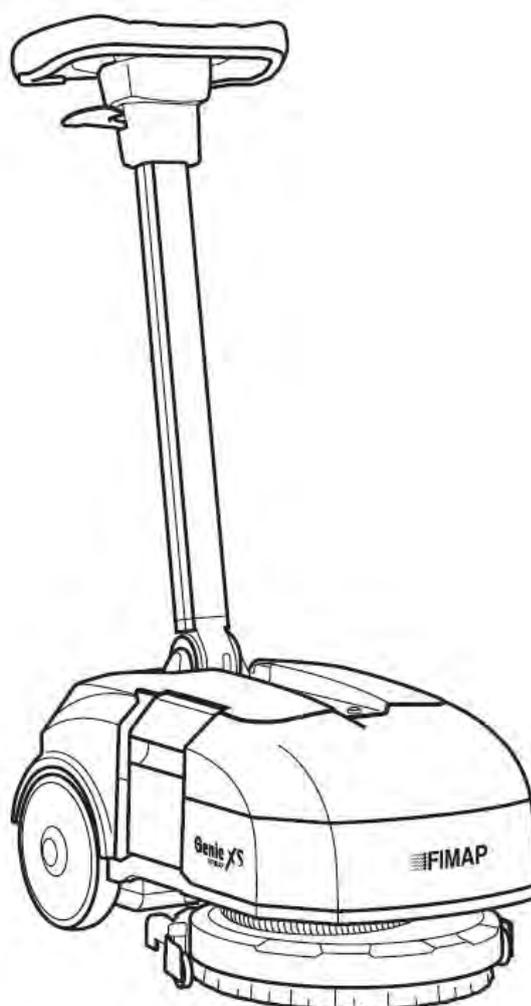




## WORKSHOP HANDBOOK

### Genie XS



Version: **AB**  
Date: **February 12, 2016**  
Document Number: **10055555**

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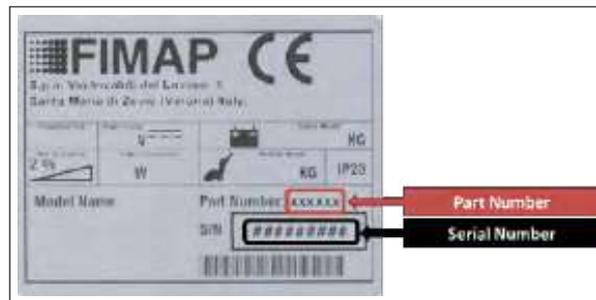
**Part I**

**Product Introduction**

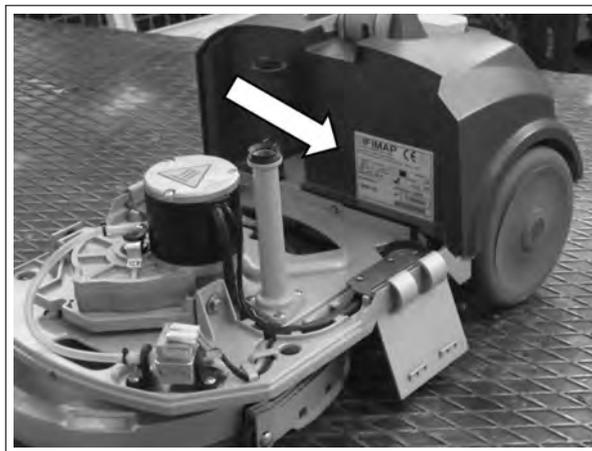
# Chapter 1

## Serial Number and Technical Support

### 1.1 The Serial Tag



### 1.2 Serial Tag location



To have access to the Serial Tag it is sufficient to **remove both tanks**.

The Serial Number is an extremely important information which has to be provided each time a Technical Support is required or is necessary to buy spare parts or accessories. The serial number is the only way to identify the machine by model, production date type equipments in general.

# Chapter 2

## Main Technical Features

### Technical Data

| <b>TECHNICAL DESCRIPTION</b>                              | <b>U/M</b>      | <b>Genie XS</b> |
|---|-----------------|-----------------|
| Working width   | mm              | 280             |
| Working capacity, up to                                   | $\frac{m^2}{h}$ | 900             |
| Steering Diameter   | mm              | 650             |
| Maximum Ramp Gradient                                     | %               | 2               |
| Total Power   | W               | 255             |
| Machine Length  | mm              | 555             |
| Machine length <i>(Handlebar in Maintenance Position)</i> | mm              | 895             |
| Machine Height <i>(Handlebar in Resting Position)</i>     | mm              | 1050            |
| Machine Height <i>(Handlebar in Maintenance Position)</i> | mm              | 350             |
| Machine Width <i>(with Squeegee)</i>                      | mm              | 375             |
| Sound pressure level (ISO 11201)                          | LpA dB (A)      | 76              |
| Hand vibration level (ISO 5349)                           | $\frac{m}{s^2}$ | ≤ 2.5           |

### Weights and Pressures<sup>1</sup>

| <b>TECHNICAL DESCRIPTION</b>   | <b>U/M</b> | <b>Genie XS</b> |
|--|------------|-----------------|
| Machine Weight <i>(Machine + Brush + Squeegee)</i>   | kg         | 18              |
| Gross Weight of the machine in work conditions<br><i>(Machine + Battery+ Water + Brush + Squeegee)</i> | kg         | 23              |

<sup>1</sup>Weight and Pressures depends on how much water there is in the tanks.

**Part II**

**Anomalies Resolution Guide**

# Chapter 3

## Troubleshooting Guide

### 3.1 Basic Guide

#### 3.1.1 Electrical system: what to do if...

---

#### **The machine doesn't switch on**

---

- |                                      |   |  |
|--------------------------------------|---|--|
| 1. The main switch is not pushed     | ⇒ | <i>Push the main switch.</i>                                       |
| 2. The battery doesn't work properly | ⇒ | <i>Refer to the proper section (see section 3.1.1 at page 8).</i>  |
| 3. The problem is not solved         | ⇒ | <i>Refer to the Advanced Guide (see section 3.2.2 at page 14).</i> |
- 

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#### **The battery don't work properly**

---

- |  |   |  |
|--|---|--|
| 1. The battery is not properly connected | ⇒ | <i>Insert the battery until the end position clicks.</i>           |
| 2. The battery is discharged             | ⇒ | <i>Perform a complete charge cycle.</i>                            |
| 3. The battery is faulty                 | ⇒ | <i>Refer to the Advanced Guide (see section 3.2.3 at page 15).</i> |
| 4. The battery charger doesn't work      | ⇒ | <i>Check the proper section (see section 3.1.1 at page 8).</i>     |
-

---

### **The battery charger doesn't work**

---

1. The battery charger is not connected to the power supply ⇒ *Connect the charger to a supplied electric socket.*
  2. The charger has the power switch in position 0 ⇒ *Move the power switch in position 1.*
  3. The battery charger has the Red LED blinking ⇒ *The battery charger is in error conditions, verify the alarm tables and solve the issue by following the related instructions (see section 5.3.5 at page 32).*
  4. The battery charger plugged in and turned on does not activate the Green LED (electrical continuity) ⇒ *Replace the battery charger.*
  5. The battery charger plugged in and turned on with battery inserted does not activate the Red LED (charging) ⇒ *Make sure the battery is properly positioned inside the slot and the terminals have a good contact. The battery may be already charged.*
- 

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### **The display shows an alarm message**

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1. The display shows an alarm message ⇒ *Check what alarm message is shown and solve the related issue by following the proper instructions (see section 5.6.1 at page 36).*
- 

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### **The machine has a very limited working autonomy**

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1. The battery is discharged ⇒ *Perform a complete charge cycle.*
  2. The battery have been working for several cycles ⇒ *Replace the battery.*
-

### 3.1.2 Mechanical scrubbing system: what to do if...

---

| <b>The machine doesn't clean well</b>                  |   |
|--|---|
| 1. The machine is switched off                         | ⇒ <i>Switch on the machine.</i>   |
| 2. The machine doesn't switch on                       | ⇒ <i>Refer to the proper section (see section 3.1.1 at page 8).</i>   |
| 3. The display shows an alarm message                  | ⇒ <i>Check what alarm message is shown and solve the related issue by following the proper instructions (see section 5.6.1 at page 36).</i> |
| 4. The switch "Auto" is not pressed                    | ⇒ <i>Press the "Auto" switch.</i>   |
| 5. The brush motor is not working                      | ⇒ <i>Refer to the Advanced Guide (see section 3.2.5 at page 16).</i>  |
| 6. The brush is not properly engaged                   | ⇒ <i>Release and engage properly the brush.</i>   |
| 7. The solution flow rate is not correct or not enough | ⇒ <i>Refer to the proper section (see section 3.1.4 at page 12).</i>  |
| 8. The detergent doesn't fit the type of dirt          | ⇒ <i>Replace the detergent with a proper one.</i>   |

---

### 3.1.3 Drying system: what to do if...

| <b>The machine doesn't dry well</b> |  |   |
|-------------------------------------|--|---|
| 1.                                  | The machine is switched off                                  | ⇒ <i>Switch on the machine.</i>   |
| 2.                                  | The machine doesn't switch on                                | ⇒ <i>Refer to the proper section (see section 3.1.1 at page 8).</i>   |
| 3.                                  | The vacuum motor doesn't work                                | ⇒ <i>Refer to the Advanced Guide (see section 3.2.6 at page 18).</i>  |
| 4.                                  | The machine is in "ECO" mode                                 | ⇒ <i>Set up the machine as per standard configuration.</i>  |
| 5.                                  | The display shows an alarm message                           | ⇒ <i>Check what alarm message is shown and solve the related issue by following the proper instructions (see section 5.6.1 at page 36).</i> |
| 6.                                  | The recovery tank is full                                    | ⇒ <i>Empty the recovery tank following the proper procedure.</i>  |
| 7.                                  | The squeegee is lifted up from the floor                     | ⇒ <i>Lower down the squeegee.</i>   |
| 8.                                  | The squeegee rubber blades are worn out or broken            | ⇒ <i>Rotate or replace the squeegee rubber blades (see section 7.4.1 at page 46).</i>   |
| 9.                                  | The squeegee is not properly adjusted                        | ⇒ <i>Adjust the squeegee properly following the proper procedure (see section 7.3.1 at page 46).</i>  |
| 10.                                 | The squeegee vacuum chamber or the adapter is stuck or dirty | ⇒ <i>Clean the squeegee.</i>  |
| 11.                                 | The vacuum hose is stuck or broken                           | ⇒ <i>Clean or replace the vacuum hose.</i>  |
| 12.                                 | The vacuum hose is not properly fitted in                    | ⇒ <i>Connect the vacuum hose properly.</i>  |
| 13.                                 | The intake manifold is stuck or broken                       | ⇒ <i>Clean or replace the intake manifold.</i>  |
| 14.                                 | The vacuum cover is not well positioned or is missing        | ⇒ <i>Position properly the vacuum cover.</i>  |
| 15.                                 | The vacuum cover gasket doesn't adhere properly              | ⇒ <i>Replace the vacuum cover.</i>  |

### 3.1.4 Solution delivery system: what to do if...

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#### **The delivered solution is not correct or not enough**

