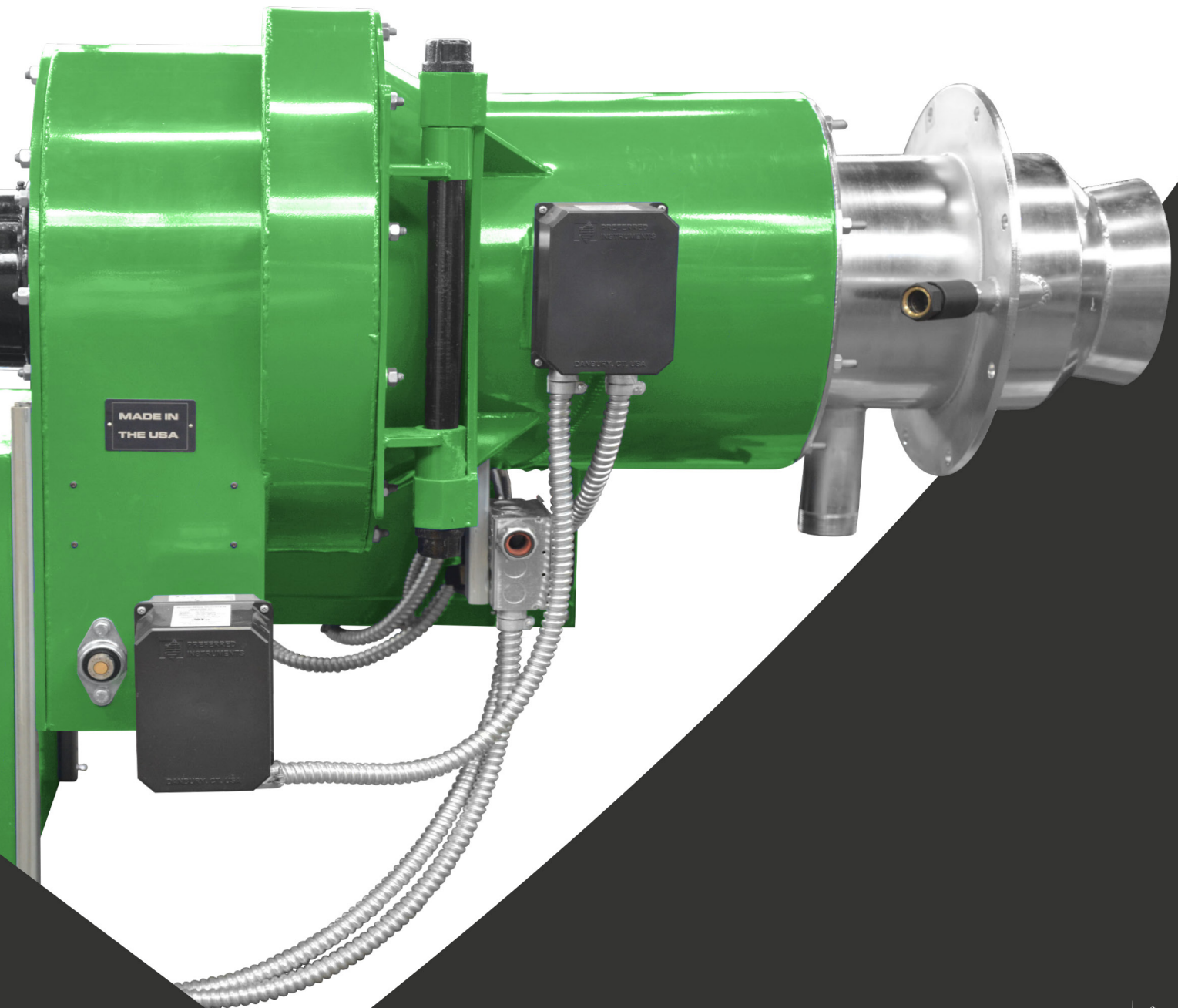
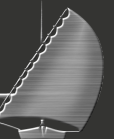


