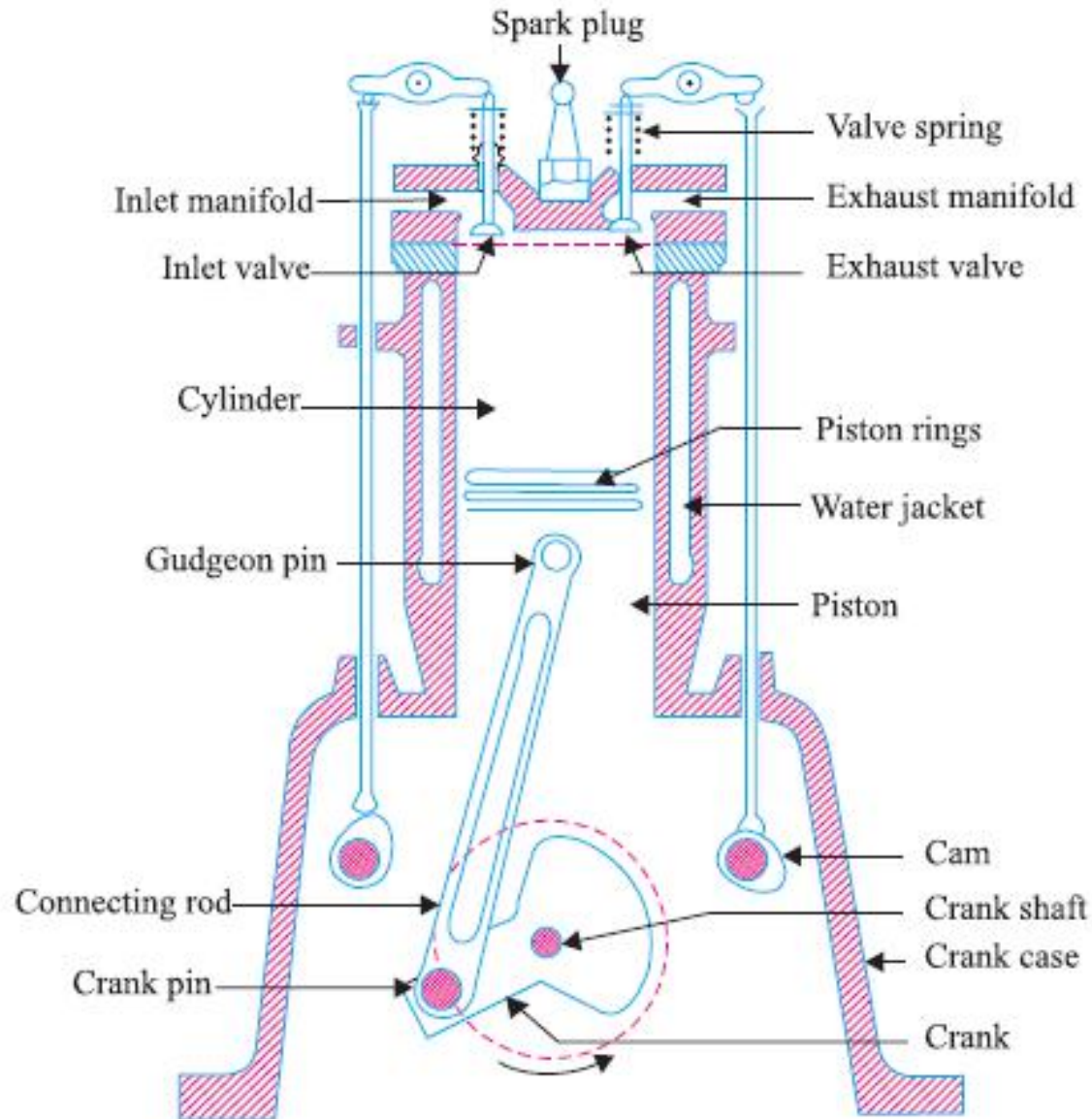


Unit-4

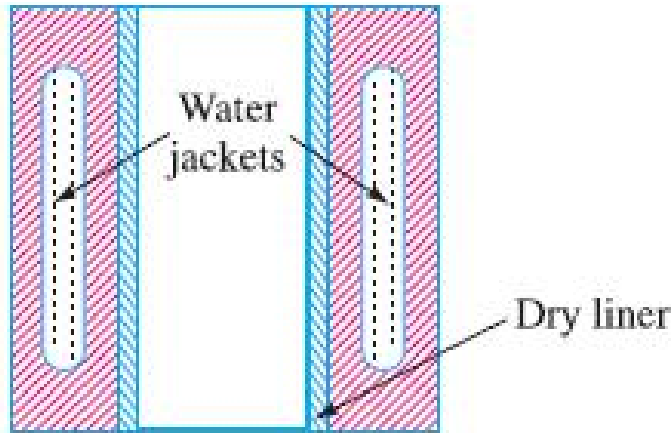
I.C. Engine Part -

1 & 2

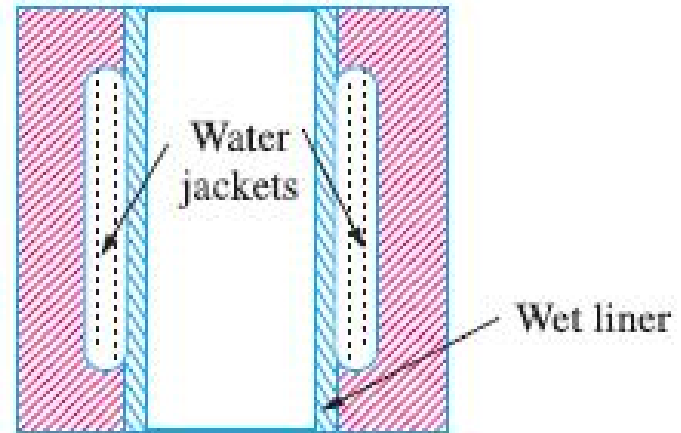
PRINCIPAL PARTS OF AN ENGINE



CYLINDER LINER



(a) Dry liner.

