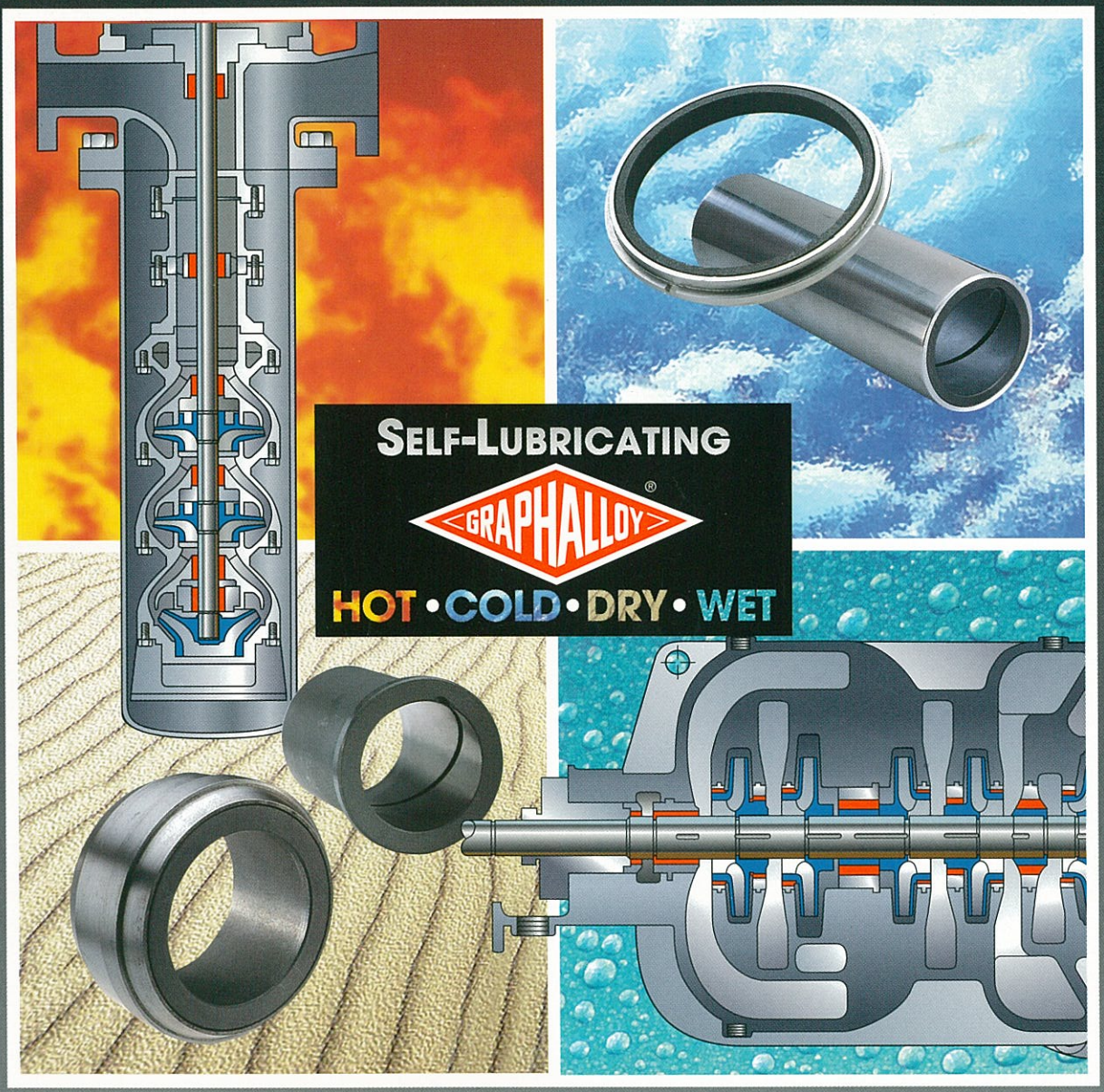
DS 2500B

GRAPHALLOY®

Bearings for Horizontal and Vertical Pumps



Bowl and Lineshaft Bushings ■ Case Wear Rings ■ Seals ■ Stuffing Box Bushings
■ Closer Clearance Throat and Throttle Bearings

GRAPHITE METALLIZING
CORPORATION

GRAPHITE METALLIZING CORPORATION ISO 9002 CERTIFIED

GRAPHALLOY®

Bearings for Pump Survival

What is GRAPHALLOY?

