

REMETALLING AND MACHINING RESTORE AGITATOR SHAFT

GOLTENS' IN-PLACE MACHINING RESTORES INDONESIAN POLYESTER PLANT TO SERVICE

A polyester plant in Indonesia was planning a shutdown in four weeks and suspected that the polyester reactor's 285mm diameter agitator shaft was damaged and would require repair during the maintenance window. The maintenance window was short, and the extent of the repairs required was unknown.

Goltens deployed a team of specialists to the plant coincident with the shutdown of the plant. The team removed all the covers from the unit to complete the inspection. The In-Situ Specialist's inspection revealed significant ovality and scoring/scratches on the journal's running surface.

THE REPAIR

The extent of the damage would require Goltens to machine away the surface damage to restore the running surface. Complicating the repair, the customer required the diameter to be restored to the original 285mm so Goltens proposed a process to remove the damage, remetal the surface and machine the diameter to nominal measurement.

Goltens installed its journal machining tools and removed 3.30mm of material from the diameter. Goltens then deployed thermal spraying machinery to remetal the shaft diameter slightly above the 285mm original diameter. Once completed, Goltens finish machined and machine polished the running surface of the agitator shaft to the required original 285mm diameter.

SUCCESSFUL RESULTS

Goltens' In-Place Machinists worked around the clock in two shifts to complete the job within the tight maintenance window provided by the customer.

After a joint inspection verifying the diameter, surface hardness and required surface roughness, the repair was fully accepted by the customer.

PROJECT FACTS: SHAFT REMETALLING

Location:	Indonesia
Customer:	Polyester Plant
Shaft Diameter:	285mm
MM Removed/Remetalled:	3.3mm

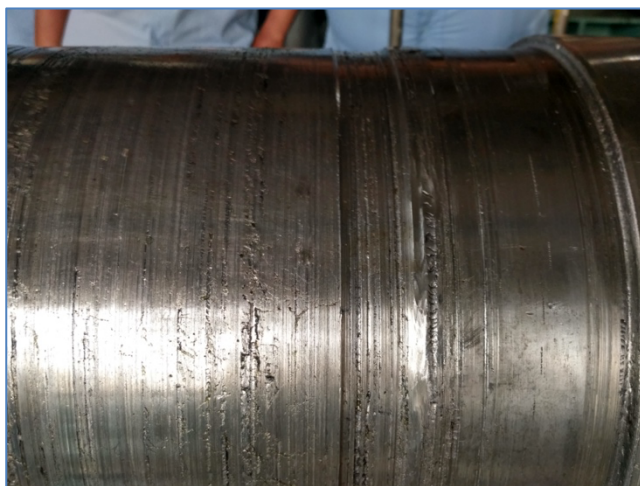


Figure 1: Scoring damage on Agitator Shaft's journal surface



Figure 2: Measurement of undercut shaft at (3.30mm)



Figure 3: Remetalling/Thermal Spraying of agitator shaft



Figure 4: Thermal Spraying of agitator shaft



Figure 5: Machining shaft to nominal dia.

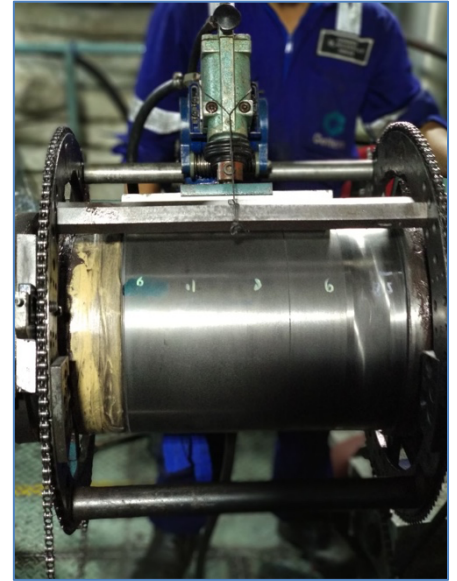


Figure 6: Honing of shaft surface



Figure 7: Verifying shaft diameter measurement

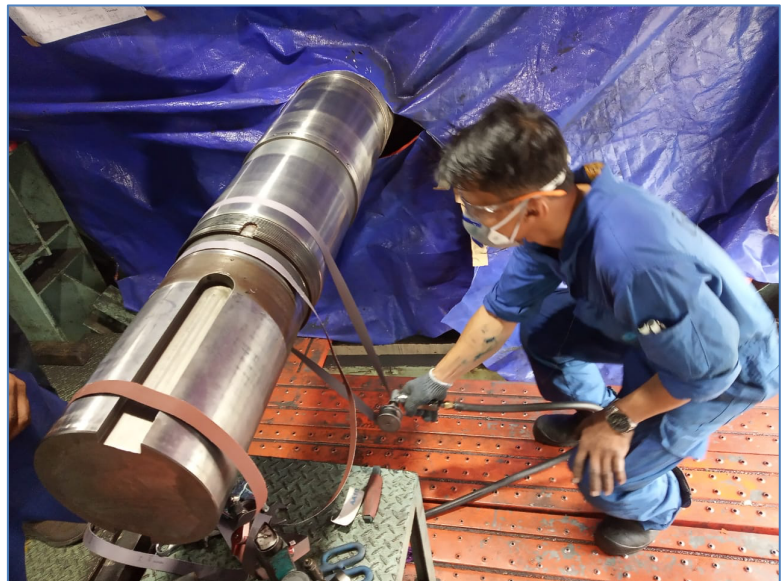


Figure 8: Final polishing of agitator shaft

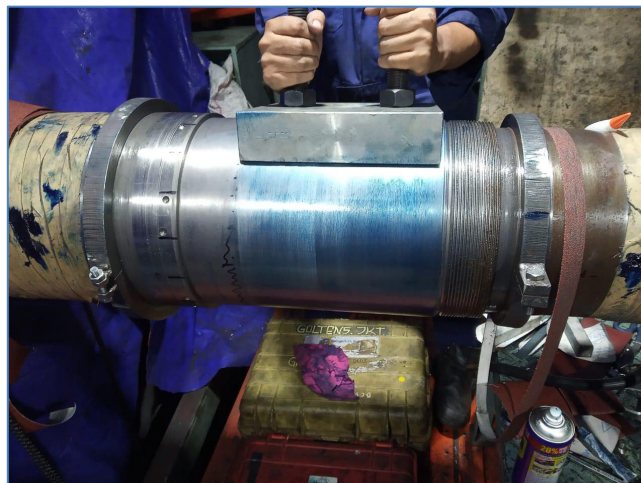


Figure 9: Blue contact test with dummy bearing