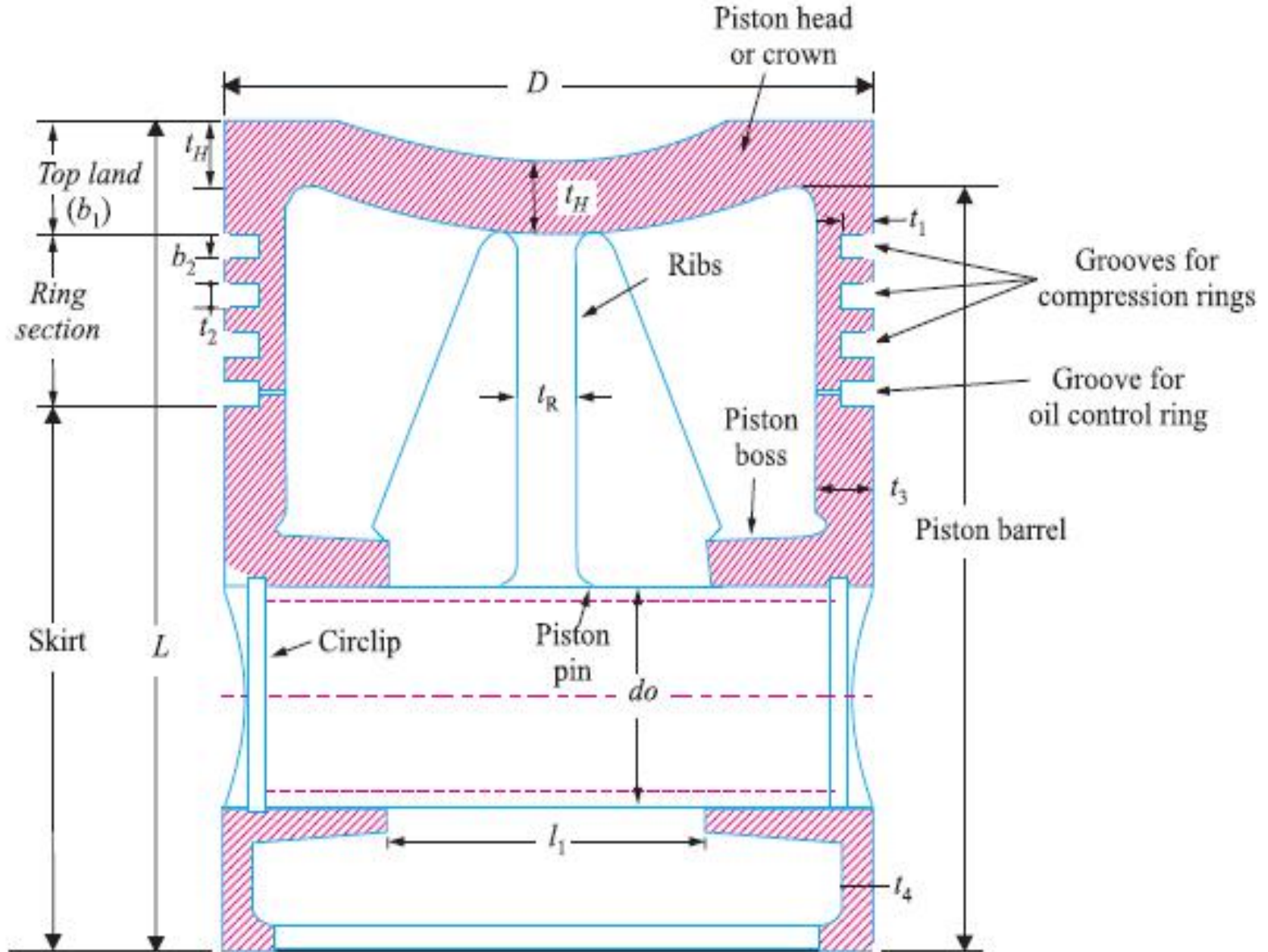


(b) Wet liner.

A cylinder liner which does not have any direct contact with the engine cooling water, is known as **dry liner**, as shown in Fig.(a).

A cylinder liner which have its outer surface in direct contact with the engine cooling water, is known as **wet liner**, as shown in Fig.(b).

