

# STEAMLOK ENGINEERING

## ECO-BLOW

### Automatic Blow Down Control System



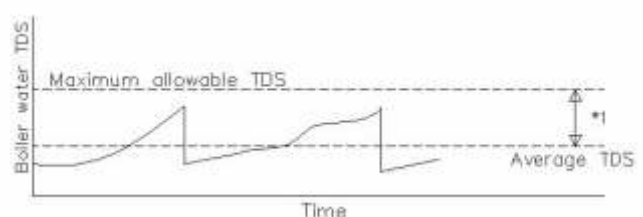
## Timer Based Eco - Blow & TDS Based Eco - Blow

Every Boiler needs a periodic blow down. To reduce the level of suspended and total dissolved solids in Boiler, water is periodically discharge or blow down. High concentration of total dissolved solids can lead to scale formation in boiler tube causing lower heat transfer and reduce boiler efficiency. This may also lead to foaming and carryover of boiler water into steam. This could result in water hammer and may damage piping or process equipments. so for better quality of steam supply and longer life of the boiler and its tube, blow down becomes mandatory.

### ADVANTAGES

- Control on boiler water TDS ( Total Dissolved Solids ) at optimum level.
- Reduced energy loss due to unnecessary blow down.
- Savings on fuel cost.
- Low cost solution.
- Enhanced boiler life.
- Just two minutes of extra blow down from a 10 Kg/cm (g) pressure FO fired boiler through 50NB blow down line would drain about 1440 kg of extra water on which fuel has been burnt to heat.
- If in a day, three such blow downs are taken, the loss at the end of one month amounts to Rs. 1,20,000 in terms of loss of fuel.

### MANUAL BLOW DOWN SYSTEM



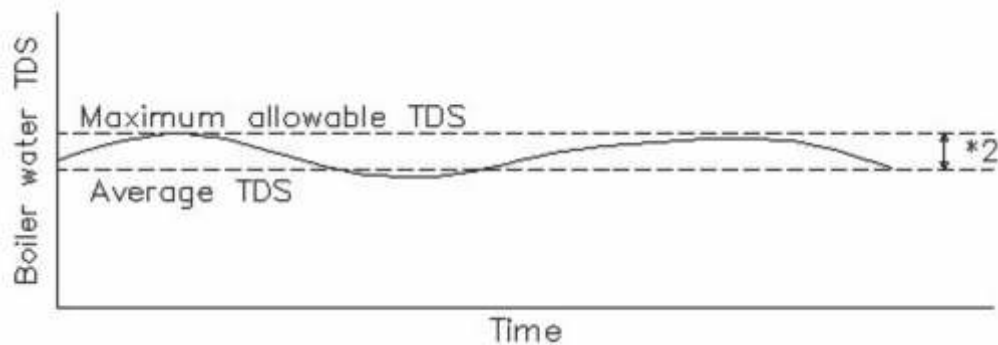
# [ ECO-BLOW ]

## AUTOMATIC BLOW DOWN CONTROL SYSTEM

- Manual blow down and assumptions of TDS levels in boiler water arbitrarily decided blow down time and frequency results in excessive blow down.

Thus average TDS level being maintained is much lower than the rated maximum allowable TDS Levels causing wastage and loss of heat and water.

