

Chapter 9

Fastening Methods

The man who makes no mistakes does not usually make anything.
—Edward John Phelps

Introduction

Most machine shop time is spent turning raw materials into finished parts, but the next manufacturing step is often assembling and fastening together these parts. This chapter looks at both fastening *devices*: screws, bolts, pins, and rivets, and fastening *processes*: adhesive bonding, soldering, and welding. Cost, weight, strength, availability, reliability, corrosion resistance, and simplicity are some of the many factors that influence the fastening method used by the prototype or non-production machinists. There are over one hundred different fastener designs and tens of thousands of variations when size, finish, and material are counted. This chapter presents the most common fastening methods. Information on other methods can be obtained from *Machinery's Handbook*, industrial tool supply catalogs, and manufacturers' product literature. These sources often include excellent application notes.

Section I – Threaded Fasteners

Parts of a Bolt

What are the parts of a bolt?

See Figure 9–1.

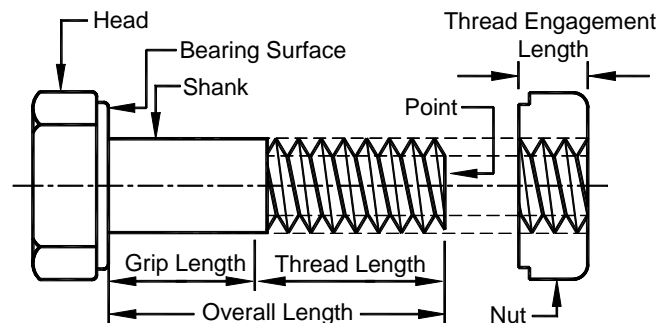


Figure 9–1. Bolt nomenclature.