

Review Paper on Connection to Lathe System for Gear Cutting

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ABSTRACT: *The key purpose of this paper is to include the literature analysis of the Gear Cutting Machine Connection. As the gear cutting process is mainly carried out on the milling machine and the expense of the milling machine is also very high, which is not economical for small-scale industries. This would minimize the initial expenditure of small-scale milling companies that can use their lathe for gear cutting operations. It would therefore reduce the area covered by the computers, and the remaining space will be used for more useful work outputs.*

KEYWORDS: *Shape milling, Lathe, Gear cutting, Machine, Small scale industry, Guidelines.*

INTRODUCTION

As the population of our world is growing day by day, the market for various goods has risen. This has contributed to a growth in the number of different enterprises, most of which are small-scale industries that produce small parts for different large-scale industries. Cost saving is one of the key factors considered in small-scale manufacturing [1]. If the industry will decrease the cost of production, it would reduce the cost of revenue and improve the economic economy of the industry. This would also have a positive effect on the cost of the commodity [2].

1.1 Machine Gears:

The gears are a toothed disc used for transferring power over short distances. Positive forms of drive are favored in computers. The essential use of the different types of gears is as follows:

- a. Spur gear
- b. Helical gear
- c. Rack & pinion
- d. Worm & worm wheel
- e. Bevel gear
- f. Spiral gear

1.2 Lathe Machine:

Lathe is one of the earliest machine tools and is intended to strip metal from the workpiece and give it the form and scale it requires. The lathe is made up of a bed, a slip. The spindle that holds the work carrying unit is normally pushed by the engine via the gearbox to achieve different speeds. The carriage travels along the lines of the bed lead, parallel to the axis of the work spindle, and the cross-slide provides the transverse motion required by the movement of the feed shaft to the spindle drive.

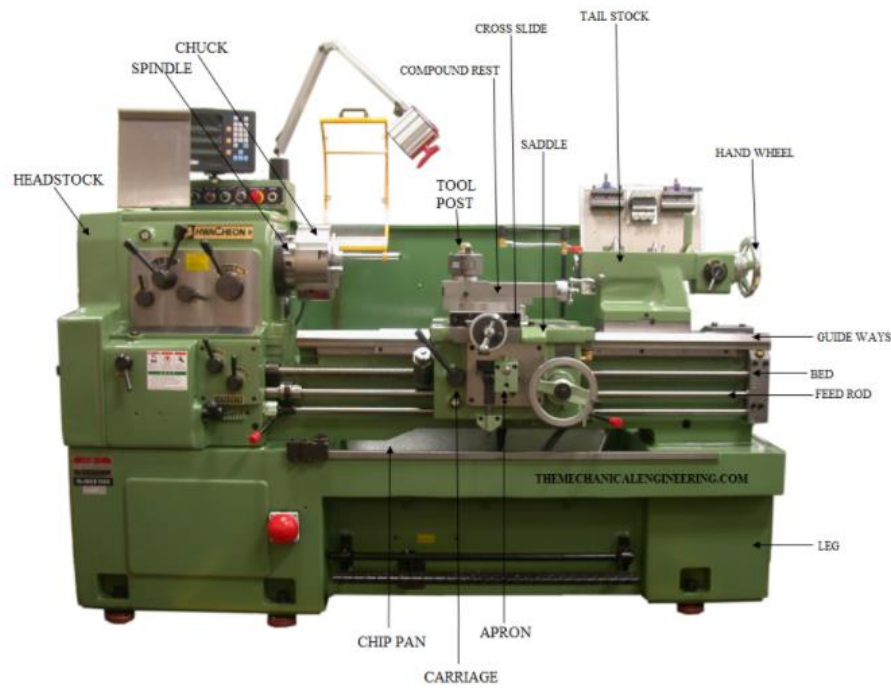


Figure 1: Picture of a Lathe machine

1.2 Form Milling:

Form milling is a method of CNC milling procedure for the development of irregular contours consisting entirely of curves or curves and straight lines, with a single milling cutter. The special irregular form may be concave, convex or of some other shape. The machining speed of the shape milling process is 20 to 30 percent lower than that of the straight milling operation [3][4].

1.2.1 Benefits of Using Form Milling:

While the shape milling method is not inexpensive, it does make an important contribution to saving time, preserving precision and reducing total costs, which is helpful to the business [5]. One of the greatest benefits of shape milling, and when you need it the most, is when we get into situations where hard precision is required to mill or produce several times, whether you have different radius and all, we can mix that tool and then come across and mill everything all at once [6].

1.2.2 Milling cutter:

Shape milling cutters do not have a standard definition, they are used to create 2D and 3D contour surfaces. Various shape cutters are available in various sizes, configurations and for different uses. Shape cutters may be made of alloy steel, solid carbide, brazed carbide and HSS. Popular types of milling cutters include convex, concave and corner milling cutters. Shape milling cutter may also come in straight gash, spiral gash, serration form, special relief form, basic keyway bores, and complicated hubs and shanks. The teeth of the moulding cutter have a shape that corresponds to the profile of the surface to be made. Shape milling cutter can be used in a range of traditional CNC milling and machining methods, including internal ball nut milling, external rotary thread milling on hard-to-turn products, internal thread milling on neck ring moulds, internal rotary enclosure milling, groove milling, full radius milling, chamfering, face milling and more. Choosing a flexible shape cutter can not only increase your effectiveness, but also improve your ability [7].

LITERATURE REVIEW

Lathe is one of the earliest machine tools and is intended to strip metal from the workpiece and give it the form and scale it requires. The lathe is made up of a bed, a slip. The spindle that holds the work carrying unit is normally pushed by the engine via the gearbox to achieve different speeds [8].

RESULT AND CONCLUSION

We can infer that the gear cutting connection for the lathe machine can minimise the requirements of the milling machine for the gear cutting industry in limited scales. This will contribute to savings in the expense of buying a milling machine. Increase the workplace of the industry. Increase the versatility of the Lathe machine as no. of the operations that can be performed on the lathe machine would increase. As a result, the cost of producing gear cutting will decrease and this will lead to economic growth for small-scale industries.

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