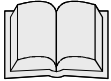
	<p>ADJUSTMENTS AND INSPECTIONS</p>	<p>SMX 2011</p>	<p>Doc. 10016991 Em. Luglio 2011 Ver. AC Pag. 1 di 19</p>
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VALIDITY

This document has validity since the serial number **211006524**

MODIFICATION COMPARING TO THE PREVIOUS DOCUMENT

Ref. Page	Descriptions
5	Update adjustment for machine with speed potentiometer
7	Update parameters for machine with speed potentiometer
9	New potentiometer calibration
14	Update pictures squeegee
18	Update new pictures of squeegee



READ THE USE AND MAINTENANCE MANUAL

PROGRAMMATION CONSOLE

Console services

The console allows to:

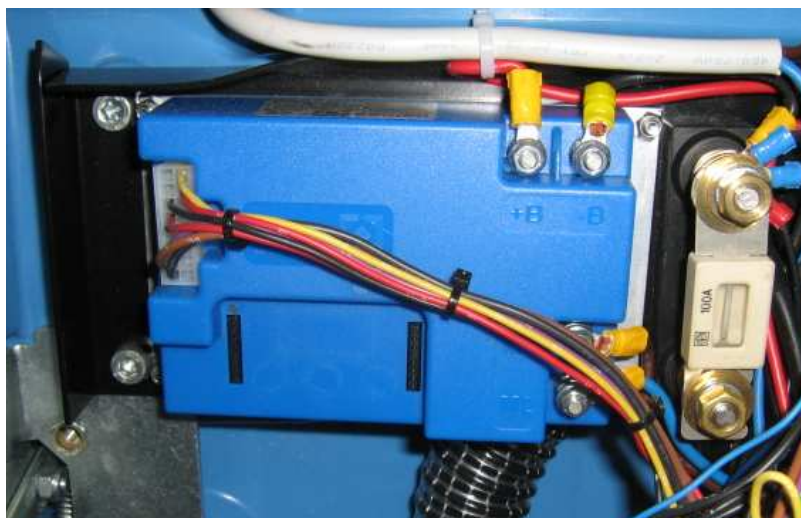
- Program the chopper to have a customized performance of the traction;
- Test and check the electric values and the electric circuit conditions (only the traction part);
- Read the alarm and warning to help the operator to solve the problems;

Console use

The right sequence to connect la console is the following:

1. **TURN OFF** the machine by the key switch;
2. connect the console in the socket on the chopper;
3. **TURN ON** the machine by the key switch;
4. Terminate any program you used with the console and **TURN OFF** the machine by the key switch;
5. Take off the console from its socket;

**A OPERATION SEQUENCE DIFFERENT FROM THAT SHOWN ABOVE
CAN COMPROMISE OR DAMAGE THE CHOPPER CARD OR THE CONSOLE**

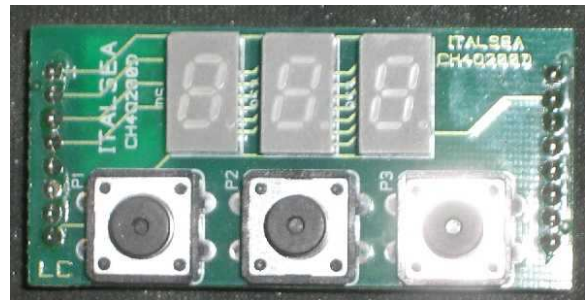
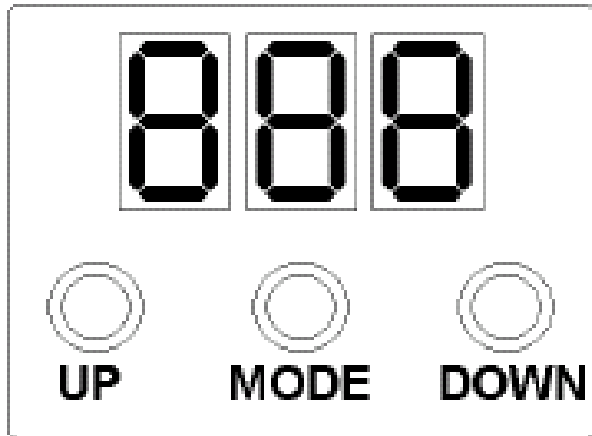


ALARM AND WARNING TABLE

Alarms or warning stop the machine. The number of the alarm occurred is readable by the console display or counting the blinks of the alarm led. The number of blinks match with the alarm number (for example 4 blinks is equal to A4).