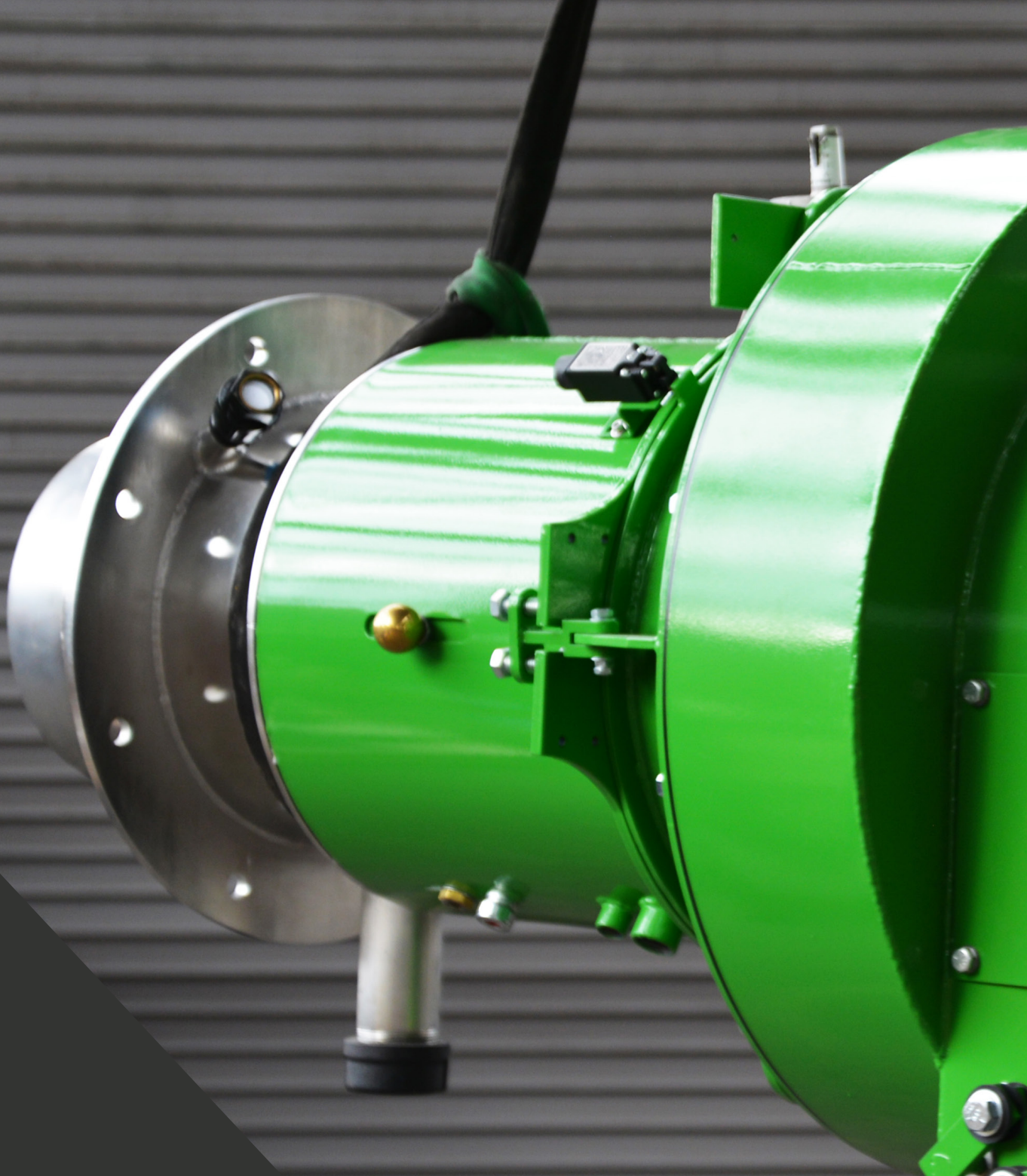
RANGER

ULTRA LOW-NOX COMBUSTION SYSTEM



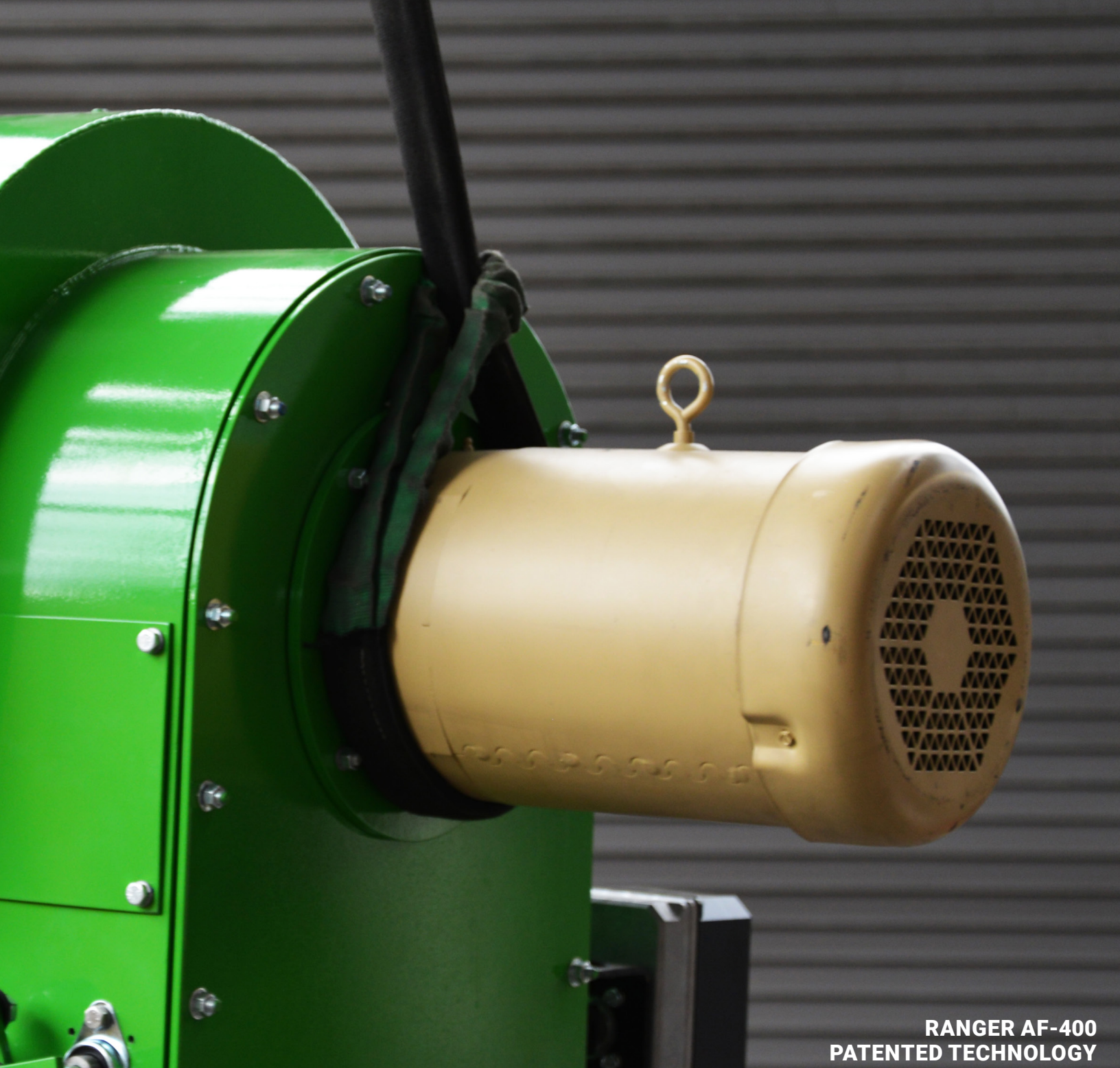
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HOW BURNERS WERE MADE IN THE PAST

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.



