

DP11

METAL-POLYMER ANTI-FRICTION PLAIN BEARINGS



APPLICATIONS

Automotive – Belt tensioners, clutches, dual mass fly-wheels, pulley dampers, etc.

Industrial – Applications with high frequency and low amplitude oscillating movements

CHARACTERISTICS

- Very good wear and anti friction performance over a wide range of loads, speeds and temperatures in dry running conditions
- Particularly suited to dry applications with high frequency and low amplitude oscillating movements
- Suitable for linear, oscillating and rotating movements
- Lead-free material compliant to ELV, WEEE, and RoHS specifications
- Approved to standard FMVSS 302 - Federal Motor Vehicle Safety Standard concerning the flammability of materials used in the occupant compartments of motor vehicles

AVAILABILITY

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



BEARING PROPERTIES		IMPERIAL UNITS	IMPERIAL VALUE	METRIC UNITS	METRIC VALUE
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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	1 000	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	Very Good
Oil lubricated	Good
Grease lubricated	Fair
Water lubricated	Not recommended
Process fluid lubricated	Fair

FOR SUPERIOR / LEAD-FREE PERFORMANCE	
Grease lubricated	DP4 / DX
Water lubricated	DP4-B
Process fluid lubricated	DP4 / DP31

MICROSECTION

