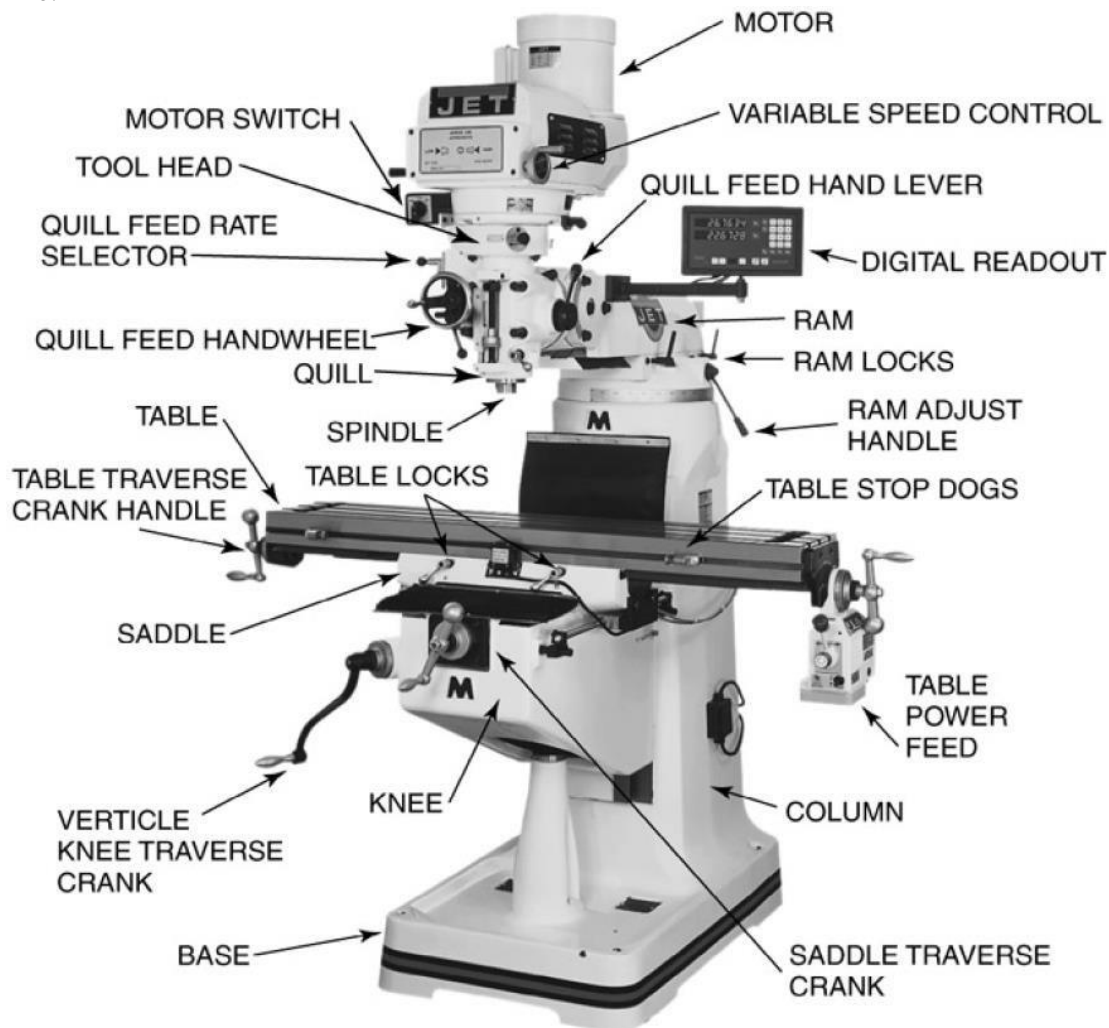


Introduction

Milling machines are very versatile. They are usually used to machine flat surfaces, but can also produce irregular surfaces. They can also be used to drill, bore, cut gears, and produce slots. The type of milling machine most commonly found in student shops is a vertical spindle machine with a swiveling head. Although there are several other types of milling machines, this document will focus only on the vertical milling machine.



Safe Use of Milling Machines

- Keep all guards in place while operating the machine.
- While operating the milling machine allow no one else to touch it.
- Keep hands away from moving cutting tools.
- Do not make measurements of the stock while the milling machine is powered.
- Do not allow large quantities of chips to accumulate around the work piece or machine table. After stopping the machine, use a brush or rag to remove all excess chips from the mill bed and stock.
- Use a rag or Kevlar gloves to handle sharp cutting tools.
- Cutting tools must be securely fastened in the machine spindle with the proper accessory. Never try to tighten cutting bits or tools by hand.

- Do not power the machine to tighten or loosen cutting bits or tools.
- Work pieces and stock must be rigidly fastened to the mill bed with clamps, a vise, or special fixtures.
- Use appropriate speeds and feeds for the type and size of cutter being used and the material being machined.
- Make sure the cutting tool is clear of the work piece before starting the machine.