Benefits:
- Uniform heat radiation over a wide area
- No hot spot in front of the burner outlet
- Robust burner
- Fuel savings with hot air version

Features:
- Sizes from 150 kW to 750 kW
- Suitable for natural gas, LPG, manufactured gas and light oil
- Over 10/1 turndown on ratio and 1500% excess air on natural gas
- Ignition by direct spark or premix pilot
- UV flame detection
- Maximum furnace temperature: 1350°C
- Hot air version available for preheat temperature up to 550°C

Typical Applications:
- Steel reheating
- Ceramics kilns
- Process heating
- Glass sheet bending

The Flat Flame Burner has a flared refractory outlet which produces a disc-shaped flame which “sticks” to the refractory wall or roof, thus creating a source of radiant heat. It is used in applications where no forward velocity can be tolerated. Typically these are kilns where the flame cannot be allowed to impinge on the ware, or large reheating furnaces, where they are installed in the roof to ensure good temperature uniformity by providing additional heat in the middle of the furnace. FFB Burners are also used for reheating glass sheets prior to bending.
Turndown and Excess Air
The diameter and radiation of the disc-shaped flame are controlled by the turndown and the amount of excess air, respectively. The maximum turndown of the FFB Burner is more than 10/1 and the maximum excess air is 1500%.

Fuels
The FFB Burner is suitable for natural gas, LPG and gas oil with a viscosity of 34 sec. Red. 1.

Ignition, Flame Supervision and Automatic Start-up
The FFB Burner can be ignited by means of direct spark when operating on natural gas or LPG and by premix pilot when operating on oil. The burner is fitted with a sight glass and a port is provided for a UV scanner to be installed. In order to start the burner automatically and supervise the flame permanently, Hotwork Combustion Technology can also supply flame management equipment if required.

Hot Air Version
In order to improve fuel efficiency, Hot Air Flat Flame Burners for preheated air up to 550°C are also available for applications where a central recuperator is fitted such as reheating furnaces.

Thermal Ratings and Combustion Data (Natural Gas)

<table>
<thead>
<tr>
<th>Model</th>
<th>FFB5</th>
<th>FFB7.5</th>
<th>FFB10</th>
<th>FFB15</th>
<th>FFB20</th>
<th>FFB25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Rating – Max. (kW)</td>
<td>146</td>
<td>220</td>
<td>293</td>
<td>440</td>
<td>586</td>
<td>733</td>
</tr>
<tr>
<td>Air Volume (Stoichiometric) – Max (Nm³/h)</td>
<td>142</td>
<td>212</td>
<td>283</td>
<td>425</td>
<td>566</td>
<td>708</td>
</tr>
<tr>
<td>Air Pressure (Stoichiometric) – Max (mb)</td>
<td>45</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>57</td>
<td>50</td>
</tr>
<tr>
<td>Gas Pressure @ burner (mb)</td>
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<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Turndown (Stoichiometric)</td>
<td>10/1</td>
<td>10/1</td>
<td>10/1</td>
<td>10/1</td>
<td>10/1</td>
<td>10/1</td>
</tr>
<tr>
<td>Max. Excess Air (%)</td>
<td>1500</td>
<td>1500</td>
<td>1500</td>
<td>1500</td>
<td>1500</td>
<td>1500</td>
</tr>
<tr>
<td>Approx. Flame Diameter (mm)</td>
<td>450</td>
<td>494</td>
<td>494</td>
<td>510</td>
<td>530</td>
<td>530</td>
</tr>
</tbody>
</table>

The data provided is for guidance only and could vary slightly due to manufacturing tolerances.

Further Information
Further details on this burner such as dimensional drawings, typical schematic diagram, spares drawings, procedures for installation, commissioning and maintenance, etc. are available on request.

The data provided in this leaflet is for information only and does not form part of any contract. Due to our continued commitment to research and development, we reserve the right to modify specifications or dimensions without notice. The improper use of combustion equipment can result in a condition hazardous to people and property. Users are urged to comply with national and local standards.