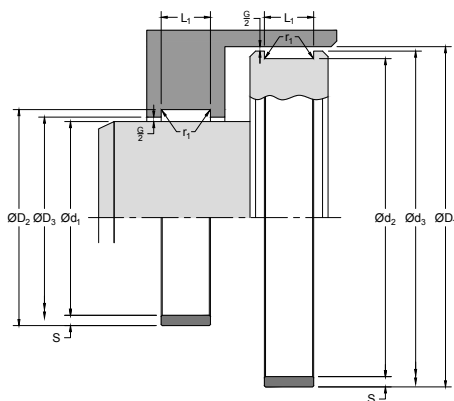




533

BEARING

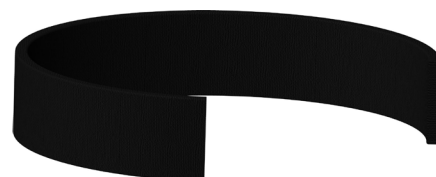
*Glass-Filled
Nylon, Piston and Rod*

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



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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

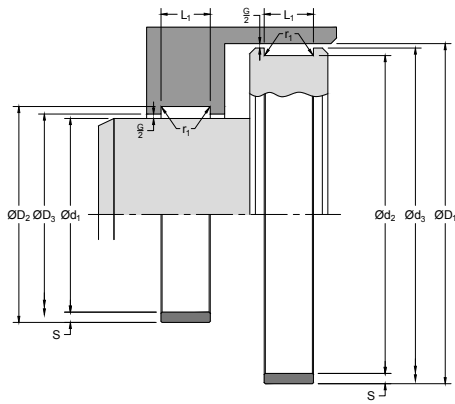
Data given are maximum values and can apply depending on specific application. Maximum ratings of temperature, pressure, or operating speeds are dependent on fluid medium, surface, gap value, and other variables such as dynamic or static service. Maximum values are not intended for use together at the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

SURFACE ROUGHNESS	µmRa	µmRz	µmRt	µinRa	µinRz	µinRt
Dynamic Sealing Face - Rod Ød ₁	0.40	1.6 max	4 max	16	63 max	157 max
Static Sealing Face - Rod ØD ₂ , L ₁	3.2 max	10 max	16 max	125 max	394 max	630 max
Dynamic Sealing Face - Piston Ød ₁ , L ₁	0.40	1.6 max	4 max	16	63 max	157 max
Static Sealing Face - Rod ØD 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	Ød ₁ mm	f9	Ød ₁ in	f9
	ØD ₂ = Ød ₁ + 2S mm	≤ Ø80 H10 > Ø80 H9	ØD ₂ = Ød ₁ + 2S in	+0.004 -0
	ØD ₃ = Ød ₁ + G mm	-	ØD ₃ = Ød ₁ + G in	-
Piston	ØD ₁ mm	H11	ØD ₁ in	H11
	Ød ₂ = ØD ₁ - 2S mm	h9	Ød ₂ = ØD ₁ - 2S in	+0.000 -0.0004
	Ød ₃ = ØD ₁ - G mm	-	Ød ₃ = ØD 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



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.

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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

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- 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



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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.

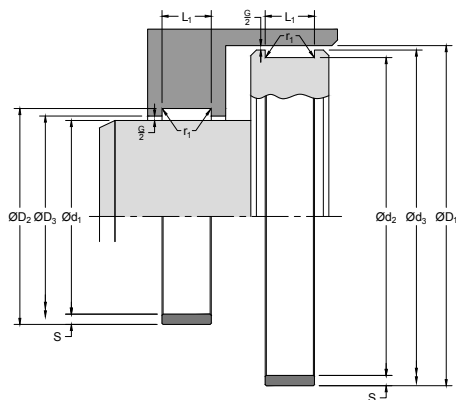
SURFACE ROUGHNESS	μmRa	μmRz	μmRt	μinRa	μinRz	μinRt
Dynamic Sealing Face - Rod $\varnothing d_1$	0.40	1.6 max	4 max	16	63 max	157 max
Static Sealing Face - Rod $\varnothing D_2, L_1$	3.2 max	10 max	16 max	125 max	394 max	630 max
Dynamic Sealing Face - Piston $\varnothing d_1, L_1$	0.40	1.6 max	4 max	16	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