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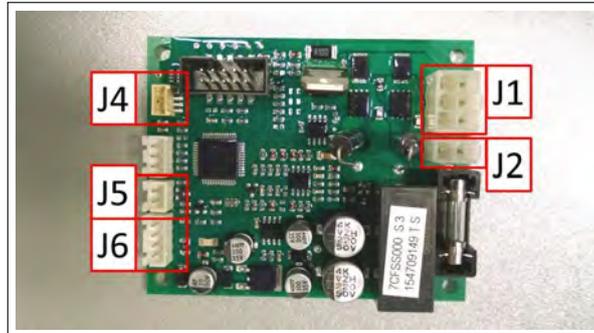
|  |   |   |
|--|---|---|
| 1. The machine is switched off           | ⇒ | <i>Switch on the machine.</i>   |
| 2. The machine doesn't switch on         | ⇒ | <i>Refer to the proper section (see section 3.1.1 at page 8).</i>   |
| 3. The solution tank is empty            | ⇒ | <i>Fill up the solution tank.</i>   |
| 4. The solution filter is missing        | ⇒ | <i>Restore the solution filter in the correct position (see section 4.5 at page 25).</i>  |
| 5. The solution filter is stuck          | ⇒ | <i>Clean the solution filter (see section 4.5 at page 25).</i>  |
| 6. The water flow is adjusted at minimum | ⇒ | <i>Increase the water flow adjustment.</i>  |
| 7. The water pump doesn't work           | ⇒ | <i>Refer to the Advanced Guide (see section 3.2.7 at page 18).</i>  |
| 8. The display shows an alarm message    | ⇒ | <i>Check what alarm message is shown and solve the related issue by following the proper instructions (see section 5.6.1 at page 36).</i> |

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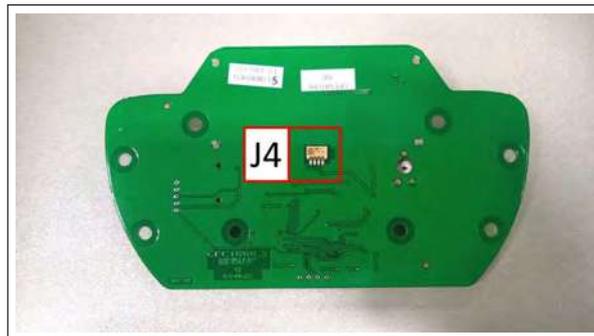
## 3.2 Advanced Guide

### 3.2.1 Electric Cards Overview

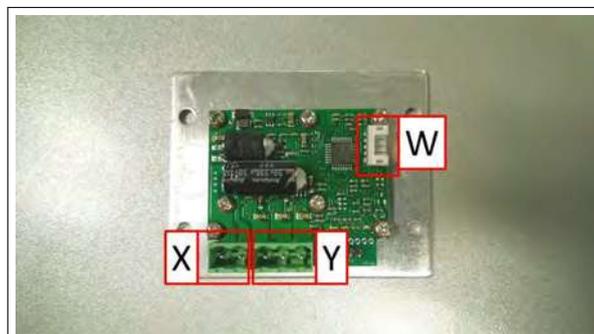
#### Main Card



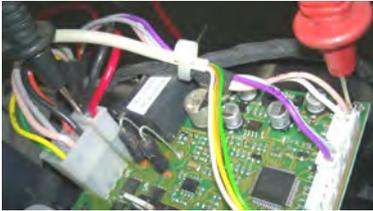
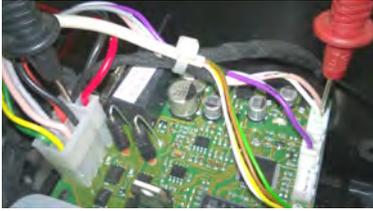
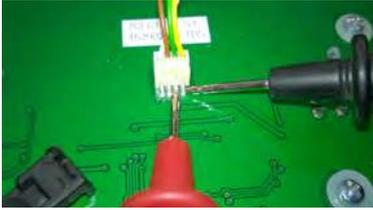
#### Handle Control Card

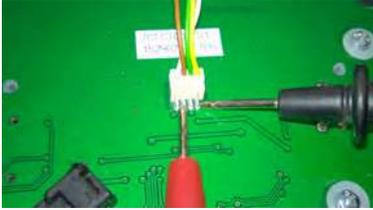
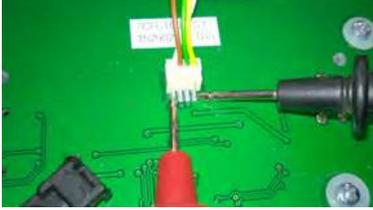


#### Motor Control Card



### 3.2.2 The Display doesn't switch ON

|     |   |   |             |  |     |   |         |    |   |                       |
|-----|---|---|-------------|--|-----|---|---------|----|---|-----------------------|
| 1.  | Check the battery voltage   |    | $V \geq 33$ | <table border="1"> <tr> <td>YES</td> <td>⇒</td> <td>Point 2</td> </tr> <tr> <td>NO</td> <td>⇒</td> <td>Replace the battery</td> </tr> </table>   | YES | ⇒ | Point 2 | NO | ⇒ | Replace the battery   |
| YES | ⇒   | Point 2   |             |  |     |   |         |    |   |                       |
| NO  | ⇒   | Replace the battery   |             |  |     |   |         |    |   |                       |
| 2.  | Check the voltage on the connector <b>J2</b>  |    | $V \geq 33$ | <table border="1"> <tr> <td>YES</td> <td>⇒</td> <td>Point 3</td> </tr> <tr> <td>NO</td> <td>⇒</td> <td>Replace the cables</td> </tr> </table>    | YES | ⇒ | Point 3 | NO | ⇒ | Replace the cables    |
| YES | ⇒   | Point 3   |             |  |     |   |         |    |   |                       |
| NO  | ⇒   | Replace the cables  |             |  |     |   |         |    |   |                       |
| 3.  | Check the voltage <b>J6-Pink / J2-Black</b>   |   | $V \geq 33$ | <table border="1"> <tr> <td>YES</td> <td>⇒</td> <td>Point 4</td> </tr> <tr> <td>NO</td> <td>⇒</td> <td>Replace the main card</td> </tr> </table> | YES | ⇒ | Point 4 | NO | ⇒ | Replace the main card |
| YES | ⇒   | Point 4   |             |  |     |   |         |    |   |                       |
| NO  | ⇒   | Replace the main card   |             |  |     |   |         |    |   |                       |
| 4.  | Check the voltage <b>J6-Pink / J2-Black</b>   |  | $V \geq 33$ | <table border="1"> <tr> <td>YES</td> <td>⇒</td> <td>Point 5</td> </tr> <tr> <td>NO</td> <td>⇒</td> <td>Replace the cables</td> </tr> </table>    | YES | ⇒ | Point 5 | NO | ⇒ | Replace the cables    |
| YES | ⇒   | Point 5   |             |  |     |   |         |    |   |                       |
| NO  | ⇒   | Replace the cables  |             |  |     |   |         |    |   |                       |
| 5.  | Push the main switch and check the voltage <b>J6-White / J2-Black</b>               |  | $V \geq 33$ | <table border="1"> <tr> <td>YES</td> <td>⇒</td> <td>Point 6</td> </tr> <tr> <td>NO</td> <td>⇒</td> <td>Replace the switch</td> </tr> </table>    | YES | ⇒ | Point 6 | NO | ⇒ | Replace the switch    |
| YES | ⇒   | Point 6   |             |  |     |   |         |    |   |                       |
| NO  | ⇒   | Replace the switch  |             |  |     |   |         |    |   |                       |
| 6.  | Check the voltage <b>J6-White / J2-Black</b>  |  | $V \geq 33$ | <table border="1"> <tr> <td>YES</td> <td>⇒</td> <td>Point 7</td> </tr> <tr> <td>NO</td> <td>⇒</td> <td>Replace the cables</td> </tr> </table>    | YES | ⇒ | Point 7 | NO | ⇒ | Replace the cables    |
| YES | ⇒   | Point 7   |             |  |     |   |         |    |   |                       |
| NO  | ⇒   | Replace the cables  |             |  |     |   |         |    |   |                       |
| 7.  | On the Handle card, check the voltage on the connector <b>J4 Yellow &amp; Green</b> |  | $V \geq 33$ | <table border="1"> <tr> <td>YES</td> <td>⇒</td> <td>Point 8</td> </tr> <tr> <td>NO</td> <td>⇒</td> <td>Point 10</td> </tr> </table>              | YES | ⇒ | Point 8 | NO | ⇒ | Point 10              |
| YES | ⇒   | Point 8   |             |  |     |   |         |    |   |                       |
| NO  | ⇒   | Point 10  |             |  |     |   |         |    |   |                       |

|       |   |   |             |   |     |   |                         |       |  |  |    |   |                       |
|-------|---|---|-------------|---|-----|---|-------------------------|-------|--|--|----|---|-----------------------|
| 8.    | On the Handle card, check the voltage on the connector <b>J4 Yellow &amp; Brown</b> |    | $V \geq 1$  | <table border="0"> <tr><td>YES</td><td>⇒</td><td>Point 9</td></tr> <tr><td colspan="3"><hr/></td></tr> <tr><td>NO</td><td>⇒</td><td>Point 11</td></tr> </table>                         | YES | ⇒ | Point 9                 | <hr/> |  |  | NO | ⇒ | Point 11              |
| YES   | ⇒   | Point 9   |             |   |     |   |                         |       |  |  |    |   |                       |
| <hr/> |   |   |             |   |     |   |                         |       |  |  |    |   |                       |
| NO    | ⇒   | Point 11  |             |   |     |   |                         |       |  |  |    |   |                       |
| 9.    | On the Handle card, check the voltage on the connector <b>J4 Yellow &amp; White</b> |    | $V \geq 1$  | <table border="0"> <tr><td>YES</td><td>⇒</td><td>Replace the handle card</td></tr> <tr><td colspan="3"><hr/></td></tr> <tr><td>NO</td><td>⇒</td><td>Point 12</td></tr> </table>         | YES | ⇒ | Replace the handle card | <hr/> |  |  | NO | ⇒ | Point 12              |
| YES   | ⇒   | Replace the handle card   |             |   |     |   |                         |       |  |  |    |   |                       |
| <hr/> |   |   |             |   |     |   |                         |       |  |  |    |   |                       |
| NO    | ⇒   | Point 12  |             |   |     |   |                         |       |  |  |    |   |                       |
| 10.   | On the Main card, check the voltage on the connector <b>J4 Yellow &amp; Green</b>   |    | $V \geq 33$ | <table border="0"> <tr><td>YES</td><td>⇒</td><td>Replace the cables</td></tr> <tr><td colspan="3"><hr/></td></tr> <tr><td>NO</td><td>⇒</td><td>Replace the main card</td></tr> </table> | YES | ⇒ | Replace the cables      | <hr/> |  |  | NO | ⇒ | Replace the main card |
| YES   | ⇒   | Replace the cables  |             |   |     |   |                         |       |  |  |    |   |                       |
| <hr/> |   |   |             |   |     |   |                         |       |  |  |    |   |                       |
| NO    | ⇒   | Replace the main card   |             |   |     |   |                         |       |  |  |    |   |                       |
| 11.   | On the Main card, check the voltage on the connector <b>J4 Yellow &amp; Brown</b>   |   | $V \geq 1$  | <table border="0"> <tr><td>YES</td><td>⇒</td><td>Replace the cables</td></tr> <tr><td colspan="3"><hr/></td></tr> <tr><td>NO</td><td>⇒</td><td>Replace the main card</td></tr> </table> | YES | ⇒ | Replace the cables      | <hr/> |  |  | NO | ⇒ | Replace the main card |
| YES   | ⇒   | Replace the cables  |             |   |     |   |                         |       |  |  |    |   |                       |
| <hr/> |   |   |             |   |     |   |                         |       |  |  |    |   |                       |
| NO    | ⇒   | Replace the main card   |             |   |     |   |                         |       |  |  |    |   |                       |
| 12.   | On the Main card, check the voltage on the connector <b>J4 Yellow &amp; White</b>   |  | $V \geq 1$  | <table border="0"> <tr><td>YES</td><td>⇒</td><td>Replace the cables</td></tr> <tr><td colspan="3"><hr/></td></tr> <tr><td>NO</td><td>⇒</td><td>Replace the main card</td></tr> </table> | YES | ⇒ | Replace the cables      | <hr/> |  |  | NO | ⇒ | Replace the main card |
| YES   | ⇒   | Replace the cables  |             |   |     |   |                         |       |  |  |    |   |                       |
| <hr/> |   |   |             |   |     |   |                         |       |  |  |    |   |                       |
| NO    | ⇒   | Replace the main card   |             |   |     |   |                         |       |  |  |    |   |                       |

