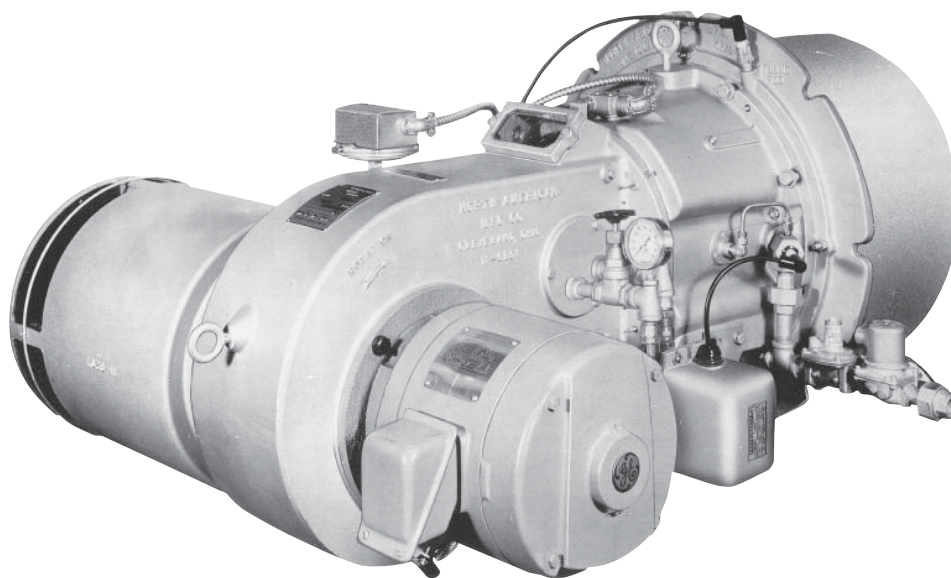


## North American Low NOx 4131, 6131 Packaged Automatic Burners

Engineering Specifications 6131



### Features of the North American Packaged Automatic Burners

**BUILT-IN BLOWER:** Delivers 100% of combustion air required for burner operation. Eliminates need to install an expensive and bulky air delivery system.

**CONTROL VARIETY:** Building from the basic burner package, control systems are available along with many pre-packaged gas and oil trains, motorized controls, flame safeguard accessories, and programming systems.

**WIDE RANGE OF CAPACITIES:** 4 200 000 to 30 000 000 Btu/hr, in six frame sizes. Typical air turndown is 4:1 on standard models. Greater turndowns are available for special applications.

**RUGGED, VERSATILE, AND RELIABLE:** An ultra stable burner designed to operate in chambers at temperatures up to 2000 F and under negative or slightly positive pressures. Cold, tight chambers present no problem for this rugged, low-maintenance workhorse. Proven reliability while operating with natural gas, #2 fuel oil, and #6 fuel oil. Crude oil, and pitch have also been successful, however, these are often application dependent. Consult North American, Cleveland, for applications with these fuels.

**LOW NOx:** By their design the package burners are inherently Low Nox. In conjunction with other NOx reducing features, they are capable of meeting emission limitations for new or retrofit applications in environmentally sensitive installations. However, emission levels will vary from one application to another. Contact your North American Sales Engineer for your specific application.

The Packaged Automatic Burners are ideal for steel firebox, scotch marine, cast iron sectional, and watertube boilers, and industrial process heating equipment, such as air heaters, dryers, oil heaters, ovens, and incinerators. Six frame sizes produce a wide range of capacities (4 200 000 to 30 000 000 Btu/hr).

**Design:** The 4131 Burner is for any fuel gas; and the 6131 for dual-fuel (combination gas and oil). All are of the nozzle mix design with an integral blower to supply 100% combustion air. Oil atomizers are of the tip emulsion design, using steam or compressed air as the atomizing medium. The hinged construction provides quick and complete accessibility. Fixed fuel lines need not be broken for service because fuel oil enters through the burner hinge and gas enters through a stationary gas section.

