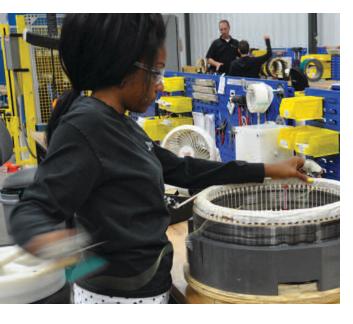
# Core Competencies

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



# 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



# **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.



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# 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 Manufaturer'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





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