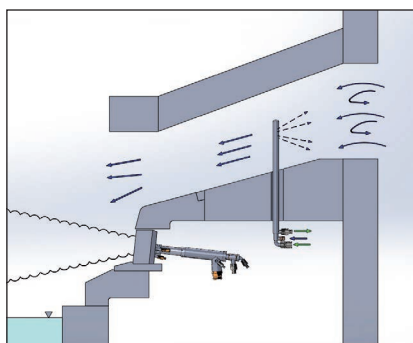


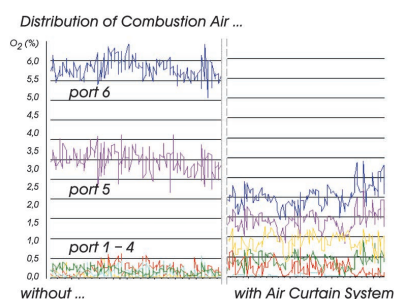
Air Curtain System with compressed air lances for optimized air distribution



STG Compressed air spray lance for installation in port bottom



Deflection of excess air towards deficient air ports



Before / after comparison of O₂ profile



Cooling water control skid

For cross fired furnaces with regenerators having no partition walls, the combustion air distributes uncontrolled between the single burner ports. Therefore the technologically necessary distribution of combustion air is not given and it is hard to operate the combustion close to stoichiometric.

For such type of furnaces STG has developed »Air Curtain System«, inserting compressed air spray lances into the bottom of typical excess air ports. Using nozzles that are individually aligned with the port geometry, a barrier of compressed air is created, that faces the combustion air flow and redistributes air towards deficient air ports.

Technical Data

- Water cooled compressed air spray lance
 - Diameter: 50 mm
 - Total length: 1.200 mm
 - Drillings: 60 mm (vertically in port bottom) – by customer
 - Customized nozzles according to individual furnace design possible
- Media supply
 - Compressed air: 6 bar, up to 150 Nm³/h
 - Purge air: 5...10 Nm³/h per lance (for non-firing side)
 - Cooling water: 2...3 bar, 1...2 m³/h, Water hardness low...medium (closed cooling water cycle, best available quality)
 - Stainless steel metal hoses with quick couplings
 - 1 1/2" Process connection with furnace

Benefit

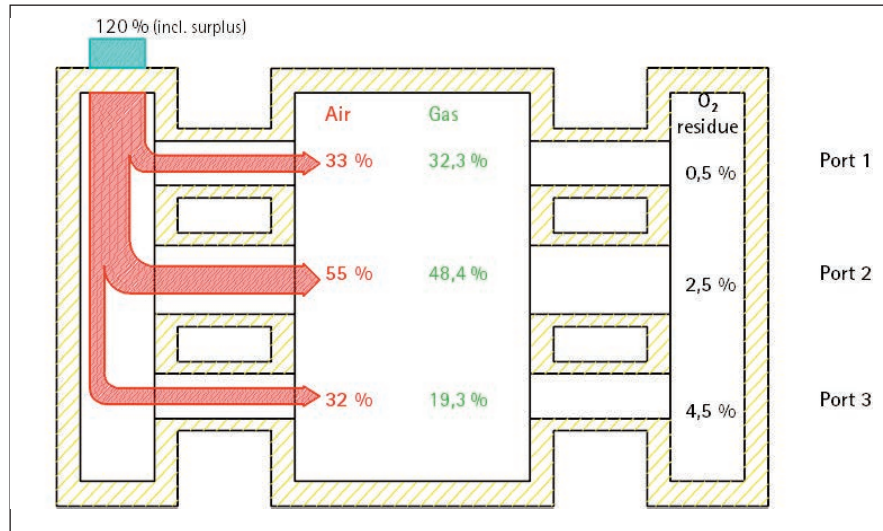
- Harmonization and optimization of combustion air flow
- Deflection of excess air and redistribution towards deficient air ports
- Reduction of the total air consumption by adjusting near-stoichiometrically operation
- NO_x reduction and Energy savings
- Extend service life of old regenerators
- Enables for further optimization with STG Lambda Control (Software, for STG O₂ sensors based automatic combustion control)

