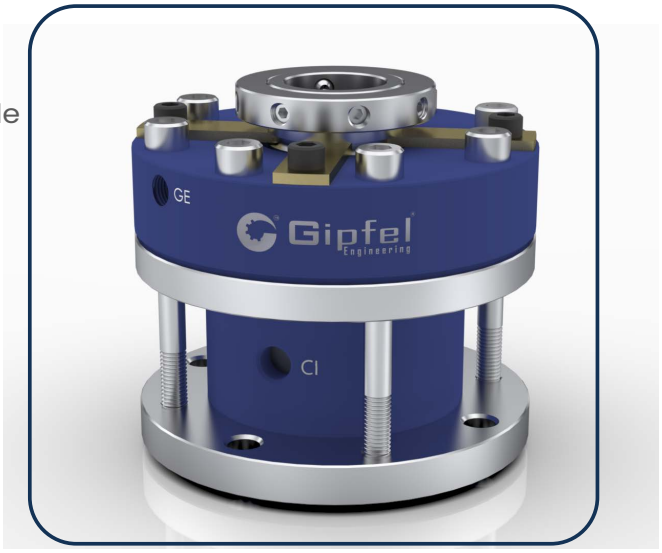
Gipfel Engineering

ISO 9001-2015 CERTIFIED COMPANY

# Single Cartridge Mechanical Seal with Bearing Assembly & Cooling Housing

## (For Top, Side & Bottom Entry Equipment – Compatible with Glass-Lined Reactors)

## TYPE : ES925 – ES930




**Face Materials :**

- Carbon / Ceramic / Silicon Carbide / Tungsten Carbide

**Secondry Seals :**

- NBR (Nitrile) / FKM (Viton) / EPDM / Aflas / PTFE / TTV / Kalrez (FFKM)

**Hardware :**

- SS 304 / SS 316 / SS 316L / Duplex / Hastelloy C / Alloy 20

**Operating Limits :**

**Shaft Size :** 20.0 mm to 300.0 mm (0.750" to 12.000")
**Speed :** 150 RPM
**Pressure :** Vacuum ... to 12 bars (174 PSI)
**Temperature :** -20°C to +150°C (-4°F +302°F)

**Application :**

- Hydrocarbon
- Paint Industry
- Refining Technology
- Foodstuff Processing
- Bulk Drugs Processing
- Viscous & Sticky Media
- Petrochemical Industry
- Biochemistry Processing
- Pulp and Paper Industry
- Pharmaceutical Industry
- Chemical blending tanks
- Polymerization Processing
- Electron Epoxy Processing
- Plastic & Chemical Industry
- Food-grade and hygienic mixers
- Polymer and solvent mixing vessels
- Biotech and pharmaceutical process reactors
- Hazardous area classified mixing systems (ATEX/IECEx)
- Glass-lined reactor agitators (top, bottom, or side entry)
- All type of Top, Side & Bottom Entry Rotating Equipment Etc.

Meet: Plot No. 142/48, Ghaswala Industrial Estate, Opp. 24 Karat, S. V. Road, Jogeshwari (West), Mumbai - 400 102. Maharashtra, India.
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### Face Materials :

- **Cost-Effective Design:** Engineered for durability and reliability while maintaining cost efficiency for general and critical applications.
- **Externally Mounted Design:** Enables easy access for inspection, adjustment, and servicing without disturbing the process equipment.
- **Reverse Pressure Capability (Inboard):** Enhances seal performance in applications with fluctuating or reverse pressure conditions.
- **Optional Non-Metallic Wetted Components:** Prevents product contamination and corrosion in sensitive or aggressive chemical applications.
- **Cartridge Construction:** Simplifies installation, eliminates setting errors, and reduces downtime during maintenance or seal replacement.
- **Integrated Bearing Assembly:** Offers enhanced shaft stability and radial load handling, critical for bottom-entry and long-shaft configurations.
- **Top, Side & Bottom Entry Suitability:** Versatile design compatible with a wide range of equipment orientations and process configurations.
- **Monitoring Ready:** Supports optional integration of temperature, pressure, or flush monitoring devices as required by application safety standards.
- **Cooling & Lubrication Housing** – Enhances heat dissipation and ensures proper lubrication of seal faces, reducing wear and extending service life.
- **Balanced and Unbalanced Seal Options:** Available in both configurations to suit varying pressure conditions, product viscosities, and operational loads.
- **Bi-Directional Operation:** Operates independently of shaft rotation direction, allowing use in both clockwise and counterclockwise rotating equipment.
- **Rotary Multiple Spring Mechanism:** Provides uniform face loading, accommodates shaft deflection, and maintains consistent sealing performance over time.
- **Glass-Lined Reactor Compatibility:** Designed with chemically compatible, non-damaging materials for safe use in enamel-lined vessels handling corrosive or pure media
- **Custom-Engineered Solutions:** Wide range of materials, face combinations, and dimensional configurations available upon request to meet specific process requirements.
- **Single Mechanical Seal Design:** Provides effective and reliable sealing for general-duty and critical applications involving moderate pressure and temperature ranges.
- **Factory-Assembled & Pressure-Tested Unit:** Supplied as a pre-assembled cartridge to ensure quality, dimensional accuracy, and leak-tight performance right from installation.

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### Why It Is Suitable for Bottom Entry :

**1) Integrated Bearing Assembly:**

- Bottom-entry shafts are vertically mounted and often overhung, which can cause **radial and axial shaft movement.**
- The integrated bearing in the ES925 / ES930 stabilizes the shaft and **ensures concentric seal face alignment,** which is **critical** in bottom-entry setups.

**2) Lubricating Cooling Housing:**

- Bottom-entry seals are prone to **dry running** due to fluid gravity not always reaching the seal faces.
- A built-in cooling and lubrication jacket ensures **continuous face lubrication,** preventing overheating and excessive wear.

**3) Lubricating Cooling Housing:**

- Simplifies installation in tight or vertical bottom-entry spaces where component seals are difficult to align correctly.
- Ensures **pre-set compression** and minimal installation error, which is important in difficult-to-access bottom-entry seal housings.

**4) Glass-Lined Reactor Compatibility:**

- Many bottom-entry applications are used in **glass-lined reactors** for corrosive or pharmaceutical processes.
- The ES925 / ES930 is designed to interface safely with these sensitive surfaces using **non-reactive, chemically compatible materials.**

### Additional Considerations for Bottom Entry :

- **Operating Limits:** Seal operating limits, including pressure, temperature, and speed, may vary based on selected materials and process conditions.
- **Proper Flush or Barrier System:** To prevent solids from settling or dry running, a **Plan 32 (flush)** or **Plan 53A/B (barrier system)** may be recommended.
- **Monitoring Ready:** Proper system monitoring and support components (e.g., barrier fluid systems, flush plans) may be required for optimal performance and safety compliance.
- **Orientation-specific Installation:** Seals for bottom-entry should be installed with correct alignment tools, and equipment should allow easy access for periodic inspection or replacement.

**➤ DIMENSIONS FOR HIGHER SIZES AVAILABLE ON REQUEST**

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