

Reciprocating IC engine Terminology

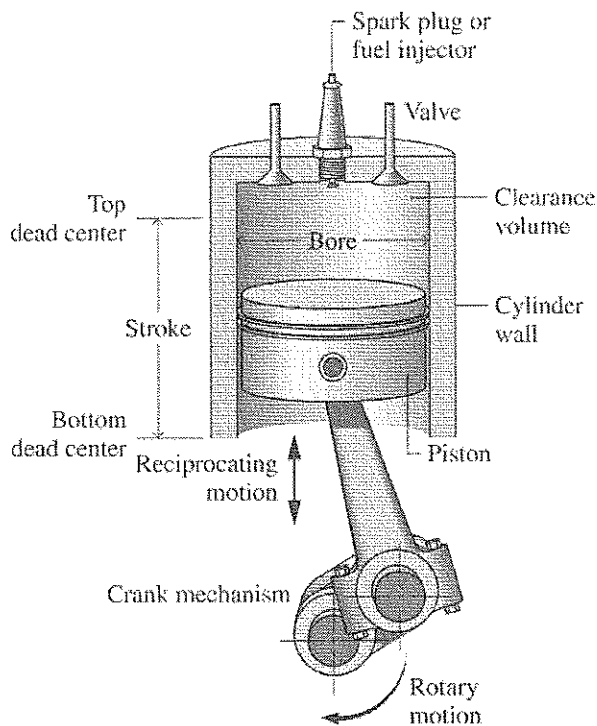


Figure Nomenclature for reciprocating piston-cylinder engines.

- ✓ The sketch is labeled with some special terms.
 - The *bore* of the cylinder is its diameter.
 - The *stroke* is the distance the piston moves in the direction.
 - The piston is said to be at *top dead center* when it has moved to a position where the cylinder volume is a minimum.
 - This minimum volume is known as the *clearance* volume.
 - When the piston has moved to the position of maximum cylinder volume, the piston is at *bottom dead center*.
 - The volume swept out by the piston as it moves from the top dead center to the bottom dead center position is called the *displacement volume*.
 - The **compression ratio** r is defined as the volume at bottom dead center divided by the volume at top dead center.
 - The reciprocating motion of the piston is converted to rotary motion by a crank mechanism.

The **mean effective pressure** is defined as

$$mep = \frac{\text{net work for one cycle}}{\text{displacement volume}} \quad (9.1)$$