follows:

1. Main key switch.
2. Emergency switch.
3. Working program adjustment switch, I-Drive device.
4. Control display.

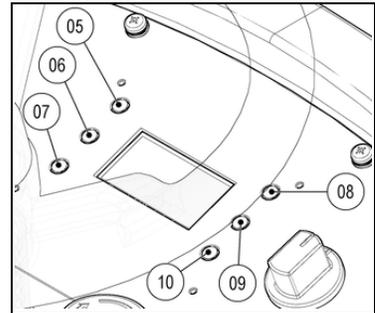


Choose the desired working program with the I-Drive device:

- A. Transfer: movement of the machine without working.
- B. Drying: using the squeegee only.
- C. Scrubbing / Drying: using both the brushes and the squeegee.
- D. Scrubbing only: using the brushes only.



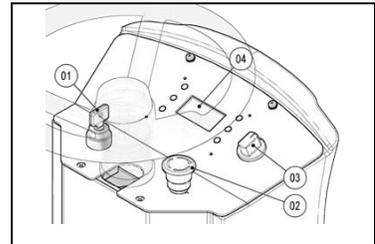
5. "ECO" function button.
6. Horn button.
7. Selector button of the level of the water amount in the water system (only CDS system).
8. Selector button for the level of the forward and reverse speed.
9. "BRUSH UNCOUPLING" function button.
10. Selector button for the percentage of detergent in the water system (only CDS system).



5. INSTRUMENT PANEL COMPONENTS (700RSX versions)

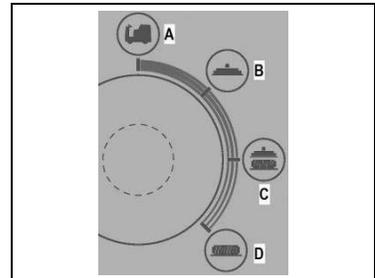
The instrument panel components are identified as follows:

1. Main key switch.
2. Emergency switch.
3. Working program adjustment switch, I-Drive device.
4. Control display.



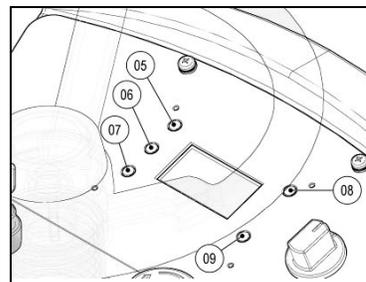
Choose the desired working program with the I-Drive device:

- A. Transfer: movement of the machine without working.
- B. Drying: using the squeegee only.
- C. Scrubbing / Drying: using both the brushes and the squeegee.
- D. Scrubbing only: using the brushes only.



MACHINE PREPARATION

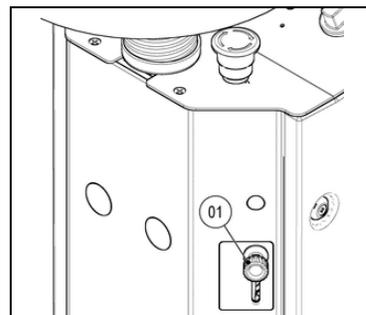
5. "ECO" function button.
6. Horn button.
7. Selector button of the level of the amount water in the water system (only CDS system).
8. Selector button for the level of the forward and reverse speed.
9. Selector button for the percentage of detergent in the water system (only CDS system).



6. STEERING COLUMN COMPONENTS

The steering column components are identified as follows:

1. Detergent solution adjustment lever (version without CDS) - clean water adjustment lever (version with CDS).



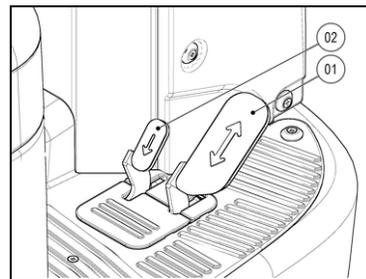
7. FOOTBOARD COMPONENTS

The footboard components are identified as follows:

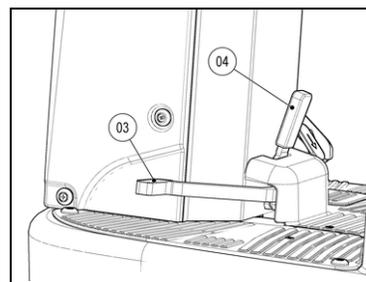
1. Accelerator pedal, forward.
2. Accelerator pedal, reverse.



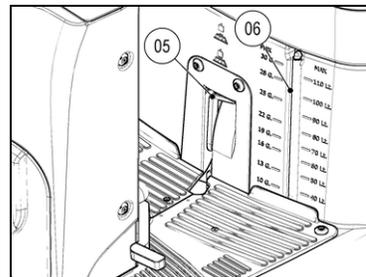
WARNING: Only by simultaneously pressing the pedals is the reverse made



3. Brake pedal.
4. Parking brake lever.



5. Brush head extra pressure pedal (650RDX versions).
6. Water level pipe (versions with CDS) or solution level pipe (versions without CDS).

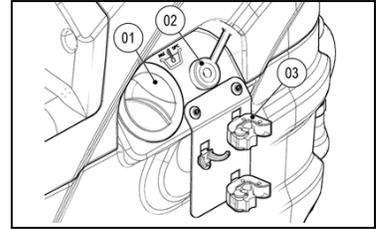


MACHINE PREPARATION

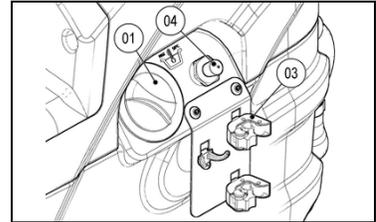
8. SIDE COMPONENTS OF THE MACHINE

The side components of the machine are identified as follows:

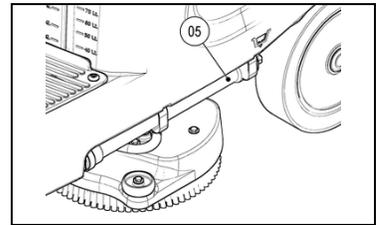
1. Water-detergent filler cap (versions without CDS).
2. Fast water filler cap.
3. Optional kit for cleaning accessories.



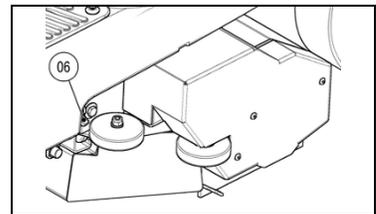
4. Optional rapid refill kit.



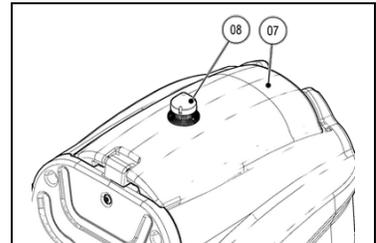
5. Solution tank drainage pipe (650RDX versions).



6. Solution tank drainage plug (700RSX versions).



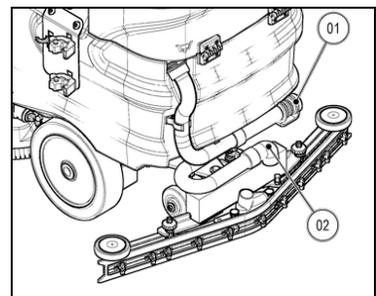
7. Vacuum cap.
8. Optional blinking light kit.



9. REAR COMPONENTS OF THE MACHINE

The rear components of the machine are identified as follows:

1. Recovery tank drainage tube.
2. Squeegee vacuum hose.



MACHINE PREPARATION

10. BATTERY TYPE

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)

The battery compartment can house four 6V or two 12V batteries

For a good operating performance, we suggest the use of 210 Ah C5 batteries

11. 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.

EXHAUSTED BATTERIES ARE CLASSIFIED AS DANGEROUS WASTE AND MUST BE CONSIGNED 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.

12. FITTING THE BATTERIES INTO THE MACHINE

The batteries must be housed in the special compartment beneath the recovery tank and should be handled using lifting equipment that is suitable in terms of both weight and coupling system. They must also satisfy the requirements of Standard CEI 21-5. The dimensions of the battery compartment are: 384 x 520 x H340 mm.

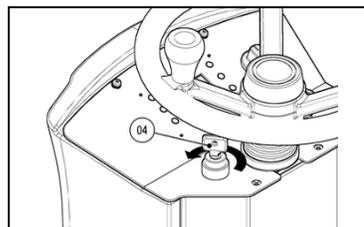
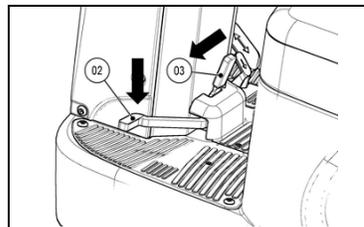
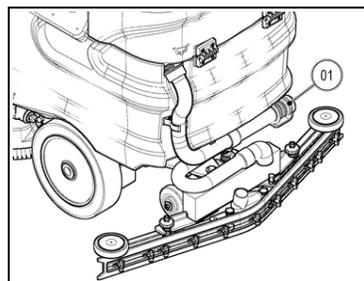


WARNING: For battery maintenance and daily recharging, you must carefully follow the instructions provided by the manufacturer or retailer. All installation and maintenance operations must be carried out by specialised personnel.



WARNING: Ensure that you comply with the accident prevention regulations in force in the country where you work or with DIN EN 50272-3 and DIN EN 50110-1, before any handling of the batteries.

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



To insert the batteries into the compartment proceed as follows:

1. Check that the recovery tank is empty; if not, empty it using the tube provided for this purpose (01) positioned at the rear of the machine (read the section "EMPTYING THE RECOVERY TANK").
2. Block the machine in place by engaging the parking brake, press the pedal (02) and block it with the lever (03) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").
3. Check the main switch (04) is at "0", if not, turn the key by a quarter of a turn to the left, and remove the key from the instrument panel.

MACHINE PREPARATION

4. Grip the handle on the right side of the recovery tank.
5. Lift the recovery tank until it hooks to the end of the safety catch.



WARNING: Before installing the battery, clean the battery compartment with a damp cloth. Check that the connectors on the cables supplied are functioning correctly.

WARNING: Check that the characteristics of the battery that you are looking to use are appropriate for the type of work to be performed. Check the battery charge and the condition of the contacts on the battery.



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

WARNING: The lifting hooks must not damage the blocks, connectors or cables.

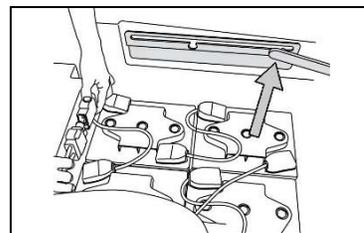
6. House the batteries in their compartment, positioning the poles "+" and "-" opposite each other.

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



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.



13. CONNECTING THE BATTERIES AND BATTERY CONNECTOR

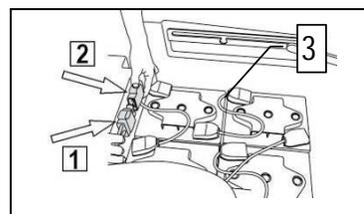
1. Connect the batteries in series using the jumper cables supplied (03) to the poles "+" and "-".
2. Connect the battery connector cable (01) to the "+" and "-" poles to obtain a voltage of 24V on the terminals.
3. Connect the battery connector (01) to the machine connector (02).



WARNING: All installation and maintenance operations must be carried out by expert personnel, trained at the specialised assistance centre.

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

4. Remove the safety catch.
5. Grip the handle on the right side of the recovery tank, lower the tank until it is in the work position.

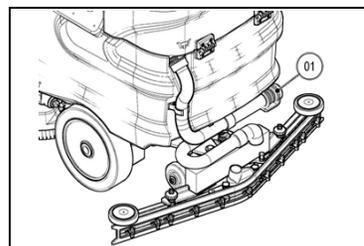


14. CONNECTING THE BATTERY CHARGER (VERSIONS WITH BC)

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

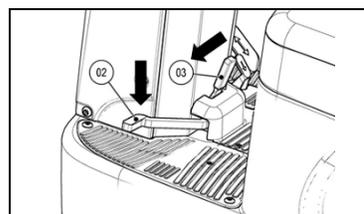


WARNING: Never leave the batteries completely discharged, even if the machine is not being used. Check the battery charger is suitable for the batteries installed, in terms of both capacity and type.



To connect the battery charger you must:

1. Take the machine to the maintenance area.
2. Check that the recovery tank is empty; if not, empty it using the tube provided for this purpose (01) positioned at the rear of the machine (read the section "EMPTYING THE RECOVERY TANK").
3. Block the machine in place by engaging the parking brake, press the pedal (02) and block it with the lever (03) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").

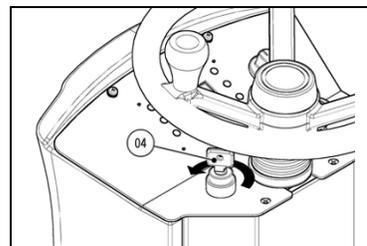


MACHINE PREPARATION

4. Check the main switch (04) is at "0", if not, turn the key by a quarter of a turn to the left, and remove the key from the instrument panel.
5. Grip the handle on the right side of the recovery tank.
6. Lift the recovery tank until it hooks to the end of the safety catch.



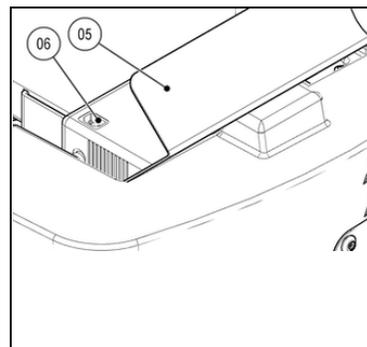
WARNING: Park the machine in a place that protects it from the elements and that has adequate ventilation, on a flat and level surface; near the machine there must be no objects that could either damage it, or be damaged through contact with it.



