EBSRAY PUMPS

L Series
Model L80
The EBSRAY MODEL L80 LOBE PUMP is designed and precision built for efficient transfer of medium to high viscosity clean liquids. It is especially suited for high viscosity liquids where increased efficiency is demanded.

**Specifications**
- Max Flow: 5,000 L/min
- Max Differential Pressure: 2,000 kPa
- Max Speed: 500 RPM
- Viscosities: 100 cSt to 700,000 cSt
- Porting: Flanged DN200 (8”)

**Features**
- High Overall Efficiency at high viscosities.
- Self priming, positive displacement.
- Rotation to suit fluid flow - CW or CCW, Reversible.
- Robust construction for heavy duty applications.
- Large diameter Sleeve Bearings lubricated by pumpage.
- Pressure Retaining Components - Cast Iron, Ductile Iron (ASTM A395) or Cast Steel. Other materials to specification.
- Mechanical Seal or Hydraulic Packed Gland.
- Heating Jackets (optional).
- Optional integral porting for Bypass/Pressure Relief Valves.

**Typical Industries**
- Sugar Industry
- Petroleum Industry
- Chemical Industry
- Refineries
- Bunkering

**Common Liquid Applications**
- Molasses
- Heavy Fuel Oil
- Crude Oil
- Additives
- Lubricating oils
- Palm Oil
- Bitumen
- Resins
- Most clean viscous liquids may be pumped.

**Assured Performance**
EBSRAY’s ISO 9001 Quality System assures compliance with high safety and quality standards. All Ebssray L Series pumps and pumpsets are manufactured under strict guidelines and procedures. Quality inspections and tests during production guarantee pump integrity and pumping performance in accordance with the specifications.
The EBSRAY Model L80 Lobe Pump is a highly efficient positive displacement rotary pump which has only two moving parts to perform its pumping cycle.

**Description**

The Outer Rotor is housed in the pump Body and rotates inside a replaceable Liner. The external surface of this Outer Rotor is cylindrical with an internal shape as shown in the adjacent diagram. Liquid enters and leaves the pump chambers during rotation through the radial ports as shown. The Inner Rotor (which is attached to the Shaft) passes eccentrically through the Outer Rotor thus creating the pumping action. The Inner Rotor/Shaft assembly is supported by large product lubricated Sleeve Bearings at both ends. The geometry of the two rotors allows the Inner Rotor to rotate and drive the Outer Rotor whilst maintaining sealing contact where the two rotors mesh. Constant close clearances are maintained on the opposite side where the rotors are out of mesh to effect the seal between outlet and inlet.

1. As the rotor lobes move out of mesh, they create a low pressure zone which draws the liquid into the pump inlet port.
2. As rotation continues, the liquid is transferred across the seal zone to the outlet side of the pump.
3. As the lobes come back into mesh, liquid is forced out through the pump outlet port.

**Flow/Viscosity**

The above graph shows the performance envelope of the EBSRAY L80 Lobe pump.

**NOTES**

1. Selection is dependent upon adequate NPSHa (Available) for optimum performance and operation at selected speed.
2. Suitability may be affected by Discharge Pressure (Casing pressure), Differential Pressure (Bearing loading), Viscosity of product (Shaft size/torque limitations). Check with EBSRAY or your local Representative as required.
3. Shear sensitive liquids may require slower speeds.
4. For Kinematic Viscosity greater than 50,000 cSt we recommend conferring directly with EBSRAY or local Representative.
5. For flows greater than 5,000 L/min, refer to EBSRAY or local Representative.
6. For flows less than 500 L/min, refer to EBSRAY T Series selection graph.
7. Internal pump clearances will affect hydraulic slip. Therefore, slip calculations must be considered for final pump speed determination in every selection. Clearances are determined by: a) pump casing/rotor materials, and/or, b) product temperature, and/or, c) product viscosity, and/or, d) Shear sensitivity of product.
# Dimensions & Materials

Pump Weight approx. 750 kg (depending on features)

<table>
<thead>
<tr>
<th>Cat #</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BODY</td>
<td>Cast Iron, Ductile Iron or Cast Steel</td>
</tr>
<tr>
<td>3</td>
<td>COVER - INSPECTION END</td>
<td>Cast Iron, Ductile Iron or Cast Steel</td>
</tr>
<tr>
<td>4</td>
<td>Rotor Bearing - Inspection End</td>
<td>Bronze</td>
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<tr>
<td>6</td>
<td>Locating Pin - COVER</td>
<td>Mild Steel</td>
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<tr>
<td>10</td>
<td>COVER - DRIVE END</td>
<td>Cast Iron, Ductile Iron or Cast Steel</td>
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<tr>
<td>11</td>
<td>Rotor Bearing - Drive End</td>
<td>Bronze</td>
</tr>
<tr>
<td>12</td>
<td>‘O’RING - COVER</td>
<td>Nitrile, Viton or as required to suit product pumped</td>
</tr>
<tr>
<td>14</td>
<td>Setscrew - COVER</td>
<td>High Tensile Steel</td>
</tr>
<tr>
<td>17</td>
<td>Gland Plate</td>
<td>Bronze or Steel</td>
</tr>
<tr>
<td>19</td>
<td>Stud and Nut - Gland Plate</td>
<td>Mild Steel</td>
</tr>
<tr>
<td>21</td>
<td>Hydraulic Packing/MEchanical Seal</td>
<td>As required to suit product pumped</td>
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<tr>
<td>35</td>
<td>Outer Rotor</td>
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<tr>
<td>40</td>
<td>Shaft</td>
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<tr>
<td>44</td>
<td>Bearing Cap</td>
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<tr>
<td>45</td>
<td>Setscrew - Bearing Cap</td>
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<tr>
<td>47</td>
<td>‘O’RING - Bearing Cap</td>
<td>Nitrile, Viton or as required to suit product pumped</td>
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<tr>
<td>60</td>
<td>Inner Rotor</td>
<td>Cast Iron</td>
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<td>Key - Rotor</td>
<td>Keysteel</td>
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<td>Key - Coupling</td>
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<tr>
<td>132</td>
<td>Locating Pin - Liner</td>
<td>Mild Steel</td>
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## Warranty
All Ebsray manufactured pumps and equipment are warranted for a full 12 months against faulty workmanship and/or materials. Refer to Ebsray or Factory Appointed Representative.

## Note
All specifications and illustrations are typical only and subject to revision without notice. Certified data available on request.