



## SEALING RINGS

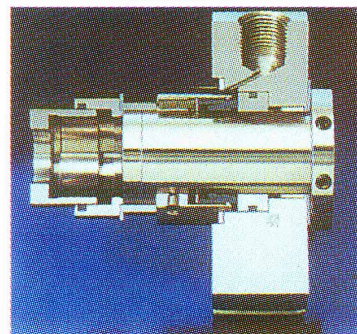
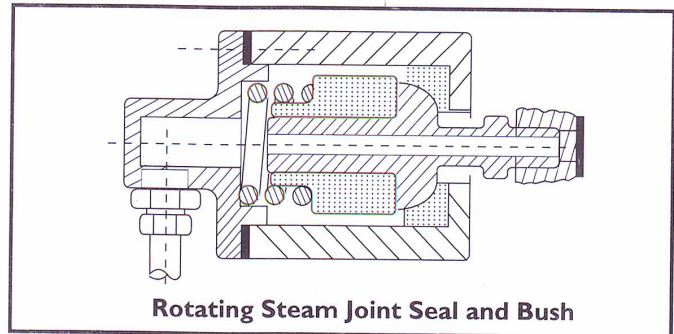
Carbon Sealing Rings are used as the wear face of most mechanical seals for the sealing of fluids in all industries.

### APPLICATION ARE :

- Process pumps
- Rotary steam joints
- Seals for agitators and autoclaves
- Chemical pumps
- Cold and warm water pumps
- Corrosive liquid pumps

Carbon is well suited to be used as a sealing ring due to having the following properties.

- Very Good Chemical resistance
- Good thermal conductivity
- High wear resistance
- Good corrosion resistance
- Dry running properties
- Good frictional properties
- Outstanding resistance thermal shock
- Low Thermal expansion



Due to the need for sealing rings to be impervious the carbon material is impregnated with either resin or various metals. VSK should be contacted to ensure the correct grade is used for the application. Seal faces can be supplied unlapped or if required lapped to two / three helium light brands of flatness.

Carbon seal faces are compatible with a wide range of metallic and ceramic counter faces including silicon carbide and tungsten carbide.

## DESIGN CONSIDERATIONS

Certain factors must be taken into consideration when deciding which combination of material for seal ring and counterfaces the most suitable for a particular application. These factors are the lubrication conditions obtainable at the interface, the pressure between seal ring and counterface.

### Full Fluid Film or Wet Lubrication

This Condition is that which would be found in a pump with the seal fully immersed in the liquid being sealed and arranged so that there is a constant supply of cool liquid circulating around its rubbing faces and with a seal combination designed to give full fluid film lubrication at the interface.

### Boundary Lubrication

This is a condition in which the only cooling of the seal is achieved by splash from the liquid being sealed or in which the seal is fully immersed but the circulation of the liquid around it is restricted or the interface film is destroyed repeatedly by evaporation.

### Dry

This means that the seal is out of contact with the liquid and is completely surrounded by gas. This is the most arduous operating condition and should, if possible, be avoided because in certain circumstances very high rate of wear can be experienced. If the dew point of the surrounding gas is more than 0°C there is a good changes of success. There have been applications where the dew point was down to -15°C and the resulting wear rate was acceptable. With dew points below -15°C, the wear rate becomes excessive.

In those cases where "dry" conditions are encountered it is preferable to use a gland ring or labyrinth system.



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