Department of Mechanical Engineering

NEWSLETTER

ISSUE 7: Summer 2021

Shanti Education Society's

A. G. PATIL POLYTECHNIC INSTITUTE, SOLAPUR

Mr. S. K. Mohite
Head (Mech. Engg. Dept.)

VISION:

To provide technical education and values in areas of Mechanical Engineering to create professionals to meet the needs of industry, business and society

MISSION:

- **To provide skilled manpower to the industry**
- **To educate students to be Entrepreneurs and Team leaders with ethics**
- **To motivate students for research and innovation for humanity**

PEO's:

- **To develop ability to work as Supervisor, Manager and Entrepreneur**
- **To present themselves as responsible Mechanical Engineering professionals with ethics**
- **To inculcate ability to develop Mechanical product and processes by considering social and environmental aspects**

NEWS FROM THE DEPARTMENT:

It gives me immense pleasure to present before you the annual academic report for academic year 2020-21 of Mechanical Engineering Department.

We are proud that our mechanical program is NBA accredited and also awarded as "Excellent" grade by Maharashtra state Board of Technical Education, Mumbai.

In the academic year 2020-21 Mechanical Department arranged different online activities for students, to enhance their skills and performances in academic. Department has intake of 60 students.

Total 11 faculties are working in Mechanical department out of them 80% faculties completed their post graduation with different specialization. Overall 27 Technical Papers are Published by Faculty in 2020-21

7 Faculties participated in industrial training or workshop or any short term training program

Patents:

- Mr. Mulla J.G. filed a patent named Design of Dipstick Spanner for bike.

Teachers had to adapt to new pedagogical concepts and modes of delivery of teaching in this pandemic, for which they may not have been trained. Therefore different schemes are proposed by department to AICTE - Quality Improvement Scheme. Total 3 schemes are sanctioned.

Out of three, A scheme sanctioned by AICTE is to get '3D Printer'. STTP on Teaching learning Pedagogies is also sanctioned by AICTE.

TOPPERS

2020-2021

TY

Katte Anil
96.46%

Mane Vikram
95.03%

Ghadge Prajyot
94%

SY

Kulkarni Samarth
95.25%

Kulkarni Nachiket
90.99%

Karkale Rohit
90.90%

FY

Dhadde Kedar
89.10%

Mulla Aman
87.51%

Bharle Arati
86.48%

BEST PROJECTS

"DESIGN OF PRESS TOOL FOR HANDLE BRACKET"

Under the guidance of

Mr. J. P. Pinjar

SUBMITTED BY

Ms. Snehal Maske

Mr. Siddhant Maske

Mr. Kiran Bhakte

Mr. Soban Shaikh

ABSTRACT

Press tools are used to produce a particular component in large quantity, out of sheet metals where particular component achieved depends upon press tool construction and its configuration. A rivet is a permanent mechanical fastener. Before being installed, a rivet consists of a smooth cylindrical shaft with a head on one end. The end opposite to the head is called tail. On installation, the rivet is placed in a punched and drilled hole, and tail is upset, or buckled (i.e., deformed), the head is supported against the direction of the tail when upsetting so it will stay on place; the tail expands to about 1.5times the original shaft diameter, holding the rivet in place. In other word, the pounding or pulling creates a "head" on the tail end by smashing the "tail" material flatter, resulting in air that is roughly a dumbbell shape. To distinguish between the two ends of two rivets, the original head is called the factory head and the deformed end is called the shop head or buck tail.

INTRODUCTION

High rate production industries generally use press machines. Thickness can vary significantly, although extremely small thicknesses are considered as sheet and above 6 mm are considered as plate. Thickness of the sheet metal fed in between is called its gauge. Sheet metal is simply fed in between the dies of press tool for any press operation to perform. The reciprocating movement of punch is caused due to the ram movement of press machine. The press machine may be of electrical type, mechanical type, pneumatic type, manual type and hydraulic type. In today's practical and cost conscious world, sheet metal parts have already replaced many expensive cast, forged and machined products. The common sheet metal forming products are metal desks, file cabinets, appliances, car bodies, aircraft fuselages, mechanical toys and beverage cans and many more. Due to its low cost and generally good strength and formability characteristics, low carbon steel is the most commonly used sheet metal because high carbon composition gives high strength to the material.

