

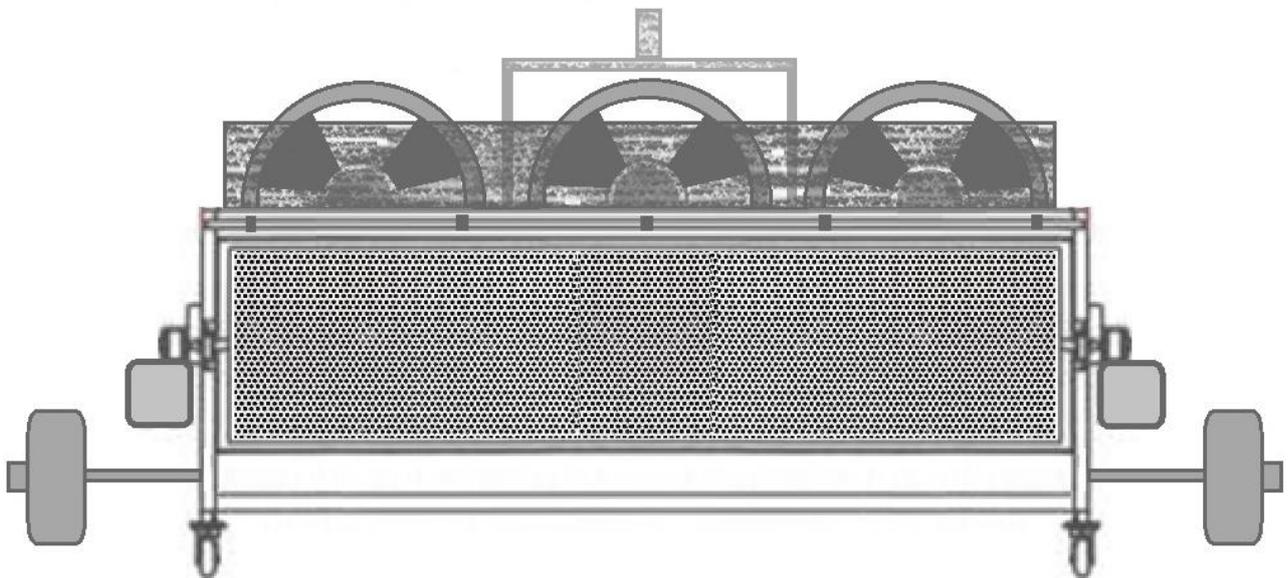


IndiBOT

Robot Facade Cleaner

INFORMATION BROCHURE

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IndiBOT is the 1st Robot Facade Cleaner in India, designed & produced as per Intl. usage and Environmental conditions, especially considering Indian Environment. Keeping buildings always clean is always a big challenge for the property owners as well as Service Providers. Façade Cleaning is an ongoing job which is dominated by conventional systems, purely dependent upon manual cleaning techniques. This segment also has high risk involved to do the job at heights. Comprehensive maintaining cost of the buildings gets too expensive because the manual job is very slow and have its own constraints of higher salaries, higher insurance premiums etc. IndiBOT Façade Cleaning/Washing system is designed for cleaning Low/Mid/High Rise Buildings without using any manpower. Different kind of equipment available for different applications. Fully automated system does the job much effectively with no risk of life at all. Fast Pay Back, High Return on Investment, Optimum utilization of the resource makes IndiBOT a favourite Equipment for FMS companies as well as Service Providers.

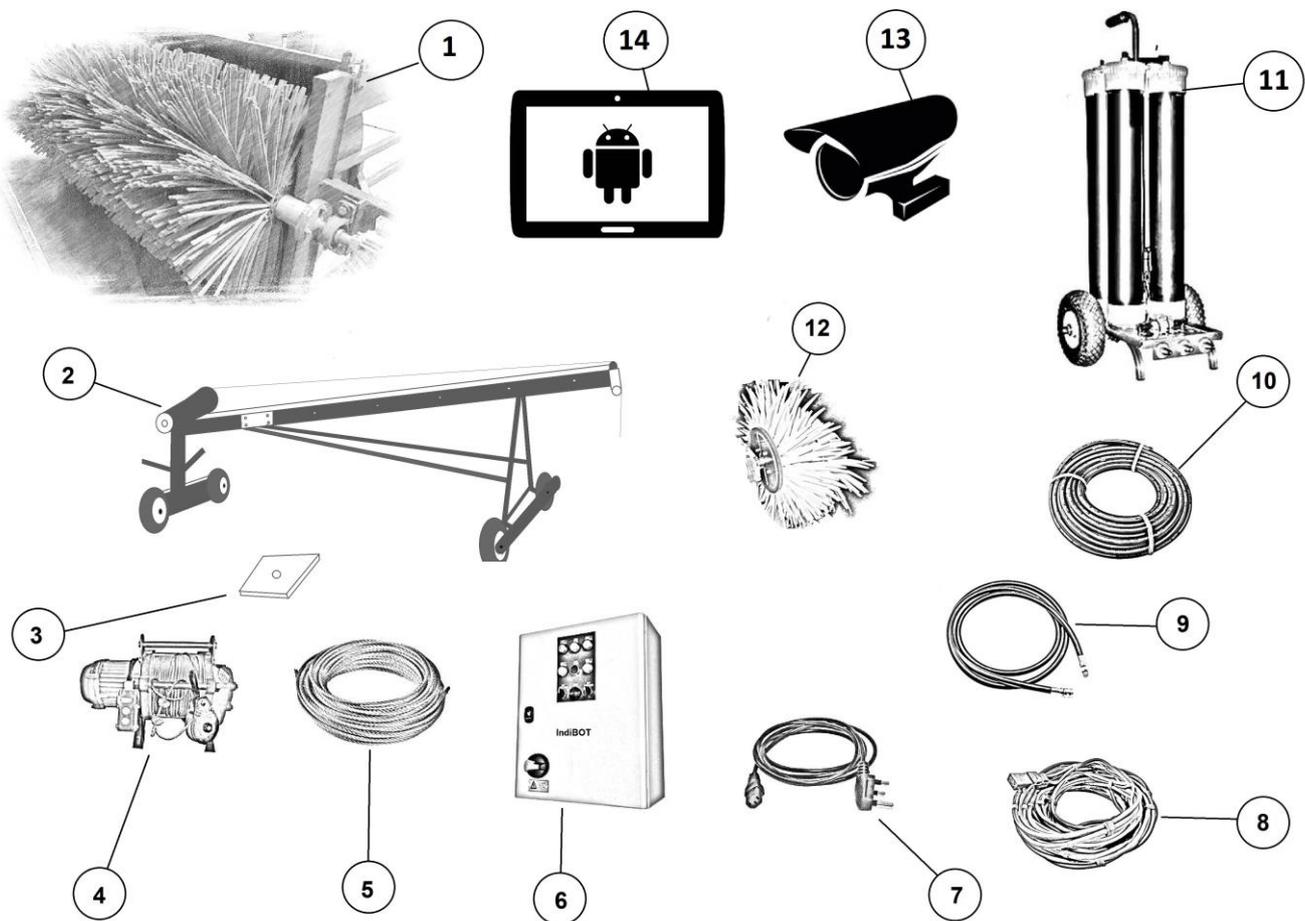
It is an Automated Cleaning System, consisting of Cleaning Robot Unit having big Cleaning Brush mounted on a rigid steel frame. Cleaning unit remains hanging on a Roof Top Rig or Parapet Wall Rolling Fixture. IndiBOT is available to clean buildings up to 50 floors as std. and further models are developed specially for a particular building. It is a safe and economical way to clean the windows, frames and exterior of the buildings. Using this affordable automated system, with 2 persons you can clean not only windows but also whole building. Weighing just 55 Kg, 90kg and 140 Kg (Hanging unit) which is easy to transport in a small truck for using at multiple locations. We have designed it to be very simple and completely modern, so parts are easily and quickly changeable. Made of lightweight Powder Coated rigid Steel Structure won't rust in long term usage. Provision of sidearm prevents Robot to collide with Building Glass hence preventing it to break. Equipment is well balanced to work effortlessly and effectively. IndiBOT uses 6 inches, 60 inches to 84 inches long Cleaning Brush made of High-Quality Foam, soft and gentle enough on your Façade. Side Cleaning Brush is provided as a std. accessory for cleaning corners of the building.