533

BEARING

*Glass-Filled
Nylon, Piston and Rod*

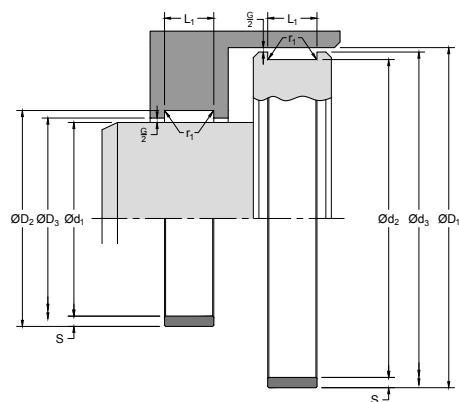
PART NUMBER RANGE

INCH			
ØD ₁ , ØD ₂	Ød ₂ , Ød ₁	L ₁	PART No.
1.250	1.000	1.000	F30220
1.500	1.250	0.250	F30005
1.500	1.250	0.375	F30006
1.500	1.250	0.500	F30305
1.500	1.312	0.187	F30004
1.500	1.312	0.375	F30352
1.750	1.500	0.190	F30234
1.750	1.500	0.375	F30201
1.750	1.500	0.500	F30013
1.875	1.625	0.190	F30179
1.875	1.625	0.375	F30235
1.875	1.625	0.500	F30306
2.000	1.750	0.187	F40001
2.000	1.750	0.250	F30018
2.000	1.750	0.312	F30020
2.000	1.750	0.375	F30022
2.000	1.750	0.500	F30024
2.000	1.750	0.750	F30025
2.000	1.812	0.375	F30325
2.125	1.875	0.375	F20026
2.250	2.000	0.187	F40029
2.250	2.000	0.250	F30196
2.250	2.000	0.312	F30032
2.250	2.000	0.375	F30033
2.250	2.000	0.500	F30035
2.250	2.000	0.625	F30036
2.250	2.000	0.750	F30037
2.375	2.125	0.500	F30038
2.500	2.250	0.187	F30040
2.500	2.250	0.250	F30041
2.500	2.250	0.312	F30043
2.500	2.250	0.375	F30044

NOTE

For complete size list, please visit Hallite.com.



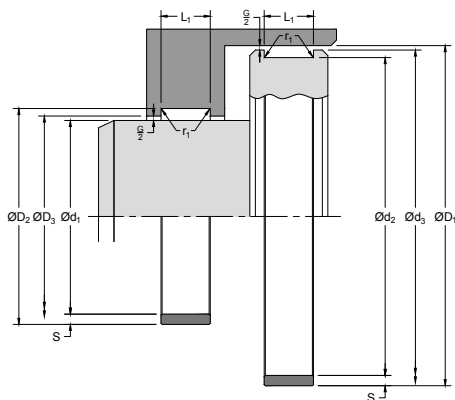


PART NUMBER RANGE

INCH			
$\text{ØD}_1, \text{ØD}_2$	$\text{Ød}_2, \text{Ød}_1$	L_1	PART No.
2.500	2.250	0.500	F30045
2.500	2.250	0.625	F30047
2.500	2.250	0.750	F30048
2.500	2.250	1.000	F30286
2.500	2.312	0.375	F30326
2.625	2.375	0.375	F20179
2.625	2.375	0.625	F30285
2.750	2.500	0.250	F30209
2.750	2.500	0.375	F30051
2.750	2.500	0.500	F30052
2.750	2.500	0.625	F30054
2.750	2.500	0.750	F30055
2.750	2.500	1.000	F30056
3.000	2.750	0.250	F30061
3.000	2.750	0.312	F30062
3.000	2.750	0.375	F30063
3.000	2.750	0.500	F30064
3.000	2.750	0.625	F30191
3.000	2.750	0.750	F30066
3.000	2.750	1.000	F30067
3.000	2.812	0.375	F30327
3.250	3.000	0.250	F30207
3.250	3.000	0.312	F30259
3.250	3.000	0.375	F30069
3.250	3.000	0.500	F30070
3.250	3.000	0.625	F30287
3.250	3.000	0.750	F30072
3.250	3.000	1.000	F30074
3.250	3.062	0.375	F30353
3.500	3.250	0.250	F30079
3.500	3.250	0.312	F30255
3.500	3.250	0.375	F30080

