

Design

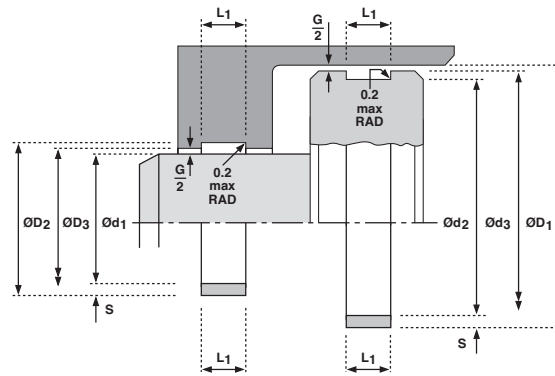
Hallite 87 bearing strip has the ability to support side loads and eliminate 'stick slip' between moving parts. The accurately dimensioned rectangular cross section is produced from a special combination of PTFE and Bronze materials. It has excellent heat resistance and strength to resist creep, making it suitable for bearings with reciprocating, oscillating or rotary movement, whether lubricated or not. Our standard range of cross section sizes are proportioned to be wrapped around a wide range of rod or piston diameters. Installation of the bearing is an easy task. Calculate and measure length L2 (see overleaf), cut the strip with a sharp blade and fit to the groove. If required we will be pleased to supply bearings to your sizes. Independent testing has established the typical properties which make the Hallite 87 worthwhile considering for many applications other than hydraulic or pneumatic cylinders. When using the compressive stress at yield in your calculation it is suggested a 4:1 factor of safety is applied.

The material is compatible with hydraulic mineral oil, lubricating oil, water based and synthetic fire resistant fluids and lubricating grease. Although the material is rated at 200°C, the recommended maximum temperature for bearing applications is 60°C.

Please send us details of your application for advice on this or any other problem where the Hallite 87 may solve your bearing problem.

Features

- Low friction
- Infinite length range
- Easy installation
- Extremely flexible



Technical details

Operating Conditions

Maximum Speed 5.0 m/sec
Temperature Range -50°C +200°C

Typical Physical Properties

Specific Gravity 3.1
Compression Stress at Yield 23°C 20 MN/m²
Compression Stress at Yield 80°C 9 MN/m²
Coefficient of Thermal Conductivity 2.5 W/mK
Coefficient of Thermal Expansion Length & Thickness
6.5 x 10⁻⁵ per °C

Coefficient of Dynamic Friction Dry Lubricated
0.25 0.05

Bearing Strip Tolerances L₁ S
-0.1 -0.5 +0.03 -0.05

Surface Roughness

Dynamic Sealing Face Ød₁ ØD₁ 0.4 4 max
Static Housing Faces ØD₂ L₁ Ød₂ 3.2 max 16 max

Housing Details & Tolerances

Rod Ød₁ f9
ØD₂=Ød₁+2S up to: Ø80 H10
above: Ø80 H9
ØD₃=Ød₁+G G min / max
L₁ -0 +0.2
Piston ØD₁ H11
Ød₂=ØD₁-2S f9
Ød₃=ØD₁-G G min / max
L₁ -0 +0.2

Inch

15.0 ft/sec
-58°F +390°F

3.1
73°F 2900 p.s.i.
176°F 1300 p.s.i.
1.4Btu/hft°F

µinCLA µinRMS
16 18
125 max 140 max

G min controls the minimum metal to metal clearance between the gland and rod or bore and piston.

G max controls the maximum extrusion gap seen by a seal associated with the bearing.

Typically, G min should be 0.7mm / 0.028" but can be reduced when required by the extrusion gap for the seal and the build up of tolerances.

The absolute minimum metal to metal clearance recommended is 0.1mm / 0.004"

For applications not using a seal G max - see overleaf.

