

The **Proven** Alternative

PSM 501F Series Compatible Turbine Airfoils



PSM's complete line of airfoils, compatible with the Siemens/Westinghouse 501F (SGT6-5000F) series gas turbines, has been redesigned to address the life-limiting elements of existing designs. The parts are designed to deliver 24,000 Factored Fired Hours (FFH) and 900 Factored Starts (FS) operational intervals or longer before requiring reconditioning/repair, and to have lower fall-out (scrap) rates during reconditioning. Total life of each component is designed to be equal to or greater than the OEM part it replaces.

Thermodynamic performance of all parts is equal to the OEM parts they replace thereby assuring true interchangeability and maintaining engine output, efficiency, and emissions.

Scope of Supply for 501F Series Turbine Section

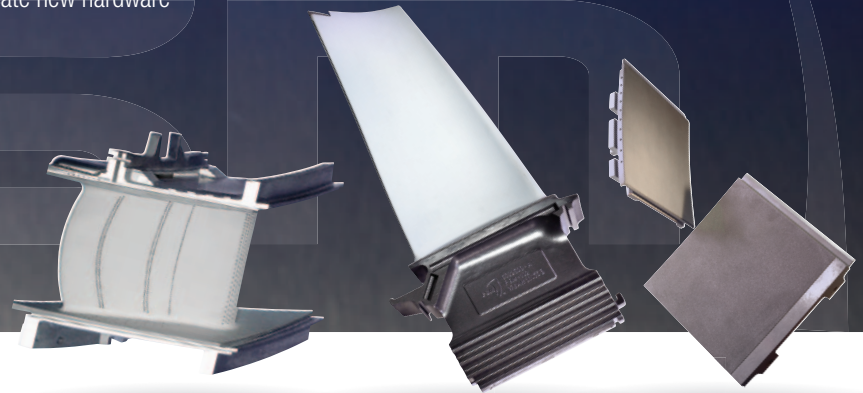
PSM parts are interchangeable with OEM parts in 501F engine models 501 through 501FD2 as indicated in the table.

SW 501F Series Compatible Parts	Blades	Vanes	Ring Segments
Turbine Stage 1	All Models	All Models	All Models
Turbine Stage 2	All Models	All Models	All Models
Turbine Stage 3	All Models	All Models	All Models
Turbine Stage 4	All Through FD2	All Through FD2	All Models

INCREASED DURABILITY

PSM's turbine airfoils are made using advanced materials, coatings, cooling schemes, and design features to maximize durability and reliability of our components in your engines. **To accomplish this we:**

- + Identify the issues and failure modes in current OEM replacement products
- + Use state-of-the-art analytical tools to model the issues
- + Use the same analytical tools to design and fabricate new hardware with longer life
- + Validate the product in real-world engine testing



SUMMARY OF FEATURES

PSM 501F Compatible 1st Stage Vanes

- + Vanes incorporate improved platform cooling to mitigate TBC spalling/erosion
- + Vanes incorporate leading edge cooling design
- + Vanes incorporate simplified vane insert design which reduces repair costs

PSM 501F Compatible 2nd Stage Vanes

- + Manufactured from a IN939 alloy for improved creep life and reparability
- + Vanes are bolted pair doublet design which eliminates airfoil and platform cracking
- + Vanes incorporate a decreased-pressure-loss cooling design to help mitigate ID platform oxidation

PSM 501F Compatible 3rd Stage Vanes

- + Manufactured from a IN939 alloy for improved creep life and reparability
- + Structurally enhanced to tie platform to airfoil and further enhance creep strength

PSM 501F Compatible 1st Stage Blades

- + Blades incorporate tip perimeter cooling to eliminate tip cracking
- + Blades incorporate an active platform cooling design to eliminate platform cracking
- + Blades incorporate trailing edge undercut design for reduced TE stress
- + Under-platform debris pocket provided to mitigate pin lockup
- + Blades are externally coated with Dense Vertically Cracked (DVC) TBC
- + Blades incorporate EB welded tip cap design

PSM 501F Compatible 1st Stage Ring Segments

- + Improved end-cooling and inter-segment purge
- + Optimized inter-segment gap
- + Dense Vertically Cracked (DVC) TBC for improved spalling and erosion resistance
- + Improved seal strip material to minimize wear and oxidation

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