NOTE

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533

BEARING

*Glass-Filled
Nylon, Piston and Rod*

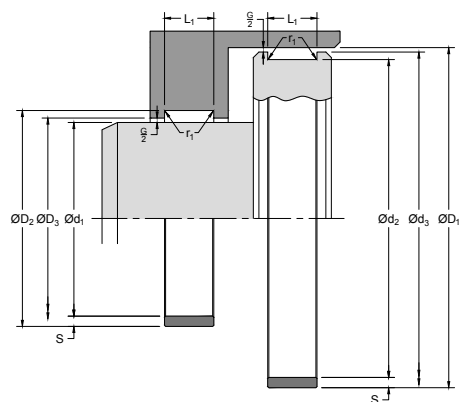
PART NUMBER RANGE

INCH			
OD_1, OD_2	OD_2, OD_1	L_1	PART No.
3.500	3.250	0.500	F30083
3.500	3.250	0.625	F30085
3.500	3.250	0.750	F30087
3.500	3.250	1.000	F30275
3.500	3.312	0.375	F30328
3.625	3.375	0.500	F30090
3.625	3.375	1.000	F30091
3.750	3.500	0.250	F40027
3.750	3.500	0.312	F30260
3.750	3.500	0.375	F30092
3.750	3.500	0.500	F30093
3.750	3.500	0.625	F30094
3.750	3.500	0.750	F30095
4.000	3.750	0.250	F30100
4.000	3.750	0.312	F30256
4.000	3.750	0.375	F30101
4.000	3.750	0.500	F30102
4.000	3.750	0.625	F30104
4.000	3.750	0.750	F30105
4.000	3.750	1.000	F30219
4.250	4.000	0.312	F30261
4.250	4.000	0.375	F30107
4.250	4.000	0.500	F30108
4.250	4.000	0.625	F30109
4.250	4.000	0.750	F30110
4.250	4.000	1.000	F30112
4.500	4.250	0.312	F30262
4.500	4.250	0.375	F30114
4.500	4.250	0.500	F30115
4.500	4.250	0.625	F30118
4.500	4.250	0.750	F30120
4.500	4.250	1.000	F30278

NOTE

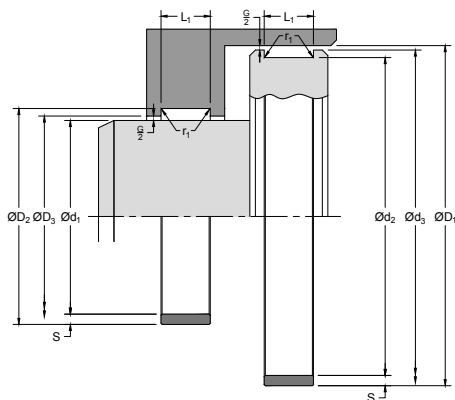
For complete size list, please visit Hallite.com.





PART NUMBER RANGE

INCH			
ØD ₁ , ØD ₂	Ød ₂ , Ød ₁	L ₁	PART No.
4.750	4.500	0.375	F30194
4.750	4.500	0.500	F30121
4.750	4.500	0.750	F30123
4.750	4.500	1.000	F30124
5.000	4.750	0.375	F30126
5.000	4.750	0.500	F30127
5.000	4.750	0.625	F30128
5.000	4.750	0.750	F30129
5.000	4.750	1.000	F30169
5.250	5.000	0.500	F30131
5.250	5.000	0.625	F30132
5.250	5.000	0.750	F30133
5.250	5.000	1.000	F30269
5.500	5.250	0.375	F30135
5.500	5.250	0.500	F30136
5.500	5.250	0.625	F30138
5.500	5.250	0.750	F30140
5.500	5.250	1.000	F30141
5.750	5.500	0.750	F30143
5.750	5.500	1.000	F30144
6.000	5.750	0.500	F30145
6.000	5.750	0.625	F30147
6.000	5.750	0.750	F30208
6.000	5.750	1.000	F30149
6.250	6.000	0.500	F30279
6.250	6.000	0.625	F30151
6.250	6.000	0.750	F30152
6.250	6.000	1.000	F30153
6.500	6.250	0.500	F30154
6.500	6.250	0.750	F30199
6.500	6.250	1.000	F30157
6.750	6.500	1.000	F30276
NOTE		For complete size list, please visit Hallite.com .	



533

BEARING

*Glass-Filled
Nylon, Piston and Rod*

PART NUMBER RANGE

INCH			
OD_1, OD_2	OD_2, OD_1	L_1	PART No.
7.000	6.750	0.500	F30158
7.000	6.750	0.625	F30159
7.000	6.750	0.750	F30277
7.000	6.750	1.000	F30160
7.250	7.000	0.500	F30281
7.250	7.000	0.750	F30284
7.250	7.000	1.000	F30289
7.500	7.250	0.500	F30162
7.500	7.250	0.750	F30165
7.500	7.250	1.000	F30166
7.750	7.500	0.500	F20160
7.750	7.500	1.000	F30247
8.000	7.750	1.000	F30231
8.250	8.000	1.000	F30248
8.500	8.250	0.500	F30168
8.500	8.250	1.000	F30246
8.750	8.500	1.000	F30249
9.000	8.750	1.000	F30230
9.250	9.000	1.000	F30253
9.500	9.250	1.000	F30254
9.750	9.500	1.000	F30250
10.000	9.750	1.000	F30221
10.250	10.000	1.000	F30258
10.500	10.250	1.000	F30257
11.000	10.750	1.000	F30222
11.250	11.000	1.000	F30251
11.500	11.250	1.000	F30252
12.000	11.750	1.000	F30223
13.000	12.750	1.000	F30224
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