

Vacuum Pumps

3 tips to optimize and ensure a longer lifespan

- 1) Ensuring the liquid ring water quality (seal) is essential since most of the pumps are made of cast iron, therefore the water seal must have:
 - Temperature of 38°C or less.
 - Low contents of chloride (less than 50 ppm) and sulfates (less than 100 ppm), as they are highly corrosive.
 - Low water hardness content such as calcium carbonate (less than 300 ppm), and total dissolved solids (less than 1000 ppm) in order to avoid scale that could block the pump.
 - Abrasive suspended solids under 250 ppm and maximum size of 1000 microns, as these are agents that would wear down the rotor and pump walls.
 - It should not contain soft suspended solids over 1 mm in size. Only a maximum of 360 ppm can be tolerated without compromising the free passage of the seal water and the air or gases handled.
 - The best recommendation is to use water from a cooling tower and if necessary, an automatic filtration system.
- 2) The selection of vacuum pumps it is very important, and it should consider the material from which they are manufactured: stainless steel vs. iron. The manufacturing material of the vacuum pump has a major impact on its duration and efficiency. Stainless steel pumps are more expensive but have a higher investment return on any application.
- 3) It is necessary for the vacuum pumps to have enough capacity to vacate air / gases from its chamber, along with the product handled in the vacuum. For the same gas mass to be moved, the vacuum level reached for each process will alter the power and rpm for the pump.

