

PNEUMATIC HACKSAW MACHINE

Lambate A.S*¹ Waykar G.B², Shinde S.R³ & Darekar S.V⁴

¹Diploma student, Department of Mechanical Engineering, Jaihind Polytechnic, Kuran, India.

²Diploma student, Department of Mechanical Engineering, Jaihind Polytechnic, Kuran, India.

³Diploma student, Department of Mechanical Engineering, Jaihind Polytechnic, Kuran, India.

⁴Diploma student, Department of Mechanical Engineering, Jaihind Polytechnic, Kuran, India.

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ABSTRACT

The aim of this work is to automate the conventional power hacksaw machine in order to achieve high productivity of work-pieces than the power hacksaw machine using pneumatic power. Pneumatic is a huge topic of engineering dealing with the mechanical properties of air. In our project we take this pneumatic and a hacksaw for cutting purpose, The pneumatic high-speed hacksaw machine has an advantage of working in high air pressure , the hacksaw used in this is reciprocate such that required shape can be cut according to the requirement. The hacksaw is the metal cutting machine tool designed to cut metal by applying air pressure. Hacksaws are used to cut thin and soft metals the operation of the unit is simplified to a few simple operations involving a cylinder bore and piston arrangement. There are numerous systems in hacksaw machine.

INTRODUCTION:

The hacksaw is the metal cutting action tool designed to cut metal by applying pneumatic pressure. The machine exclusively intended for mass production and they represent fasten and more easier way to cut the metal. Hacksaws are used to cut thin and soft metals the operation of the unit is simplified to a few simple operations involving a cylinder block and piston arrangement. There are many numerous systems in hacksaw machine .The main aim of pneumatic hacksaw is to cut thin and soft metals by pneumatic power. Hacksaws are used to cut thin and soft metals the operation of the unit is justified to a few simple operations involving a cylinder block and piston arrangement. There are numerous systems in hacksaw machine.

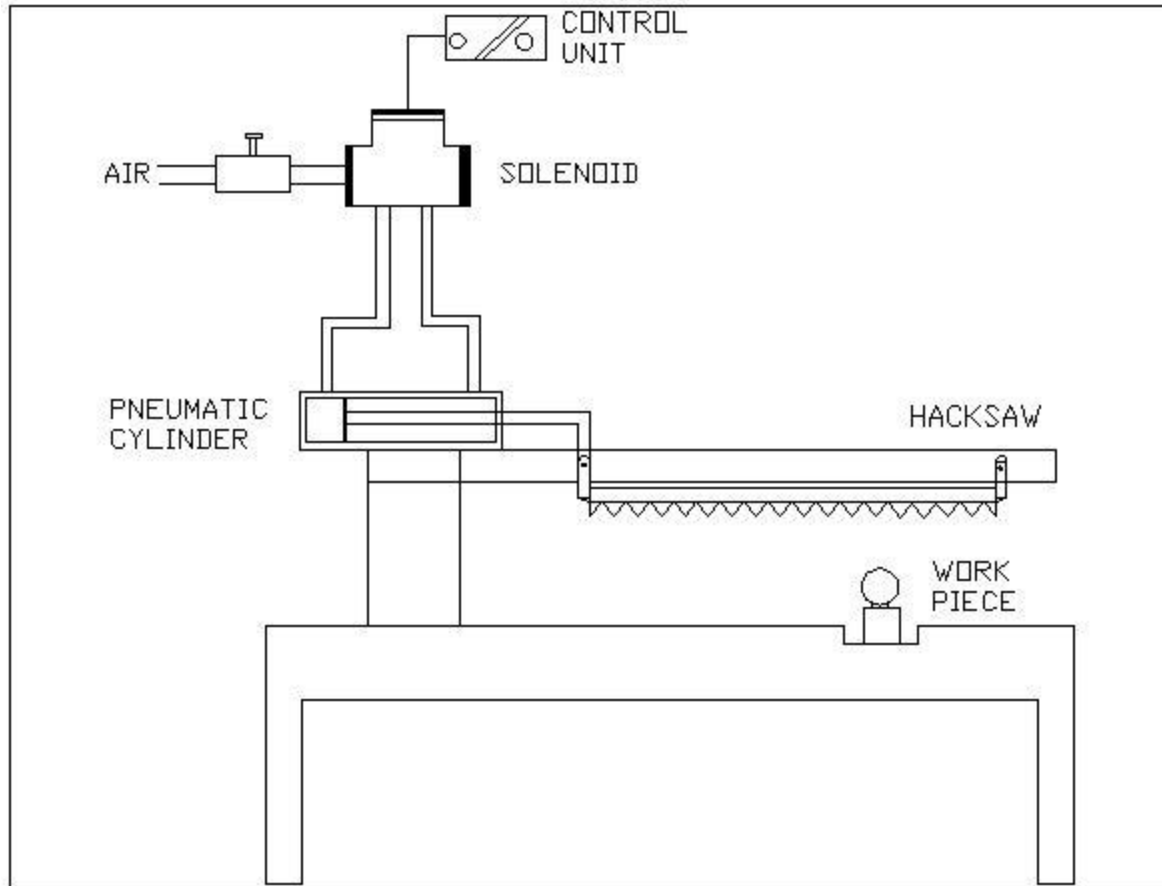
MATERIAL AND METHODS

Material

1. Control unit
2. Solenoidal valve
3. Pneumatic cylinder
4. Hack saw
5. Air compressor
6. Handle
7. Pressure Regulator
8. Connecting ports
9. Houses
10. Actuator



Design

**RESULT AND DISCUSSION**

It is known that conventional power hacksaw machine can be replaced with automated power Hacksaw machine. Automated power hacksaw machine gives high productivity in short time period in comparison with the conventional power hacksaw machines. The major advantage of this machine is intervention of labor is reduced to maximum level. In this rapid emerging industrial section the use of power Hacksaw machine is wide, time and labor plays a major role in production process. This can be overcome by using this type of automated machines.

Calculations

- **Piston Rod:** M.S. hard Chrome plated
- **Seals:** Nitrile (Buna – N) Elastomer
- **Piston:** Aluminium
- **Media:** Air
- **Temperature Range:** 0^oc to 85^oc
- Bore Diameter-- 25 mm
- Stroke Length --80 mm
- Action type-- Double acting
- Maximum air pressure-- 12 bar



CONCLUSION

The automated hacksaw machine can be made use of at any of the industries like pump manufacturing industries that involve bulk amount of shafts that have to be cut frequently. The range of size of work-pieces that can be cut using the automated hacksaw machine can be varied by changing the blade size. Currently, the machine uses 12 inch blade for cutting. An another advancement that can be implemented in automated hacksaw machines is that the user can also get cut work-pieces of different lengths in one cycle itself. This means that the user has to specify the number of work pieces that have to be cut in each of the different length values specified.

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