MESSAGE	ALARM	TO DO
A1	FORWARD GEAR TURNED ON DURING SWITCHING	CONTROL THE MICRO FORWARD GEAR
A2	REVERSE GEAR TURNED ON DURING SWITCHING	CONTROL THE MICRO REVERSE GEAR
A3	TEAR POTENTIOMETER	CONTROL THE CABLES OF THE POTENTIOMETER
A4	POTENTIOMETER NOT SETTED TO ZERO DURING SWITCHING - SET	THE POSITION OF REST OF THE POTENTIOMETER
A5	THERMIC PROTECTION (it clicks with temperature over 90°, make stopping the machine, until the temperature doesn't arrive under the planning limits - control the value of temperature with the parameter F14=4))	CONTROL THE ABSORPTION OF THE MOTOR - INCREASE THE DISSIPATION
A6	SHORT MOS DURING THE SWITCHING	SWITCH OFF, VERIFY AND SWITCH ON AGAIN. CONNECTIONS. IF IT PERSISTS CHANGE THE OPERATION
A7	OVERCURRENT LINE 1	CONTROL THE MOTOR OR - DECREASE THE MAX. CURRENT
A8	OVERCURRENT LINE 2	CONTROL THE MOTOR OR - DECREASE THE MAX. CURRENT
A9	UNDER TENSION	TENSION < 18V CONTROL THE CONNECTIONS AND THE SECTION OF THE CABLES OF POWE
A10	OVER TENSION	TENSION > 45 V
A11	AMMETER PROTECTION	CONTROL THE CURRENT OF THE MOTOR
A12	DISABLE	CONTROL THE CONNECTION OF THE PIN 6,
A13	ALARM SWITCHING OFF	CONTROL THE KEY AND THE CORRESPONDENT CONNECTION
A14	ALARM EEPROM	SWITCH OFF AND SWITCH ON AGAIN

CHOPPER CARD PROGRAMMATION



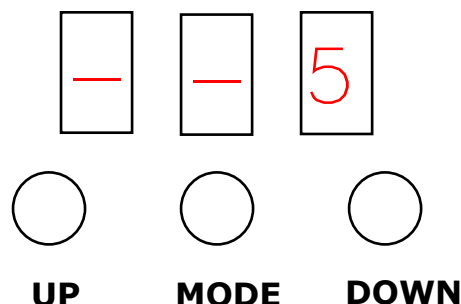
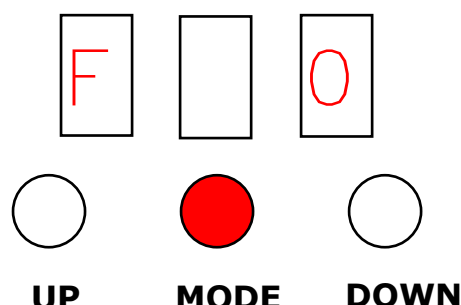
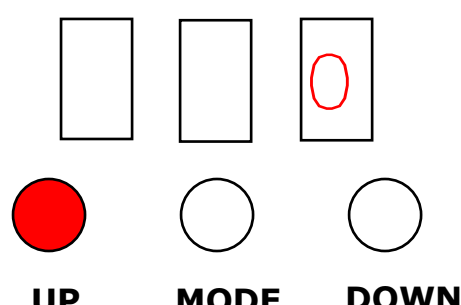
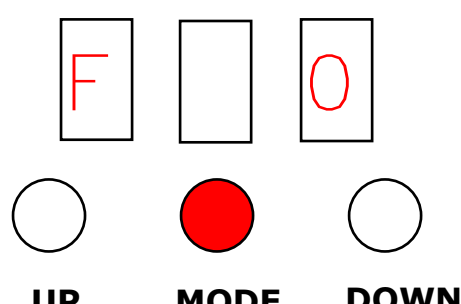
Code of the console : 411818

To enter into the programming functions, push "MODE".

