GRAPHALLOY® BEARING APPLICATIONS IN THE STEELMAKING PROCESS

DUCT DAMPER FLANGE ASSEMBLIES

GRAPHALLOY Simplifies Maintenance

Damper bearings in the power house have always caused maintenance headaches due to heat and poor lubrication practices. Changing to dry GRAPHALLOY material eliminates the need for any lubricant which would burn-off, gum-up or harden at these higher temperatures. At one installation, the upgrade to GRAPHALLOY flange blocks resulted in maintenance-free operation for more than seven years!

FURNACE TAP GATE CAM FOLLOWERS

GRAPHALLOY Does Not Seize

In this design of a furnace tap gate, the 18 in. x 15 in. metal plate slides open and closed via cam followers rolling on stationary rails. Although the travel is short and the gate opens only once an hour, conventional grease-lubricated cam followers would certainly lock-up when exposed to the expected 750° F. Therefore the OEM chose this component with GRAPHALLOY bearing material. It was dimensionally interchangeable with needle bearing configuration, but required NO LUBRICATION.

COOLING BED LINE UP ROLL PILLOW BLOCKS

GRAPHALLOY Saves Maintenance Costs

The pillow blocks supporting the line up rolls originally had grease lubricated ball bearings. However, the combination of high temperature and intermittent operation caused frequent maintenance problems... numerous bearing replacements, seizures with the resulting roll "flat spot" repairs, and the occasional production line shut down. The engineering solution was to replace the OEM supplied ball bearings with interchangeable pillow blocks using GRAPHALLOY bushings. The initial cost was higher, but annual dollar savings in roll life, replacements, labor and lubricants was over $200,000

ENTRY PINCH ROLL BUSHINGS

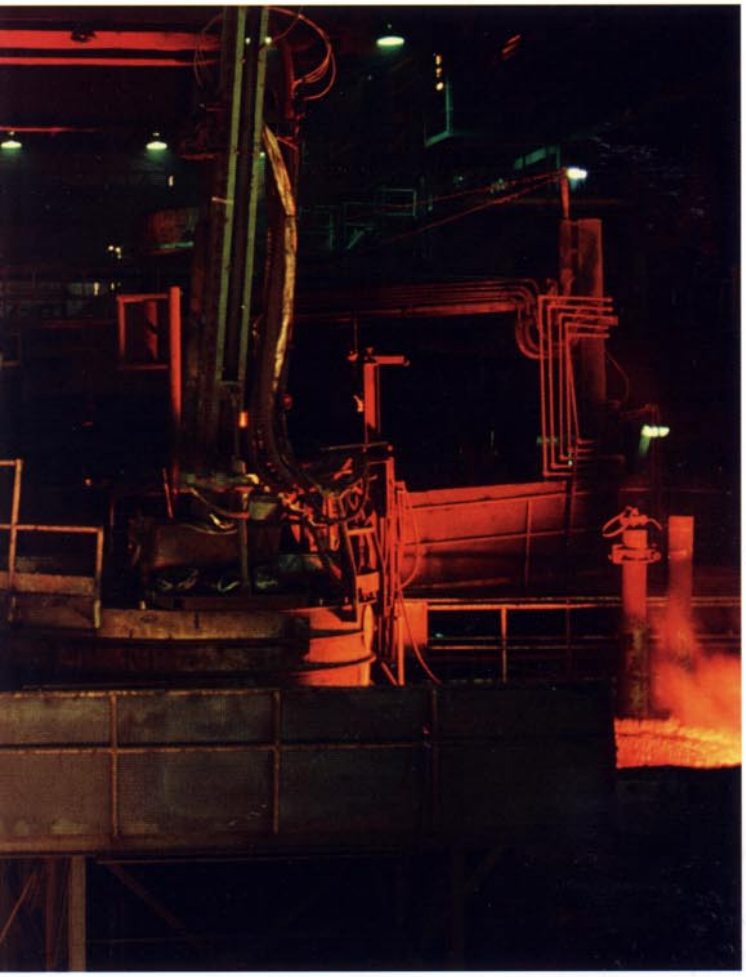
GRAPHALLOY Increases Equipment Life

The interior temperature of an annealing furnace is in the range of 1200° F. Even though bearings supporting the pinch rolls are outside the walls, they still reach temperatures up to 750° F ...and yet must be able to compensate for shaft expansion from cold start-up to production temperature levels. Rigid, grease lubricated rolling element bearings could not meet these conditions, so the operators specified GRAPHALLOY journal sleeve bushings--sized for installation in a special metal shell and inserted into the existing housing. Since 1990 the design has been operating successfully in this tortuous environment.

Graphite Metallizing Corporation
1050 Nepperhan Avenue
PO Box 110
Yonkers, NY 10702 U.S.A.

Tel: 914-968-8400
Fax: 914-968-8468
www.GRAPHALLOY.com
email: sales@GRAPHALLOY.com

GRAPHALLOY® BEARING APPLICATIONS IN THE STEELMAKING PROCESS



RELIEF VALVE STEM BUSHINGS

GRAPHALLOY
Operates in High Temperatures

The internal bushings between the valve body and disc and its moving stem are exposed to temperatures well above 500° F. The bearing material must function in this environment which is well above the practical limit of grease lubricants. GRAPHALLOY with its maximum temperature rating of 1000° F more than meets this requirement. Plus, its self-lubricating benefit allows for use in external valve control linkages without the potential disastrous consequences of a missed lubrication date.

STEAM TURBINE RINGS

GRAPHALLOY
Lasts Longer

Steam turbines in the steel mill power house are subjected to frequent load swings. This "up and down" operation causes rubbing between the stationary and rotating parts in the packing boxes... with the resulting increase in seal ring and shaft wear. At a Chicago area site, switching from the OEM furnished packing rings to GRAPHALLOY delivered three times longer service life for these components, plus it cured the associated shaft wear problems.

ZINC POT ROLL BEARINGS

GRAPHALLOY
Minimizes Downtime

Submergence in molten zinc at 900° F is one of the most hostile environments for any bearing material. Traditionally hard alloy bearings ran against hardened roll journals, relying on heavy strip tension to keep the roll turning. This resulted in rapid bearing and roll neck wear, but more critical, the heavy tension force would break light gauge strip, stopping the roll and thus accumulating dross on its surface. When this happened, the roll would have to be changed immediately causing an unscheduled shutdown. A GRAPHALLOY grade was developed to withstand the corrosive attack of molten zinc and aluminum in the pot. In addition, the low friction property of GRAPHALLOY reduced the required roll tension force. The result... no product quality problems and less downtime.

DIVERTER PILLOW BLOCKS

GRAPHALLOY
Survives Wet Exposure

As the steel strip exits the hot mill, it is spray quenched with water. At one installation, pillow blocks are required to support the diverter louver shafts and associated control linkages. It is essential that the bearings operate in this hostile environment of jetting water and saturated steam. Because GRAPHALLOY is dry running, there is no grease to be washed out... resulting in equipment failure. At one installation there are 360 GRAPHALLOY pillow blocks flawlessly functioning in this application.

Graphite Metallizing Corporation
1050 Nepperhan Avenue
PO Box 110
Yonkers, NY 10702 U.S.A.

Tel: 914-968-8400
Fax: 914-968-8468
www.GRAPHALLOY.com
email: sales@GRAPHALLOY.com