**RANGER AF-400
PATENTED TECHNOLOGY**

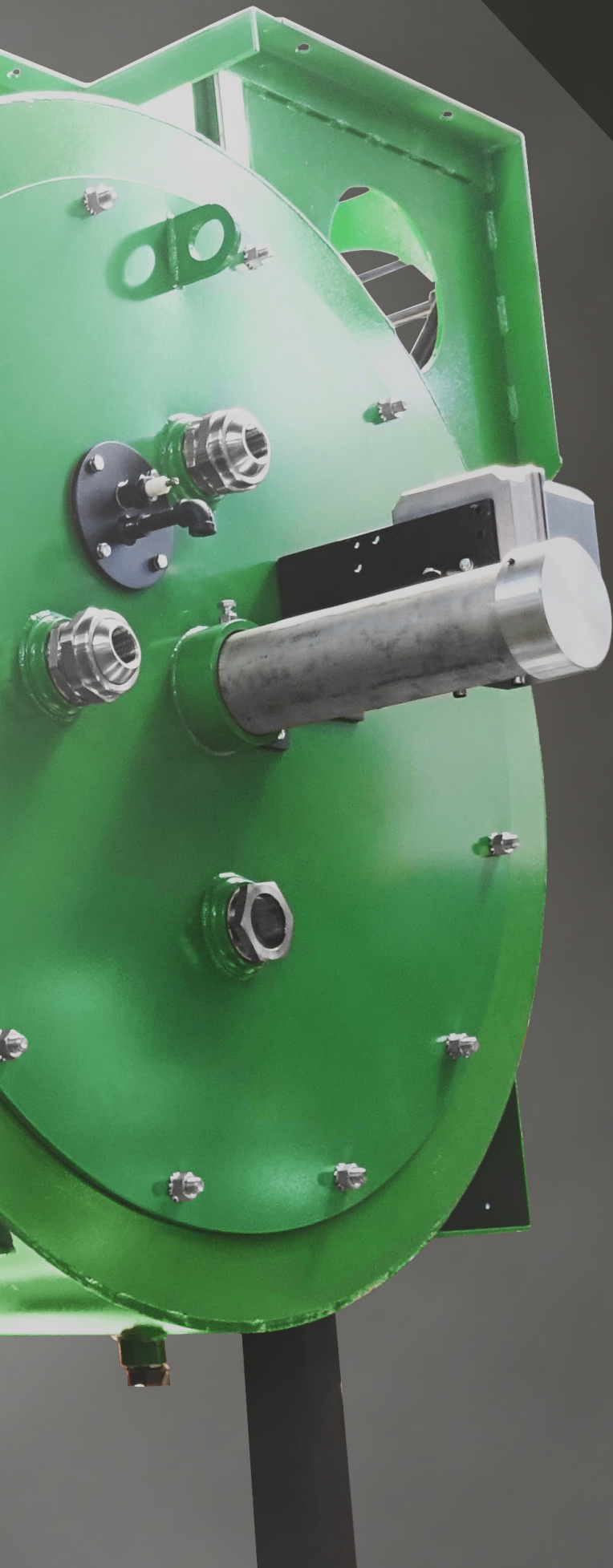
We've re-engineered the burner to exceed the requirements for lower emissions. Created specifically to achieve sub 9ppm NO_x, the Ranger uses modern combustion techniques with the built-to-last tradition. The Ranger reaches levels that were previously only achieved through compromise.

**HOW BURNERS
ARE MADE TODAY**



RANGER

ULTRA LOW-NOX COMBUSTION SYSTEM



COMPLIANCE WITHOUT **COMPROMISE**

The Ranger Ultra-Low NO_x Combustion System is a sub 9ppm NO_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_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.

