Title (en)

Low NOx burner

Title (de)

Brenner mit niedrigen NOx-Werten

Title (fr)

Brûleur à faible NOx

Publication

EP 2218965 A1 20100818 (EN)

Application

EP 09152909 A 20090216

Priority

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Abstract (en)

The present invention is a burner tip for the combustion of fuel gas in the combustion zone of a furnace, comprising a burner tube having a longitudinal axis and having a dowstream end and an upstream end for receiving the fuel gas, wherein, the furnace comprises means to introduce an effective amount of air into the combustion zone to cause the combustion of the fuel gas, the burner tube extends through an opening in the wall or floor into the combustion zone, the burner tube comprises a plurality of primary ports to deliver the primary fuel gas in the combustion zone, said primary ports are located in the combustion zone in order to create the fuel-lean combustion zone, a bluff body is attached to the tube, located close to the primary ports which deliver the primary fuel gas and between said ports and the upstream end of the burner tube, the bluff body is designed to produce, in the vicinity of the ports which deliver the primary fuel gas, an air speed as low as possible, advantageously lower than the flame speed, such as the said primary fuel gas is given sufficient residence time to ignite, the burner tube comprises a plurality of secondary ports to deliver the secondary fuel gas in the combustion zone, said secondary ports are located in the flue gas zone (or outside the combustion zone) in order to create a fuel-rich zone, said secondary ports are located between the primary ports and the downstream end, optionally other ports are located after the secondary ports having regards to the fuel gas flow from the upstream end to the downstream end. The flame stabilization is ensured by the bluff body, for example fins or a perforated plate, which has been welded to the tip just below the primary fuel ports. The flame stabilizer creates a recirculation zone for the air in which the primary fuel is given sufficient residence time to ignite.

IPC 8 full level

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CPC (source: EP US)

F23D 14/10 (2013.01 - EP US); **F23D 14/48** (2013.01 - EP US); **F23D 14/70** (2013.01 - EP US); F23C 2201/20 (2013.01 - EP US)

Citation (applicant)

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