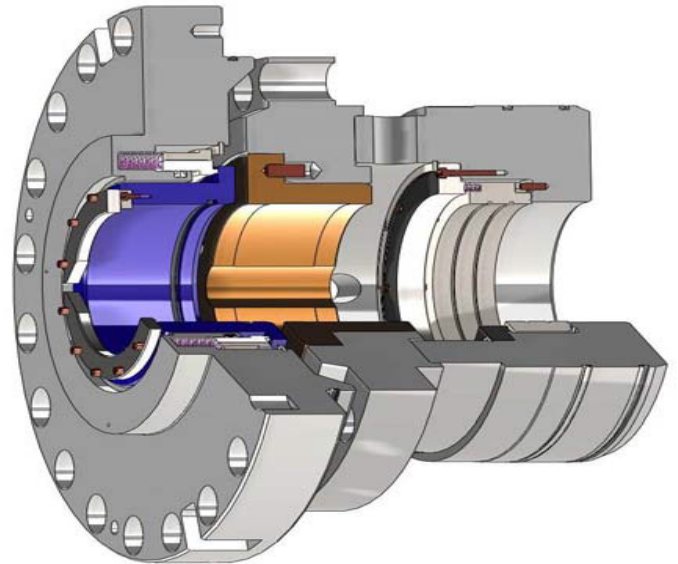


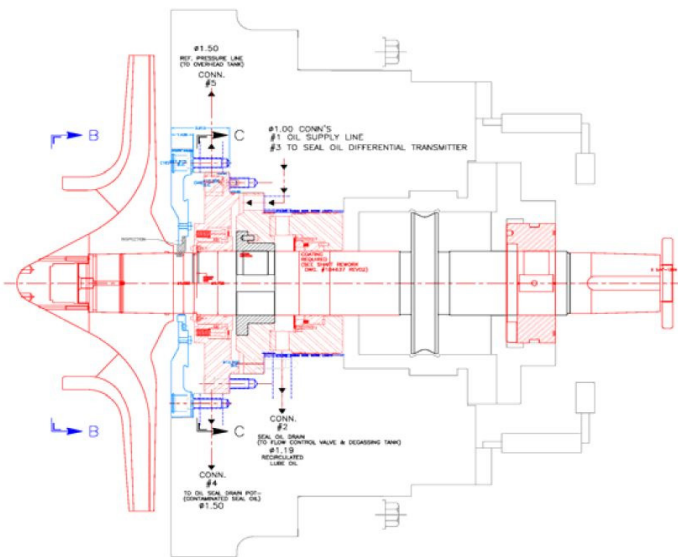
SHAFT SEAL STUDY

By Tony Rubino, P.E.

Rotating Machinery Services, Inc. was contracted to do a shaft seal improvement study for I-R CDP24 single stage pipeline compressors on natural gas pipeline service. The purpose of the study was to determine how to minimize or eliminate seal oil carryover into the pipeline. The customer reported that they were experiencing as much as 200 gal/day make up oil requirements with the existing bushing oil seal arrangement on some of the compressors. The customer also described complaints received from power plants along the pipeline that the seal oil carryover was the cause of combustion system fouling of their gas turbines drawing combustion gas from the pipeline.



After approximately one month of operation, the customer could not provide oil usage data since the oil level had not changed appreciably. In the customer's words, "The seals are doing what they are supposed to be doing". The team approach and collaborative effort between the customer, Kaydon and RMS got it done right the first time.



The scope of the study included a site visit to perform compressor dimensional and documentation inspections by RMS during a maintenance outage performed by the customer. The customer's preference was to convert to a dry gas seal. The result of the study and the follow-on execution determined that a dry gas seal was not feasible due to space limitations. Working in cooperation with Kaydon (seal supplier), a suitable mechanical face seal was designed and manufactured. RMS also performed controls system and rotordynamics reviews to ensure proper integration of the new seals. New pressure dam journal bearings were provided to improve compressor rotor stability.

For more information:

Tony Rubino, P.E.

Email: trubino@rotatingmachinery.com

Tel: 484-821-0702

Headquarters

2760 Baglyos Cir.
Bethlehem, PA 18020

Houston Office

16676 Northchase Dr., Ste 400
Houston, TX 77060

rotatingmachinery.com

Tel: 484-821-0702

Parts: rms@rotatingmachinery.com



Rotating Machinery Services, Inc. | 2760 Baglyos Circle, Bethlehem, PA 18020 | Tel: 484-821-0702