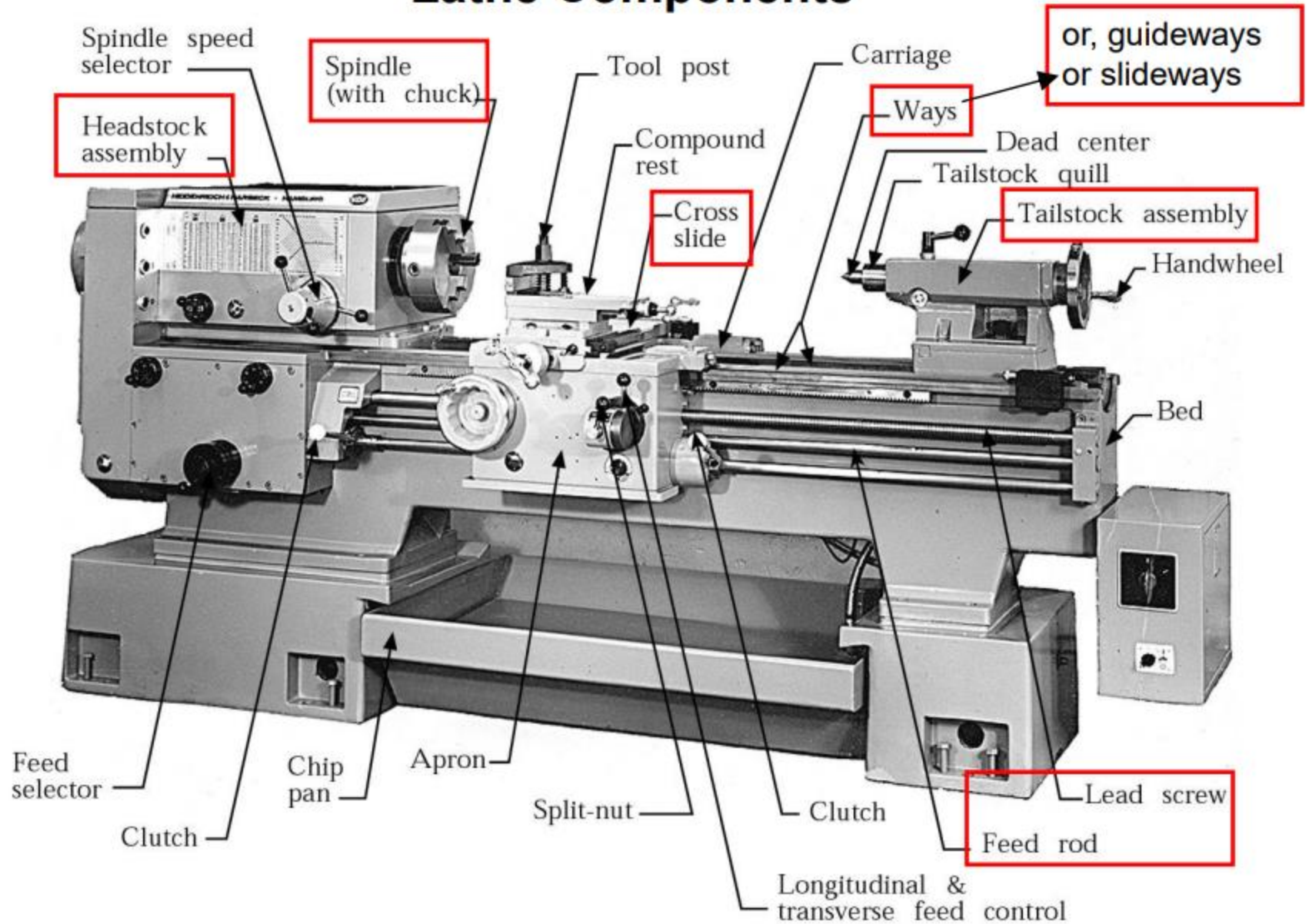




# Lathe Components



**Machining Process:** It is a process in which a piece of raw material is cut into a desired shape and size by means of sharp cutting tools called a Machining Process.

**Types of Machining Operations:**

There are two types of machining process.

**1. Conventional Machining Process**

Drilling

Milling

Turning

Boring etc.