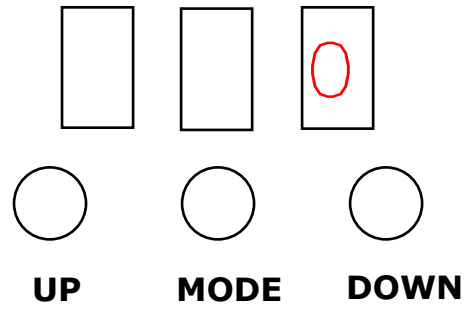
It will appear the writing referred to the first parameter ("F0"); pushing "UP" and "DOWN" to select the required parameter.

Push "MODE" to enter into the modalities of change and push "UP" and "DOWN" to obtain the required value; when it's selected, confirm another time the new value with "MODE".

SET DEFAULT PARAMETERS

<ol style="list-style-type: none"> TURN OFF THE MACHINE. Connect the consolle (411818). 	
<ol style="list-style-type: none"> For a while, the screen show you the value on the figure on the side, and them 0. 	
<ol style="list-style-type: none"> Press MODE button as shown on the picture. F0 will show on the screen. Press again MODE button. 	
<ol style="list-style-type: none"> 0 will show on the screen. <u>Press UP button to select the correct value for your machine.</u> <p>9. <u>Reference</u></p>	
<p>SMX without speed potentiometer on the handlebar F0=5</p> <p>SMX with speed potentiometer on the handlebar F0=6</p>	
<ol style="list-style-type: none"> After select the correct default value, press MODE button. Disply show you F0. 	


12. Wait for a while until 0 will be shown on the display.



13. TURN OFF AND TURN ON THE MACHINE.

PARAMETERS


Name	SMX without speed potentiometer	SMX with speed potentiometer	Description
F 0	5	6	Parameters of default (F0=2), switch off and switch on again
F 1 *	50	50	IGSL
F 2 *	100	100	PGSL
F 3 *	70	70	IGCL
F 4 *	600	600	PGCL
F 5	20	20	Acceleration (10=1s)
F 6	10	10	Deceleration when reversing (10=1s)
F 7	8	8	Deceleration ramp when stopping (10=1s)
F 8	60	60	Limit of current [A] - Imax
F 9	60	60	Decrease reverse gear [%]
F 10	2	0	Refer of speed 0=potentiometer 0-max. with 2 micro of gear 1=potentiometer wig-wag with micro of gear 2=potentiometer wig-wag without micro of gear
F 11 *	--	--	LPOT
F 12 *	--	--	CPOT
F 13 *	--	--	HPOT
F 14	2	6	Display view: 0=none 1=motor current [1=1A] 2=motor voltage [10=1V] 3=potentiometer voltage [10=1V] 4=temperature dissipator [°C] 5=battery voltage [10=1V] 9=software version
F 15	5	5	Late of release electric brake (10=1s)
F 16	0	0	Minimal speed (% respect of the max speed)
F 17	15	15	Nominal current of the motor - I_n
F 18	15	15	Time ammeter [s] with max current - t
F 19	15	15	Dead strip potentiometer (10=0,1V)
F 20	0	0	Qualification calibration potentiometer 0=no qualified / 1 = qualified
F 21	0	0	Time duration anticrushing (0,1 s)
F 22	100	100	Max. speed with forward gear [%]
F 23	0	0	Entrance Multimode: 0=inhibited entrance 1=reduction of speed with mando Multimode, 2=reduction of current with mando Multimode
F 24	60	60	Max. speed in Multimode [%]
F 25	15	15	Max current in Multimode [A]
F 26	0	0	RxI [100=10% a 120 A (60 A)]
F 27	0	0	Speed in anticrushing [%of speed max] F27=0 DISABLES ANTICRUSHING
F 28	0	0	Tension battery [0 = 24V ; 1 = 36V] SWITCH OFF AND SWITCH ON AGAIN TO CONFIRM
F 29 *	--	--	I_TAR
F 30	0	0	Entrance key to parameters (*)
F 31	1	1	Entrance logic disable [0=N.A. ; 1=N.C.]

