



**High  
Performance  
Commutators**



***ELECTRIC MATERIALS***





# Nonstop Service



with

**TEMCO EXPRESS**

## EMERGENCY COMMUTATOR REPAIR

When you need commutator repair in a hurry, take the Temco Express. We provide continuous service 24 hours a day, 365 days a year.

Here's how it works. When your commutator arrives at our receiving dock – bearing a bright Temco Express label – we start the rebuilding process immediately. And we continue the

process – nonstop – until your commutator is repaired, properly seasoned, tested, and shipped back. No idle time allowed. No corners cut. With Temco Express you get it right the first time, on time, every time.

Call today for more information and your supply of Temco Express labels.



*When you don't have the time,  
take the Temco Express.*

**ELECTRIC MATERIALS**

The Electric Materials Company  
50 South Washington  
North East, Pennsylvania 16428  
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# ELECTRIC MATERIALS



## Commutators for OEM Applications

Many of the world's leading original equipment manufacturers specify motors built with Electric Materials commutators. Our ability to supply products that precisely adhere to customer specifications is our reason for success.

Vertical integration of our manufacturing process makes it possible. We start with copper from our own mill and control everything else in the process internally.

Here's how it works. One of our engineering cells, dedicated strictly to commutators, reviews our customer's requirements to verify electrical and mechanical specifications.

Silver bearing copper alloys are either hot rolled or extruded then drawn into the required wedge shaped bars and cut to size, or can be pulled from our huge inventory of standard wedge shapes.

Copper segments are stacked and insulated utilizing mica rings, then assembled onto machined steel shells. Welded shells, and related components, are produced by welders certified to ASME codes and military standards. Newly assembled commutators are statically cured in electric ovens.

Static seasoning, balancing, and electronic profiling of commutators, as application requires is closely controlled for greater stability. Traction motor and other high performance commutators are heated and spin seasoned at up to 25% over their normal operating speed to provide dynamic seasoning and to verify stability.







## Commutator remanufacturing

Here again, Electric Materials has been highly successful in rebuilding and refilling large commutators. As with OEM commutators, our experienced design engineers evaluate the (required) operational requirements of the motor, conduct stress analysis and create manufacturing drawings for rebuilding the commutator.

Commutators are then disassembled and rebuilt with new copper and mica following the same quality assurance processes applied to new commutators.

The result is a high quality remanufactured commutator that meets the operational demands of the motor users application.



## Commutator Capabilities and Processes

**Sizes:** 5" through 116" brush diameter, up to 144" radial diameter

**Types:** Either vee or arch bound, diaphragm, glass banded (grooved and banded), shrink ring (external and internal)

### Types Can Be Supplied:

**OEM:** All new steel, copper, mica.

**Refilled:** Existing steel, new copper, mica

**Assembled:** New copper, mica, machined and wire banded ready for customer installation on steel components

**Reinsulated:** Existing steel and copper with new mica (except shrink ring or glass banded types). All reinsulated commutators subject to acceptance based on engineering evaluation

**Spin Seasoning:** Up to 100" radial diameter, speed up to 10,000 rpm

**Heat Curing:** Electric ovens up to 14' diameter, temperatures up to 500° F

**Pressing:** Hydraulic pressing up to 300 tons

**Undercutting:** Up to 124" brush diameter, 24" bar length

**Mica Ring Fabrication:** Sectional or finger type

**Brazing:** Butt, lapp, and insert-brazed risers

**Welding:** Shell fabrication and repair certified to ASME Codes and Military Standards

**Machining:** Complete CNC metalworking capabilities

**Testing:** Complete mechanical, electrical and metallurgical testing and certification equipment



# Electrical Rings

Electric Materials is also your best source for high performance collector ring assemblies, slip rings and rotor end rings. Select from a variety of metallurgically certified alloys and conductivity ranges in size from 6" through 55" diameter. Rings can be conventionally cast up to 55" or centrifugally cast up to 35" to meet your requirements.

Call today for complete specifications.



- ♦ The Electric Materials Plant is located 150 miles north of Pittsburgh along Lake Erie, midway between Buffalo and Cleveland.
- ♦ As an independent producer, we are geared to provide customers fast, quality service.
- ♦ We encourage customers to visit our plant when traveling through our area.

## ***ELECTRIC MATERIALS***

**CASTINGS • FORGINGS • EXTRUSIONS • ROTOR BARS • BUS SYSTEMS • COMMUTATORS**

Electric Materials • 50 South Washington • North East, Pennsylvania 16428  
Phones: 814-725-9621 • Toll Free: 800-356-2211 • FAX: 814-725-3620  
www.elecmat.com • email: sales@elecmat.com

***Providing engineered solutions since 1915***

**ISO 9001**  
CERTIFIED



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5M - D1  
Printed in USA





To insure the highest level of quality, every heat is checked prior to pouring to confirm melt temperature and electrical conductivity. Individual samples are taken for detailed chemical analysis.



The molten metal is spun at controlled RPM, producing a denser casting to near net shape.



## Centrifugally Cast Copper and Copper Alloy Products

The Electric Materials Company manufactures high performance collector rings, slip rings and rotor end rings using a centrifugal casting process that provides excellent microstructure in a near net shape.

Many copper and copper alloys are available in a wide variety of sizes to meet your specifications.





Rings are machined to precise tolerances and premium quality surface finish.



Metallurgically certified rings are available in a broad range of sizes to meet your specific needs.



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