



GRAPHALLOY® Pump Bearings Excel in Liquefied Natural Gas (LNG) Service

GRAPHALLOY® bushings and bearings are used in many low viscosity pump applications, including LNG service, to help eliminate operational problems due to potential flashing and the low lubricity nature of these liquids. The non-galling, self-lubricating features of GRAPHALLOY allow pumps to continue working even when they encounter a run dry situation.

We received an urgent request from a customer for GRAPHALLOY to be installed as steady bearings in pumps for a new application. The pumps are single-stage, horizontally mounted, axial split case, double suction, between bearings pumps. The customer modified the mountings to assemble the pump in a vertical configuration. When the pump is mounted vertically, the outboard bearing is located at the very bottom and becomes a product lubricated sleeve bearing. The vertical configuration was required due to space restrictions.

The customer needed to quickly assemble and deliver the LNG pumps, in several different sizes, to their customer who was constructing a prototype Floating Liquid Natural Gas (FLNG) ship, owned by a major oil company.

Delivery was critical because the pumps would be located on the bottom level of the ship and needed to be installed before further construction of the ship could proceed. According to the customer's project manager "timely completion of a multi-billion dollar project depends on timely delivery of our pumps".

The drawings indicated that the GRAPHALLOY bushings would be installed in the split casing of the pump. Graphite Metallizing engineers realized that this design would not allow for an adequate press fit to hold the GRAPHALLOY bushings in compression.

After some discussion between Graphite Metallizing and the customer's engineers, it was determined that Graphite Metallizing would install the GRAPHALLOY bushings into metal holders ensuring the proper press fit. The GRAPHALLOY bushings were redesigned with smaller ODs to fit into the metal holders and then the entire assembly was installed into the split pump casing.

This project involved multiple pumps in several different sizes. Complicating logistics further was the need for metal holders in both 316 and duplex stainless steels.

Timely and consistent communication between Graphite Metallizing and the customer's personnel solved the problems of procuring the holders, re-machining the GRAPHALLOY bushings and adjusting the drawings. This was completed within an aggressive time frame so that the customer could honor their deliveries to their end user.

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