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POTENTIOMETER CALIBRATION

SMX WITHOUT Speed potentiometer on handlebar

1. Be sure that the machine is turned off;
2. Connect the programming console to the chopper card and then turn on the machine;
3. A check out message (like - -5 or similar will blink few times) will be shown and then "0" will appear;
4. Push the ENTER button, "F0" will appear;
5. Push the "UP" button until "F20" appear and then press the Enter button to be able to change the parameter 20;
6. Push the "UP" button to set the parameter at "1" then confirm the value with the ENTER button;
7. Wait until the console shows "0";
8. Push simultaneously the "UP" and "DOWN" keys and keep them pressed for few seconds;
9. The mid flashing segment and the potentiometer voltage value will appear;
10. With handle in idle condition press "ENTER" to store in the chopper the idle potentiometer value;
11. Then a the low segment will start to blink;
12. Pull the accelerator handle to its end stroke and, keeping it pressed, push the "ENTER" button to store in the chopper the maximum potentiometer value;
13. Then the high segment will start to blink;
14. Push the accelerator handle to its end stroke and, keeping it pressed, push the "ENTER" button to store in the chopper the maximum potentiometer value;
15. Wait until on the console "0" appears;
16. Then push the "ENTER" button to let "F0" appear;
17. Push the "UP" button until "F20" appear and then press the "ENTER" button.
18. The console will show the number 1 which is the value of the parameter 20;
19. Push the "DOWN" button to set the parameter 20 to 0 and confirm with the "ENTER" button;
20. Wait until the console shows the number "0";
21. Turn off the machine and restart it;
22. The Accelerator Programmation is finished;
23. Be sure to disconnect the console only if the machine is turned off;

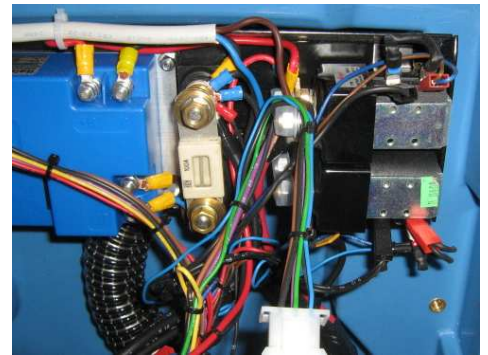
	<p style="text-align: center;">ADJUSTMENTS AND INSPECTIONS</p>	<p style="text-align: center;">SMX 2011</p>	<p>Doc. 10016991 Em. Luglio 2011 Ver. AC Pag. 9 di 19</p>
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SMX WITH Speed potentiometer on handlebar

1. Be sure that the machine is turned off;
2. Connect the programming console to the chopper card and then turn on the machine;
3. A check out message (like - -5 or similar will blink few times) will be shown and then "0" will appear;
4. Push the ENTER button, "F0" will appear;
5. Push the "UP" button until "F20" appear and then press the Enter button to be able to change the parameter 20;
6. Push the "UP" button to set the parameter at "1" then confirm the value with the ENTER button;
7. Wait until the console shows "0";
8. Push simultaneously the "UP" and "DOWN" keys and keep them pressed for few seconds;
9. Then a the low segment will start to blink;
10. Turn the speed potentiometer to the minimum
11. Pull the accelerator handle to its end stroke and, keeping it pressed, push the "ENTER" button to store in the chopper the value;
12. Then the high segment will start to blink;
13. Turn the speed potentiometer to the maximum
14. Pull the accelerator handle to its end stroke and, keeping it pressed, push the "ENTER" button to store in the chopper the value;
15. Wait until on the console "0" appears;
16. Then push the "ENTER" button to let "F0" appear;
17. Push the "UP" button until "F20" appear and then press the "ENTER" button.
18. The console will show the number 1 which is the value of the parameter 20;
19. Push the "DOWN" button to set the parameter 20 to 0 and confirm with the "ENTER" button;
20. Wait until the console shows the number "0";
21. Turn off the machine and restart it;
22. The Accelerator Programmation is finished;
23. Be sure to disconnect the console only if the machine is turned off;

Electric plant inspection

1. Verify the functioning of the electric plant: switches motors, solenoid valve contactors and power fuses.



2. Verify the functioning of the potentiometer and of the direction microswitches.



3. Verify the conditions and the connections of the batteries poles, the power cables and the battery charger connection.

