ERG-AL3 – ELECTROMAGNETIC STIRRER FOR ALUMINUM FURNACES

ergolines produces a wide range of stirrer for non-ferrous alloys, mainly for the production of aluminum and copper alloys. Efficient stirring of the aluminum melting furnaces is one of the key factors enabling to speed up the kinetics of the chemical reactions and improve both heat and mass transfer.

ERG-AL 3 is the cost-effective solution to increase productivity, optimize charge and furnace yield and reduce maintenance costs.
Ergolines is market leader in stirring technology, providing standard and customized EMSs for steel and non-ferrous alloy industries. Our customer oriented approach enables extreme design flexibility and personalized engineering, making ergolines the ideal partner to guarantee high value and fast return on investment.

Our worldwide projects and references in the supply, installation and commissioning of EMS systems for continuous casters, arc furnaces and melting/alloying furnaces witnesses the quality of the ergolines effort to deliver reliable and innovative solutions to optimize production processes and increase products quality.

**BENEFITS**

ERG-AL3 EMS family for aluminum furnaces sized up to 200 tons, based on 3 phase, air or water cooled coils, is the cost-effective solution to:

- Optimize charge and furnace yield
- Optimize alloying
- Increase productivity
- Extend lining life
- Reduce dross formation
- Reduce gas inclusion into the alloy
- Reduce fuel consumption and emissions of the furnace burners
- Reduce maintenance cost
- Reduce manual labor and usage of fork lifts

**ERG-AL3 EMS SYSTEM CONFIGURATION**

- EMS Unit (standard or custom design, air or water cooled)
- Power System (Inverter, transformer, special cables and junction boxes)
- Cooling system (air or water)
- Design improved to fulfil customer expectations in term of performance, power consumption and installation requirements
- Turn-key solutions for EMS systems including EMS, power supply and cooling systems, moving and lifting devices.
Low maintenance required, no production stops
Continuous stirring action of the whole bath of molten aluminium; stirring direction reversibility facilitates dross skimming and counteracts dead corners
To be installed underneath or integrated in the furnace, allowing stirring also when the furnace tilts
Stirrer parameters can be tuned to achieve fluid dynamic performance able to guarantee:
  - Temperature homogenisation
  - Heat transfer increase
  - Improved alloying

<table>
<thead>
<tr>
<th>Technical data</th>
<th>ERG-AL3AE-1600</th>
<th>ERG-AL3AE-3000</th>
<th>ERG-AL3IE-3200</th>
<th>ERG-AL3IE-3800</th>
<th>ERG-AL3IE-5500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnace Size</td>
<td>Up to 15 ton</td>
<td>15 ÷ 30 ton</td>
<td>30 ÷ 60 ton</td>
<td>60 ÷ 120 ton</td>
<td>100 ÷ 200 ton</td>
</tr>
<tr>
<td>Nonmagnetic window size (LxW [mm])</td>
<td>1800x1000</td>
<td>3200x1500</td>
<td>3400x1100</td>
<td>4000x1700</td>
<td>5800x2200</td>
</tr>
<tr>
<td>Max distance from window [mm]</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Cooling system</td>
<td>Air/Water</td>
<td>Water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (LxWxH [mm])</td>
<td>1600x900x450</td>
<td>3000x1300x485</td>
<td>3200x820x640</td>
<td>3800x1500x1000</td>
<td>5500x2000x1100</td>
</tr>
<tr>
<td>Operating frequency range [Hz]</td>
<td>0.5 ÷ 2</td>
<td>0.5 ÷ 1</td>
<td>0.5 ÷ 1</td>
<td>0.5 ÷ 1</td>
<td>0.5 ÷ 1</td>
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<tr>
<td>Reversible Stirring direction</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
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