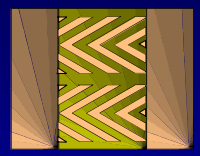
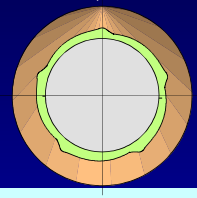
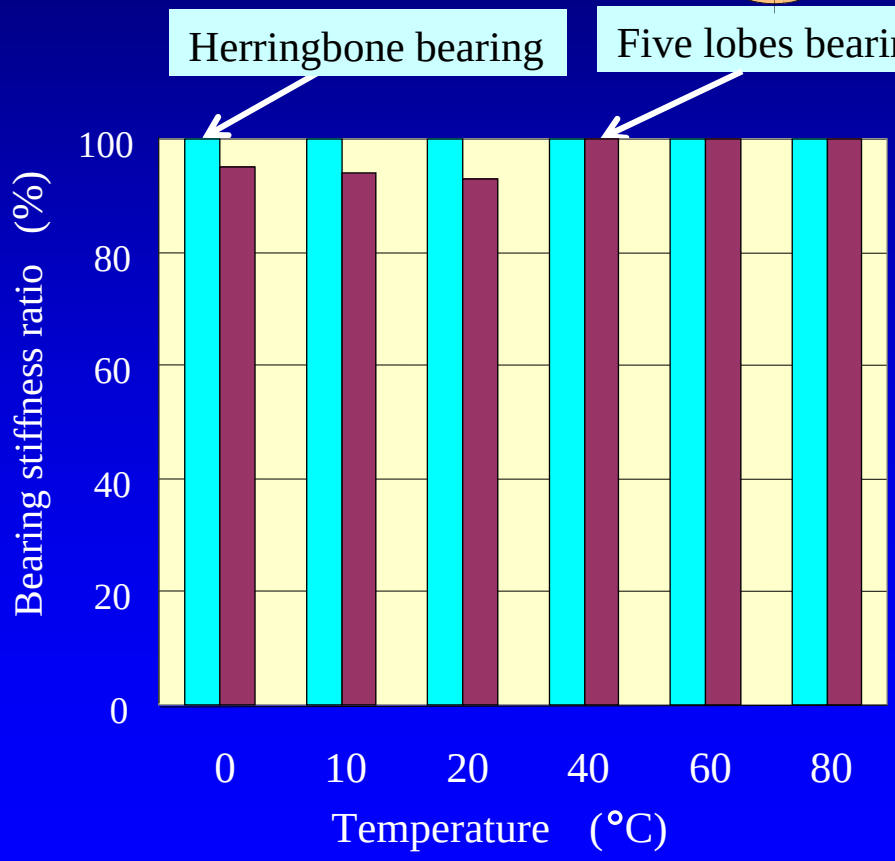
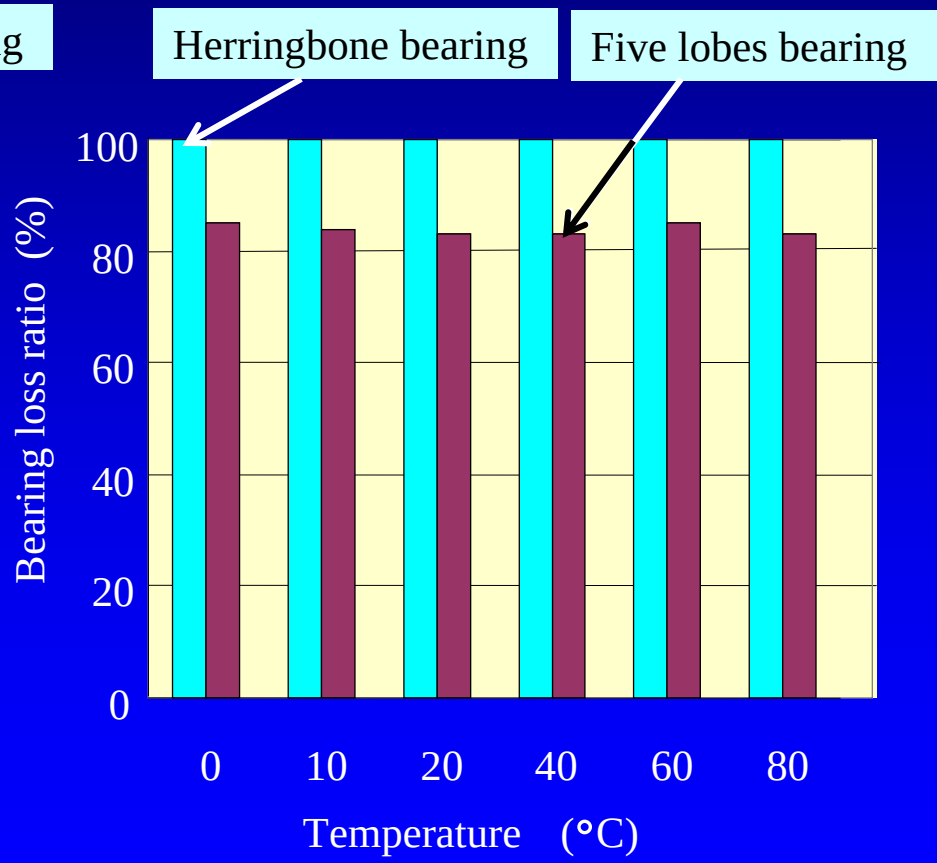
Comparison of bearing stiffness and bearing loss(2)

