Liqui-Mover® Pumps
Float and Float-Free Condensate Pumps

- Pressure-powered positive displacement pumping
- The more reliable and efficient way to move liquids
Liqui-Mover Pump Family

As a positive displacement pressure-powered pump, the Liqui-Mover pump has no motors, starters, shafts, rotating mechanical seals, or impellers. Instead, the Liqui-Mover pump uses steam (or any compatible inert gas) under pressure as the motive force to lift or pump liquids.

With none of these maintenance-intensive components to leak, wear, or fail, the Liqui-Mover pump is naturally more reliable than conventional electric pumps. As a result, the Liqui-Mover pump will work longer, with less maintenance, and far less downtime.

**Stage One**
Fluid flows from the receiving chamber (A) through an inlet check valve (B) into the pump tank (C), raising a float (D). The vent port (E) is open to equalize pressure between the receiving chamber and pump tank.

**Stage Two**
When the float reaches its highest level, it triggers a linkage (F) that closes the vent port and opens the motive pressure valve (G) to admit the motive pressure into the pump tank. The motive pressure forces the fluid past the discharge check valve (H) and out the discharge line.

**Stage Three**
Once the float (D) reaches its lowest position, the linkage shuts off the motive pressure port, and opens the vent port (E). Excess pressure is vented to the receiver, equalizing pressure between the two tanks. The cycle will now repeat.

*Compact dimensions, easy to install, and low maintenance.*

*The LRSM skid mounted system is ideal for use with PV coils and heat exchangers.*

**Liqui-Mover Float Series**
Compact dimensions, easy to install, and low maintenance.

The LRSM skid mounted system is ideal for use with PV coils and heat exchangers.
Stage One
During the fill cycle, fluid flows from the receiving chamber (A) through the inlet check valve (B) into the pump tank (C). The 3-way valve (D) is open between the pump tank and the receiving chamber, equalizing the pressure between them through the equalizing line (E).

Stage Two
When the level control (F) senses that the pump tank is full, the 3-way valve energizes to admit the motive pressure into the pump tank (C). The inlet check valve (B) prevents backflow into the fill line. The discharge cycle begins when pressure inside the pump tank is greater than in the discharge line. The discharge check valve (G) opens and fluid flows into the discharge line. During this cycle, incoming condensate is stored in the receiver.

Stage Three
Once the level control (F) senses the pump tank has emptied, the 3-way valve (D) de-energizes, shutting off the motive pressure, and opening the vent port in the valve. This equalization cycle allows the pump tank (C) and the receiving chamber (A) to equalize in pressure, and the fill cycle begins again.

Benefits
- No rotating parts and a minimum of moving parts for greater reliability and lower maintenance
- Can handle most high-temperature fluids without venting or cooling
- Little or no condensate cooling loss
- Compact dimensions, easy to install and operate
- Non-electric models require no electricity for operation
Choosing the Best Pump for Steam Condensate Service

### Electric Centrifugal Condensate Pumps vs. Liqui-Mover Pumps

#### Comparison Chart

<table>
<thead>
<tr>
<th>How Does It Measure Up?</th>
<th>Liqui-Mover Pumps</th>
<th>Electric Centrifugal Condensate Pumps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumps condensate up to 365°F</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Can insulate pump and receiver</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Handles flashing condensate easily</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Possible to eliminate atmospheric flash vent</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Never requires condensate cooling water</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Additional flash tank not required</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>May operate without electricity</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Cavitation not possible</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Application flexibility – custom designs</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Handles varying loads and back-pressures easily</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Easy to repair – minimal knowledge required</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Minimal spare parts required</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Maintenance requirements</td>
<td></td>
<td>High maintenance items eliminated</td>
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<tr>
<td></td>
<td></td>
<td>Seal kits, motors, float switches, impellers</td>
</tr>
</tbody>
</table>

Dimensions are for reference only and subject to change.

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Kadant is a global supplier of high-value, critical components and engineered systems used in process industries worldwide.

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Liqui-Mover Pumps-3008 (US) 12/2018
Replaces all previous versions
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