

TYPES OF BOILERS:

The boilers can be classified according to the following criteria.

According to flow of water and hot gases.

1. Water tube.
2. Fire tube.

In water tube boilers, water circulates through the tubes and hot products of combustion flow over these tubes. In fire tube boiler the hot products of combustion pass through the tubes, which are surrounded, by water. Fire tube boilers have low initial cost, and are more compact. But they are more likely to explosion, water volume is large and due to poor circulation they cannot meet quickly the change in steam demand. For the same output the outer shell of fire tube boilers is much larger than the shell of water-tube boiler. Water tube boilers require less weight of metal for a given size, are less liable to explosion, produce higher pressure, are accessible and can response quickly to change in steam demand. Tubes and drums of water-tube boilers are smaller than that of fire-tube boilers and due to smaller size of drum higher pressure can be used easily. Water-tube boilers require lesser floor space. The efficiency of water-tube boilers is more.

Water tube boilers are classified as follows.**Various advantages of water tube boilers are as follows:**

- (i) High pressure of the order of 140 kg/cm² can be obtained.

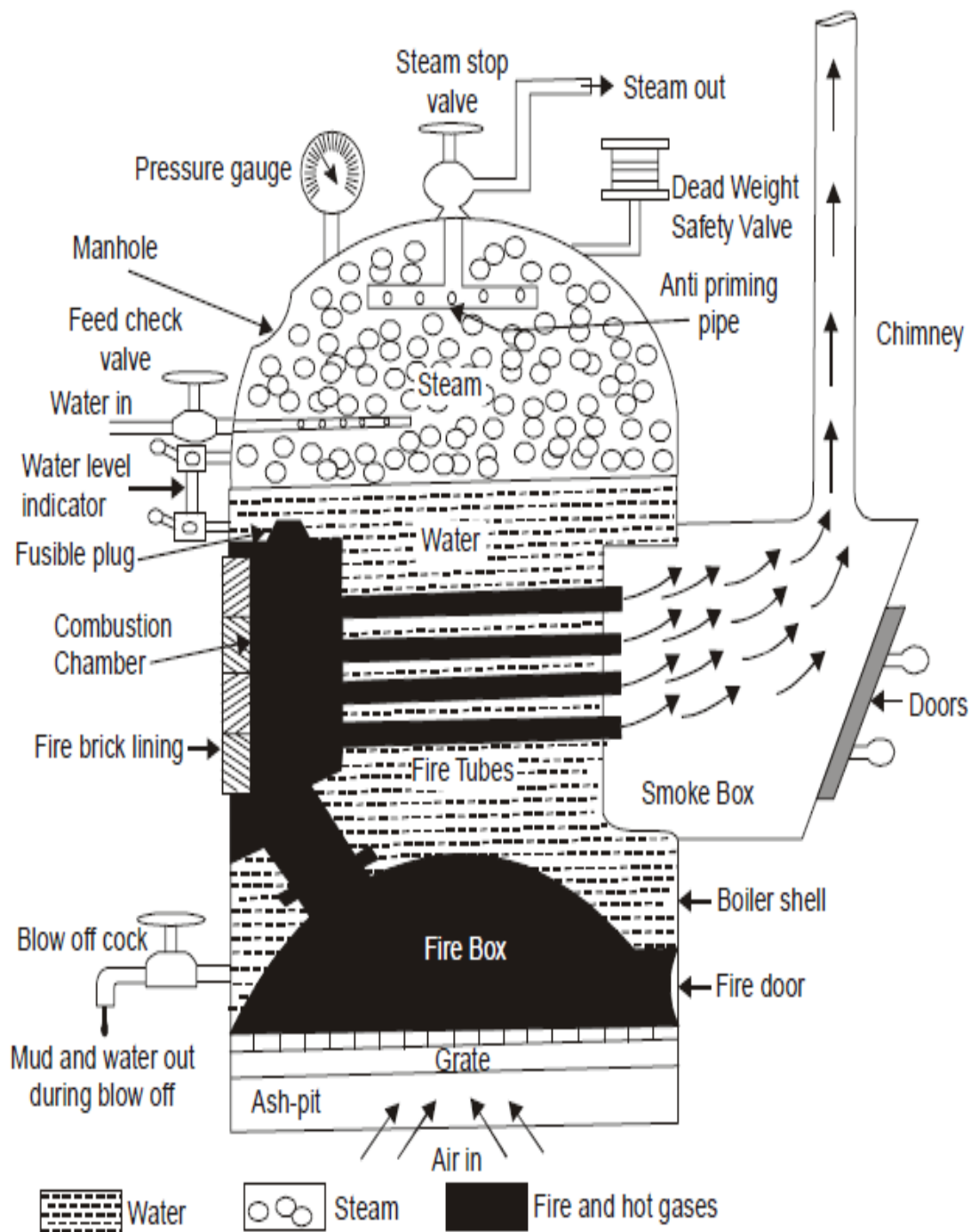
Various advantages of fire tube boilers are as follows:

- (i) Low cost
(ii) Fluctuations of steam demand can be met easily
(iii) It is compact in size.

According to position of furnace:

- (i) Internally fired (ii) Externally fired

In internally fired boilers the grate combustion chamber are enclosed within the boiler shell whereas in case of externally fired boilers and furnace and grate are separated from the boiler shell.

**COCHRAN BOILER**