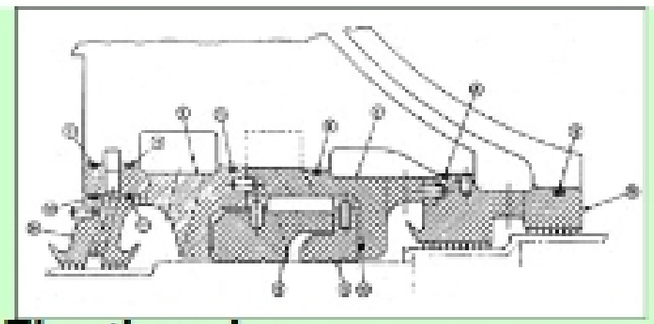
Date:



Today's material

Notes 11a

Applications of oil seals in turbomachinery Floating ring seals. Effect of eccentricity

Notes 11b

Applications of oil seals in turbomachinery Long seals

Observations/Announcements

Read

Childs & Vance., 1997, TurbSymp, pp.201, 220

Notes 11.
High Pressure Floating Ring Oil Seals

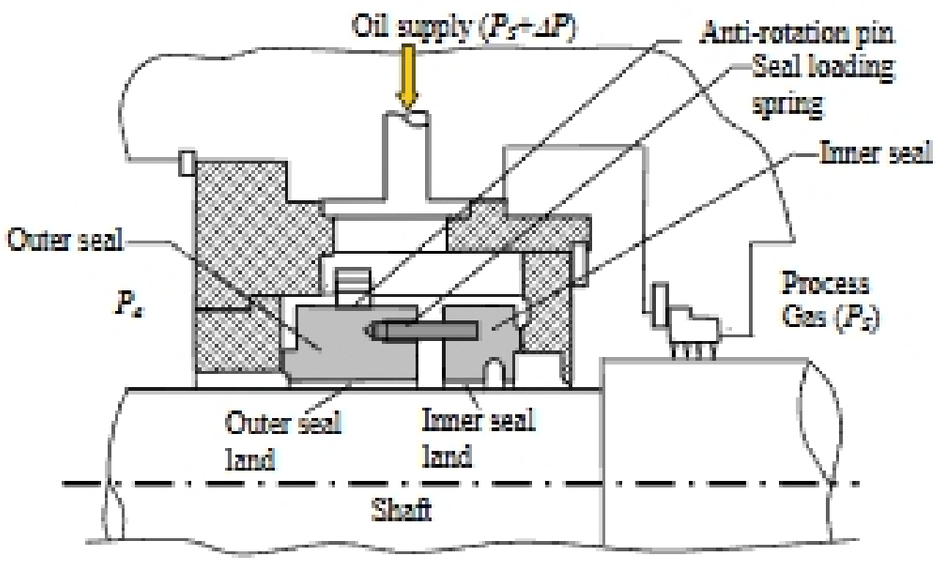


Fig. 1 Typical oil seal multi-ring assembly

Bushing oil seals and mechanical dry-gas (buffer) seals are the final sealing elements in compressors keeping the process gas within. Oil bushings, also known as floating ring seals, can have a major detrimental effect on the rotordynamic stability characteristics of compressors; and in some cases act as additional support bearings, i.e., they generate radial loads.

Oil seal rings **minimize** process product leakage while allowing a limited lubricant flow rate accompanied by a pressure drop. Oil seal rings are of the mechanical face type, with rotating and stationary faces, as well as with a carbon face in between the two.

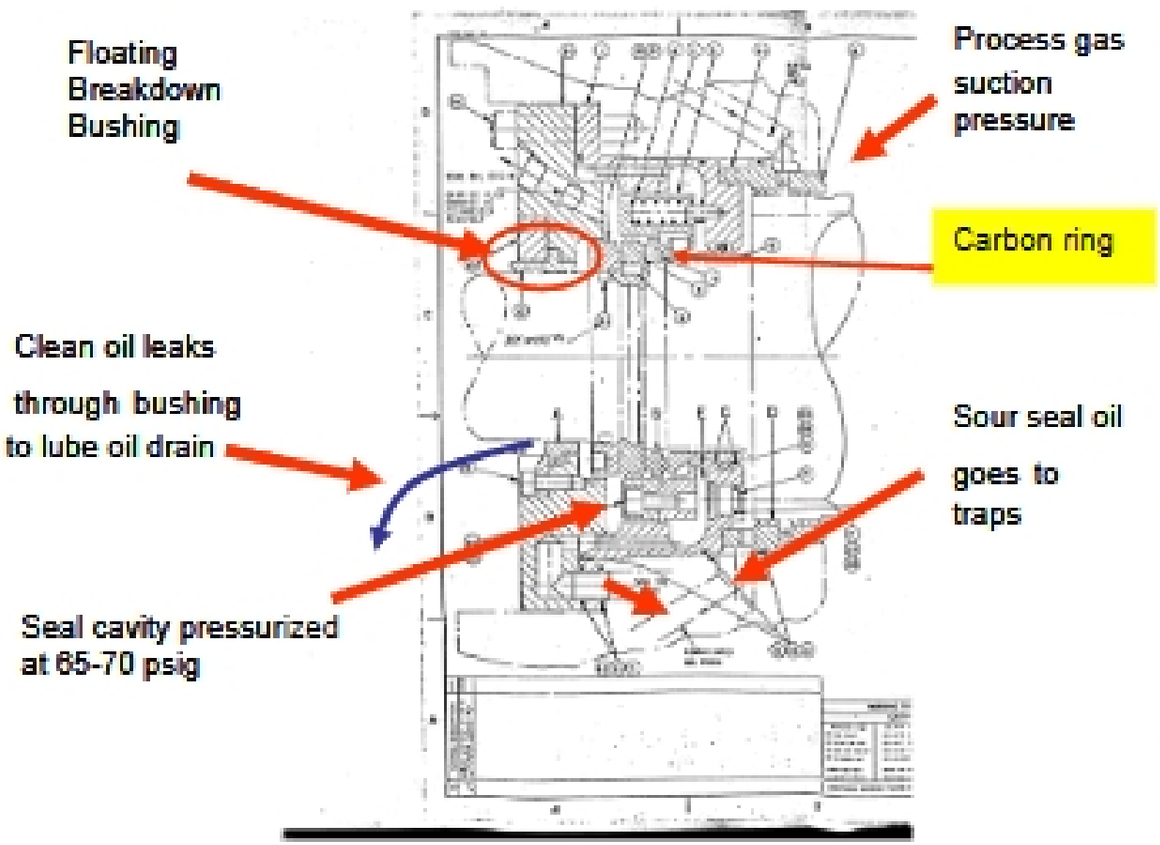


Fig 2. Oil seal ring cartridge in a compressor

towards the process gas side, thus providing some degree of product contamination. The outer seal faces

Oil seal rings come as an assembly cartridge with a preload spring. The cartridge contains two seals (low pressure and high pressure) with small radial clearances. The seals operate with some mineral oil supplied at a pressure slightly higher than the (gas) sealing pressure.

The inner seal faces the process fluid, with lubricant flow (leakage)