

ADVANCED ROTOR WELDING

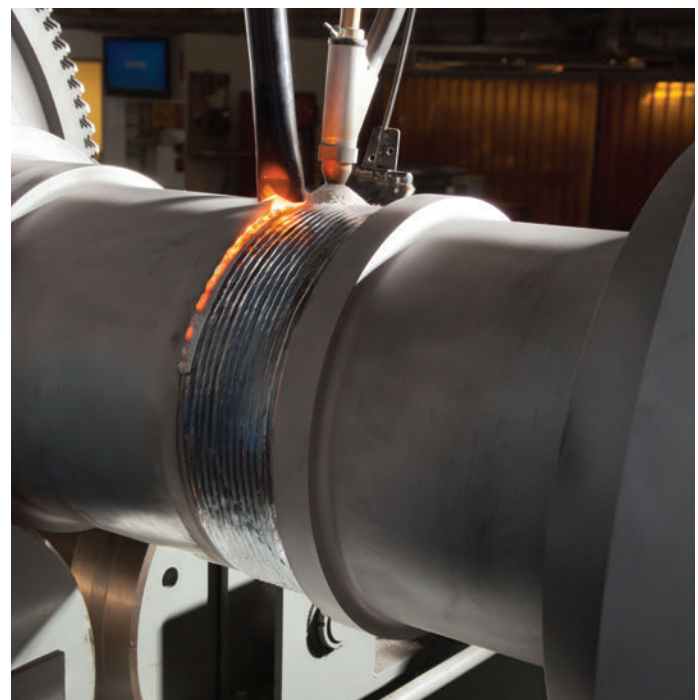
MD&A Turbine-Generator Repair Facility

MD&A brings advanced turbine weld repair technologies to the steam and gas turbine-generator marketplace by utilizing submerged arc welding (SAW) and gas tungsten arc welding (GTAW) processes. We offer the weld repair and restoration of damaged rotor shaft forgings.

Rotor Welding

Reliable operation of steam turbine, gas turbine, and generator rotors is extremely vital to ensure the power generation industry to avoid millions of dollars in losses due to lost generation. Rotating power generation equipment forged shaft steels are designed to provide reliable operation due to normal thermal, mechanical, and environmental influences. In some cases, forged shaft steels can be damaged due to these influences causing corrosion pitting, scoring, hardening, low cycle fatigue cracking, high cycle fatigue cracking, stress corrosion cracking, and/or creep cracking. Procurement of a new rotor shaft forging is very costly and lengthy process that can take up to 24 months. Although, weld repair or restoration of damaged rotor shaft forging can be accomplished in a fraction of the cost and duration as compared to replacement.

MD&A focuses on offering both in-kind as well as upgraded weld filler materials that address many of the most common operational and stress related failures. MD&A is capable of providing full turn key weld repair and reconditioning services to include equipment inspections and damage assessment, weld repair solution definition and recommendations, baseline and weld repair geometry finite element analysis, as well as root cause failure analysis.



- Phase I - Weld overlays of journals, oil seal areas, dummy areas, and shaft end / interstage gland areas.
- Phase II - Weld buildups of couplings, thrust collars, wheels, and dovetails / blade attachment areas.

