

# MECHANICAL SEAL FLUSH

**MICROPUMP®**



A close-up, black and white photograph of industrial pump components, showing several large, circular, metallic openings or ports. The lighting creates strong highlights and shadows, emphasizing the metallic texture and the circular geometry of the parts.

# MECHANICA

Flushing of mechanical seals, on large industrial pumps, is used to extend the life of the seal by cleaning and/or cooling the seal. There are many methods for implementing seal flush, but all either recirculate fluid from various other points on the industrial pump (usually the output) or use an external source for the flushing stream.

Barrier systems primarily handle petroleum-based heat transfer fluids, but also water-based and water/glycol fluids. Fluid viscosity is application dependent, and the average temperature 80° C.

These customers look to Micropump to provide a robust pump solution with the ability to manage differing fluid cleanliness. They also value the ability to procure pump and motor combinations, with the flexibility to meet the customer's motor compliance specifications and fit a variety of motor sizes.

## MICROPUMP SOLUTION

In either case a step-up in pressure, and/or flow control may be required, and a small Micropump pump is often used for that purpose. Micropump gear pumps are well suited for this application because they provide a well-controlled, smooth flow, and are built of materials that provide chemical capability and the temperature range require for most applications.

### Flow Rate

- 15 to 19 L/min (240 to 300 USG/hr) flow rates
- Variable speed pumps with flows from 0.405 to 26.6L/min (6.4 to 421 USG/hr)

### Max System Pressure

- Max System Pressure 840 psi (59 bar)
- Up to 1500 psi (103 bar) max system pressure

### Temperature

- Minimal flow variation over wide temperature range, room temperature to 300°F (149°C) max
- Suction Shoe pumps are best-in-class for achieving minimum flow variation from -50°F (-46°C) to 350°F (177°C)



# L SEAL FLUSH

## Precise Flow Control

- Positive displacement gear pumps for precise, pulseless flow

## Maintainability

- Service Kits for easy field serviceability and streamlined components for easy replacement

## MICROPUMP PRODUCTS OPTIMIZED FOR THIS APPLICATION

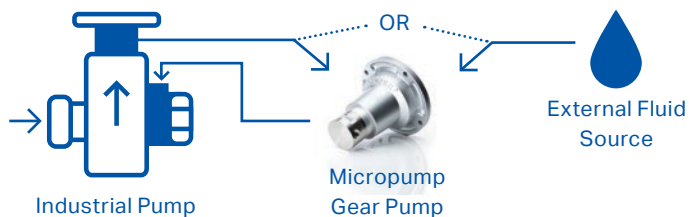
Micropump Series GC and GL pumps are commonly used for Seal Flush applications. The Series GC pump is a Suction Shoe style gear pump. Suction Shoe style gear pumps can operate over large temperature ranges and provide consistent flow with pump wear. The Series GL gear pump can provide higher flow rates when required. Both the Series GC and GL provide the flow control and smooth, pulseless flow required for these applications.

### GC Specifications

- Displacement: 0.811 ml/rev (M23) | 1.82 ml/rev (M25) | 3.48 ml/rev (M35)
- Min Flow Rate: 405 mL/min | 0.11 US gpm
- Max Flow Rate: 0.405 to 13.9L/min (6.4 to 221 USG/hr)
- Max Differential Pressure: 125 psi (8.6 Bar)
- Max System Pressure: 1500 psi (103 Bar)
- Temp range: -46 to 177 °C (-50 to 350 °F)

### GLH Specifications

- Displacement: 4.6 ml/rev (H21) | 6.2 ml/rev (H23) | 7.7 ml/rev (H25)
- Min Flow Rate: 0.6 GPM (2,270 mL/min) at 500 rpm
- Max Flow Rate: 7.0 GPM (26,565 mL/min) at 3,450 rpm
- Max Differential Pressure: 125 psi (8.6 bar) [50 psi with PTFE gears]
- Max System Pressure: 1,500 psi (103.4 bar)
- Temp Range: -29° C - 121° C (20 to 250 °F)



*Micropump gear pumps provide differential pressure and flow control needed either for re-circulation or when using an external flushing stream.*

## SUCCESS STORY

For a major engineered products company providing mechanical seals for the refinery industry, Micropump pumps are used on the wet side in main seal circulation (their closed-loop system). Micropump pumps deliver best in class volumetric efficiency that only uses enough power to counteract the drag or inertia in pipes to propel the liquid forward efficiently. This process is repeated over and over again, intermittently, and the pump has been found to have an excellent lifespan of 3 to 5 years. Micropump pumps are utilized in the customer's systems for mechanical seal flushing throughout the world. GC-M35 and GLH series are most typically chosen for flow rates and reliability. Additionally Micropump pumps can meet API requirements, closed-loop seal systems, and pairing with an industrial motor.

# ***MICROPUMP***<sup>®</sup>

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ACTUAL PERFORMANCE MAY VARY. Specifications are subject to change without notice.