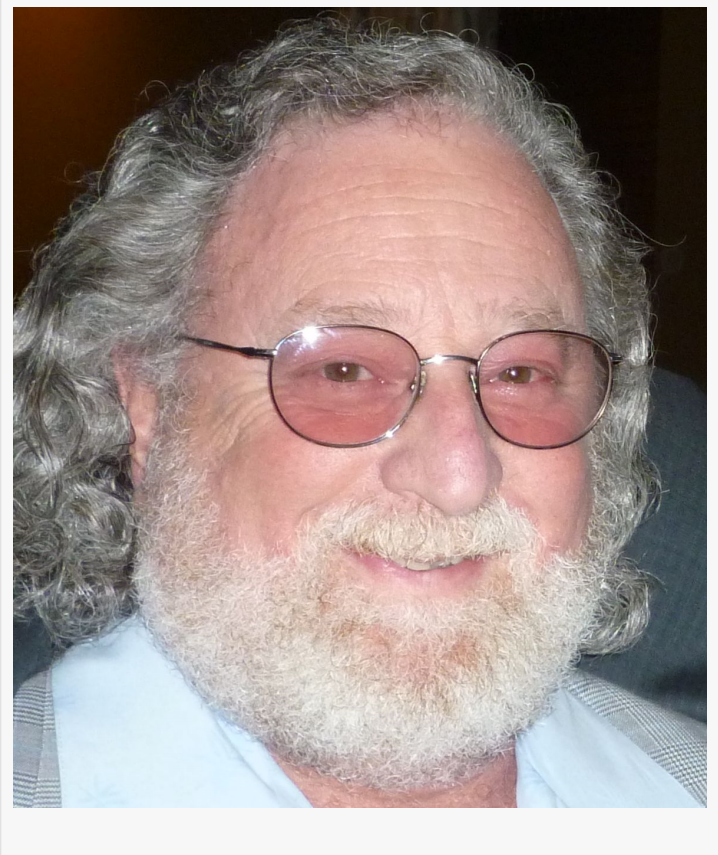


All Metals & Forge Group Expands Component Production for Green Energy Wind, Wave, Tidal, and Solar Turbine Parts

Manufacturer Produces Custom Open Die Forgings and Seamless Rolled Rings for Structural Components and Turbine Parts for New Installations, Repairs, Retrofits.

FAIRFIELD, NEW JERSEY, UNITED STATES, December 22, 2022 /EINPresswire.com/ -- All Metals & Forge Group (AMFG), an ISO 9001/AS 9100D registered manufacturer of open die [forgings](#) and [seamless rolled rings](#), is expanding its production and delivery capabilities to produce structural components and [turbine](#) parts for delivery in 8 to 10 weeks for new installations, repairs, and retrofits for the hydroelectric, steam, wind, wave, tidal, and solar turbine industries. The company can also maintain a critical parts inventory for customers that can be immediately shipped for emergency repairs. The market for open die forgings and seamless rolled rings for wind, wave, tidal, and solar turbine parts is forecast to grow from \$7.28 billion in 2022 to \$11.15 billion by 2028, a CARG of 7.4% from 2022 to 2028.



"The ability to manufacture quality components at competitive costs and deliver quickly is the benchmark for All Metals & Forge Group," said Lewis A. Weiss, company president.

Forged parts for turbine components include flanges, sleeves, impellers, seamless rolled rings, spacers, blades, buckets, adapters, casings, discs, hubs, bearings, bearing blocks, gears, shafts, step shafts, and single or double-flanged shafts. These parts can be delivered as rough machined forgings near net shape or finish machined parts that save time and money for new or replacement part installations. AMFG can forge turbine parts in nickel alloys, stainless steel, alloy steel, and carbon steel. It also forges aluminum, titanium, and tool steels for many end part uses.

