

# Automatic Collar Cleaner In Washing Machine

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## Abstract:

In today's busy life there's no time to hand clean the clothes hence there opens a door for the invention of machines that washes the clothes automatically. Due to this many types of washing machines have been introduced. Every day new idea has been emerged to improve the cleaning in this collar cleaning is in current demand. Many companies are trying to solve this by implementing new techniques. Even though new techniques arose but human intervention is needed in many cases. Hence this paper gives a new idea of cleaning the shirt collar automatically without human intervention by using quick return mechanism.

## Keywords:

**Bull gear, Rocker arm, Movable ram, Crank pin.**

## 1. Introduction:

In today's world there are many inventions and improvements in washing machines to clean the collars. In such process there are many ideas and projects which help to clean the collars efficiently. In such a way here is an idea which helps to clean the shirt collar in a fastest way. In this quick return mechanism is added with a brush attached to the ram. So that collars can be cleaned very easily without human intervention.

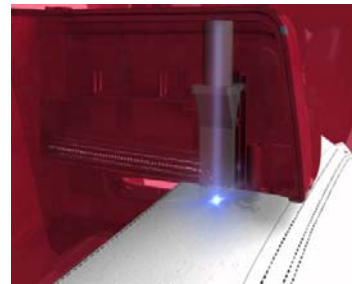
In this a specially made lock is placed at both ends to hold the shirts so that brush attached to ram moves over the collar to clean it. These locks should be controlled by ECU so that after some scrubbing time these locks should open one by one.

## 2. Previous Advancements:



The Samsung WA 4500 HH washing machine is equipped with a rubbing board. So it's easier and more comfortable to pre-wash and scrub the

heavily stained areas of clothes, like collars and cuffs, before starting a normal washing cycle.



Godrej Eon U-Sonic washing machine comes with a unique Ultra Sonic stain remover that uses a mixture of Ultra

Sonic waves and detergent to break the stains on any cloth surface to get rid of them as quickly as they came to be in the first place.



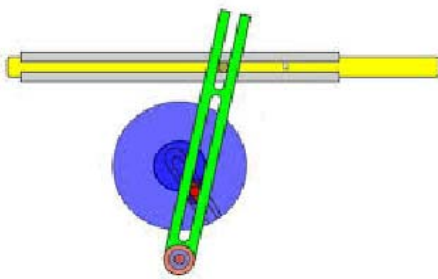
Videocon Typhoon plus WM VS60B11-DM Semi Automatic Top Loading Washing Machine. It features collar scrubber and 2 wash tub scrubber.

### 3. Disadvantages in the previous advancements:

The one and only main disadvantage in all the above advancements is they all need human intervention. In all the above process humans should use their effort to hold the collars until it cleans.

### 4. Principle behind our idea:

The idea presented in this paper uses whit worth quick return mechanism. This is used where there is a



need to convert rotary motion into reciprocating motion. As the disc rotates the black slide moves forwards and backwards.

### 5. Construction:

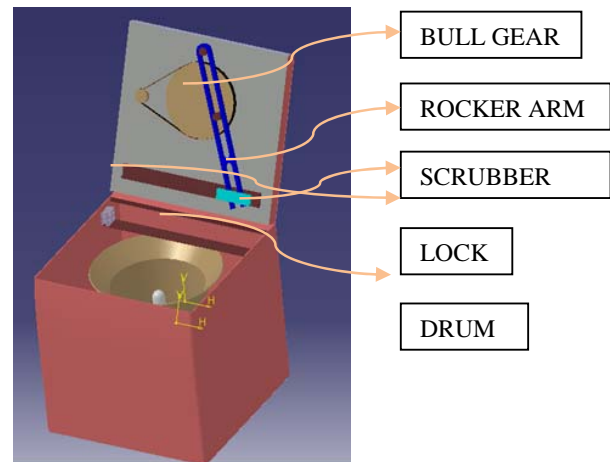
- ✓ Below the top cover of the top loading type washing machine a bull gear is attached which is connected to the motor through a belt.
- ✓ A crank pin is attached to the bull gear such that it is offset from the centre.
- ✓ A rocker arm whose one end is fixed and other end is attached to the arm to which a scrubber is attached.
- ✓ Inside the washing machine locks are provided on the either sides to hold the shirt collars.

- ✓ A plate is welded below these locks just to rest the collars.