(calculation)

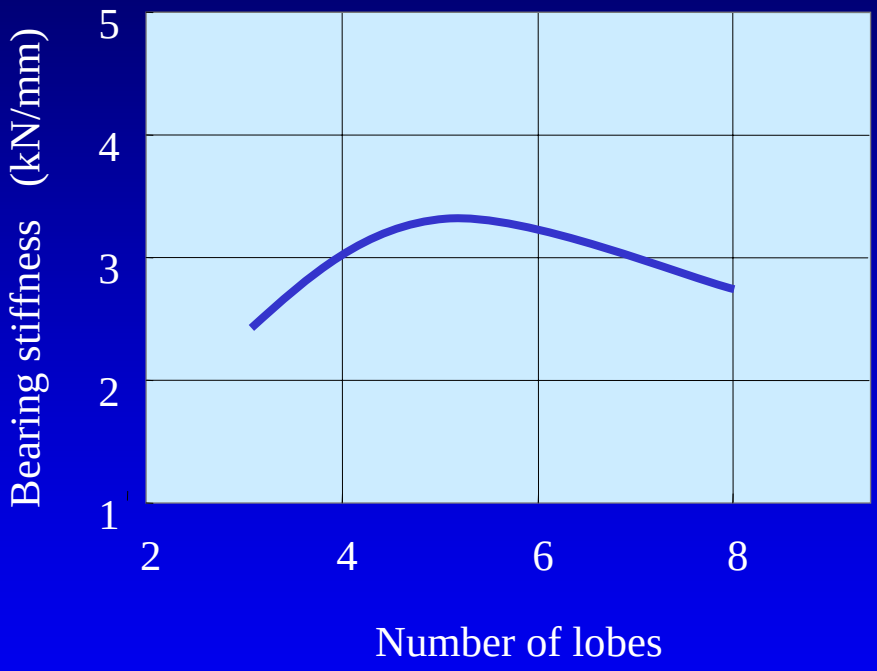


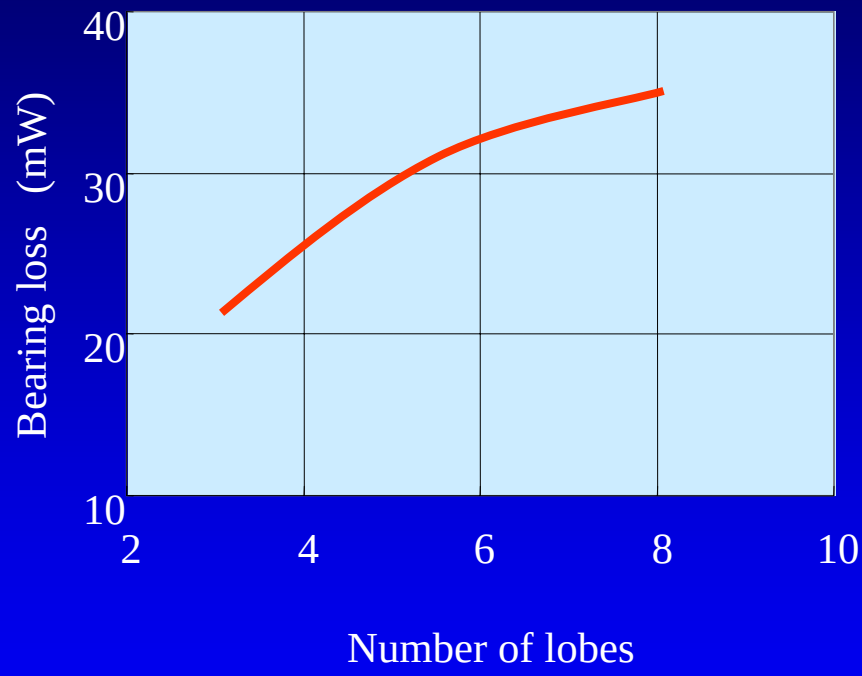






Comparison of bearing stiffness and bearing loss (multi-lobes bearing)