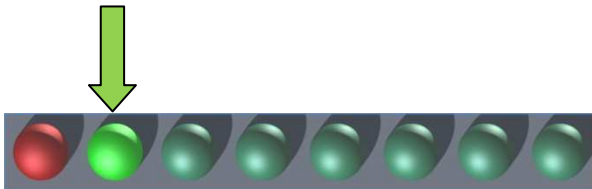


Battery check card adjustment

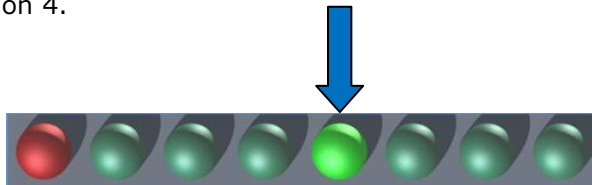
1. Verify that turning on the machine the battery check card has the following starting sequence:
 - Turning on of the LED which correspond to the set-up (**red LED = "0"**).
 - Turning on of all the LEDs (check of the lamps)
 - Turning on of the LEDs depending on the charge of the battery
2. Verify the hour meter functionality

To verify which is the set-up you simply need to turn on the machine and check which is the first LED that turns on. Counting the LEDs since the left side any LED correspond to a position and the LED which turn on correspond to the current set-up.

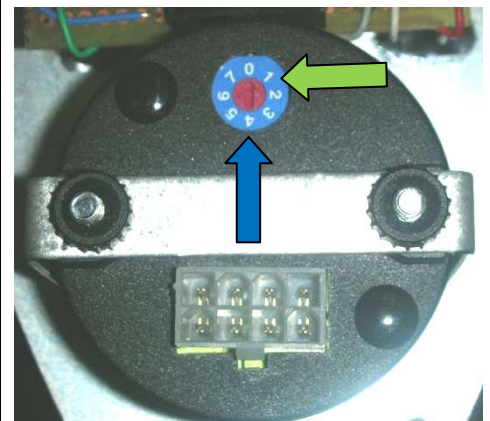
Verify that if the machine uses wet cell batteries the adjustment is on **position 1**.



Verify that if the machine uses GEL batteries the adjustment is on position 4.



WARNING: A wrong set-up of the battery control card can compromise the battery efficiency and damage then in irreversible way.



Battery charger adjustment

1. Verify that the battery charger set up is correct for the battery type used on the machine.



2. To adjust the battery charger act as follow:

- Lift up the **sticker** on the front part of the battery charger.
- Set up the dip switches under the sticker following the instructions of the table below.
- Put the **sticker** in its original position.



Under the plastic cover you can see the dip switches as the picture shows.

The dip switches has to be setted up as follow:

DP1 – DP2: Charge curve selection

GEL TROJAN	DP1	DP2
	ON	ON
WET CELL	DP1	DP2
	OFF	ON
GENERIC GEL o AGM	DP1	DP2
	ON	OFF
GEL EXIDE SONNENSCHNEIN	DP1	DP2
	OFF	OFF



Other switches UNCHANGEABLES

DP3	DP4	DP5	DP6	DP7	DP8
ON	ON	ON	OFF	OFF	ON



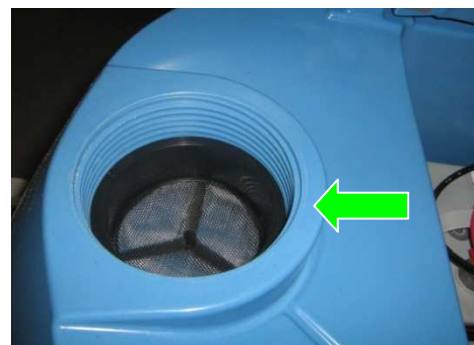
Read carefully the battery charger use and maintenance manual

Segnali di allarmi del caricabatterie:

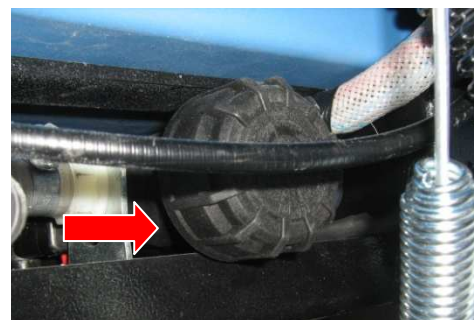
ERROR MESSAGE	CAUSE	WHAT TO DO
E01	Over voltage on the battery	Verify the battery installed on the machine, the cleanness of the power connections and the quality of the power cables.
E02	Overtemp of an external probe.	Restart the battery charger if the problem is still there, replace the battery charger.
E03	Charging phase overtime	Verify the battery conditions and, if necessary, replace it.
SCt	Charging overtime	Verify the battery conditions and, if necessary, replace it.
SCr	Internal short circuit	Replace the battery charger

