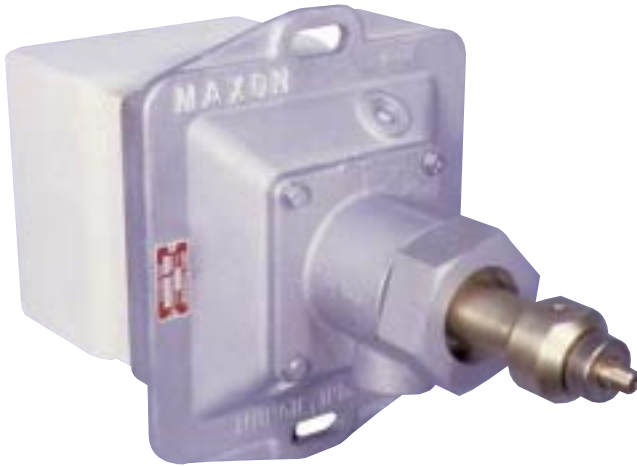
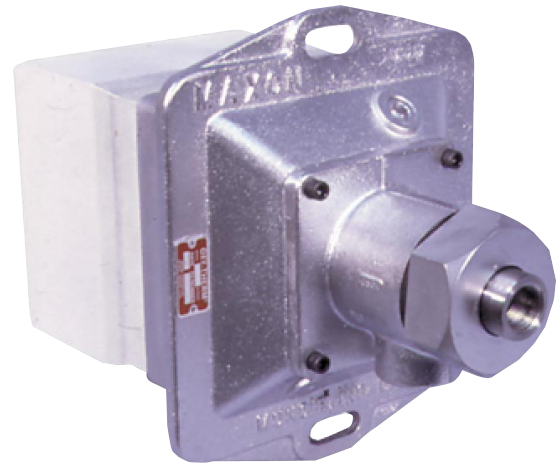


# OXY-THERM® Gas or Oil Burners



OXY-THERM® Oil Burner



OXY-THERM® Gas Burner

- **Provide clean combustion with low NOx levels**, even with on-site generated oxygen (approximately 90% purity) units. OXY-THERM® Burners use oxygen for the combustion reaction, removing the major source of nitrogen available for the formation of NOx.
- **Quickly convert between gas and oil service** by changing the burner nozzle. Provides stand-by or alternate fuel capabilities. Fuel oil capability ranges from light to heavy fuel oils.
- **Designed for easy installation and maintenance.** OXY-THERM® Burner nozzles can be removed during furnace operation, eliminating costly downtime.
- **Achieve higher flame temperatures** by burning fuels with oxygen. OXY-THERM® Burners eliminate the need for costly combustion air preheaters, regenerators or recuperators.
- **Substantially improve the product quality** by eliminating the flow reversals found in regenerative melters. Oxygen-fuel firing reduces flue gas volume, resulting in less turbulence in the melter atmosphere.
- **Quickly change burner capacity** by replacing the thread-on burner nozzle (gas burners only).
- **Improve heat transfer**, leading to better homogenization and fining of the melt. Hence, lower seed counts, higher pull rates and better selections.
- **Eliminate the need for water cooling** and related water piping and maintenance.
- **Provide application flexibility** with 5:1 turndown range.

Gas OXY-THERM® manufactured under U.S. Patent #4690635,  
 Canadian Patent #1260378, U.K. Patent #2192982,  
 German Patent P3722446.8 and French Patent #8704742.  
 Oil OXY-THERM® Burner manufactured under U.S. Patent #5092760.  
 Additional patents pending in Canada, Europe, Japan, South Korea and Mexico.

Contact Esys for more information about this product:  
 Esys® The Energy Control Company™  
 4520 Stine Road, Ste 7  
 Bakersfield, CA 93313  
 (661) 833-1902

email: [esys@esys.us](mailto:esys@esys.us)  
 website: <http://www.esys.us>



# OXY-THERM<sup>®</sup> Gas or Oil Burners

## Principle of Operation

With OXY-THERM<sup>®</sup> Burners, oxygen for combustion enters the burner body, mixes with the fuel and exits the burner block.

