



Feroglide

Fibre-reinforced PTFE-based composite bearings with metal backing

Feroglide is a self-lubricating bearing material; a low friction composite bearing surface of strong fibres to reinforce PTFE blends. It is supplied on a metal backed substrate. A specialist fibre-free formulation adds extra benefit. Feroglide yields a high strength, excellent chemical resistance, and low coefficient of friction material that is resistant to wear, chemicals, cavitation, flow erosion and fatigue. It has been specially designed for long life and reduced maintenance, making it the heavy-duty option for working environments with little or no lubrication across a range of speeds and extreme temperatures.

Product Description

Feroglide bearings are completely self-lubricating, maintenance-free and they normally run dry. Feroglide bearings are used extensively due to the material's ability to maintain low friction under heavy loads.

Feroglide is typically used in high load applications such as valves, hydro power equipment, lifting equipment, hydraulic pumps. Extreme working conditions are possible with Feroglide, as seen with installations from Ariane rockets to deep sea valves.

Feroglide bearings are known as the market leader in terms of bearing capacity and working life. This is made possible thanks to the specialist reinforcement of the PTFE bearing surface.

Feroglide bearings operate over a wide range of load, speed, and temperature conditions because they are composite in nature and thus do not have the cold flow tendencies of solid PTFE or filled PTFE materials. Thanks to the specialist self-lubrication, Feroglide bearings are a superior replacement for greased metallic parts.

Feroglide bearings operate at extreme cold and extreme hot temperatures, beyond the range of most lubricants. Working conditions of -150 °C to +300 °C are common for Feroglide. Feroglide maintains a consistently tight fit about the shaft, made possible by its superior thermal stability. This ensures best bearing support for rotating parts, thus improving performance of a valve.

The extended work life means they operate with a "fit and forget" function. This is especially beneficial in sub-sea, oil and gas, platform, and other remote operations.

Feroglide bearings have superior wear performance and this helps to ensure the ball or shaft continues to rotate concentrically, whilst also reduce damaging side loads on seals. Feroglide bearings and glide strips offer high compressive strength, high temperature resistance, and have excellent chemical resistance.

Product Advantages

- Increased Bearing Life
- High wear resistance giving long life
- Large Application Range
- Large operating temperature range -200°C to +300°C
- Corrosion resistant & can be used with aggressive liquids such as Sea Water, Gasoline, Acids, Detergent Solutions, Hydraulic Oils, Ammonium Hydroxide, Oils
- Reduced Maintenance
- Significantly Reduced Downtime
- Improved Performance
- Free from stick slip, giving easy movement & operation
- High strength, capable of carrying high loads.
- Good dimensional stability & capacity to be formed to close tolerances
- Customized Innovative Solutions
- Proven Performance Over Decades
- Excellent Chemical Resistance
- Self lubricating & operate without external lubrication

Specialist Grades

Feroglide T401

Operates in temperatures ranging from -50°C to 300°C and exhibits outstanding chemical compatibility including acids, alkali, bleaches, and the H₂S concentrations in sour gas.

Feroglide T445

Is fabric free and has a low friction layer bonded directly to the metal support. It is free from copper and bronze that cause bearing failure in aggressive environments. It is chemically resistant and used to 200°C. It is especially applicable in oil and gas valves where its chemical and temperature resistance, and ability to withstand assembly damage find great benefit.

Approved Applications

Used in high load applications, including valves, hydro power equipment, lifting equipment, cranes, hydraulic pumps, agri machinery, offshore bearings, ski lifts.

Physical Properties

	Units	Grade				
		T900	T500	T401	T401	T200
Liner		T900	T500	T401	T401	T200
Metal		MS	SS	SS	Inconel	MS
Maximum Operating Temperature	°C	120	120	300	300	120
Minimum Operating Temperature	°C	-54	-54	-196	-196	-54
Static Pressure Limit	MPa	240	240	240	420	240
Dynamic Pressure Limit	MPa	140	140	140	180	140
Recommended Dynamic Pressure for Best Life	MPa	14-28	14-28	14-28	14-28	14-28
PV Limit	MPa.m/min	40		"130 (intermittent) 40 (continuous)"	"130 (intermittent) 40 (continuous)"	40
Coefficient of Friction	μ	0.02-0.10	0.02-0.10	0.02-0.10	0.02-0.10	0.02-0.10
Shear Strength (of adhesive bond) - ASTM D3528	MPa					
20 °C		-	-	0.30	0.30	-
-196 °C		-	-	0.53	0.53	-

Sizes

Feroglide bearings are supplied as coiled, solid, swash plate, half shell, and cylindrical bearings, thrust washers, and slide pads. The metal backing is typically chosen from bronze, stainless steel, such as SS316, and Inconel 625.

For spherical parts, standard diameters range up to 740mm and lengths up to 560mm. For flat parts, a max surface area 500 x 200 mm is possible.

Fitting Instructions

Feroglide bearings are generally installed using a press fit into the housing bore, utilising interference between the part and the housing. Suggestions on fitment tolerances and shaft running clearance are available direct from Tenmat. Flanged parts can be fitted using mechanical means like screws and bolts. Tenmat can design bespoke fitment incl. clip-in design, screw-in bores, and others.

Intended Use

Feroglide material is intended for use as heavy-duty bearing and thrust washer components in high load valve applications where parts must last a long time to reduce maintenance and bearing replacement.

Maintenance

Tenmat composite wear parts significantly reduce maintenance requirements in many challenging applications. Tenmat products are typically “fit and forget” as long as working conditions keep to design specs.

Storage

- Store in dry, ambient conditions
 - Take care not to exceed safe working loads and heights for storage shelves and racks
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Shelf Life

If stored correctly, in original packaging that has not been open or damaged, there is no noticeable reduction in performance of the material even during long storage times

Working Life

Feroglide bearings have been designed for a fit-and-forget operation, which is especially beneficial for sub-sea installations. Typically, Feroglide parts exceed all operational work life cycles.



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Advanced materials.
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