

- 1st stage nozzle
- 2nd stage nozzle
- 3rd stage nozzle

Nozzles Equivalent to GE MS9001E

Sulzer provides design and manufacturing of new gas turbine components in both hot and cold sections. We focus on lifetime extension and performance improvement of your equipment. We have unique insight into designing a high quality product that is compatible and interchangeable with the original equipment. All nozzle kits include installation hardware suitable for installation in PG9171E gas turbines.

1st stage nozzle

The first stage nozzle is manufactured through an investment casting process using the advanced cobalt-based super alloy FSX-414. The first stage nozzle features trailing edge film cooling and internal impingement cooling. Advanced cooling of the shrouds is applied to minimize thermal cycle fatigue effects.

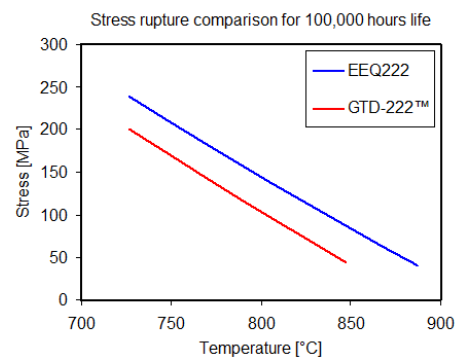
The first stage nozzle is not coated. However, Sulzer can optionally apply a Thermal Barrier Coating (TBC) to prevent the base material from overheating and to reduce thermal gradients along the hot gas path. This coating will further reduce effects of thermal cycle fatigue and produces a lifetime extension resulting in improved durability.

2nd stage nozzle

The second stage nozzle is manufactured through investment casting using Sulzer's advanced nickel-based super alloy EEQ-222, which has a similar composition to the original GTD-222™. However, the alloy exposes superior corrosion resistance and increased creep life. Therefore, less deflection upon exposure to service conditions is observed.

An external aluminum diffusion coating is applied to further optimize corrosion and oxidation resistance.

Originally, the sealing is non-pressurized. However, the optional brush sealing leads to performance improvements on output and heat rates.



3rd stage nozzle

The third stage nozzle is also manufactured through investment casting using Sulzer's advanced nickel-based super alloy EEQ-222. The third stage nozzle is supplied without protective coatings.

Nozzle stage 1	
Firing temp.	Up to 1,124°C (2,055°F)
Design	Two-vane segment
Cooling	Trailing edge film cooling Internal impingement cooling Advanced side-wall cooling
Material	FSX-414
Coating	Non-coated, TBC optional
Sealing	Chordal hinge
Auxiliaries	Locking hardware included

Nozzle stage 2	
Firing temp.	Up to 1,124°C (2,055°F)
Design	Long-chord three-vane segment
Cooling	Trailing edge cooling Optimised internal impingement cooling
Material	EEQ-222
Coating	Aluminium diffusion coating
Sealing	Non-pressurised. Brush seal optional
Auxiliaries	Locking hardware included

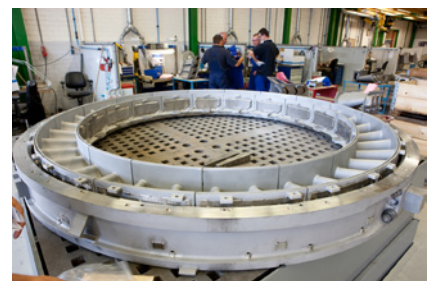
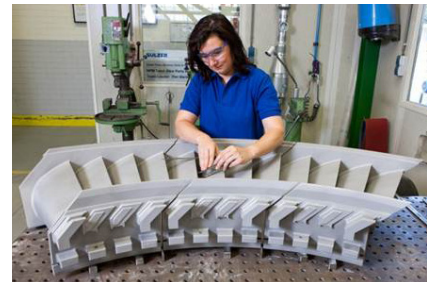
Nozzle stage 3	
Firing temp.	Up to 1,124°C (2,055°F)
Design	Four-vane segment
Cooling	
Material	EEQ-222
Coating	
Sealing	
Auxiliaries	Locking hardware included

Services:

- Component refurbishment
- Lifetime extension
- Field service
- New parts manufacturing
- Training programs
- Rotor overhaul and refurbishment
- Long term service agreements
- Condition monitoring
- Turbine controls
- Engineering support

About Sulzer

Sulzer provides cutting-edge services and solutions for rotating equipment dedicated to improving customers' processes and business performances. When pumps, turbines, compressors, generators, and motors are essential to operations, customers need a service partner they can trust. With our technically advanced and innovative solutions, we give our customers the assurance they need to focus on their operations. Customized solutions help to reduce maintenance time and cost. Our partners' business demands are ever increasing and changing but they can rely on our experts to provide the optimal solution to improve operational efficiency and reliability. We provide high-quality services at competitive prices and delivery times.



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