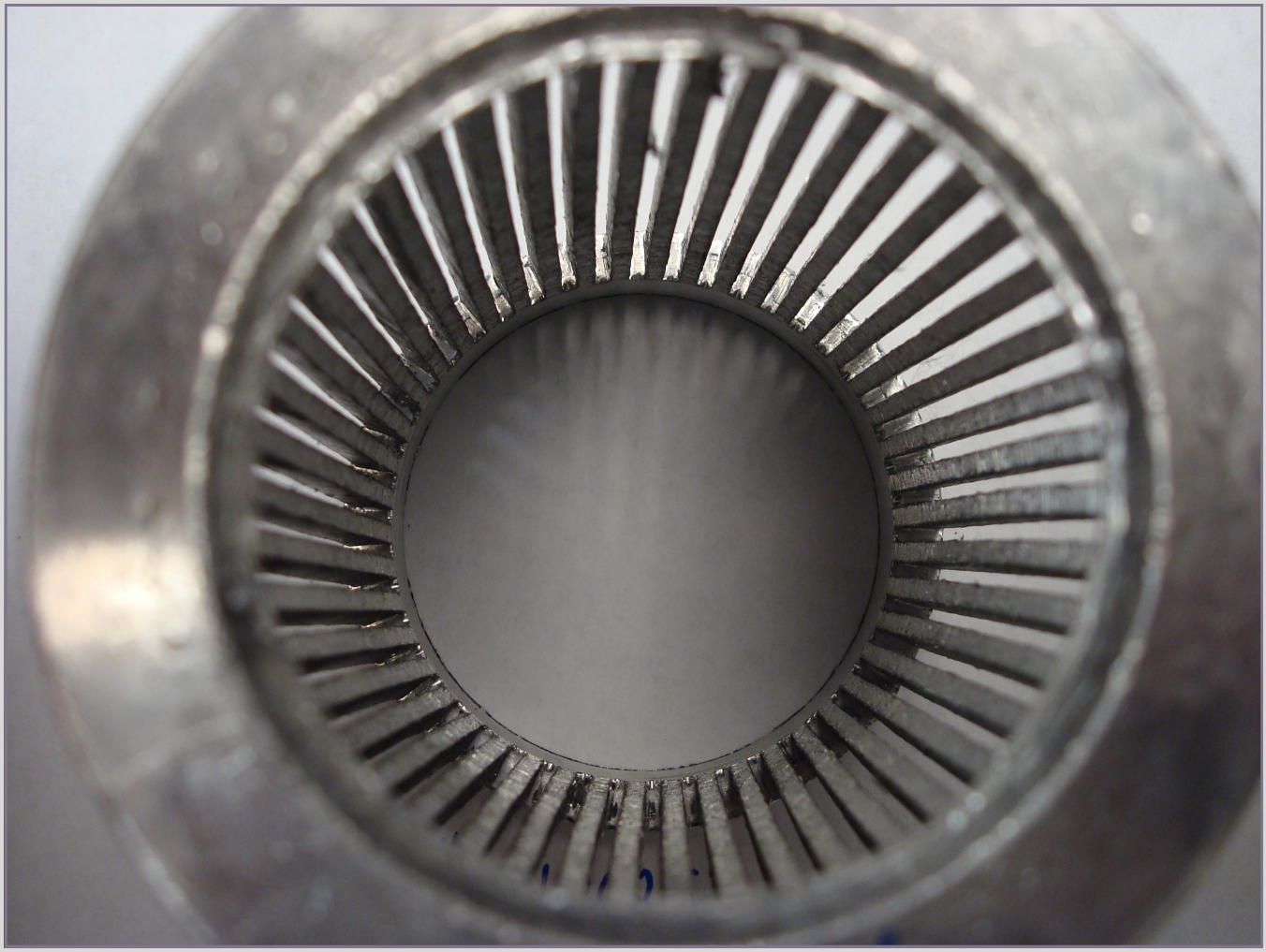
Ramco Electric Motors

RAMCAST

- *Low Porosity Levels*
- *Decreased Stray Load Losses*
- *Aluminum or Copper rotors*
- *State of the art data collection & record retention*
- *Expert Rotor Casting Evaluation*
- *Process Capabilities*

RAMCAST = High Quality Rotor Castings

With today's increased RPM's and efficiency requirements, motor designers are often requiring more from cast rotors than traditional casting methods can deliver. Traditional rotor casting methods have centered around Horizontal and Vertical casting machines. Both processes have shortcomings when trying to produce high quality rotor castings. Tapping in on years of experience with both methods, Ramco Electric Motors was driven to design, build, and refine a new casting process to address the shortcomings associated with both the Horizontal and Vertical casting methods. We encourage our Customers to take advantage of this technology that makes our RAMCAST process the industry leader!



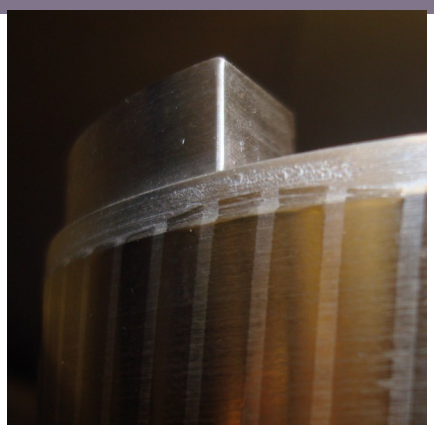
Lower Porosity Levels

Ramco Electric Motor's new RAMCAST process allows motor designers to push the limits past conventional casting capabilities. The RAMCAST process produces castings with lower porosity levels within the end ring and most importantly, at the connection of the end ring to the bars. Rotors can now be pushed to higher RPM's and temperatures compared to conventionally cast rotors.

