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## Associated Steel Corporation

### CASE STUDY TG&P HARDENED ALLOY SHAFT

#### SUMMARY

**Material:** Mirraloy® TGP

**Description:** One (1) Piece 90MM Diameter x 39" Long

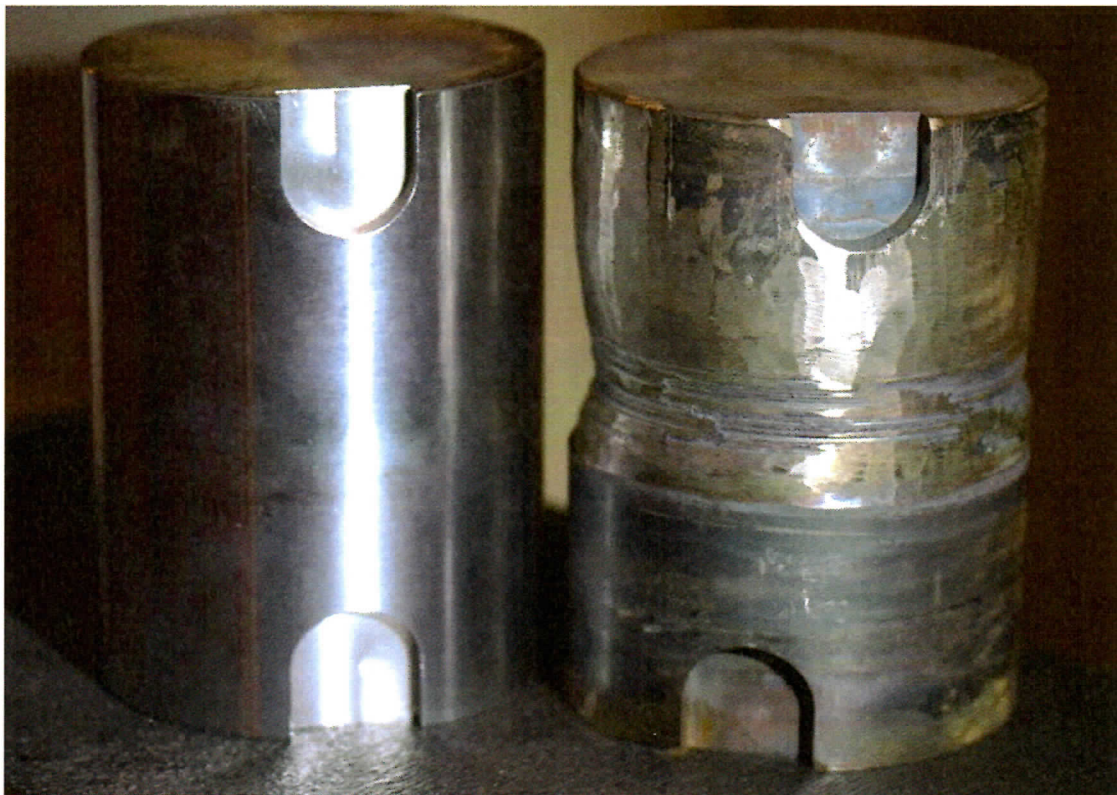
**Application:** Drive shaft for large material mixer. Medium being mixed was dry plastic powder. This shaft drove a large mixer-blade head and was powered by a 400hp motor. The bearing failed resulting in a catastrophic unit failure. Our TG&P hardened alloy shaft was twisted but did not fracture.

Our customer supplied us with a portion of the affected shaft. He advised us that he and his father had been running this maintenance shop; he for over 20yrs and his dad for over 50yrs. In that time neither had seen anything like this. As costly as the failure was, the cost was minimized by the fact that the shaft never did fail.

The customer advised that he began using our alloy shafting years ago because of the tolerances, quality, and machinability. Now he is dedicated to this product because of the strength and toughness.

**ALIGNMENT OF KEYWAYS BEFORE  
BEARING FAILURE OCCURRED**

**ALIGNMENT OF KEYWAYS AFTER  
BEARING FAILURE W/O FRACTURE**



*Most in-service shaft failures in heavy industry are fatigue related. "TOUGHNESS" is the most effective property that resists fatigue failure. CLEAN STEEL TECHNOLOGY™ builds toughness in shafts.*