**Construction:** This rugged burner consists of a cast iron mounting plate, with slotted mounting holes, fitted with a high strength case refractory burner tile rated for service up to 2600 F. A stainless steel tile support jacket is available as an option. The circular gas plenum has a bottom gas inlet, a combustion air diffuser, and a spark-ignited gas pilot (for natural gas or propane).

The hinge-mounted blower section includes the blower motor, impeller, intake guard (or optional intake silencer), a large reinforced glass observation port, provisions for mounting a flame detector, and flange mounted oil atomizer. An accurate linked valve ratio control is provided by a compact arrangement of aircraft-quality linkage rods and swivels that connect the internal main air proportioning shutters with a butterfly gas valve and/or a Sensitrol™ oil valve and the modulation motor.

**Standard Components:** The 4/6131 Burner includes the pilot gas regulator, pilot gas solenoid (2nd solenoid optional), 6000 volt ignition transformer, electric modulating control motor (air motor optional), low combustion air interlock, and burner hinge interlock switch. Oil burners also include a solenoid valve (or optional motorized automatic valve), piped between the hinge and atomizer assembly. All electrical components are wired to the burner mounted NEMA 4 junction box.

**Turndown:** Typical air turndown is 4:1 on standard models. Greater turndown can be achieved with an optional blower air inlet controller. Consult North American, Cleveland, for details.

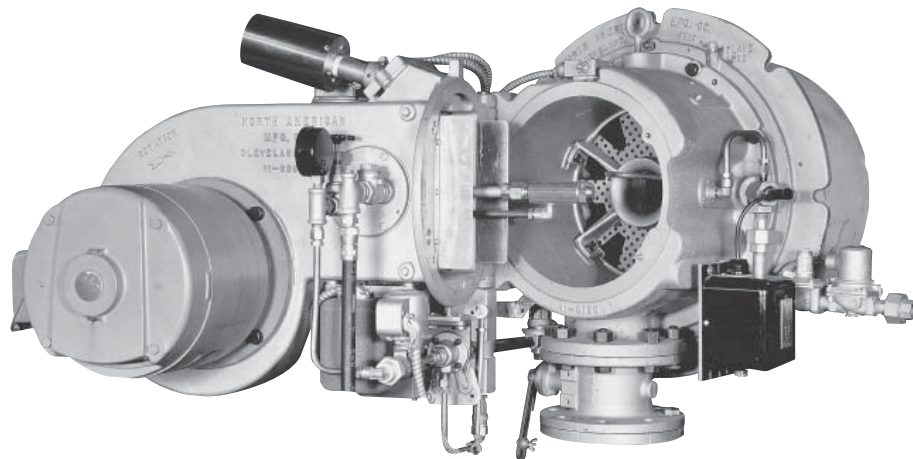
**Excess Air:** Standard burner linkage is factory set to deliver 20% excess air. Rates greater than 20% are possible through reduction of fuel input.

**Flame Characteristics:** These burners generate well-defined medium length flames. See Supplement 6131-1 for flame sizes.

**Chamber Pressures:** Designed for stable operation in chambers with pressures ranging from -0.5"wc to 2.0"wc. The "N" burner is specified on applications with 0 to -0.5"wc chambers (i.e., 2-pass boilers, dryers, heaters, etc.) and the "P" burner is specified on those with 0.1 to 2.0"wc chambers (i.e., 3-pass boilers, etc.). Consult North American, Cleveland, for burner performance with other pressures.

**Underwriters Laboratories Listing:** The Model 4/6131 Burners have been designed in accordance with the requirements of the Underwriters Laboratories.

Hinged construction provides for complete accessibility to burner internals.



**WARNING:** Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., is inherent with any combustion application. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American Combustion, Inc. urges compliance with National Safety Standards and Insurance Underwriters' recommendations, and care in operation.