

INFORMATION N° 109

T, TA, TAR Pumps Tightness of mechanical seal

Mechanical seals (shaft seals) of T, TA and TAR pumps have been designed for applications from light oil to heavy oil fuels.

All T, TA, TAR SUNTEC pumps are tested in factory and warranted with a shaft seal leakage rate of 60mm³/h maximum for a 5 cSt oil viscosity and with 2850 rpm rotational speed.

SUNTEC mechanical seal consists of :

- a treated counter face,
- a carbon seal face ,
- a PTFE cone (ensuring the shaft tightness).

In view to increase the life time of the mechanical seal and minimize leaks, some rules have to be respected :

Do	Why?
Avoid start-up with cold fuels (high viscosity)	Part lubrication would not be correctly carried out and this would damage the carbon seal face.
Adapt the inlet pressure to the fuel temperature.	A too low inlet pressure would cause a cavitation phenomenon.
Inlet pressure must not exceed : 5 bars.	A too high inlet pressure would cause a premature wear of the carbon seal face.
Have a temperature adapted to the fuel used.	If the temperature is too high regarding the heavy oil fuel used, this one would coke and the carbon seal face would be blocked in its casing
Ensure a good filtration.	Solids residues contained in heavy oil fuels would damage the face of the carbon seal.
Have a coupling in good condition and an assembly perfectly aligned.	A worn or non-aligned coupling would cause vibrations on the carbon part which would be worn out and blocked in its casing.
Avoid the use of low viscosity fuel in a warmed up pump.	The low viscosity fuel would vaporize and the lubrication of the mechanical seal would not be carried out.