

Installation and Operating Instructions for OPTIMA™ SLS Burner

Application Requirements

View Port

A view port to observe burner flame is essential to inspect flame aspect. Locate the view port downstream of the flame, looking back in to the burner sleeve. Make sure the complete flame can be evaluated.

Support Burner Air and Gas Piping

The OPTIMA™ SLS Burner shall not be used as support for the piping to the burner. Gas and air piping shall be supported in such way that no additional loads will be created on the burner.

Burner Protection

Most UV/IR scanners generally have recommended maximum exposure temperatures. Consult the operating instructions for your selected flame detector. Cooling air may be required. In cases of high chamber temperatures (above 800°F) and/or back pressures, it may be required to purge the burner with a small amount of cooling air. This can be achieved with keeping the combustion air blower on, and the air control valve in minimum position.

SMARTFIRE® and SMARTLINK® Control System

Consult the SMARTFIRE® or SMARTLINK® installation and operation instructions. Only adequate regulator adjustment will be required as SMARTFIRE® is a compensating closed loop air/fuel ratio control system. For burners equipped with SMARTLINK®, consult the appropriate operating and instruction manual.

Installation Instructions

Storage of OPTIMA™ SLS Burners

OPTIMA™ SLS Burners shall be stored dry (inside).

Handling of OPTIMA™ SLS Burners

OPTIMA™ SLS Burners are shipped as complete units. Handle burners with care during unpacking, transport, lifting and installation. Use proper equipment. Any impact on the burner could result in damage.

Test Connections

Install test fittings, tubes, and manometers or gauges at the air, gas and chamber pressure test connections on the burner. Air and gas pressures must be read differentially against the system chamber pressure.

Mounting

Burner may be mounted at any orientation.

An upward-facing flame scanner can lose signal over time as water and debris fall on the lens.

Ensure burner weight is adequately supported. Thin skin walls may require stiffening plates or additional structural support.

Combustion Air Supply

No air filtration is necessary for the OPTIMA™ Burner because of its open internal structure for most applications. In especially dirty or dusty environments like gypsum plants, textile mills or foundries, air filtration is recommended.

SMARTFIRE® control system will compensate for fluctuations in combustion air temperature, barometric pressure and chamber pressure.

Combustion air control valve and combustion air blower may be close coupled to burner air inlet. Consider rotation of air control butterfly when piping.

(Allow 5 Ø minimum straight pipe length between air control valve and burner. An elbow is permissible at the burner inlet with 1 Ø of straight connecting pipe.)

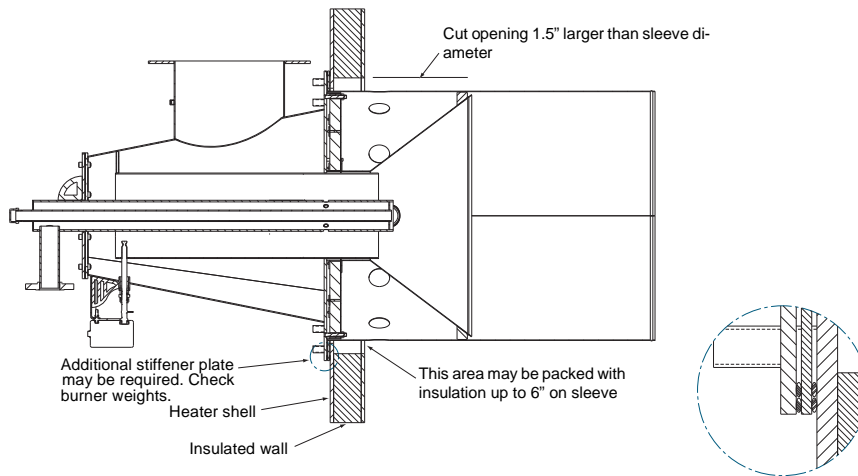
Burner Mounting

Consult burner weights when designing mounting penetrations. Do not hang OPTIMA™ SLS burners on thin walled vessel skins without added support. Size burner penetrations 2" to 3" larger than discharge sleeve diameter. Insulation may be packed onto discharge sleeve for the first 6" of length.

