RANGER
ULTRA LOW-NOX COMBUSTION SYSTEM

MADE IN THE USA

PREFERRED
UTILITIES MFG CORPORATION
Heavy-duty construction and high-quality materials made burners of the past last a lifetime. Designed to be rugged, the body withstood high temperatures and harsh conditions. Reliable performance produced a stable flame and constant flow of even heat for easy operation and maintenance in the boiler room.
We've re-engineered the burner to exceed the requirements for lower emissions. Created specifically to achieve sub 9ppm NO\textsubscript{X}, the Ranger uses modern combustion techniques with the built-to-last tradition. The Ranger reaches levels that were previously only achieved through compromise.
RANGER
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The Ranger Ultra-Low NO\textsubscript{X} Combustion System is a sub 9ppm NO\textsubscript{X} burner platform capable of firing dual fuels.

The Ranger achieves 10:1 turndown on natural gas and 8:1 turndown on oil with less than 3% oxygen.

Sub 9ppm NO\textsubscript{X} is achieved without an air filter or a fiber mesh head. Maintenance is simple since there is no need to replace a clogged air filter or a burned out fiber mesh head, resulting in higher savings.
CHANGE FUEL
WITH THE FLIP
OF A SWITCH

Switching your fuel choice has never been easier. This is accomplished in three simple steps: turn off the burner, change the fuel choice, and turn the burner back on.

CHOOSE WHAT YOU RUN ON
NO HASSLE MAINTENANCE
EASY ACCESS HINGE TO CLEAN

NO FIBER MESH HEAD
SAVING ON REPLACEMENT

NO JACK SHAFT CONTROLLER
SAVE FUEL AND MAINTENANCE COSTS

RANGER AF-250
PATENTED TECHNOLOGY
WHY UPGRADE?

When you upgrade your burner, you also upgrade your efficiency and your savings, without compromising for sub 9ppm NO$_X$. 

NO AIR FILTER

SAVING ON REPLACEMENT

NO WASTED TIME SWITCHING FUELS

SAVING TIME AND LABOR COSTS

RANGER
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### SPECIFICATIONS

<table>
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<tr>
<th>Applications:</th>
<th>Single burner: firetube, firebox (cast iron sectional), watertube boilers, or HTHW generators.</th>
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<tr>
<td>Fuel:</td>
<td>No. 2 through No. 6 fuel oil, and/or natural gas (consult factory for Bio Residual Oil (BRO), Renewable Fuel Oil (RFO), or waste fuels).</td>
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<tr>
<td>NOx Emissions:</td>
<td>Natural gas: less than 9 ppmc. No. 2 fuel oil: less than 90 ppmc (maximum 0.01% FBN) without FGR. No. 6 fuel oil: less than 250 ppmc (maximum 0.30% FBN) without FGR. BRO &amp; RFO: consult factory</td>
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<tr>
<td>Burner Efficiency:</td>
<td>Any fuel: 1.5 - 2.5% excess oxygen 50 - 100% firing rate (exclusive of “tramp” air) VFD motor control for maximum electrical efficiency of combustion air.</td>
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<td>Turndown:</td>
<td>10:1 on gas firing; 8:1 on oil firing.</td>
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<td>Supply Pressures:</td>
<td>The Ranger burner accommodates a wide variety of combustion applications and fuels. Specific information relating to fuels intended to be used, as well as pressures and temperatures, must be provided.</td>
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<td>Burner Control &amp; Monitoring:</td>
<td>Firing Rate Control: Burnermate Universal Parallel Positioning/Fully metered controller. Oxygen sensor: Model “ZP” In-Situ sensor, reliable zirconium oxide detector Monitoring: SCADA/Flex remote monitoring and control system. Instruments: UV &amp; IR Flame Scanner</td>
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<td>Additional Options:</td>
<td>Draft control, drum level control, low fire fuel changeover, dual/redundant flame scanning, smoke opacity monitoring and alarm, atomizer post purge capability, flue gas temperature indication alarm, emergency boiler shutdown.</td>
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**Note:** Furnace geometry and heat release rate affect NO<sub>x</sub> performance. Lower NO<sub>x</sub> emissions are attainable with more FGR.
REMOTE FAN

- Size: 400HP to 2500HP
- MMBTU: 4—120
- Configurable to meet special requirements (high altitude, obstructions at the boiler front, hazardous locations, pre-heated air).
- Removeable oil gun for easy maintenance and includes a coupling block design with integral shutoff valves for operator safety.
- Air plenum can be welded to the boiler front wall. Burner design is suitable for Watertube applications.
- Multiple scanner locations.

AXIAL FAN

- Size: 100 to 400 HP
- MMBTU: 4—25
- Pre-engineered sizes and configurations for fast deliveries.
- Hinged fan design for easy burner maintenance and inspection.
- Axial fan provides compact burner and reduced installation time.
- Burner mounted control panel is available.