PISTON NOMENCLATURE

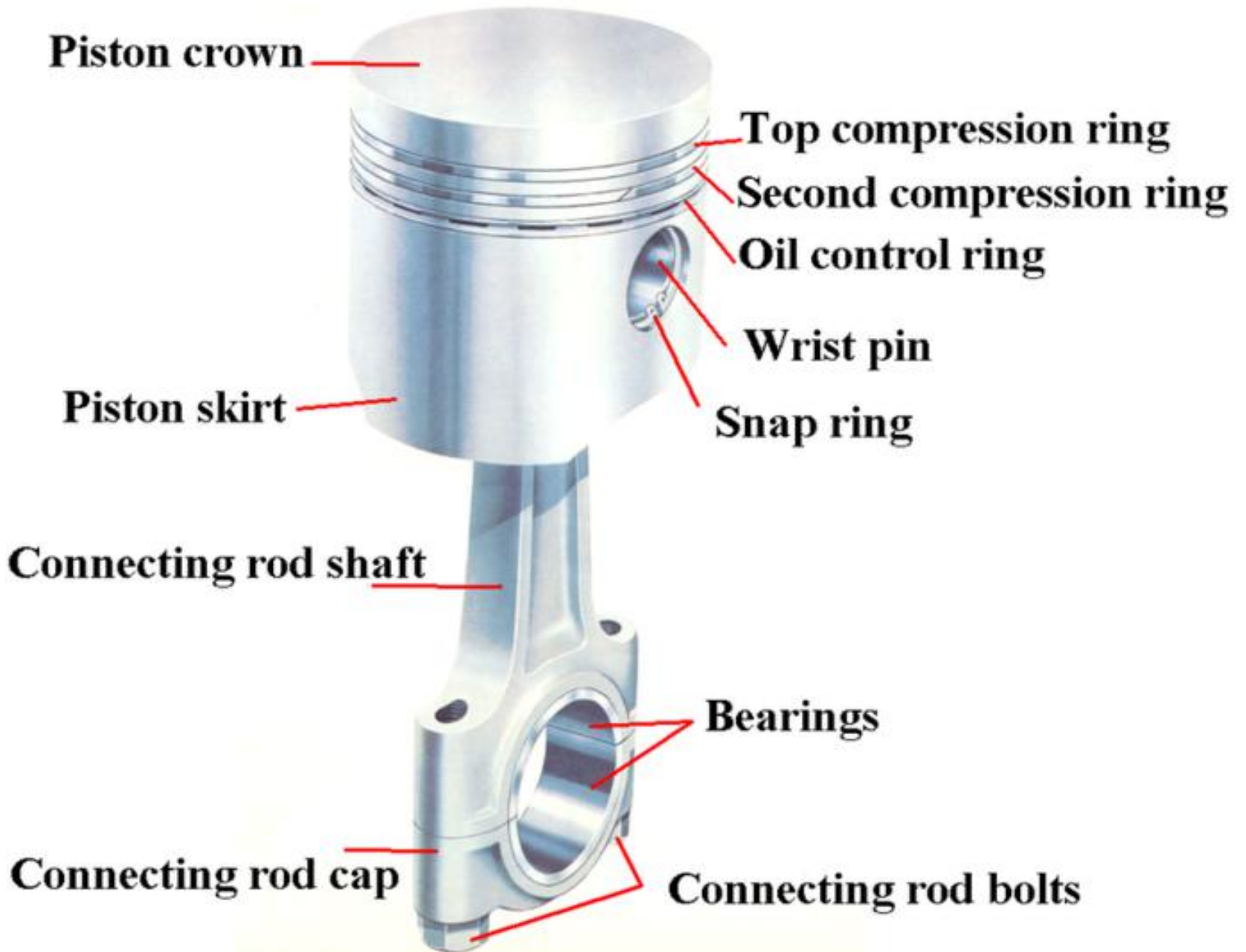


1. Head or crown. The piston head or crown may be flat, convex or concave depending upon the design of combustion chamber. It withstands the pressure of gas in the cylinder.

2. Piston rings. The piston rings are used to seal the cylinder in order to prevent leakage of the gas past the piston.

3. Skirt. The skirt acts as a bearing for the side thrust of the connecting rod on the walls of cylinder.

4. Piston pin. It is also called gudgeon pin or wrist pin. It is used to connect the piston to the connecting rod.



DESIGN CONSIDERATIONS FOR A PISTON

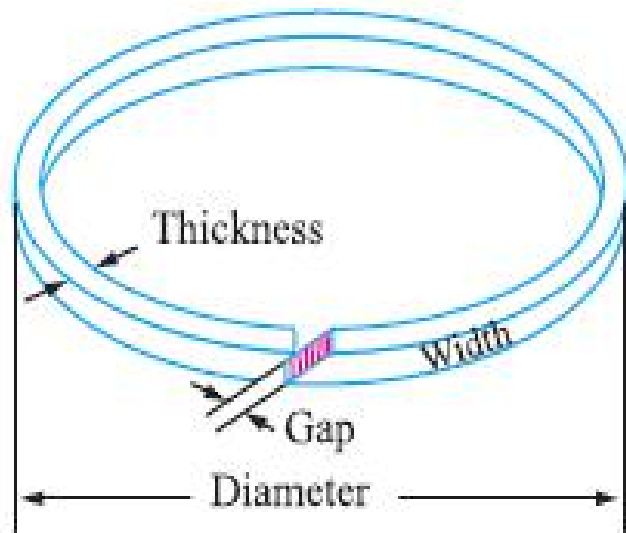
