

HI-EX[®]

Metal-Polymer Hydrodynamic Composite 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 material compliant to EVL, RoHS and WEEE specifications



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

APPLICATIONS

Automotive: Diesel fuel pumps, ABS equipment.

Industrial: Hydraulic motors and pumps, agricultural equipment, wind energy equipment, yaw and teeter bearings.



HI-EX® Technical Data

Bearing Properties		Imperial Units	Imperial Value	Metric Units	Metric Value
General					
Maximum load, p	Static	psi	20 000	N/mm ²	140
	Dynamic	psi	20 000	N/mm ²	140
Operating temperature	Min	°F	- 240	°C	- 150
	Max	°F	480	°C	250
Coefficient of linear thermal expansion	Parallel to the surface	10 ⁻⁶ /F	6	10 ⁻⁶ /K	11
	Normal to the surface	10 ⁻⁶ /F	17	10 ⁻⁶ /K	29
Grease Lubricated					
Maximum sliding speed, U		fpm	500	m/s	2.5
Maximum pU factor		psi x fpm	80 000	N/mm ² x m/s	2.8
Coefficient of friction			0.08 - 0.12		0.08 - 0.12
Oil Lubricated					
Maximum sliding speed, U		fpm	2 000	m/s	10.0
Maximum pU factor		psi x fpm	286 000	N/mm ² x m/s	10.0
Coefficient of friction			0.03 - 0.08		0.03 - 0.08
Recommendations					
Shaft surface roughness, Ra		µin	≤ 2 - 16*	µm	≤ 0.05 - 0.40*
Shaft surface hardness	Normal	HB	> 200	HB	> 200
	For longer service life	HB	> 350	HB	> 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	GAR-MAX / HSG / GAR-FIL / MLG

Microsection