7. Remove the cover (05) of the battery charger.
8. Connect the connector of the battery charger power cable to the socket (06) on the charger itself.
9. Plug the battery charger cable into the mains socket.
10. Grip the handle on the safety catch and turn the recovery tank until it hooks up with the prop in the first point of the safety catch.



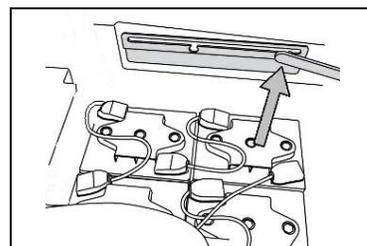
WARNING: Keep the recovery tank open for the duration of the battery recharging cycle to allow gas fumes to escape.
WARNING: The room used to recharge the batteries must be adequately ventilated to prevent the accumulation of gases that leak from batteries.
WARNING: Before inserting the battery charger power cable into the socket, verify that there is no condensate or other forms of liquids.



11. After a full recharge cycle grip the handle on the right side of the recovery tank until it hooks to the first prop of the safety catch.
12. Pull out the battery charger power cable from the mains socket.
13. Disconnect the connector of the battery charger power cable from the socket (06) on the battery charger itself.
14. Secure the cover (05) of the battery charger.
15. Grip the handle on the safety catch and lower the tank until it is in the work position.

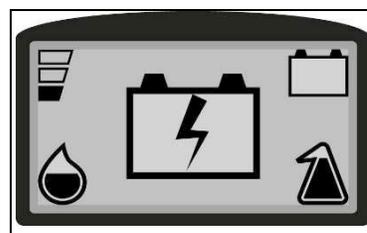


WARNING: Carefully read the use and maintenance manual of the charger that is delivered inside the bag containing this instruction booklet.



WARNING: If power is inadvertently given to the electrical system the symbol shown in the figure on the side will appear on the control display, none of the controls on the steering wheel will work.

ATTENTION: Always make sure the green LED of the battery charger is on before using the machine again



15. HOUR METER

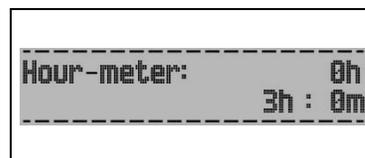
The control display is on the machine's instrument panel, the third screen after the machine has been started allows you to observe:

1. In the first part of the display you can display the work voltage that has been set and the type of battery.



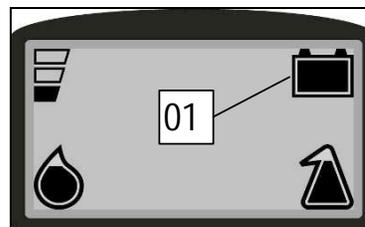
MACHINE PREPARATION

- In the second part of the display you can display the total time (first sequence of numbers) and the partial time (second sequence of numbers) that the machine has been used. The numbers followed by the letter "h" identify the hours, while the numbers followed by the letter "m" identify the tenths of an hour (a tenth of an hour corresponds to six minutes).
- In the third part of the display you can display the program version of the controls circuit board.



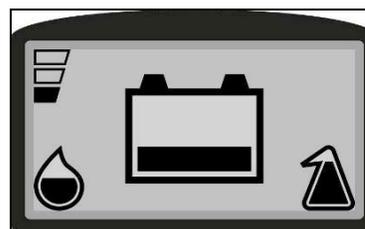
16. BATTERY CHARGE LEVEL INDICATOR

The control display is on the machine's instrument panel, in the top right of the work screen is the graphic symbol (01) that identifies the charge level indicator of the batteries. The indicator is composed of 5 charge levels, each of which represents about 20% of residual charge. With a residual charge of 20% the graphic symbol starts to flash and after a few second it will appear in larger dimensions in the middle of the screen, under these conditions take the machine to the usual place to charge the batteries.



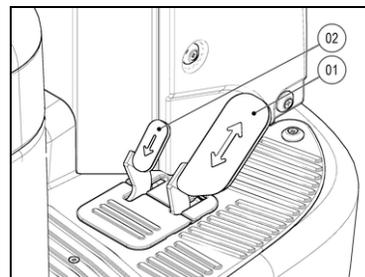
WARNING: a few seconds after the battery charge level reaches 20%, the brush motor switches off automatically. With the remaining charge it is still possible, however, to complete the drying process before recharging

WARNING: A few seconds after the battery charge level reaches 10%, the vacuum motor switches off automatically. With the remaining charge, it is still possible, however, to move the machine to the location designated for its recharging



17. WORKING FORWARD SPEED

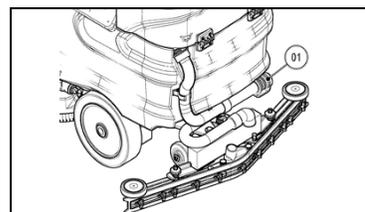
This machine is equipped with electronic traction control. To move the machine, after having turned the key in the ON position, push the drive pedal (01) adjusting the speed by pressing and releasing the pedal. The machine will then start moving. To make a reversing manoeuvre, press both pedals (01 and 02), the machine will then start moving backwards. During reverse motion, the machine emits an acoustic signal.



18. FILLING THE SOLUTION TANK WITH WATER

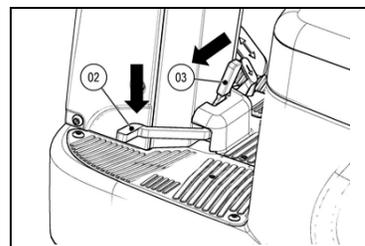
Before filling the solution tank, carry out the following steps:

- Take the machine to the usual place for filling the solution tank
- Check that the recovery tank is empty; if not, empty it using the tube provided for this purpose (01) positioned at the rear of the machine (read the section "EMPTYING THE RECOVERY TANK").



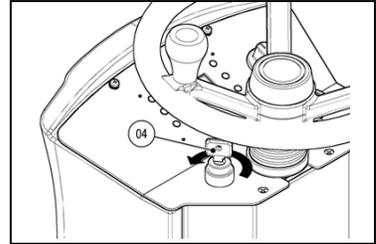
WARNING: The tanks should be emptied in the place used for draining dirty water.

- Block the machine in place by engaging the parking brake, press the pedal (02) and block it with the lever (03) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").

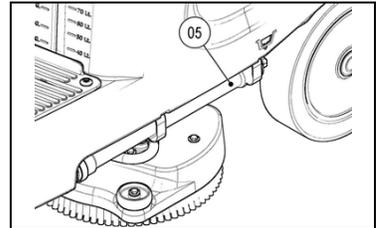


MACHINE PREPARATION

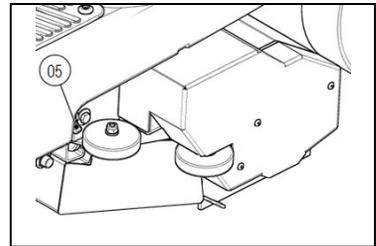
- Turn the main machine switch to "0" by turning the key (04) a quarter rotation to the left.
- Remove the key from the instrument panel.



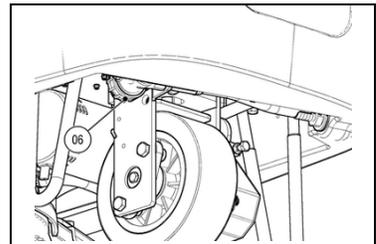
- Check that the solution tank discharge plug (05) has been tightened, if not turn it in an anticlockwise direction. (650RDX versions)



- Check that the solution tank discharge plug (05) has been tightened, if not turn it in an anticlockwise direction. (700RSX versions)



- Check that the cap of the water system filter (06) on the front right of the machine, has been tightened, if not turn it in an anticlockwise direction.

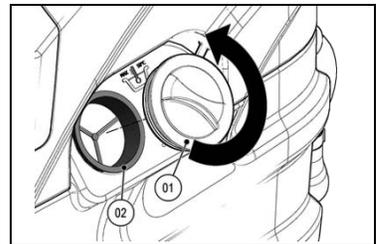


The solution tank can be filled with water in three different ways:

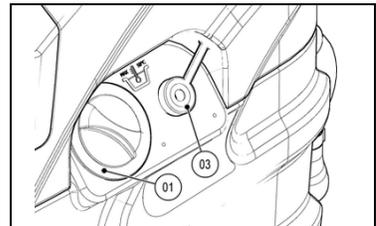
- By unscrewing the filler cap (01) and filling it using a rubber tube or bucket.



WARNING: Check that the filter (02) under the filler cap (01) is positioned correctly; this is to prevent impurities and dirt causing a malfunction in the machine's water system.



- By using the rubber cap (03), which supports the water hose on its own, be sure to unscrew the cap (01) to allow the proper vent of air.



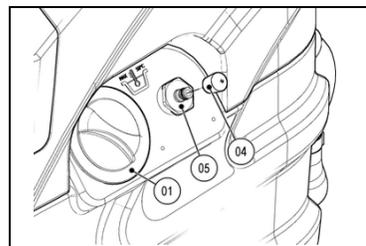
MACHINE PREPARATION

- By using the optional system (05) for automatically topping up with clean water, which has a float for controlling the overflow, be sure to unscrew the cap (01) to allow the proper vent of air.



WARNING: Before inserting the female insert into the male insert (05) in the rapid top-up kit, be sure to remove the cap (04).

Fill with clean water, at a temperature not higher than 50°C and not lower than 10°C. The amount inside the tank can be seen by means of the level tube (04) on the front left of the seat.



19. DETERGENT SOLUTION

After filling the solution tank with clean water add the liquid detergent to the tank in the concentration and manner indicated on the detergent manufacturer's label. To prevent the formation of an excessive amount of foam that could damage the vacuum motor, use the minimum percentage of detergent required.



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



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

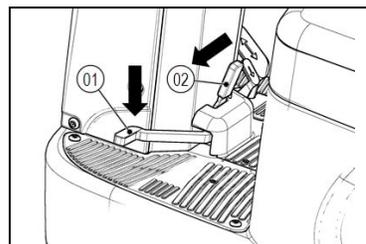


WARNING: Always use low foam detergent. To avoid the production of foam, before starting to clean, put a minimum quantity of anti-foam liquid into the recovery tank. Never use pure acids.

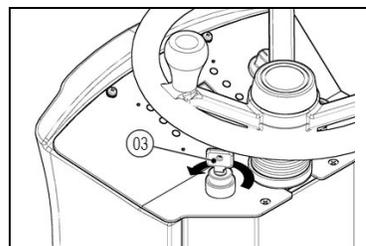
20. ASSEMBLING THE SQUEEGEE

To assemble the squeegee, which for reasons of packaging, is supplied dismantled from the machine, proceed as follows:

- Check that the squeegee attachment is raised from the floor, if not, use the switch on the instrument panel.
- Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").
- Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
- Remove the key from the instrument panel.



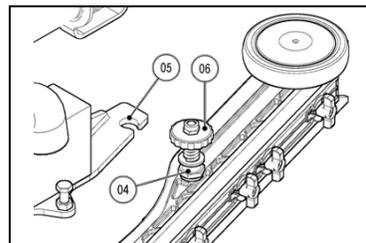
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.



- Initially insert the right pin (04) of the squeegee into the right slot (05) of the squeegee attachment, making sure to keep the spring and the washer above the squeegee attachment plate.

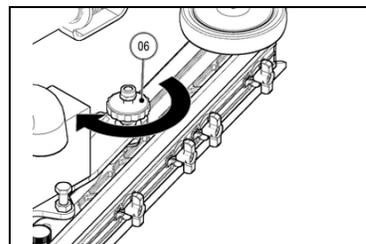


WARNING: This can be simplified by first loosening the handwheel (06) on the pin.

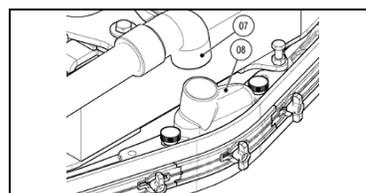


MACHINE PREPARATION

6. Repeat the same operation also for the left pin.
7. Then tighten the handwheels (06) to lock the squeegee in place.
8. Finally insert the vacuum hose (07) of the squeegee into the relative coupling (08) of the vacuum nozzle.



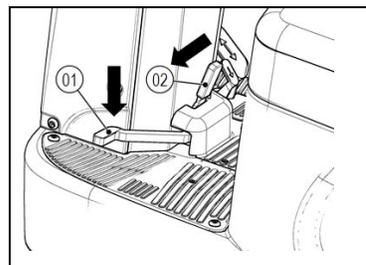
WARNING: The squeegee has already been regulated, however if it needs adjusting, read the sections "REGULATING THE SQUEEGEE" and "REGULATING THE SQUEEGEE ATTACHMENT".



21. WASHING THE BRUSH HEAD CASING ASSEMBLY (650RDX versions)

The brush head casings, for reasons of packaging, are supplied dismantled from the machine, so to assemble to the brush head unit proceed as follows:

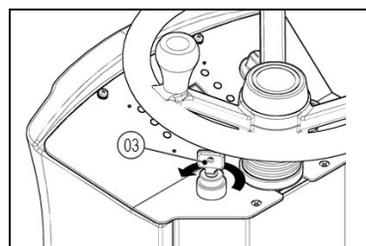
1. Check that the brush head unit is in contact with the floor, if not, use the switch on the control panel.
2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.



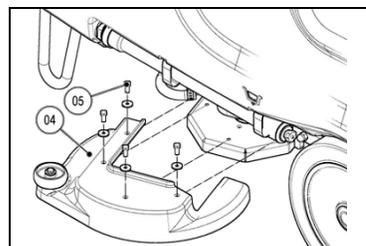
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.



5. Insert the left casing (04) on the brush head unit, securing it on it using the screws (05) supplied.
6. Repeat the same operation also for the right casing.



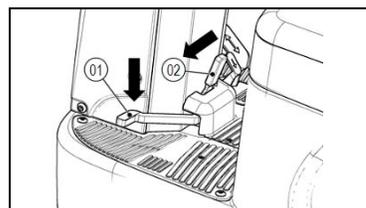
WARNING: This operation must be carried out by qualified personnel, using suitable equipment. An incorrect connection may cause the machine to malfunction.



