Multiphase pumping technology includes a robust twin-screw multiphase pump combined with a reliable control and monitoring system. A Multiphase System reduces the wellhead pressure enabling increased production and boosts the full well stream mixture of oil, water, gas and solid particles from the well cluster to a central production facility via a single pipeline.

Multiphase systems are a reliable, economic and efficient solution for the upstream and midstream oil and gas market. Key applications include brownfield or marginal field operations, low pressure wells, greenfield operations with low to medium Gas Volume Fraction Percentage and tank terminals.

These customized systems are assembled to meet present demands and modular to easily expand production if required. The total system is comprised of a multiphase pumping module, power supply unit, power distribution and control unit.

Product Performance

- Flow rates up to 400,000 Barrels per Day
- Differential Pressure up to 600 psi or 40 bar

Features / Benefits:

- Multiphase systems handle 100% GVF with external liquid screw sealant, 97% without external cooling in most cases
- Ability to manifold multiple wells into one pad with single or multiple multiphase pumps operating in parallel
- Remote unmanned control system controlling, monitoring and trending pressures, temperatures and vibration for safe operation of the system
- Innovative design maintains proper wetting of the screws without recirculating fluid back to suction, thus improving volumetric output and providing additional sale of hydrocarbons.
Two-Screw Multiphase Pumping System

MPP Quick Selection Table - 1500 rpm; Single Operating System

<table>
<thead>
<tr>
<th>Model</th>
<th>Theoretical Flow Rate (m³/h)</th>
<th>Theoretical Flow Rate (bpd)</th>
<th>Differential Pressure (Bar)</th>
<th>Differential Pressure (psi)</th>
<th>Max Temperature</th>
<th>GVF %</th>
<th>Viscosity Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR 150</td>
<td>259</td>
<td>39,000</td>
<td>40</td>
<td>580</td>
<td>300F / 150C</td>
<td>0 - 100%</td>
<td>1 - 5,000 cst</td>
</tr>
<tr>
<td>MR 200</td>
<td>486</td>
<td>75,000</td>
<td>40</td>
<td>580</td>
<td>300F / 150C</td>
<td>0 - 100%</td>
<td>1 - 5,000 cst</td>
</tr>
<tr>
<td>MR 250</td>
<td>1,501</td>
<td>225,000</td>
<td>40</td>
<td>580</td>
<td>300F / 150C</td>
<td>0 - 100%</td>
<td>1 - 5,000 cst</td>
</tr>
<tr>
<td>MR 350</td>
<td>1,650</td>
<td>250,000</td>
<td>40</td>
<td>580</td>
<td>300F / 150C</td>
<td>0 - 100%</td>
<td>1 - 5,000 cst</td>
</tr>
<tr>
<td>MR 400</td>
<td>2,700</td>
<td>400,000</td>
<td>40</td>
<td>580</td>
<td>300F / 150C</td>
<td>0 - 100%</td>
<td>1 - 5,000 cst</td>
</tr>
</tbody>
</table>

Typical Dimensions - MR 250

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Oil & Gas Products & Services

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