### 3.2.3 The battery doesn't work

|       |                           |   |             |   |     |   |                                  |       |  |  |    |   |                     |
|-------|---------------------------|---|-------------|---|-----|---|----------------------------------|-------|--|--|----|---|---------------------|
| 1.    | Check the battery voltage |  | $V \geq 33$ | <table border="0"> <tr><td>YES</td><td>⇒</td><td>Perform a complete charge cycle.</td></tr> <tr><td colspan="3"><hr/></td></tr> <tr><td>NO</td><td>⇒</td><td>Replace the battery</td></tr> </table> | YES | ⇒ | Perform a complete charge cycle. | <hr/> |  |  | NO | ⇒ | Replace the battery |
| YES   | ⇒                         | Perform a complete charge cycle.  |             |   |     |   |                                  |       |  |  |    |   |                     |
| <hr/> |                           |   |             |   |     |   |                                  |       |  |  |    |   |                     |
| NO    | ⇒                         | Replace the battery   |             |   |     |   |                                  |       |  |  |    |   |                     |

### 3.2.4 The Display doesn't show the battery level

All the other devices of the machine are functioning properly

|   |   |            |  |
|---|---|------------|--|
| 1. Check the voltage<br><b>J5-Gray / J2-Black</b>   |    | $V \geq 1$ | YES $\Rightarrow$ <i>Point 2</i><br>NO $\Rightarrow$ <i>Point 3</i>                        |
| 2. Check the voltage<br><b>J5-Violet / J2-Black</b> |    | $V \geq 1$ | YES $\Rightarrow$ <i>Replace the main card</i><br>NO $\Rightarrow$ <i>Point 4</i>          |
| 3. Check the battery<br>voltage                     |   | $V \geq 1$ | YES $\Rightarrow$ <i>Replace the cables</i><br>NO $\Rightarrow$ <i>Replace the battery</i> |
| 4. Check the battery<br>voltage                     |  | $V \geq 1$ | YES $\Rightarrow$ <i>Replace the cables</i><br>NO $\Rightarrow$ <i>Replace the battery</i> |

### 3.2.5 The brush Motor doesn't work

All the other devices of the machine are functioning properly

|  |   |             |   |
|--|---|-------------|---|
| 1. Check the voltage in<br><b>AC</b> on the connector <b>Y</b><br><b>Blue &amp; Yellow</b> (with<br>running machine) |  | $V \geq 25$ | YES $\Rightarrow$ <i>Point 2</i><br>NO $\Rightarrow$ <i>Point 4</i> |
| 2. Check the voltage in<br><b>AC</b> on the connector <b>Y</b><br><b>Blue &amp; Red</b> (with<br>running machine)    |  | $V \geq 25$ | YES $\Rightarrow$ <i>Point 3</i><br>NO $\Rightarrow$ <i>Point 4</i> |

|       |  |   |             |   |     |   |                               |       |  |  |    |   |                              |
|-------|--|---|-------------|---|-----|---|-------------------------------|-------|--|--|----|---|------------------------------|
| 3.    | Check the voltage in <b>AC</b> on the connector <b>Y Yellow &amp; Red</b> (with running machine) |    | $V \geq 25$ | <table border="0"> <tr> <td>YES</td> <td>⇒</td> <td><i>Replace the motor</i></td> </tr> <tr> <td colspan="3"><hr/></td> </tr> <tr> <td>NO</td> <td>⇒</td> <td><i>Point 4</i></td> </tr> </table>                | YES | ⇒ | <i>Replace the motor</i>      | <hr/> |  |  | NO | ⇒ | <i>Point 4</i>               |
| YES   | ⇒  | <i>Replace the motor</i>  |             |   |     |   |                               |       |  |  |    |   |                              |
| <hr/> |  |   |             |   |     |   |                               |       |  |  |    |   |                              |
| NO    | ⇒  | <i>Point 4</i>  |             |   |     |   |                               |       |  |  |    |   |                              |
| 4.    | Check the voltage on the connector <b>X Red &amp; Black</b> (with running machine)               |    | $V \geq 33$ | <table border="0"> <tr> <td>YES</td> <td>⇒</td> <td><i>Replace the motor card</i></td> </tr> <tr> <td colspan="3"><hr/></td> </tr> <tr> <td>NO</td> <td>⇒</td> <td><i>Point 5</i></td> </tr> </table>           | YES | ⇒ | <i>Replace the motor card</i> | <hr/> |  |  | NO | ⇒ | <i>Point 5</i>               |
| YES   | ⇒  | <i>Replace the motor card</i>   |             |   |     |   |                               |       |  |  |    |   |                              |
| <hr/> |  |   |             |   |     |   |                               |       |  |  |    |   |                              |
| NO    | ⇒  | <i>Point 5</i>  |             |   |     |   |                               |       |  |  |    |   |                              |
| 5.    | Check the voltage on the connector <b>W Black &amp; Yellow</b> (with running machine)            |    | $V \geq 0$  | <table border="0"> <tr> <td>YES</td> <td>⇒</td> <td><i>Point 6</i></td> </tr> <tr> <td colspan="3"><hr/></td> </tr> <tr> <td>NO</td> <td>⇒</td> <td><i>Replace the motor</i></td> </tr> </table>                | YES | ⇒ | <i>Point 6</i>                | <hr/> |  |  | NO | ⇒ | <i>Replace the motor</i>     |
| YES   | ⇒  | <i>Point 6</i>  |             |   |     |   |                               |       |  |  |    |   |                              |
| <hr/> |  |   |             |   |     |   |                               |       |  |  |    |   |                              |
| NO    | ⇒  | <i>Replace the motor</i>  |             |   |     |   |                               |       |  |  |    |   |                              |
| 6.    | Check the voltage on the connector <b>W Black &amp; White</b> (with running machine)             |  | $V \geq 0$  | <table border="0"> <tr> <td>YES</td> <td>⇒</td> <td><i>Point 7</i></td> </tr> <tr> <td colspan="3"><hr/></td> </tr> <tr> <td>NO</td> <td>⇒</td> <td><i>Replace the motor</i></td> </tr> </table>                | YES | ⇒ | <i>Point 7</i>                | <hr/> |  |  | NO | ⇒ | <i>Replace the motor</i>     |
| YES   | ⇒  | <i>Point 7</i>  |             |   |     |   |                               |       |  |  |    |   |                              |
| <hr/> |  |   |             |   |     |   |                               |       |  |  |    |   |                              |
| NO    | ⇒  | <i>Replace the motor</i>  |             |   |     |   |                               |       |  |  |    |   |                              |
| 7.    | Check the voltage on the connector <b>W Black &amp; Green</b> (with running machine)             |  | $V \geq 0$  | <table border="0"> <tr> <td>YES</td> <td>⇒</td> <td><i>Replace the motor card</i></td> </tr> <tr> <td colspan="3"><hr/></td> </tr> <tr> <td>NO</td> <td>⇒</td> <td><i>Replace the motor</i></td> </tr> </table> | YES | ⇒ | <i>Replace the motor card</i> | <hr/> |  |  | NO | ⇒ | <i>Replace the motor</i>     |
| YES   | ⇒  | <i>Replace the motor card</i>   |             |   |     |   |                               |       |  |  |    |   |                              |
| <hr/> |  |   |             |   |     |   |                               |       |  |  |    |   |                              |
| NO    | ⇒  | <i>Replace the motor</i>  |             |   |     |   |                               |       |  |  |    |   |                              |
| 8.    | Check the voltage on the connector <b>J1 Red &amp; Black</b> (with running machine)              |  | $V \geq 33$ | <table border="0"> <tr> <td>YES</td> <td>⇒</td> <td><i>Replace the cables</i></td> </tr> <tr> <td colspan="3"><hr/></td> </tr> <tr> <td>NO</td> <td>⇒</td> <td><i>Replace the main card</i></td> </tr> </table> | YES | ⇒ | <i>Replace the cables</i>     | <hr/> |  |  | NO | ⇒ | <i>Replace the main card</i> |
| YES   | ⇒  | <i>Replace the cables</i>   |             |   |     |   |                               |       |  |  |    |   |                              |
| <hr/> |  |   |             |   |     |   |                               |       |  |  |    |   |                              |
| NO    | ⇒  | <i>Replace the main card</i>  |             |   |     |   |                               |       |  |  |    |   |                              |

### 3.2.6 The suction Motor doesn't work

All the other devices of the machine are functioning properly

|   |   |                               |   |
|---|---|-------------------------------|---|
| <p>1. Check the voltage on the faston (with running machine)</p>                              |  | <p><math>V \geq 33</math></p> | <p>YES <math>\Rightarrow</math> <i>Replace the motor</i></p> <hr/> <p>NO <math>\Rightarrow</math> <i>Point 2</i></p>                |
| <p>2. Check the voltage on the connector <b>J1 Gray &amp; Pink</b> (with running machine)</p> |  | <p><math>V \geq 33</math></p> | <p>YES <math>\Rightarrow</math> <i>Replace the cables</i></p> <hr/> <p>NO <math>\Rightarrow</math> <i>Replace the main card</i></p> |

### 3.2.7 The Pump doesn't work

All the other devices of the machine are functioning properly

|   |   |                               |   |
|---|---|-------------------------------|---|
| <p>1. Check the voltage in <b>AC</b> on the Pump's connectors, Don't disconnect the connectors from the pump (with running machine)</p> |  | <p><math>V \geq 8</math></p>  | <p>YES <math>\Rightarrow</math> <i>Replace the pump</i></p> <hr/> <p>NO <math>\Rightarrow</math> <i>Point 2</i></p>                 |
| <p>2. Check the voltage in <b>AC</b> on the connector <b>J1 Green &amp; Yellow</b> (with running machine)</p>                           |  | <p><math>V \geq 36</math></p> | <p>YES <math>\Rightarrow</math> <i>Replace the cables</i></p> <hr/> <p>NO <math>\Rightarrow</math> <i>Replace the main card</i></p> |

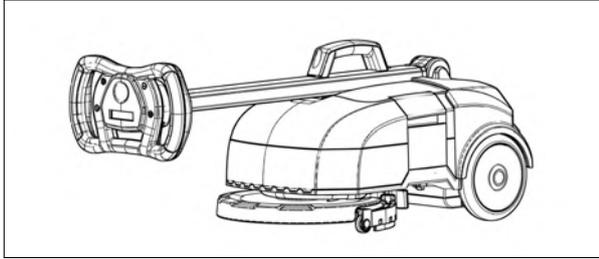
# Chapter 4

## Disassembling Procedures

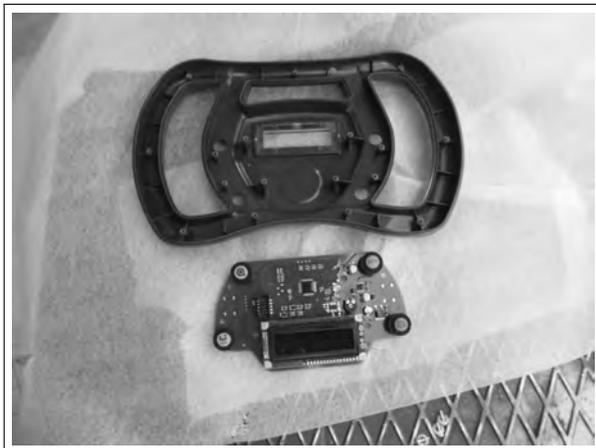
**WARNING:** BEFORE TO PERFORM ANY OPERATION DESCRIBED BELOW VERIFY THAT THE MACHINE TANKS ARE COMPLETELY EMPTY, THE MACHINE HAS TO BE TURNED OFF. REMOVE THE BATTERY FROM THE MACHINE. AT LAST, VERIFY THAT THE MACHINE IS IN A TOTALLY SAFE CONDITION.

