A joint development with Pohang Institute of Intelligent Robotics (PIRO)
www.iwindoro.com

Smart WINDORO for Cleaning Window!

WINDORO, the window cleaning robot is operated in tandem with two modules: the inner and the outside portions. The inside module works as the navigation unit and the outside module cleans using the spinning microfiber pads.
Clean windows freely!
The world-first commercialized window cleaning robot, WINDORO, automatically clean your window glasses.

Do you want to see beautiful scenery through clean windows?
It was too danger and too difficult to clean the window glasses. Especially, if you are living at the high apartment houses. But, now you can clean smart and easily with Windoro only.

The outside module attached to the outside window pane cleans as the inside navigator module navigates itself around the window.

One Button Cleaning!
Open the window that is needed for cleaning and attach Windoro on both sides of the window. Once Windoro is attached press the button on top of the machine. Windoro will then automatically wipe the glass clean.

End Signal and Automatic Return!
The user will be alarmed by a beep from the machine, after Windoro will then return to its initial spot of attachment.

Magnetic Force Controller!
The magnetic force is controlled by the magnetic sensor, and it cleans windows with a wide range of thickness varying from 5~15mm or 16~28mm.

Excellent Safety!
The robot will remain tightly attached to the window whether or not the power has been turned off. It consists of two modules that fit excellently on opposite sides of the window and hold each other using permanent magnets.

Perfect Cleaning!
The combination of a precise amount of detergent spray and the spinning microfiber pads clean the window perfectly.

Convenient Detachable Pad!
The microfiber pad with Velcro tape can be conveniently detached and re-applied after washing. (For perfect cleaning of a dirty window, clean the window repeatedly after changing pads.)
- The product moves from top to bottom and from left to right to check the width of the window to be cleaned.
- When the width of the window is less than 2 metres, the product will clean the window in single mode.
- When the width of the window is more than 2 metres, the product will clean the window in double mode.
- After the cleaning process is finished, the product stops in the initial place and makes a beeping sound three times. The position where the product stops can be different from the initial place if there is dust on the window.

Note for remote controller usage:
It can work only within 3 meters of the unit.
It can send a signal only to the inside device in which a receiver is embedded.
The outside device does not have a receiver.

1 Automatic Mode
START : Button to start or restart cleaning.
STOP : Button to stop cleaning.
PAUSE : Button to pause cleaning.

2 Home
The robot returns to the original position where it was first attached.

3 Manual Mode
UP/DOWN : After spinning vertically, the robot moves up and down.
LEFT/RIGHT : After spinning horizontally, the robot moves from left to right.

A SPEED – moving speed
High : Speed increase, the maximum speed 10cm/sec.
Normal : Speed decrease, the minimum speed 6cm/sec.

B SPACE – cleaning space
Dense : The robot cleans densely, the maximum value is 3.
Normal : The robot cleans lightly the minimum value is -3.

C LIQUID – the volume of detergent
Strong : The volume increases.
Normal : The volume decreases.
## Product Features and Components

<table>
<thead>
<tr>
<th></th>
<th>WINDORO for Single Panes</th>
<th>WINDORO for Double Panes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>IN 218x211x51mm, OUT 210x208x47mm</td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>2.9kg (IN: 1.6kg, OUT: 1.3 kg)</td>
<td>3.2kg (IN: 1.8kg, OUT: 1.4 kg)</td>
</tr>
<tr>
<td><strong>Moving speed</strong></td>
<td>8 centimeters per second</td>
<td></td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>Less than 25 Watts</td>
<td></td>
</tr>
<tr>
<td><strong>Adapter</strong></td>
<td>Rated voltage AC 110/220V, voltage DC 15V, 1.5A</td>
<td>Li-ion body(11.1V 2200mAh), out (7.4V 2200mAh)</td>
</tr>
<tr>
<td><strong>Battery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Charging time</strong></td>
<td>Around 150 minutes</td>
<td></td>
</tr>
<tr>
<td><strong>Usage time</strong></td>
<td>Around 120 minutes</td>
<td></td>
</tr>
<tr>
<td><strong>Remote control</strong></td>
<td>IR receiver system</td>
<td></td>
</tr>
<tr>
<td><strong>Cleaning mode</strong></td>
<td>Zigzag</td>
<td></td>
</tr>
<tr>
<td><strong>Noise</strong></td>
<td>Less than 60dB</td>
<td></td>
</tr>
<tr>
<td><strong>Thickness Criteria</strong></td>
<td>thickness 5~15mm</td>
<td>thickness 16~28mm</td>
</tr>
</tbody>
</table>

### 1 WINDORO inside/outside bodies
WINDORO consists of an inside navigation device and an outside cleaning tool.

### 2 One Remote Controller
After attaching the WINDORO device to the window, you can use the remote controller inside to operate the product safely and conveniently.

### 3 The WINDORO Adapter
The Y-type adapter is only for WINDORO. You can use it to charge the inside and outside devices at the same time.

### 4 WINDORO Detergent
Pour it into the inlet of the outside cleaning tool to a maximum of 40 millilitres. You will need to use our specific WINDORO detergent only. If you use other detergents, it can cause imperfect cleaning or operation faults.

### 5 WINDORO Microfiber pads
There are twelve microfiber detachable pads included with the units. After using them, thoroughly wash them for reuse. Use WINDORO pads only. The magnetic force of the product is adjusted to the thickness of the WINDORO pads, hence if you use other pads, it can cause imperfect cleaning, operation faults, or the product to fail.

### 6 WINDORO Edge cleaning kit
Edge pad+Fix plate. The Edge cleaning kit can be used to clean the edge of the window, attached to the edge of the outside cleaning tool. Only the Edge cleaning kit can be used for Windoro.