### Automatic Blow down

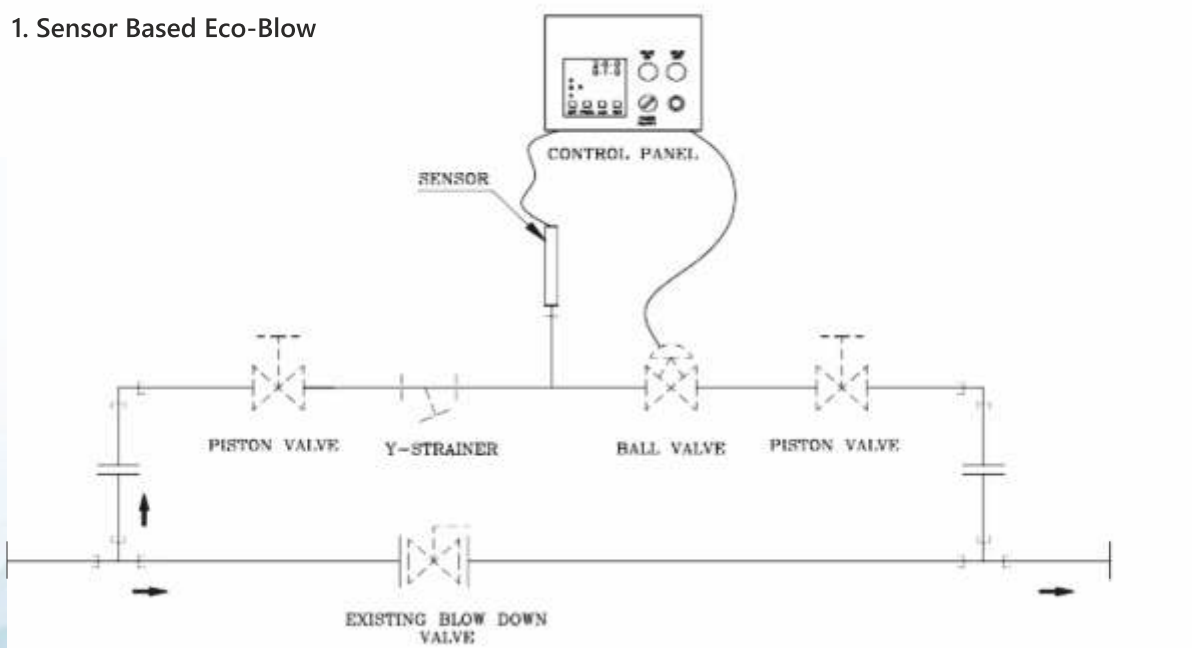


- Eco-Blow Automatic Blow down results into TDS Being Controlled accurately near to maximum level, minimizing blow down and wastage, yet avoiding carry over and foaming caused by excessive TDS level

### BLOW DOWN SYSTEM VARIANTS

1. Sensor based Eco - Blow
2. Timer based Eco - Blow

#### 1. Sensor Based Eco-Blow

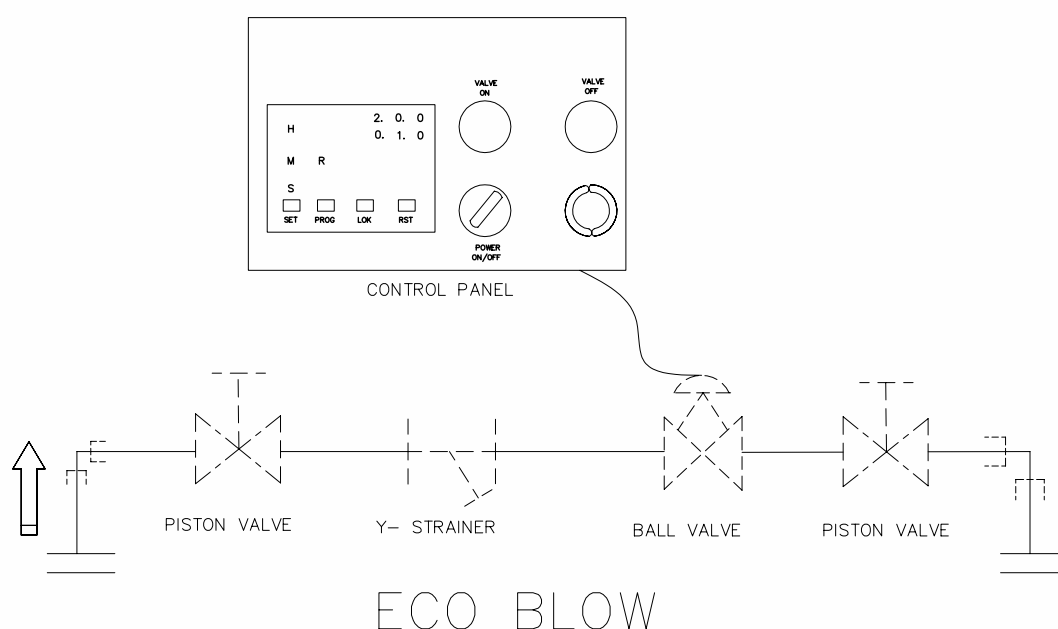


## WORKING OF TDS BASED ECO-BLOW

The desired TDS value of the boiler water is first set in the Eco-Blow controller. This controller is Programed to periodically open the blow down valve to start a flow of boiler water (purge cycle) past the systems conductivity sensor.

The Eco-Blow system conductivity sensor measures the TDS of the blow down water line and gives feedback to the controller.

The measured value is then compared with desired TDS set point in the controller. If the measured value is lower than the set point, the blow down valve is closed. If it has reached the set point, the blow down valve remains open until the measured value drops below set point.



The heart of the Eco-blow system is a PLC based electronic controller with state of art features to optimize the boiler blow down cycle and by doing so provide better quality steam to the user and create significant monetary savings. It comes with LED display of TDS the on going cycle indication and temperature of the blow down water.

