

Cyrus-Bradford

Overhauling Epicyclic Gearbox



Project Background

The customer is among the top 10 global steel companies with an annual crude steel capacity of over 28 million tones per annum. It is now one of the world's most geographically diversified steel producers with operations in 26 countries. They serve customers in all major market sectors globally such as automotive, construction, consumer goods, engineering, packaging, lifting and excavating.

The Brief:

This Gearbox is a safety critical unit which weighs in excess of 27 Tonnes. It is a double input and double output gearbox. The Gearbox is designed to drive even if one input drive fails or one of the output drives fail. This Safety Critical unit lifts a ladle which weighs 150 tonnes and when full of molten steel will weigh 450 tonnes.



The Solution:

The replacement gears were manufactured and all bearings and seals were renewed. The gearbox is shown in the process of being re assembled.

All the lubrication pipes have been replaced with larger internal pipe work with the hydraulic pump and motor being mounted on the side of the gearbox for ease of maintenance access.

The unit was re-assembled, test run & certified at Cyrus-Bradford workshops with the client in attendance. Condition monitoring values were said to be to finer limits those previously achieved by OEM.

The Result:

The gearbox was tested for a period of 24 hours nonstop and run in both directions. All bearing temperatures and oil flow /temps are monitored and readings recorded during testing. A final report with all readings including backlash readings of all sets of gears and meshing details (blueing) etc. with photographic evidence was issued to the customer. Finally, the gearbox was delivered to the customer for fitting on a BOS plant crane.

