Identifying Causes of Seal Leakage

The purpose of this poster is to provide educational information about seal leakage in order to aid in the identification and maintenance of mechanical seals. Identifying and correcting the cause of leakage will promote long, trouble-free operation. Observations made about the seal and installation are compared to symptoms, possible causes and corrective procedures. Pictures of common seal failures are given for easy identification.

CAUTION: Repair crews should be thoroughly familiar with the use of personal protective equipment. Safety must be an integral part of repair and maintenance operations.

3 Thermal Distortion (Positive Rotation)

SYMPTOM: Seal leaks excessively when shaft is rotating or stationary.

POSSIBLE CAUSES:
1. Poor lubrication from liquid being sealed.
2. Abrasives are embedded in softer primary ring material.
3. High spots are at each bolt location. 360° contact on primary ring.
4. Seal fluid vaporizing (soft and sticky).
5. Seal faces overheated.

CORRECTIVE PROCEDURES:
1. Check for improper installation of hardware.
2. Check for improper mating ring.
3. Check for improper materials or seals used for application.
4. Change seal to low emission design, materials or arrangement.
5. Materials not conducive to low emissions.
6. Change seal to low emission design, materials or arrangement.
7. Make sure the gland plate and seal chamber are insulated.
8. Low flush system design, increase flush flow rate.
9. Use distributed flush design instead of single point flush.
10. Check for improper materials.

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