



Core Competencies

- Stator Winding & Assembly
- Stator Core Building
- Rotor Casting
- Fabricated Copper & Brass Rotors
- Shaft Making
- Rotor & Shaft Assembly
- Motor Assembly



Rotor Casting

Aerospace Quality Rotor Casting - RAMCAST

Ramco's proprietary casting process RAMCAST, was developed especially for aerospace and other applications that demand ultra-high quality rotor castings. We designed the process, designed a custom machine to carry out the process, and built the machine in-house. We are the only company in the world with this process.

- Cast Aluminum Rotors (up to 20" OD, 50 lbs. of Alloy)
- Cast Copper Rotors (up to 20" OD, 18 lbs. of Alloy)
- Ultra-low Porosity (compared to conventionally-cast rotors) - dense castings
- Tighter dimensional tolerances
- Structurally sound cast end rings allow motors to run at higher speeds
- Higher Efficiency Rotors
- Lower Stray Load Losses



Conventional Die Cast Rotors

- Cast Aluminum Rotors (up to 10" OD, 30 lbs. of Alloy)
- THT vertical rotor die cast presses
- Open or closed slot rotors
- Over 2M rotors cast since 1987

Rotor Secondary Operations

- Rotor ID Honing
- Rotor ID Boring
- Rotor OD Machining and Grinding
- Rotor Keyway Broaching
- Rotor Annealing

Fabricated Copper and Brass Rotors

- Source copper and brass to your shape
- Source / machine end rings
- Assemble and Braze/Solder - Torch or Induction

Shaft Making

- Carbon, Stainless, High Grade Alloy, Super Alloy Steels
- +/- .0001" tolerance
- Features
 - Splining - Internal and External
 - Flats, keyways, knurls, drill & tap
 - Gun Drilling
- Provide outsourced processing of heat treating, passivation, friction weld, magnetic particle inspection



Rotor & Shaft Assembly

- Cold Press
- Hot-drop cores on Liquid Nitrogen cooled shafts available
- Straightening
- Cleaning for wet motors (particle counting)

Machining

- Up to 18" OD
- Up to 80" long
- Okuma Turning Centers with Live Tooling
- 4-Axis Turning Center - Pinch Turning to reduce Cycle Times
- Hurco Vertical Machining Center

Grinding

- Studer S33 OD Grinders
- Up to 39" in length
- Up to 13.75" OD
- +/- .0001" tolerance

Rotor Balancing

- Schenck Balancing Equipment (Down to balance grades of G1.0 and weights up to 650 lbs.)

Motor Assembly

Ramco Electric Motors builds complete motors to customer design. You provide the design, and we'll do the rest! We are equipped to build AC Induction, DC Brush-Type motors.



Stator Winding & Assembly

- Fractional to 200HP plus
- Induction Motor Stators
- Stator Generators
- DC Brushless Stators
- CNC MCS Winders
- Coil Winding up to 48" Coils
- Lap and Concentric Wound
- Hand Insertion
- Single and Three Phase
- State of the art stator test equipment from Automation Technology

Stator Secondary Operations

- Varnish Vacuum Pressure Impregnation (VPI)
- Varnish Dip & Bake
- Stator Shell Flat Rolling and Welding
- Stator ID Honing and ID Varnish Cleaning
- Stator OD Machining or Grinding

Stator Core Building

Bonding Agents

- MagnaTac E645[®] Bonding
- Scotchcast 265[®] Bonding

Welding

- TIG (GTAW)
- MIG Welding





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MAGNETIC TECHNOLOGIES

 **RAMCO ELECTRIC MOTORS, INC.**



A10 Thunderbolt photo courtesy US Dept. of Defense

Our Mission:
 Our mission is to be the preferred supplier for customers who need low-to-mid volume electric motors and related components.

Who We Are:

Ramco Electric Motors, Inc. is a sub-contract manufacturer for electric motors, stators, and rotors for use in industrial, commercial, military, and aerospace applications.

- Founded in 1987
- 71,000 Sq. Ft. Facility
- ISO 9001:2008 Certified
- AS9100:2004 Rev C Certified
- ITAR Compliant
- NFIB Member
- Ohio Manufacturer's Association Member

Our Customers:

Ramco Electric Motors, Inc. serves a wide customer base, building and supplying assemblies for commercial, industrial and government applications.

- Food Equipment
- Material Handling
- Hybrid Vehicles
- Military Vehicles
- Military Aircraft
- Commercial Aircraft
- Mining Equipment
- Oil Drilling Equipment



Customer Services:

- Solutions to problems
- KANBAN
- JIT
- Lot/Serial Control
- Record Retention to 45 Years
- Lamination Sourcing
 - AISI M19/M43/M45/M54
 - ASTM A677/A343/M47
 - HI-PERM49
 - Hyperco
 - C4, C5, C6 Coreplate
 - Progressive Die
 - Compound Die
 - Notching
 - Laser Cut

Our Team



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