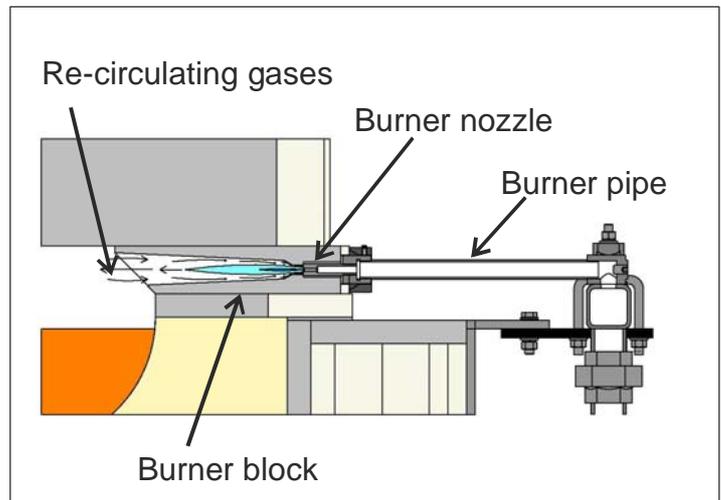




## Forehearth & Distributor Ceramic Burner Nozzles.

Conventional forehearth and distributor burners are manufactured with stainless steel burner nozzles sized according to the heating requirements of the specific forehearth or distributor combustion zone. It is the flow of the air / gas mixture through the nozzle that keeps the nozzle cool. A stainless steel nozzle having a high thermal conductivity results in the nozzle face operating at a relatively low temperature providing a relatively cold surface on which volatile materials from the glass, such as soda vapour, can condense and build up in a similar way that they build up on the surface of combustion and cooling flue damper blocks. This material is carried to the burner nozzle from the forehearth combustion chamber atmosphere by the action of re-circulating gases around the burner flame and can lead to the eventual blockage of the burner nozzles unless they are regularly cleaned out or replaced with spare burners. The progressive reduction in burner nozzle diameter causes the air / gas mixture to change (becoming gas lean) and the maximum firing capacity to be reduced, resulting in inefficient firing conditions which can lead to poor temperature control and glass quality problems. In order to restore the nozzle to the correct diameter the burners must either be regularly reamed out from the rear burner plug in-situ, which is not recommended as this can result in the condensate material entering the glass, or replaced with spare burners during a job change and cleaned and re-drilled to the correct nozzle diameter in the workshop ready for re-use.

Ceramic burner nozzles have a much lower thermal conductivity and operate at higher temperatures, greatly reducing or eliminating the tendency for condensates to build up on the nozzle face and block the burner. This preserves combustion efficiency whilst significantly reducing or eliminating maintenance requirements. The nozzles are manufactured from 95% dense alumina refractory material and can be supplied as fully assembled burners or as conversion parts. They can also be specified with every new PSR forehearth/distributor installation or can be retrofitted to any forehearth or distributor that uses conventional pre-mix burners.



Burner assembly with ceramic burner nozzle