



Chromalloy opened a new castings facility in Tampa, Florida, U.S.A., expanding its manufacturing capabilities in both quantity and size of gas turbine hot section components.

An Ensemble Cast At Chromalloy

New casting facility expands turbine component manufacturing capabilities

Chromalloy, a company that repairs and manufactures new parts for gas turbines, has opened a new casting facility in Tampa, Florida, U.S.A. The facility expands upon previous capabilities, tripling the company's Tampa location capacity to manufacture components for the hot section in gas turbines used in power generation, marine, heavy-frame industrial and aero applications.

The new casting facility in Tampa was designed to pour up to 136 kg of alloy at any given time for turbine hot section parts such as blades, vanes, nozzles and shrouds.

The site is also equipped to cast larger frame IGT parts that the company didn't have the capacity to do before. Chromalloy installed larger material handling devices, larger furnaces and larger testing inspection equipment. The company is now

equipped to manufacture parts that will fit up to a 122 cm envelope and weigh 68 to 79 kg.

Tom Trotter, vice president and general manager of Chromalloy Castings in Tampa, said, "We've got some terrific repair techniques that we're applying in the power generation markets and those are opening up possibilities."

Chromalloy's business concept is to offer customers an alternative to OEM repairs and replacement parts.

Trotter explained, "Chromalloy has developed many proprietary repair techniques that we utilize, and our business model is different. We would prefer to repair a part and not have the operator going through the expense of buying a new spare part. But, if we can't repair it, we have the capability now — with the expansion in Tampa — to be able to produce the part for the operator," he said.

The company offers design engineering, tooling, casting, machining, repair technology and coatings.

"Despite the fact that Chromalloy has the full design capability, we typically use the OEM design as kind of the baseline," said Trotter, explaining the engineering that goes into cast replacement hot parts for turbines.

"Because we do have the design and analysis capability — and because we do repairs on these parts — during the repair cycle, we know and we've been able to build a database on what the failure modes of these individual components are.

"So in many cases what we will do is redesign the part to address those failure modes and be able to provide a better part to the operator than what the OEM might be running with today," said Trotter.

The company said it develops its own intellectual property by reverse engineering parts produced by the original equipment manufacturers. Once the part is designed, it goes through a casting process, which Chromalloy said can meet tolerances as tight as five- to eight-hundredths of a millimeter.

Chromalloy employs investment



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casting to manufacture its aftermarket parts. The process begins by injecting a wax pattern. With the pattern, the mold assembly is produced and the assembly is then dipped six to seven times in a ceramic slurry.

Once dipped, the wax is removed from the ceramic shell and the melted alloy is poured into the shell. The shell is then removed and the parts are removed from the gating. From there, they go to finishing and inspec-

tion. During the testing process, each manufactured component is x-rayed for quality control.

Because aero turbines make up the majority of the company's business, Chromalloy has to manufacture those turbine components up to FAA standards and regulations. As a result, Chromalloy engineers and manufactures all components for all industries it services up to FAA standards.

Along with the opening of its new facilities, Chromalloy also announced plans to expand the new facility to produce its own ceramic cores on-site. The ceramic cores are used in the molding process to form the air passageways in hollow components.

The expanded Tampa facility replaces the previous Tampa location. The company said it was important to build the new location within 15 to 20 minutes of the old to retain its workforce. 💡

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