Hydraulic installation inspection

3. Verify the cleanness and the functionality of the **solution filter** under the tank cap.



4. Verify the cleanness and the sealing of the **solution filter**.

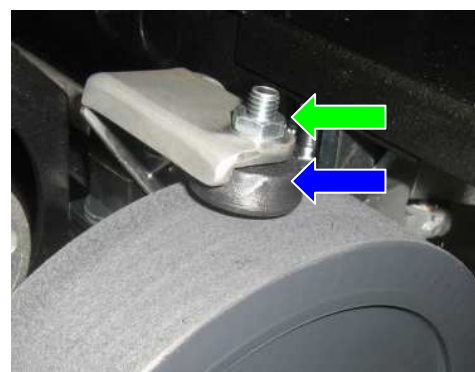


Brake adjustment

1. Fix the brake wire to the chassis screwing up completely the **sheath** to its support.

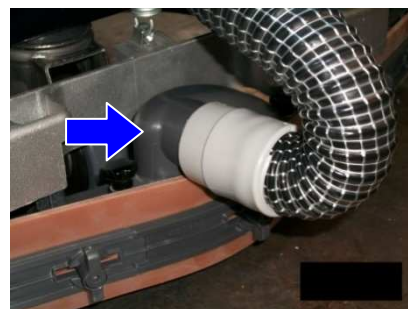


2. Adjust the pads on the wheels to let the machine be blocked at th third step of the hand brake.
3. To adjust the pads act as follow:
 - Unscrew the **block nut M8**;
 - Screw up or loose the **pad** to let it stay in right position;
 - Block up the **block nut M8**;

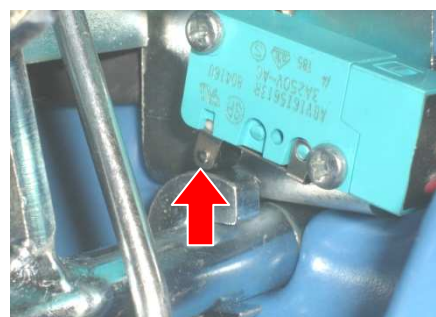


Suction system inspection

1. Verify the cleanness and functionality of the **floating filter**.
2. Check the air sealing of the **suction head** on the recovery tank.
3. Verify the connections and the sealing of the suction hoses and the squeegee hoses.
4. Check the sealing of the **squeegee mouth**.
5. Check the sealing of the exhaust hose and exhaust hose plug.



6. Suction microswitch adjustment:
7. Adjust the suction microswitch in way that when the cam on the squeegee lever **push the microswitch** there is about 0,5 mm of clearance of the microswitch lever.

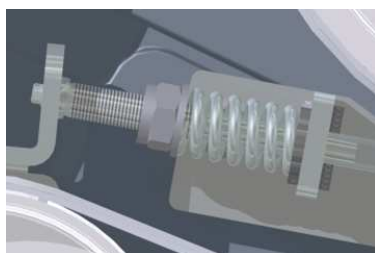


Brush base adjustment

1. Adjustment of the **brush base microswitch**. Verify that with the pedal hooked the microswitch switches and the microswitch wheel keep about 0,5mm of clearance.
2. If it is necessary to adjust the microswitch act as follow:
 - Loose the self **locking nut M3** and its **screw M3**;
 - Move the microswitch using the **eyelet** on its body;
 - Fix the **self locking nut M3** and its **screw M3** to block the microswitch paying attention to not screw up too much to avoid to damage the microswitch body and its mechanism.
 - Verify, when finished, the correct functioning of the microswitch and, if necessary, repeat the operations described.



3. Adjust the **belt tensioner spring** to be compressed **27mm** long.



4. Adjust the transversal inclination of the brush base:
 - Put the machine on a even and flat floor.
 - Lower down the brush base on the floor with the brushes installed.
 - Loose the **screw and the M8 nut** that fix the left hand arm to the brush base.
 - Let the brush base lie on the floor taking care that both brushes touch simultaneously the floor.
 - Block the M8 screw with its self locking nut.