X-ray of rotor end ring.

Stray Load Losses

Stray load losses are also reduced by the RAMCAST process. In conventional casting processes, the clamp force of the machine is applied directly to the lamination stack. Inconsistencies in lamination stack lengths vary the amount of force applied to them during clamping and casting. The RAMCAST process adjusts for each individual lamination stack length, allowing less clamp force to be used, resulting in reduced stray load losses due to shunted laminations. Expensive lamination coatings can now be utilized to their full potential.



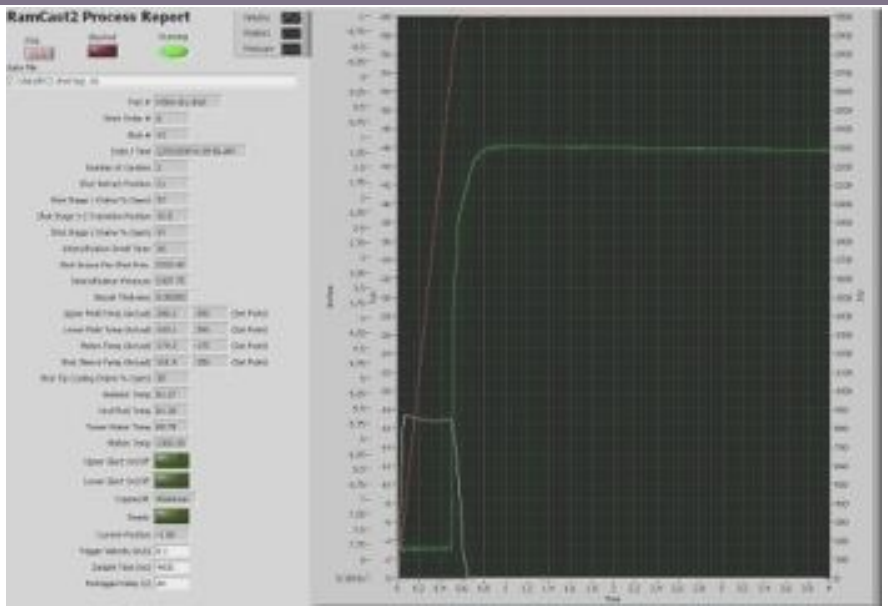
The part to the left was cast on a horizontal casting machine. Laminations are forced into the end ring due to the immense clamp pressure applied. Deformed end laminations and shunted lamination insulation are a direct result of high clamping forces.

Aluminum / Copper Rotors

The RAMCAST process was designed to handle both Aluminum and Copper casting alloys. State of the art melting equipment is used to cast several different alloys. Contact Ramco Electric Motors about expected conductivity levels for standard cast alloys.

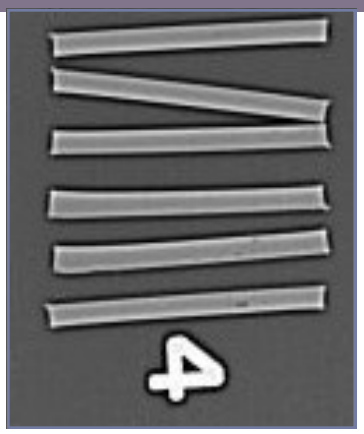
Data Collection / Record Retention

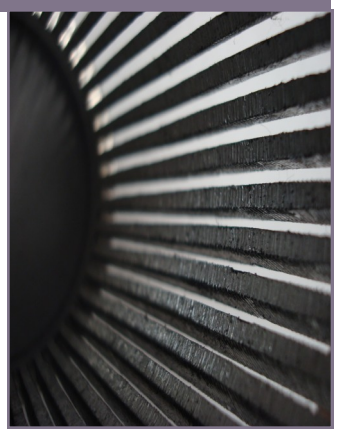
The RAMCAST process utilizes high speed data acquisition software to closely monitor each rotor casting. For every rotor, all data is compiled and electronically stored for virtually endless record retention. After initial process refinement, the “recipe” is frozen and changes are not made without customer approval.



Rotor Casting Evaluation

During refinement of the RAMCAST process Ramco has become experts at rotor casting evaluation. Conventional casting techniques make it easy to spot defects due to their increased porosity size and quantity. RAMCAST rotors have to be inspected using a much more refined inspection technique. Each individual bar can be inspected to find minute defects that are normally overlooked by our competitors. Ramco can provide detailed evaluations of competitor supplied rotors to help customers during the transition to Ramco’s RAMCAST process.





Process Capabilities

The RAMCAST process was designed with flexibility in mind. Only top-shelf components were used resulting in a reliable consistent process. Current machine capacities are:

Rotor OD = 1/2” - 20” (Maximum OD depends on desired casting quality)

Stack lengths up to 12” (depends on end ring configuration)

AL Weight ~ 50 lbs

CU Weight ~ 18 lbs

Ramco Electric Motors also has a complete cell equipped to turn rotors into finished rotor shaft assemblies.

Ramco Electric Motors

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Ramco Electric Motors, Inc. is a AS9100 / ISO9001:2004 Quality Certified manufacturer of electric motors, stators, rotors, rotor & shaft assemblies, armatures, and field yokes for use in industrial, military, and aerospace applications. Founded in 1987 and known as Ramco Rotors, we have recently changed our name to Ramco Electric Motors to better describe our capabilities. Ramco has cast millions of rotors over the years, and remains a leader in our niche of the electric motor industry. Ramco remains a Customer-focused one-stop-shop for all your electric motor needs. Call us today with your requirements.

"No rest stops at 40,000 feet"

www.ramcoelectricmotors.com