**2. UnConventional Machining Process:** An advanced to Conventional Machining processes

USM (Ultrasonic Machining)

EDM (Electric Discharge Machining)

ECM (Electro Chemical Machining)

Laser Machining

Wire-cut EDM etc.

### **Advantages of Machining Process:**

A high surface finish can be obtained.

Machining is not only performed on the metal but it also performs on wood, plastic, composites, and ceramics.

Variety of geometry features are possible, such as Screw threads, Very straight edges, Accurate round holes etc.

Good dimensional accuracy.

### **Limitations of Machining Process:**

The accuracy of the components produced is dependent on the efficiency of the operator.

The consistency in manufacturing is not present. Hence 100% inspection of the component is required.

The personal needs of the operator are reducing the production rates.

Because of a large amount of Manpower involved, the labor problem will also be high.

The complex shapes like parabolic Curvature components, Cubic Curvature components are difficult to manufacture.

Frequent design changes in the component cannot be incorporated into the existing layout.

To overcome the above disadvantages, the advanced machining methods like NC, CNC, DNC, FMS, etc. have been developed.

# Machining Operations

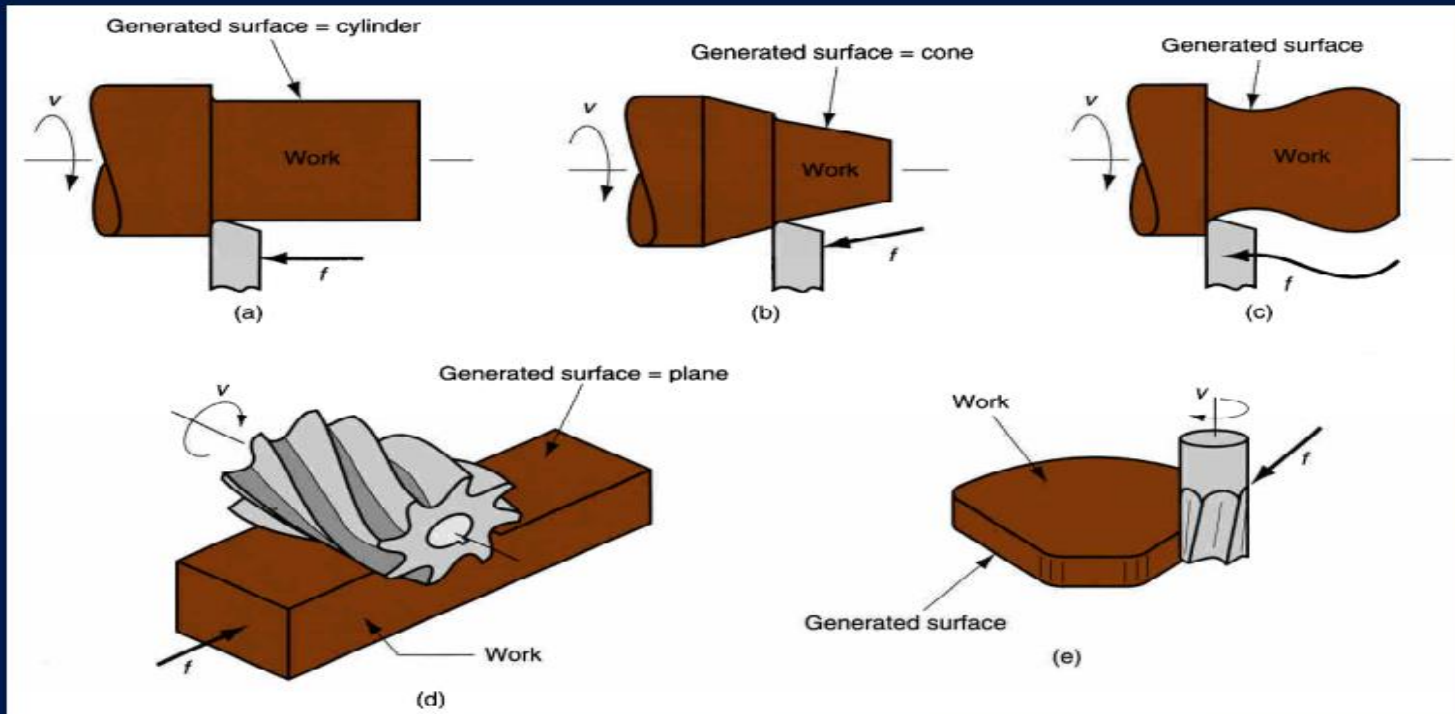


Figure 22.2 - Generating shape: (a) straight turning, (b) taper turning, (c) contour turning, (d) plain milling, (e) profile milling