5. Verify that the **M8 screw** that fix the brush base to the third point arm, let the brush base moves longitudinally to let the brush base follow the floor imperfections.
6. If the brush base vibrate on the floor where it's used screw up a little bit more the screw to compress the spring a little bit more to stop or decrease the vibrations.

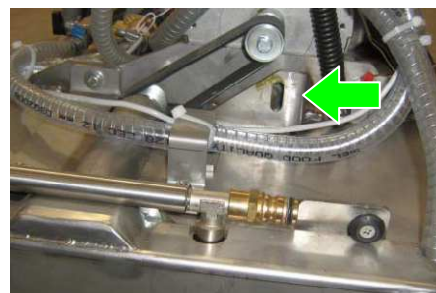
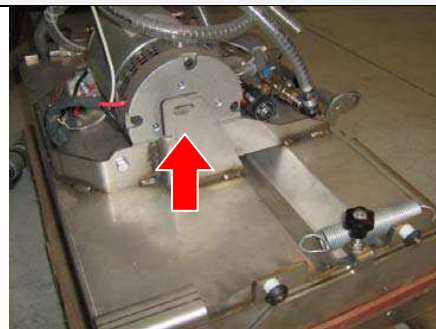


7. Verify that the brushes could be taken apart and that there is space enough for the passage of the hooking button under the brush plates. If necessary:
 - Lift up the brush base;
 - Unscrew the blocking nut M6;
 - Loose the **M6 screw** until the brushes have space enough to be removed from the brush base;
 - Verify at the same time that the brush base doesn't touch the solution tank.



Sweeping base adjustment

1. Loosen the bolts of the **left bracket** and the **third point** of the brush base.
2. Put the brush base on the ground with both brusche installed. Check if the brush base is smooth to the floor then tighten the bolts.
3. First of all, tighten the bolt of the **left bracket** and then the bolt of **third point** of the brush base.



4. After finish, check the imprint on the floor of the two brusche. It should be similar to the picture.

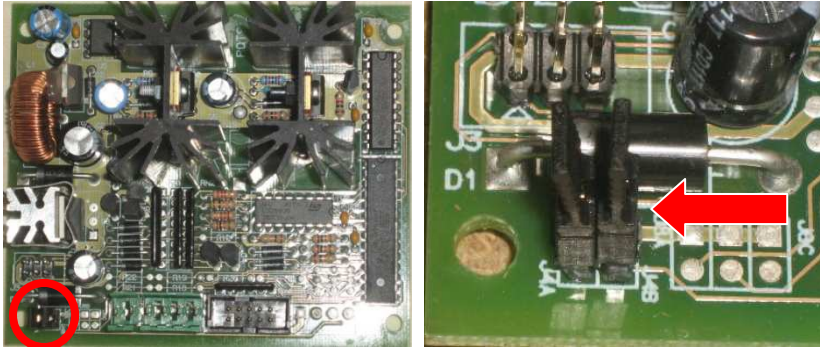
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<input style="width: 95%;" type="text"/>	<input type="checkbox"/>	
<input style="width: 95%;" type="text"/>	<input type="checkbox"/>	No
<input style="width: 95%;" type="text"/>	<input type="checkbox"/>	
<input style="width: 95%;" type="text"/>	<input type="checkbox"/>	Ok
<input style="width: 95%;" type="text"/>	<input type="checkbox"/>	

Dosing system adjustment

Verify the cleanness of the connectors and of the site of the chemical dosing system card.

Verify the set-up of the **two jumper J4A and J4B** of the card.

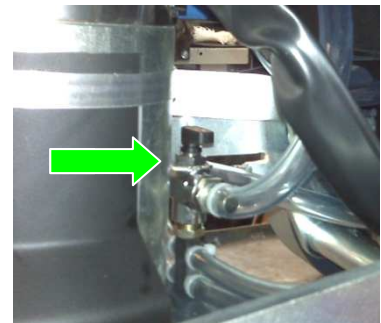
Put the jumper on the bridges to short circuit both.



Verify the cleanness and the conditions of the detergent hoses and of the chemical tank.



