

IN-SITU MACHINING AND BEARING REBABBITING RESTORES POWERPLANT MAN B&W 9K80MC-S GENERATOR 896.00MM CRANKPIN AND BEARINGS

After suffering a bearing failure on Crankpin #4, a Jamaican powerplant operator called in Goltens to perform an inspection of the crankshaft and propose a course of repair.

After completing a full inspection, Goltens determined that #4 crankpin had significant surface cracks that would need to be removed. On this type of engine the fillet radii are not in line with the crankpin and Goltens needed to machine new fillet radii to create a reference for machining of the crankpin.

It was also determined that the lead time for undersized bearings was too long and Goltens proposed rebabbiting the damaged big end bearings in its centrifugal casting machinery in the workshop.

Due to the large size of the pin (896.00mm), the extent of the damage and the urgency of the customer, Goltens immediately mobilized tooling and two teams of in-situ machinists to work around the clock to restore the generator to service as soon as possible.

REPAIRS CONSISTED OF:

- Full NDT inspection (Magnaflux and Hardness)
- Machining of new fillet radii
- Machining of crankpin #4 to -05.00mm undersize (891.00mm)
- Superpolishing crankpin to roughness less than 0.30 Ra
- Manufacture of blueing dummy and performance of contact tests to verify contact surfaces within manufacturer's specs.
- Rebabbiting and finish machined reconditioned big end bearings to undersize -05.00mm

RESULTS:

4 machinists worked around the clock to restore the engine to service completing the fillet radii machining in 3 days and the crankpin machining and polishing in an additional 3 days. Engine was restored to full operation upon receipt of the reconditioned bearings from Goltens.

PROJECT FACTS:

Engine Make/Model:	MAN B&W 9K80MC-S
Engine Output:	41,670 kW (103 Rpm)
Crankpin Dia. Pre machining:	896.00mm
Crankpin Dia. Post machining:	891.00mm