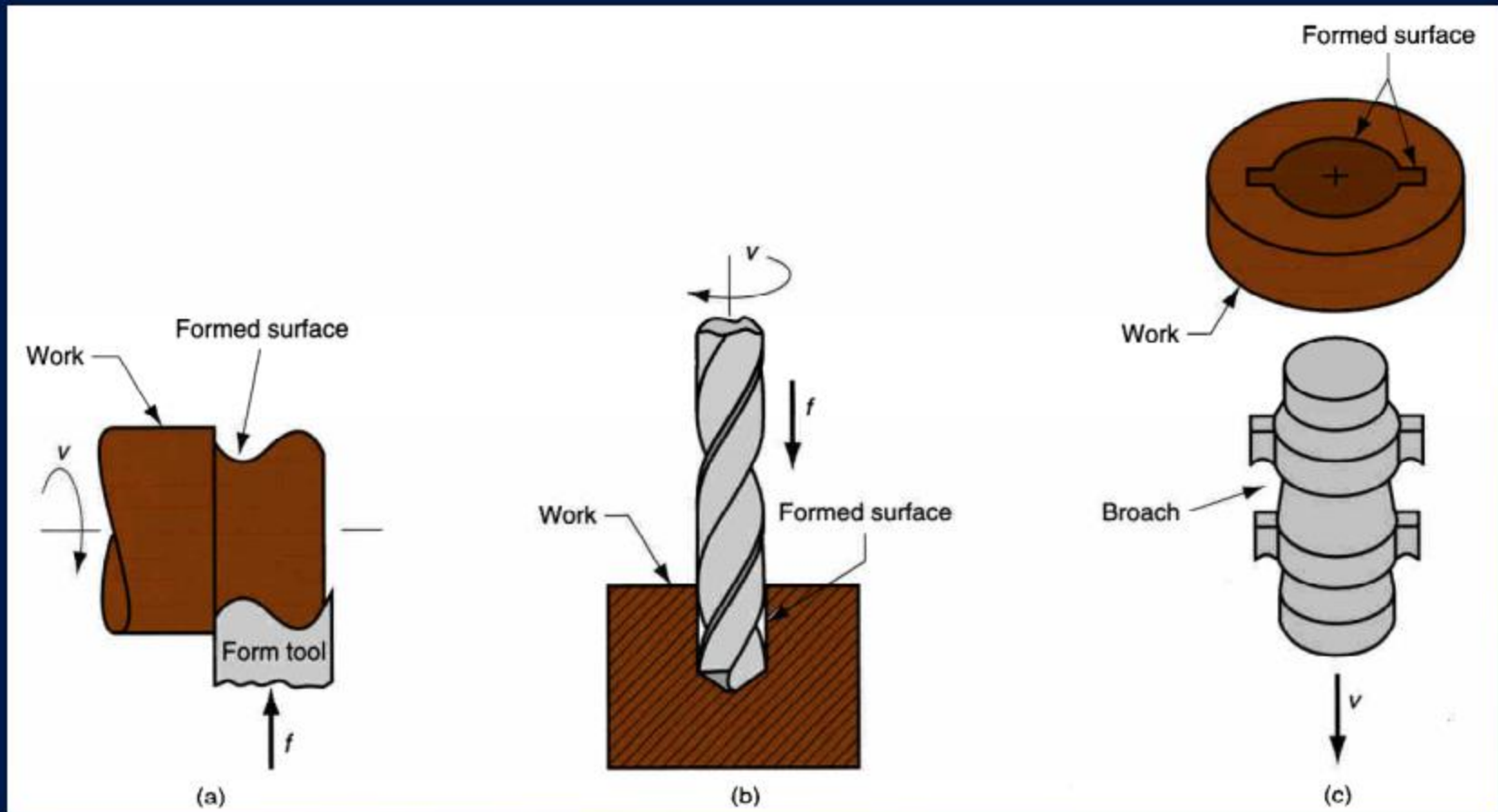


Figure 22.3 - Forming to create shape: (a) form turning, (b) drilling, and (c) broaching