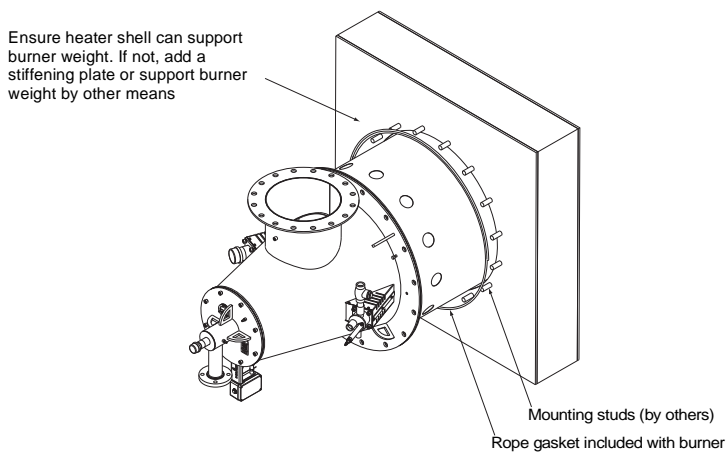
Do not fully insulate sleeves. Do not trap sleeves in highly radiant environments or refractory structures.

Optimal sleeve life will occur where discharge sleeves are kept in moving process flows. For optimal emissions performance, protect discharge sleeve exit from perpendicular process velocities >3000 ft/m . Do not orient burners where process flows will travel into discharge sleeve.

Sketch 1



Sketch 2



Start-up Instructions

Instructions provided by the company or individual responsible for the manufacture and/or overall installation of a complete system incorporating MAXON burners take precedence over the installation and operating instructions provided by MAXON. If any of the instructions provided by MAXON are in conflict with local codes or regulations, please contact MAXON before initial start-up of equipment.



Read the combustion system manual carefully before initiating the start-up and adjustment procedure. Verify that all of the equipment associated with and necessary to the safe operation of the burner system has been installed correctly, that all pre-commissioning checks have been carried out successfully and that all safety related aspects of the installation are properly addressed.

Initial adjustment and light-off should be undertaken only by a trained commissioning engineer.

SMARTFIRE® Control System

Refer to the SMARTFIRE® instruction section for complete start-up instructions.

Typical Ignition Sequence

- Pre-purge of burner and installation, according to the applicable codes and the installation's requirements.
- Combustion air control valve shall be in the minimum position to allow minimum combustion air flow to the burner.
- Pre-ignition (typically 2 seconds sparking in air)
- Open pilot gas and continue to spark the ignitor (typically 5 to 10 seconds depending on local code requirement).
- Stop sparking, continue to power the pilot gas valves and start flame check. Trip burner if no flame from here on.
- Check pilot flame stability (typical 5 to 10 seconds to prove stable pilot).
- Open main gas valves and allow enough time to have main gas in the burner (typical 5 second + time required to have main gas in the burner).
- Close the pilot gas valves.
- Release to modulation (allow modulation of the burner).
- Above sequence shall be completed to include all required safety checks during the start-up of the burner (process and burner safeties).
- Position 1 (one) pilot gas valve as close as possible to the pilot burner gas inlet for fast ignition of the pilot burner.

Maintenance and Inspection Instructions

Regular inspection, testing and recalibration of combustion equipment according to the installation manual is an integral part of its safety. Inspection activities and frequencies shall be carried out as specified in the installation manual.

- Perform the following activities at least annually as part of a recommended preventative maintenance routine.
- Inspect burner internal parts for wear or oxidation.
- Inspect associated control instruments and devices for function with particular attention to all safety permissive switches.
- Perform leak tests on fuel shut off valves according to any schedule established by the authority having jurisdiction.
- Clean or replace combustion air filters if present.
- Clean gas filters and drain drip legs in fuel train.
- Assess combustion spare parts and restock. For the OPTIMA™ SLS Burner, MAXON recommends keeping spare spark ignitors, a SMARTFIRE® actuator, and spare flow probes.



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COMBUSTION SYSTEMS FOR INDUSTRY

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