# E - 02 - VACUUM DEAERATOR



Taravosh Jam Co. is a Manufacturer in Iran & Middle east for delivery and fabrication of the Vacuum Deaerator or Packed Column Deaerator.

**What is Vacuum Deaerator or Packed Column Deaerator?**

Vacuum Deaerator is the equipment used to remove oxygen and dissolved gasses (Cl2/CO2) in the cold feedwater seawater injection in oil wells/desalination oil/water sweating. Oxygen (cl2/co2) is the leading cause of corrosion in units. Oxygen dissolved in the water caused damage by corrosion in the system.

### Vacuum Deaerator or Packed Column Deaerator performance

If the water is at its saturation temperature of the gas dissolution rate is almost zero. Therefore water must be high turbulence or should boil to ensure complete removal of all the gas. Vacuum pump& Ejector uses to decrease the boiling point of water. Packing tower is made of polypropylene, high resistance to corrosion distribution of liquid and gas phase by raising the level of mass transfer between the two phases increases, causing the tower to maximize efficiency.

### Vacuum Deaerator or Packed Column Deaerator working principle

- remove the oxygen by 50-25 ppb
- the elimination of (Cl2/CO2)
- prevent corrosion
- prevent fouling water
- providing feedwater pump NPSH
- water storage for 3 to 5 minutes (holding time)

### Vacuum Deaerator types

- one stage-without ejector
- Two stage-with one ejector
- Three stage-with two ejector-best performance

The vacuum Deaerator produces water with Outlet oxygen concentration max.25 ppb(with a chemical injection of max. 2 ppb) in the temperature range of 20 -40°C. The vacuum Deaerator column has two stages. Stage 1 spray section with packing+ spray/Stage 2 is the packed section. The first stage of the tower performs bulk removal of oxygen at pressure ~60 mmbara, and in the second stage, final removal is achieved at a higher vacuum. The tower storage hold up time is ~5 minutes. The height of the skirt deaerator is ~7m, which will provide about >6 NPSHa for the pump. It prevents high vacuum in the suction pump. Therefore we have lower leakage. For the high vacuum required, an air ejector /vacuum liquid ring pump system with the cool seal water20 °C is required.