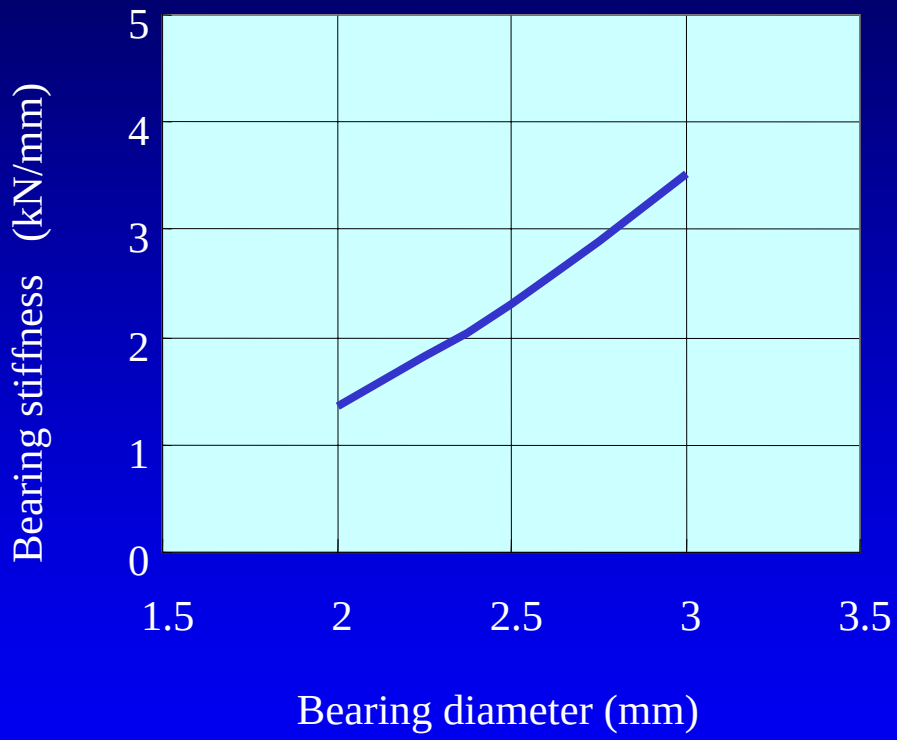


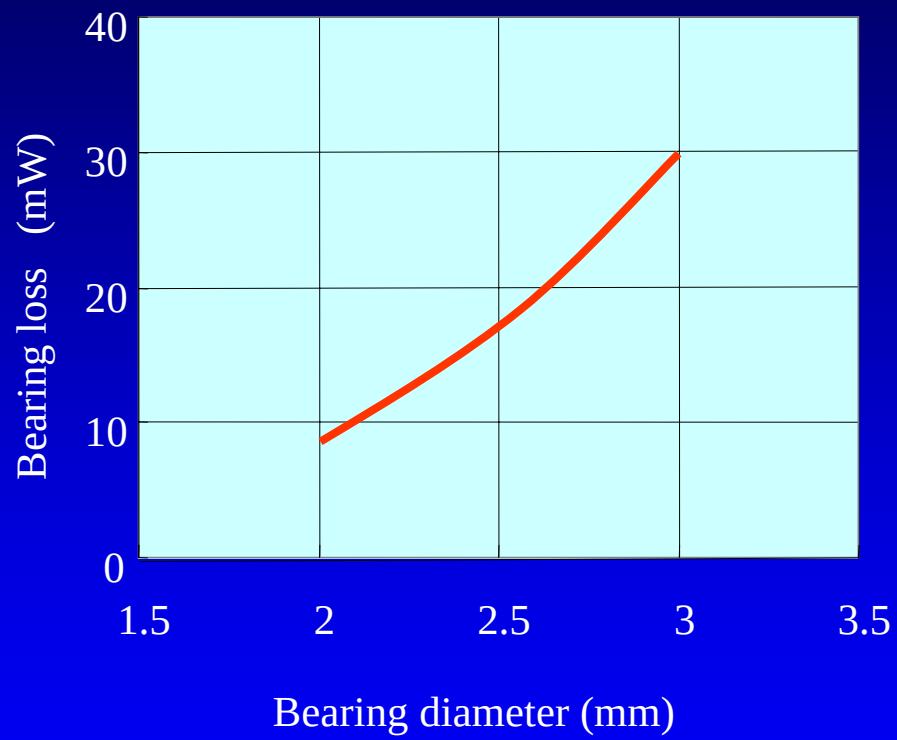
Bearing diameter: Φ3mm Width：1.6mm

Clearance: 0.003mm

Rotating speed: 5400rpm Temperature: 60℃

Bearing stiffness and loss of five lobes bearings(1)