22. ASSEMBLING THE BRUSHES (650RDX versions)

To assemble the brushes, which for reasons of packaging are supplied dismantled from the machine, proceed as follows:

1. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").

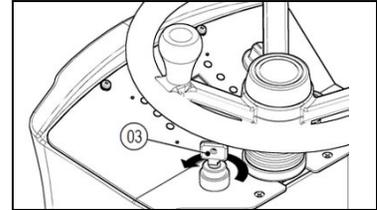


MACHINE PREPARATION

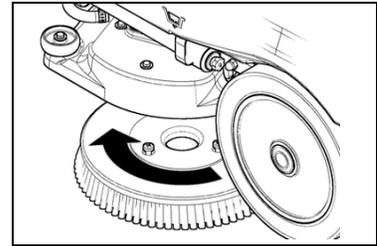
2. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
3. Remove the key from the instrument panel.



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



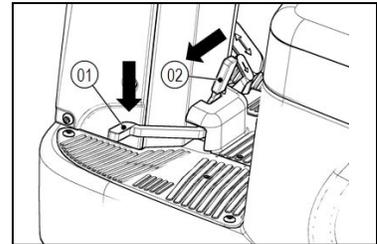
4. With the brush head in a high position put the brushes in the housing of the plate under the brush head, turning them until the three buttons go into the niches of the plate itself; turn until the pin is pushed towards the coupling spring and is locked into place. The photo shows the rotation direction to hook up the left-hand brush; for the right-hand one, rotate in the opposite direction.



23. ASSEMBLING THE BRUSH (700RSX versions)

To assemble the brushes, which for reasons of packaging are supplied dismantled from the machine, proceed as follows:

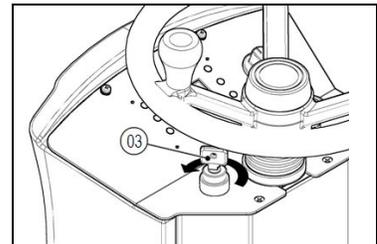
1. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND FOUNDATION BRAKE").



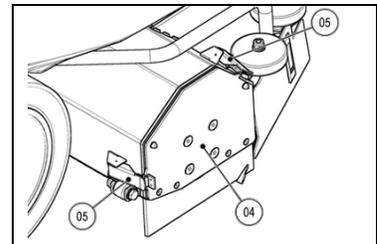
2. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
3. Remove the key from the instrument panel.



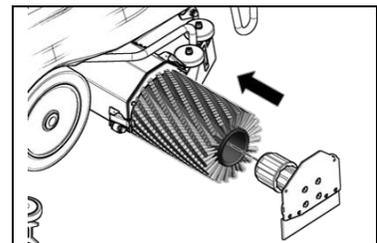
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.



4. With the brush head in a high position remove the right brush head casing (04), uncoupling the retention hinges (05).



5. Insert the brush (the side with 5 teeth) in the tunnel until it couples with the drive hub on the opposite side of the tunnel.

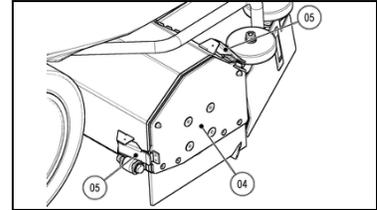


MACHINE PREPARATION

6. Insert the idler wheel of the right brush head casing in the brush.
7. Secure the right casing (04) to the brush head using the retention hinges (05).

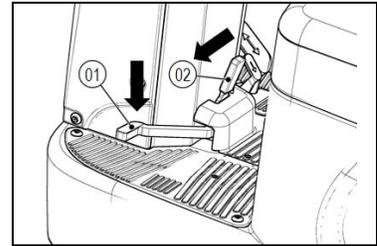


WARNING: Pay attention to the direction of the brush bristles during assembly, the cusp of the brush viewed from the above should be towards the front of the machine.



24. PARKING BRAKE - SERVICE 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 (01) pushing it downwards.



To engage the parking brake press the brake pedal (01) downwards and block it in position using the lever (02) pulling it left until it locks the pedal (01), the symbol indicated in the figure will appear on the control display.

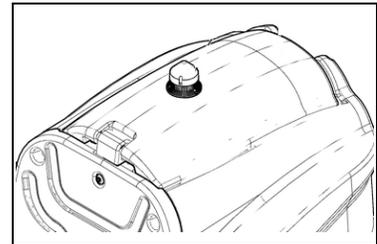


WARNING: With the parking brake engaged the traction motor is disengaged, only by removing the parking brake is it possible to move forwards or backwards.



25. BLINKING LIGHT (OPTIONAL)

The machine can be equipped with a blinking light that turns on automatically when the key in the main switch is turned on.

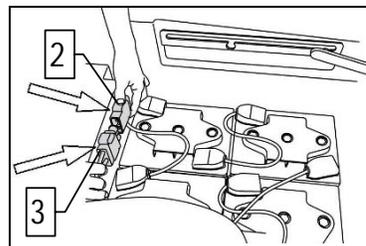
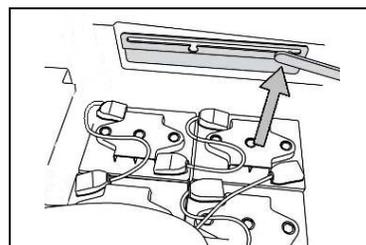
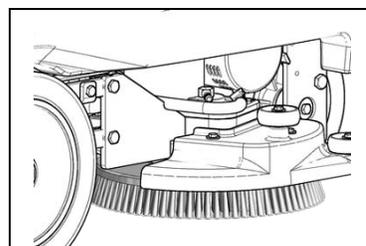
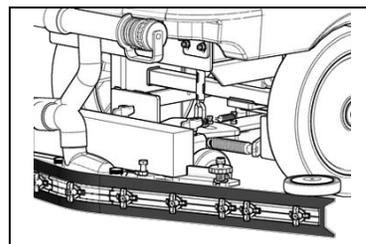
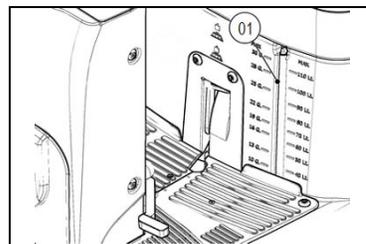


PREPARING TO WORK

26. PREPARING TO WORK

Before beginning to work, it is necessary to:

1. Make sure the recovery tank is empty, otherwise empty it completely.
2. Check that the quantity of detergent solution in the solution tank is correct for the type of work to be carried out; if not, refill the solution tank. View the level tube (01) on the front left of the seat.
3. Check that the state of the squeegee rubber is suitable for work, if not have them maintained (read the sections "CLEANING THE SQUEEGEE RUBBER" or else "REPLACING THE SQUEEGEE RUBBER").
4. Check that the state of the disc brush/brushes (650RDX versions) or the cylindrical brush (700RSX versions) are suitable for work, if not have them maintained (read sections "CLEANING THE BRUSH" or else "REPLACING THE BRUSH").
5. Grip the handle on the right side of the recovery tank.
6. Lift the recovery tank until it hooks to the end of the safety catch.
7. Check that the connector of the general system (02) is connected to the battery connector (03), if not, connect them together.
8. Grip the handle on the right side of the recovery tank.
9. Lower the recovery tank as far as the working position.

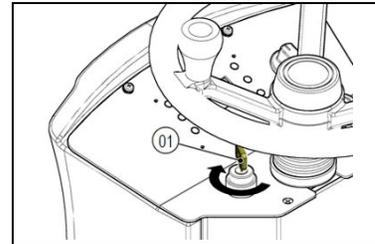


WORK

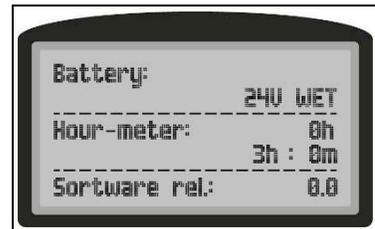
27. STARTING TO WORK

To start working, do as follows:

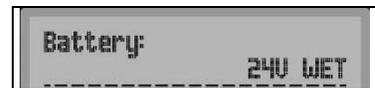
1. Carry out all the checks in the chapter "PREPARING TO WORK".
2. Sit on the driver's seat.
3. Turn the main switch key (01) clockwise by a quarter of a turn to "I". The instrument panel display will immediately come on.



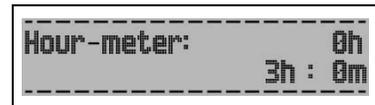
The first screen displayed indicates the name of the machine.
The second screen displayed (adjacent picture) indicates the characteristics of the machine's programming.



The top part displays the settings for the type of batteries used.



The middle part of the display indicates the total time (first sequence of numbers) and the partial time (second sequence of numbers) that the machine has been used. The numbers followed by the letter "h" identify the hours, while the numbers followed by the letter "m" identify the tenths of an hour (a tenth of an hour corresponds to six minutes).

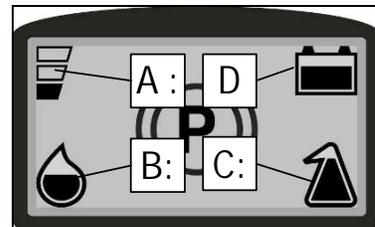


The lower part of the screen displays the program release inserted into the circuit board.



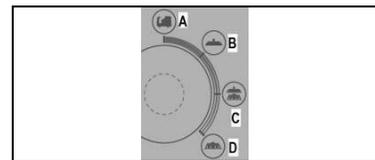
The third screen (adjacent picture) displays the work panel. The symbols represent the following:

- A. Level of transfer or work speed.
- B. Level of the water in the machine's water system (versions with CDS).
- C. Level of the detergent in the machine's water system (versions with CDS).
- D. Battery charge level.

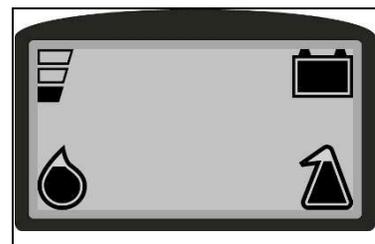


4. Choose the desired working program with the I-Drive device:

- A. Transfer: movement of the machine without working
- B. Drying: use the squeegee only
- C. Scrubbing / Drying: use both the brushes and the squeegee
- D. Scrubbing only: use brushes only



By selecting the "TRANSFER" program, the display screen will appear as in the adjacent figure. Both the brush head and the squeegee are raised from the floor and are not operating.

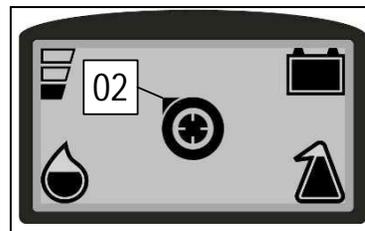


WORK

By selecting the "DRYING" program, the display screen shown on the side will appear. The brush head is raised from the floor and is not operating. The squeegee will position itself in contact with the floor as soon as the forward movement pedal is pressed, in that moment the vacuum motor will start working.



WARNING: this program should only be used to collect the dirty solution after a pre-wash, and should never be used for the work of vacuuming liquids.



If during the "DRYING" program the machine is stopped and the forward movement pedal is released, the squeegee body will remain in contact with the floor for a few seconds, after which it will raise up from the ground to go back to its rest position. For all these phases the vacuum motor will continue to operate, only after a few seconds that it has returned to its work position will it switch off, this is to allow the motor to collect all the liquid in the vacuum hose. During these phases, the symbol of the vacuum motor (02) on the instrument panel display will blink, and it will only stop when the squeegee is in its work position and the vacuum motor is off.

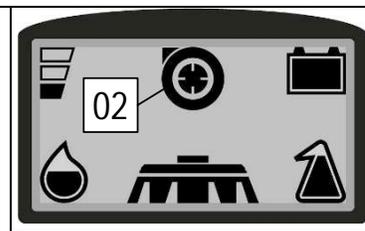


WARNING: by pressing the forward movement pedal it will start working with the same program and with the same parameters that were set before it stopped.

WARNING: if reverse is carried out with this program active, the brush head unit will raise up from the floor, the motor will keep working for a pre-set time and then it will switch off.

WARNING: By pressing the forward movement pedal again, drying will start working again normally.

By selecting the "SCRUBBING - DRYING" program, the display screen will appear as in the adjacent figure. Both the brush head and the squeegee will position themselves in contact with the floor as soon as the forward movement pedal is pressed, in that moment both the brush motor and the vacuum motor will start working. Also the solenoid valve will start to dispense detergent solution onto the brushes.



If during the "SCRUBBING - DRYING" work the machine stops and the forward movement pedal is released, the brush motor and the solenoid valve will switch off, and after a few second the brush head unit will raise up off the ground and return to its rest position. The squeegee will stay in contact with the floor for a few seconds, after which it will raise up from the ground and return to its rest position. For all these phases, the vacuum motor will continue to operate, only after a few seconds that it has returned to its work position will it switch off, this is to allow the motor to collect all the liquid in the vacuum hose. During these phases, the symbol of the vacuum motor (02) on the instrument panel display will blink, and it will only stop when the squeegee is in its work position and the vacuum motor is off.



WARNING: by pressing the forward movement pedal it will start working with the same program and with the same parameters that were set before it stopped.

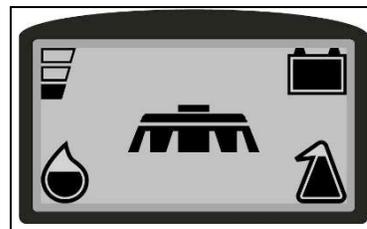
WARNING: if reverse is carried out with this program active, the brush head unit will raise up from the floor, the motor will keep working for a pre-set time and then it will switch off.

WARNING: if reverse is carried out with this program active, the brush head unit will remain in contact with the ground, the motor will continue working but the solenoid valve will no longer dispense any detergent solution onto the brushes.

WARNING: By pressing the forward movement pedal again, drying will start working again normally.