## 4.1 Electrical Installation

- Put the machine in safe conditions.
- Turn the handlebar forward in horizontal position.



- Separate the lower casing of the handlebar from the upper casing by unscrewing the lower screws.
- Disconnect the connecting cable from the control card and release the cable from the fastening clamp.
- Remove the screws that secure the **Handlebar Control Card** to the upper casing and remove the card.



- Remove the lifting handle from the handlebar stem by unscrewing the screws (see fig. 4.1.0-1).
- Release the lock levers of the tanks, and remove them (see fig. 4.1.0-2).

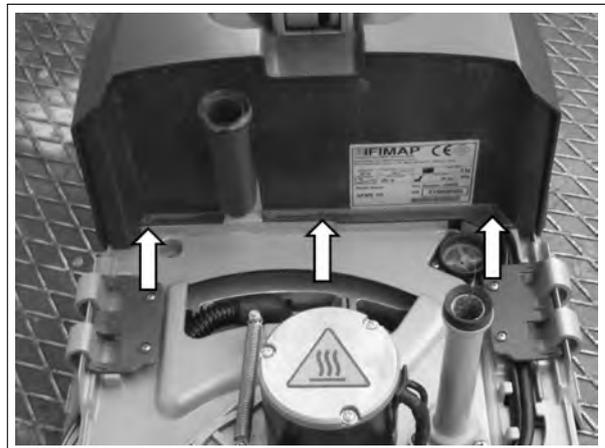
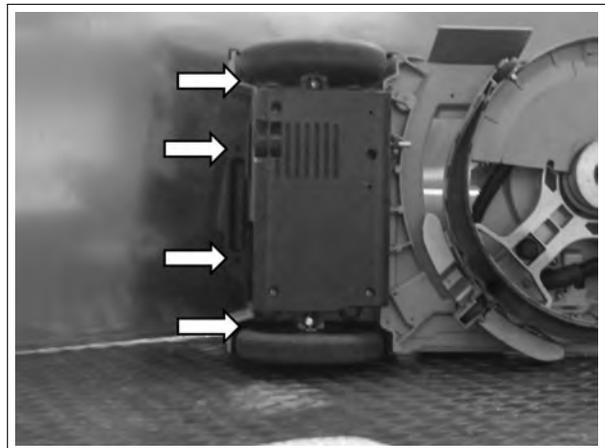


4.1.0-1



4.1.0-2

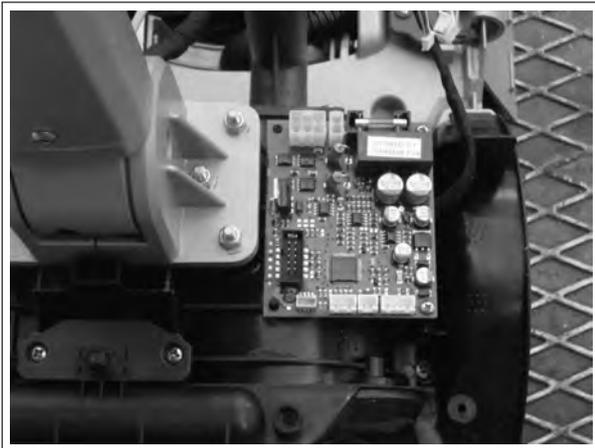
- Lay the machine on its side, and loosen the lower screws of the **Upper Carter**, near the wheels and the On/Off button.
- Reposition the machine and remove the upper screws from the front part of the Upper Carter.



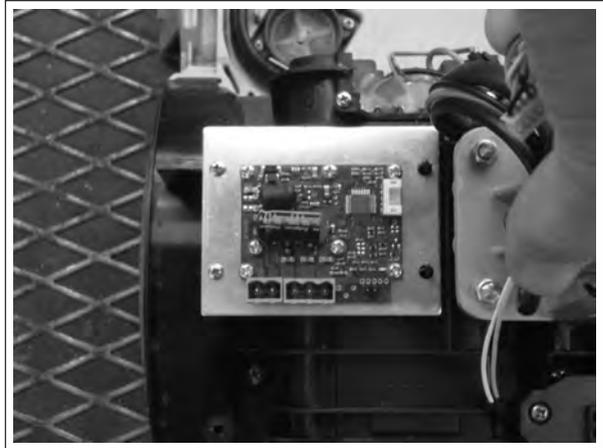
- Lift up the upper carter and slide it along the handlebar stem.



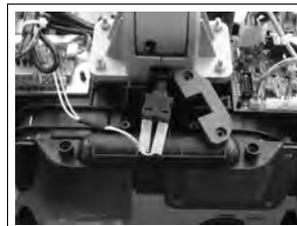
- Disconnect the connectors from the **Main Card**, remove the screws and remove the card.



- Disconnect the connectors from the **brush motor Control Card** remove the screws securing the plate to the upper frame and remove the card.



- Remove the screws of the **Main Switch** support and remove it from the housing (see fig. 4.1.0-3).
- Disconnect the cables from the switch and remove it.
- Loosen the screws and remove the **Suction Manifold** (see fig. 4.1.0-4).



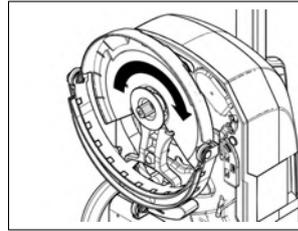
4.1.0-3



4.1.0-4

## 4.2 Mechanical Friction System

- Put the machine in safe conditions.
- Remove the Brush from the Brush deck.
- Unscrew the lower shaft from the shaft of the gearmotor as indicated by the arrow and remove the **Brush retainer Bell** (see fig. 4.2.0-5).
- Remove the Upper Carter (see fig. 4.2.0-7) (see section 4.1 at page 20).
- Disconnect the cables of the gearmotor from the motor control card (see fig. 4.2.0-8).
- Remove the **tanks lever's left hinge support** to free the gear motor cables (see fig. 4.2.0-9).
- Disconnect the solution dispensing hose from the distributor hose of the gearmotor and release the tension spring (see fig. 4.2.0-10).
- Loosen the screws holding the **gear-motor support** to the frame and remove the scrubdeck and the **bushings** (see fig. 4.2.0-11).
- Remove the **gear motor** from the support by unscrewing the fixing screws (see fig. 4.2.0-12).
- Remove the screws that secure the **slewing ring support** to the frame, paying attention to the **sliding bushing** (see fig. 4.2.0-13).
- Remove the **squeegee Support** from the **scrubdeck Body** (see fig. 4.2.0-14).



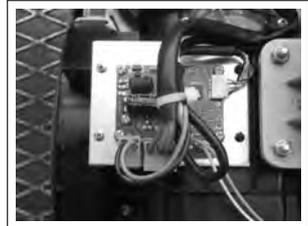
4.2.0-5



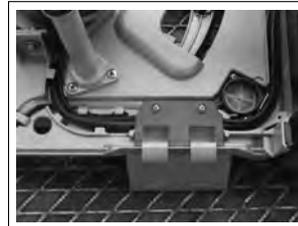
4.2.0-6



4.2.0-7



4.2.0-8



4.2.0-9



4.2.0-10



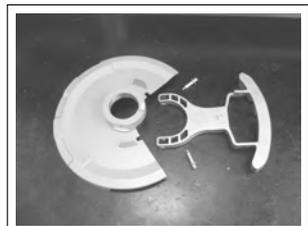
4.2.0-11



4.2.0-12



4.2.0-13



4.2.0-14

## 4.3 Drying System

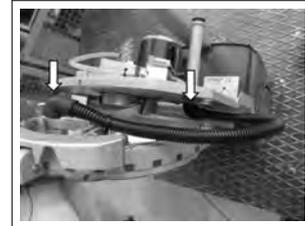
- Put the machine in safe conditions.
- Remove the **recovery tank Cover** by releasing the latch handles (see fig. 4.3.0-15).
- Remove the **recovery Tank** by releasing the locking levers.
- Unscrew the rear screws of the suction motor grid.
- Pull off the **Suction motor** and remove the sound-absorbing sponge and the dust filter (see fig. 4.3.0-16).
- Disconnect the power cables of the suction motor and remove the rubber cover.
- Turn the handlebar forward in horizontal position.
- Put the machine vertically and rotate the squeegee 180 degrees.
- Disconnect the **suction Hose** from the squeegee and the rigid suction tube (see fig. 4.3.0-17).
- Remove the hose from the clamps and remove it.
- Remove the screws and bushings that hold the **Squeegee** to the support and remove the squeegee.
- Separate the **squeegee Support** from the scrubdeck body by removing the screws and bushings.



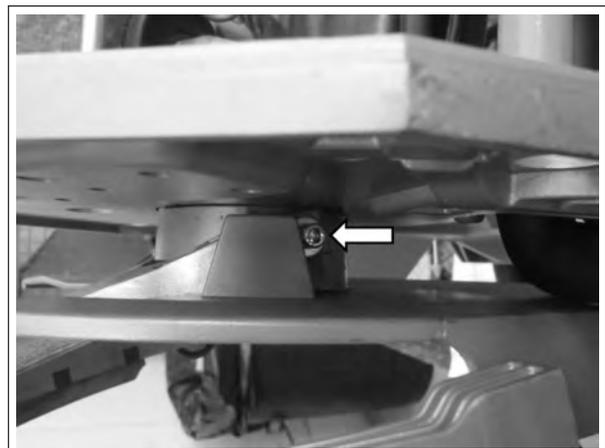
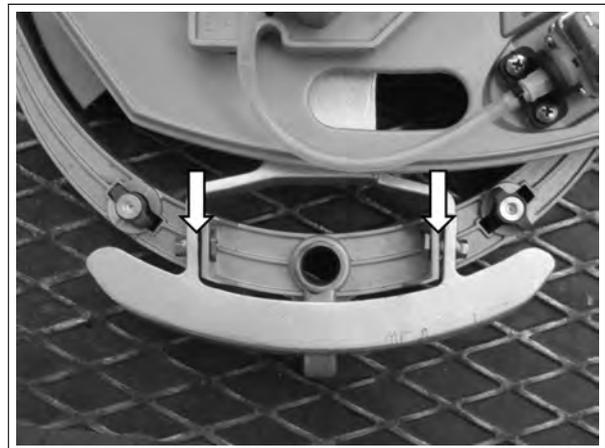
4.3.0-15



4.3.0-16



4.3.0-17



## 4.4 Frame and Traction System

- Put the machine in safe conditions.
- Remove the screws that hold the handle to the handlebar tube (see fig. 4.4.0-18).
- Disconnect the cable from the Main card and release the cable from the fastening clamp.
- Remove the Cover Carter (see section 4.1 at page 20) (see fig. 4.4.0-19).
- Unscrew the screws that hold the handle release body and remove the release lever, together with cotter pin and pin (see fig. 4.4.0-20).
- Disconnect the connecting cable from the main card and remove the clamps.
- Remove the fixing screws of the handlebar joint and remove the **Handlebar Group** by the upper frame.
- Lay the machine on its side and remove the wheel hub cap by pushing it with a screwdriver through the hole visible from the inner side of the wheel (see fig. 4.4.0-21).
- Unscrew the screw and remove the **Wheel** (see fig. 4.4.0-22).
- Proceed in the same way for the other wheel.