Wind, Wave, Tidal, and Solar Turbines

All Metals & Forge Group has been producing critical component parts for the turbine industry for several decades. Demand for clean, renewable power generation is driving up demand for sources of energy beyond hydroelectric, coal or gas-fired steam

turbines. Wind has been the most common use of turbines, and hundreds of onshore and offshore wind farms are in operation or being installed.

All Metals & Forge Group

OPEN DIE FORGINGS & SEAMLESS ROLLED RINGS

Wave, tidal, and solar energy has been explored for many years. Technology is improving the efficiency and durability of surface, subsea, and solar energy is driving the demand for quality forged turbine components and forged structural parts. Countries and companies on every continent are actively installing various designs to capture the energy produced by wind, water, and the sun.

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The ability to manufacture quality components at competitive costs and deliver quickly is the benchmark for All Metals & Forge Group”

Lewis A. Weiss, President

The key to controlling new installation and repair costs of turbines lies in the quality and durability of the forged parts of the support structure and internal components of

the turbines. The failure of a forged part 300 feet in the air or 300 feet underwater is a major repair expense and loss of power generation.

AMFG recognizes that proven quality is better than assumed quality and takes the extra steps in testing from billet or ingot to finish machined parts (when finish machined is required by the customer) so that failures in the field should not be a concern other than normal life cycle wear and tear requiring refurbishment.

Global Supplier

AMFG ships rough machined forgings or finished machined parts anywhere they are needed. In addition, the company can forge and store critical components to reduce installation or repair lead times from months to days. Generally, the customer’s first order can be produced and shipped in 8 to 10 weeks; a bit longer if finished machined parts are required, or disruptions occurred in the supply chain. However, most of the supply chain disruptions experienced between 2020 and 2022 have been resolved. Thus, the 8 to 10-week delivery time has become

quite reliable.

Proof of Quality and Soundness

AMFG is an unusual manufacturer in the forging industry. Rather than stating “Capable of ASTM A388,” an ultrasonic test forging soundness benchmark, AMFG actually tests every forging for part soundness using tighter requirements than the standard for flat bottom hole (FBH) or voids within a forging. It then certifies each forging to ASTM A388 or more stringent specifications.

The quality of forged turbine parts is crucial to the performance and life of turbines and support structures. AMFG produces forgings to material specifications, including ASTM, AMS, ASME, AISI, SAE, and many standards from Germany (DIN), Great Britain (GB), and other international material chemistry and physical properties specifications. However, the company goes a step further than relying on the mill test report (MTR) for the chemistry of the starting stock. AMFG runs an analysis of ingot or billet chemistry before that material is used for forging, documents those results, and confirms the quality of the ingot.

One aspect of forging quality that is often overlooked is the cleanliness of the billet or ingot for forging starting stock, which measures impurities within the material at one of five levels. In addition, the actual melting of the ingot or billet is considered for the customer’s desired end use, from ESR (most common) to VIM-VAR, which yields high purity for critical aerospace and special industrial uses.

The Forging Itself

Forgings are manufactured to the chemistry and physical properties of industry-standard material specifications. These standards also define hardness, acceptable methods of heat treatment, and the target ranges for physical properties after processes like annealing, normalizing, or quenching and tempering. However, to prove that the target results were attained, AMFG takes another step before the material is shipped to the customer for their end use.

Specifications call for coupons to be representative or extracted from a prolongation. AMFG produces four coupons for every heat of material, and in required cases, from the forgings as designated by the spec. It then tests one of the coupons to confirm the chemistry and physical properties of the material specification. Those test results are shared with the customer. Separately, AMFG sends a coupon to a third-party, independent testing laboratory for them to test the chemistry and physical properties. These reconfirmation results are provided to the customer, as well. The third coupon is stored by AMFG to comply with various traceability requirements by the customer or the end user. The fourth coupon is delivered to the customer, who can conduct their own reconfirmation tests.

The shift from fossil fuels to renewal energy from wind, wave, tidal, and solar will be a strong market for AMFG.

Lewis Weiss

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