Scope of supply

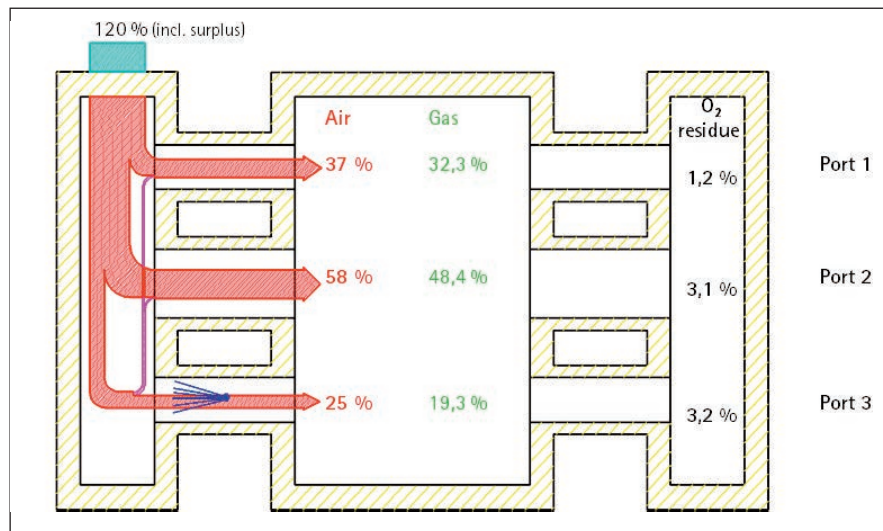
- Complete engineering and assembly of Air Curtain system:
 - Compressed air spray lances and accessories (media hoses / brackets)
 - Control skids for working air and cooling water
 - Hardware / Software for Control System integration
- Installation and optimization of Air Curtain System on site
- Maintenance services and process optimization

Notice: STG Oxygen Measurement in regenerator crown is precondition for Air Curtain System!

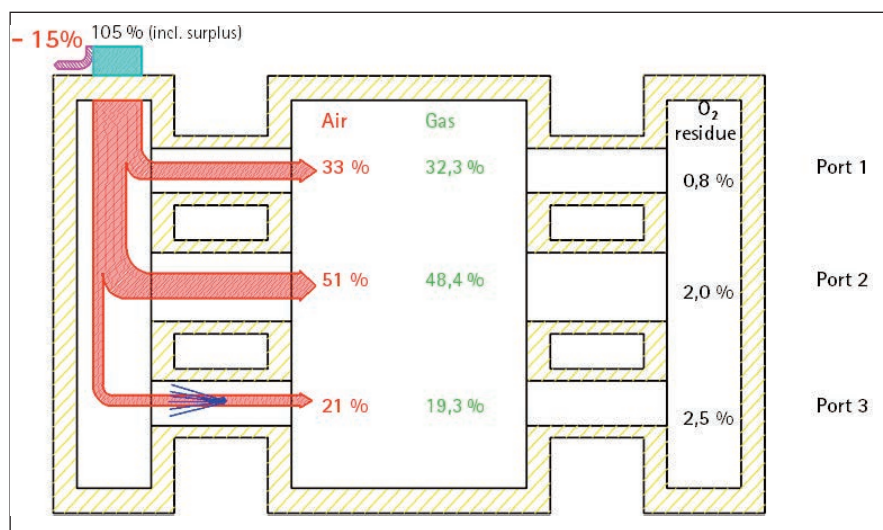
Example: Principle and function at 3 Port furnace



1) Fuel and air distribution without Air Curtain



2) Redistribution and harmonization by reducing air at Port 3



3) Reduction of total combustion air