For oil firing, oil enters through the nozzle, is atomized and combines with the combustion oxygen as it exits the burner block.

The ignited oxygen-fuel flame discharges through the refractory block tunnel and develops a luminous, soft, but tightly-wrapped flame pattern with low exit velocities.

Pilots are generally not required for oxygen-fuel applications. Contact your Maxon representative about specific piloting questions.

Typical applications in the glass industry include tunnel-type ceramic kilns, converted regenerative-type glass melters, and unit melters.

Flow control and shut-off valves (available from Maxon) need to conform with the appropriate codes and standards for oxygen service.

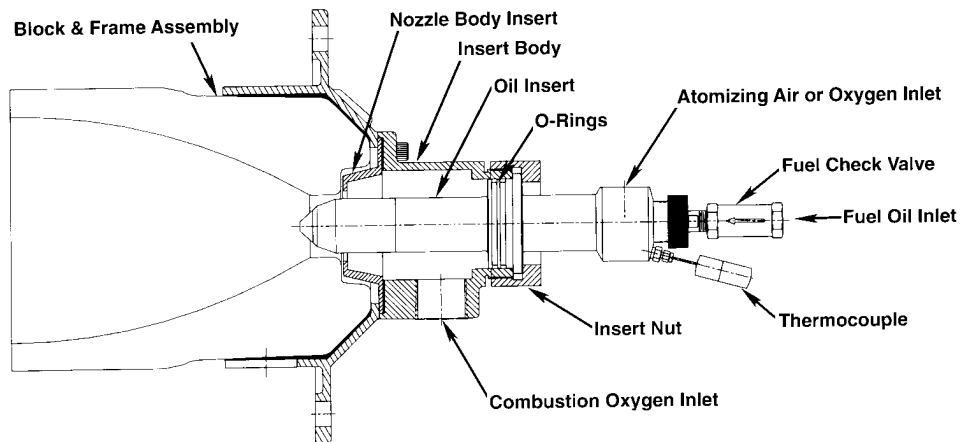
Two refractory block materials are available for OXY-THERM<sup>®</sup> Burners. **Zedmul-20 burner blocks** are to be used for gas firing only, and should be checked for compatibility with your process. **Zirconia burner blocks** may be used with gas firing and are required for oil firing due to the highly radiant nature of the flame.

## Capacities

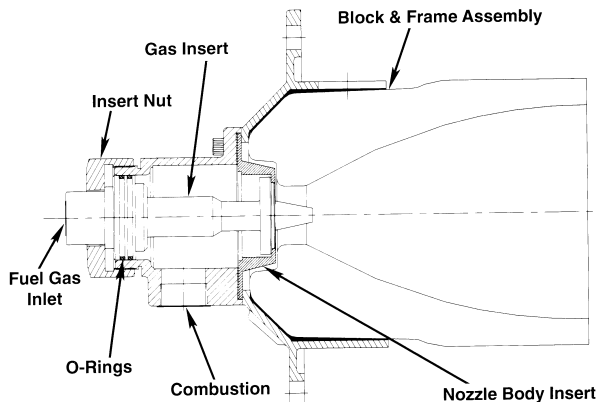
Gas OXY-THERM<sup>®</sup> Burners provide maximum outputs that range from 200 MBtu/hr (59kW) to 7.5 MMBtu/hr (2.2MW). Oil OXY-THERM<sup>®</sup> Burners provide maximum outputs that range from 2.7 MMBtu/hr (790 kW) to 15 MMBtu/hr (4.4 MW).

**NOTE:** In the Imperial System, "M" refers to 10<sup>3</sup>, "MM" refers to 10<sup>6</sup>.

**OXY-THERM<sup>®</sup>**  
**Oil Burner**  
(cutaway view)



**OXY-THERM<sup>®</sup>**  
**Gas Burner**  
(cutaway view)



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