WORK

By selecting the "SCRUBBING" program, the display screen will appear as in the adjacent figure. The squeegee is raised from the floor and is not operating. The brush head will position itself in contact with the floor as soon as the forward movement pedal is pressed, in that moment the vacuum motor will start working. Also the solenoid valve will start to dispense detergent solution onto the brushes.

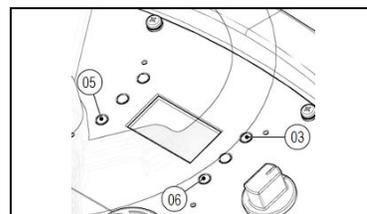


If during the "SCRUBBING" work the machine stops and the forward movement pedal is released, the brush motor and the solenoid valve will switch off, and after a few second the brush head unit will raise up off the ground and return to its rest position.



WARNING: by pressing the forward movement pedal it will start working with the same program and with the same parameters that were set before it stopped.

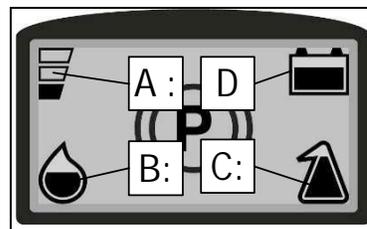
- Choose the forward operating speed by pushing the button (03) on the control panel.



This machine has the possibility of selecting three different forward speeds, by pressing the button (03), the passage from one to the other is continuous. The symbol (A) on the top left part of the control panel display shows the speed.



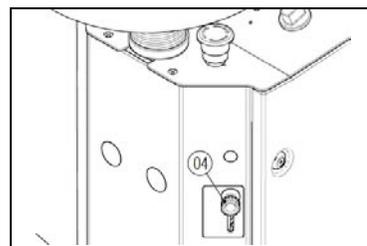
WARNING: The reverse speed is lower than the forward speed to comply with current health and safety standards.



- If the machine does not have the CDS dosing device, move the knob (04) downwards and adjust the amount of desired solution.
- If the CDS dosing system is present, the knob (04) must be pulled completely down, thereby fully opening the flow of water.

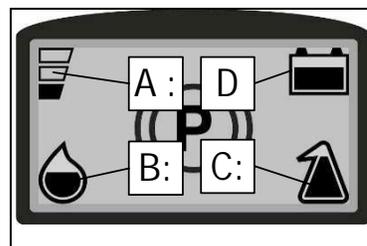


WARNING: With the CDS system, never operate the knob (04) when working. To get a correct dosing of the detergent solution only use the buttons (05) and (06). See paragraph "DETERGENT ADJUSTMENT WITH CDS SYSTEM".



The level of the amount of water in the machine's water system is given by the symbol (B) in the lower left part of the display.

The level of the percentage of detergent in the machine's water system is given by the symbol (C) in the lower right part of the display.

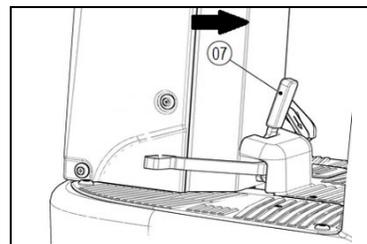


WORK

8. Remove the parking brake, turn the lever (07) clockwise. The parking symbol "P" will disappear from the control panel display.

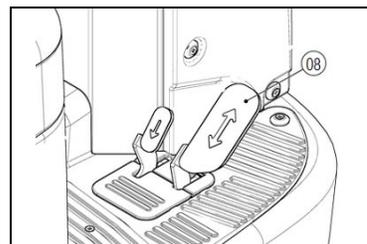


WARNING: If you try to move forward with the parking brake engaged, the machine will not move because the motor wheel is disengaged electrically when the parking brake is active.

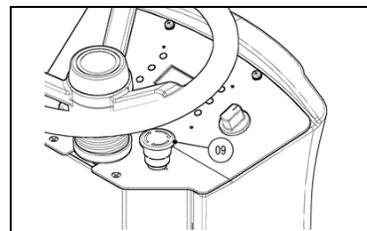


9. By pressing the forward movement pedal (08), the machine will start to move.

If the program selected is "SCRUBBING- DRYING" the squeegee and the brush head lower until they touch the ground. As soon as the forward movement pedal is pushed the brush head motor and the vacuum motor will start working, and as a result also the solenoid valve will start its work and detergent solution will be dispensed onto the brushes. During the first few metres, check that there is sufficient solution and that the squeegee is drying correctly. The machine will now begin to work with full efficiency until the battery is flat or until the detergent solution has finished.



If there are any problems while you are working, press the emergency button (09) on the instrument panel. This command interrupts the electrical circuit that goes from the batteries to the machine's system. To restart the work, once stopped and the problem resolved, turn the key to "0", bring the button (09) to the standard position, turn the key to "1".

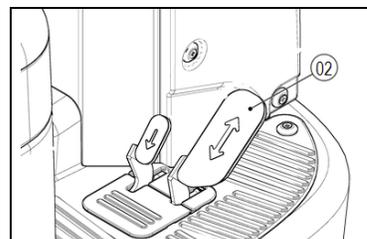
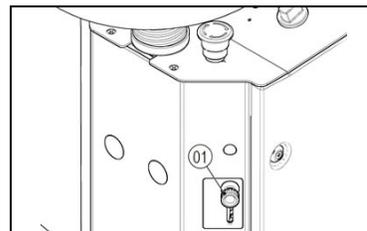


28. DETERGENT REGULATION

To regulate the amount of detergent solution on the brushes, proceed as follows:

1. Fully open the flow coming from the tap on the front of the machine by moving the knob (01) on the rear of the steering column down.
2. Choose the desired working program with the I-Drive device, either "SCRUBBING - DRYING" or "SCRUBBING".
3. By pressing the forward movement pedal (02) the brush head and the squeegee, or just the brush head (depending on the program selected), will lower into a work position and the machine starts to move. Both the brush motor and the vacuum motor (depending on the program selected) will start to work and the solenoid valve will distribute detergent solution to the brushes.

In the first few metres, check that the quantity of solution is sufficient to wet the floor, but not so much that it exits the splash guard, the amount of detergent can be adjusted by moving the knob (01), when lowering it increases the flow onto the brushes, when raising it decreases the flow. Bear in mind that the correct amount of solution always depends on the nature of the floor, the degree of dirt and the forward speed.

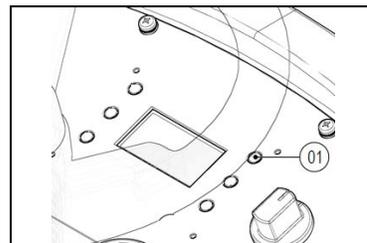


29. REGULATING THE FORWARD MOVEMENT SPEED

This machine allows you to choose from three different forward speeds using the button (01) on the instrument panel. The selection is continuous cycle, by pressing the button you pass from one level to another.

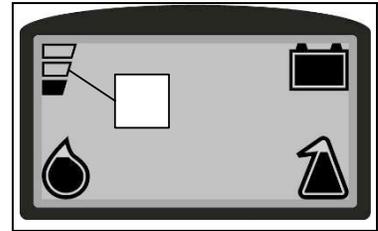


WARNING! The reverse speed is lower than the forward speed to comply with current health and safety standards.



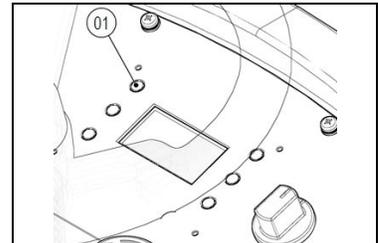
WORK

To display the speed level that has been set, just look at the symbol (02) on the display.

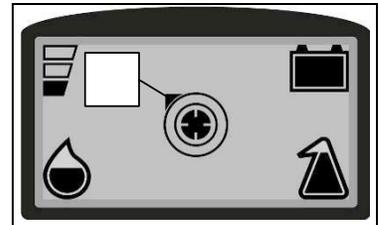


30. "ECO" DEVICE

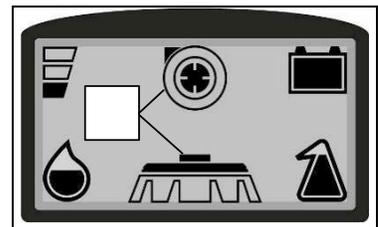
By activating "ECO MODE" mode using the relevant button (01) on the instrument panel, the energy used by the machine is reduced, decreasing the power of the brushes motor and the vacuum motor. Just press the button (01) on the instrument panel to deactivate the "ECO MODE" function.



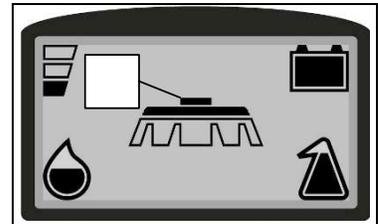
If, when working in "DRYING" mode, the "ECO MODE" button is pressed, the control display will immediately undergo the change (02) shown in the image on the side.



If, when working in "SCRUBBING - DRYING" mode, the "ECO MODE" button is pressed, the control display will immediately undergo the change (03) shown in the image on the side.



If, when working in "SCRUBBING" mode, the "ECO MODE" button is pressed, the control display will immediately undergo the change (04) shown in the image on the side.

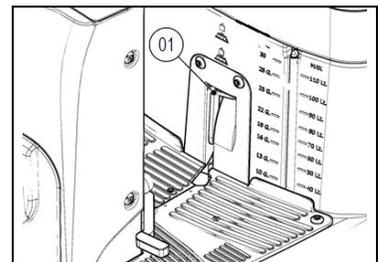


31. BRUSH HEAD UNIT EXTRA PRESSURE (650RDX versions)

This machine allows you to increase the pressure on the brushes using the pedal (01) on the front left of the seat, and this can only be done when the brush head is in contact with the ground.

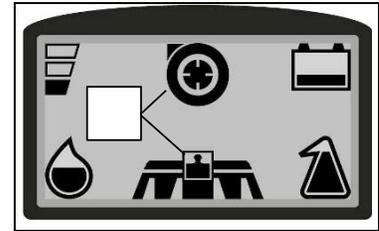


WARNING! The extra pressure should be engaged taking into account the type of floor and the degree of dirt. An increase in pressure could cause greater wear and tear of the brushes and greater energy consumption.

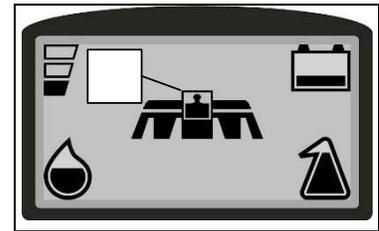


WORK

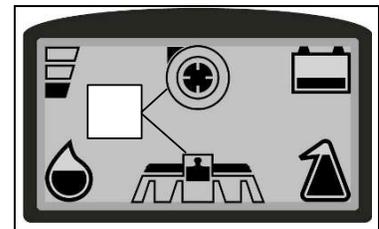
If, when working in "SCRUBBING - DRYING" mode, the extra pressure pedal is pressed, the control display will immediately undergo the change (02) shown in the image on the side.



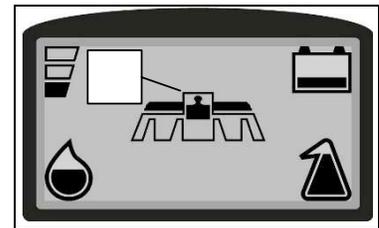
If, when working in "SCRUBBING" mode, the extra pressure pedal is pressed, the control display will immediately undergo the change (03) shown in the image on the side.



If, when working in "SCRUBBING - DRYING" mode in "ECO MODE", the extra pressure pedal is pressed, the control display will immediately undergo the change (04) shown in the image on the side.



If, when working in "SCRUBBING" mode in "ECO MODE", the extra pressure pedal is pressed, the control display will immediately undergo the change (05) shown in the image on the side.



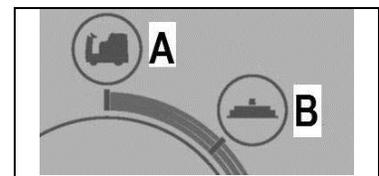
WARNING! If, while working with the extra pressure active, you stop and release the forward movement pedal, the brush head will not raise up from the ground in order to avoid seriously damaging the machine.

32. OVERFLOW DEVICE

The machine is NOT equipped with an overflow device, because the capacity of the recovery tank is greater than the capacity of the solution tank. In extraordinary cases, there is a mechanical device (float) under the recovery tank lid that, when the recovery tank is full, shuts off the air to the vacuum motor intake to protect it; the sound of the vacuum motor will then be deeper.

If this is the case, proceed as follows:

- Using the switch on the instrument panel select the "TRANSPORT" program (A), in this way the brush motors and the solenoid valve will stop working, after a few seconds the brush head unit will lift up from the floor. The squeegee will remain in contact with the ground for a few seconds, to allow the drying to finish, after which it will lift up off the floor. A few seconds after the squeegee is in the rest position the vacuum motor stops working, this is to allow all the liquid in the vacuum hose to be suctioned off.



- Take the machine to the designated place for draining off the dirty water and empty the recovery tank (read the paragraph "EMPTYING THE RECOVERY TANK" carefully first).



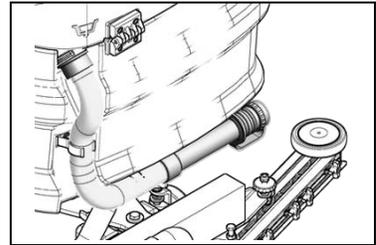
WARNING! It is good practice every time the solution tank level is topped up, to empty the recovery tank using the special drainage hose.

AT THE END OF THE WORK

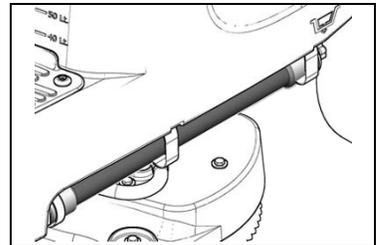
At the end of work, and before carrying out any type of maintenance, perform the following operations:

1. Take the machine to the designated place for draining off the dirty water.
2. Bring the main machine switch to "0" by turning the key on the instrument panel a quarter rotation to the left.
3. Engage the parking brake, rotating the lever on the rear of the steering column anti-clockwise.

