

GravitySeal

Heavy Fluid High-temperature ESP Protector

GEO DYNAMICS

Innovative Artificial Lift Solutions

GravitySeal Heavy Fluid High-temperature ESP Protector is an advanced sealing and lubrication technology for ESP systems. Utilization of Heavy Lubricating Fluid with specific gravity of 1.95 alongside the special construction ensures, that all the oil remains inside the motor and protector, preventing leakage and extending system life. The approach ensures a clean, stable lubrication environment and eliminates well-fluid contamination in demanding oilfield and geothermal applications. The technology is protected under European Patent Application EP4572101A1.

Specification

| | |
|------------------------|------------------------|
| Series: | 675 875 |
| Working Fluid | Heavy oil with SG 1.95 |
| Max HP | 2000 HP 2600 HP |
| Max Thrust Load | 10000 lbf 25000 lbf |
| Material | CS/CS or 9Cr1Mo/SS416 |
| Chamber Config | Any |
| Max BHT | 160°C |



Highlights

| | |
|---------------------------------|---|
| Zero-Leakage Concept | High-density Heavy Lubricating Fluid stays below well fluid – cannot escape the protector or motor. |
| Extended ESP Lifetime | Eliminates leakage which dramatically increases MTBF. |
| Stable Lubrication | Maintains dielectric and lubrication properties even at extreme temperatures. |
| Environmental Protection | No contamination of well fluids – especially critical in geothermal wells. |
| Recoverable Oil | Heavy Lubricating Fluid remains inside the system and can be reused across ESP installations. |

heavyFLUID



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Key Features

Heavy Lubricating Fluid (HLF)

- Specific gravity 1.95 ensures downward stability.
- Superior lubrication & dielectric performance compared to standard motor oil.
- Fluorinated synthetic variant supports high temperatures.

Integrated Sealed Architecture

- Base + head + interior chambers ensure total fluid retention.
- Shaft passes through all chambers with bearing support.

Tandem Fluid Communication

- Motors and protectors automatically equalize Heavy Liquid Fluid levels.
- Ensures balanced internal pressure and protection at all times.

High Reliability in Harsh Downhole Conditions

- Operates at high pressure, high temperature, and deep-well environments.
- Prevents well fluid intrusion and motor contamination.

Ratings and Features

| | | |
|------------------------------------|--|-------|
| SERIES | 675 | 875 |
| MOTOR OIL SG ^① | 1.95 | |
| SHAFT HP LIMIT, HP ^{②③} | 2000 | 2600 |
| MAX THRUST LOAD, lbf ^{②④} | 10000 | 25000 |
| MATERIAL | CS HSG / CS H&B (STD) 9CR1MO HSG / SS416 H&B (CORR. RESIST.) MONEL / INCONEL SHAFT | |
| CHAMBER CONFIGURATION | ANY | |
| MAX AMBIENT TEMPERATURE, °C | 160 ^⑤ | |

① – Measured at 0 °C (32 °F)

② – At 60 Hz

③ – High Strength Shaft

④ – High Load Thrust Bearing

⑤ – For higher temperatures check with Oil Dynamics GmbH Engineering Department

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