

# GE Frame 6FA 7FA 9FA

## Advanced Repairs available only from Liburdi Turbine Services

### The Liburdi Advanced Repair Program offers:

- Extended Reliable Service Life
- Reduced Maintenance Expenses
- Component Upgrades that Address Design Deficiencies

The Advanced Repairs Program developed by Liburdi has been proven in power generation applications around the world. These repairs, available only from Liburdi Turbine Services, fully restore critical turbine components at a fraction of the cost of new replacement parts; maintaining or improving component integrity while creating significant savings for the operator.



## Advanced “F Class” Repairs for Frame 6FA 7FA 9FA Buckets

### *Stage 1 Buckets – Full-Life Refurbishment and Upgrade*

- Superior tip weld alloy maintains performance for full service interval
- FSR® Full Solution Rejuvenation® heat treatment avoids scheduled bucket retirement
- Full coating replacement
  - External Options: MCrAlY, MCrAlY plus LSR® aluminide, Sintered Strain Tolerant TBC
  - Internal Option: Replacement aluminide

### *Stage 2 Buckets – Upgrade and Extend Service Life*

- Full chemical coating removal
- Shroud lift correction restores both lift and twist
- FSR® Full Solution Rejuvenation® heat treatment process restores alloy strength
- Reprofile for extended shroud life
- Sintered Strain Tolerant TBC available

### *Stage 3 Buckets – Restore and Upgrade*

- Restore shroud Z-notch surfaces and dimensions
- Upgrade with new diffusion aluminide airfoil coating

## Advanced “F Class” Repairs for Frame 6FA 7FA 9FA Nozzles

### Stage 1 Nozzles – Extended Life Repairs

- High strength LPM® process for heavy crack repairs – outperforms conventional welding
- Advanced internal coatings and external TBC to improve nozzle durability
- Eliminate local hot spots with cooling modification



### Stage 2 and Stage 3 Nozzles – Extended Life Repairs

- Low distortion, HAZ crack free LPM® for crack repairs
- Downstream lean distortion correction with precision machining
- Upgrade core plugs to latest standard
- Available new advanced LSR® aluminide and Sintered Strain Tolerant TBC coatings

**LPM® Powder Metallurgy** is a unique process developed and patented by Liburdi Engineering Limited. It is a high strength superalloy alternative to welding and diffusion brazing, and as such has been used extensively with a proven track record for over a decade for Industrial and Aircraft gas turbine components - for both advanced repairs and new part manufacturing. LPM® re-construction techniques strengthen critical high stress areas, and permit precise control when restoring airfoil wall thickness and throat area harmonics.

Liburdi's extensive experience with rejuvenation heat treatment processes, combined with its unique stripping and coating capabilities, ensures that every repaired component meets or exceeds the original equipment performance and durability requirements in future service.

### Liburdi Turbine Services

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