The problem of bearing bearing raceway noise

Raceway bearing raceway acoustic noise, due to rotation of the bearing rolling body raceway when rolling in and create a smooth and continuous noise, only when the sound pressure level or tone of voice can cause people to pay attention to the great.
In fact, roll inspired by the road sound of sound energy is limited, such as in the normal condition, the quality of the 6203 bearing raceway acoustic ranged from 25 to 27dB. Single row deep groove ball bearing this noise to bear radial load as the most typical, it has the following characteristics:
A, noise, vibration is random;
B, the vibration frequency is higher than 1kHz;
C, no matter how to change speed, noise frequency and sound pressure level is almost the same with the speed increase;
D, when the radial clearance increases, the sharp increase in sound pressure level;
E, bearing rigidity is increased, the overall sound pressure level is low, even if the speed increased, the overall sound pressure level is slightly increased;
F, the lubricant viscosity is high, the sound pressure level is lower, but for grease lubrication, the shape and the size of its viscosity, soap fiber can affect the value of the noise.
The sound source ring raceway is inherent vibration caused by load after. Due to the elastic contact rings and rolling bodies composed of nonlinear vibration system. When the lubricating or machining precision is low, will stimulate the inherent vibration associated with the elastic characteristics, transfer to the air becomes noise.
Although the raceway of bearing noise is unavoidable, but can take high precision machining parts work surface, the correct selection of bearing and bearing noise reduction using precise to vibration.

