



# CORNELL PUMP COMPANY

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## Barrier Oil Consumption Rate

### REFRIGERANT PUMP SEALING CHARACTERISTICS

Cornell's refrigerant pump sealing technology is a system, which consists of an evolutionary double mechanical seal with integral barrier fluid pump. The inboard faces of the seal prevent escape of refrigerant from the pump case while the outboard faces retain the system-compatible barrier fluid. The system includes a pressurized barrier fluid reservoir, fluid level indicator and a limit switch. This configuration allows unattended monitoring of the fluid level, and a safety shut down feature.

Low viscosity refrigeration machinery oil is utilized as the seal barrier fluid and is automatically pressurized to 15 PSI above pump discharge. The oil is continuously circulated through the seal barrier system by the integral "pumping ring". The positive pressure difference between the barrier and the refrigerant prevents the refrigerant from entering the barrier system and ensures that there will always be a minute oil film between the seal faces.

### BARRIER OIL CONSUMPTION RATE

As the barrier oil is slowly depleted, the indicator constantly monitors the barrier oil consumption rate and level. At an user-determined set point, the indicator activates the limit switch. The reservoir indicator and limit switch will warn that the oil reservoir requires a routine refill, or that the process side seal is nearing it's service life limit. The switch can be wired to trigger an audible or visual alarm, or to shut down the pump before the barrier oil gets too low. In the event of process side seal failure, the barrier seal will contain the refrigerant until maintenance can be performed.

The oil reservoir is designed to accommodate 1.25 pints of low viscosity refrigeration machinery oil. The barrier oil consumption rate is approximately one (1) to two (2) tablespoon per weeks. The consumption rate will increase, as the double mechanical seal approaches it's service life limit, or in liquid overfeed applications where the refrigerant pump is exposed to excessive cavitation and/or vapor entrainment.

**ISO9001** CERTIFIED

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