The Robot moves at a max. Linear speed of 37 feet per minute which gives you end yield of 35-80000 square feet cleaning (Twice movement) per day (model specific). Soft RO water is used as a cleaning media with the option of using chemicals if needed. We give an option of 2 hanging systems, one is for narrow terrace and second is for an open terrace. In the end, there is a significant saving in manpower cost, Hefty Insurance Premiums, Scaffolding and other related costs. IndiBOT Façade Cleaner is the first and must choice for Building Owners, Service Providers and Cleaning Companies.

This handy information brochure is created to provide information about working, Do's and Don'ts and other related information on equipment usage and maintenance.

Brush Cleaning System

Complete System works on Brush Cleaning System. There are highly efficient fans mounted on the main cleaning unit frame which give reverse thrust to the cleaning unit by which it remains in contact with the façade. Cleaning Unit remains hanging on an overhead Rig kept at Roof. The Rig is movable to move the cleaning unit. Portable RO Water machine is provided along with the complete system. For Robot's cleaning system and upward downward motion an automatic, speed-controlled winch motor unit is mounted on the Rig which rotates as desired and controlled by the operator. Cleaning unit uses RO water, one high-efficiency RO water machine is provided along with the system as a std. accessory. The input of this machine is the water from the building water supply and output water is high-pressure water used as the input of the cleaning unit. RO water has its quality that it gives no strains on the glass after drying. The overhead control panel is kept on the roof.



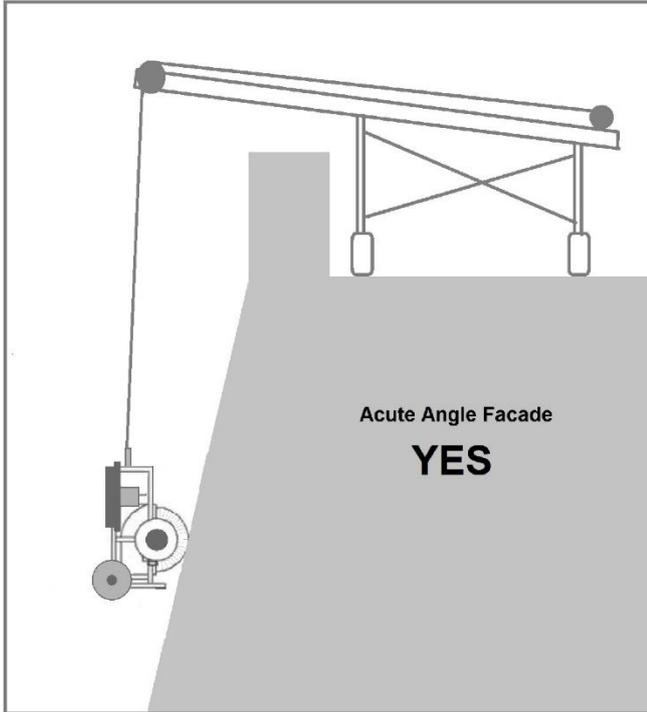
Details of the Std. parts of the system

Sr. No	Description	Sr. No	Description
1	Main Cleaning Unit	8	Power Output Cable
2	Overhead Roof Mounted Rig	9	Low Pressure Hose
3	Counter Weights	10	High Pressure Hose
4	Winch Motor Assy.	11	RO Machine
5	Steel Wire	12	Side Cleaning Brush
6	Elect./Elec. Control Panel	13	Live Recording Camera
7	Power Input Cable	14	Android Tablet PC

