



Steam Turbine Diaphragm Hybrid Coupon Repair

New Repair Process Offers Multiple Benefits

In the past, when a diaphragm needed major repair, two options were available: traditional repair or partial partition repair. Now, GE Power offers a new process that captures the benefits of both, particularly for diaphragms with radial heights larger than 4 inches. The Hybrid Coupon Partition Repair method helps to accurately restore the airfoil shape without the costs associated with the partial partition repair.



Reduced Weld/Grind Time Equals Reduced Cycle Time

The traditional partition weld repair involves welding layered stringer beads to restore the portion of the damaged trailing edge that was removed. Welding numerous stringer beads takes time and, afterward, the pressure and suction side of the partition will need to be ground to the net shape of the partition. Using the Hybrid Coupon Repair method, up to 70% of the welding is eliminated, resulting in up to \$3,000 per diaphragm in cost savings and a 25% reduction in cycle time. Couple that with the precision-formed pressure side provided by the pressed coupon.

Precision-formed Restoration for Performance Recovery

Using the diaphragm partition 3D models, stamping dies are created to precision form a stainless steel coupon to the shape of the pressure side of the airfoil trailing edge that will be replaced. In addition, a precision-stamped copper backing plate is created to position the coupon for welding. Use of these precision-formed coupons provides an economical way for the airfoil shape to be restored to the original design, thus helping to restore steam turbine performance without the need to turn to more expensive options.

Features and Benefits

- Restores airfoil back to its original shape through custom-machined stamping dies for each diaphragm
- Reduces weld up to 70%
- Reduces cycle time up to 25%
- Saves up to \$3,000 in costs per diaphragm
- Allows for either on-site or in-shop repairs
- Costs less than partial partition repair for diaphragms with larger radial heights
- Provides GE proprietary technology (patent pending)

For more information, contact your Power Services account manager or visit www.ge.com

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