

Spec item : L-1	<b>SPECIFICATION</b>	
L-1 #2 Alternator rotor overhaul and rebuild		

**Part 1: SCOPE:**

The intent of this spec shall be to refurbish the complete rotor from #2 Alternator onboard the CCGS Edward Cornwallis.

The #2 Alternator rotor is to be serviced in conjunction with the listed items in the following scope of work.

All recommended testing during and upon completion of the work to be completed by contractor at their facility.

All work included in scope to be carried out at the contractors facility once rotor has been delivered.

Contractor shall be responsible for pickup of rotor assembly, approx. (13,000lbs) at Dartmouth CCG Base Warehouse and have transported to their repair facility. Rotor has been crated and ready for shipping to facility of successful bidder. Contractor shall have newly rebuilt rotor crated after repairs completed and will be responsible for shipping back and delivery to Dartmouth CCG Base Warehouse.

TCMS Survey credit is required.

Contractor is encouraged to take photos of the pre-start/during/completion of the project.

**Part 2: REFERENCES:****Related drawings:**

GE Rotor:

4002B1157BF (1)

4004D1009DA (3 of)

GE Exciter:

4004D1039AE (1)

4004D1041BH (1)

Alternator Control Data Sheet (1)

**Propulsion Alternator:**

- GE Alternator - Type: EN-139533
- GE Alternator exciter: AC Brushless Exciter EN-139482 and Basler Regulator
- Alternator rotor rigging weight: Approx 5,900kg
- Temperature Rises: Class F insulated ( 85 Deg C by resistance at rated output )

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**Preliminary Notes:**

Contractor shall conduct a visual inspection upon receipt of full rotor assembly.  
Contractor shall provide any and all required safety apparatus required to fulfill the assigned work package in their properly equipped facility.  
Contractor shall provide any and all required material and apparatus required to fulfill the assigned work package, unless otherwise stated.

**2.1 Standards**

Contractor shall perform all of the following work, unless otherwise stated and provide fully certified personnel acceptable to Lloyd's in accordance to Ship Safety Electrical Standards TP127E and IEEE Standard 45 – Recommended Practice for Electrical Installation on Shipboard.

**2.2 Regulations**

All work performed by contractor must be compliant with the latest Canada Shipping Act Regulations and in particular to the Marine Machinery Regulations. All work shall meet the requirements of Lloyd's Register Rules and Regulations and in particular Chapters 6, 12, 13, 14 and 17.

**2.3 Owner Furnished Equipment**

Contractor shall supply all materials, equipment, and parts required to perform the specified work unless otherwise stated.

**Part 3: TECHNICAL DESCRIPTION:****3.1 General****Scope of work for the renewal of alternator rotor:****Contractor Shall:**

- Receive the full rotor assembly at their certified facility and document state of full unit and connections for reconnection purposes.
- Conduct incoming Megger and PI testing on rotor.
- Conduct mechanical inspection and TIR on rotor.
- Remove pole keys to remove rotor poles.

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- Strip and take component data.
- Glass bead clean poles.
- Sand blast Spider assembly.
- Prepare to wind coils.
- Rewind coils on form as per Manufacturer's specifications.
- Bake and test on completion of coil windings as per Manufacturer's specifications.
- Install windings on pole core.
- Bake to cure as per Manufacturer's specifications.
- Clean poles after bake.
- Test poles after bake.
- Install poles on rotor.
- Key poles to rotor.
- Connect poles as per original connections.
- Test as per Manufacturer's specifications.
- Install new owner supplied exciter rotor and diode wheel assembly on to main rotor.
- Balance full assembly to G1.0
- Complete final paint buff.
- Clean journals and seal surfaces.
- Prepare for shipping back to vessel in shipped crate.

### 3.2 Location

All work to be carried out in Class approved Contractor's Repair Facility.

## Part 4: PROOF OF PERFORMANCE:

### 4.1 Inspection-

#### Inspection and Repairs

All work shall be completed in accordance with the Manufacturer's instructions as stated in scope of work and to be approved at completion by TCMS.

### 4.2 Testing

Contractor shall conduct a Megger test and a PI test of alternator rotor upon completion of unit repair.

### 4.3 Certification

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Certification on the integrity of repaired unit to be provided for TCMS Survey credit.

## **Part 5: DELIVERABLES:**

### **5.1 Drawings/Reports**

#### **Reports**

Contractor shall provide a written report of the service work, and test results for alternator rotor, within the 1[one] week period following acceptance of that units return.

### **5.2 Spares** N/A

### **5.3 Training** N/A

### **5.4 Manuals** N/A