



OIL IMPREGNATED BRONZE* BEARINGS SELF-LUBRICATING (oil-lite style)

* This flyer details our standard range of oil impregnated bronze BP25, (oil-lite style) and iron alloy FP20 (which replaces FP15) bushings. Maryland Metrics also offers non-standard sizes, as well as other alternate materials such as: Brass, Cast Bronze, Steel, Plastic. Please consult.

Why << self-lubricating bearing>> ?

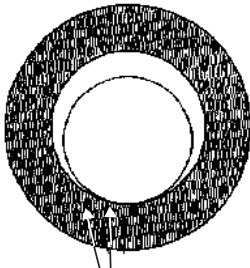
Depending on the shaft speed, load and operating conditions, a bearing can be offered with two types of lubrication :

Hydrodynamic conditions :

High speeds, medium loads.

Lubrication with a continuous film according to the "oilwedge" mechanism (see below figures).

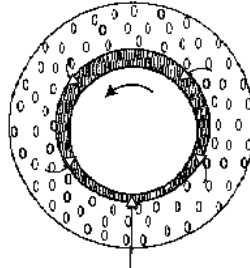
In this case, the coefficient of friction is around 0.01 to 0.08.



Capillarity porosities

1 - At rest

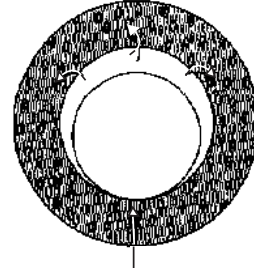
A volume of 25% of the porous sintered metal is impregnated with a high lubricity oil.



Oil film

2 - In movement

The pumping effect of shaft in rotation and the oil wedge generate an hydrodynamic film, and a real oil pad.



Re-absorbed oil

3 - Stopping

As soon as the shaft stops, reabsorption of oil into the bearing body, due to the pores capillarities.

Tough conditions:

Low speeds, high loads, alternative movements.

Lubrication by a film composed of high adherence molecular layers. This can be possible with both liquid or solid lubricants such as molybdenum disulphide, graphite, PTFE.

In that case, the coefficient of friction is the following.

Oil lubrication : 0.05 to 0.15

Solid lubrication : 0.10 to 0.25

Advantages

Cost saving

- Eliminates lubrication points
- Reduces maintenance costs
- Compact over-all dimensions
- Reduces engineering costs

Security

- Steady stock ensuring availability
- No more seizing
- Reproducibility
- Easy maintenance

Running

- Good coefficient of friction
- Silent running thanks to the continuous oil film
- Linear speeds of shaft up to 6 m/s
- PV factor (load x speed) higher than dry friction

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