CONCLUSION

The press tool design is a tedious work, but once it get completed we can use it for mass production. The functionality of press tool is much better than the any manual operations that can be carried out in any production processes. The similarity is that the main component are subjected to design as per the tonnage rating of press tool , die design, etc. will be carried out in connection with the proper analysis in future by using modern software's in order to analyze the different types of multidimensional mechanical properties. The important task in component manufacturing in press tool is Scrap strip layout where material utilization has prime importance.

BEST PROJECTS

"DESIGN & FABRICATION OF 'F' CLAMP"

Under the guidance of

Mr. J. P. Pinjar

SUBMITTED BY

Mr. Purushottam Manekari

Mr. Akash Utagikar

Mr. Parth Bhumkar

Mr. Amit Ingale

ABSTRACT

An F-clamp, also known as a bar clamp or speed clamp, is a type of clamp. The name comes from its "F" shape. The F-clamp is similar to a C-clamp in use, but has a wider opening capacity (throat). This tool is used in woodworking while more permanent attachment is being made with screws or glue, or in metalworking to hold pieces together for welding or bolting. An F-clamp consists of two horizontal bars joined together by a vertical bar. There is a large screw on the lower bar to allow for the clamp to be tightened. F-clamps are adjustable which allows for them to be used on larger scale objects without the need for a large screw. An F-clamp is also a simple mechanical device used for lifting engine or transmission parts. The clamp has an adjusting screw to tighten onto the part and a lifting ring to attach a hoist cable.

INTRODUCTION

A An 'F' clamp is a handy device, used for securely holding a workpiece in place while carrying out work on it. The applications that a clamp can be used for include: *Woodworking and carpentry:* A clamp may be used for holding a piece of wood to a workbench, in order for a variety of woodworking tasks to be completed, such as sawing or chiseling. *Metalworking:* For applications, such as welding, grinding or fabrication, a clamp is an ideal tool to use for holding all types of metals, including steel, iron, aluminum and copper. *Drilling:* A clamp can be used to hold a workpiece firmly in place on drill table.

F-clamps are available in many different sizes. Always use an F-clamp which is large enough to support the workpiece; otherwise there will be a risk of damaging the screw. Similarly to the majority of clamps, an F-clamp's size and clamping capacity is determined by its jaw opening and throat depth. The smallest jaw opening available is 80mm.The largest jaw opening available is 1500mm. Its strong construction makes it the ideal tool to use for heavy-duty woodworking, as it can withstand the pressure that comes with clamping large and heavy workpieces.

CONCLUSION

C-clamps or G-clamps are typically made of steel or cast iron, though smaller clamps may be made of pot metal. At the top of the "C" is usually a small flat edge. At the bottom is a threaded hole through which a large threaded screw protrudes. One end of this screw contains a flat edge of similar size to the one at the top of the frame, and the other end usually a small metal bar, perpendicular to the screw itself, which is used to gain leverage when tightening the clamp. When the clamp is completely closed, the flat end of the screw is in contact with the flat end on the frame. When the clamp is actually used, it is very rare that this occurs. Generally, some other object or objects will be contained between the top and bottom flat edges. This holds the firm fixturing for the clamping part of any length and size in the fabrication as well as machining work on raw material.

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COURSES OFFERED IN DIPLOMA ENGINEERING

Discipline	Intake Capacity	Duration of Course	Accreditation Status
Electrical Engineering	60	3 years	New Course Started from 2020
Mechanical Engineering	60	3 years	NBA Accredited
Electronics and Telecom. Engineering	60	3 years	NBA Accredited
Civil Engineering	60	3 years	NBA Accredited
Computer Engineering	60	3 years	NBA Accredited
Total Intake	300