

## DESIGN OF LOW COST VACUUM CLEANERS

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### ABSTRACT

In this project I carried out a human friendly cleaning robot with the advancement of technology to make human life easy and comfortable. The conventional automatic cleaning robot already exists but these robot do not work in sync with humans. This robot can work in any of two modes i.e. is "Automatic and manual" the need of the venture has come up in view of occupied timetable of working individuals. This is the reason thinking of a target of robotized vacuum more clean. The objective was to assemble a vacuum cleaner and contrast it works better and battery together. The weight likewise manages how it functions, the motivation behind why less and more volts were added to contrast if and the two batteries the machine capacities better. In beginning 10 little paper pieces consumed by vacuum more clean.

### I.INTRODUCTION

These days, mechanical cleaners have taken more consideration in automated vacuum cleaners. Because of their adequacy in working people in floor cleaning application at homes, lodgings, cafés, workplaces, emergency clinics, workshops and colleges and so forth Fundamentally automated cleaners are grouped on their cleaning procedure like floor cleaning, wiping, dry vacuum cleaning.

The Low cost vacuum cleaning robot has been designed for consumer, office environments, hotels and restaurants. This planned is being worked in double modes. In one of the modes robot is completely self-ruling and settling on choices based on the yields of sensors. In manual mode the robot can likewise be utilized to clean a particular space of a room by working it physically. Blueprints the extent of the guidelines and of the survey concentrate just as the important norms and enactment identified with vacuum cleaner energy utilization, strength and asset effectiveness. Gives an outline of the vacuum cleaner market including deals, stock and base information on purchaser costs, just as an outline of market advancement patterns and creation structures. Respects the pre-owned conduct, particularly taking a gander at robot and cordless vacuum cleaners to propose delegate testing and energy utilization estimation at later phases of the examination.

### II.METHODOLOGY

The scope of the review study as vacuum cleaner energy consumption, durability and resource efficiency. Gives an overview of the vacuum cleaner market including sales, stock and base data on consumer costs, as well as an overview of market development trends and production structures suggest representative testing and energy consumption calculation at later stages of the study. Reviews the technical aspects of vacuum cleaners as products, and outlines the current technology levels in terms of average and best available technologies, on both component and product level.

The base cases and the environmental and economic impact of each of them. The environmental impact is both the energy consumption in the use phase as well as the material consumption and impact categories are given. The environmental impact is calculated as the product life cycle cost for the end-user for each base case. Outlines the design options for improving the environmental performance of the base cases without causing excessive costs for the end-users. All types of batteries and sets rules regarding placing on the market of batteries, specifically prohibiting batteries containing hazardous substances such as lead, mercury and cadmium the average technology and best available technologies were determined for each of the following vacuum cleaner types:

- Mains-operated household vacuum cleaners;
- Commercial vacuum cleaners;
- Cordless vacuum cleaners;
- Robot vacuum cleaners.

- **Commercial vacuum cleaner test:**

Commercial vacuum cleaners are currently tested using the same test standards as household vacuum cleaners, however, commercial vacuum cleaner manufacturers argue that the actual use conditions are different and that the tests should be adjusted in order to reflect these differences. Commercial vacuum cleaner manufacturers have therefore suggested a specific commercial vacuum cleaner performance test for debris pick-up on hard floor. The test is based on picking up M3 brass nuts and washers, laid out in a specific pattern to avoid strategic design of the nozzle to fit the test. Brass is used to simulate a "worst case" scenario with heavy debris, since the density is high, thus brass nuts and washers are more difficult to pick up than any lighter materials. The test is to be performed with the same nozzle and settings as the crevice hard floortest.

