



MULTI LOBE BEARING
THREE LOBE DESIGN



Description:

Typically, multi-lobe bearings have 2 to 4 axial oil feed grooves with 2 to 4 pads. Each pad can contain a different preload and/or offset but usually they are both the same. Multi-lobe bearings do not have the side lands found in taper land bearings. The lobes are always preloaded as a zero preloaded multi-lobe bearing is simply an axial groove bearing. The lobes can also be offset with the minimum lobe clearance located at some angle with rotation from the center of the lobe.

Application:

This type of bearing is very popular in Europe and is gaining popularity in the United States.

Perspective:

This bearing is difficult to manufacture because of the tight lobe tolerances and lobe profiles. It is also difficult to determine if the lobe profiles are correct. The problem is exacerbated for bearings that are not split in half at the centerline.

Modeling: The machined-in pad diametral clearance must be placed in the *Bearing Clearance* cell.

References:

1. Flack, R. D., Lanes, R. F., "Effects of Three-Lobe Bearing Geometries on Rigid-Rotor Stability", ASLE Transactions, 25 (2), pp. 221-228 (April 1982).
2. Lanes, R. F., Flack, R. D., "Effects of Three-Lobe Bearing Geometries on Flexible Rotor Stability", ASLE Transactions, 25 (3), pp. 377-385 (July 1982)