

HI-EX®

METAL-POLYMER HYDRODYNAMIC Composite Bearings





APPLICATIONS

Automotive – Diesel fuel pumps, ABS equipment Industrial – Hydraulic motors and pumps, agricultural equipment, wind energy equipment, yaw and teeter bearings.

CHARACTERISTICS

- Marginally lubricated composite bearing material with good wear resistance under thin film conditions
- Standard bearings supplied with indents for optimum retention and distribution of the lubricant over the sliding layer
- Available with non-indented overlay for hydrodynamic applications
- Rated for high temperature use up to 250°C / 480°F
- Suitable for use with low viscosity fluids
- Good chemical resistance
- Lead-free bearing material compliant to ELV, RoHS and WEEE specifications
- Tested acc. to ASTM E595/ECSS-Q-ST-70-02C -Outgassing properties of materials used in Spacecraft equipment

AVAILABILITY

Bearing forms made to order: Cylindrical bushes, thrust washers, sliding plates, half-bearings, special shapes obtained by stamping, bearings with locating notches, lubricant holes and machined grooves, customized bearing designs



HI-EX[®] DATASHEET

BEARING PROPERTIES		UNITS	VALUE
GENERAL			
Maximum load, p	Static	N/mm ²	140
	Dynamic	N/mm ²	140
Operating temperature	Min	°C	- 150
	Max	°C	250
Coefficient of linear thermal expansion	Parallel to the surface	10 ⁻⁶ /K	11
	Normal to the surface	10 ⁻⁶ /K	29
GREASE LUBRICATED			
Maximum sliding speed, U		m/s	2.5
Maximum pU factor		N/mm ² x m/s	2.8
Coefficient of friction, f			0.08 - 0.12
OIL LUBRICATED			
Maximum sliding speed, U		m/s	10.0
Maximum pU factor		N/mm ² x m/s	10.0
Coefficient of friction, f			0.03 - 0.08
RECOMMENDATIONS			
Shaft surface roughness, Ra		μm	≤ 0.05 - 0.40*
Shaft surface hardness	Normal	HB	> 200
	For longer service life	НВ	> 350

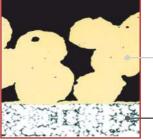
* Depending on operating conditions

OPERATING PERFORMANCE	
Dry	Fair
Oil lubricated	Good
Grease lubricated	Very Good
Water lubricated	Good
Process fluid lubricated	Good

FOR SUPERIOR PERFORMANCE

Dry

MICROSECTION



- Sliding Layer PEEK + PTFE + Fillers
- Porous Bronze Sinter
- 🗕 Steel Backing

GAR-MAX / HSG / GAR-FIL / MLG