A COMPANY OF

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OIL & GAS

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In 2012 CEBA acquired 100% of SAMIA COMBUSTION, a company with more than 60 years of experience, becoming its single shareholder. The main type of burners designed and manufactured:

- Fuel Gas
- Fuel Oil
- Combined
- Air staged
- Fuel staged

- **Low NOx burners**
- **Conventional burners**

**Radiant wall burners**

**Suitable for:**
- Hot Oil Heaters
- Crude Heaters
- Vacuum Heaters
- Coker Heaters
- Reformer Heaters
- Visbreaker Heaters
- Reboiler Heaters
PROCESS BURNERS

FUEL GAS BURNERS – SRX MODEL

- **LOW NOX MECHANISM**: FUEL STAGED
- **DRAFT**: FORCED & NATURAL DRAFT
- **FUEL TYPE**: GAS (SINGLE OR DUAL FIRING)
- **MAXIMUM POWER RANGE**: 0.1 ÷ 20 MW
- **NOISE**: 80 dB(A)
- **BURNER TURNDOWN**: up to 10 ÷ 1
- **GAS PRESSURE**: 1 ÷ 2 barg
- **AIR TEMPERATURE**: 0 ÷ 300 °C
- **TYPICAL EXCESS AIR**: 15 %

**EMISSIONS (100% CH₄ operation)**
- **NOx**: < 25 ppm
- **CO**: < 5 ppm
PROCESS BURNERS

FUEL GAS BURNERS – SRX MODEL

NOx < 25 ppm
**PROCESS BURNERS**

**FUEL OIL / COMBINED BURNERS – SRG MODEL**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low NOx Mechanism</td>
<td>Air Staged</td>
</tr>
<tr>
<td>Draft</td>
<td>Forced &amp; Natural Draft</td>
</tr>
<tr>
<td>Fuel Type</td>
<td>Gas and Oil Combined</td>
</tr>
<tr>
<td>Maximum Power Range</td>
<td>0.1 ÷ 16 MW</td>
</tr>
<tr>
<td>Noise</td>
<td>80 dB(A)</td>
</tr>
<tr>
<td>Burner Turndown</td>
<td>Up to 6 ÷ 1</td>
</tr>
<tr>
<td>Fuel Gas Pressure</td>
<td>1 ÷ 2 barg</td>
</tr>
<tr>
<td>Fuel Operative Pressure</td>
<td>5 barg</td>
</tr>
<tr>
<td>Atomization System</td>
<td>Vapour injection</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>6.5 barg</td>
</tr>
<tr>
<td>Air Temperature</td>
<td>0 ÷ 300 °C</td>
</tr>
<tr>
<td>Typical Excess Air</td>
<td>15 ÷ 30 %</td>
</tr>
</tbody>
</table>

**Emissions (0.03% N2 content)**

<table>
<thead>
<tr>
<th>Emission</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>&lt; 50 ppm</td>
</tr>
<tr>
<td>CO</td>
<td>&lt; 20 ppm</td>
</tr>
</tbody>
</table>
PROCESS BURNERS

FUEL OIL / COMBINED BURNERS – SRG MODEL

NOx < 55 ppm
PROCESS BURNERS
LOW NOX BURNER - REVAMPING

ACHIEVABLE EMISSIONS
NOx < 30 ppm
CO < 5 ppm

NO MODIFICATIONS TO
Heater’s floor
Piping
Operative specs
RADIANT BURNERS

LOW NO\textsubscript{x} RADIANT WALL BURNER

<table>
<thead>
<tr>
<th>FUEL TYPE</th>
<th>NG/ OFFGAS / FLASHGAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAT RELEASE</td>
<td>0.1 ÷ 1 MW</td>
</tr>
<tr>
<td>AIR TEMPERATURE</td>
<td>0 ÷ 500 °C</td>
</tr>
</tbody>
</table>

- Higher heat release
- Low NO\textsubscript{x} < 50ppm
- Improved flash back / lift off prevention

GUARANTEED POLLUTANT EMISSIONS

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>&lt; 50 ppm</td>
</tr>
<tr>
<td>CO</td>
<td>&lt; 5 ppm</td>
</tr>
</tbody>
</table>

BURNERS TEST HAVE BEEN SUCCESSFULLY COMPLETED AND CEBA CAN BE CONSIDERED AS HALDOR TOPSOE VENDOR ON CASE BY CASE BASIS.
PROCESS BURNERS

CEBA’S BURNERS MAIN FEATURES

- **ULTRA LOW POLLUTANT EMISSIONS**
  - Staged Air and Staged Fuel
  - NOx < 25 ppm
  - CO < 1 ppm

- **HIGH QUALITY STANDARDS**
  - ISO 9001:2008
  - API standards
  - ASME standards
  - UOP standards

- **SIMPLE AND EFFECTIVE DESIGN**
  - 10 % Excess Air
  - SPL < 80 dB(A)
  - Castable parts
  - Lightweight muffle blocks
  - Sightglasses 170 visibility span

- **EASY MAINTENANCE**
  - Less spare and consumable part compared to our competitors
PROCESS BURNERS

CEBA’S BURNERS MAIN FEATURES

- **HEAVY DUTY - TAILOR MADE**
  - Burners customized as per client’s needs

- **MULTIPLE FUEL FIRING**
  - High flexibility to any type of fuel gas and fuel oil

- **FULLY TESTED & CERTIFIED**
  - Each burner is tested in our facility simulating in-site’s conditions
  - Material certificates and traceability

- **ULTRA RESISTANT HANDLES**
  - Heavy duty construction
  - Suitable for sour environments and acid attack
  - High temperature friendly

- **CUSTOMER CARE**
  - Rapid response for assistance and spares

- **20-YEAR OPERATION BURNER**
  - Each burner is designed to operate at least 20 years
CEBA can supply complete combustion plants according to Customer’s specifications and main international standards, i.e.:

- Combustion air/fuel gas valve train complying with main international standards (EN, NFPA, …)
- Burner management system (BMS) and process control panel with programmable logic control (PLC)
- Burners ignition and control systems
- High energy ignition systems
- Shoulder-portable high energy ignition systems
- Carts for portable high energy ignition systems
- Ultra-Violet and Infra-Red flame scanners