Koyo

BEARING LIFE 2X LONGER

BY INCREASED LOAD RATINGS

5 ADVANTAGES ON INCREASED LOAD RATING »

|More Uptime |Less Maintenance |Smaller Package Space |Weight Reduction |Overall Savings

Decades of Research & Development has led to an increase of the actual life of our Bearings

Koyo

..."The Big Bang Theory challenged by Koyo bearings search for Eternity"...

1. Introduction

JIS B 1518:2013 has been revised and a bearing life calculation that uses the αISO factor has been introduced. This enables us to calculate bearing life that takes into consideration the lubrication conditions and the loading conditions of the bearing and it improves the accuracy of the service life calculation. Furthermore, the discrepancy between the calculated life and the actual life has been large, and a life calculation with high accuracy has been an issue. Now the accuracy of the calculated life has been improved by revising the dynamic load rating.

2. JTEKT bearing abilities

We have compared the calculated life and the abilities of our bearings which have been tested since 1992. The actual life is two times or greater than the calculated life (Figure 1). This is because of advances in the steel making process and reductions in the amount of oxygen in steel that is harmful to bearing life. We are also implementing daily component control that is advantageous to bearing life. We have been able to confirm two times the bearing life in thrust-style rolling contact fatigue test that is performed at JTEKT (Figure 2).

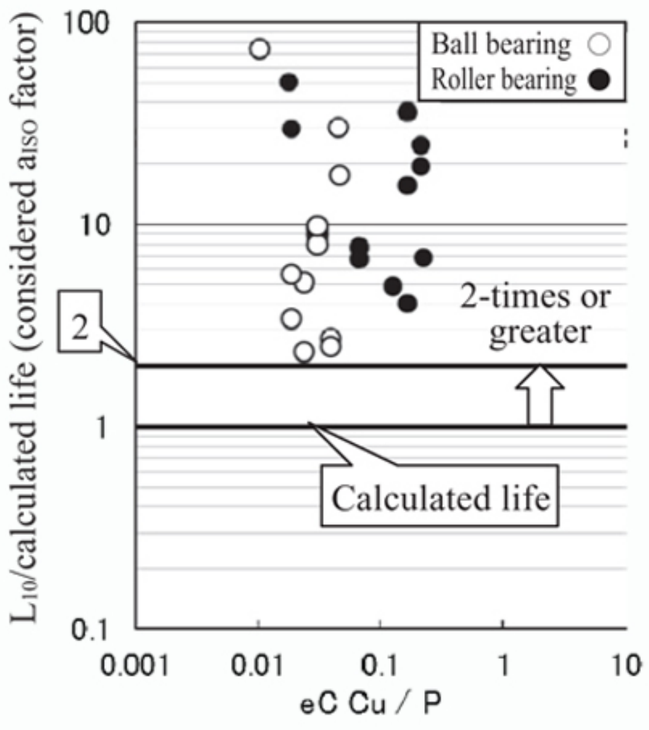

Figure 1
Comparison of JTEKT bearing test results and calculated life
(Evaluation results with clean oil since 1992)

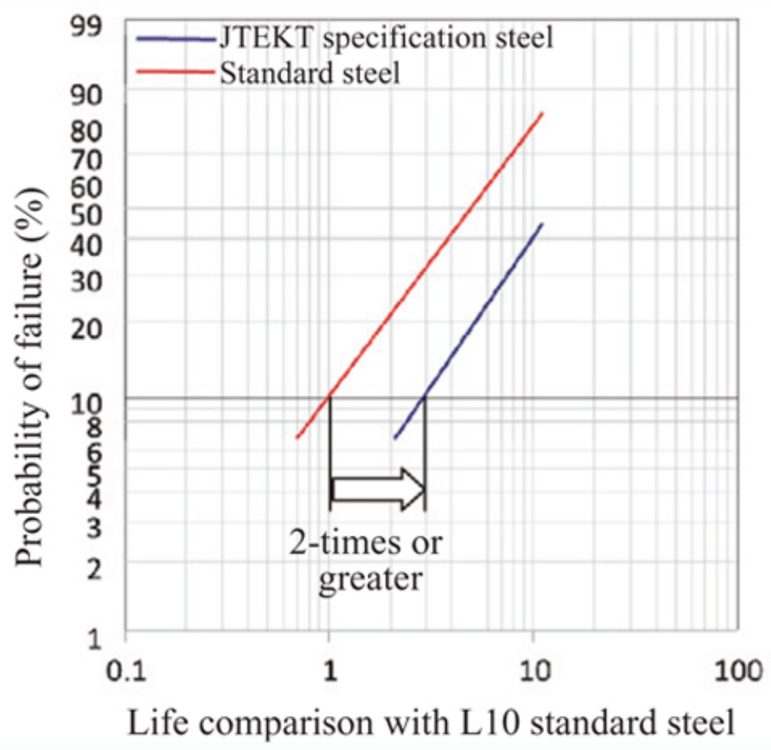

Figure 2
Thrust-style rolling contact fatigue test

3. Dynamic load rating revision

Two times the life is equivalent to multiplying the dynamic load rating based on JIS by 1.25. Therefore, JTEKT has improved the accuracy of the life calculation by multiplying the dynamic load rating by 1.25.

4. Exempt bearings

Above rules and explanations do not apply on these range of bearings: Needle Roller Bearings, Individually resold bearings, Bearings for railcar axles, K-type bearings and EXSEV bearings.

Table 3. C_{JTEKT}(CJ) drawing indication (Temporary) continue

Customer	Application	Yes				No (Same as now)
		CJ only	CJ/CN/COLD Combined	CJ/CN Combined	CJ/COLD Combined	
Other Auto and its related	OEM					○
	Tandem AC for differential			○		
	Catalogue bearing	○				
	Drivetrain			○		
Machine tool and its related	All			○		
Steel	All			○		
Industrial machinery	All			○		
EXSEV users	Normal bearing（SUJ2,3NC）			○		
	Made of stainless, ceramics					○
Rail car and its related	Trans axle journal drive/powertrain					○
Other Auto and its related	All					○
Aerospace related	Air craft bearing					○
Wind mill and its related	All					○
New customer	Motorcycle applications	○				
	Drivetrain	○				

Table 3 will be revised based on customer requirements.

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