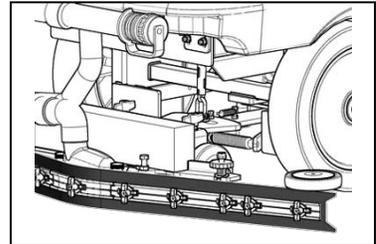
4. Empty the recovery tank (read the section "EMPTYING THE RECOVERY TANK").



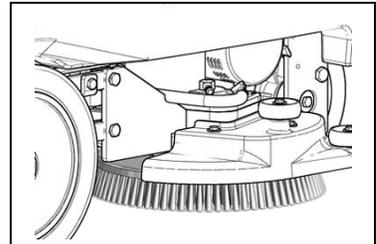
5. Empty the solution tank (read the section "EMPTYING THE SOLUTION TANK"). The adjacent picture shows the drainage tube for the 650RDX versions.



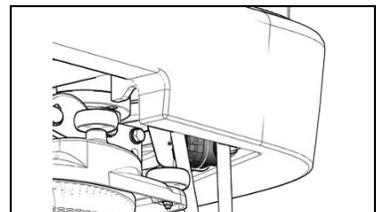
6. Remove the squeegee unit and clean it of any impurities (read the section "CLEANING THE SQUEEGEE UNIT").



7. Remove the brushes and clean them (read the section "CLEANING THE DISC BRUSHES (650RDX version)" or else "CLEANING THE CYLINDRICAL BRUSH (700RSX versions)"). The adjacent picture shows a disc brush for the 650RDX versions.

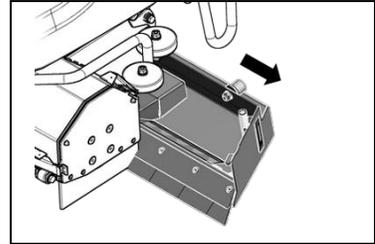


8. Remove the water system filter and clean it of any dirt (read the section "CLEANING THE WATER SYSTEM FILTER").



AT THE END OF THE WORK

9. Remove the debris hopper and clean it (read the section "CLEANING THE DEBRIS HOPPER (700RSX versions)").



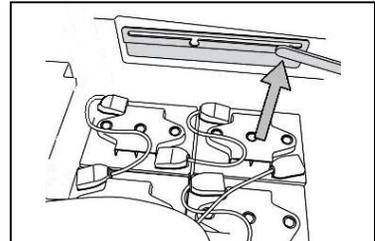
10. Engage the parking brake, rotating the lever on the rear of the steering column clockwise.
11. Bring the main machine switch to "I" by turning the key on the instrument panel a quarter rotation to the right.
12. Take the machine to the designated machine storage place.



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

13. Bring the main machine switch to "0" by turning the key on the instrument panel a quarter rotation to the left.
14. Remove the key from the control panel.
15. Engage the parking brake, rotating the lever on the rear of the steering column anti-clockwise.

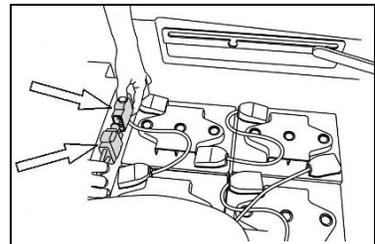
16. Grip the handle on the right side of the recovery tank.
17. Lift the recovery tank until it hooks to the end of the safety catch.



18. Disconnect the electric system connector from the battery connector.



WARNING: This process must be carried out by qualified personnel. An incorrect connection of the connector may cause problems with machine functioning.



19. Grip the handle on the safety catch and lower the tank until it is in the work position.

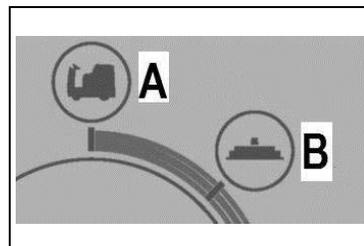
DAILY MAINTENANCE

PERFORM ALL MAINTENANCE OPERATIONS IN SEQUENCE

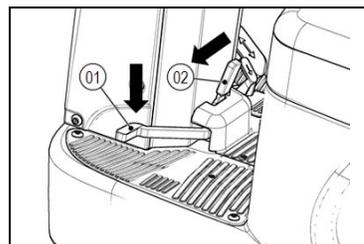
33. EMPTYING THE RECOVERY TANK

Proceed as follows to empty the recovery tank:

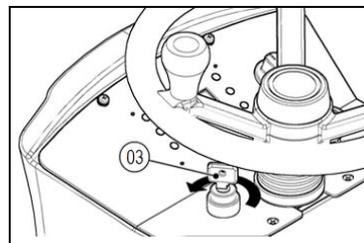
1. Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).



2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").

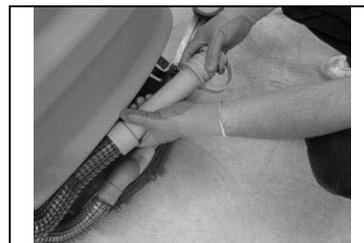


3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.



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

5. Remove the drainage tube of the recovery tank from the clamps, it is located at the rear of the machine.



6. Bend the end of the drainage tube, so as to create a choke and prevent the content from coming out, put the tube on the discharge surface and gradually release the tube.
7. Repeat the operations in the reverse order to reassemble everything.

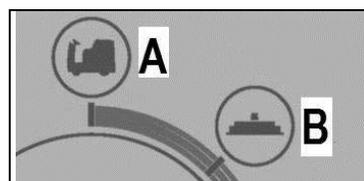


WARNING: The place this operation is carried out should comply with current environmental protection regulations.

34. EMPTYING THE SOLUTION TANK (650RDX versions)

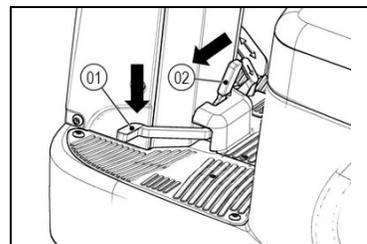
Proceed as follows to empty the recovery tank:

1. Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).

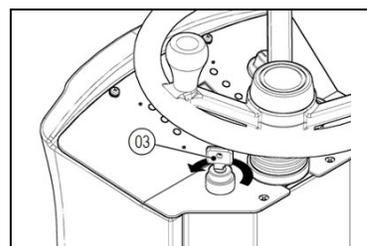


DAILY MAINTENANCE

- Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").

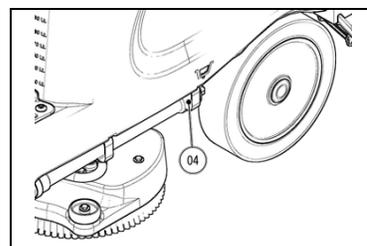


- Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
- Remove the key from the instrument panel.



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

- Remove the drainage tube (04) of the solution tank from the clamps, it is located on the left side of the machine.
- Put the tube on the drainage surface and unscrew the cap.



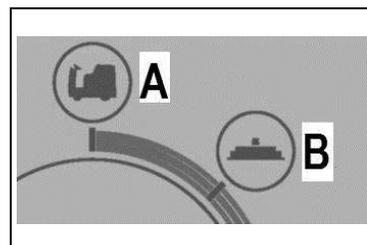
WARNING: The place this operation is carried out should comply with current environmental protection regulations.

- Repeat the operations in the reverse order to reassemble everything.

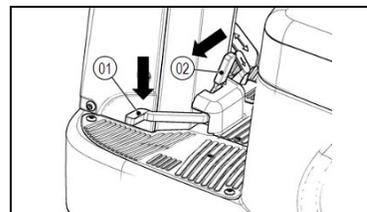
35. EMPTYING THE SOLUTION TANK (700RSX versions)

Proceed as follows to empty the solution tank:

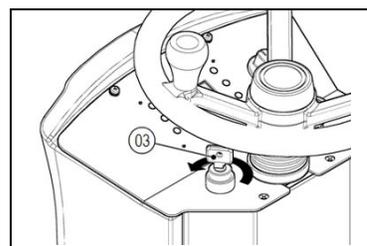
- Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).



- Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



- Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
- Remove the key from the instrument panel.



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

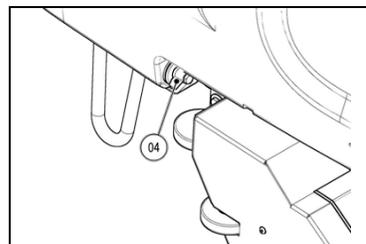
DAILY MAINTENANCE

- Remove the drainage plug (04) of the solution tank, it is located on the left side of the machine.



WARNING: The place this operation is carried out should comply with current environmental protection regulations.

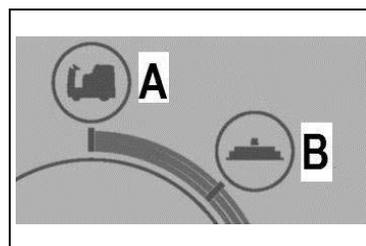
- Repeat the operations in the reverse order to reassemble everything.



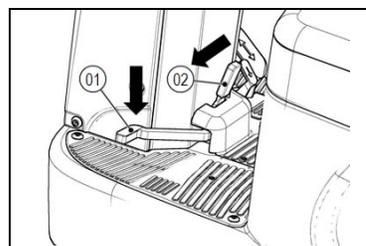
36. CLEANING THE SQUEEGEE BODY

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

- Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).



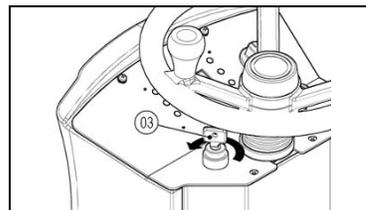
- Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



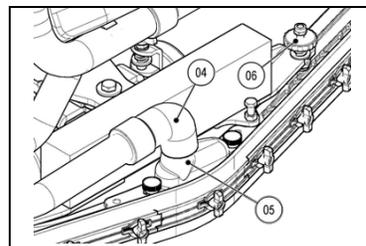
- Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
- Remove the key from the instrument panel.



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



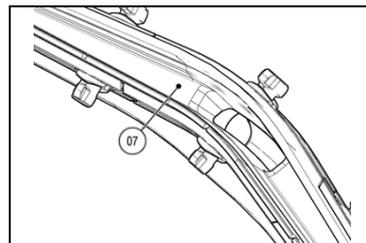
- Remove the vacuum hose (04) from the vacuum nozzle (05) on the squeegee body.
- Loosen the knobs (06) in the squeegee body pre-assembly.



- Remove the squeegee body from the slits in the squeegee connector.
- First with a jet of water and then with a damp cloth, thoroughly clean the vacuum chamber (07) of the squeegee unit.

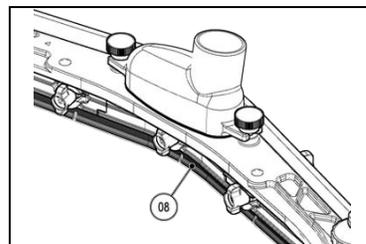


WARNING: The place this operation is carried out should comply with current environmental protection regulations.

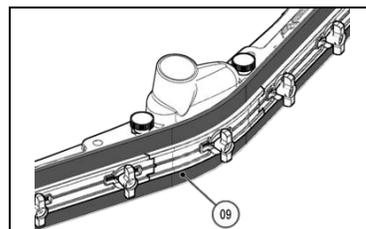


DAILY MAINTENANCE

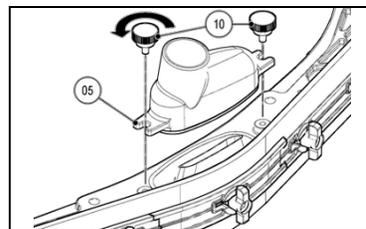
9. First with a jet of water and then with a damp cloth, thoroughly clean the front rubber blade (08) of the squeegee body.
10. Check the wear of the front rubber blade (08) on the squeegee body; if the edge of the rubber in contact with the floor is worn proceed with replacement, reading the paragraph "REPLACING THE SQUEEGEE UNIT RUBBER BLADES" first.



11. First with a jet of water and then with a damp cloth, thoroughly clean the rear rubber blade (09) of the squeegee body.
12. Check the wear of the rear rubber blade (09) on the squeegee body; if the edge of the rubber in contact with the floor is worn proceed with replacement, reading the paragraph "REPLACING THE SQUEEGEE UNIT RUBBER BLADES" first, in any event it is possible to turn the rubber blade around four edges.



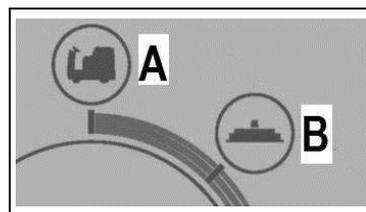
13. Tighten the knobs (10) that fix the vacuum nozzle (05) to the squeegee body.
14. First with a jet of water and then with a damp cloth, thoroughly clean the vacuum nozzle (05). Also clean the squeegee body support surface.
15. Position the vacuum nozzle (05) on the squeegee body and secure it using the knobs (10).
16. Repeat the operations in the reverse order to reassemble everything



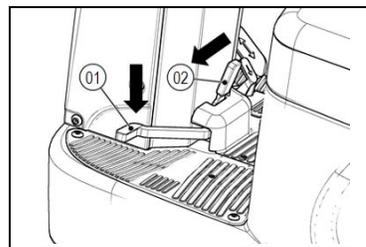
37. CLEANING DISC BRUSHES (650RDX versions)

Careful cleaning of the brushes guarantees better cleaning of the floor as well as a longer brush motor life. To clean the brushes, proceed as follows:

1. Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).
2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



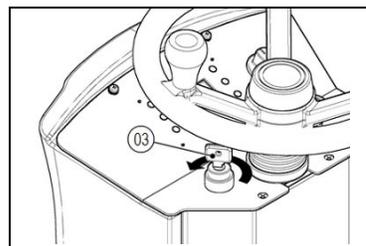
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.