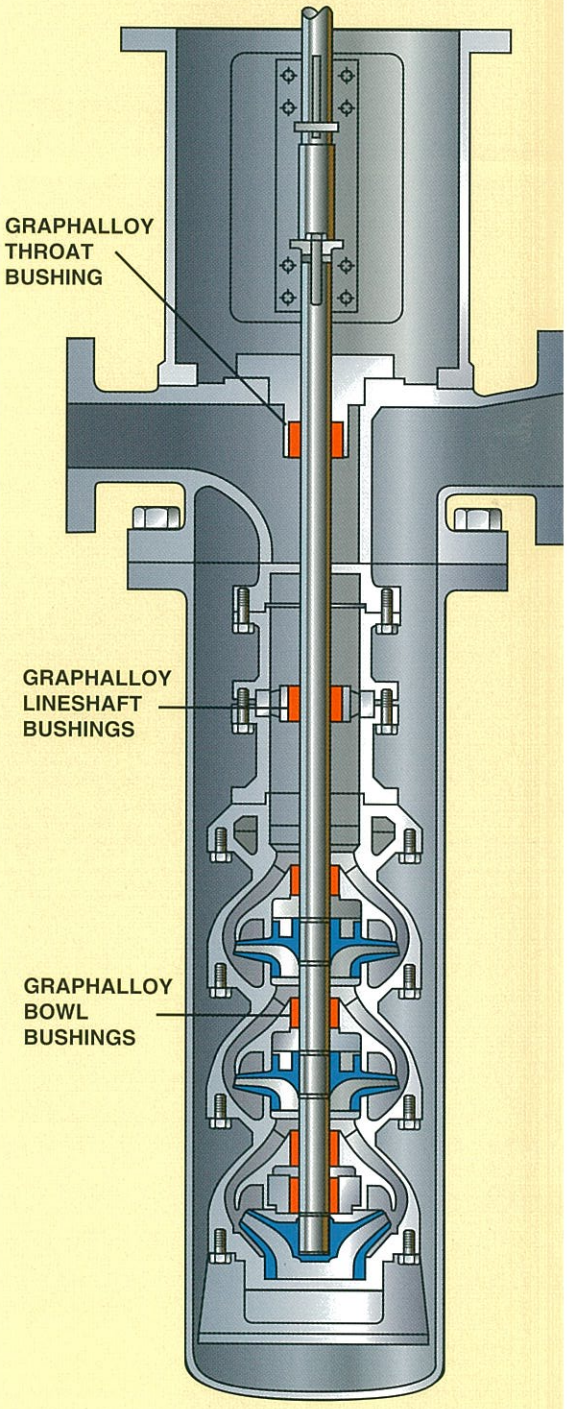
GRAPHALLOY, graphite/metal alloy is a self-lubricating bearing material used by designers and maintenance engineers to solve the toughest pump applications-from new installations to retrofitting existing units. GRAPHALLOY is non-galling, corrosion resistant, dimensionally stable and performs at temperatures from cryogenic to higher than 1000° F. GRAPHALLOY allows pumps to survive "run dry" conditions, slow roll operation and frequent stops/starts where metal and plastics fail. GRAPHALLOY works in low lubricity, corrosive and sour liquids. The use of GRAPHALLOY pump wear parts results in lower operating and repair costs and provides assurance against catastrophic failures.

What Makes it Work Better

FEATURES	BENEFITS
Self-Lubricating	Handles low lubricity fluids such as light hydrocarbons, liquefied gases and hot water in which metallic bearings wear excessively.
Hot	Runs at temperatures well above the limit of plastic-even in molten metals above 1000° F- and survives thermal shocks of 22 degrees per second down to ambient.
Cold	Performs in cryogenic temperatures to -450° where other materials suffer embrittlement and seizure.
Dry Running	Survives "loss of pumpage" operation for prolonged periods without either damage or preventing pump re-start.
Wet	Resists attack by most corrosive liquids including sulfuric acid, chlorine water, and caustics.
Non-Galling	Permits closer running clearances between rotating parts resulting in higher pump efficiency and lower shaft vibration.
Dimensionally Stable	Maintains dimensional stability when submerged, under static pressure loading, and over wide temperature swings, providing constant running clearance for all operating conditions.

THE QUESTION . . .

THE ANSWER . . .