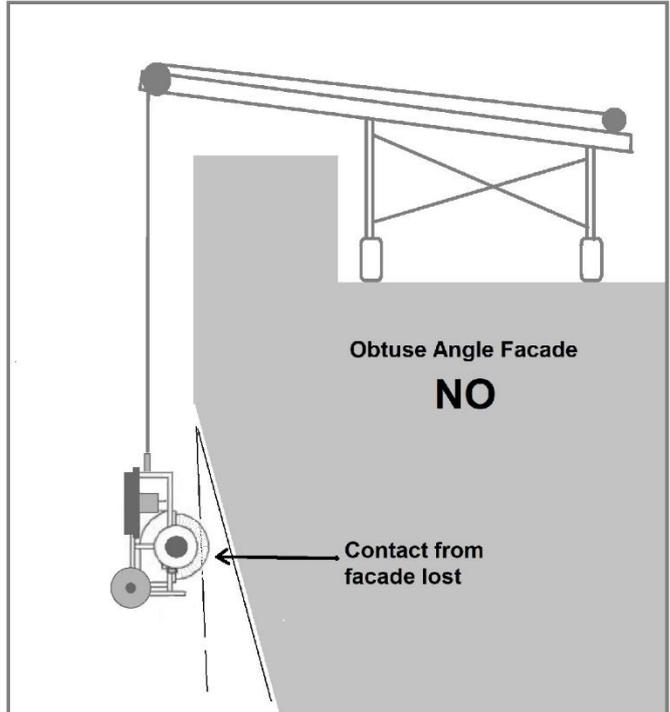
Type of Buildings those can be cleaned using IndiBOT Façade Cleaner