3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.

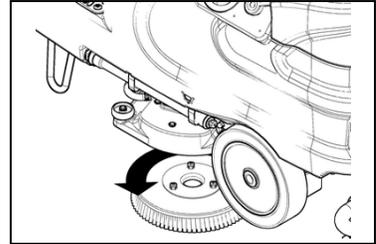


WARNING: The place this operation is carried out should comply with current environmental protection regulations.



DAILY MAINTENANCE

5. Rotate the brush until it comes out of the housing of the brush holder plate (the diagram shows the rotation direction for extracting the left brush). To remove the right brush, turn in the opposite direction.
6. Clean the brushes under a jet of water and remove any dirt in the brush bristles. Check the bristles are not worn; in the event of excessive wear, replace the brushes (the bristles should be at least 10 mm long). Read the section "REPLACING DISC BRUSHES (650RDX versions)" for replacing the brushes.
7. Repeat the operations in the reverse order to reassemble everything.

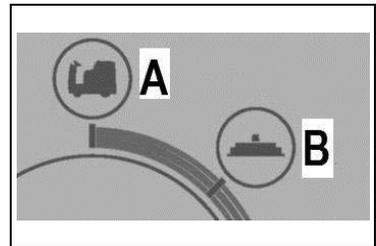


You are advised to invert the right and left-hand brushes every day. If the brushes are not new however, and have deformed bristles, it is better to reassemble them in the same position (the right-hand one on the right, and the left-hand one on the left), to prevent the different inclination of the bristles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

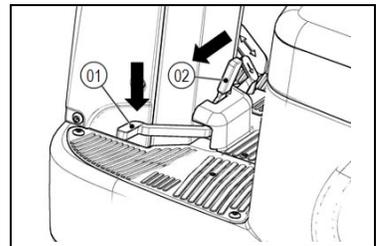
38. CLEANING THE CYLINDRICAL BRUSH (700RSX versions)

Careful cleaning of the brush guarantees better cleaning of the floor as well as a longer brush motor life. To clean the brush, proceed as follows:

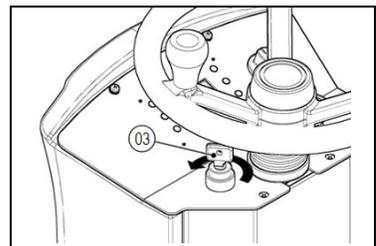
1. Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).
2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



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



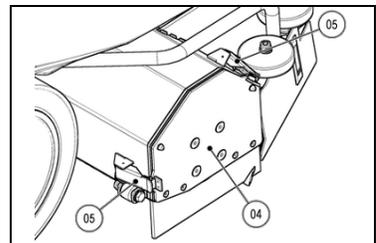
3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.



5. With the brush head in a high position remove the right brush head casing (04), uncoupling the retention hinges (05).



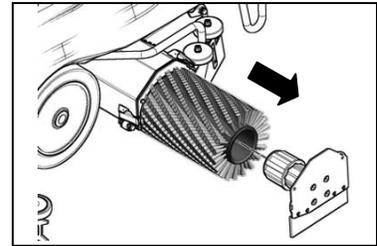
WARNING: The place this operation is carried out should comply with current environmental protection regulations.



DAILY MAINTENANCE

6. Remove the brush from the tunnel.
7. Clean the brush under a jet of water and remove any dirt in the brush bristles.

Check the bristles are not worn; in the event of excessive wear, replace the brushes (the bristles should be at least 10 mm long). Read the section "REPLACING CYLINDRICAL BRUSH (700RSX version)" for replacing the brush.



8. Clean the splash guard rubber on the left side of the brush head unit well with a wet cloth and on the right casing.
9. Repeat the operations in the reverse order to reassemble everything.

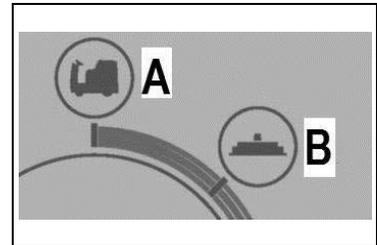


WARNING: In order to be assembled correctly, the brush should have the cusp shape facing the front of the machine.

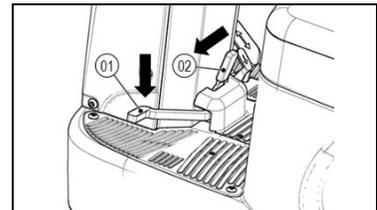
39. CLEANING THE DEBRIS HOPPER (700RSX versions)

Careful cleaning of the debris hopper guarantees better cleaning of the floor as well as a longer brush motor life. To clean the debris hopper, proceed as follows:

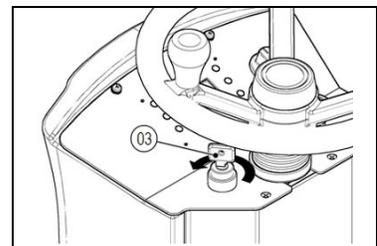
1. Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).
2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



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



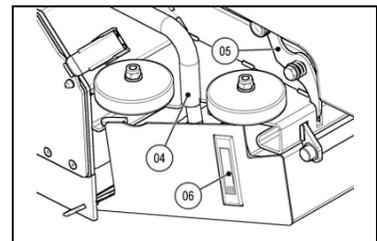
3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.



5. Disconnect the hopper vacuum hose (04).
6. Turn the knob (05) anti-clockwise until the debris hopper is free to move.
7. Using the flush handle (06), remove the hopper and empty it.

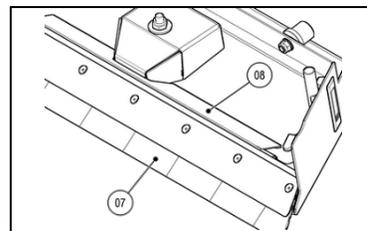


WARNING: The place this operation is carried out should comply with current environmental protection regulations.



DAILY MAINTENANCE

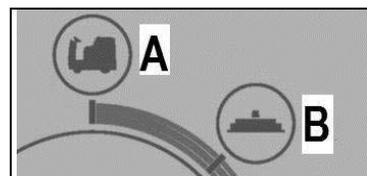
8. Check the wear of the rubber (07) and clean it with a jet of running water and then with a damp cloth.
9. Turn the hopper vacuum filter (08) anti-clockwise, pulling it towards the vacuum hose and extract it from the retainer pin.
10. Clean underneath with a jet of water and check it is working correctly.
11. Repeat the operations in the reverse order to reassemble everything.



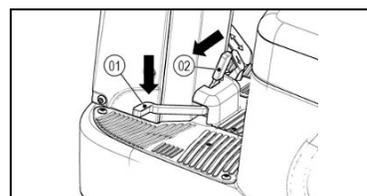
40. CLEANING THE RECOVERY TANK FILTER

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

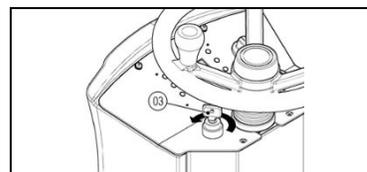
1. Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).
2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



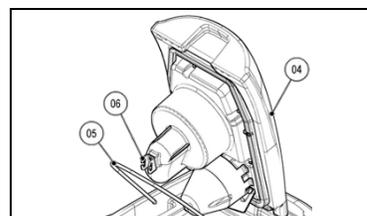
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.



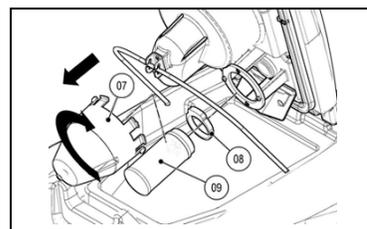
3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.



5. Raise the cap (04) until the hook (05) is secured to the prop (06) of the recovery tank.



6. Remove the vacuum filter protection (07) by rotating it in a clockwise direction.
7. Release the retaining clips (08).



8. Take the vacuum filter out of the housing (09), clean the walls and the bottom of the filter with a jet of water, remove any dirt that is attached.
9. Repeat the operations in the reverse order to reassemble everything.



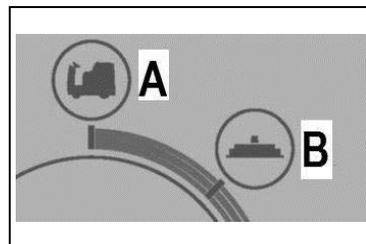
WARNING: The place this operation is carried out should comply with current environmental protection regulations.

WEEKLY MAINTENANCE

41. CLEANING THE RECOVERY TANK

The careful cleaning of the recovery tank guarantees a longer machine life. Proceed as follows to clean the recovery tank:

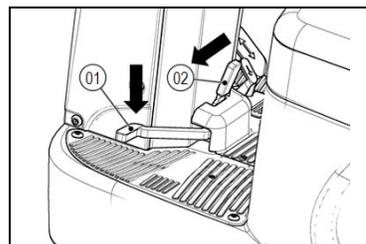
1. Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).
2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



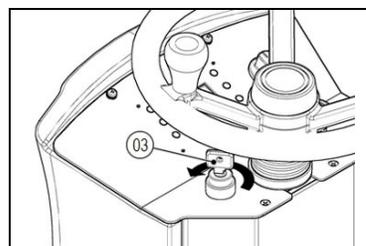
3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.



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



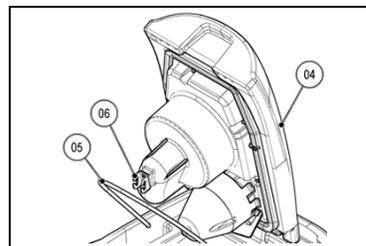
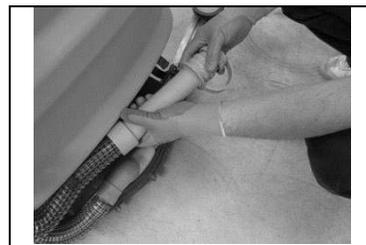
5. Remove the drainage tube of the recovery tank from the clamps, it is located at the rear of the machine, unscrew the cap and lay it on the ground.
6. Grip the handle on the right side of the recovery tank.
7. Lift the recovery tank until it hooks to the safety clamp at the first point.



8. Raise the cap (04) until the hook (05) is secured to the prop (06) of the recovery tank.
9. Rinse the inside with a jet of water, if necessary use a spatula to remove the sludge that has accumulated at the bottom of the tank.
10. Repeat the operations in the reverse order to reassemble everything.



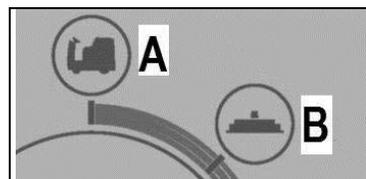
WARNING: The place this operation is carried out should comply with current environmental protection regulations.



42. CLEANING THE SOLUTION TANK (650RDX versions)

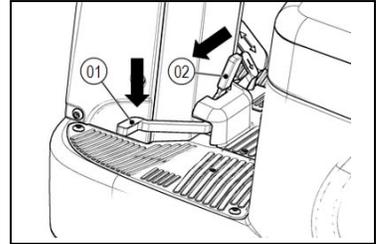
The careful cleaning of the solution tank guarantees a longer machine life. Proceed as follows to clean the solution tank:

1. Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).



WEEKLY MAINTENANCE

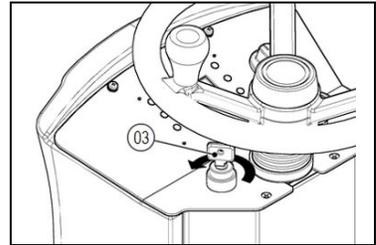
2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



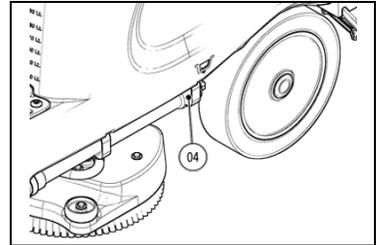
3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.



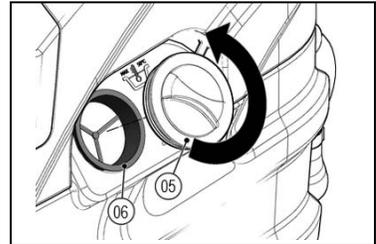
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.



5. Remove the drainage tube (04) of the solution tank from the clamps, it is located on the left side of the machine, unscrew the cap and lay it on the ground.



6. Remove the filling cap (05) and the filter (06) on the left side of the machine. Clean the filter (06) with a jet of water and remove any dirt.



7. Clean the inside of the solution tank with a jet of water.
8. Repeat the operations in the reverse order to reassemble everything.

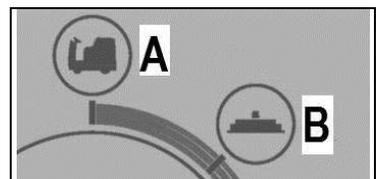


WARNING: The place this operation is carried out should comply with current environmental protection regulations.

43. CLEANING THE SOLUTION TANK (700RSX versions)

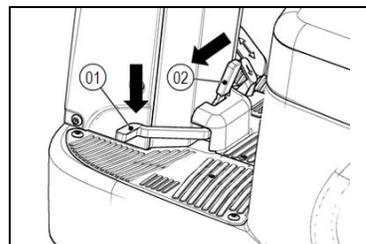
The careful cleaning of the solution tank guarantees a longer machine life. Proceed as follows to clean the solution tank:

1. Take the machine to the maintenance area, using the switch on the instrument panel select the "TRANSPORT" (A) program.

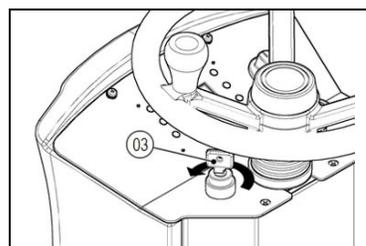


WEEKLY MAINTENANCE

- Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").

