

SELF RECUPERATIVE AND RADIANT TUBE BURNERS

Single Ended Radiant Tube Burner (SER)

Outstanding Fuel Efficiency Low Nox

Overview



The low NOx SER V5 burner delivers the best fuel efficiency of any burner in its class. Featuring a compact design incorporating both the burner and recuperator, the burner is easy to install and set up. With the burner and an enhanced performance recuperator co-axially mounted inside a radiant tube, the SER V5 internally transfers combustion exhaust heat back to the burner air supply in a counter-flow pattern. This provides high preheat temperatures. The new high-efficiency recuperator design incorporates a unique dual-finned combustor, which provides an increased heat transfer surface for greater fuel savings. The SER v5 delivers exceptional heat flux and temperature uniformity.

Features & Benefits:

- The new, high efficiency recuperator design incorporates a unique dual finned combustor to provide an increased heat transfer surface for greater fuel savings
- SER v5 delivers exceptional heat flux and temperature uniformity
- SER V5 cuts fuel costs from 35% to 55% over sealed ambient air burners and even more when replacing atmospheric type burners
- NOx emissions are reduced by more than 50% over conventional recuperative burners
- Self-recuperative design eliminates the need for external recuperators and insulated piping
- The insulated mounting flange and exhaust housing improve heat recovery while creating a much cooler working environment
- Burners can be installed either vertically or horizontally in nearly any furnace, either gas or electric

Specifications

APPLICATIONS & COMPATIBILITY

Applications

- Radiant tube heating in industrial furnaces

MEASUREMENT, MEDIA & PHYSICAL PROPERTIES

Specific Gravity

- 0.6

COMBUSTION, FUEL & MIXING SUB-SYSTEMS

Recuperator Type

- Internal recuperator

Burner Configuration

- Single-ended



CONNECTIONS & INTERFACES

Pipe Connection Type

- BSP and NPT thread standards

MECHANICAL DESIGN & HARDWARE DETAILS

Outer Tube

- Ceramic or Metallic

OVERVIEW

Models

- SER450, SER600, SER800

Burner Type

- Nozzle-mix burner with integrated recuperator

PRESSURE SPECIFICATIONS

Minimum Blower Pressure

- ≥ 15 in. w.c. (37 mbar) recommended

MAXIMUM/MINIMUM TEMPERATURE LIMITS

Maximum Furnace Temperature

- 1850 deg F (1010 deg C)

SAFETY, PROTECTION & RELIABILITY

Main Gas Safety

- Dual shut-off valves per NFPA

IGNITION, FLAME & SUPERVISION SPECIFICATIONS

Ignition Type

- Direct Spark Ignition

Flame Sensor

- UV Scanner

Flame Monitoring

- UV Scanner (required for ceramic tubes)

THERMAL, FLOW & PROCESS CHARACTERISTICS

Heating Value

- 1004 Btu/ft³ (40 MJ/m³)

Heating Type

- Indirect heating

FUEL, GAS & MEDIA SPECIFICATIONS

Fuel Type

- Natural Gas (CH₄ ≥ 90%)

BURNER/FLAME-RELATED LENGTHS

Flame Length

- Based on tube length and model



Exhaust Housing

- Insulated for cooler working environment

DIMENSIONS & SIZE SPECIFICATIONS

Diameter

- 4.5 in, 6 in, 8 in

CONTROL, LOGIC & FUNCTIONAL BEHAVIOR

Control Type

- High/Low pulse firing (modulating optional)

Filters

▼ CATEGORY	
☒ Spare Part	
☒ Base Part	
▼ TYPE	
☒ Outer Tube Assembly	
☒ Inner Tube Kit	
☒ Mounting Flange	
☒ Outer Tube	
☒ Tube Assembly	
☒ Insulation Sleeve	
☒ Burner Extension	
Search	
Part Number	10003161
Description	GSKT, SQ, SER, 3 1/4, ADPT, OUTR, 3 1/2
Category	Spare Part
Type	Adapter Gasket
	Order Online
Part Number	10003162
Description	GSKT, SQ, SER, 3 1/4, ADPT, OUTR, 4 1/2
Category	Spare Part
Type	Adapter Gasket
	Order Online
Part Number	10003163
Description	GSKT, SQ, SER, 3 1/4, ADPT, INR, 2 1/2
Category	Spare Part
Type	Adapter Gasket
	Order Online
Part Number	10003164
Description	KIT, ADPT, SER, 3 1/4, OUTR
Category	Spare Part
Type	Adapter Kit
	Order Online



Part Number	10003165
Description	KIT, ADPT, SER, 3 1/4, INR
Category	Spare Part
Type	Adapter Kit
	Order Online
Part Number	10009701
Description	GSKT, INR TB, PTB035, SIC, 7.5 "
Category	Spare Part
Type	Inner Tube Gasket
	Order Online
Part Number	10011070-1
Description	CMBSTR, SER, VRSN 3, 4.5 IN., 22MM BORE
Category	Spare Part
Type	Combustor
	Order Online
Part Number	10011071-1
Description	NZL, SER450, 1 HOLE
Category	Spare Part
Type	Nozzle
	Order Online
Part Number	10011071-2
Description	NZL, SER450, 2 HOLE
Category	Spare Part
Type	Nozzle
	Order Online
Part Number	10011073-1
Description	TB, GAS, SER450, 440MM LG
Category	Spare Part
Type	Gas Tube
	Order Online

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Product Number



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10003161
GSKT,SQ,SER,3 1/4,ADPT,OUTR,3 1/2

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10003163
GSKT,SQ,SER,3 1/4,ADPT,INR,2 1/2



10003163

GSKT,SQ,SER,3 1/4,ADPT,INR,2 1/2

10003164

KIT,ADPT,SER,3 1/4,OUTR

10003164

KIT,ADPT,SER,3 1/4,OUTR

10003165

KIT,ADPT,SER,3 1/4,INR

10003165

KIT,ADPT,SER,3 1/4,INR

10009701

GSKT,INR TB,PTB035,SIC,7.5 "

10009701

GSKT,INR TB,PTB035,SIC,7.5 "

10011070-1

CMBSTR,SER,VRSN 3,4.5 IN.,22MM BORE

10011070-1

CMBSTR,SER,VRSN 3,4.5 IN.,22MM BORE

10011071-1

NZL,SER450,1 HOLE

10011071-1

NZL,SER450,1 HOLE

10011071-2

NZL,SER450,2 HOLE

10011071-2

NZL,SER450,2 HOLE

10011073-1

TB,GAS,SER450,440MM LG

10011073-1

TB,GAS,SER450,440MM LG