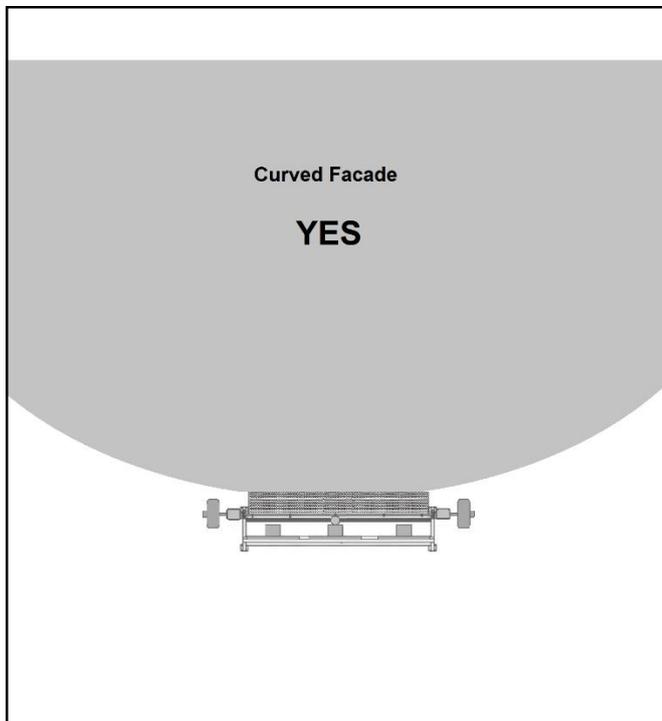
Type of Façade where Robot Works



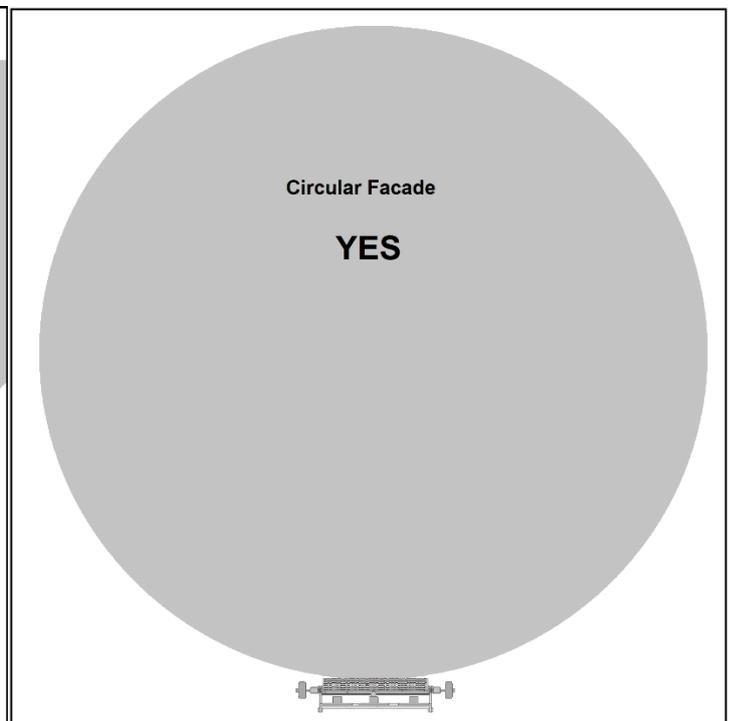
Acute Angled Façade



Obtuse Angled Façade

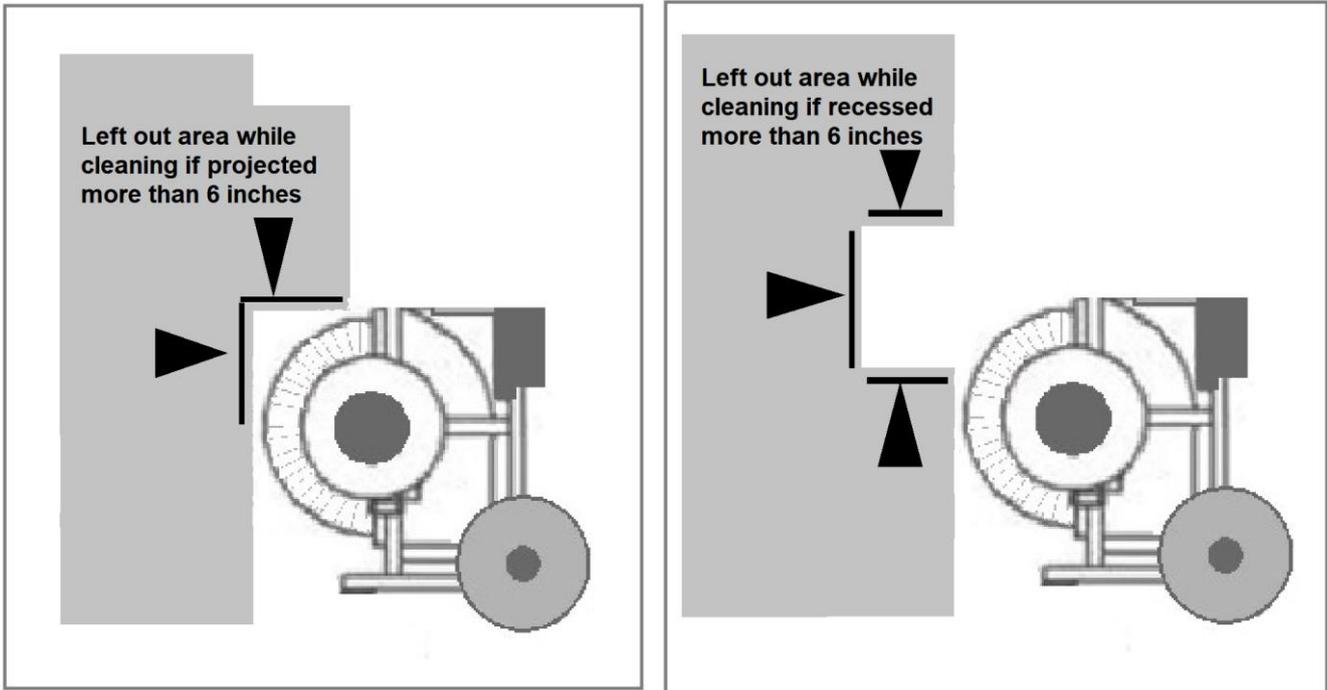


Curved Façade



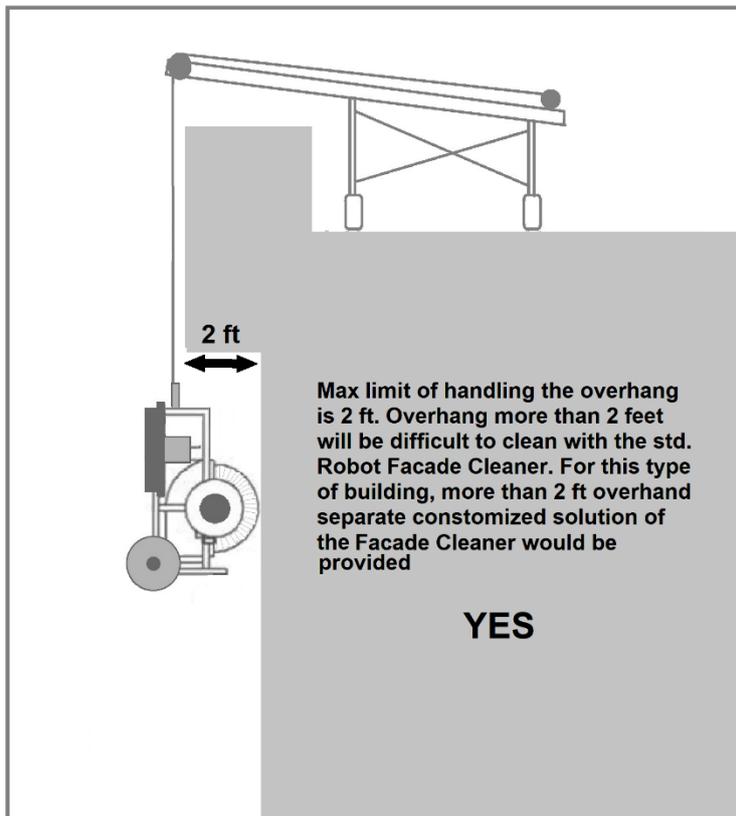
Circular Façade

Projections & Recessions Handling

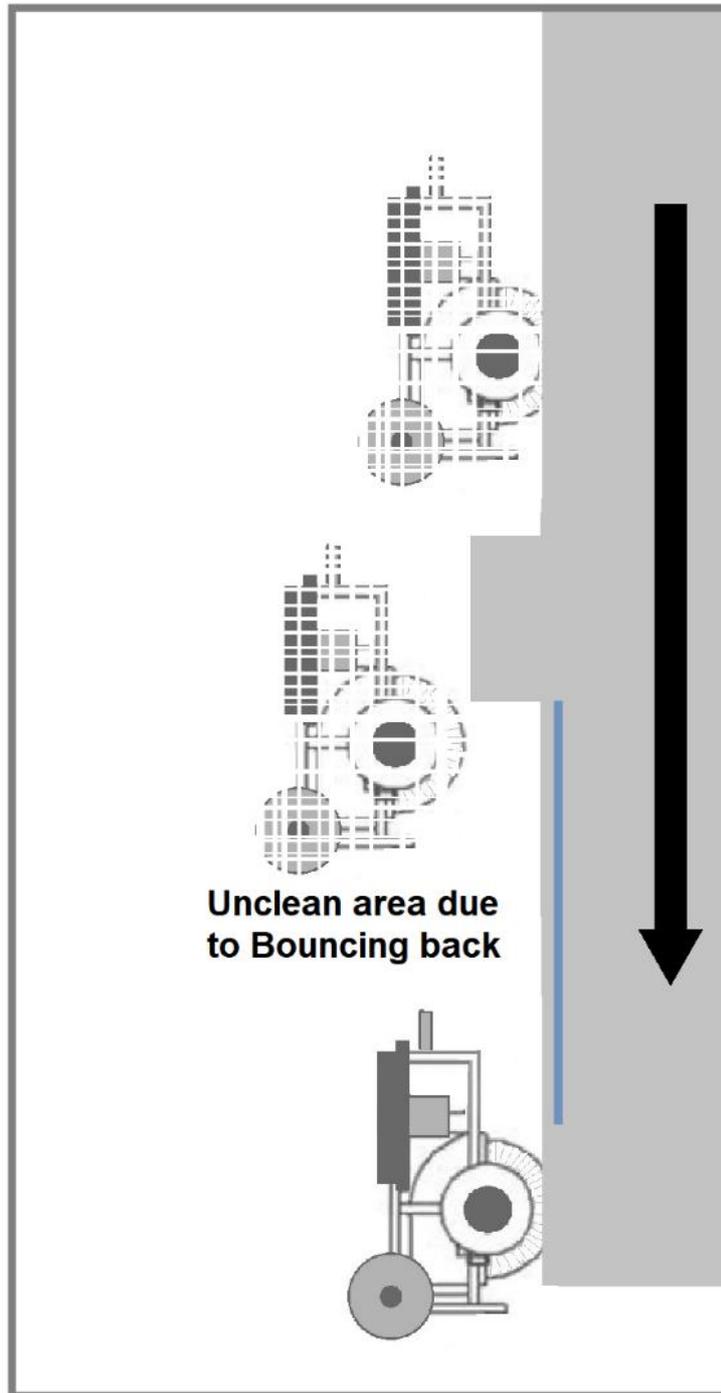


The limit of projection and recession in the Façade is 6 inches. If it is more than the limit it will be the unclean area.

Overhanging Handling