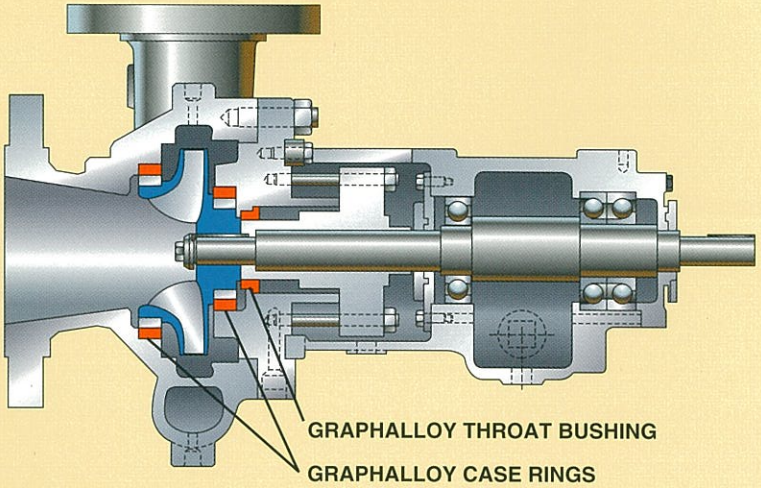
Graphite Metallizing Corporation ■ Yonkers ■ NY ■ USA ■ (914) 968-8400, Fax: (914) 968-8468

HOW MUCH CAN GRAPHALLOY® IMPROVE PUMP OPERATION?

SPECIFYING GRAPHALLOY® PROVIDES REAL ADVANTAGES.

GRAPHALLOY Reduces Vibration

Pumps with mechanical seals have frequent failures due to excessive shaft vibration. Upgrades using GRAPHALLOY case rings and close clearance throat bushings provide reduced vibration levels-in one specific case from 1.2 to less than .05 ips. The result is fewer seal and bearing failures and increased MTBF. This upgrade is recognized in the current API 682 standard. GRAPHALLOY more than meets this specification.



GRAPHALLOY Extends Life for Continuous Service

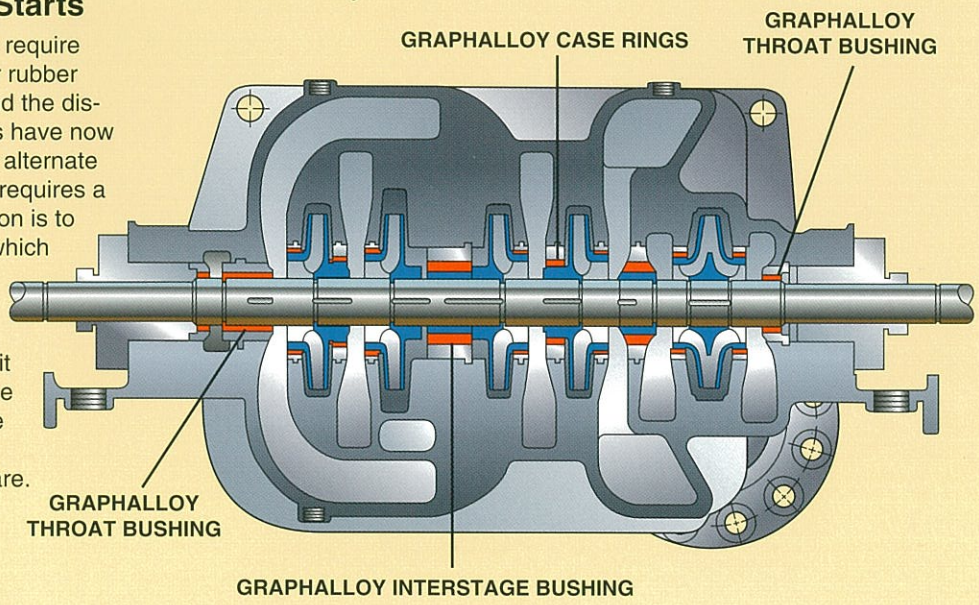
Self-lubricating GRAPHALLOY has long been the standard bearing in vertical "can" pumps in the refinery tank farm area. The typical light hydrocarbon products have poor lubricity and tendency to "flash". This, combined with recurring "run dry" operation when the tanks emptied, motivated designers and operators to search for a replacement of the bronze bearing material. GRAPHALLOY is now the overwhelming choice (confirmed by the API 610 Eighth Edition) for lower wear rates and "run dry" survival.

