

# ECLIPSE TJSR V5

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## SELF-RECUPERATIVE BURNERS

### **Advanced design combines a high velocity flame with fuel saving recuperation**

The Eclipse TJSR V5 is a direct fired, self-recuperative burner based on our industry proven ThermJet technology. A space saving, integral eductor pulls the furnace exhaust through an internal ceramic recuperator. The recuperator preheats the incoming combustion air to very high levels, which improves furnace operating efficiency to reduce fuel usage by as much as 50% over typical ambient air burners.

### **Built For Efficiency**

The TJSR V5 design eliminates the need for hot air ductwork required by external recuperators, providing savings in hardware and installation. The internally insulated heat exchanger section and exhaust housing hold heat in the recuperative section, adding to the heat recovery efficiency. This also keeps external temperatures very low, providing better operator comfort and reduced thermal wear on associated equipment outside the furnace shell.

### **Cost Saving Features**

- The integrated gas and air orifices simplify burner piping, set-up and adjustment. There is no guesswork with input levels or burner capacity settings at startup.
- The new burner housing design is up to 40% lighter, making furnace structural changes and installation simpler, with no fear of high stress mounting areas.
- Internal components are made of space age silicon carbide materials, built to deliver excellent heat transfer and extremely long burner life.

### **High Velocity Self-Recuperative Burners**



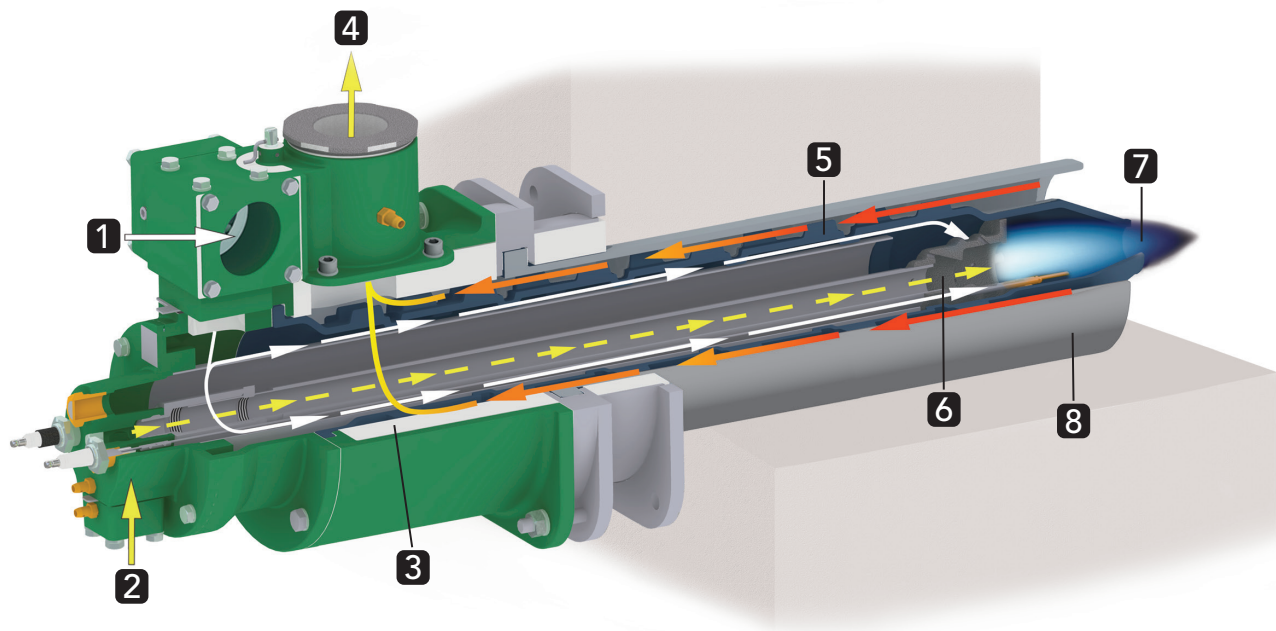
- Installation, operation, and maintenance are simplified and less costly. And the fuel savings are constant, with no degradation of the exchanger/recuperator section, even after years of use.
- Available in four sizes with a maximum capacity ranging from 200,000 to 1,000,000 BTU/hr (60 to 293 kW).

### **Versatile Performance**

With the TJSR V5, you can light anywhere in the ignition range, with no pilot required. The TJSR V5 is capable of firing with High/Low or modulating control. For even more precise control, TJSR V5 delivers exceptional performance with the Eclipse PulsePak pulse firing control system. On-ratio firing and excess air firing can also be accomplished. Unlike competitive burners, TJSR V5 delivers a stable flame throughout its full input range.

# TJSR V5 Self-Recuperative Burners

*Advanced technology delivers fuel saving recuperation in a high velocity, direct fired burner.*



- 1** The eductor design uses a "coanda effect" to maintain a precisely calibrated air balance between the burner and the exhaust. It provides for easy, single pipe air connection.
- 2** Gas inlet block is adjustable in 90° increments to suit a variety of piping alternatives. The integral gas orifice provides accurate gas metering and burner set-up.
- 3** Insulated burner body holds in the usable heat while protecting the operator with a cooler work environment.
- 4** Exhaust outlet. Thanks to the high efficiency heat exchanger and insulated burner body, the TJSR V5 yields cooler exhaust temperatures.
- 5** Dual-finned heat exchanger provides the highest heat transfer efficiencies available in a self-recuperative burner.

- 6** The nozzle design uses staged air and gas mixing to provide very low emissions and a wide turndown range.
- 7** High speed flame delivers up to 550 FPS (168 m/sec) exit velocity, making the TJSR V5 the highest velocity burner in the industry.
- 8** High temperature ceramic exhaust tube for better heat transfer and longer life.



## PulsePak Control System

For single or multiple TJSR V5 burner installations, the Eclipse PulsePak Pulse Firing Control System offers the most precise, efficient control solution. Refer to Bulletin 862C.

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