Mechanical Face Seal Assembly

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Source: Glossary of Seal Terms (Special Publication)
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1. **Torque Pin**: A type of anti-rotation device. It consists of a metal pin, one end of which fits loosely in a hole or slot in the primary-seal carrier with the other end being solidly attached to the secondary-seal carrier.

2. **Coil Spring**: A type of spring which is formed from wire wrapped in a helix. The spring so formed encloses a volume in the shape of a right cylinder. It is normally used in multiples, with the individual springs oriented about the circumference of a seal assembly. Thus placed, the springs transmit a uniform closing force on the sealing face.

3. **Free Length**: The uncompressed axial length of a face-seal assembly. The term is also applicable to a spring or a bellows.

4. **Piston-Ring Carrier**: Also known as **Secondary Seal Carrier**: That component of a face seal assembly or its surrounding stationary structure which contains grooves or slots into which the secondary seals are mounted.

5. **Primary-Seal Carrier**: That component of a face seal assembly or its surrounding stationary structure which contains grooves or slots into which the secondary seals are mounted.

6. **Primary Seal Ring**: A ring-shaped member in a face seal or in a ring seal. It is normally made of carbon. The face of the primary-seal ring forms the primary seal with the mating ring.

7. **Seal Bore**: The diameter which corresponds to the innermost surface of a face-seal assembly. The surface referred to can be on the primary-seal ring, the primary-seal carrier, or the secondary-seal carrier, whichever has the smallest inner diameter.

8. **Sealing Face**: The lapped surface of the seal, which comes in closest proximity to the face of the mating ring of a face seal, thus forming the primary seal. With reference to lip seals, the preferred term is ‘seal contact surface’.

9. **Sealing-Face Inner Diameter**: The diameter which corresponds to the inner edge of the sealing face on the seal nose.

10. **Sealing-Face Outer Diameter**: The diameter which corresponds to the outer edge of the sealing face on the seal nose.
11. **Sealing-Face Width**: The radial distance from the inside edge to the outside edge of the nose part of the sealing face.

12. **Seal Nose**: The part of the primary seal ring of a face seal which comes in closest proximity to the mating surface and which together with the mating surface, forms the primary seal.

13. **Secondary-Seal Land**: The cylindrical surface against which the secondary seal rides to effect the secondary sealing.

14. **Secondary-Seal Land Diameter**: The diameter of the surface of the face-seal assembly which contacts the secondary seal. The sealing land may also be on a stationary surface which is not a part of the seal assembly. For a balanced seal, this diameter is also the balance diameter.

15. **Piston Ring**: A ring with a basically rectangular cross-section and a single small gap. It seals by expanding or contracting against a mating cylindrical surface.