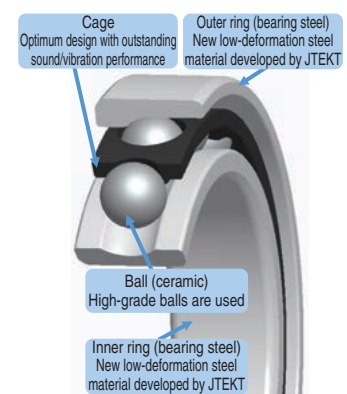
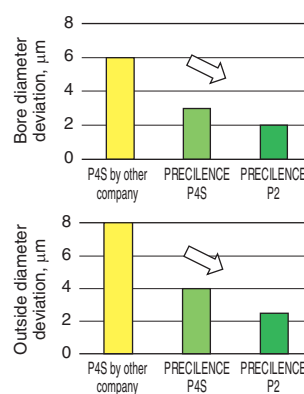
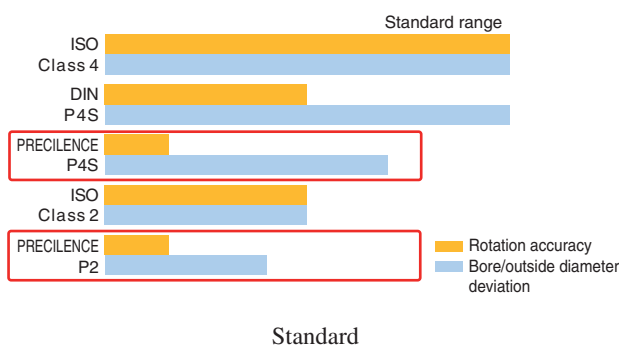


Ultra High Precision Bearing

In recent years, machine tools and other industrial machineries and equipments have been required to have higher levels of machining accuracy and efficiency, and the demands for higher performance bearings used in these machines and equipments and for more efficient bearing assembly works have been increasing. One solution for this issue is to use ultra high-precision bearings. Use of ultra high-precision bearings can reduce the runout and vibration of various industrial machines for enabling ultra-precision machining and micromachining in high-speed ranges. This paper presents the performance of the ultra high-precision bearing PRECILENCE that has just been developed.

1. Improved Accuracy and Performance

The PRECILENCE specifications are based on ISO Class 2, 4, and DIN P4S, with two levels, P4S and P2.

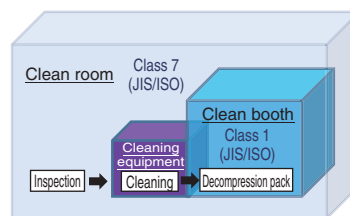


Dimensional deviation

Bearing structure

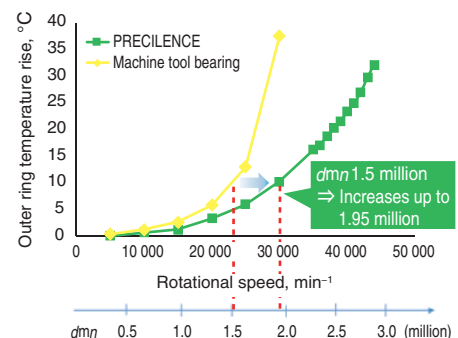
2. Improved Efficiency of Bearing Assembly Work

- 1) Reduced preload adjust time
Small deviation of bore/outside diameters for enabling selective fitting without the need for preload adjustment
- 2) No need for pre-assembly cleaning
Environmental packaging including assembly and decomposition pack in a clean room allows for high-cleanliness bearings.



Environment for each process

Test conditions	
Item	Conditions
Bearing dimensions	φ50×φ80×16×2 columns
Preload	Preload at fixed position (180 N)
Lubrication method	Grease
Cooling	Included



Temperature rise comparison

3. Reduced Machine Costs and Environmental Impact

- Low bearing temperature rise during high speed rotation leads to reduced machining times.
- Can rotate at higher speeds when greased to allow for operation of existing equipment.

Applications

Precision machine tools, semiconductor manufacturing equipments, precision measuring devices, precision printing machines, and coating machines

* PRECILENCE is a registered trademark for the ultra-high precision bearings developed by JTEKT Corporation and Daibea Co., Ltd. (Industrial Solutions Engineering Dept., Industrial and Bearing Business Unit)

JTEKT CORPORATION