LEADING EDGE PILOT IGNITERS FOR THE PETROLEUM AND CHEMICAL REFINING INDUSTRY

Burner pilot and igniter system

Callidus Technologies, LLC
The ultimate pilot system
The Callidus Scepter Pilot for high performance ignition in the refining and petrochemical industries.

Meeting the refining and petrochemical challenge.
As a result of the efforts of Callidus engineers and with input from our customers, the Scepter Pilot was developed. The new pilot system was designed at the world-class industrial scale Callidus Research and Test Facility, and only released after three years of extensive evaluation.

The Scepter Pilot is available in two models to meet the demands of industry.
Callidus Scepter Pilot is available in two models, the original permanent Scepter Pilot and the Scepter Model P1 portable igniter. Each is designed to address the rugged requirements of the refining and petrochemical industries. With self-contained electronics, stainless steel construction throughout, hermetically sealed flame and ignition rods, the Scepter Pilots stand up to rough handling and severe service. The high internal energy igniter cannot short out and the flame rod is impervious to moisture, providing reliable spark ignition, light-off and monitoring. For dependable, non-compromising pilot performance, turn to the Scepter.

Scepter Advantages
- Internal flame rod
- Self aspirating
- 100,000 Btu/hr
- Internal direct high-energy ignition
- High intensity performance

Rugged High-Energy Igniter
- Impervious to water
- Proprietary Scepter exciter
- Cannot short out
- Internally mounted
- Service on-line
- Available for natural draft or forced draft applications
- Scepter Pilot model S2 offers high-energy ignition.
- Scepter Pilot model S2HR offers high-energy ignition plus flame detection

Design Features
- Compact, high capacity design
- Heavy duty construction
- Severe service rated
- 2” OD fits most burners
- Removable igniter and flame rod for on-line servicing
- ACI Type HP-45 Tip flame tip for long life
- Stainless steel construction
- Scepter S2 and Scepter S2HR are suitable for use in thermal oxidizer installation

Design Performance Comparison

<table>
<thead>
<tr>
<th></th>
<th>Traditional Pilot</th>
<th>Traditional Scepter</th>
<th>Pilot Pilot</th>
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<tbody>
<tr>
<td>Flame Rod</td>
<td>Well protected</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Self drying</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Hermetically sealed</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Ignition Source</td>
<td>Well protected</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>High Energy Ignitions (HEI)</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Impervious to water</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Pilot</td>
<td>Selectable internal or external aspiration</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Rugged design</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Continuously monitors presence or absence of flame before, during and after ignition sequence</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Retrofit</td>
<td>Fits in 2” OD opening</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Explosion Proof Enclosure
2” Diameter (Stainless Steel)
Internal Flame Rod and Ignition Rod
ACI Type HP-45 Tip
The Callidus Scepter P1 Portable Igniter for absolute reliability of on-demand portable ignition.

The Callidus Scepter Model P1 Portable Igniter was developed to work under the most demanding requirements found in the industrial, refining and petrochemical industries. The P1 is a safe and reliable solution for the toughest burner ignition applications, including situations where steam or rain may be present. The unit is also ideal for use during the replacement of spent burner igniters or in emergency situations where the firing of burners fail due to electrical power loss.

The Scepter P1 portable igniter unit consists of the ignition lance, igniter electronics and a MAPP gas propylene or propane bottle. No high-voltage cable or heavy battery packs are required. The compact one inch diameter igniter head fits into virtually any burner plenum for safe ignition inside the combustion area.

Features
- Compact one inch diameter igniter head fits into virtually any burner plenum.
- High Energy Ignition lights when completely wet from steam or rain.
- Eliminates exposed flame outside heater.
- Light inside burner plenum in high draft and high force air +/- 10 inches W.C.
- Lights in turbine exhaust gas (TEG)
- Rugged yet light weight
- Standard insertion lengths: 24 to 60 inches. Custom lengths available.
- Lights 100 burners on a single fuel tank.
- Batteries last over one year.

Energy Sources
- Electrical: Eight (8) "C" Cell Batteries
- Fuel Gas: Standard MAPP Gas Propylene or Propane Bottle

Right Tool for Common Problems
- Ignites the hardest to light burners.
- Stop using improvised lighting techniques such as oily rags or road flares.
- Fire on demand, shutoff on demand.

Loaded weight 16 lbs.
Test Facility
The Callidus test facility is in continual use for combustion technology research and development as well as customer witnessed demonstrations. Our array of test systems allows us to closely match actual field operating conditions, providing results which will more accurately predict actual measured performance.

Global Coverage
Callidus reaches the global market through our headquarters located in Tulsa, Oklahoma, USA with regional direct sales offices and independent sales representation around the world. Meeting our customers’ expectations and setting the standards for the combustion industry have always been our company goals. Each burner, flare, thermal oxidizer and catalyst system we design and manufacture is built with those goals in mind.

In Addition to Catalyst Systems, Callidus Offers:
- Ultra-low NOx Burners
- Flares, Flare Systems, and Flare Gas Recovery Systems
- Thermal Oxidizer Systems
- Field Services and Parts
- CFD Modeling
- Training and Schools

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