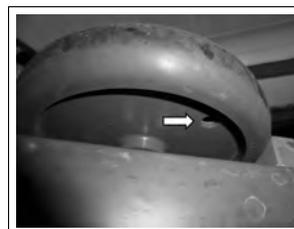
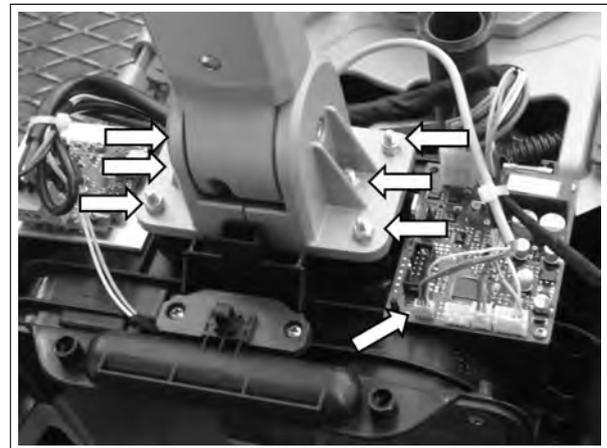
4.4.0-18



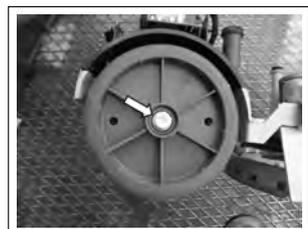
4.4.0-19



4.4.0-20



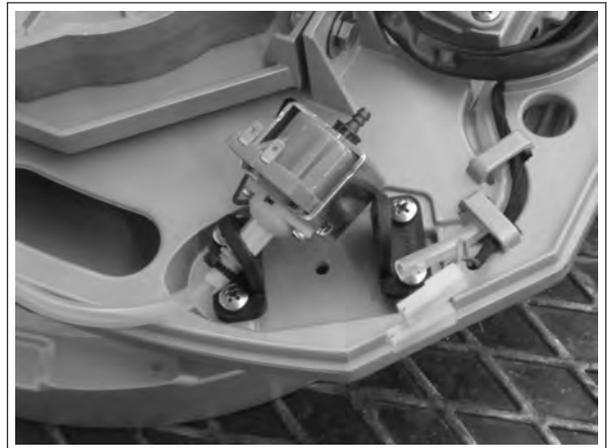
4.4.0-21



4.4.0-22

## 4.5 Solution Delivery System

- Put the machine in safe conditions.
- Release the locking levers.
- Remove the Recovery tank and then the **solution Tank**.
- Unscrew the screws and remove the housing and the **clean water Filter**.
- Disconnect the power cables from the pump and remove the water pipes.
- Unscrew the screws that hold the pump to the machine frame and remove the **Pump**.



**Part III**

**Machine Description**

# Chapter 5

## Electrical System

### 5.1 Structure

1. Main Card
2. Handle Control Card
3. Brush Motor control Card
4. Main Switch
5. Battery and battery charger

### 5.2 Description

**A main card** runs all the functions of the machine, brush base, suction and water.

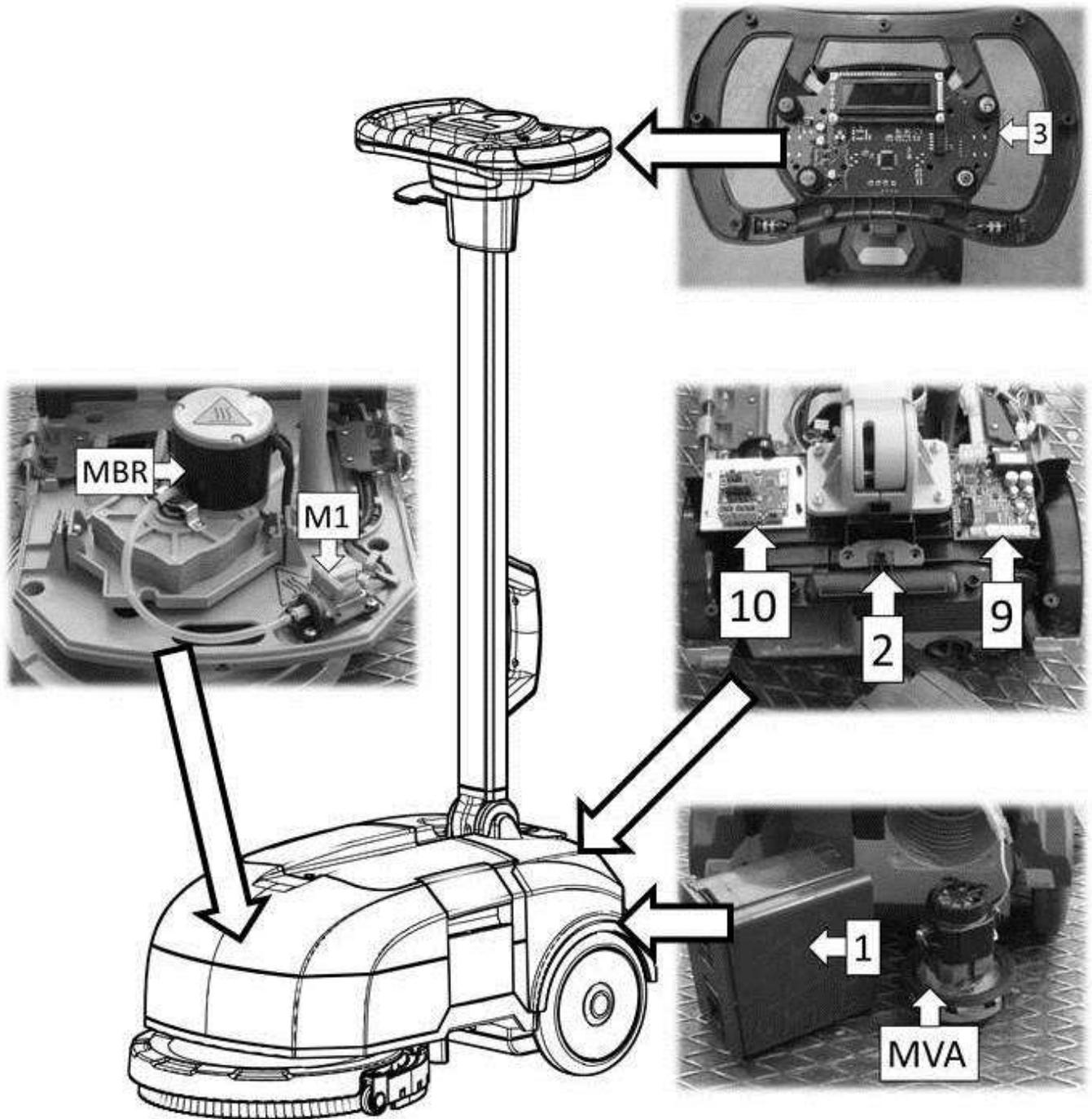
**The main card** receive as input, all the information from the control card.

These signals are translated from the main card to run correctly the scrubber dryer and to prevent any safety problem to the operator.

**The handlebar** can be used also as a programmer, both to set the main operating parameters of the machine (traction, washing and drying) and to **verify in real time:**

- The battery status
- The motors absorption
- The status of the Operator Lever Sensor

### 5.3 Location of Electrical components



## List of Components

1 Battery

2 ON/OFF Switch

3 Handle Card

9 Main Card

10 Brush Motor control Card

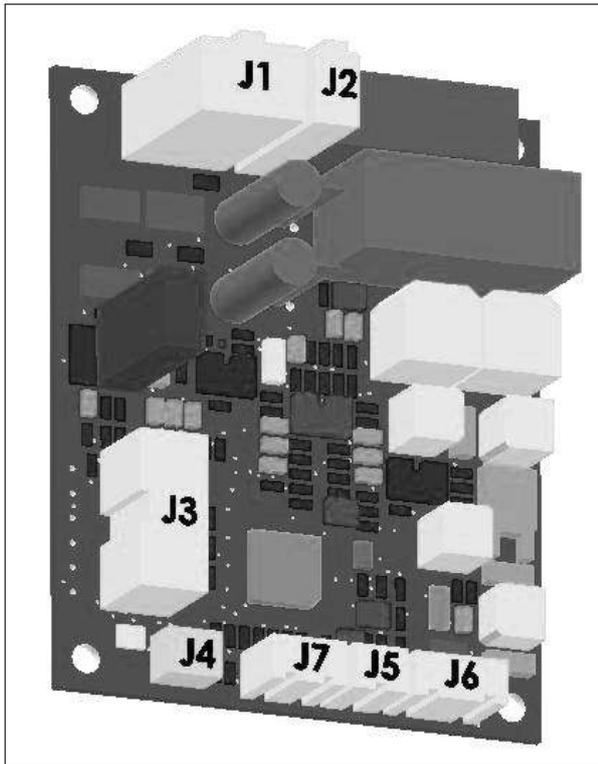
M1 Water Pump

MBR Brush Motor

MVA Suction Motor

### 5.3.1 Main Card

The Main Card is the heart of the machine and, depending of the input information, decides how to use the devices of the machine during normal work. On the table here below, is possible to identify the input/output signals of the card.



Input & Output Signals

|    |  |
|----|--|
| J1 | Brush motor, Suction motor and Water Pump. |
| J2 | Card power supply.                         |
| J4 | Control Card communication.                |
| J5 | Battery Level check.                       |
| J6 | ON/OFF Switch.                             |

### 5.3.2 Handle and Control card

#### Functions of the handle

- Manage and set up the main functions and command of the machine during the normal work.
- Check the alarm code in order to detect a possible malfunction.
- Enter in three different menu:

#### User Menu

to check the status of the battery and the hourmeter of the machine (depending of the set up into Operator menu). If a defect is detected on the machine, this menu show a short message concerning the alarm.

#### Operator Menu

containing the basic adjustment, accessible by the user of the machine.

#### Advanced Menu

where is possible to modify the advanced settings and thanks to the **Check / Monitor function**, check the motors absorption and the status of the Operator Lever Sensor.

**ATTENTION:** THE OPERATOR MENU IS ACCESSIBLE WITHOUT ANY RESTRICTION, WHEREAS TO ENTER INTO THE **ADVANCED MENU** A PASSWORD IS NEEDED.

### Functions of the control card

During the **normal working**, the display shows the hourmeter and the battery residual charge (in percentage).

When the **charge of the battery** goes down to 10%, the battery control card disable the brush motor and, after that, the suction motor. The **handle Control Card** is located inside of the Handlebar and, trough a connecting cable (item J4), transfers to the Main Card all the information and settings set by the control buttons (see fig. 5.3.2-23).

