

Press Information

IN-SITU MACHINING GIVES NEW LIFE TO CEMENT UNLOADER FOR FORTH PORTS, LEITH, SCOTLAND

Having ascertained that the slew ring on its 20 year-old cement unloader was in need of replacement, the management of Forth Ports, Leith called in Metallock Engineering, Coventry, to machine the 3.28 metre diameter slew ring surfaces to a high degree of flatness. This enabled a new slew ring to be fitted and restore the unloader to efficient use.

Leith & Forth Ports contacted the original manufacturer, BMH, Sweden. to obtain the necessary spare parts and also seek recommendations for a company to remachine the badly worn slew ring location faces to the necessary flatness laid down by BMH. Based on past experience with similar work BMH recommended Metallock Engineering.

Following a site meeting with Metallock to discuss the requirements, the Port engineering staff separated the cabin and turret sections from the main frame enabling Metallock to undertake a series of pre-machining laser inspections before setting up its purpose designed rotary facing machine. This comprises a hydraulically driven arm that revolves around the slew ring base centre point. At the outer end is a hydraulically driven milling head.

The lower turret annular ring 3.28m diameter and 60mm wide was machined flat to within $\pm 0.02\text{mm}$ and subsequently checked by laser. A similar operation was performed on the upper turret slew ring location surface which had been upturned on the dockside by the customer.

Metallock also in-situ machined three pairs of link bore locations used to locate the hydraulic lifting rams to accept oversize pins manufactured and supplied by BMH. These assemblies had been dismantled and placed on timbers on the dockside to facilitate the machining operations.

On completion of all the machining work, which was carried out within the time limitations and budget, Leith & Forth Ports fitted the new slew ring and link bore location pins and re-assembled the unloader which has now been back in service for several months and operating with no problems.



The 3.28m diameter upper and lower slew ring faces were machined flat and three pairs of badly worn link bore locations for the hydraulic lifting rams were rebored to accept new oversize pins.

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