RANGER RF-800
PATENTED TECHNOLOGY

CHANGE FUEL WITH THE FLIP OF A SWITCH

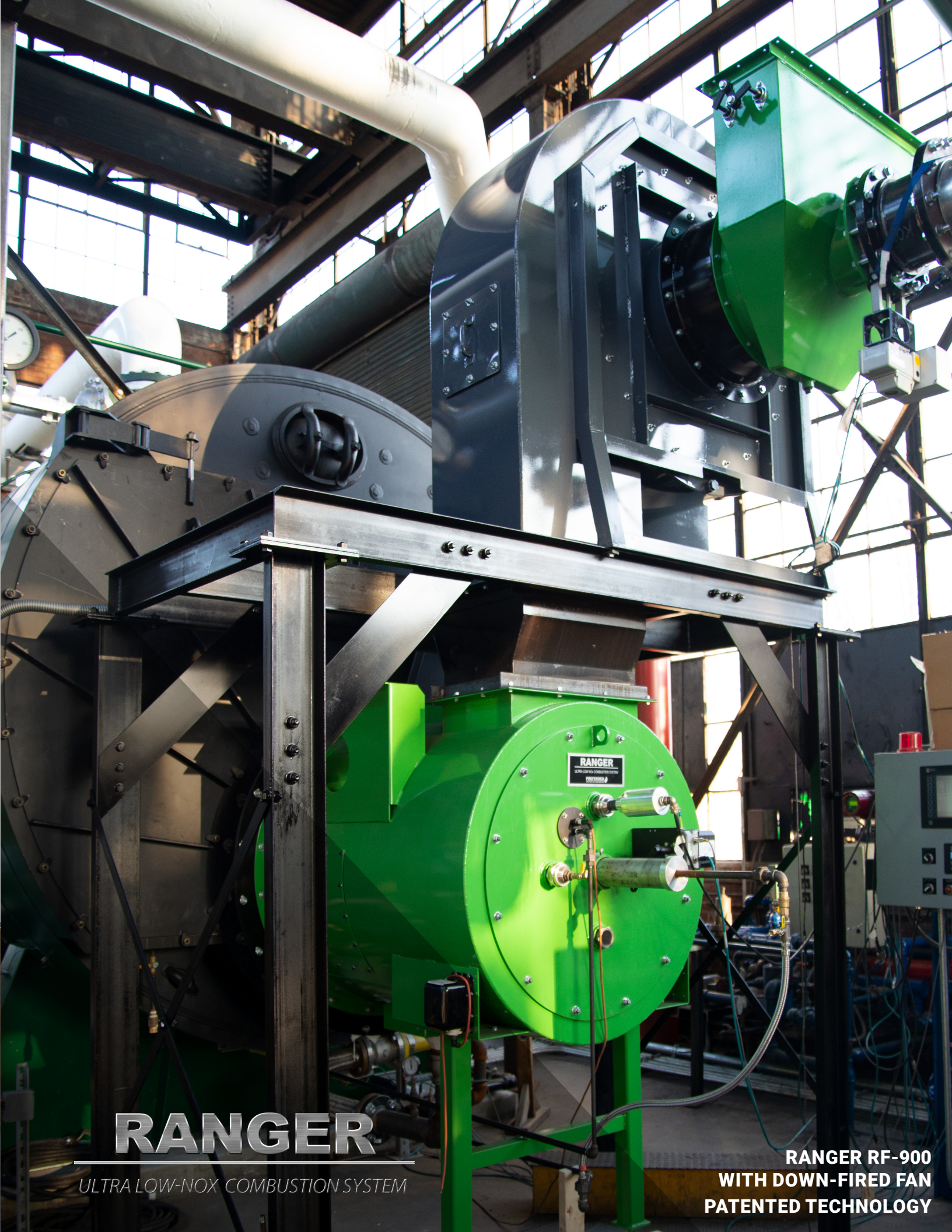
Switching your fuel choice has never been easier.