The **Dead man Sensor** present on the card is activated by a magnet housed in the lever itself, when this is pressed, the magnet is approached to the sensor which activates the functions of the machine (see fig. 5.3.2-24).



5.3.2-23



5.3.2-24

### 5.3.3 Brush Motor control Card

The brush motor control board is dedicated to control the operation of the motor brush.

### 5.3.4 ON/OFF Switch

The machine is provided with a ON/OFF switch positioned at the base of the handlebar joint comfortably activated by pedal.



5.3.4-25

### 5.3.5 Battery and battery charger

The machine is available with charger base (see fig. 5.3.5-26).

To charge the battery it is necessary to remove it from the machine, position it correctly in the charger base, which is plugged in and powered up, and set the switch to "I". Recharging starts automatically (see fig. 5.3.5-27).



5.3.5-26



5.3.5-27



5.3.5-28

A correct Charging cycle follows the below series of illumination stages of the Red LED.

| Phase | LED | Description      |
|-------|-----|------------------|
| 1     | ON  | Battery charging |
| 2     | OFF | Battery charged  |

### Attention

If when inserting the battery, the LED does not light:

- Make sure the battery is properly positioned inside the slot and that contacts properly connect.
- The battery may be already charged.

### Error Codes of Charger

The charger have an alarm system. The alarm code is shown by blinks of the Red LED.

| Error Codes |  |
|-------------|--|
| Flash       | Description                              |
| 1           | Timeout alarm, Defect of the battery     |
| 2           | Overvoltage Alarm, Defect of the Charger |
| 2           | Overcurrent Alarm, Defect of the Charger |
| 4           | Overtemperature alarm                    |

### Restore

In case of alarm 1, 2, or 3, the alarm is reset by disconnecting the power. If it appears again, replace the charger.

In case of alarm 4, the alarm is reset when the charger cools down.

## 5.3.6 ECO Function

Once activated the ECO function (with the proper button), let the brush motor and the suction motor work. With the ECO mode activated, check if the noise of the suction motor is reduced.

**ATTENTION:** We don't give the amperometric reference values because they can change depending of the working conditions of the machine.

## 5.4 Maintenance and Checks

### 5.4.1 Electrical System

#### **Check** (to perform every **150h**)

Check the functions and the proper connections of the switches, main switch, motors, water pump. Check periodically, the wiring connections status. To access to the electrical system remove the tanks and the Upper Carter (see section 4.1 at page 20).

## 5.5 Programming

### 5.5.1 Entry into Operator Menu and Advanced Menu

The dashboard could be used like a programming console. If you press a determinate combination of buttons you can enter into two menu:

- Operator Menu
- Advanced Menu

The structure of the menu can be shown in the section (see section 5.7.1 at page 37):



---

Function of the buttons  
in programming mode

---

- |   |  |
|---|--|
| 1 | Not Used                                     |
| 2 | ENTER (Confirm)                              |
| 3 | SCROLL UP/PLUS (Scroll up and Increase)      |
| 4 | SCROLL DOWN/MINUS (Scroll down and Decrease) |
- 

### 5.5.2 How to access the Operator Menu

To enter to the *Operator Menu* go ahead as follow:

- With the machine off, press at the same time button 2, 3 and 4.
- Turn on the key, with the three buttons pressed.
- Waiting the upload of the Working Menu.
- Release the buttons.

To move inside of the Operator Menu, press button 3 and 4.

To modify a parameter or confirm a changed value within a specific section, press the button 2.

### 5.5.3 How to Change a Parameter (in the Operator Menu)

To change the value of a parameter proceed as follows:

- Run the menu with the button 3 or 4 and select the parameter to change.
- Select the parameter to be changed pressing the button 2
- Utilize the button 3 and 4, to shift all the available values to edit the parameter.
- To confirm the new value press the button 2.
- To save the change is necessary to return to the User Menu; to exit from Working Menu select the Exit parameter and confirm by pressing the button 2.



### 5.5.4 For example, to modify the language from IT to EN

- Turn OFF the machine.
- With the machine off, press at the same time button 2, 3 and 4.
- While the buttons are pressed, turn ON the key and wait the upload of the Working Menu.
- Use the buttons 3 and 4 to select the Language parameter.
- To modify the values of this parameter, press the button 2. To confirm the possibility to change parameters, the first line on the display will blink.
- Utilize the buttons 3 and 4 to shift all the values of this parameter and select the value IT.
- Confirm the new value by pressing the button 2.
- To save this modification, select the Exit parameter and confirm by pressing button 2.

### 5.5.5 How to access the Advanced Menu

The *Advanced Menu* can be reached from the Operator Menu by accessing the Password parameter and setting the value **60**.

Change a Parameter (in the Advanced Menu)

To change the value of a parameter, proceed as follows:

- Scroll through the submenu with the buttons 3 and 4.
- Select the submenu that contains the parameters to be changed using the button 2.
- Scroll through the parameters with the buttons 3 and 4 to find the parameter to be edited.
- Select the parameter with the button 2.
- Use the buttons 3 and 4 to scroll through the list of available values of the parameter.
- Confirm the new value of the parameter using the button 2.
- To enable the changes, it is necessary to return to the User Menu; to exit the parameters and return to the Advanced Menu press simultaneously the buttons 3 and 4, then find the Exit parameter and confirm with button 2.

### 5.5.6 Use of the Check/Monitor Function

The Check / Monitor function allows to check

- The battery status
- The motors absorption
- The status of the operator lever sensor

**The status of the operator lever Sensor** is displayed by entering the Check / Monitor function, and scrolling the entries up to **Sensor**:

by activating the operator lever, the card will display the status by increasing the Value on the display (measured in bit)

(see section 5.7.3 at page 40).

**The motors absorption** instead can be viewed while the machine is in working condition. To view the values, following the instruction:

- Access the Advanced Menu by entering the password and confirming with button 2.
- Press the button 3 or 4 to select the menu Check/Monitor sub-menu and confirm by pressing 2.
- Press the button 3 or 4 to select the parameter you want to check during normal work and confirm by pressing 2.
- Once confirmed, the display will return to normal working mode, but in the second line it will be displayed the value of the selected parameter.
- To exit from the Check/Monitor function, turn OFF and ON the machine.

## 5.6 Alarm Table

### 5.6.1 Alarms

#### Alarms of Overcurrent and Temperature

| Id Alarm                       | Meaning                                | Solution  |
|--------------------------------|--|---|
| AL_1: Function Brushes Ammeter | Brush Amperometric Protection          | Check consumption of the brush motor. Detected high current on brush motor.   |
| AL_2: Function Vacuum Ammeter  | Suction Amperometric Protection        | Check consumption of the suction motor. Detected high current on suction motor.                                       |
| AL_3: Function Powerstage fail | Damage of Power                        | Damage power of brush or suction: replace the main card.  |
| AL_4: Function Overcurrent     | Output overcurrent on brush or suction | Detect a short circuit on output brush motor or suction motor: Check connections and motors.                          |
| AL_5: Function Overtemperature | Thermal protection on brush/suction    | Overtemperature of brush/suction motor: check consumption of motors.  |
| AL_6: Function Error Sensor    | Reversed sensor of the presence lever  | Reverse polarity of the the magnetic field detected by the presence lever sensor (acquired value less than 480 bits). |

#### Traction Alarms

| Id Alarm                      | Meaning                              | Solution   |
|-------------------------------|--------------------------------------|--|
| AL_14: Traction Lever pressed | Safety lever pressed before starting | Detected lever pressed during the machine switch-on: release the safety lever. |

#### General Alarms

| Id Alarm                       | Meaning   | Solution   |
|--------------------------------|---|--|
| AL_20: General EEPROM FAIL     | Error reading internal memory                       | Replace the main card.   |
| AL_21: General KEY-OFF FAILURE | Error key sequence                                  | Error on switch-on signal: Check the connection between battery-handle card-main card.   |
| AL_22: General Main relay fail | Damage of general relay or of power Fuse            | Check the traction motor connections. If the connection are OK, the general relay on the main card is damaged: replace the main card.<br>The alarm is generated even in case of power fuse damaged |
| AL_23: General Overvoltage     | Overvoltage   | Detected a overvoltage on the main card (greater than 45V). Check the battery connections.   |
| AL_25: General Keyboard com.   | No communication between control card and main card | Check the connections between handle control card and main card.   |



## 5.7.2 Working Menu

| MENU                                 | DEFAULT  | CHOICES                   | DESCRIPTION   |
|--------------------------------------|----------|---------------------------|---|
| General Setup:<br>Language: ##       | IT       | IT - EN - FR -<br>SP - DE | Setup language  |
| General Setup:<br>Mod: #####         | GENIE XS | ...                       | Setup type of machine   |
| General Setup:<br>Reset Cnt: #       | N        |                           | Reset partial hourmeter   |
| General Setup:<br>Display Cnt: ###   | BR       | KEY - BR -<br>VAC         | Select the kind of hourmeter: <b>key</b> connect to the main switch - <b>BR</b> connect to the brush motor - <b>VAC</b> connected to the suction motor. |
| General Setup:<br>Exit. ....         |          |                           | Exit from the menu.   |
| General Setup:<br>Key.h: #### h:## m |          |                           | Total hourmeter connect to the key.   |
| General Setup:<br>Br.h: #### h:## m  |          |                           | Total hourmeter connect to the brush motor.   |
| General Setup:<br>Vac.h: #### h:## m |          |                           | Total hourmeter connect to the suction motor.   |
| General Setup:<br>password: ###      | 60       |                           | This password is necessary to enter into the "Advanced menu", manageable by expert technicians only.  |

## 5.7.3 Advanced Menu

| MENU                            | DESCRIPTION  |
|---------------------------------|--|
| Options menu:<br>General sets.  | Enter to the general parameters (language, battery...).  |
| Options menu:<br>Brushes sets.  | Enter to the parameters for the brush base.              |
| Options menu:<br>Pumps sets.    | Parameters not managed.                                  |
| Options menu:<br>Vacuum sets.   | Enter to the parameters of suction motor.                |
| Options menu:<br>Check/Monitor. | Enter to view the list of working parameters.            |
| Options menu:<br>Engineer pars. | Protected parameters (calibrations and factory settings) |
| Options menu:<br>Exit. ....     | Exit and return to the main menu.                        |

## General Sets

| Parameter                        | Default  | Values                    | Description                                       |
|----------------------------------|----------|---------------------------|---|
| General Sets:<br>Language: ##    | IT       | IT - EN - FR -<br>SP - DE | Setup the language of the display.                |
| General Sets:<br>Mod: ###        | GENIE XS | ...                       | Setup of the machine model.                       |
| General Sets:<br>Rst.Cnthr: #    | N        |                           | Reset partial hourmeter (like on "working menu"). |
| General Sets:<br>Rst.Main Cnthr: | N        |                           | Reset Total hourmeter.                            |

## Brushes Sets

| Parameter                         | Default | Min ÷ Max  | Description  |
|-----------------------------------|---------|------------|--|
| Brushes Sets:<br>I. Max: ## [Amp] | 9.0     | 2.0 ÷ 15.0 | Maximum current from the main card to the brush motor.                                     |
| Brushes Sets:<br>I. Nom: ## [Amp] | 9.0     | 0.2 ÷ 15.0 | Rated current; with T. Nom manages the amperometric protection (alarm + stop brush motor). |
| Brushes Sets:<br>T. Nom: ## [s]   | 2       | 1 ÷ 60     | Rated timer; with I. Nom manages the amperometric protection (alarm + stop brush motor).   |
| Brushes Sets:<br>T. Off: ## [s]   | 0.5     | 0.0 ÷ 1.0  | Delay of switching off of the brush motor when the safety lever is released.               |

