

INSPECTION AND OVERHAUL OF A CONMEC FEX-97HT FCC EXPANDER

By Don Shafer

Rotating Machinery Services was contracted to perform a complete inspection on FEX-97HT Rotor, Bearing and Seal Assembly and Rotor Assembly that was removed from service. These sub-assemblies had been removed from service after a 5 year operating campaign. As per the normal RMS procedure all of the components were dis-assembled, cleaned and inspected. All critical dimensions and runouts were documented and used to develop the repair workscopes. The key structural welds and machined surfaces were non-destructively tested to ensure the integrity of the components.



Figure 1: RBSA Rebuilt

A complete inspection was also performed on the Rotor Assembly. The rotor blades were determined not to be suitable for reuse. RMS provided a replace-in-kind set of 63 rotor blades with the existing airfoil geometry. This required a modification to the RMS existing Ex38 blade casting tooling and requalification

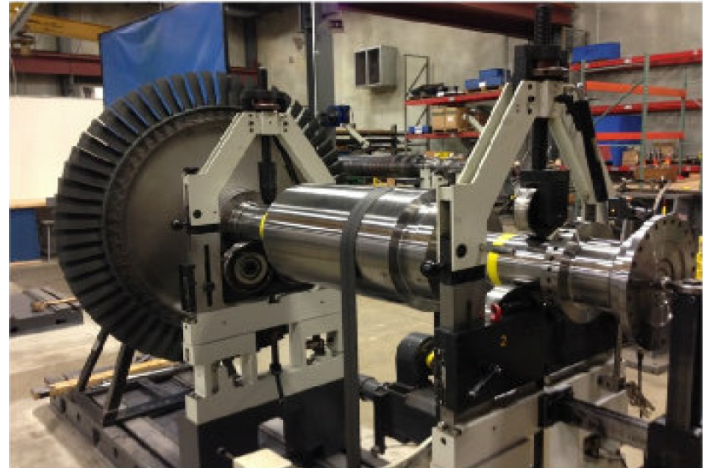


Figure 2: Re-bladed with RMS Ex38CO Blades

of the fixed process for this set of new blades. This modification now allows RMS to provide a full range of E-138, Ex38, Ex38ER, Ex38CO, FEX-97, FEX-97HT, FEX-107 rotor blade castings. The rotor disc was inspected and blended to remove minor erosion cutting on the tenons and prepared for re-assembly. All of the remaining rotor assembly components were inspected and deemed suitable for re-assembly. The completed rotor assembly was low speed balanced and high speed balanced.

During the inspection process RMS was notified by the customer that the completed sub-assemblies needed to be delivered on an expedited schedule due to issues at the site. This impacted all of the repairs and completion of the new rotor blade castings and final machining's.

All of the remaining repair workscopes were completed on this basis. All of the required Rotor, Bearing and Seal Assembly components were refurbished or replaced with new. All new joint fasteners, new equipment health monitoring instrumentation, new tubing and insulation were provided. The rotor assembly was installed and all critical clearances were brought into tolerance and recorded prior to shipment. RMS completed the assemblies as promised and they arrived at site as required by the customer.

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