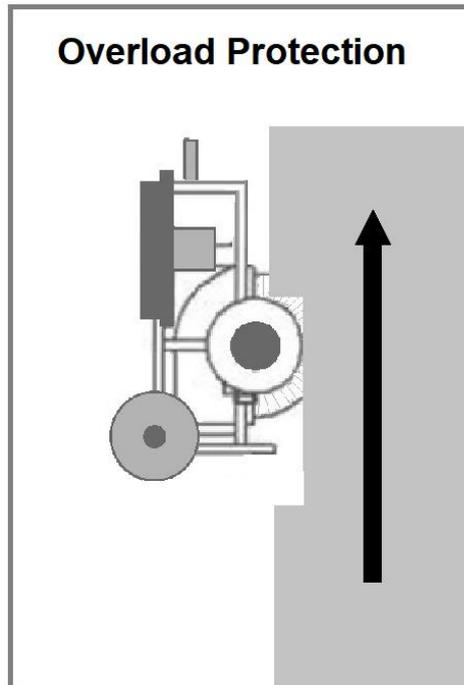


Handling the Unclean Area due to Bouncing



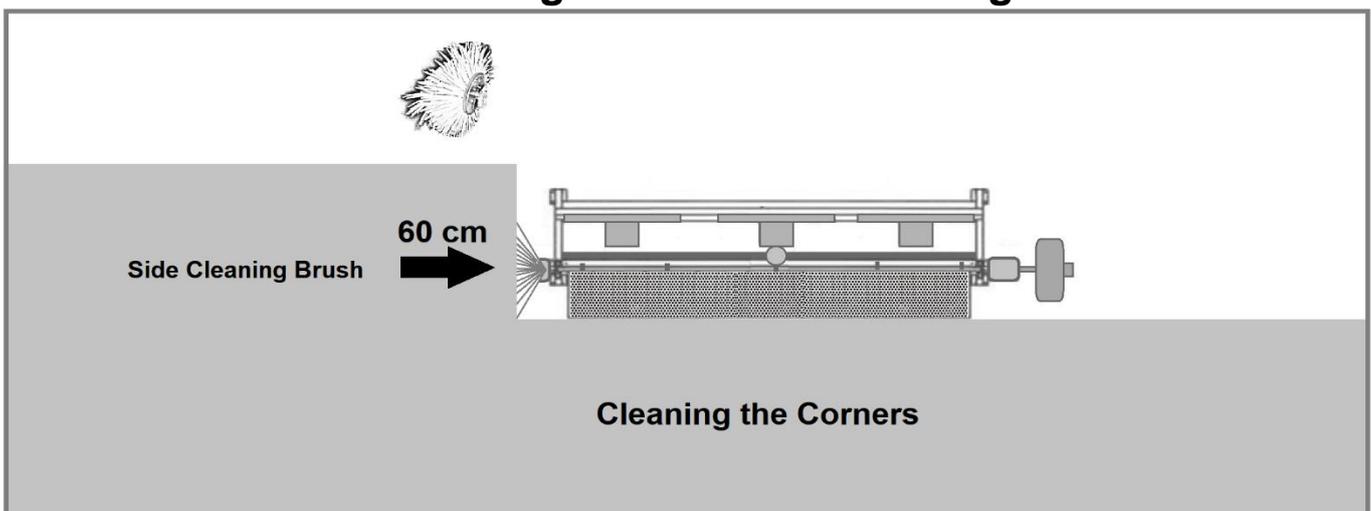
This is a very common instance when the robot is doing the cleaning in automatic mode. Sometimes if protrusion is more, then Robot bounces the façade and bt the times it retouches the façade some area remains unclean. So while doing the cleaning job give special attention to control the speed manually, reduce it when Robot reaches near to the protrusion so that it do not bounce.

