

# OIL-FILM BEARING FOR ROTATING MACHINES

**PRIORITY NUMBER:**

102017000046660

**KEYWORDS:**

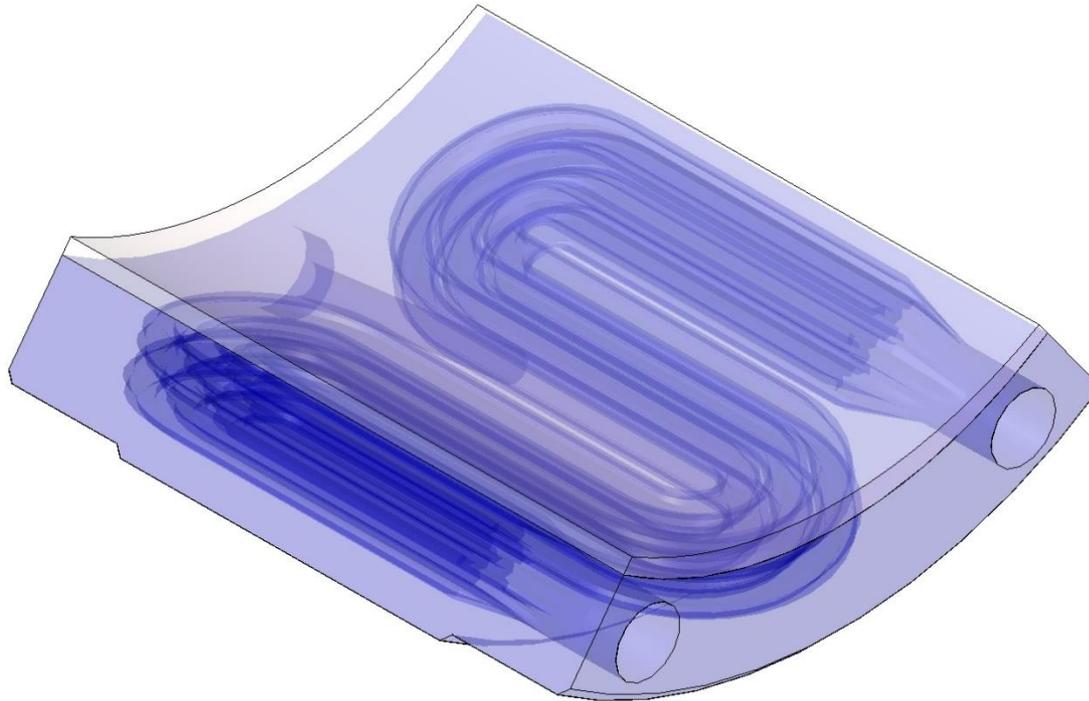
Oil-film bearing

Reduction of temperature

Internal cooling channels

Additive manufacturing

Performance increase



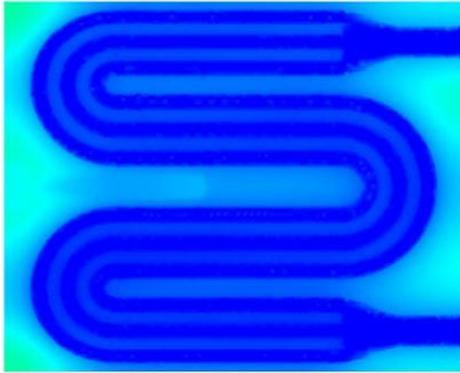
The invention relates to an innovative lubricated bearing to be used in rotating machines.

The invention proposes bearings in which the operating temperature can be kept below critical levels even when operated at operating speeds and / or with higher loads than those usually used.



[www.pmi-network.eu](http://www.pmi-network.eu)

# OIL-FILM BEARING FOR ROTATING MACHINES

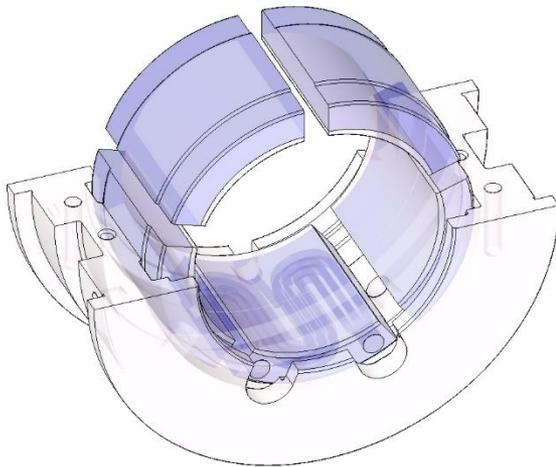


## DESCRIPTION:

The reduction of the maximum temperature of the bearing is guaranteed by the presence, inside the active part, of a plurality of microchannels for the circulation of a cooling fluid. Owing to suitable geometry of the cross-section of at least a portion of the internal duct in the active part, the total heat can be removed from the bearing by more than 25% compared to a standard circular section.

The microchannels can be made by additive manufacturing technique.

The possibility of manufacturing the microchannels in a closed circuit makes it possible to safely employ a cooling fluid that is also different from the lubricating fluid, in order to increase the removal of heat from the bearing.



## ADVANTAGES:

- Safely employing a cooling fluid that can be different from the lubricating fluid;
- Increase in heat removal of over 25% compared to standard solutions;
- Increase in the rotational speed and load.

## APPLICATIONS:

- Journal;
- Thrust hydrodynamic or hydrostatic lubricating bearings.