

DP4

METAL-POLYMER LOW FRICTION PLAIN BEARINGS



APPLICATIONS

Automotive – Braking systems, clutches, gearbox and transmissions, hinges: door, bonnet, boot, cabriolet roof tops, pedals; pumps: axial piston, radial piston, gear and vane; seat mechanisms, steering systems, struts and shock absorbers, wiper systems, etc.



CHARACTERISTICS

- DP4 low friction bushings offer good wear and low friction performance over a wide range of loads, speeds and temperatures in dry running conditions
- Very good performance in lubricated applications
- Good performance in greased applications
- Suitable for linear, oscillating and rotating movements
- Lead-free material compliant to ELV, WEEE, and RoHS specifications
- Approved to standard DIN EN 1797: 2002-02 and ISO 21010: 2004-04 (Cryogenic Vessels – Gas/Material Compatibility) for piping, valves, fittings and other components in both gaseous and liquid oxygen for up to maximum temperature of 60°C and oxygen pressure of 25 bars. Contact GGB for further details.
- Approved to standard FAR 25.853 and FAR 25.855 - Federal Aviation Regulations – making it suitable for interior aircraft applications

AVAILABILITY

Bearing forms available in standard dimensions:

Cylindrical bushes, flanged bushes, thrust washers, flanged washers and sliding plates

Bearing forms made to order: Standard bushing forms in special dimensions, half-bushings, special shapes obtained by stamping or deep drawing, bearings with locating notches, lubricant holes and machined/stamped grooves, customized bushing designs, customized bearing designs

Industrial – Aerospace, agricultural equipment, construction equipment, food and beverage, material handling equipment, forming machines: metal, plastic and rubber; office equipment, medical and scientific equipment, packaging equipment, pneumatic and hydraulic cylinders, pumps and motors, railroad and tramways, textile machinery, valves, etc.



BEARING PROPERTIES		IMPERIAL UNITS	IMPERIAL VALUE	METRIC UNITS	METRIC VALUE
GENERAL					
Maximum load, p	Static	psi	36 000	N/mm ²	250
	Dynamic	psi	20 000	N/mm ²	140
Operating temperature	Min	°F	-328	°C	- 200
	Max	°F	536	°C	280
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	30
DRY					
Maximum sliding speed, U		fpm	500	m/s	2.5
Maximum pU factor		psi x fpm	29 000	N/mm ² x m/s	1.0
Coefficient of friction, f			0.04 - 0.25*		0.04 - 0.25*
OIL LUBRICATED					
Maximum sliding speed, U		fpm	1000	m/s	5.0
Maximum pU factor		psi x fpm	286 000	N/mm ² x m/s	10.0
Coefficient of friction, f			0.02 - 0.08		0.02 - 0.08
RECOMMENDATIONS					
Shaft surface roughness, Ra	Dry	µin	12 - 20	µm	0.3 - 0.5
	Lubricated	µin	≤ 2 - 16*	µm	≤ 0.05 - 0.40*
Shaft surface hardness	Unhardened acceptable, improved bearing life	HB	> 200	HB	> 200

* Depending on operating conditions

OPERATING PERFORMANCE	
Dry	Good
Oil lubricated	Very Good
Grease lubricated	Good
Water lubricated	Fair
Process fluid lubricated	Good
FOR SUPERIOR PERFORMANCE	
Water lubricated	DP4-B

MICROSECTION