Overload Protection due to Clogging



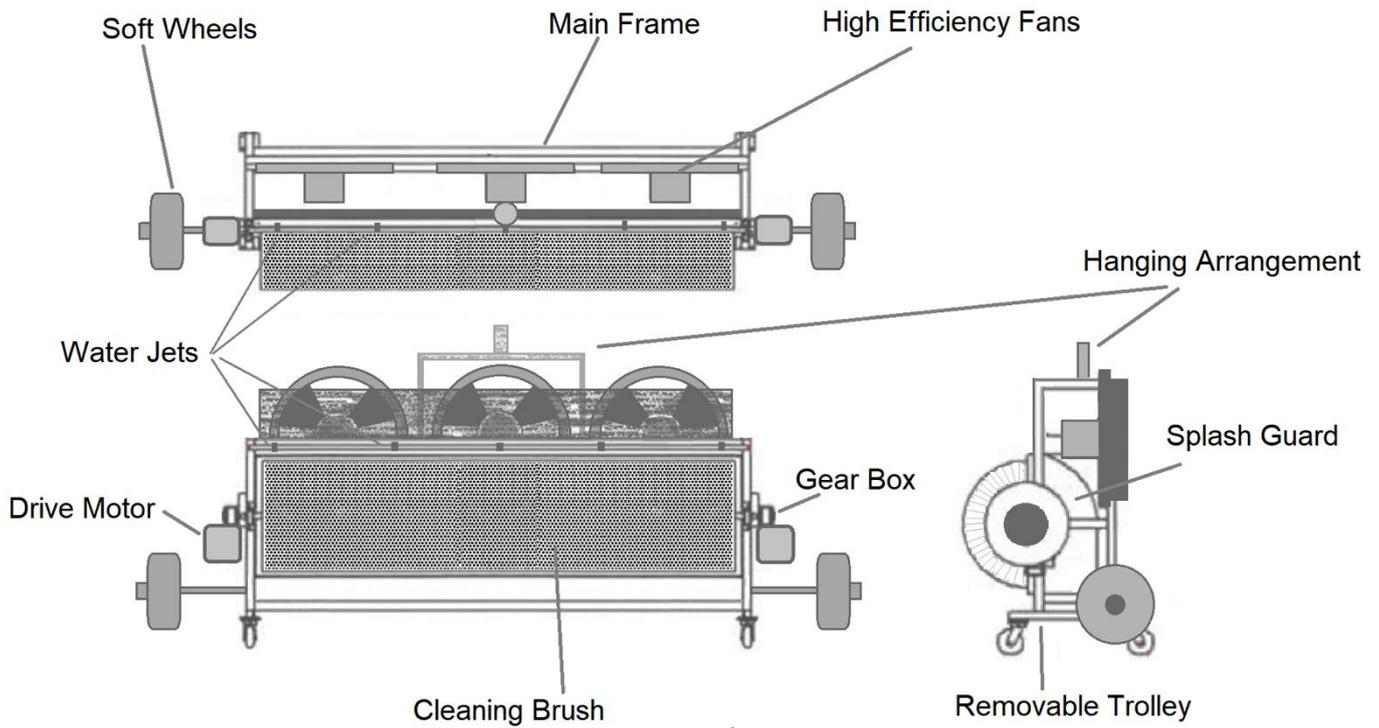
Sometimes there are chances that while Robot is moving from bottom to top, it might get clogged if any part gets closed at any recessed surface of the building façade. The hoist tends to pull the Robot up, as extra protection to the system we have made the system equipped with Overload protection. Moment system draws more current than the specified limit, Limit Switch shuts the system off. To restart the system it has to be restart and by doing this operator can make it safely move out of the clogged area.

Building Side Corner Cleaning

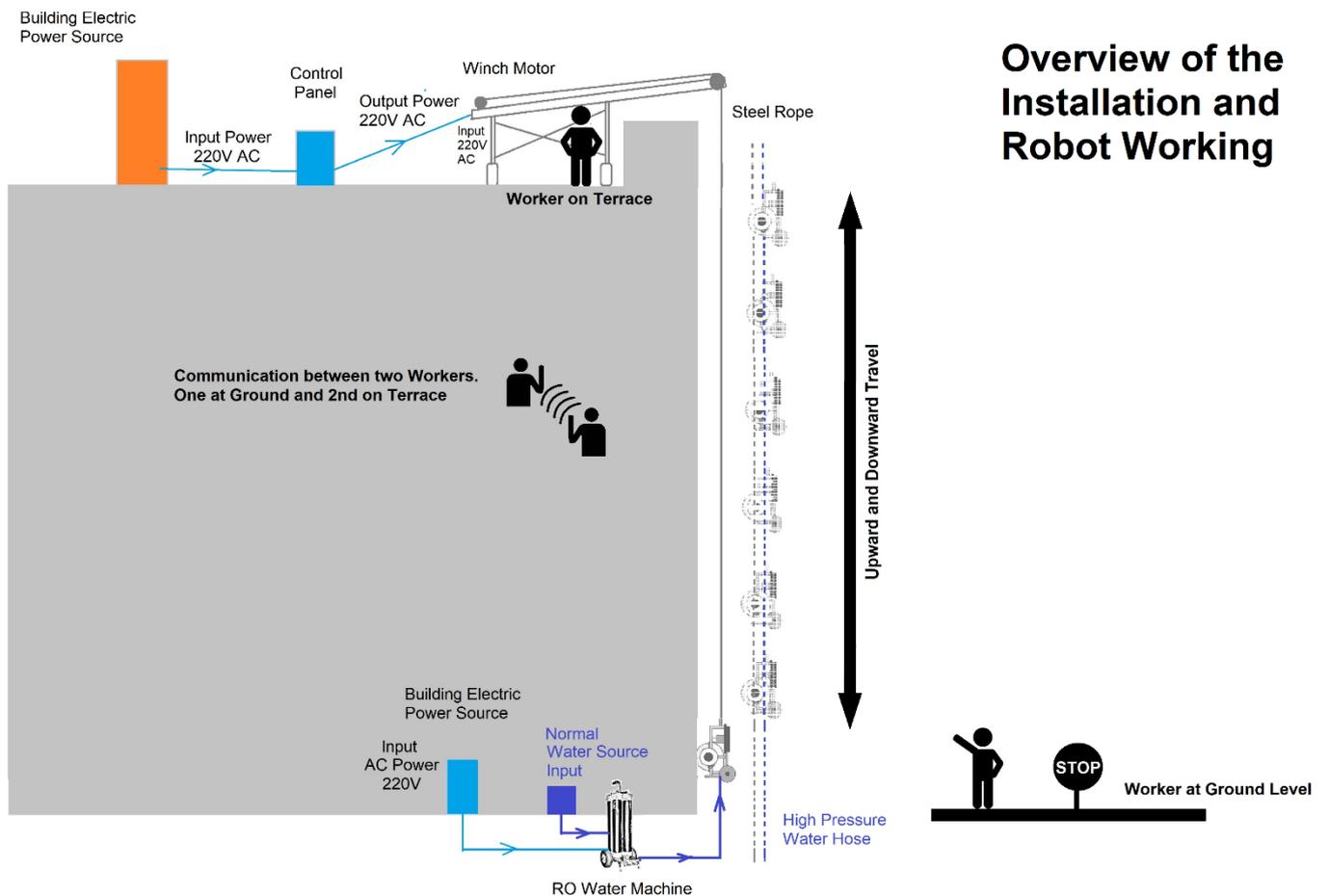


Sometimes in the architecture design of the building has small angles, IndiBOT comes with an option of Side Cleaning Brush to clean the small corners of the Façade effectively. To use Side Brush Wheel is replaced with the Side Cleaning Brush and used in conjunction with the main Cleaning Brush Working.