In designing a piston for I.C. engine, the following points should be taken into consideration :

1. It should have enormous strength to withstand the high gas pressure and inertia forces.
2. It should have minimum mass to minimise the inertia forces.
3. It should form an effective gas and oil sealing of the cylinder.
4. It should provide sufficient bearing area to prevent undue wear.
5. It should disperse the heat of combustion quickly to the cylinder walls.

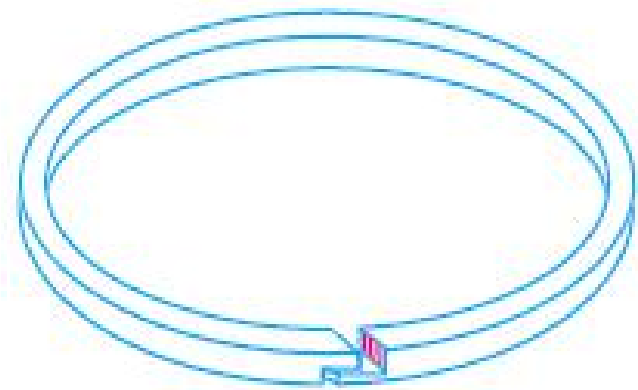
6. It should have high speed reciprocation without noise.
7. It should be of sufficient rigid construction to withstand thermal and mechanical distortion.
8. It should have sufficient support for the piston pin.