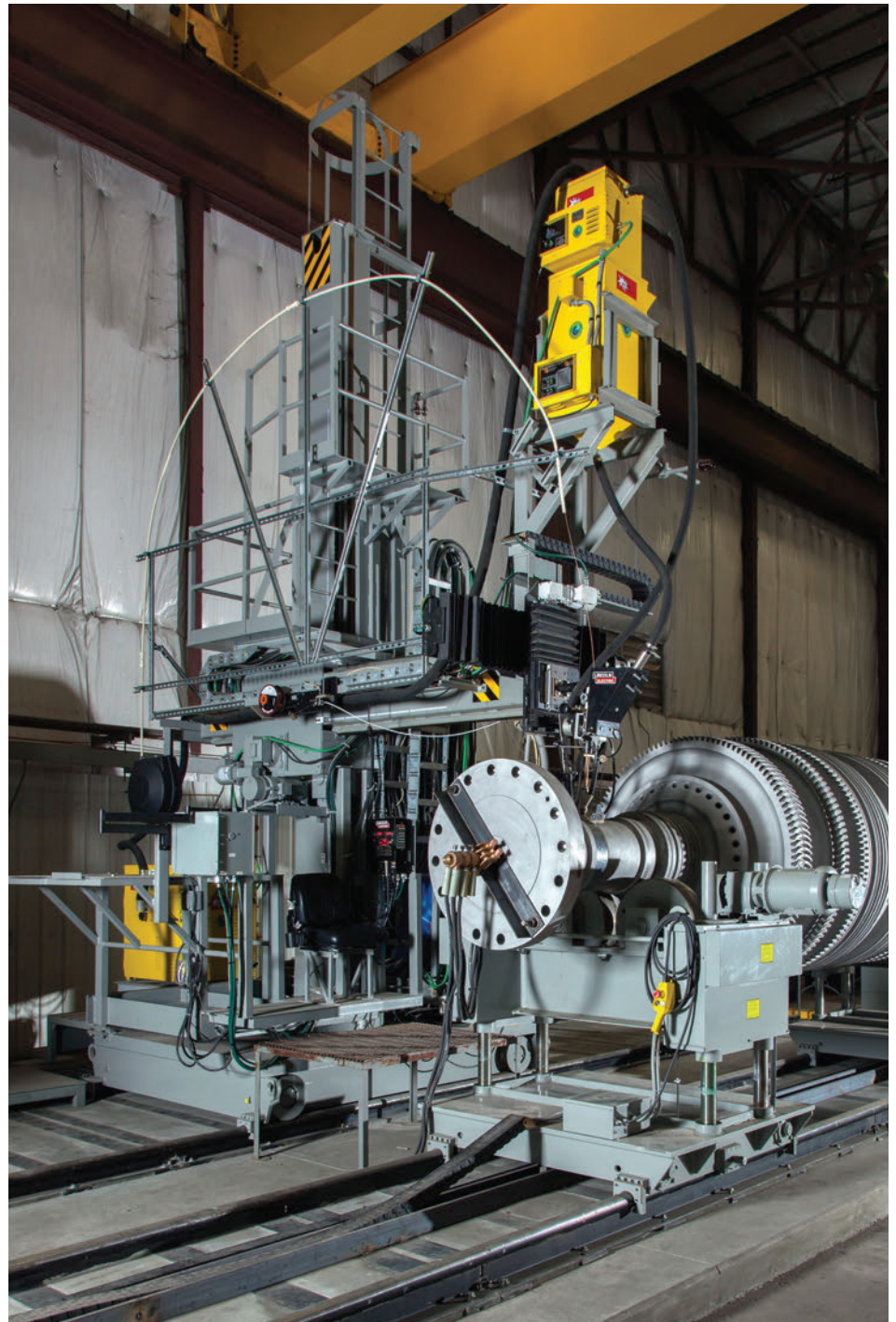
MECHANICAL DYNAMICS & ANALYSIS

For more information on Advanced Rotor Welding Services please contact MD&A at 314-880-3000.

Facility and Capabilities

MD&A repairs and balances turbine and generator rotors used to generate electric power. Centrally located in St. Louis, the MD&A Turbine-Generator Repair Facility has successfully completed many shaft weld repairs of steam turbines, gas turbines, and generator rotating fields.

- The welding station is capable of performing weld repairs / restorations of steam turbine, gas turbine, and generator rotating fields up to 45' in length, 12' in diameter, and 100 tons in weight.
- Koike-Aronson Rotor Welding Station with Lincoln 1000 amp AC/DC SAW (Sub Arc Welding) Head and Arc Machine 400 amp GTAW (Gas Tungsten Arc Welding) Head.
- The welding station has a foot print of 50' long and 20' wide with a Scarab II weld manipulator that has a 14' tall mast and a 7' boom reach.



MD&A TURBINE-GENERATOR REPAIR FACILITY

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