### III. MODELING AND ANALYSIS

- **Robotic and Cordless vacuum cleaner**

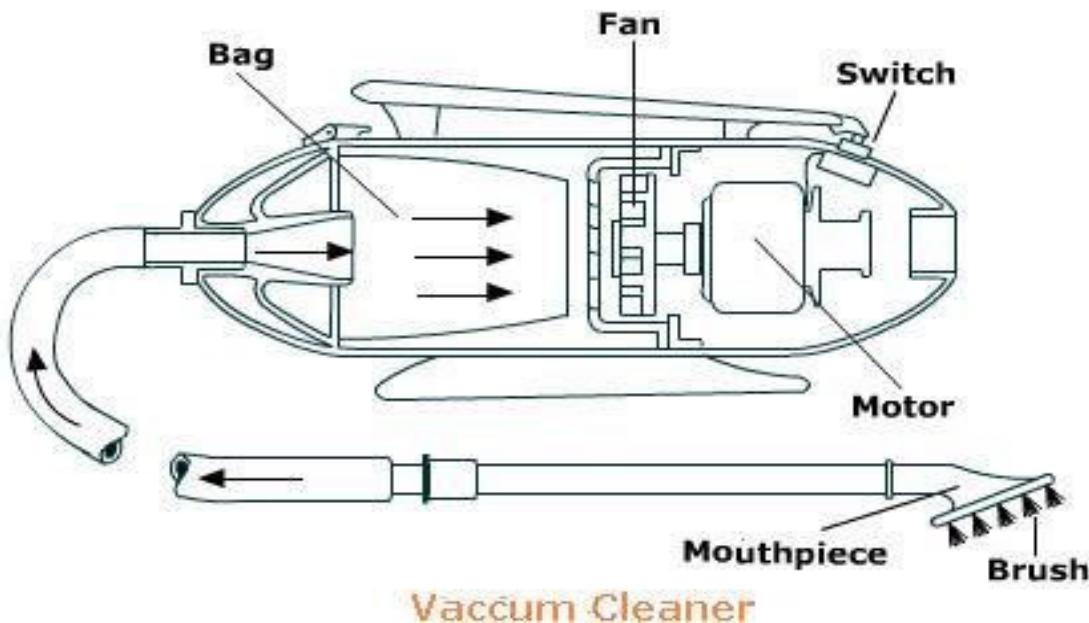
For cordless and robot vacuum cleaners, other parameters are relevant to the consumers besides those tested for mains-operated cleaners. Factors related to the battery are particularly important, e.g. battery run time, charging time, maintenance consumption and battery life. This is in addition to the performance parameters discussed for mains-operated vacuum cleaners, e.g. debris pick-up on hard floor and fiber pick-up on carpets.



A portion of the vacuum cleaner types displayed in Figure especially upstanding and chamber types, can be either stowed or sack less, for example utilizing a solitary use pack to gather and store the residue (sacked) or a reusable holder (bagless). In any case, it's anything but recommended to change the meanings of the vacuum cleaner types in the mains-worked gathering and in this way not to incorporate meanings of stowed and bagless cleaners in the guidelines, since similar necessities ought to apply.

As indicated by vacuum cleaner producers an ever increasing number of individuals purchase cordless vacuum cleaners. As indicated by industry most clients get them determined to utilize them for little cleaning occupations, however wind up utilizing them as their principle vacuum more clean. This is likewise reflected in the deals, where the market for cordless cleaners is relied upon to get a move on as it turns out to be more acknowledged by clients.

#### IV. RESULTS AND DISCUSSION



- **AIR FLOW:** amount of air passing through the machine in liters per second measured.
- **Suction Power:** The power calculated from air flow rate and suction or vacuum created by the machine. This indicates the real power being yielded by the machine for vacuum cleaning.
- **Vacuum:** The amount of negative atmospheric pressure produced by the machine.

Purchase price Repair and maintenance costs Electricity costs End of life cost as there are installation costs for the types of vacuum cleaners included in the study scope, this was not be included. Each of the other costs are explained in the following sub- sections. The costs are shown as unit prices for each product, maintenance event, electricity and so on. The total life cycle costs, which also depend on use patterns and frequency.

#### V.CONCLUSION

This robot is specially made on the basis of modern technology. It has all features for a vacuum cleaner, It can work automatically and manually. It has feature of the scheduling and it can auto drain. Cleaning has many competitors who are selling same product in high prices. This research clear the way for efficient floor purpose. The floor cleaner robot can perform sweeping and mopping task. Robots are utilized for

many applications to assist human beings The conventional vacuum cleaner system consists of large mechanical and electrical parts which are more costly and incur more losses. This work can be very useful for consumer in improving life style of mankind.

## **VI. References**

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