

PARKER BOILER CO.
PREMIX METAL FIBER LOW NO_x BURNER SYSTEM

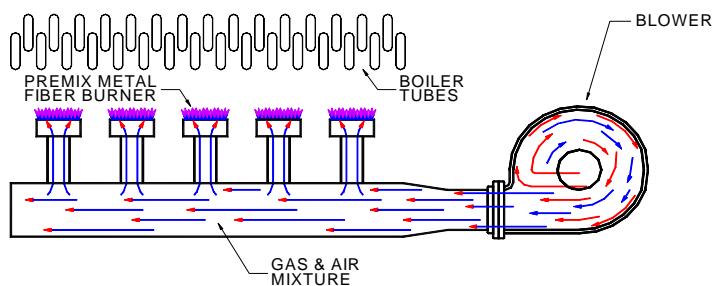
DESCRIPTION

The premix fan assisted combustion system consists of a burner bed of multiple Metal Fiber Burners. These burners are linked to a single fan through a manifold and gas air premix piping. The Premix Burners provide uniform heat distribution over all boiler tubes. The system provides a high degree of NO_x level repeatability once system is adjusted. No filters are required.

The burners are capable of generating Low NO_x without generating significant CO emissions. NO_x emissions are guaranteed less than 12, 20 or 30 PPM at 3% O₂ with CO emissions guaranteed less than 100 PPM at 3% O₂. Different style burners offer different NO_x Levels.

The burners consist of a Metal Fiber Hot Face made from an Iron Chromium Alloy. The Metal Fiber is backed by Stainless Steel distribution plates. The Metal Fiber Burners provide a high degree of resistance to mechanical and thermal shock, fast cool down and corrosion resistance. Maximum pressure drop through burner at normal firing rates is 1.2" W.C.

The system utilizes a blower and/or mixer system, which distributes a ratio controlled gas/air mixture to individual Metal Fiber Low NO_x Burners. Blower construction is non-sparking with totally enclosed motor. The burner bed is placed under the standard Parker tube bundle and contained in a non-pressurized combustion chamber. The gas/air ratio is controlled by the blower/mixer system. Parker offers 5 different types of Low NO_x Mixing Systems, see Bulletin LN-BSSG.



PREMIX BURNER SYSTEM

EFFICIENCY

South Coast Air Quality Management District Testing has confirmed 83-85% thermal efficiency on Parker High Pressure Steam Boilers. Higher efficiencies are realized because of excellent gas/air ratio control, clean complete combustion and the radiant effect. Most boiler efficiencies can be improved at least 2-5% with the Premix Metal Fiber Burner System.

GUARANTEE

This Burner System when installed or adjusted by Parker Boiler or an Approved Service Organization, is guaranteed to produce less than 12, 20 or 30 PPM NO_x emissions and less than 100 PPM CO emissions at 3% corrected O₂ when burning natural gas or LPG. These Low NO_x levels are achieved by the Metal Fiber Burner and a Premix gas/air distribution manifold assembly. Varying burner selections are available for different NO_x levels.

Parker or Approved Service Organization will adjust and certify these Low NO_x and CO levels.

REPEATABILITY

It has been our experience with field installations that the Low NO_x and CO levels can be repeated, with ease.

MAINTENANCE

We would recommend that the burner system be checked and tuned up by competent personnel on a yearly basis. The burners can be blown off with air if the surface becomes dirty. After approximately 5 years, if required, the burners can be removed, washed and reinstalled. For service, tuning and cleaning information, refer to Energy Evaluation & Tune up Procedures Parker Bulletin TU-1146L.

PARKER BOILER CO.
LOW NO_x PREMIX BURNER
IDENTIFICATION BULLETIN

Parker Boilers Premix Low NO_x Burner System utilizes a variety of metal fiber burners. We use burners with a 20.5" length, 22½" length and 36" length.

The burners consist of a metal fiber surface (hot face) constructed from a special metal alloy. The metal fiber is either sintered or woven. The metal fiber offers an insulating effect which lowers burner surface, flame temperatures and NO_x levels. These burners have distribution and backing plates. The metal fiber thickness varies between 1-8 mm.



The MFB-22.5 and 36 have been in use since 1992. They utilize a sintered metal fiber hot face. We have installed approximately 10,000 of these burners in the field. The burners are utilized for a 20 or 30 ppm NO_x level. These burners are designed to run in a blue (convective) flame mode.

The PB-20.5, PB-22.5 or PB-36 utilize a woven metal fiber. They were developed as replacements for the MFB Series. The metal fiber on these burners covers the entire top of the burner offering improved service life under severe heat conditions. All PB Burners are constructed of stainless steel. These burners can operate in a blue flame or radiant mode if desired.

The PB-22.5LN and PB-36LN were developed to address the 9 and 12 ppm NO_x levels imposed by various air districts. The burners utilize the NIT100S material on 100% of the firing surface plus they utilize a series of stripes of woven metal fiber strips to break the surface flame pattern.

Extremely Low NO_x Levels can be achieved with these burners and many Parker systems are installed and running at under 12 ppm with these burners.

All burners bolt to a Parker transitions, which connect to NPT Pipe.

The burners if kept clean and adjusted properly will offer many years of trouble free service. Many burners have been in the field for 10 years.

For service, tuning and cleaning information refer to Energy Evaluation & Tune up Procedures Parker Bulletin TU-1146L.

Parker Metal Fiber Burners

PART NO.	
MFB-22.5	22½" METAL FIBER BURNER
MFB-36	36" METAL FIBER BURNER
PB-20.5	20½" NIT METAL FIBER BURNER
PB-22.5	22½" NIT METAL FIBER BURNER
PB-22.5LN	22½" NIT/STRIPE METAL FIBER BURNER 12PPM
PB-36	36" NIT METAL FIBER BURNER
PB-36LN	36" NIT.STRIPE METAL FIBER BURNER 12PPM