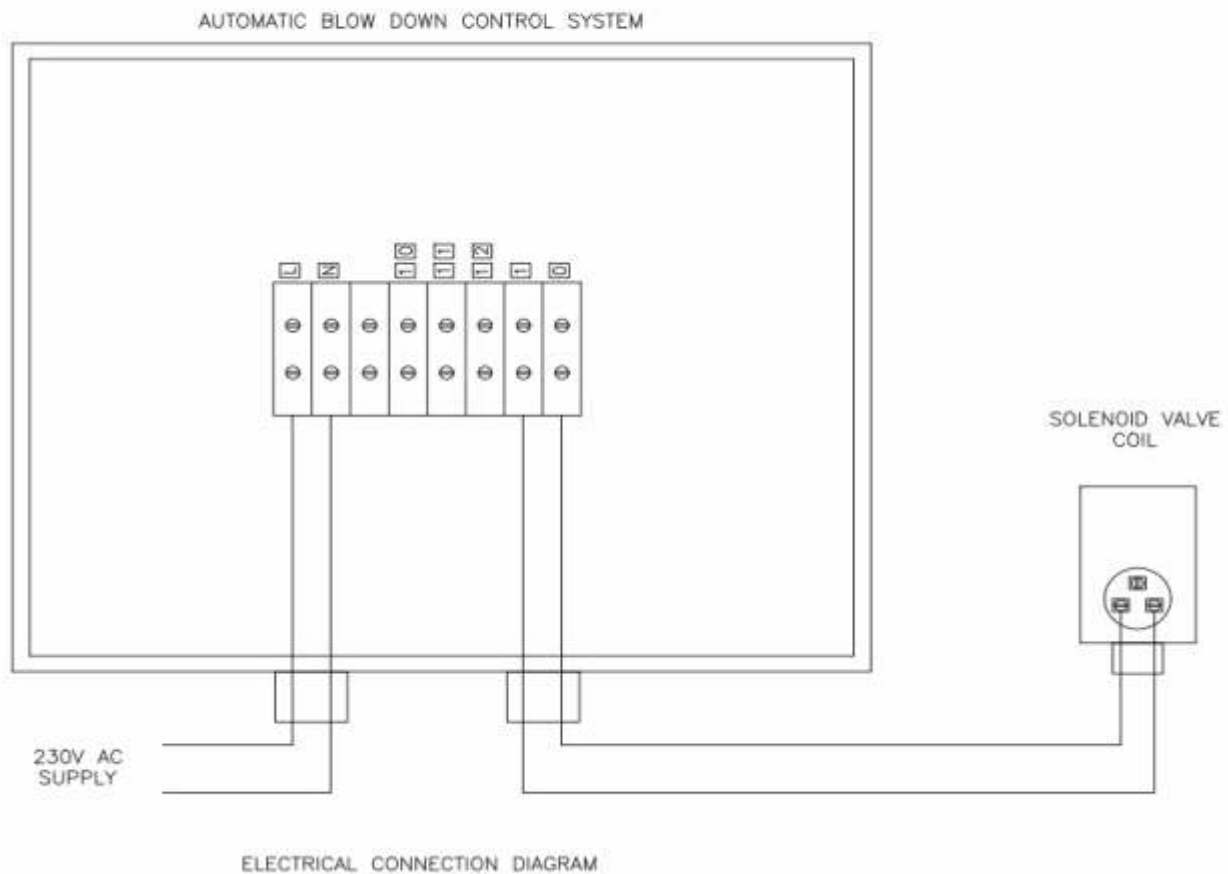
In the controller the required blow down time is set i.e 2 hours close and open for 20 second for blow down such cycle is repeated to control the TDS level in the boiler and increase its efficiency. Cycle time of valve closing & opening can be changed depending upon TDS formation frequency

# [ ECO-BLOW ] AUTOMATIC BLOW DOWN CONTROL SYSTEM

## ELECTRICAL CONNECTION FOR TIMER BASED ECO-BLOW

From Control panel terminal no. 1 & 0 is connected to solenoid valve coil  
External 230V AC supply to be given to control panel terminal line and neutral.  
Maximum 8 bar air pressure to be supplied to solenoid valve

Electrical connection is shown below.



## HOW TO ORDER

- Boiler Capacity
- Boiler Pressure
- Boiler existing blow down valve size
- Boiler blow valve flange rating end connection
- Boiler blow valve flange to flange outside length
- Eco-Blow - Time base / TDS Base / Type



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