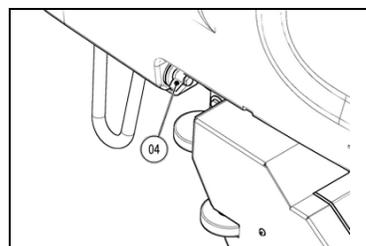


- Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
- Remove the key from the instrument panel.

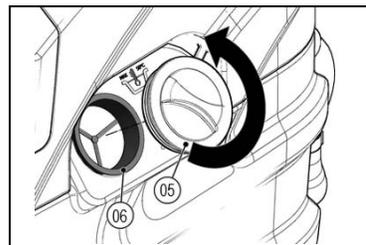


WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.

- Unscrew the drainage plug (04) of the solution tank, it is located on the left side of the machine.



- Remove the filling cap (05) and the filter (06) on the left side of the machine. Clean the filter (06) with a jet of water and remove any dirt.



- Clean the inside of the solution tank with a jet of water.
- Repeat the operations in the reverse order to reassemble everything.

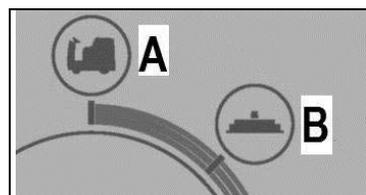


WARNING: The place this operation is carried out should comply with current environmental protection regulations.

44. CLEANING THE WATER SYSTEM FILTER

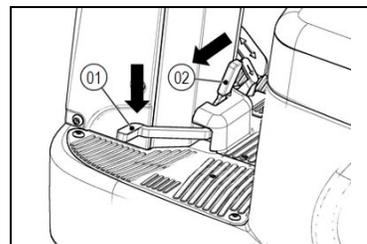
The careful cleaning of the water system guarantees a better cleaning of the floor as well as a longer life for all the components that make up the water system. To clean the water system filter, proceed as follows:

- Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).

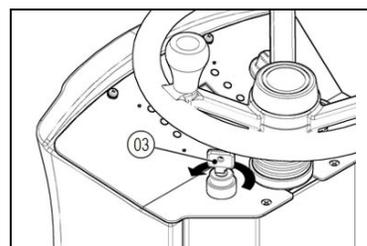


WEEKLY MAINTENANCE

2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").

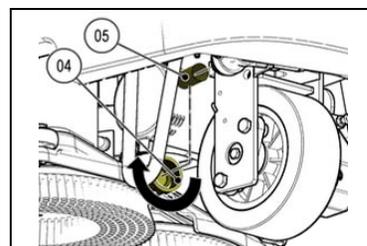


3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.
5. Make sure the solution tank is empty, otherwise empty it completely.



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

6. Unscrew the filter cap (04) of the water system on the front of the machine.
7. Remove the filter cartridge (05) and clean it under a jet of water, remove any dirt that might be attached.
8. Repeat the operations in the reverse order to reassemble everything.

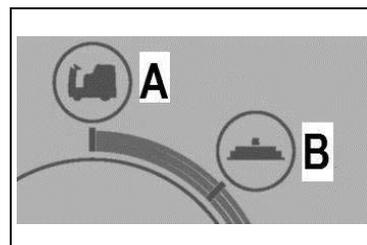


WARNING: The place this operation is carried out should comply with current environmental protection regulations.

45. CLEANING OF THE VACUUM HOSE (650RDX versions)

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

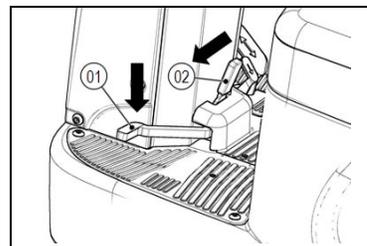
1. Take the machine to the maintenance area, using the switch on the control panel select the program "TRANSPORT" (A).



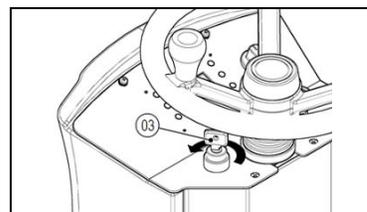
2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



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

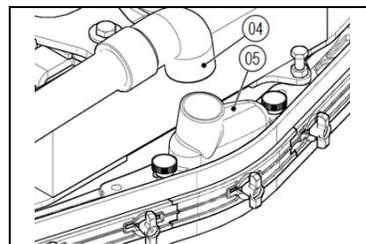


3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.

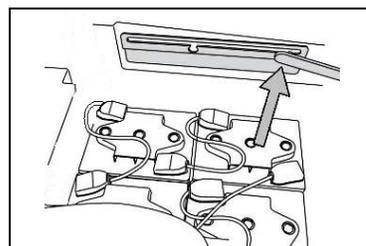


WEEKLY MAINTENANCE

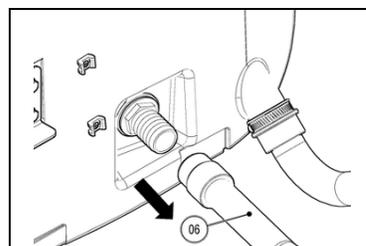
- Remove the vacuum hose (04) from the vacuum nozzle (05) on the squeegee body.



- Grip the handle on the right side of the recovery tank.
- Lift the recovery tank until it hooks to the end of the safety catch.



- Remove the vacuum hose (06) from the recovery tank.
- Clean the inside with a jet of water, inserting the tube in the part of the vacuum nozzle that was fixed to the recovery tank.
- Repeat the operations in the reverse order to reassemble everything.

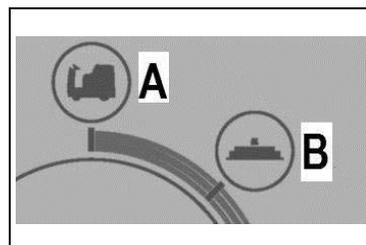


WARNING: The place this operation is carried out should comply with current environmental protection regulations.

46. CLEANING OF THE VACUUM HOSE (700RSX versions)

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

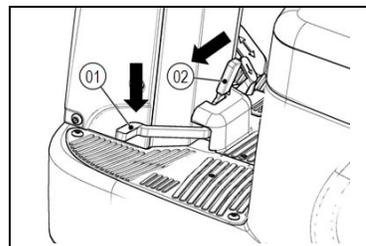
- Take the machine to the maintenance area, using the switch on the instrument panel select the "TRANSPORT" (A) program.



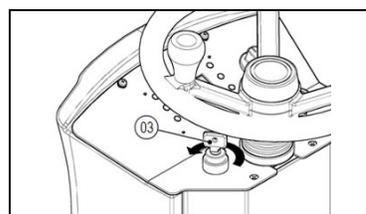
- Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



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

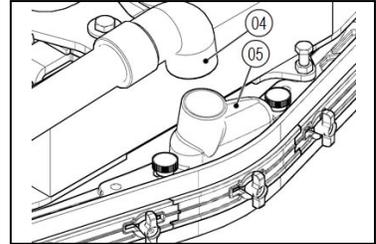


- Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
- Remove the key from the instrument panel.

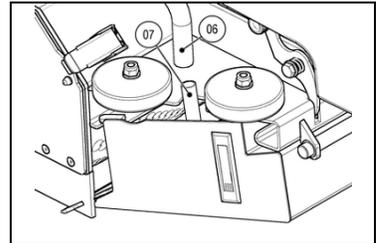


WEEKLY MAINTENANCE

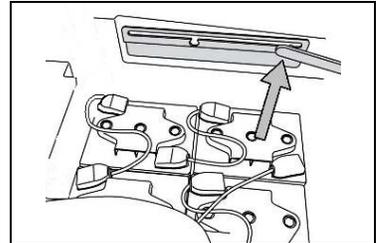
5. Remove the vacuum hose (04) from the vacuum nozzle (05) on the squeegee body.



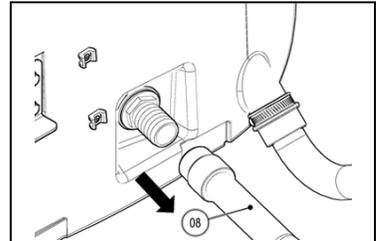
6. Remove the debris hopper vacuum hose (06) from the vacuum nozzle (07) on the brush head unit.



7. Grip the handle on the right side of the recovery tank.
8. Lift the recovery tank until it hooks to the end of the safety catch.



9. Remove the vacuum hose (08) from the recovery tank.
10. Clean the inside with a jet of water, inserting the tube in the part of the vacuum nozzle that was fixed to the recovery tank.
11. Repeat the operations in the reverse order to reassemble everything.



WARNING: The place this operation is carried out should comply with current environmental protection regulations.

EXTRAORDINARY MAINTENANCE

47. REPLACING THE SQUEEGEE RUBBER

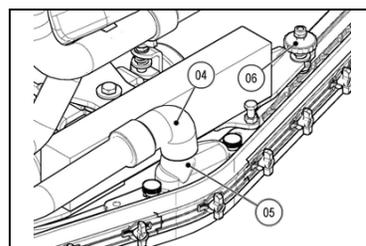
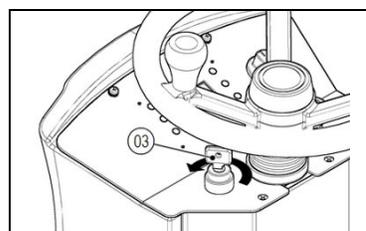
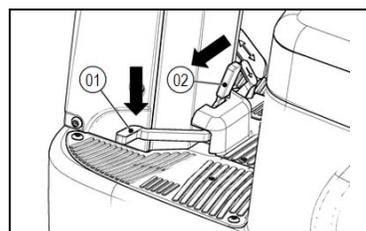
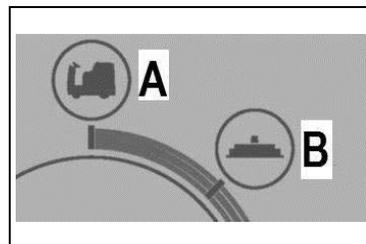
Careful cleaning of the squeegee rubber guarantees better cleaning of the floor as well as a longer vacuum motor life. To change the squeegee rubber proceed as follows:

1. Take the machine to the maintenance area, using the switch on the control panel select the program "TRANSPORT" (A).
2. Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").
3. Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
4. Remove the key from the instrument panel.



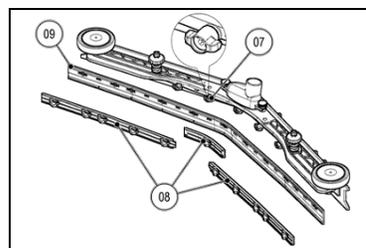
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.

5. Remove the vacuum hose (04) from the vacuum nozzle (05) on the squeegee body.
6. Loosen the knobs (06) in the squeegee body pre-assembly.
7. Remove the squeegee body from the slits in the squeegee connector.



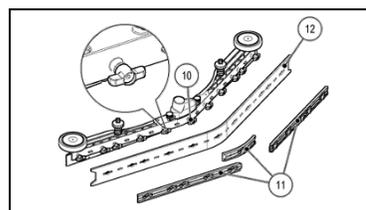
Proceed as follows for replacing the front rubber blade of the squeegee body:

1. Turn the wing nuts (07) in the horizontal position.
2. Remove the front rubber-pressing blades (08).
3. Remove the rubber (09) and replace it.
4. Proceed in reverse to replace the rubber.



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

1. Turn the wing nuts (10) in the horizontal position.
2. Remove the front rubber-pressing blades (11).
3. Remove the rubber (12) and replace it.
4. Proceed in reverse to replace the rubber.



EXTRAORDINARY MAINTENANCE

48. REGULATING THE SQUEEGEE

Careful adjustment of the height between the squeegee rubber and the floor guarantees better drying and cleaning of the floor as well as a longer vacuum motor life. To regulate the squeegee rubber proceed as follows:

- Using the switch on the instrument panel, select the program "SCRUBBING - DRYING" (C).
- Remove the parking brake, turn the lever (01) clockwise. The parking symbol "P" will disappear from the control panel display.



WARNING: If you try to move forward with the parking brake engaged, the machine will not move because the motor wheel is disengaged electrically when the parking brake is active.

- Adjust the flow of detergent coming out by using the knob (01) on the rear of the steering column.

- By pressing the forward movement pedal (02) the brushes and the vacuum motor start and the machine starts to move.

If you need to increase the inclination of the rubber blade in the centre, it is necessary to tighten the screw (03), while to decrease it just turn the screw (03) in the opposite direction. During working operation, the rear rubber blade should be slightly tilted backwards by about 30°- 45° with respect to the floor in a uniform way along its whole length. This means that the height of the squeegee should be regulated, and this is done by turning the knob (04) (in the diagram only the right knob is depicted) anti-clockwise to raise the squeegee and in the opposite direction to lower it.

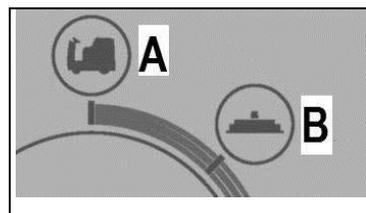
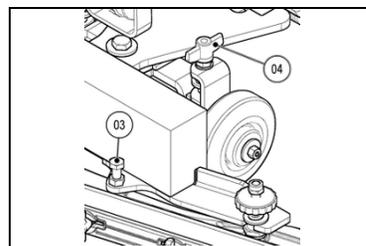
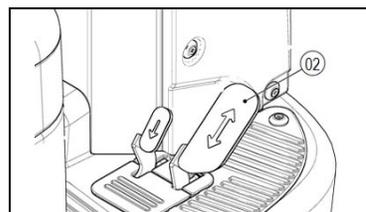
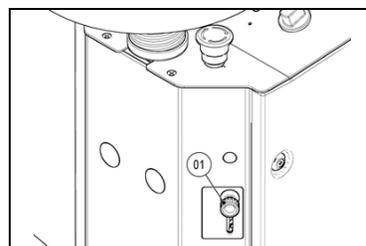
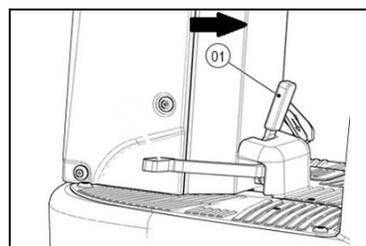
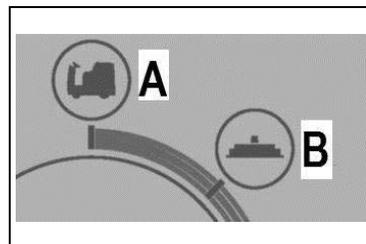


WARNING: the right and left wheels must be adjusted to the same level, so the squeegee can work parallel to the floor.

