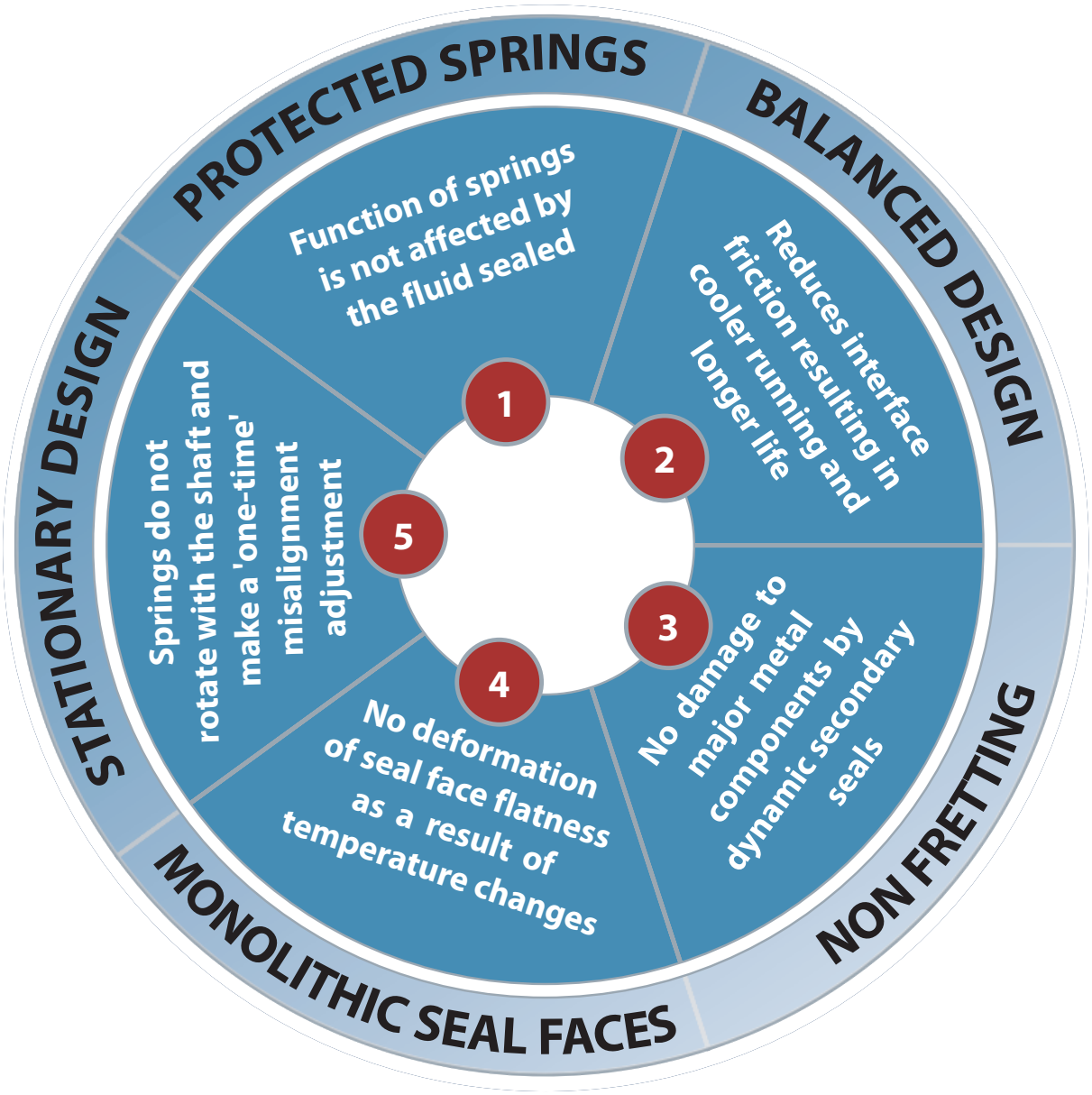
5 Key Characteristics of Good Mechanical Seal Design



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1. Springs are placed on the atmospheric side of the seal. This way the springs are protected from the process fluid and their function is not impacted by contamination and solids in the process fluid.

2. Balanced designs reduce the area of the sealing interface that the pressure acts upon. As a result, the net closing force is reduced. This allows for better lubrication resulting in lower heat generation, face wear, and power consumption.

3. During operation the springs compensate for misalignment from installation and parts tolerances. As the springs compensate, the dynamic secondary seal moves back and forth, twice per revolution. This rapid movement prevents the protective chrome oxide layer on the underlying metal to form. Corrosion of this unprotected area causes a groove to develop that results in leakage.

4. Some mechanical seals are designed with a face pressed in a metal holder. When exposed heat from the process fluid or face friction, the different rates of thermal expansion of both parts causes the seal face to deform. This results in leakage and accelerated wear. Seals with monolithic seal faces that are made out of a single material only and are therefore not affected.

5. A stationary seal is designed in such a way that the springs do not rotate with the pump shaft, they remain stationary. Because the springs do not rotate, they are unaffected by stuffing box misalignment and rotational speed.