The Rotary Shaft Seal is used for excluding dirt, dust, water or other particles, while retaining lubricant in rotary shaft equipment. It was developed as a means of protecting bearings of rotating shafts. The sealing effect is achieved by preloading the sealing lip making its internal diameter slightly smaller than the shaft diameter. The garter spring ensures constant force to the shaft, flattening the sealing edge to a defined width.

The following are types of rotary seals that Seal & Design offers:

Oil Seals
IM Seals
PTFE Lip Seals
V-Ring Seals

Rotary shaft seals are used between rotating and non-rotating machine components. They are comprised of:

A cylindrical outer covering of sheet steel (shell) or elastomer which seals statically against the housing bore to be obtained as well as facilitating proper installation.
The sealing lip of elastomer which provides dynamic and static sealing against the shaft. The lip has a sealing edge which is formed by pressing, cutting or grinding and is normally pressed against the counterface on the shaft with a defined radial force by a garter spring. The edge of the sealing lip and the shaft counterface form the most important functional area of a radial shaft seal.
The sealing effect of the lip can be enhanced by providing the contact area of the lip with hydrodynamic aids which may be designed for single direction operation, or for alternating directions of shaft rotation. An additional sealing lip may also be provided to protect the sealing contact proper from dust and other fine solid contaminants. A suitable
lubricant in the space between the sealing lip proper (primary lip) and additional (secondary) lip can reduce wear and delay corrosion.