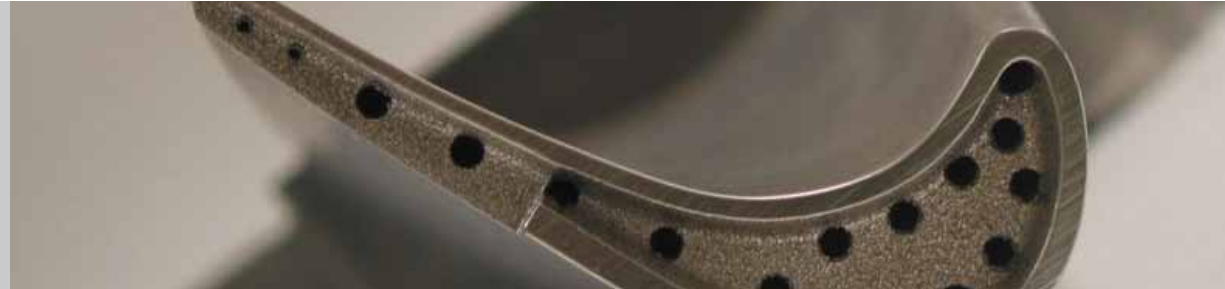


Frame 6001B Buckets



Chromalloy offers turbine buckets for all three 3 stages of the Frame 6B gas turbine.

We are the only provider of new replacement components that directly design, cast, machine, coat and install, our components, all within the parent company group. This gives Chromalloy complete control of the quality and technology, again separating ourselves from other providers who require the outsourcing of critical elements of their manufacturing. Our experience in servicing turbine buckets throughout their life cycle has provided a unique insight into designing a high quality product that is compatible with the original equipment.

1st Stage Buckets

Two versions of the first stage bucket are available; one suitable for standard Frame 6B firing temperature of 2020 to 2042 °F (1104 to 1117 °C). The second design is for the up rated firing temperatures of 2055 to 2084 °F (1124 to 1140 °C) Suitable for 6581 GT's.

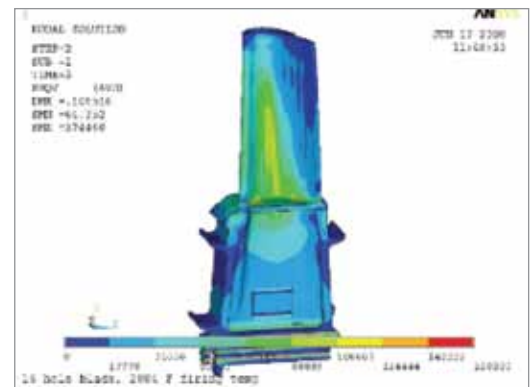
These buckets are Directionally Solidified investment cast utilizing an advanced Nickel-based superalloy. The Directionally Solidified structure has no transversal grain boundaries, which results in enhanced creep and rupture strength. The grain structure orientation gives a higher elasticity modulus along the vertical axis and better fatigue life.

Chromalloy applies a MCrAlY coating with superior oxidation and corrosion resistance for base load and peak applications throughout a wide range of fuel types and operational conditions.

2nd and 3rd Stage Buckets

The second and third stage buckets are capable of operating at uprated firing temperatures of 2055 to 2084 °F (1124 to 1140 °C). Both buckets are made from IN738 LC Alloy and have shrouded tips that include wear resistant “Z” notches. Both buckets have cutter teeth suitable for honeycomb shrouds blocks (Also available from Chromalloy). Standard buckets are not coated however we can offer various MCrAlY coatings that can improve oxidations and corrosion resistance depending on application.

Stage 2 bucket has 6 cooling holes along mean line of airfoil, 5 of which are turbulated to improve heat transfer into cooling air. Stage 3 are the new advanced airfoil design, when combined with new stage 3 nozzle, will provide approximately 1% improvement in turbine output.



Chromalloy carries out 3 dimensional mathematical modelling, including heat transfer, structural, model and transient analysis.

Stage 1 Buckets (S1B) — Standard Design

Firing Temp: 2020 to 2042 °F (GT's that have not been up-rated).

Airfoil: Blunt leading Edge Airfoil with vented tip.

Cooling: 12 radial STEM drilled cooling holes along mean line of airfoil.

Material: Propriety MS1007, which is a Directionally Solidified Nickel based superalloy very similar in characteristics to OEM's material.

Coating: The buckets are coated to provide protection from oxidation and corrosion. The coating is a LPPS applied MCrAlY overlay coating with aluminide topcoat on airfoil section and internal cooling holes. Coating specification is CN122 + CN65a which is equivalent to OEM's coating.

Stage 1 Buckets (S1B) — Up rate to 6581

Firing Temp: Suitable for all Firing Temperatures (2020 – 2084 °F).

Airfoil: Blunt leading Edge Airfoil.

Cooling: 16 radial STEM drilled cooling holes around perimeter of airfoil. 13 with turbulation.

Material: Propriety MS1007, which is a Directionally Solidified Nickel based superalloy very similar in characteristics to OEM's material.

Coating: The buckets are coated to provide protection from oxidation and corrosion. The coating is a LPPS applied MCrAlY overlay coating with aluminide topcoat on airfoil section and internal cooling holes. Coating specification is CN122 + CN65, which is equivalent to OEM's coating.

Stage 2 Bucket (S2B)

Firing Temp: Suitable for all firing temperatures.

Airfoil: Standard

Shroud: Improved shroud design offering hardened faces at Z notch. Seal rails incorporate cutter teeth. Suitable for shrouds with or with out Honeycomb.

Cooling: Not cooled.

Material: IN738 LC

Coating: No coating required. However, we can offer a range of MCrAlY and Aluminide coatings to suit customer's specific requirements.

Stage 3 Bucket (S3B)

Firing Temp: Suitable for all firing temperatures.

Airfoil: Advance Airfoil Design.

Shroud: Improved shroud design offering hardened faces at Z notch. Seal rails incorporate cutter teeth. Suitable for shrouds with or with out Honeycomb.

Cooling: Not cooled.

Material: IN738 LC

Coating: No coating required. However we can offer a range of MCrAlY and Aluminide coatings to suit customer's specific requirements.

Chromalloy provides power producers around the world with high-tech coatings, repairs and replacement parts that extend the life of gas turbine engines and reduce operating expenses. Through Turbine Services Limited, a wholly owned subsidiary of Chromalloy, we also provide a wide range of services including field services, engineering, maintenance, long term service agreements, controls and monitoring.

Chromalloy extends engine life like no other company can by providing the industry's only complete independent value chain—including design engineering, state-of-the-art castings, machining, coatings, repairs and field services. These unrivaled capabilities represent 60 years of innovation—and they can make an impact today.

Services include:

- Plant operation and maintenance
- Plant operator training
- Field and engineering support
- Rotor Overhaul
- Component refurbishment
- Condition Monitoring
- Replacement spare parts
- Long Term Service Agreements
- Turbine control systems
- Turbine Refurbishment

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