49. REPLACING THE DISC BRUSHES (650RDX versions)

Brushes in a good condition guarantee better cleaning of the floor as well as a longer brush motor life. To replace the brushes, proceed as follows:

- Take the machine to the maintenance area, using the switch on the instrument panel select the program "TRANSPORT" (A).

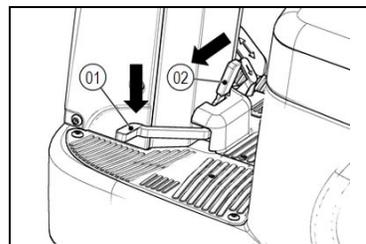


EXTRAORDINARY MAINTENANCE

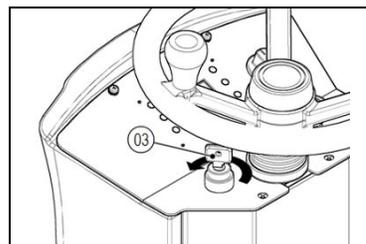
- Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



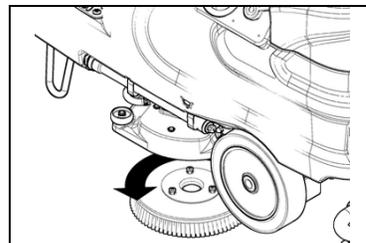
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.



- Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
- Remove the key from the instrument panel.



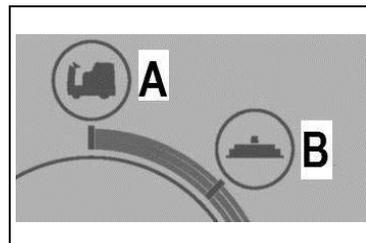
- Rotate the brush until it comes out of the housing of the brush holder plate (the diagram shows the rotation direction for extracting the right brush). To remove the left brush, rotate in the opposite direction.
- Replace the old brush with the new one.



50. REPLACING THE CYLINDRICAL BRUSH (700RSX versions)

Brushes in a good condition guarantee better cleaning of the floor as well as a longer brush motor life. To replace the brush, proceed as follows:

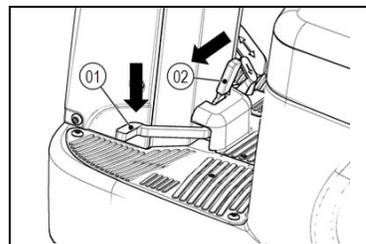
- Take the machine to the maintenance area, using the switch on the instrument panel, select the "TRANSPORT" (A) program.



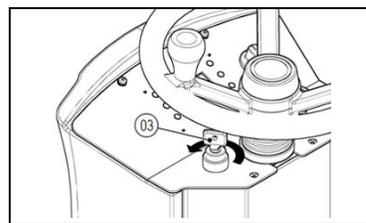
- Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



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

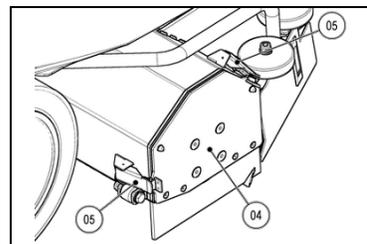


- Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
- Remove the key from the instrument panel.

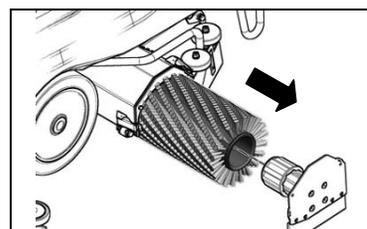


EXTRAORDINARY MAINTENANCE

- With the brush head in a high position remove the right brush head casing (04), uncoupling the retention hinges (05).

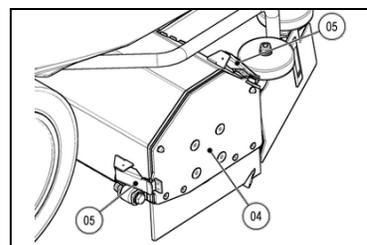


- Remove the brush to be replaced from the tunnel.
- Insert the brush (the side with 5 teeth) in the tunnel until it couples with the drive hub on the opposite side of the tunnel.



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

- Insert the idler wheel of the right brush head casing in the brush.
- Secure the right casing (04) to the brush head using the retention hinges (05).
- Thoroughly clean the splash guard rubber on the left side of the brush head unit and on the right casing with a wet cloth.
- Repeat the operations in the reverse order to reassemble everything.

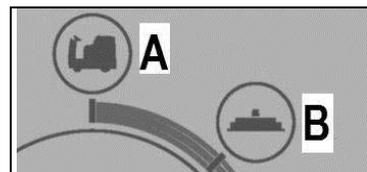


Check the state of wear of the side splash guard blades and in the event of excessive wear replace the splash guard blades. Read the section "REPLACING THE SIDE SPLASH GUARD BLADE (700RSX version)" for replacing the rubber blade.

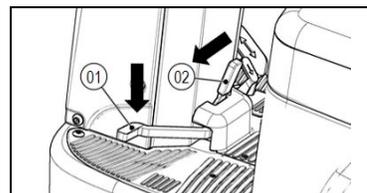
51. REPLACING THE BRUSH HEAD CASING (650RDX versions)

When the brush head casing is in a good condition it guarantees a better cleaning of the floor as well as a longer brush motor life. To replace the brush, proceed as follows:

- Take the machine to the maintenance area, using the switch on the control panel select the program "TRANSPORT" (A).
- Block the machine in place by engaging the parking brake, press the pedal (01) and block it with the lever (02) at the rear of the steering column (read the section "PARKING BRAKE AND SERVICE BRAKE").



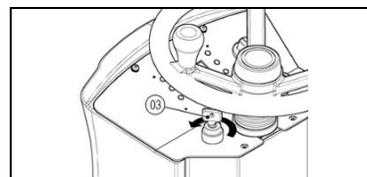
WARNING: You are advised to always wear protective gloves, to avoid the risk of serious injury to your hands.



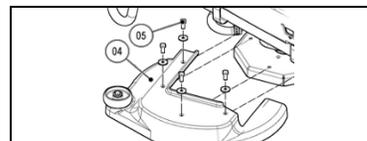
- Turn the main machine switch to "0" by turning the key (03) a quarter rotation to the left.
- Remove the key from the instrument panel.



WARNING: This operation must be carried out by qualified personnel, using suitable equipment. An incorrect connection may cause the machine to malfunction.



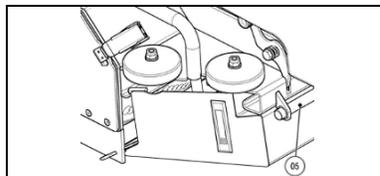
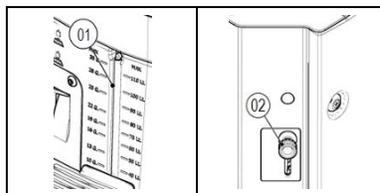
- Remove the casing to be replaced (04) from the brush head unit, the casing is fixed to it by means of screws (05). The image on the side shows the left casing.
- Secure the new casing to the brush head unit (read the section "ASSEMBLING THE BRUSH HEAD CASING").
- Repeat the operation also for the casing on the opposite side.



TROUBLESHOOTING

52. INSUFFICIENT WATER ON THE BRUSHES

1. Check that there is water in the solution tank, the amount inside the tank can be seen by means of the level tube (01) on the front left of the seat.
2. Make sure that the detergent solution tap is open, and check that the knob (02) on the back of the steering column is completely lowered.
3. Clean the solution filter located at the front of the machine.
4. Make sure the water distribution pipe (05) (S versions) is not blocked.



53. THE SQUEEGEE DOES NOT DRY PERFECTLY

1. Check the squeegee is clean.
2. Check the squeegee adjustments (read the section "SQUEEGEE ADJUSTMENT").
3. Clean the whole vacuum unit (read the relevant sections in the chapters "DAILY MAINTENANCE" and "WEEKLY MAINTENANCE").
4. Replace the rubber blades if worn out (read the section "REPLACING THE SQUEEGEE RUBBER BLADES").
5. Check that the cap on the recovery tank drainage hose is properly closed.

54. 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 15 mm long. To replace them, read the section "REPLACING THE DISC BRUSH" FOR THE VERSIONS 650RDX and read the section "REPLACING THE CYLINDRICAL BRUSH" for the 700RSX version. 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").

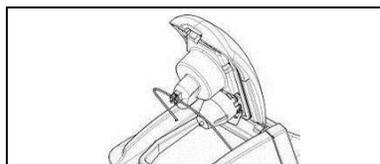
55. EXCESSIVE FOAM PRODUCTION

Check that a low foam detergent has been used. If necessary, add a small quantity of anti-foam liquid to the recovery tank.

Remember that, when the floor is not very dirty, more foam is generated. In this case the detergent solution should be more diluted.

56. THE VACUUM CLEANER DOES NOT FUNCTION

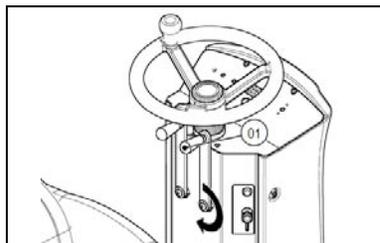
1. Check whether the recovery tank is full and, if necessary, empty it.
2. Check the float on the vacuum cap is working properly (see also "CLEANING THE RECOVERY TANK" and "CLEANING THE RECOVERY TANK FILTER").



57. THE BRUSH MOTOR DOES NOT WORK (650RDX version)

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

1. Check that the brush head is lowered during the forward movement, with the right lever (01) turned clockwise.
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 board under the footboards.

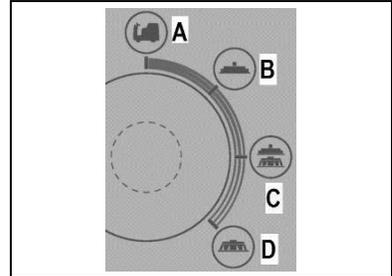


TROUBLESHOOTING

58. 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 brush head is lowered during start-up.
2. The operator must be properly seated in the driving position.
3. Check that the I-DRIVE selector is positioned to "C" or "D" (brush operation function) valid only for 650RDX versions and 700RSX versions.
4. Check no thermal protection device has intervened.
5. Check the correct connection of the motor to the terminal board under the footboards.

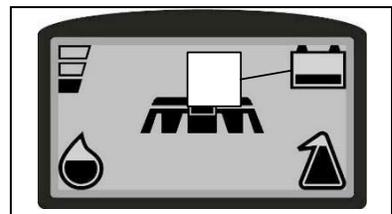
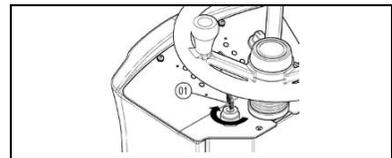
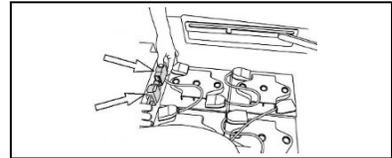


59. IT IS IMPOSSIBLE TO RAISE OR LOWER THE BRUSH HEAD OR SQUEEGEE

The machine is fitted with electrical protection devices that control the brush head and squeegee ascent/descent motor reducers. In the event of overloading, the fuses interrupt the power supply. After checking and removing the reason for the problem, to reset them just switch the machine off then on again. If the problem persists, contact the specialist technical assistance centre.

60. THE MACHINE DOES NOT START

1. Check the connector is connected to the batteries.
2. Check the key switch (01) is on "I".
3. Check that the batteries are charged, control the symbol (02) on the control display.



61. ELECTRIC FUSES AND THERMAL CUT-OUTS

In addition to general 80 A fuses, the machine is also fitted with self-restoring safety fuses located on the boards in the electric system that interrupt the power supply to the brush and vacuum motor when the machine exceeds the predetermined load. To restore the power supply to the motor, switch off the machine and wait for the fuses to cool down (about 40 seconds). If the switch disconnects the current several times in a row, contact the specialised technical assistance centre.



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
- Felt
- 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 floor, it has good resistance to wear and tear and hot water (no greater than 60°C). PPL is non-hygroscopic and therefore retains its characteristics even when working in wet conditions.

NYLON BRUSH

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

ABRASIVE BRUSH

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

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, also because, 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 centring the abrasive floor pads is difficult.

TABLE FOR CHOOSING THE BRUSHES

Machine	No. of brushes	Code	Type of bristles	Ø Bristles	Ø Brush	Length	Notes
650RDX	2	422189	PPL	0.3	340		PAD HOLDER
		422971	PPL	0.6	340		
		422972	PPL	0.9	340		
		422981	ABRASIVE		340		
		422973		330			
750RDX	2	427715	PPL	0.3	390		PAD HOLDER
		427716	PPL	0.6	390		
		427717	PPL	0.9	390		
		427719	ABRASIVE		390		
		427718		380			
700RSX	1	431774	PPL	0.8	210	690	
		432423	PPL	1			
		432425	MIXED. STEEL ABRASIVE	0.6 + 1			



HAMMERHEAD®



450**RS**



500**RS**



500**SS**



600**SS**



650**RS**



750**RS**



550**RDX**



650**RDX**



700**RSX**



750**RDX**



870**SR**

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