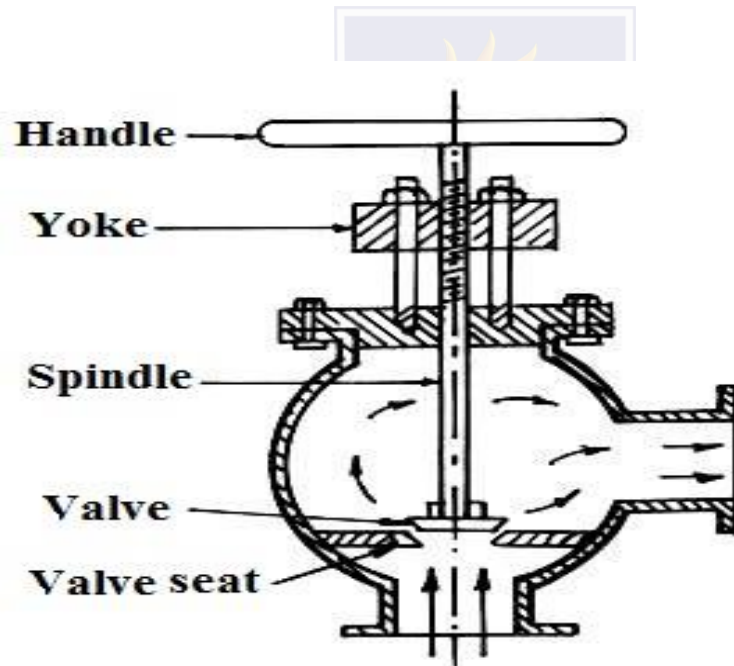


## Steam stop valve

### Function

It is fitted over the boiler in between the steam space and steam supply line. Its function is to regulate the steam supply from boiler to the steam line.



## **Construction and working**

Its casing has a L-shaped steam flow passage. It consists of a valve and valve seat to stop or allow the steam flow.

The valve is attached to a spindle and handle. Spindle passes through packing in the stuffing box to prevent leakage. The spindle has external threads in the top portion and moves in the internal threads of a fix nut. By rotating clockwise and anticlockwise the spindle and valve moves down and up thus closing or opening the valves.

## **Boiler Accessories**

Boiler accessories are the components which are attached to the boiler (Not mounted on it) and are essentially for working of boiler and for increasing its efficiency. Various boiler accessories are discussed as below

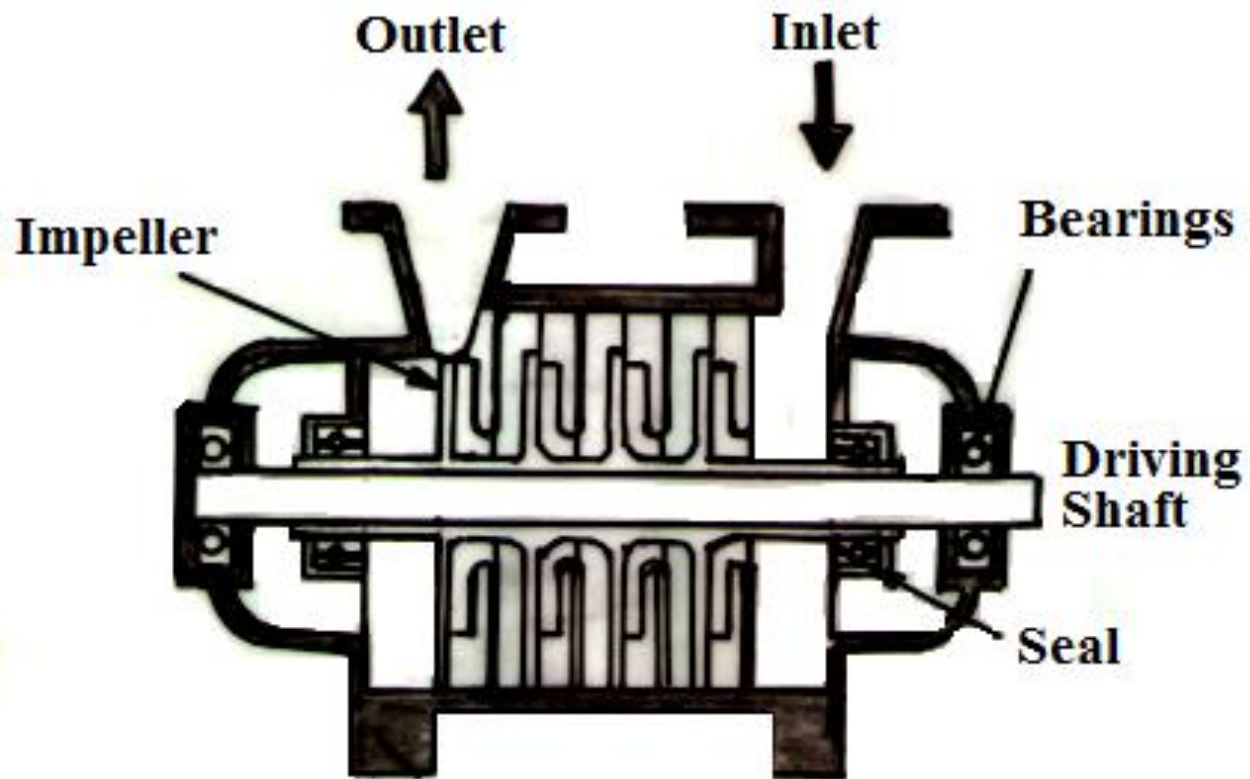
### **Feed pump**

Feed pump is placed nearby the boiler and is used to feed water to boiler working at a high pressure. The job of feed pump is not just put the water in the boiler but as boiler is working at high pressure, discharge pressure of feed pump must be sufficiently higher than this to push the water inside the boiler.

