DIABON® graphite axial flow pump

For nearly 50 years, SGL Carbon has been developing axial flow pumps able to deliver the highest flow rates required by the chemical process and wastewater industries.

SGL Carbon is uniquely capable of manufacturing such pumps from massive blocks of impervious and fully corrosion-resistant graphite, and offers a complete product range with design stability and customization.

Installed all over the world – typically on evaporation, crystallization or distillation loops – these heavy-duty motor-pump groups ensure an extended level of reliability at our valued customer’s production plants.

Customer benefits

 Extreme corrosion resistance
A wide range of graphite qualities fully impregnated with first-class phenolic resins: the perfect chemical compatibility even at high temperatures.

 Total life-cycle costs under control
Robust construction and the exceptional dimensional stability of graphite enable increased service life even at higher temperatures. Additionally, graphite can be easily repaired.

 High flexibility
Multiple design options available to optimize performance of both new plants as well as existing installations.

 Unique durability
There is no diffusion through graphite, its chemical and mechanical properties are unaffected by time. Most of our references have operated since decades.

Applications examples

- Circulation of corrosive fluids at high flow rates in loops with reduced head losses.
- Hydrochloric, sulfuric, phosphoric, sulfonic, hydrofluoric, fluosilicic acids, pickling liquors, chlorinated organics, industrial effluents, wastewaters and even more...

Product information

- Outstanding shaft rigidity preventing deflection at seal and vibrations, also allowing the lowest hydraulic gaps for enhanced efficiencies
- Steep and continuous decline of performance curve for operating stability
- Customized propeller blades to fit with customers operating conditions
- Several carbon-based materials available to achieve corrosion and abrasion resistance
- Replaceable wearing sleeve permitting easy maintenance
- Compliance with ATEX 2014/34/UE directive
- Multiple motor-pump group arrangements: ground-based baseplate, spring-mounted, suspended, V-belts transmission, gear-box, cardan or direct coupling

By the way: Axial flow pumps are also available in exotic metals, offering flow rates up to 165,000 gpm and chemical compatibility with chlor-alkaly applications. See TIS EM C pump.
Data of graphite axial flow pump

<table>
<thead>
<tr>
<th>Technical specification</th>
<th>Units</th>
<th>Type C200 to C600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propeller diameters</td>
<td>in</td>
<td>from 7 to 24</td>
</tr>
<tr>
<td>Flow directions</td>
<td></td>
<td>top suction or end suction</td>
</tr>
<tr>
<td>Flow rates</td>
<td>gpm</td>
<td>from 500 to 25,000</td>
</tr>
<tr>
<td>Total Dynamic Heads</td>
<td>ft</td>
<td>up to 30</td>
</tr>
<tr>
<td>Rotation speeds</td>
<td>min⁻¹</td>
<td>from 500 to 2100</td>
</tr>
<tr>
<td>Operating temperatures</td>
<td>°F</td>
<td>from -40 to +390</td>
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<tr>
<td>Design pressures</td>
<td>psig</td>
<td>up to 150</td>
</tr>
<tr>
<td>Flanges standards</td>
<td></td>
<td>ISO PN metric, ANSI 150 lbs metric, ANSI 150 lbs UNC</td>
</tr>
<tr>
<td>Materials</td>
<td></td>
<td>DIABON® graphite, DURABON®, SIGRASIC®</td>
</tr>
<tr>
<td>Sealing technologies</td>
<td></td>
<td>component or cartridge mechanical seals (balanced single or double, tandem)</td>
</tr>
</tbody>
</table>

Typical graphite axial flow pump – bill of material

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>elbow housing</td>
<td>DIABON, DURABON</td>
</tr>
<tr>
<td>120</td>
<td>seal casing</td>
<td>DIABON, DURABON</td>
</tr>
<tr>
<td>130/131</td>
<td>flanges</td>
<td>steel, stainless steel</td>
</tr>
<tr>
<td>140/150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>133</td>
<td>wearing sleeve</td>
<td>DIABON, DURABON, SIGRASIC</td>
</tr>
<tr>
<td>210</td>
<td>shaft</td>
<td>carbon steel</td>
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<tr>
<td>220</td>
<td>propeller 0°</td>
<td>DIABON, DURABON, SIGRASIC</td>
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<tr>
<td>240</td>
<td>shaft sleeve</td>
<td>DIABON, DURABON</td>
</tr>
<tr>
<td>291</td>
<td>propeller nose</td>
<td>DIABON</td>
</tr>
<tr>
<td>301/301</td>
<td>bearings</td>
<td>steel</td>
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<tr>
<td>400</td>
<td>mechanical seal</td>
<td>SiC-SiC, SiC-Carbon</td>
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<tr>
<td>447/449/456</td>
<td>O-rings</td>
<td>FKM, FFKM</td>
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<tr>
<td>453/460/461</td>
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<td></td>
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<tr>
<td>457</td>
<td>gasket</td>
<td>SIGRAFLEX®</td>
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Graphite axial flow pumps performance chart

TIS GR C pump_US.00
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