IndiBOT Façade Cleaner Pictorial Views



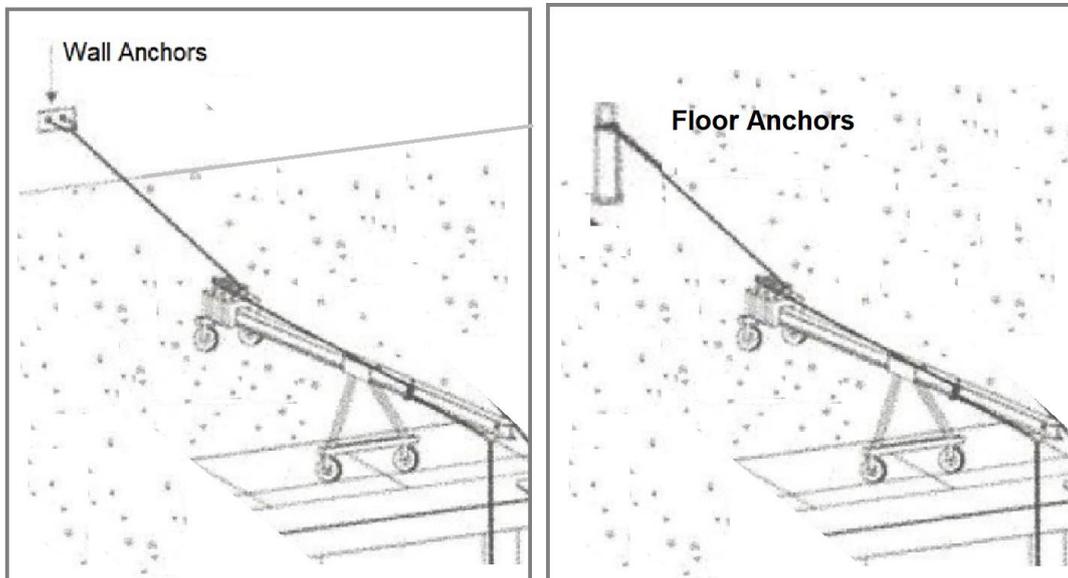
Understanding of Installation and Working



Safety of the Equipment and the Operators

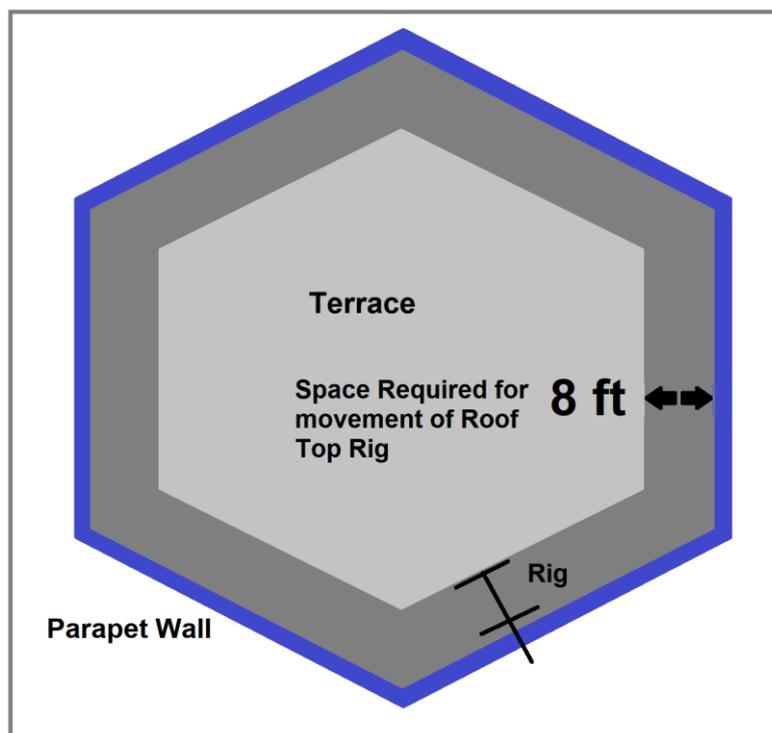
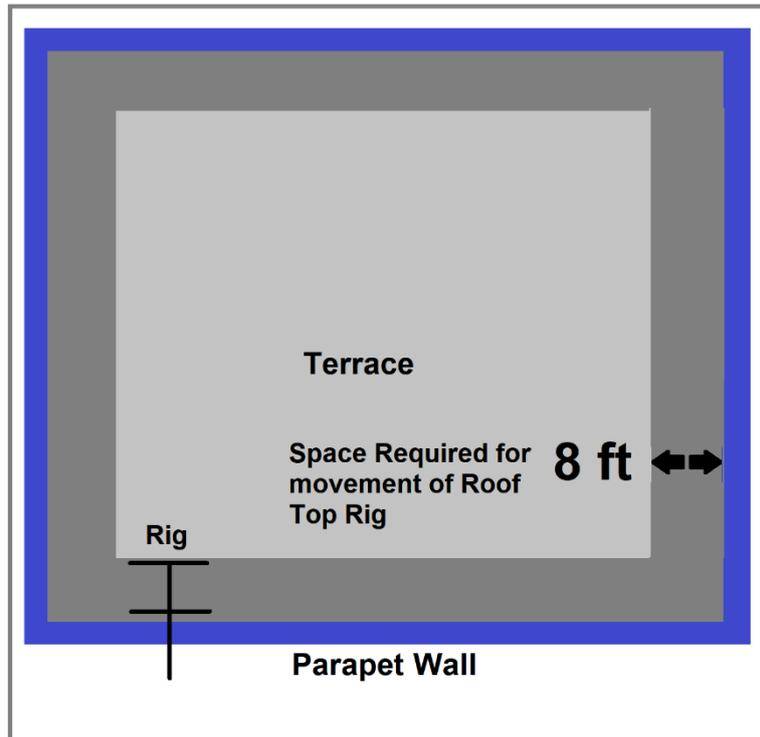