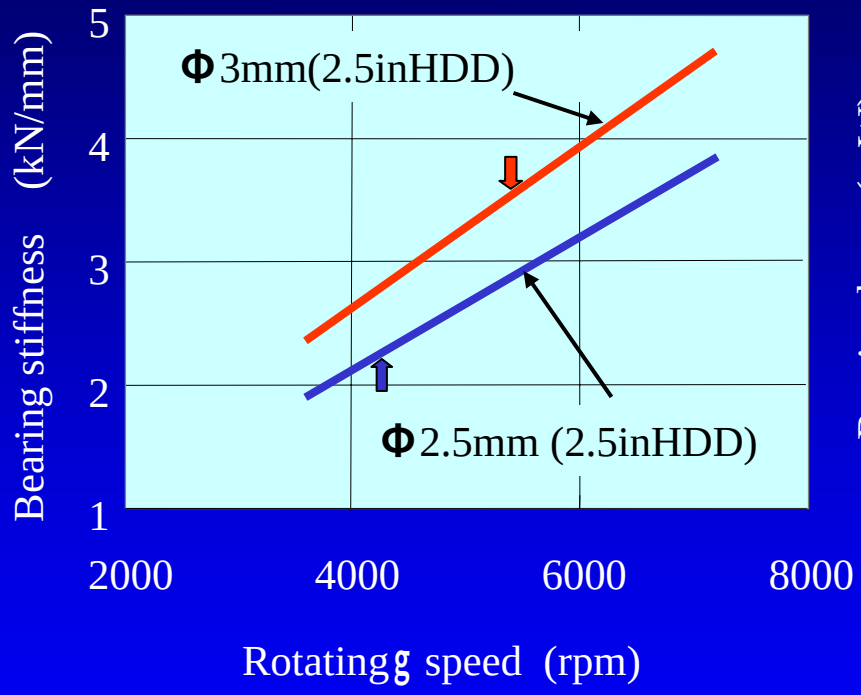


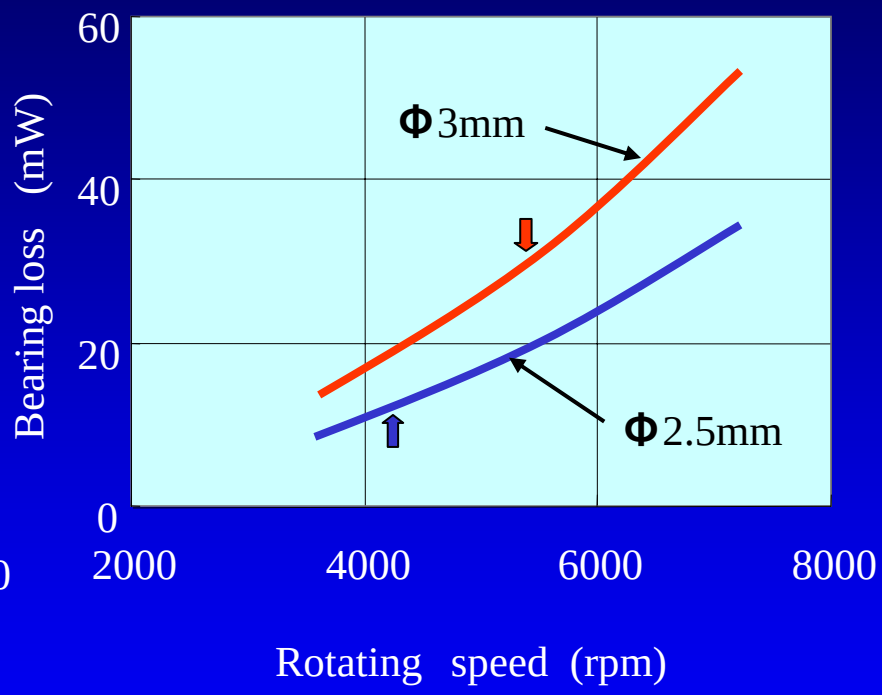


Width: 1.6mm Clearance: 0.003mm

Rotating speed: 5400rpm Temperature: 60℃

Bearing stiffness and loss of five lobes bearings(2)



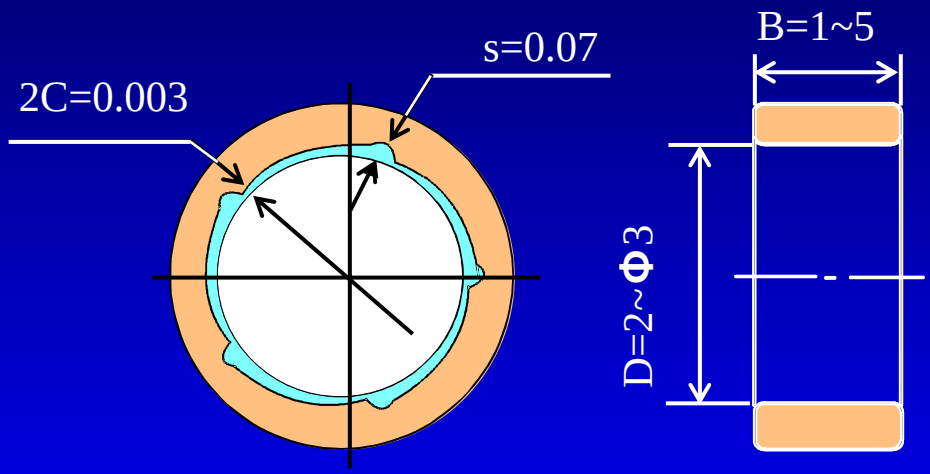


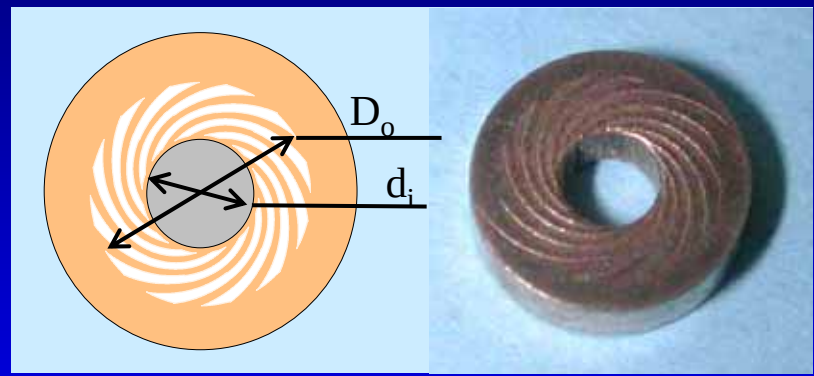
Bearing diameter : Φ2.5mm Width : 1.6mm (1.8inHDD)

: Φ3mm Width : 1.6mm

(2.5inHDD) Clearance: 0.003mm Temperature: 60℃

Application of multi-lobes bearings for HDD





Radial bearings
2.5in HDD:D=Φ3 mm B=4.8 mm
1.8in HDD:D=Φ2.5 mm B=2 mm

Thrust bearings
2.5in HDD: D_o =Φ5 mm d_i=3 mm
1.8in HDD: D_o =Φ4.5 mm d_i=2.5 mm

Conclusions

Features of our developed bearing technologies are as follows.

1) 5 lobes bearings :

High bearing stiffness and low bearing loss.

2) HMF bearing unit:

The best for downsizing of HDD

3) Our developed precise manufacturing technology and bearing materials:

50% or less of conventional cost