GRAPHALLOY Survives Frequent Loss of Suction

Boiler Feed pumps for industrial steam generators are frequently subjected to loss of suction flow during transient switch over. Pumps fitted with metal and plastic wear parts fail in a few minutes of dry running, while those fitted with GRAPHALLOY will survive and resume pumping when flow returns without wear parts damage. At a chemical plant, three pumps experienced 25 failures in eight years at a cost of $15,000 per failure. Following a GRAPHALLOY retrofit of all pumps, failures were reduced by 68% and the average repair cost by over 90% during the next five years.

GRAPHALLOY Permits Dry Starts

Deep setting vertical turbine well pumps require pre-lubrication of the standard bronze or rubber bearings between the low water level and the discharge surface. Environmental concerns have now restricted the use of oil and grease. The alternate of water from a local source for start-up requires a complicated auxiliary system. The solution is to use GRAPHALLOY lineshaft bushings which eliminate the need for any pre-lubrication by running dry until pump discharge flow is established. At one installation, the engineer estimated that it would take more than five minutes for the pumpage to reach the surface discharge from lower water level. GRAPHALLOY survived this duration with margin to spare.



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GRAPHALLOY®

A graphite-metal alloy, is a dry, self-lubricating material with a low coefficient of friction. Available in over 100 grades impregnated with...

- Babbitt
- Tin Babbitt
- Copper
- Bronze
- Silver
- Nickel
- FDA Accepted Grades
- And Others

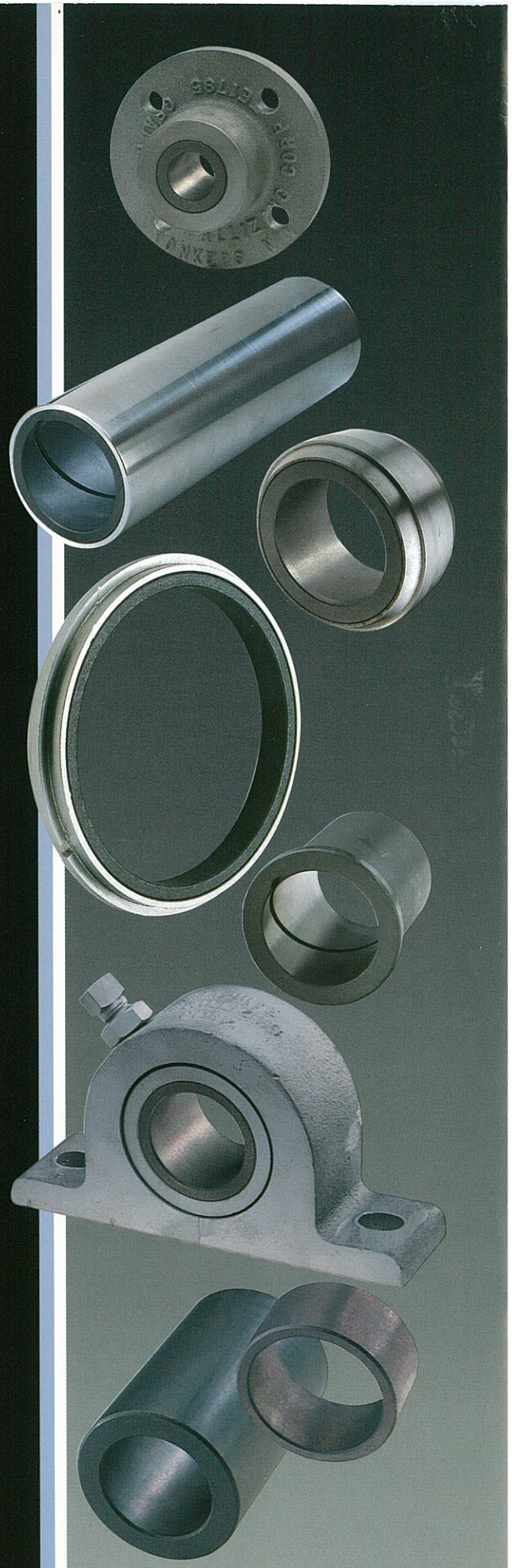
GRAPHLON®

A chemically inert material used on submerged applications that are subject to abrasion, shock or impact.

GRAPHALLAST®

A low friction material used on submerged applications that are subject to abrasion, shock, or impact.

For more information, call our sales engineers.



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