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





RANGER

ULTRA LOW-NOX COMBUSTION SYSTEM

**RANGER RF-900
WITH DOWN-FIRED FAN
PATENTED TECHNOLOGY**

NO HASSLE MAINTENANCE

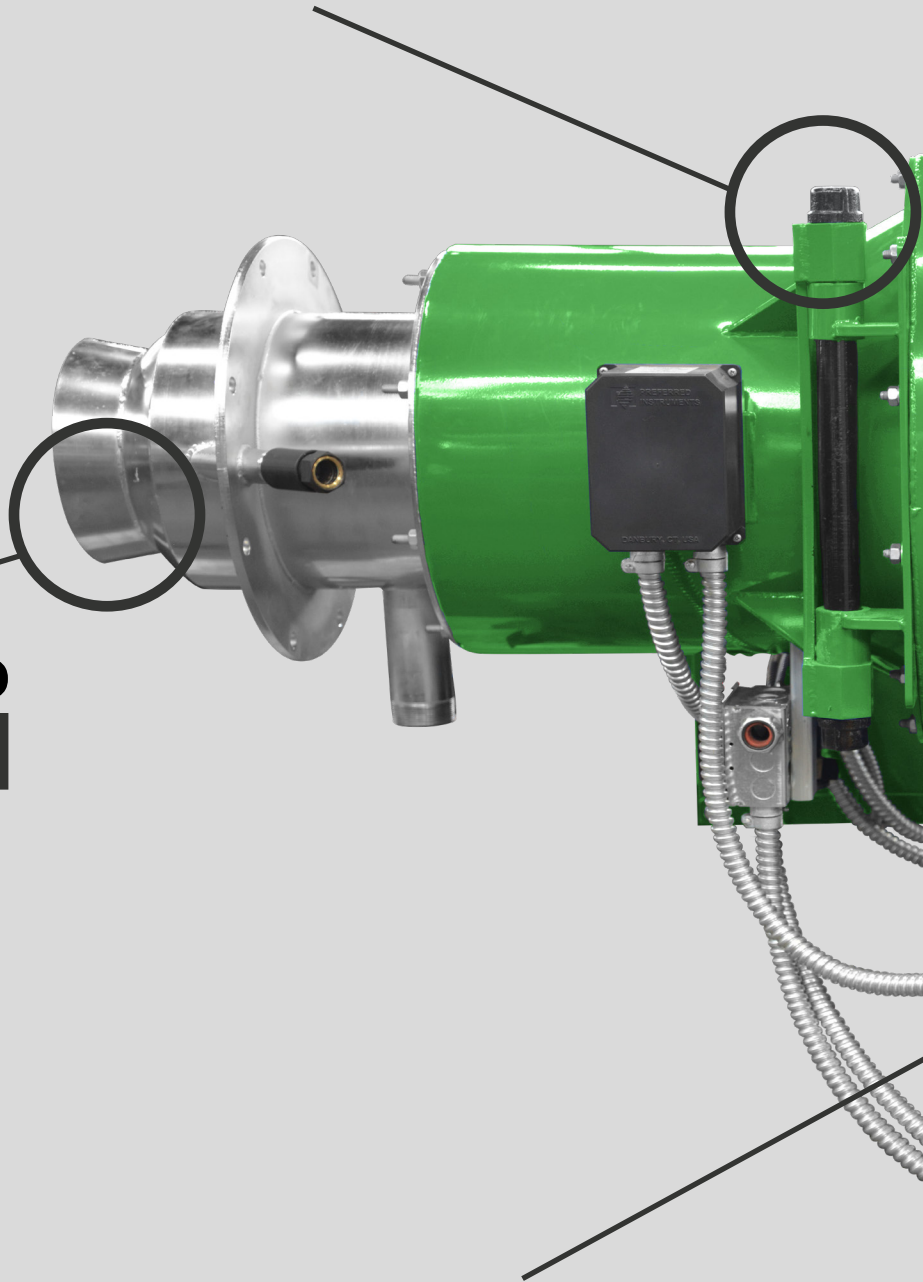
EASY ACCESS HINGE TO CLEAN

NO FIBER MESH HEAD

SAVING ON REPLACEMENT

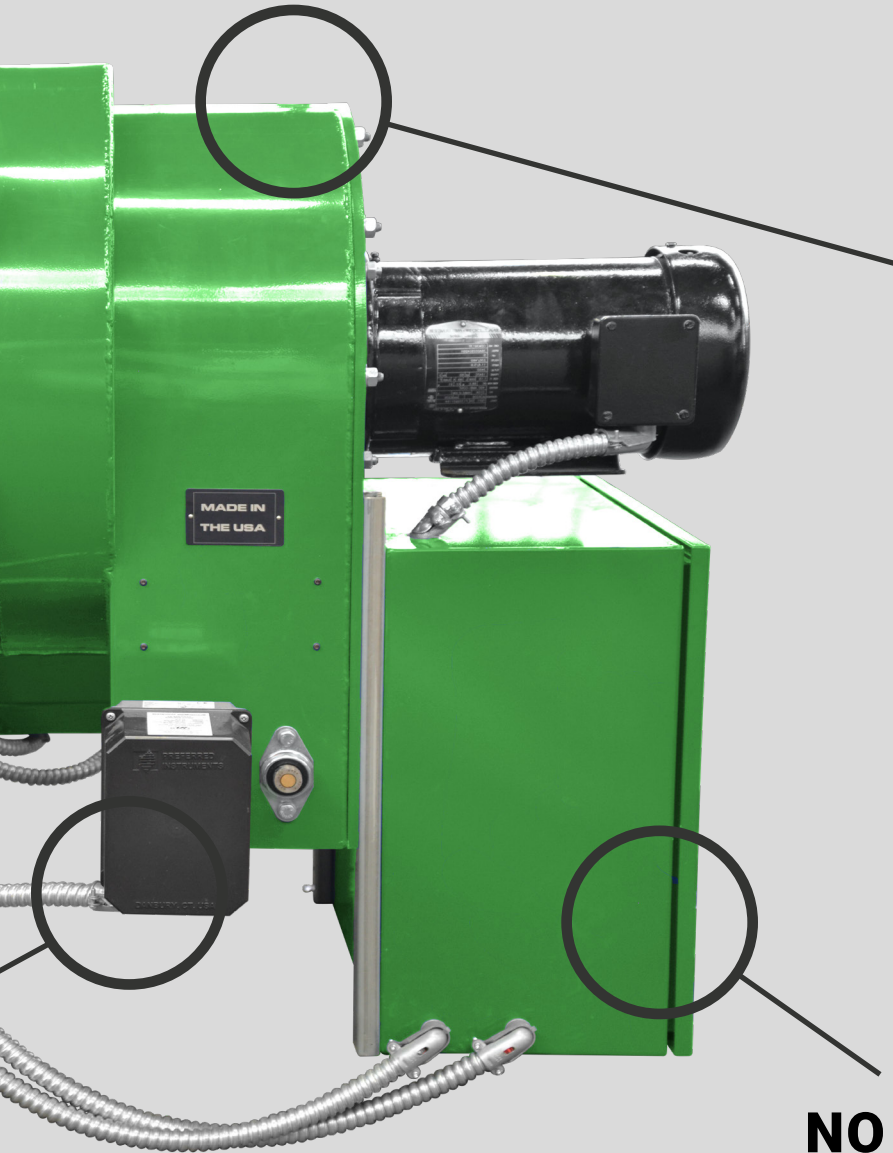
NO JACK SHAFT CONTROLLER

SAVE FUEL AND MAINTENANCE COSTS



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

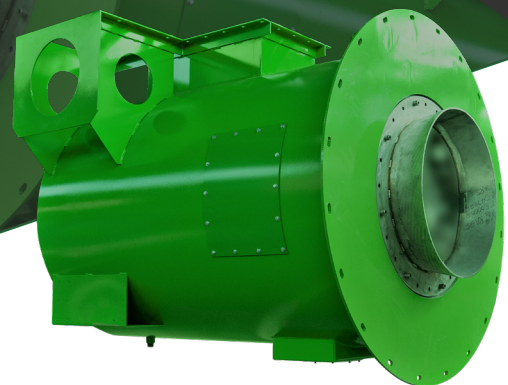
RANGER

ULTRA LOW-NOX COMBUSTION SYSTEM

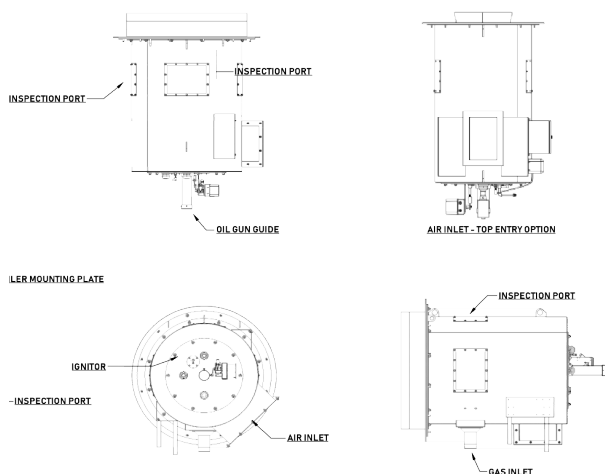
SPECIFICATIONS

Applications:	Single burner: firetube, firebox (cast iron sectional), watertube boilers, or HTHW generators.
Fuel:	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).
NOx Emissions:	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 & RFO: consult factory
Burner Efficiency:	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.
Turndown:	10:1 on gas firing; 8:1 on oil firing.