## Pumps Sets

| Parameter                        | Default | Min ÷ Max | Description                                    |
|----------------------------------|---------|-----------|--|
| Pumps Sets:<br>Wtr. Lev1: ## [%] | 24      | 2 ÷ 100   | First level of water flow of the water valve.  |
| Pumps Sets:<br>Wtr. Lev2: ## [%] | 30      | 2 ÷ 100   | Second level of water flow of the water valve. |
| Pumps Sets:<br>Wtr. Lev3: ## [%] | 40      | 2 ÷ 100   | Third level of water flow of the water valve.  |

## Vacuum Sets

| Parameter                         | Default | Min ÷ Max  | Description  |
|-----------------------------------|---------|------------|--|
| Vacuum Sets:<br>I. Max: ## [Amp]  | 10.0    | 1.0 ÷ 18.0 | Maximum current from the main card to the suction motor.                                     |
| Vacuum Sets:<br>I. Nom: ## [Amp]  | 6.0     | 0.5 ÷ 8.0  | Rated current; with T. Nom manages the amperometric protection (alarm + stop suction motor). |
| Vacuum Sets:<br>T. Nom: ## [s]    | 10      | 1 ÷ 10     | Rated timer; with I. Nom manage the amperometric protection (alarm + stop suction motor).    |
| Vacuum Sets:<br>T. Off: ## [s]    | 5       | 0 ÷ 30     | Delay of switching OFF of the suction motor when the squeegee lever is lifted.               |
| Vacuum Sets:<br>Eco Speed: ## [V] | 30      | 0 ÷ 36     | Value of Voltage reduction of suction motor, during ECO mode                                 |

## Check / Monitor

| Parameter                             | Description   |
|---------------------------------------|---|
| Check / Monitor:<br>I. Br: ## [Amp]   | Show current of brush motor.  |
| Check / Monitor:<br>I. Vac: ## [Amp]  | Show current of suction motor.  |
| Check / Monitor:<br>V. Batt: #### [V] | Show battery voltage.   |
| Check / Monitor:<br>BR Temp: ## [C]   | Show temperature inside of main card, related to brush/suction.   |
| Check / Monitor:<br>SENSOR: ###       | Check of the operator lever Sensor functioning, measured in <b>bit</b> :<br>When the lever is activated the value have to increase at least 25. |

## 5.8 Technical Features

| TECHNICAL DESCRIPTION  | U/M | Genie XS |
|------------------------|-----|----------|
| Battery Rated Voltage  | V   | 36       |
| Maximum battery weight | kg  | 2        |

# Chapter 6

## Mechanical Rubbing System

### 6.1 Structure

1. Gearmotor
2. Gearmotor Support
3. Brushdeck Body
4. Brush coupling Shaft
5. Brass bushings

### 6.2 Description:

**The washing function** of the machine is obtained by the interaction of the cleaning solution with the dirt present on the floor.

**To facilitate** and enhance this interaction, is used a system of mechanical rubbing which consists in a device which rubs on the floor.

**This device** can be of various nature (pad or brush), in each case, its function is to mechanically remove the dirt from the ground and facilitate the reaction between the dirt and cleaning solution.

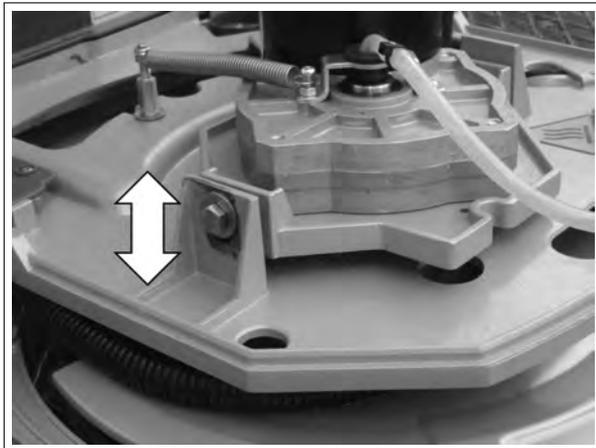
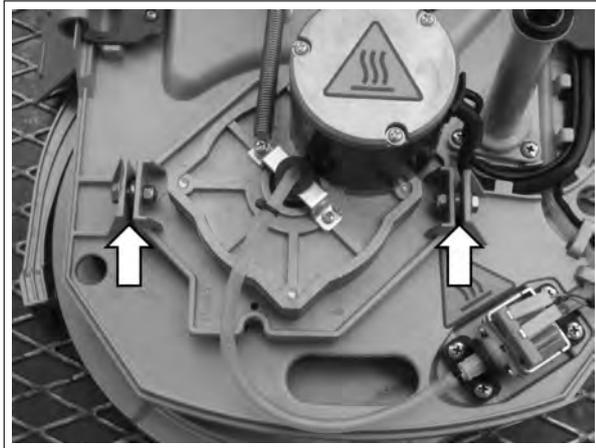
**A brushless electric motor** connected to a case of gear reduction provides the rotational movement of the brush coupling shaft.

**To the shaft** is coupled the brush (or the pad holder provided with pad) that rotates together with the shaft itself. After lowering the base to the ground, the brush touches and rubs on the floor providing the desired mechanical rubbing.

## 6.3 Maintenance and 6.3.2 Motor checks

### 6.3.1 Brush Deck

The brush deck must be free to lean evenly to the ground and properly carry out its function. Check that the gear-motor support on the right side is free to slide inside the slot on the frame. If necessary lightly loosen the locknut.



### Check (to perform every 150h)

Remove the brush.

Access the Check/Monitor Menu, and select the parameter **I<sub>Br</sub>**, pressing the button 2.

Lift the brush deck so that it **does not touch** the floor, and turn on the motor; **the current absorption** measured on the single motor must be less than **0,9 Amps**.

**The motor** should rotate evenly and smoothly and doesn't have to produce unusual noises. The motor contacts have to be clean, they have not to show signs of wear or heating in general.

**The motor wires** insulation has to be intact in all its parts and does not show signs of cracks. The single cable have to be flexible.

### 6.3.3 Brass bushings

**Check** (to perform every **150h**)

The brass bushings allow a fluid rotational movement of the gearmotor support. To prevent the base is locked in a position without the possibility of movement, is important that the brass bushings are in good condition and clean. In case of excessive wear it is necessary to proceed with the replacement.

**Maintenance** (to perform every **300h**)

Brass bushings replacement: *Procedure:*

- Put the machine in safe conditions.
- Lower the brush deck to the ground
- Loosen the screws that fix the arms to the brush deck
- Remove the recovery tank and the solution tank by releasing the locking levers.
- Unscrew the screws between the gearmotor support and the frame, and remove the bushings.
- Proceed to the reverse operations to reassemble it all, sprinkle the new bushings with lubricating grease before mounting.

### 6.3.4 Scrubdeck Body

**Check** (to perform every **50h**)

The brush base must be kept clean and intact. A ruined brush base may be dangerous to the machine and the operator that uses it.

If necessary, replace it.

### 6.3.5 Brush retainer Bell

**Check** (to perform every **50h**)

The brush retainer Bell must be intact and kept clean in order to maintain the brush in the correct position.

If necessary, replace it.



## 6.4 Technical Features

| TECHNICAL DESCRIPTION                            | U/M       | Genie XS |
|--|-----------|----------|
| Maximum diameter of the active part of the brush | $\phi$ mm | 280      |
| Brush turns                                      | rpm       | 150      |
| Brush motor voltage                              | V         | 36       |
| Brush motor power                                | W         | 90       |
| Max weight on brush                              | kg        | 10       |

# Chapter 7

## Drying System

### 7.1 Structure

1. Squeegee
2. Squeegee Support
3. Suction Hose
4. Suction Cover and Floaters
5. Recovery Tank
6. Suction Motor

### 7.2 Description

**The machine** dries the floor using an integrated Drying System.

**After the washing**, the solution used, with the mechanical action of the brush to remove the dirt, is collected by a system which vacuum it out from the floor.

**The system** is basically made by a vacuum motor which produces an underpressure.

This underpressure causes an air flow which flows in the whole Drying system.

**The air that flows** in the squeegee (when it is lowered on the floor) allows it to collect the water on the floor and, via the vacuum system, is brought to the recovery tank.

**In the recovery tank** the water mixed with the dirt stops and the air keep flowing throughout the circuit reaching the vacuum motor and being discharged in the environment via the exhaust manifold.

## 7.3 Adjustments

### 7.3.1 Squeegee

The Squeegee has to be adjusted when removed from the machine. The goal of the adjustment is to let the squeegee blade be angled **45 degrees** to the floor for its whole length.

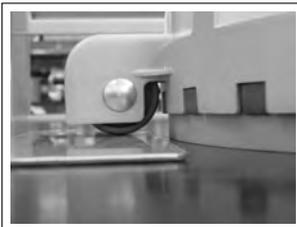
To obtain the correct adjustment act on the wheels of the squeegee (see fig. 7.3.1-29) (see fig. 7.3.1-30) to adjust the distance from the floor.

#### Procedure

- Put the machine in safe conditions.
- Remove the squeegee (see section 4.3 at page 23).
- Loosen the nuts holding the **Front wheels** of the squeegee.
- Keep the wheels at the lower end of the slot and tighten the nuts (see fig. 7.3.1-29).
- Loosen the nut that secures the squeegee **Rear wheel**.
- **Interpose** between the squeegee wheel and the floor a thickness of **approximately 2 mm** ( $\pm 0,1\text{mm}$ ) (see fig. 7.3.1-30).
- Fix the wheel of the squeegee by tightening the nut loosened earlier.



7.3.1-29



7.3.1-30

## 7.4 Maintenance and Checks

### 7.4.1 Squeegee

#### **Check** (to perform every 2h)

To have a good performance

The **squeegee chamber** have to be clean and completely free from debris.

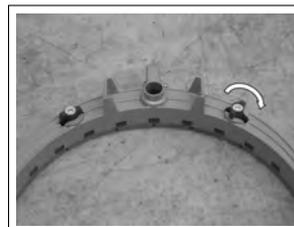
The **squeegee blades** have to be in a good conditions; they have to adhere perfectly to the squeegee body and have to be kept in that position by the plastic wing nuts.

The **squeegee wheels** must be in perfect condition and rotate free from any obstruction.

#### **Maintenance** (to perform every 15h)

##### Replacing Squeegee Rubber

- Put the machine in safe conditions.
- Place the machine vertically.
- Turn the squeegee 180 degrees and unhook the fixing knobs.
- Remove the lower squeegee body.
- Remove the front rubber and rear rubber and replace them with new ones.
- The rear rubber can be used on both sides before having to be replaced.
- Proceed at reverse to reassemble the squeegee body correctly.



7.4.1-31



7.4.1-32

**Maintenance** (to perform every **150h**)  
Replacing Squeegee Wheels

- Put the machine in safe conditions.
- Place the machine vertically.
- Completely unscrew the nuts holding the squeegee wheels
- Remove and replace the squeegee wheels
- Proceed at reverse to restore the parts.
- When finished, repeat the operations for the proper Squeegee adjustment (see section 7.3.1 at page 46).

### 7.4.2 Squeegee Support

**Check** (to perform every **50h**)

The squeegee support must be free to move and to pivot along the holding central axis to fit to the floor.

