The 700 series is the general term of the mechanical seal for high-speed application in which a O ring for the static seal is used. Since the main part of a seal is a mating ring and fixed on the rotating shaft, it is excellent in the high-speed application and the dynamic balance like the 800 series. There are a stamped housing type suitable for high speed and low load rotation and a machined housing type suitable for high structural rigidity and heavy duty. Both series are designed light in weight and compact in size. Especially a machined housing type is the structure where pressure balance can be adjusted in the large range, and can widely set up the application pressure range. As for a high-speed seal application, a stamped housing type is widely used for gearbox seal and is also used in many application, such as a main shaft of helicopter engine, a fuel pump, an oil pressure pump, and a fuel control systems.

Carbon graphite is generally used for the material of the seal ring of a static side, and hardening steel, nitriding steel or hard material coated steel is used for the matingring. Under the medium speed and a pressure condition, it is possible to obtain a good lubricating condition by using oil spray configuration, while in the high speed and temperature condition, oil jet cooling toward mating ring is used for cooling.

### Basic Operating Limits

**Stamped Housing Seals**
- Differential Pressure : 25kgf/cm² Max.
- Temperatures : 230 °C Max.
- Speed : 100m/sec Max.

**Machined Housing Seals**
- Differential Pressure : 70kgf/cm² Max.
- Temperatures : 230 °C Max.
- Speed : 75m/sec Max.

The 800 series is the general term of the mechanical seal which used the nesting type (stacked type) metal welded bellows for the stationary side and excels in the performance of the dynamic responsibility at high-speed and is applicable from cryogenic to high temperature range. In order to isolate the influence of an axial vibration of the bellows produced under high-speed rotation and to increase dynamic responsibility, a damper is attached to evade resonance. If welding is applicable, it is possible to use any material for bellows. Generally, deposit hardening stainless steel (AM350) or Inconel 718, X750 are used for bellows. Corresponding to the trend of higher temperature requirement of a sealing contact portion, the material with high thermal stability is required for a sealing material. For this reason, the carbon graphite excellent in self-lubricity, heat resistance and corrosion resistance, and the heat shock resistance is used for a stationary-side seal ring. It is used for the seals where the reduction of mounting spaces is required.

### Basic Operating Limits

**Welded Metal Bellows Seal**
- Differential Pressure : 25kgf/cm² Max.
- Temperatures : -250 °C Max. to 430 °C Max.
- Speed : 100m/sec Max.