Supply Pressures:	The Ranger burner accomodates 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.
Burner Control & Monitoring:	Firing Rate Control: Burnermate Univseral 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 & IR Flame Scanner
Additional Options:	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. Note: Furnace geometry and heat release rate affect NO _x performance. Lower NO _x emissions are attainable with more FGR.

STANDARD DESIGNS



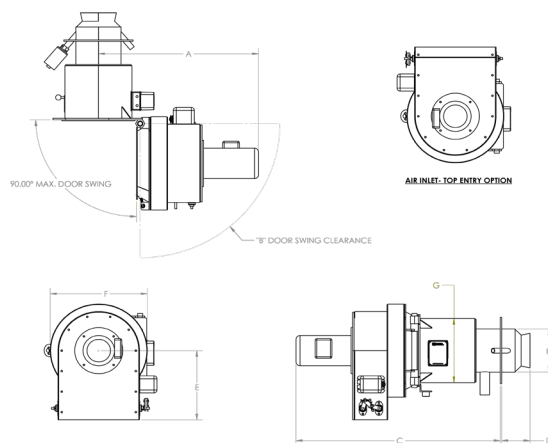
REMOTE FAN



- 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



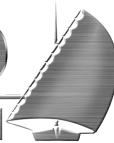
- Size: 100 to 400 HP
- MMBTU: 4–25
- Pre-engineered sizes and configurations for fast deliveries.
- Hinged fan design for easy burner maintenance and inspection.
- Axial fan provides compact burner and reduced installation time.
- Burner mounted control panel is available.



Brochure: RANGER-20190122

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