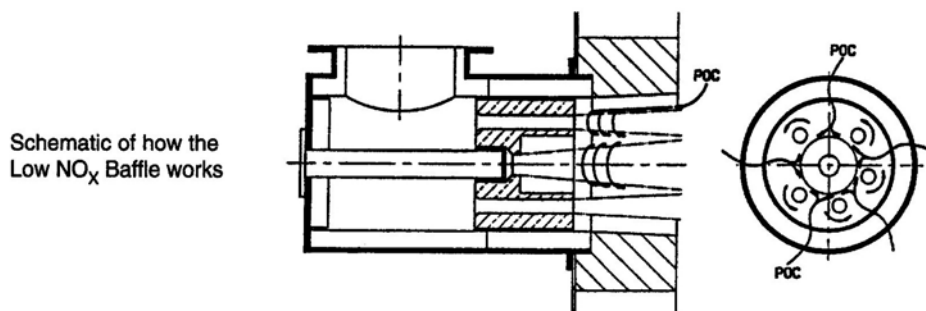
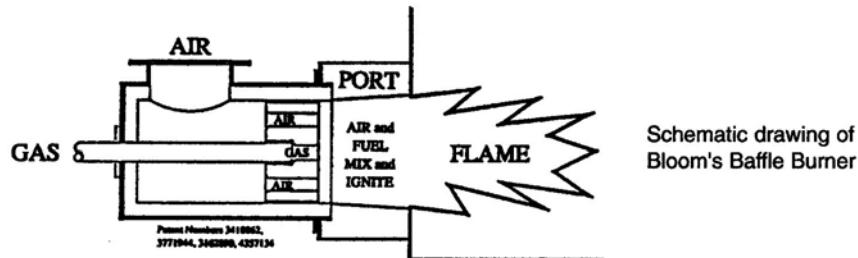


BAFFLE BURNER CONCEPT



Bloom's baffle burner recirculates furnace gas into the flame. Its appearance is deceptively simple consisting of a body, gas nozzle, baffle and port. Air enters the burner body directly and the gas passes through the body separated from the air with the fuel tube. The refractory baffle separates the body from the burner block (port), which is within the wall of the furnace.

Air passes into the port through a series of holes around the circumference of the baffle.

Gas enters the port through a hole in the center of the baffle. Only after the air and gas enter the port areas do they mix together and allow ignition to occur.

The ceramic baffle provides support to the gas tube and is a radiation shield between the flame and the internal burner parts. Baffle hole and port geometries determine the flame characteristics, such as shape and

luminosity. Geometry also influences the amount of furnace gases recirculation into the port, a major factor in reducing NO_x levels.

The baffle passages are essentially nozzles which create a jet effect on the exit side. A jet exiting a nozzle creates a recirculation zone and a low pressure area at the exit. The jet phenomenon anchors the flame in the port, ensures thorough mixing of the air and fuel, and provides the energy to recirculate POC into the port.

Subtle geometric changes to the baffle and port affect the jet characteristics. The standard Bloom burner baffle is effective in recirculation furnace gases and is inherently a low NO_x design. Bloom's Low and Ultra Low NO_xTM baffles represent an optimization of the geometry to maximize furnace gas recirculation into the flame.

CAUTION: The improper use of combustion equipment can result in a condition hazardous to people and property. Users are urged to comply with National Safety Standards and/or Insurance Underwriters recommendations