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Automatic Gauze Machine

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ABSTRACT:

While preparing the gauze especially in post-operative rooms and in ambulances, nurses and the medical staff do time consuming wrapping of these gauzes. This job can be facilitated through our proposed system that is not yet developed especially in Lebanon. We designed an Automatic Gauze Cutter that can output both the number and the size of the Gauze pieces that are needed in hospitals, emergency and medical centers etc. Our goal is to provide a cost-effective, user-friendly and fast machine. We also aim to reduce the time needed for the nurses and medical staff to cut and wrap the gauze, especially in post-operative rooms.



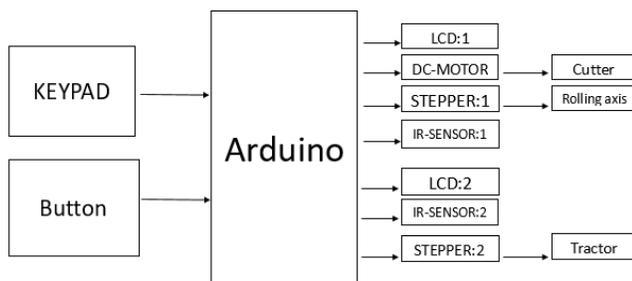
INTRODUCTION:

- In hospitals, nurses use so many gauze for injuries, scratches, burns, surgeries..
- Preparing and Cutting gauze into different sizes is time-consuming;
- Automatic medical gauze machines are not yet developed and are not yet available in Lebanon, thus usually nurses and medical staff do it manually in an affordable way.



DESIGN:

Components	Description
Keypad	Inputs the number and size of the Gauze pieces.
DC-Motor	Enforce the cutter by high torque.
IR: 1	Senses if the gauze roll is finished.
LCD: 1,2	Displays the result.
Stepper: 1	Insures the movement of the roll through the cutter.
Push Button	Gives permission for the tractor to pull out the Gauze that was sterilized previously.
IR:2	Counts the remaining gauze pieces.
Stepper:2	Enforce the tractor to output the gauze pieces.
Arduino UNO	Used and powered by a 9V battery.
Arduino Mega	



RESULTS:

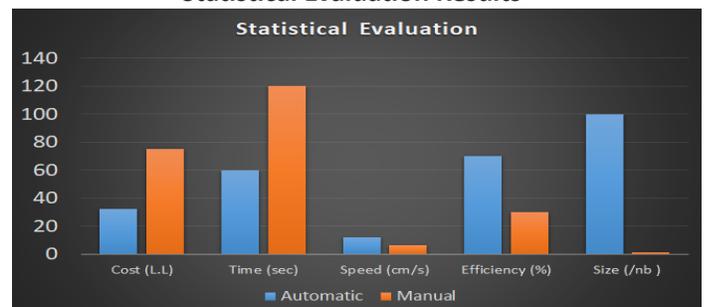
AutoCAD Simulation Results



Experimental Results



Statistical Evaluation Results



Graph Showing the Variation of Features Between the Automatic and Manual System .



CONCLUSION:

With the help of this project and after evaluating the system statistically, all Medical Centers that use Gauze could save budget and time for nurses and medical staff by using the developed Automatic Gauze Machine.

We help you "friendly".