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# Applicationbrief

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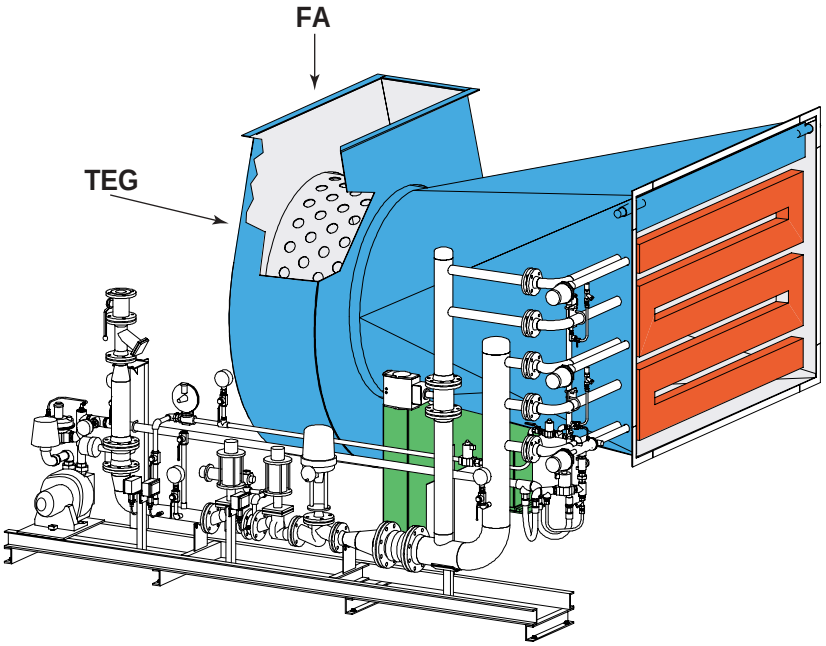
| *Eclipse Product:* | FlueFire Burners |
| *Submitted by:* | Leen Riedijk |
| *Application* | Supplementary Firing |
| *Site Location:* | Vriezo-Oosterbierum Netherlands |

## System Description

The burner supplies heat to both the exhaust gas flow of a gas turbine and a fresh air flow when the turbine is out of operation. The duct, with integrated burner, includes a fresh air distributor around the TEG inlet. The burner consists of in total 5 burner rows with flame propagation modules and is divided in two stages. In order to obtain a 10 : 1 turn-down, only 3 rows are in operation during GT mode. The burner management system provides an automatic change over between the GT and FA mode and reverse. During the change over time the pilot burners are re-ignited. To keep the flame in FA mode within the available combustion chamber length, a pneumatically operated damper is located above the burner to increase the air velocity over the burner.




## Technical Data

- ***Turbine***

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| Make | Allison |
| Type | 501 – KB7 |

- ***Turbine exhaust gas***

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|---|---|
| Mass flow | 44 lb/s |
| Oxygen level | 14.5 vol% |
| Temperature in | 980 ºF |
| Temperature out | 1550 ºF |

- ***Fresh air***

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|---|---|
| Mass flow | 33 lb/s |
| Temperature in | 60 ºF |
| Temperature out | 2100 ºF |

- ***Burner***

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|---|---|
| Duty | 27.0 MMBtu/hr in Turbine operation mode |
| | 63.5 MMBtu/hr in Fresh air operation mode |
| Fuel | Natural gas |