

ATB (Automatic Tube Brushing System):

Application

- HVAC-CHILLER Automatic cleaning to ensure constant efficiency throughout the life of the equipment.

Benefits

- Saving in Energy
- Saving in Maintenance
- Reduction in Chemicals
- Reduction in Downtime

Heat exchanger tubes begin to foul-up the moment it starts to operate. Fouling in heat exchanger tubes not only reduces cooling capacity, energy usage would be higher than the intended design condition. With the automatic tube brushing system, energy consumption can be reduced by up to 30 percent.

Saving in Maintenance

The automatic tube brushing system brushes the heat exchanger tubes 3 to 4 time daily. Regular manual brushing or high-pressure cleaning and chemical cleaning of heat exchanger tubes becomes unnecessary or is eliminated entirely.

Saving In Energy

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Chillers operating in high ambient temperature particularly face compromise in cooling capacity with increase heat exchanger fouling.

Reduction in Chemicals

When heat exchanger tubes are badly fouled, normal chemical water treatment needs the most aggressive introduction of chemicals which often leads to greater heat exchanger corrosion. When heat exchanger tubes are kept clean daily by the automatic tube brushing system, expensive chemical cleaning can be avoided and chemicals used in the normal program of water treatment reduced.

Reduction in Downtime

Downtime due to scheduled or unscheduled cleaning of heat exchanger tubes are often an expensive exercise for the manufacturing plants. Plants forced to carry out maintenance on the heat exchanger tubes need also to shut down the rest of the production processes leading to lost in production time. The automatic tube brushing system maintains the fouling of the heat exchanger at an acceptable level reducing the downtime needed for heat exchanger maintenance.

How the Tube Automatic Brushing Systems Works

Baskets are installed at both ends of every available heat exchanger tube. A brush is assigned to each tube and resides in the basket which holds and captures the brush as it moves in a spinning motion from one end of the tube to the other.

By tuning from Normal Position to Reverse Position and back again, the 4-way diverter valves installed in the pipeline changes the water flow in the heat exchanger which causes the brush to move back and forth and clean the tube in the process.

The movement of brush from one end of the tube and back again is a complete brushing cycle. The 4-way diverter valve changes position 3 to 4 times daily in every interval of 6 to 8 hours to activate 3 to 4 brush cycles in a 24 hour day. The 4-way diverter valve is kept in a reverse position only 30 seconds in every brush cycle. A control panel provided activates the brushing cycles automatically by turning the 4-way diverter valve while the chiller is online – brushing the tube clean without the need to shut down the chiller.