REDA Continuum LF **low-flow extended-life ESP pump**

Improve lift, efficiency, and reliability in all oil wells

**Target production rate:**
50 to 1,000 bbl/d

**Casing diameter:**
5½ in or larger

**Where it is used**
- Wells with casings 5½ in or larger
- Gassy production environments, including slug flow
- Abrasive production environments
- Reservoirs with uncertain productivity
- Wells with frequent stops and starts
- Wells with steep production decline

**How it improves wells**
- Delays conversion to low-flow artificial lift methods
- Improves ESP system reliability
- Increases uptime and extends system run life
- Improves cash flow through accelerated production and continuous operation
- Reduces operating cost through superior hydraulic efficiency
- Enhances performance in gassy and abrasive applications
- Lowers total cost of ownership

**How it works**
The REDA Continuum LF* low-flow extended-life ESP pump significantly improves lift, efficiency, lifetime, and power consumption in unconventional and conventional oil wells with very low flow rates, transient and slug flow, solids and abrasives, frequent stops and starts, and production uncertainty.

Optimal downthrust management makes Continuum LF pump an ideal choice during late well life. The result is extended lifetime as production declines, which reduces opex and capex for replacement and alternative artificial lift solutions.

**What it replaces**
Conventional ESP pumps and early conversion to rod lift.

**What else I should know**
The latest generation of Continuum* extended-life ESP pumps are fully redesigned, the culmination of four years of sustained improvement efforts involving analysis of thousands of pumps. In addition to other major improvements, the newest pumps feature an advanced tungsten carbide radial bearing design that prevents sand jams and bearing spinning, which reduces vibrations and significantly improves sand and gas handling.

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**Continuum LF pump curve for 60 Hz with sg = 1**

<table>
<thead>
<tr>
<th>Flow rate, bbl/d</th>
<th>Required power, hp</th>
<th>Efficiency, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.50</td>
<td>70</td>
</tr>
<tr>
<td>100</td>
<td>1.00</td>
<td>60</td>
</tr>
<tr>
<td>200</td>
<td>1.50</td>
<td>50</td>
</tr>
<tr>
<td>300</td>
<td>2.00</td>
<td>40</td>
</tr>
<tr>
<td>400</td>
<td>2.50</td>
<td>30</td>
</tr>
<tr>
<td>500</td>
<td>3.00</td>
<td>20</td>
</tr>
<tr>
<td>600</td>
<td>3.50</td>
<td>10</td>
</tr>
<tr>
<td>700</td>
<td>4.00</td>
<td>0</td>
</tr>
</tbody>
</table>

**Continuum LF Pump Specifications**

<table>
<thead>
<tr>
<th>Best efficiency point (BEP)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow rate, bbl/d at 60 Hz [m³/d at 50 Hz]</td>
<td>970 [154.28]</td>
</tr>
<tr>
<td>Head per stage, ft at 60 Hz [m at 50 Hz]</td>
<td>26.63 [8.12]</td>
</tr>
<tr>
<td>Required power, hp [W]</td>
<td>0.31</td>
</tr>
<tr>
<td>Efficiency, %</td>
<td>62.01</td>
</tr>
</tbody>
</table>

**General**
- OD, in [mm] | 4.00 [101.6] |
- Stage geometry | Mixed flow |
- Recommended operating range, bbl/d at 60 Hz [m³/d at 50 Hz] | 50–1,000 [6.68–132.44] |
- Burst pressure, psi [kPa] | 6,000 [41,368] |

**Stage metallurgy**
- Ni-Resist®, 5530 alloy

**Housing metallurgy**
- Carbon steel, Redalloy® premium alloy

**Shaft diameter, in [mm]**
- 0.68 [17.27]

**Shaft material and rating at 60 Hz, hp**
- 240 (INCONEL® 718)

**Shaft radial support options**
- ES-T†, ARZ-T†, FBH-T†, FBH-T-KS†

**Radial bearing material**
- Tungsten carbide

**Pump construction**
- Enhanced compression design, factory-shimmed

*Enhanced stability option with tungsten carbide bushing.
† ANZ abrasion-resistant zirconia bearing, tungsten carbide bushing, and sleeve.
‡ Full bearing housing and tungsten carbide bushing.
§ Full bearing housing, tungsten carbide bushing, and keyless sleeve.

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