

Characteristics of Modern High Pressure Boilers:

Even though the modern boilers are termed as high pressure boilers, it does not mean them fully. Because high pressure operation is only one of the characteristics of modern boilers used for power generation.

Other aspects/characteristics are as follows:

- (1) Modern power boilers are water tube.
- (2) They use forced type of water circulation.
- (3) They use feed water heaters.
- (4) They use modern methods of firing viz. pulverised firing; cyclone furnace; fluidised bed combustion.
- (5) They use F.D. and I.D. fans for creating the necessary draught.
- (6) They use water treatment plant, demineralisation plant to purify boiler feed water to minimise scale formation and salt deposits in the boiler tubes.
- (7) They use various controls for pressure temperature water level etc.
- (8) They use complex assembly of evaporator superheaters, reheaters, economisers and air heaters etc.



Advantages of High Pressure Boilers:

1. Because of high velocities, tendency of scale formation in the tubes is reduced.
2. Small light weight tubes of better heating surface arrangements can be used. This makes the unit compact and reduces erection time and cost of boiler.
3. Due to forced circulation, for heating of all the parts is uniform, which avoids overheating and development of thermal stresses.
4. There is more flexibility in the arrangement of furnace, tubes and other boiler components.
5. The steam can be raised quickly to meet the variable load requirements.
6. The efficiency of the plant is increased.
7. A very rapid start from cold is possible if an external power supply is available. Hence the boiler can be used for carrying peak loads or standby purposes with hydraulic power stations.