

Pantograph Universal Gas Cutting Machine

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Abstract –This project namely Pantograph Universal Gas Cutting Machine Is Designed And Fabricated By Us Is Mainly Used To Cut M S Plates Into Any Shapes.It Is Most Viable And Economic Project Among The Other Project What Behave Decided To Do.The Project Has Been By Means Of Initiating The Various Ideas From Our Project Makes Which Make Us To Design And Fabricate The Machine In A Right Manner.

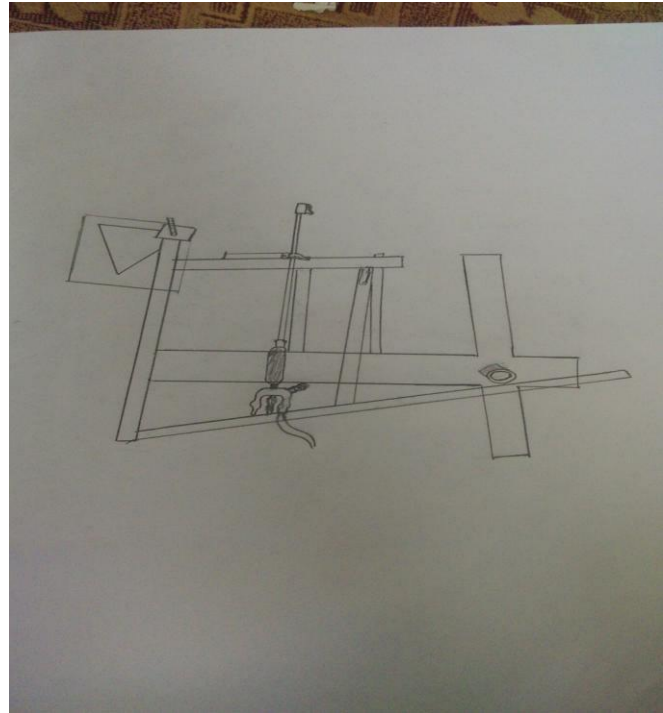
- **This low and high valuable equipment which was not available in the market make create a huge demand if it is introduced to the market. The application of the project is found to be wider. The machine is simple and compact and is easy to operate. Even a lay man can understand the principle of this machine and can operate without any risk.**

INTRODUCTION

- This project namely

PANTOGRAPH UNIVERSAL GAS CUTTING MACHINE is designed and fabricated by us is mainly used to cut M.S plates in to any shapes. It is a most viable and economic project among the other project what we have decided to do. The project has been by means of initiating the various ideas from our project makes which make us to design and fabricate the machine in a right manner.

- This low and high valuable equipment which was not available in the market make create a huge demand if it is introduced to the market. The application of the project is found to be wider. The machine is simple and compact and is easy to operate. Even a lay man can understand the principle of this machine and can operate without any risk.
- It is fully manual and hence there is no need for power consumption.cost of operation is less which leads to more economical.This kind of machine is used in almost all fabrication industries where there is a need to cut the M.S plates which may be require for various production purpose.



1.CROSS FRAME C-STAND

The C-frame stand acts as a base for this pantograph universal gas cutting machine. The other parts cylindrical stand main link etc .are supported by the base.This frame is made up of mild steel.The length of the channel is 880mm and width 630mm. The size of the channel is 75*40*6mm and its weight is 7kg.The various operations involved in manufacturing these cross section structures are like gas cutting and grinding.The thickness of this mild steel channel is 6mm.This base supports a cylindrical pillar which is also made up of mild steel.

SPECIFICATIONS

Material	-	Mild steel
Size	-	75*40*6mm
Weight	-	7kg
Operation	-	Gas cutting,Grinding

2.CYLINDRICAL COLUMN OR

PILLAR

This is in cylindrical shape made up of mild steel which is found to be welded at the junction of the two

–frames.This cylindrical pillar is a pillar which supports the main arm.A collar avoids the unnecessary

movement of the main link.By the help of collar the main link is rigidity fixed in cylindrical collar.The dimensions of the column vary from top to the bottom end.That is the diameter of the pillar is slightly increased from top end to the base end where it has to be welded in the base.

SPECIFICATIONS

Material	-	Mild steel
Total size	-	54*196
Weight	-	3.5kg
Operation	-	lathe

MAIN BUSH

The main bush is made up of a specialized mild steel material namely EN8. The main top bush is in a circular shape and it is found to be hollow in nature. The bushes are welded to a link which makes the links to move freely. The needle bush is in a rectangular shape and it is made up of mild steel materials. The other details and specifications are given below.

SPECIFICATIONS

Material	-	EN8
Size	-	50*44mm(top bush)

Size - 51*31mm(Needle
Bush)

Weight - 0.9kg

Operation - Turning

4.MAIN ARM

The main arm is fixed to the pillar by the help of welding machine. The main link is held or supported with the pillar by the help of the main arm. This is made up of mild steel and the shape is square to a hollow portion at its centre. The other specifications are given below.

SEPCIFICATIONS

Material - Mild steel

Size - 25mm square pipe

Weight - 1kg

Operation - Cutting and grinding

ADVANTAGES

1. It is a faster process.
2. Setting of machine is easy.
3. It reduces the fatigue of the worker.
4. Skilled labour is not required.
5. Labour cost is less.
6. Production cost decreases.
7. The process is most economical.

8. Instead of using electrical power this machine is manually operated there is no cost for power.

APPLICATIONS

1. This machine can be used almost in all type of industries.
2. This machine is mainly used in fabrication oriented industries.
3. The material can be removed at any shape like oval, rectangular, ellipse, square.

CONCLUSION

The report details with the design of the pantograph universal gas cutting and is attached with part drawings.

The project carried out by us made an impressing task in the field of large scale industries. It is very usefully for the workers to carry out a large number of same pieces can be done in a machine. The time to perform the operation is very low when compared to ordinary Gas cutting machine.

This project has also reduced the cost involved in the concern. Project has been designed to perform the entire requirement task which has also been provided.