### 7.4.3 Suction Hose and Duct

**Check** (to perform every **2h**)

The suction hose has to be clean and intact. It is mandatory that the hose has no crack to not decrease the underpressure. The suction hose is particularly sensitive in the coupling areas between the pipe and couplings and in tight curves. The Suction Duct and its top and bottom gaskets must be clean and intact.

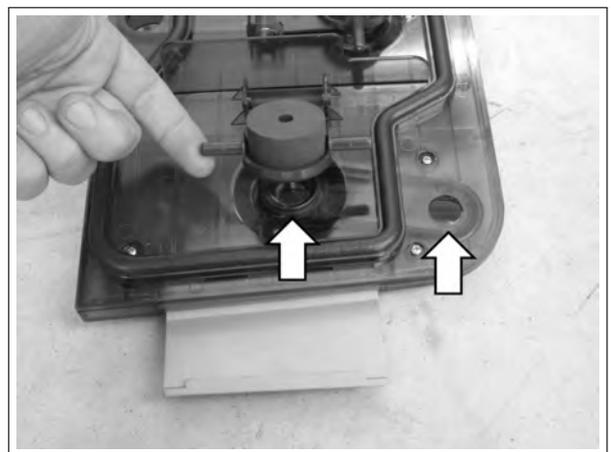
### 7.4.4 Suction Cover and Floaters

**Check** (to perform every **2h**)

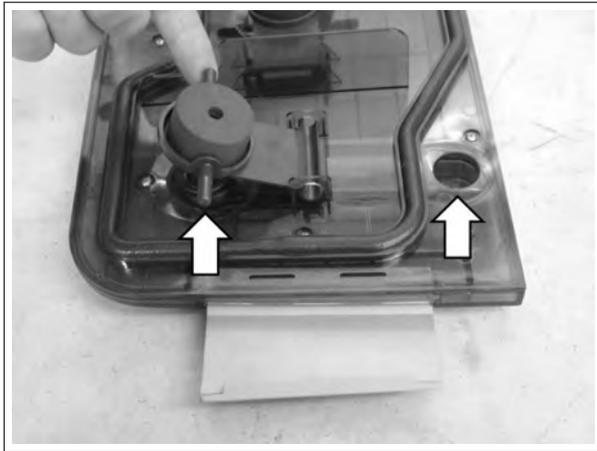
The suction cover has to be clean to allow the full passage of water and air through its conveyor compartments. The floaters has to be clean and it is important that no external debris or causes block or reduces the floaters mobility. It is Mandatory that the floaters be free to move and have to block completely the water/air flow when it is in blocking position (UP).

**Maintenance** (to perform every **2h**)

- Put the machine in safe conditions.
- Remove the suction cover.
- With a water jet, clean the floaters and the rotation fulcrum of the floaters.
- With a water jet, clean the dirty water conveyor compartment, both from the inlet hole and from the output one.



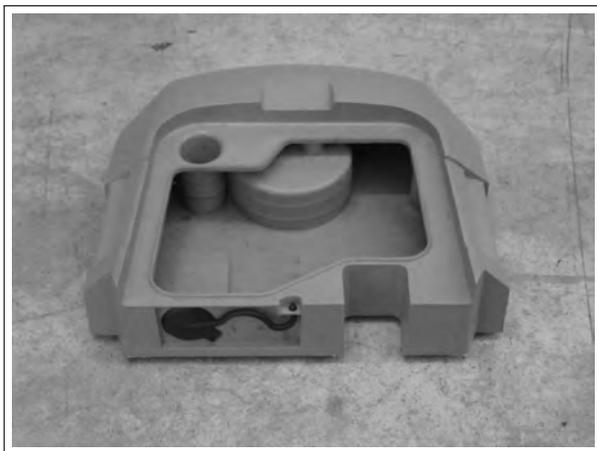
- Successively with compressed **Air**, clean the air conveyor compartment of the suction motor.



#### 7.4.5 Recovery Tank

**Check** (to perform every **50h**)

The recovery tank has to be clean and has not to have cracks or, in general, any kind of damage. The Lid housing has to be even and flat to allow the gasket to adhere perfectly to the tank to avoid any air infiltration. The hose fittings have to be in optimum condition in order to avoid any dirty water leakage or any pressure drop during the job.



#### 7.4.6 Vacuum Motor

**Check** (to perform every **150h**)

Access the Check/Monitor Menu, and select the parameter **I.Vac**, pressing the button 2.

The vacuum motor with hose disconnected from the squeegee has to absorb less than **2,8 Amps**.

The motor should rotate evenly and smoothly and doesn't have to produce unusual noises. The motor contacts have to be clean, they have not to show signs of wear or heating in general.

**The motor wires** insulation has to be intact in all its parts and does not show signs of cracks. The single cable have to be flexible.

## 7.5 Technical Features

| TECHNICAL DESCRIPTION               | U/M  | Genie XS |
|-------------------------------------|------|----------|
| Squeegee width                      | mm   | 325      |
| Recovery Tank                       | l    | 4        |
| Vacuum Motor Stages                 | Nr   | 1        |
| Vacuum Motor Power                  | W    | 150      |
| Vacuum Motor Voltage                | V    | 36       |
| Vacuum Motor Depression             | mBar | 21.6     |
| Vacuum Motor Depression in ECO Mode | mBar | 11.8     |

# Chapter 8

## Machine Frame and Traction System

### 8.1 Structure

1. Wheels
2. Frame

### 8.2 Description

**The frame** It is a single structure in aluminum on which rest the tanks.

**The machine traction** is ensured by the mechanical friction system.

**The wheels** are directly fixed to the frame.

### 8.3 Maintenance and Checks

#### 8.3.1 Wheels

**Check** *(to perform every 50h)*

The wheel must be free to rotate smoothly without friction. The wheel surface, must always be in good condition.

**Maintenance** *(to perform every 150h)*

Periodically check the wheel status. If necessary, proceed to replace the part (see section [4.4](#) at page [24](#)).

## 8.4 Technical Features

| TECHNICAL DESCRIPTION            | U/M              | Genie XS |
|----------------------------------|------------------|----------|
| Wheels ( <i>num/diam/width</i> ) | Nr/ $\phi$ mm/mm | 2/160/30 |
| Wheel material                   |                  | TPV      |
| Wheel hardness                   | Sh               | 85       |

# Chapter 9

## Cleaning Solution Supply System

### 9.1 Structure

1. Solution Tank
2. Solution Filter
3. Hoses
4. Water Pump
5. Distributor

### 9.2 Description:

**The Cleaning Solution** Supply System is made by a tank commonly called solution tank or clean water tank.

**In this tank** the clean water is mixed with the detergent to create the cleaning solution that the machine will use to clean.

**The solution** is then canalized to the filter which, in addition to allowing the valve opening of the solution tank, stops debris that could stuck the hoses system and compromise the proper functioning of the system.

**Once passed** through the filter the solution arrives to a pump which stops the flow when the brush stand is in the rest condition and which regulates the flow rate in working condition, and then conclude the path through the distributor.

**The end of the solution path** is the distributor that canalizes the flow in the middle of the brush.

## 9.3 Maintenance and Checks

### 9.3.1 Solution Tank

**Check** (to perform every 50h)

The solution tank has to be clean and intact. It has not to have cracks or any other kind of damage. Verify, when the tank is completely filled up, that there are not leakage. If necessary replace the Solution Tank.



9.3.1-33

### 9.3.2 Hoses

**Check** (to perform every 50h)

Every single hose has to be intact and has not to be worn out. It is extremely important that the hoses kept the original flexibility and they haven't suffered any chemical reaction with the detergent used with the machine. If necessary proceed with the replacement of the damaged hoses.

### 9.3.3 Clean Water Filter

**Check** (to perform every 2h)

The filter has a great importance, because its knob allows the opening of the solution tank valve.

The filter has to be periodically cleaned and it is also important to check that it is intact and has no anomalies.

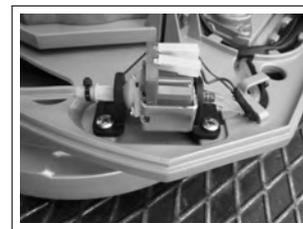


9.3.3-34

### 9.3.4 Water Pump

**Check** (to perform every 50h)

The water pump has to block completely the solution flow when the brush deck is not working. Viceversa it has to grant the flow rate when the brush deck is working.



9.3.4-35

### 9.3.5 Distributor

**Check** (to perform every 50h)

The distributor has to be intact and has to grant the proper solution flow without any leakage in the gearbox.



9.3.5-36

## 9.4 Technical Features

| TECHNICAL DESCRIPTION | U/M | Genie XS          |
|-----------------------|-----|-------------------|
| Solution Tank         | 1   | 3                 |
| Clean Water Filter    |     | Plastic cartridge |

# Chapter 10

## Consumable & Recommended Spare Parts

### 10.1 Consumable Spare Parts

#### 10.1.1 Mechanical Rubbing System

| PN     | Description   | $\phi$ (mm) | Bristle | $\phi$ Bristle (mm) | Colour |
|--------|---------------|-------------|---------|---------------------|--------|
| 439929 | BRUSH PPL 0,3 | 280         | PPL     | 0,3                 | Black  |
| 441041 | BRUSH PPL 0,2 | 280         | PPL     | 0,6                 | Black  |
| 439930 | PAD HOLDER    | 280         | -       | -                   | -      |

#### 10.1.2 Drying System

| PN     | Description             | Dimensions      |
|--------|-------------------------|-----------------|
| 439839 | FRONT RUBBER            | 410 x 27 x 2 mm |
| 439841 | REAR RUBBER             | 457 x 27 x 2 mm |
| 439808 | SQUEEGEE WHEEL D=32 L=8 | -               |

#### 10.1.3 Machine Frame and Traction System

| PN     | Description      |
|--------|------------------|
| 439343 | WHEEL D=160 L=30 |

## 10.2 Recommended Spare Parts

The following table refers to the Recommended Spare Parts, and reports the amount suggested by the number of purchased machines.

| <b>Machines</b> |   | <b>Parts</b> |
|-----------------|---|--------------|
| 1               | ⇒ | 1            |
| 10              | ⇒ | 2            |
| 25              | ⇒ | 3            |
| 50              | ⇒ | 4            |

### 10.2.1 Electrical System

| PN     | Description                   |
|--------|-------------------------------|
| 439802 | MAIN CARD CFSS000             |
| 440029 | HANDLE CONTROL CARD           |
| 440247 | BRUSH MOTOR CONTROL CARD      |
| 439605 | SERIAL CABLE FOR CONTROL CARD |
| 439524 | MAIN SWITCH                   |

### 10.2.2 Mechanical Rubbing System

| PN     | Description               |
|--------|---------------------------|
| 439433 | GEAR MOTOR 36V 90W 150RPM |

### 10.2.3 Drying System

| PN     | Description                    |
|--------|--------------------------------|
| 224555 | VACUUM MOTOR 36V 150W 1ST      |
| 440026 | VACUUM HOSE D22x460            |
| 421109 | GASKET V-RING VA=30 H=7,5      |
| 439977 | GASKET V-RING VA0020 H=7,5 NBR |
| 440025 | GASKET V-RING VA0018 H=5,5 NBR |

### 10.2.4 Cleaning Solution Supply System

| PN     | Description        |
|--------|--------------------|
| 440028 | PUMP ULKA 24V      |
| 439888 | CLEAN WATER FILTER |

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Fimap S.p.A.  
Workshop Handbook Genie XS

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Edition: February 12, 2016