

# DP31

## METAL-POLYMER HYDRODYNAMIC COMPOSITE BEARINGS



### APPLICATIONS

**Automotive** – Air conditioning compressors, gearbox and transmissions, heavy duty struts and shock absorbers, high performance pumps: axial piston, radial piston, gear, vane, etc.

**Industrial** – Compressors: scroll and reciprocating; pneumatic and hydraulic cylinders, high performance pumps axial piston, radial piston, gear, vane, etc.

### CHARACTERISTICS

- Excellent low friction and wear resistance performance in lubricated applications
- Excellent flow erosion and cavitation resistance
- Very good fatigue strength
- Lead-free material compliant to ELV, WEEE, and RoHS specifications

### AVAILABILITY

**Bearing forms made to order:** Cylindrical bushes, flanged bushes, thrust washers, flanged thrust washers, sliding plates, half-bearings, 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 <sup>2</sup>	250
	Dynamic	psi	20 000	N/mm <sup>2</sup>	140
Operating temperature	Min	°F	-328	°C	- 200
	Max	°F	536	°C	280
Coefficient of linear thermal expansion	Parallel to the surface	10 <sup>-6</sup> /F	6	10 <sup>-6</sup> /K	11
	Normal to the surface	10 <sup>-6</sup> /F	17	10 <sup>-6</sup> /K	30

OIL LUBRICATED					
Maximum sliding speed, U		fpm	2 000	m/s	10.0
Maximum pU factor		psi x fpm	286 000	N/mm <sup>2</sup> x m/s	10.0
Coefficient of friction, f			0.01 - 0.05		0.01 - 0.05

RECOMMENDATIONS					
Shaft surface roughness, Ra	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	Fair
Oil lubricated	Very Good
Grease lubricated	Fair
Water lubricated	Fair
Process fluid lubricated	Good

FOR SUPERIOR / LEAD-FREE PERFORMANCE	
Dry	DP4 / DP11
Grease lubricated	DP4 / DX
Water lubricated	DP4-B

**MICROSECTION**