### 6. Working:

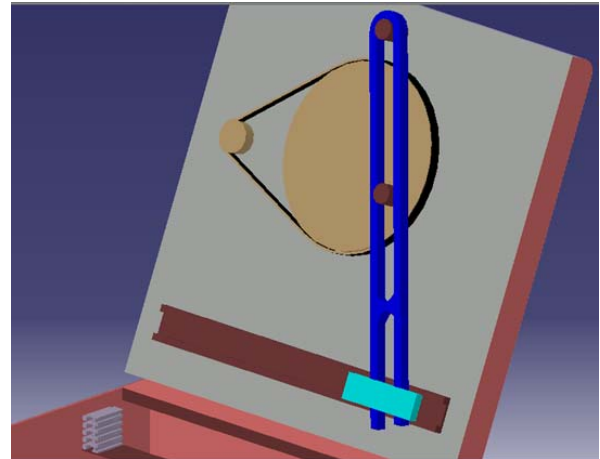
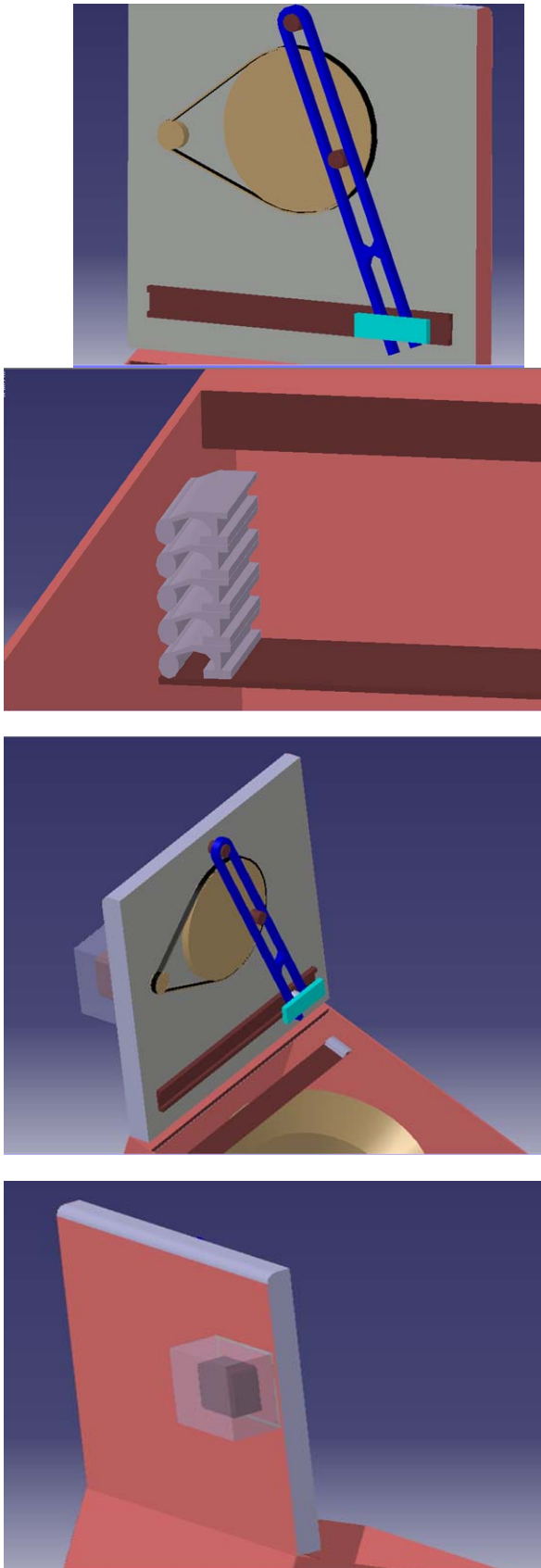
In this a motor is attached to the top cover of the top load washing machine and a small pulley is attached to the spindle of the motor. A bull gear is fixed at the perfect centre and it is connected to the motor pulley by means of belt. As soon as the motor rotates the bull gear rotates so that crank pin rotates and pulls and pushes the rocker arm.

So that the slider moves to and fro and a scrubber attached to the slider moves over the shirt collars so that the stains are cleaned.



A specially designed locks which is controlled by ECU holds the shirts collar until the scrubber cleans the collar after cleaning ECU releases the lock one and so the particular shirt is relieved and fall into the drum inside the washing machine and so it continues.

## 7. Other Images:



## 8. Advantages:

- Human intervention is completely avoided.
- Simpler process.
- Less time consuming.

## 9. Disadvantages:

- Costlier process.
- Increased weight.

## 10. Conclusion:

Stepping into the 21st century, almost everybody is living on the edge of technological and scientific advancements. Many inventions and discoveries have been made by so many great minds whose purposes were to make our life always better than before. So from this paper we heard a new technique of cleaning shirt collars without the use of human intervention. This would be very useful and helpful if this is implemented in the washing machines.

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