

Applicationbrief

Eclipse Product: FlueFire Burners
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Application Supplementary Firing
Site Location: British American Tobacco - Bayreuth Germany

System Description

The burner supplies heat to the exhaust gas flow of a gas turbine upstream of a Waste Heat Recovery Boiler. When the turbine operates as peak load shaver, steam is added to the turbine as an additional power source (Cheng-Cycle), to increase the electrical output.

In this cycle the oxygen level decreased from 13.7 down to 10 vol.% wet. To maintain flame stability and to accomplish complete combustion of the burner fuel gas, the burner was provided with a primary fresh air supply. This airflow is only 50% of the stoichiometric requirement and remains constant over the burner turn down. During normal operation the air flow was reduced to 20%.

Technical Data

Turbine

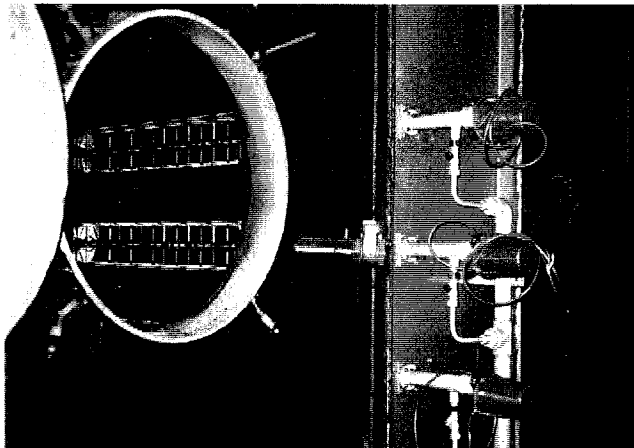
Make Kawasaki
Type M1A13CC

Turbine exhaust gas

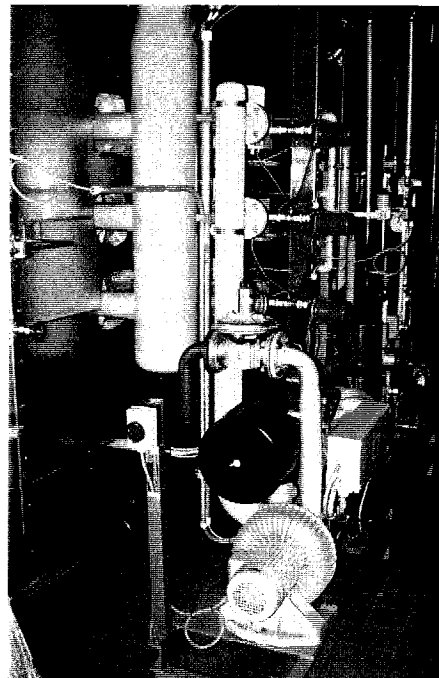
Mass flow 18 lb/s
Temperature 900° F

Burner

Type FlueFire-Low NOx
Duty 14 MMBtu/Hr
Primary air 70,000 scfh
Fuel Natural gas



2 of 3 burner rows visible through access port.



Primary air supply and gas manifold with pilot/cooling air blower and valve trains.