Verify the functioning of the chemical dosing system bypass.
The bypass system is made by a **valve** on the brush base.



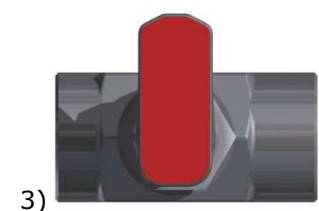
Brush base with two brushes:

Verify that in position 1 the chemical dosing system let the solution fall on the floor.

Verify that in position 2 the solution release is direct from the solution tank bypassing the chemical dosing system.

Verify that in position 3 no solution fall on the floor.

Consider the valve saw from the operator place and from the top.

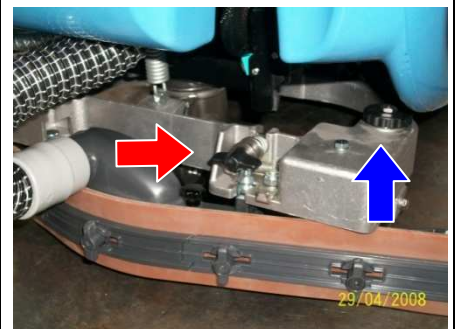
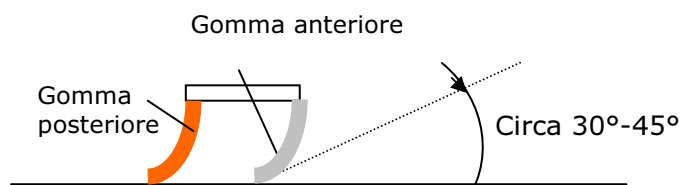


Verify the functionality and the connections of the pumps. Verify the cleanness and the conditions of all the connections.



Regolazione Tergipavimento

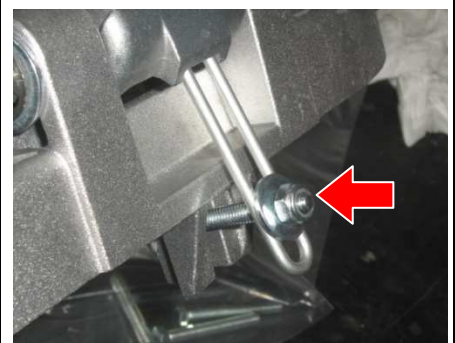
1. Adjust the inclination **adjuster** of the rubber until the rubber has a regular inclination on all its length.
2. Adjust the height of the wheels using the **knob** checking that the rubber has an inclination between 30 and 45 degrees.




3. Verify that the squeegee assembly in high position doesn't interfere with the brush base movement pedal. In opposite case act on the the M6 nut in the spring connected with the squeegee lifting wire.:
 - Lift up the squeegee and out under it a spacer of about 40mm.
 - Lower the squeegee movement lever.
 - Verify that the **nut** and the thread are visible.
 - Screw up or unscrew the nut depending on you need to lift up or lower down the squeegee assembly.
 - Verify that with the squeegee lifted up there is no interference between the **brush base movement pedal** and the **squeegee support**.



4. Verify the pressure of the squeegee on the floor. Verify that the pressure due to the spring and to the squeegee weight is enough to bend the squeegee rubbers and let the squeegee wheels touch the floor.
5. Verify that the pressure is not too much to prevent a fast wearing out of the squeegee wheels in swerving.
6. To perform the adjustment act as follow:
 - Lower down the squeegee assembly;
 - Screw up the **M8 sel locking nut** to increase the pressure on the floor or unscrew it to lower the pressure.



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Functional check of the machine

- Check the functionality of switches and warning lamps;
- Check the functionality of the accelerator lever;
- Check the functionality of the brush base;
- Check the functionality of the brush motor;
- Check the functionality of the solenoid valve;
- Check the functionality of the suction motor;
- Check the functionality of the brakes;
- Check the functionality of batteries and power cables;

Functional test of the machine

- Fill the tanks completely and verify the sealing;
- Verify the sealing of all the water plant and that the water is equal on both brushes;
- Adjust the inclination and the height of the squeegee rubbers doing a functional test;
- Adjust the inclination of the brush base and do a functional test;
- Check the efficiency of the parking brake;
- Verify the forward and backward movement, acceleration and braking;

Final Check

Check all the functions: washing, drying and movement