### **Construction & working**

The feed pump used in boiler is of two types (i) Reciprocating type (ii) Rotary type. Both these types are positive displacement type to discharge against high pressure.

The discharge pressure of a single stage centrifugal pump is not high enough to overcome the high pressure of boiler so multistage centrifugal pump is used as a boiler feed pump.



In stationary low pressure boiler used in processing industries, a multistage centrifugal pump run by an electrical motor is more suitable. In multistage centrifugal pump, a number of centrifugal casing are so attached to each other that the **impeller** of each is mounted on the same shaft run by an electrical motor and discharge of 1<sup>st</sup> stage goes to 2<sup>nd</sup> stage and of 2<sup>nd</sup> to 3<sup>rd</sup> stage and so on. In each stage the pressure of water goes on increasing and discharge pressure of final stage is so high as to overcome the internal pressure of boiler. These pumps have independent working and have smooth operation.

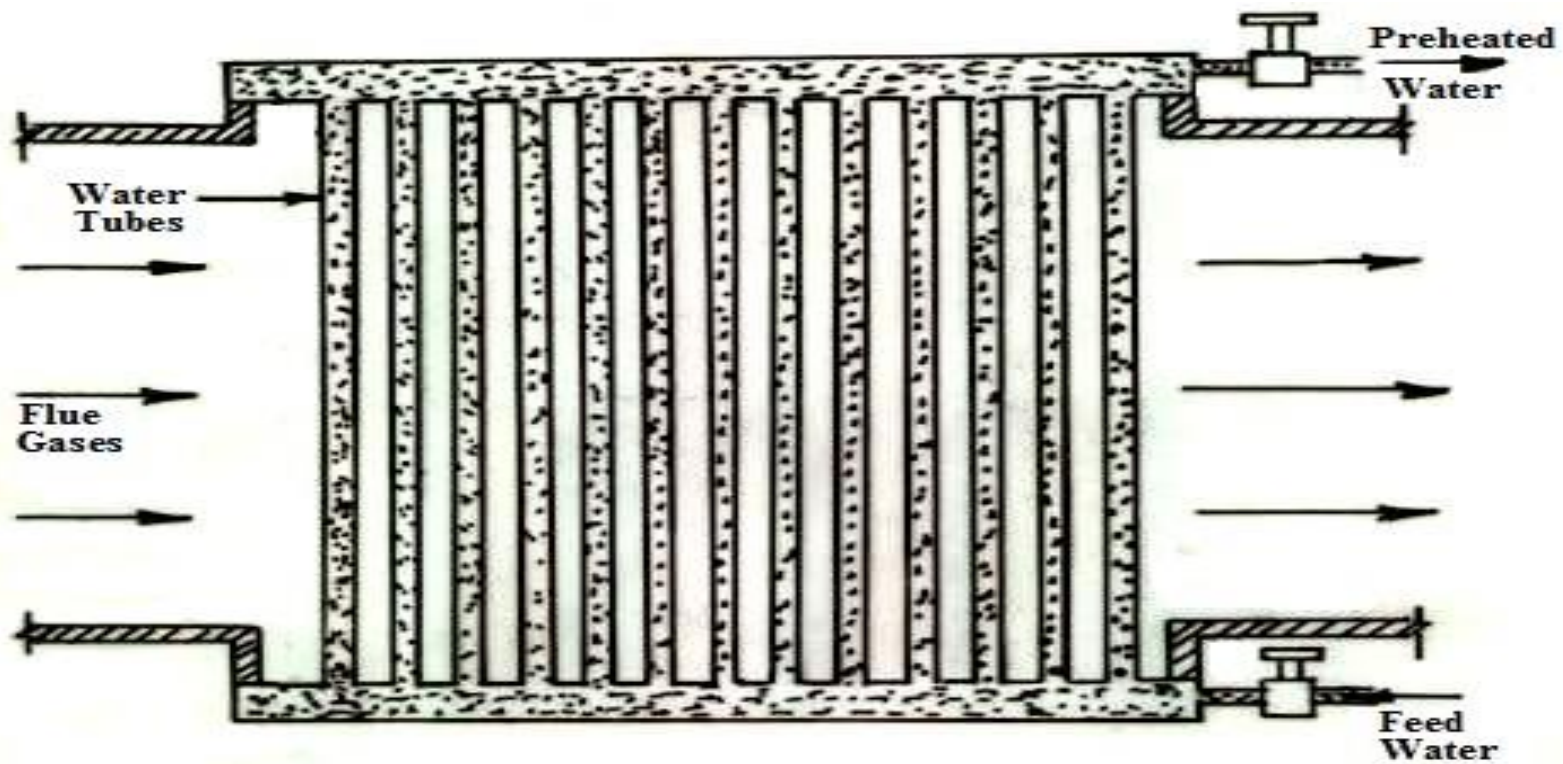
## **Economizer**

### **Function**

An economizer is a specially constructed heat exchanger for harnessing the heat energy of outgoing flue gases and utilizing it in preheating of boiler feed water. It saves the heat energy and so the fuel and decreases the operating cost of boiler by increasing its thermal efficiency.

### **Construction & working**

Economizers are of two types as (i) External type (ii) Internal type. The external type economizer is constructed and installed apart from the boiler and the flue gases from the boiler are directed to flow through it before escaping through chimney. A vertical tube external economizer.





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