



Working Mechanism of Scotch Marine Boiler

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DESCRIPTION

Scotch marine boiler is also known as a fire tube boiler. It is also known as a scotch or tank boiler. In the marine sector, it is a common boiler. This boiler offers certain distinct features, such as compactness and efficiency of operation. The scotch marine boiler can operate on any type of water. The scotch marine boiler is designed in the shape of a squat horizontal cylinder. One or more huge cylindrical furnaces are located at the bottom of the boiler shell. The boiler furnace's burned gases and smoke pass through the backside of this boiler. The gases and smoke then return through the little tubes and up and out the boiler chimney.

Types of scotch marine boiler

Single-ended: A single-ended steam boiler typically has one to four furnaces. All of these furnaces enter the boiler from the front. The length of a single-ended steam boiler is typically 3.5 metres.

Double-ended: Furnaces are located at both ends of this type of boiler. However, the number of furnaces associated with the boiler ranges from 2 to 4 in each end. The length of a double-ended steam boiler is typically 6.5 metres.

WORKING MECHANISM

Working mechanism involves that it will consume the fuel, burn it in the combustion chamber, and heat the water. The heated water then turns into steam. As a result, fuel is initially placed into the furnace. Fuel enters the furnace through the fire hole.

When fuel is present in the furnace, it ignites through the fire hole. After that, the burned fuel enters the combustion chamber, which is where the fuel is burned. Now we'll look at the heat transmission technique. When heat is generated in the combustion chamber, it is used to heat the water that surrounds it. It is the basic heat transfer technique for a typical fire tube boiler once more.

When water turns into steam, it powers the steam turbine. We have some burnt flue gases and smoke that were produced throughout the fuel combustion procedure and must be released into the environment. The exhaust gases move *via* the smoke tubes and reach the boiler chimney during this process. The chimney then vents all of the smoke and exhaust gases into the atmosphere. Water is used to surround the furnace, combustion chamber, and smoke tubes in this boiler. As a result, it gives a larger heating surface to the water during boiler operation. After burning, the exhaust gases flow *via* the smoke tubes and reach the chimney. These smoke and exhaust gases are released into the atmosphere through the chimney. The water in the scotch marine boiler surrounds the furnace, combustion chamber, and smoke tubes, providing a larger heating surface to the water.

ADVANTAGES

Scotch marine boiler has a significant advantage, and as a result, this boiler is commonly employed in marine activities and on ships. It is a small boiler that operates at a high efficiency. This boiler can also produce steam from any type of water. This boiler does not require a brick work setting like a locomotive boiler or external flues.

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