



# 533

## BEARING

*Glass-Filled  
Nylon, Piston and Rod*

### DESIGN

The Hallite 533 glass-filled polyamide bearing is designed to provide an extremely effective, hard wearing, and easy-to-use bearing solution for reciprocating, oscillating, and slow rotary movement applications. The Hallite 533 is capable of withstanding high side loads and preventing metal-to-metal contact between the piston and the bore or the rod and the gland.

The PA 533 material is heat stabilised 33% glass reinforced nylon 66, which offers excellent bearing properties. The material is compatible with hydraulic and lubricating oils. The PA 533 material is not recommended for use in water based fluids (HFA) or where significant water is present, due to the swell of the nylon. For these applications Hallite recommends the use of Hallite 506, Hallite 708, or Hallite 63 bearings.

The Hallite 533 is available in molded rings. The rectangular section strip is available in a wide range of inch and some metric sizes which are available upon request. If you cannot find the size you are looking for, please contact your local Hallite sales office for additional size information.



### FEATURES

- Moulded to size
- Robust
- Long life
- Economical
- Easy to install

### MATERIALS

As standard, this product comes in the following material. Contact your local Hallite technical team if you would like to find out if this profile can be made in a custom material to suit your application. For further material details, please refer to the Hallite Material Table.

MATERIAL OPTIONS	Name	Type	Colour
Standard	PA 533	PA-GF	Black



## TECHNICAL DETAILS

OPERATING CONDITIONS	METRIC	INCH
Maximum Speed	5.0 m/sec	16.0 ft/sec
Temperature Range	-40 +120°C	-40 +250°F

### NOTE

Data given are maximum values and can apply depending on specific application. Maximum ratings of temperature, pressure, or operating speeds are dependent on fluid medium, surface, gap value, and other variables such as dynamic or static service. Maximum values are not intended for use together at the same time, e.g. max temperature and max pressure. Please contact your Hallite technical representative for application support.

SURFACE ROUGHNESS	$\mu\text{mRa}$	$\mu\text{mRz}$	$\mu\text{mRt}$	$\mu\text{inRa}$	$\mu\text{inRz}$	$\mu\text{inRt}$
Dynamic Sealing Face - Rod $\varnothing d_1$	0.40	1.6 max	4 max	16	63 max	157 max
Static Sealing Face - Rod $\varnothing D_2, L_1$	3.2 max	10 max	16 max	125 max	394 max	630 max
Dynamic Sealing Face - Piston $\varnothing d_1, L_1$	0.40	1.6 max	4 max	16	63 max	157 max
Static Sealing Face - Rod $\varnothing D_2, L_1$	3.2 max	10 max	16 max	125 max	394 max	630 max

TYPICAL PHYSICAL PROPERTIES	TEST METHOD	METRIC	INCH
Tensile Strength at Yield	ASTM D638	186 MPa	27000 psi
Elongation at Break	ASTM D638	3.00%	3.00%
Flexural Strength at Yield	ASTM D790	262 MPa	38000 psi
Flexural Modulus	ASTM D790	8965 MPa	1300000 psi
Izod Impact	ASTM D256	112 J/m	2.1 ft-lb/in
Specific Gravity	ASTM D792	1.41	1.41
Compressive Strength	ASTM D695	176 MPa	25500 psi
Water Absorption	ASTM D570	0.70%	0.70%
Hardness - Rockwell	ASTM D785	120 R	120 R
Deformation Under Load @ 4000 psi	ASTM D621	0.80%	0.80%
Shear Strength	ASTM D732	86 MPa	12500 psi

HOUSING DETAILS & TOLERANCES				
Rod	$\varnothing d_1$ mm	f9	$\varnothing d_1$ in	f9
	$\varnothing D_2 = \varnothing d_1 + 2S$ mm	$\leq \varnothing 80$ H10 $> \varnothing 80$ H9	$\varnothing D_2 = \varnothing d_1 + 2S$ in	+0.004 -0
	$\varnothing D_3 = \varnothing d_1 + G$ mm	-	$\varnothing D_3 = \varnothing d_1 + G$ in	-
Piston	$\varnothing D_1$ mm	H11	$\varnothing D_1$ in	H11
	$\varnothing d_2 = \varnothing D_1 - 2S$ mm	h9	$\varnothing d_2 = \varnothing D_1 - 2S$ in	+0.000 -0.0004
	$\varnothing d_3 = \varnothing D_1 - G$ mm	-	$\varnothing d_3 = \varnothing D_1 - G$ in	-

RADIAL CLEARANCE RECOMMENDATIONS		
NOMINAL CROSS SECTIONS	G max	G min
S = 3.00 mm	2.00 mm	0.08 mm
S = 2.50 mm	1.50 mm	0.08 mm
S = 0.126 in (1/8 in)	0.080 in	0.031 in
S = 0.093 in (3/32 in)	0.080 in	0.031 in