

Fabrication of Automatic Pipe Cutting Machine

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Abstract— To reduce the human effort for repetitive work of cutter as well as providing fixture to support and hold the pipe during cutting Pipe cutting machine is one of the leading machines in the industry. Cutting machine is one of the principle machine in industry in the age automation, we need mass production in particular time period the feeding mechanism is used to feed the pipe while cutting. This mechanism is automatically operated in the AVR microcontroller. It is able to cut pipe and metal bar of different sizes of pipe and will be helpful in many industries due to its compatibility, reliability and efficiency.

Key words: Slider- Crank Mechanism, Microcontroller, Electric Motor Drive, AVR Sensor

I. INTRODUCTION

This is the era of automation where it is broadly defined as the replacement of manual effort by mechanical strength.

Automation has remained an essential part of the operation system, although with varying demands on physical input, the degree of mechanization of two types would be.

This project is based on the microcontroller platform it can be easy to use and flexible to measure the system pipe. According to given input, the length is correct motors are required speed (driven by the microcontroller per meter per meter). The reason for the cutting has been designed to measure the measured length of the pipes in proper form.

Semi operations require a combination of manual effort and mechanical strength. While participation in full operation human is very world-wide. Without the production and manufacturing.

The mechanical engineer is meaningless and inseparable. New the Title fabrication of automatic pipe cutting machine rivels much about the project to reduce the labour charge and increase the productivity automation is required. Our project is the key solution to the problem explain above all the mechanism required are mounted on the frame for the input motion motor is used in the machine.

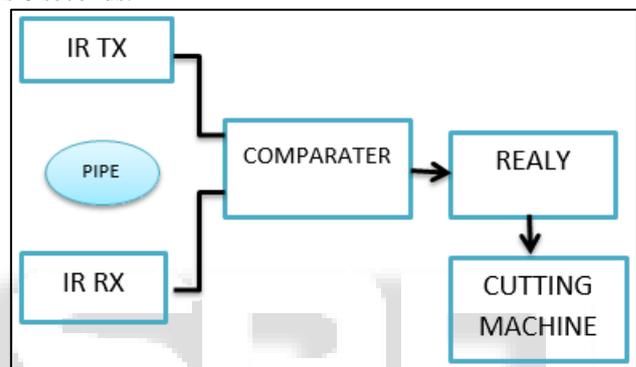
The model of pipe cutting machine is design and public area does for the consideration and requirement in the industry. Today's demand of global industrialization is the less use of man power as well as the efficient use of the money associate with our model satisfies the need of automation with the minimum cost incurred .we have demonstrated and successfully analyzed the model. The main objective of the automatic the process of pipe cutting is achieved to great extend and the also number of labour required is reduced also the span required for completing the process is drastically reduced.

II. FUTURE SCOPE

Automatic pipe cutting machine is used for multiple purpose by using different cutter blade it can use metal cutting wire cutting and wood cutting it is more beneficial and reduce the time of cutting system it also more compact and portable

III. WORKING

As the pipe is feed towards the cutter, the IR sensor sense the pipe. as the pipe is sense by IR sensor the microcontroller start the cutter machine. as the IR sensor sense the pipe for cutting the microcontroller operates the cutting. the cutter machine has an slider crank mechanism for horizontal movement for cutting the pipe as the pipe the sense by IR sensor the microcontroller sense a movement to cutter and cutter is cut the pipe at proper to length and feed provided the pipe is then forced the pipe to flow down after cutting similarly procedure is same for the next pipe the maximum time to sense the pipe is 6 seconds.



IV. COMPONENTS

- 1) IR sensor
- 2) cutting machine
- 3) cutter
- 4) clamp
- 5) slider crank mechanism
- 6) DC motor 10rpm
- 7) AVR Microcontroller
- 8) Wire
- 9) Relay
- 10) Adapter

V. ADVANTAGES

- 1) Mass production is possible with little modification.
- 2) Easy setup.
- 3) Can be operated with unskilled worker.
- 4) It is portable.
- 5) Less maintenance

VI. DISADVANTAGES

- 1) Additional cost is required to do further automation.

VII. APPLICATION

Our project has wide range of applications in industries:

- 1) Small and medium Metal Cutting Industries.
- 2) Workshops

VIII. CONCLUSION

Thus, this work provides an alternative to the existing automatic automatic. Pipe cutting machine, in terms of automating the pipe entry into the cutting apparatus, eliminates power fluctuation and lesser initial investment. Time consumption is less when compared to automatic cutting. This work provides the desired output for automation and fabrication. This machine is very useful for small scale industries.

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