Façade Cleaning Equipment, as well as operators, must be well protected with the Anti-Falling system installed on the terrace. There must be Wall Mounted Anchors or Roof Mounted Anchors Installed on the roof. These are used to tie the equipment with Nylon Safety Ropes. The operator on the terrace must also be protected with the same system containing safety belts ties with the same anchors.



Space Requirement on Terrace for Mounting the Rig

Std. design of the IndiBOT Façade Cleaning System requires min. 8 feet open space all around the Parapet Wall on the Terrace to use our Roof Top Rig installation. For the kind of the Buildings where this much space is not available there we change the Std. design of the Rig as well as Cleaning unit to make it compatible with the existing system of your building. Below are the illustrative pictures.



Typical Examples of the Building Top and Facades where customization shall be done for making the system compatible with the existing cleaning system and space available for installation.



Technical Specification

Sr. No	Model	MICRO	IndiBOT 500	IndiBOT 700
1	Technology	Automatic Brush Cleaning System based on Contact Cleaning System. Meant for all kinds of Glass Facades, Penal Work and other non-cemented surfaces. System uses Reverse Osmosis Water which is used as cleaning media. Cleaning System remains hung on Roof Mounted Overhead Rig or Parapet Wall Rolling Fixture (Depending upon the available space of Terrace).		
2	Application	Glass, Aluminium Composite Panels, Tiles Panels, Metallic Sheets, Precast Cemented Panels (Brush Off, Washing)		
3	Climbing Capacity	Up to 15 Floors	Up to 30 Floors	Up to 50 Floors
4	Size of Cleaning Brush	3'x2' (Dia)	5'x2' (Dia)	7'x2' (Dia)
5	Cleaning Media	RO Water	RO Water	RO Water
6	Water Pressure	30-80 psi	30-80 psi	30-80 psi
7	Water Consumption	0-4 ltr/min	0-7 ltr/min	0-9.5 ltr/min
8	Speed (Variable)	Max 37 ft/min	Max 37 ft/min	Max 37 ft/min
9	No. of Nozzles	3	5	7
10	Cleaning Capacity in a day in ideal conditions	30-35000 sq ft	50-55000 sq ft	70-75000 sq ft
11	Rated Power	2500 W	4000 W	5500 W
12	Voltage	220/230V 3 Phase	220/230V 3 Phase	220/230V 3 Phase
13	Circuit Breaker Size	63 Amp	63 Amp	63 Amp
14	Frequency	50 Hz	50 Hz	50 Hz
15	Weight (Hanging Unit) kg	55 Kg	90 Kg	140 Kg

Pictures and colors of the Equipment and Accessories shown in the document are for reference only. There might be difference in shape and colors in the actual supplies.

General Questions and Answers about IndiBOT Robot Façade Cleaners

- **Where is IndiBOT Façade Cleaner made?**
India
- **Can IndiBOT work with Normal Water?**
Yes, IndiBOT machines can be used with normal Water
- **What is the Benefit of RO Water?**
With RO Water surface of the façade will be spot free and RO water does not give strains after drying.
- **How many workers are needed for IndiBOT Robot Façade Cleaner?**
2 workers are required to operate the system. A person on the terrace controls the machine's working. The person on the terrace cannot see the scenario on movement and Façade condition, so the other person on ground level passes on instructions about where to increase the speed, decrease the speed and other related aspects.
- **How the machine is installed on the Roof?**
The machine is installed on the roof-mounted Rig. After each successive up and down travel, the rig is moved with the overlapping of appx 1 feet and the cycle continues. Cleaning operation remains automatic.
- **What if there is a pre-installed Rig system on the roof?**
In this case, IndiBOT cleaning unit is mounted on the existing rig system. Winch Motor and Hoist is mounted on the Cleaning unit itself.
- **What is there is very less space on the terrace?**
IndiBOT Robot Cleaner is always customized according to the available space, type of Façade and other related parameters.
- **What type of Facades can be cleaned with IndiBOT Façade Cleaner?**
All Type of Frames and Frameless facades containing Glass and ACP Panels
- **Is it necessary to use any chemical?**
No, RO water is enough to clean the glass on most of the buildings.
- **How to deal with very hard stains or old stains?**
Detergent or Hot Water can be added in the Water Line coming from the machine. This is a special requirement which can be accommodated in the existing system at a nominal cost.
- **Can IndiBOT be used in rain?**
No, Electric Shock hazard.
- **Can IndiBOT be used in high winds?**
No, it's not safe.
- **Is there any Anti-Swivel arrangement in the IndiBOT Façade Cleaner?**
Yes, there are stabilizing Arms mounted on the sides which prevent it to strike with façade.
- **Is there any Anti-Falling arrangement provided with the Machine?**
Yes
- **What to do if there is Small Rt. Angel Façade Potion which is lesser the size of the Cleaning Brush?**
Use optional Side Cleaning Brush to clean that portion of the façade.
- **What is the Life of the Cleaning Brush?**
Appx. 2 yrs (depends upon usage)
- **What is the Warranty on IndiBOT Façade Cleaner?**
1 year from the installation date
- **Is it possible to see live Cleaning Video?**
Yes, Robot is equipped with 4G Wifi-Camera. You can connect with the Camera via 4G SIM and see live videos and record if you wish

For any type of other questions, other than the stated above you are free to contact us at below mentioned contact details:

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