The most commonly used materials for pistons of I.C. engines are **cast iron, cast aluminium, forged aluminium, cast steel and forged steel.**

PISTON RINGS

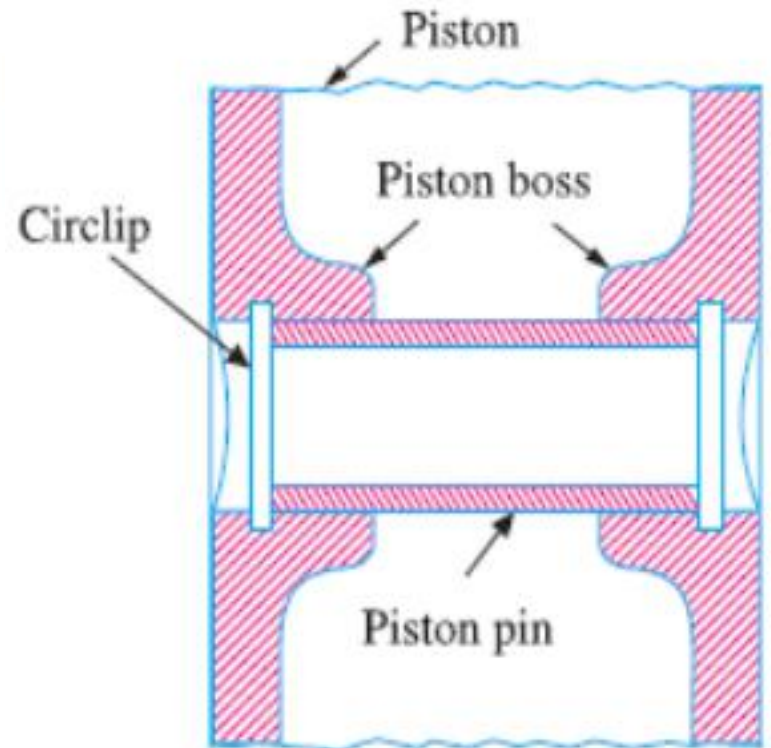
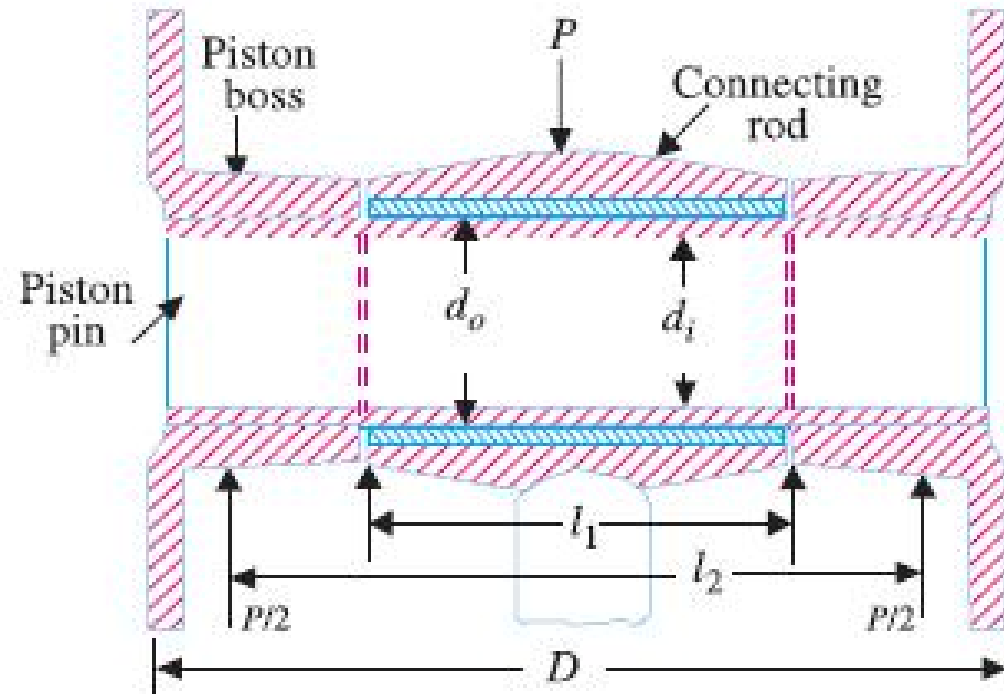


(a) Diagonal cut.



(b) Step cut.

PISTON PIN



Connecting Rod

