



Diadem Ship Repair Pvt. Ltd.

Registered Address: Sharad Wadi Room No. 2, Near Basant Cinema, Dr. C.G. Road, Chembur, Mumbai. 400074

Office Address: 228, 2nd Floor, Daulat Udyog Bhavan, Wadhavali Village, Dr. C.G. Road, Chembur, Mumbai. 400074

WORK DONE REPORT

Alternator Bearing Housing Repair by Metallizing & Machining

Vessel: MT ELENA 1

Equipment: AVK Alternator – Bearing Housing / End Covers

Location: Mumbai Anchorage / Shore Workshop

Date: 16/06/2026

Background

During dismantling and inspection of the alternator, excessive wear and damage were observed on both alternator bearing housing seating areas. The existing housing dimensions were found outside acceptable tolerances, resulting in improper bearing fitment and potential operational issues.

Following discussions with the Vessel Superintendent and Chief Engineer, both alternator end covers were off-landed and transported to our workshop for repair and restoration.

Scope of Work Executed

1. Removal & Transportation

- Dismantling of alternator end covers onboard vessel.
- Removal of bearing housing assemblies.
- Off-landing of components from vessel.
- Transportation to workshop.
- Customs and logistics formalities completed.

2. Workshop Inspection

Upon receipt at the workshop, detailed inspection and dimensional checks were carried out.

Findings

- Bearing housing seating surfaces found worn and oversized.
- Existing sleeves found damaged and unsuitable for reuse.
- Bearing fit dimensions found outside manufacturer tolerances.





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3. Repair Activities

The following repair activities were carried out successfully:

Metallizing Works

- Damaged bearing housing seating areas prepared and cleaned.
- Metallizing process carried out on worn bearing seating surfaces.
- Required metal thickness restored to facilitate machining.

Fabrication & Installation of Cast Iron Sleeves

- New Cast Iron (CI) sleeves were fabricated as per the required dimensions.
- Sleeves were precision machined to suit the bearing housing bores.
- Sleeves were installed into the repaired bearing housings.
- Industrial retaining compound applied during assembly.
- Sleeves were mechanically locked in position using grub screws and Allen key bolts to prevent rotation or movement during operation.

Machining Works

- Components mounted on Vertical Turning Lathe (VTL).
- Metallized surfaces and newly fitted sleeves machined to final dimensions.
- Bearing seating areas restored to original fit tolerances.
- Housing bores finish machined and surface finished.
- Final bearing fit dimensions achieved as per required tolerances.

Bearing Replacement

- Existing damaged bearings removed.
- New bearings supplied and fitted.
- Bearing seating and fitment verified.
- Bearing clearances checked and found satisfactory.

Dimensional Inspection

- Final dimensional measurements carried out.
- Bearing fit dimensions verified.
- Seating tolerances confirmed within acceptable limits.

4. Onboard Activities

- Repaired bearing housings transported back onboard vessel.
- End covers assembled with new bearings.





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- Alternator assembly work commenced.
- Laser Alignment Service Engineer attended the vessel as planned for final alignment activities.

Additional Findings

During assembly and inspection of the alternator rotor, it was discovered that the rotor shaft bearing seating area was also damaged and outside acceptable tolerances.

As a result:

- Laser alignment activities were temporarily suspended.
- Rotor shaft was dismantled and off-landed for workshop repair.
- Laser Alignment Engineer was demobilized and subsequently re-arranged after completion of rotor shaft repair works.
- Final laser alignment was planned upon successful completion and reinstallation of the repaired rotor shaft.

5. Completion Status

The following activities have been completed successfully:

- ✓ Metallizing work completed.
- ✓ Fabrication and installation of new Cast Iron sleeves completed.
- ✓ Grub screw and Allen bolt locking arrangement completed.
- ✓ Precision machining completed.
- ✓ New bearings installed.
- ✓ Dimensional inspection completed.
- ✓ Bearing housing dimensions restored to required tolerances.
- ✓ Components cleaned, preserved, and prepared for transportation.
- ✓ Workshop repair activities completed successfully.

Components Repaired

- Alternator Drive End Bearing Housing





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- Alternator Non-Drive End Bearing Housing
- Associated End Cover Bearing Seating Areas
- Cast Iron Bearing Housing Sleeves (Newly Fabricated)

Next Planned Activities

1. Completion of rotor shaft repair and balancing.
2. Transportation of repaired rotor onboard vessel.
3. Rotor installation.
4. Reassembly of alternator.
5. Laser alignment between alternator and prime mover.
6. Final mechanical and electrical checks.
7. Alternator commissioning.
8. Operational trial and performance monitoring.

Remarks

The bearing housing dimensions were successfully restored through metallizing, fabrication of new Cast Iron sleeves, precision machining, and mechanical locking arrangements using grub screws and Allen key bolts. New bearings were installed and verified for proper fitment.

Although laser alignment was initially scheduled and the alignment engineer attended the vessel, additional damage was discovered on the rotor shaft bearing seating area during assembly. To ensure a reliable and long-term repair, the rotor shaft was subsequently removed for repair, machining, and balancing. Final laser alignment was therefore postponed and re-arranged upon completion of the rotor shaft repairs.

Status: VSL REMARKS.: JOB HAS COMPLETED WITH VESSEL STAFF AND RUNNING AS TEST MODE, WITH UNDER OBSERVATION. ALSO THEY NOT DONE LASER ALIGNMENT DUE TO LACK OF SPACE. ONLY VISUAL ALIGNMENT WITH SHORE ALIGNMENT TECHNICIAN.

BEARING HOUSING REPAIR COMPLETED SUCCESSFULLY

ROTOR SHAFT REPAIR INITIATED FOLLOWING ADDITIONAL DAMAGE DISCOVERY

Prepared By: DIADEM SHIP REPAIR PVT. LTD. Santosh Shinde Director Date: 23/06/2026	Vessel / Superintendent Acknowledgement: Name: CHAMARA, PABU DU Designation: C/E Signature: [Signature] [Stamp: MT ELENA - 1, Chief Engineer, MONO: 9286451 (BAHAMAS)]
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