

**Koyo**®

# LONG LIFE BEARING SERIES



**KOYO SEIKO CO., LTD.**

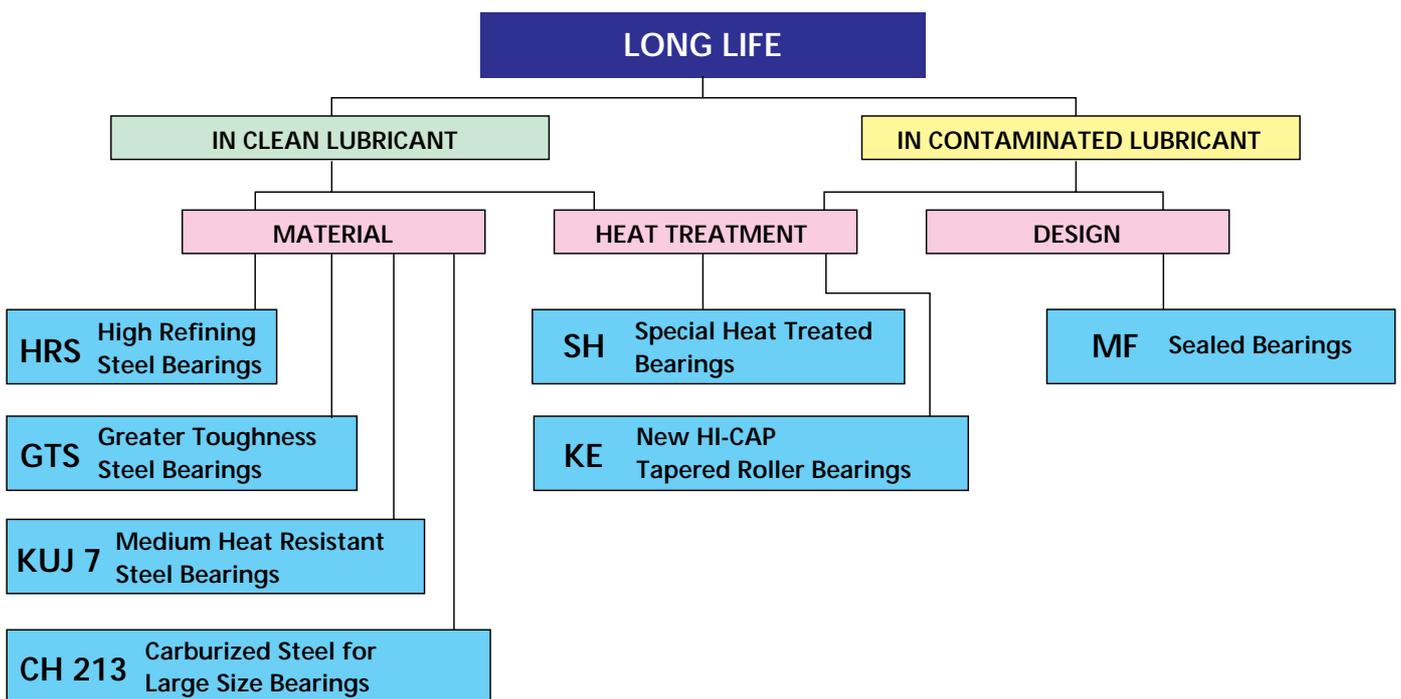
CAT.NO.199E

## 1. Extension of Bearing Life

### 1.1 Mechanism of Flaking

Type			
	SURFACE STARTING FLAKING		INSIDE STARTING FLAKING
Mechanism	SURFACE FLAKING	BRINELLING INITIATED FLAKING	
Long Life Bearings	SH,KE,MF		HRS,GTS,KUJ 7,CH 213

### 1.2 Koyo Long Life Bearing Series

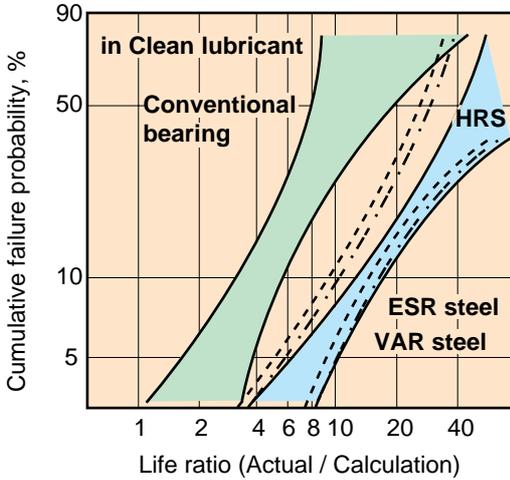




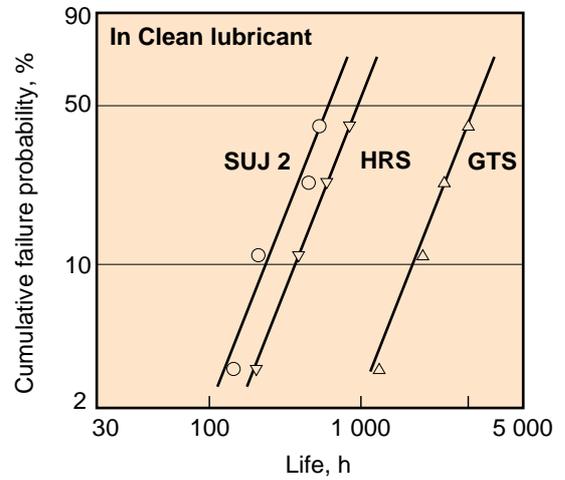
# LONG LIFE BEARING SERIES

## 2. Bearing Life Evaluation Results Against Flaking

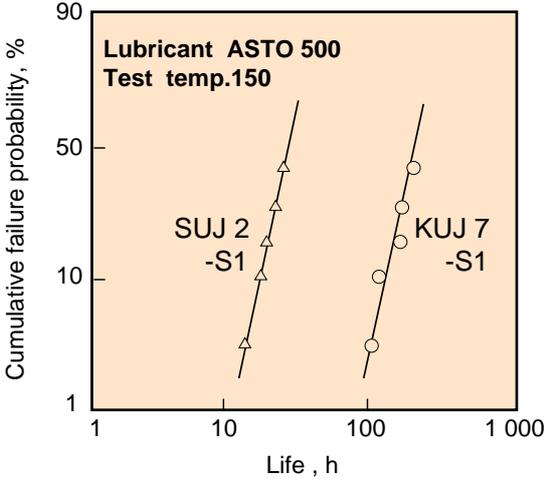
### HRS



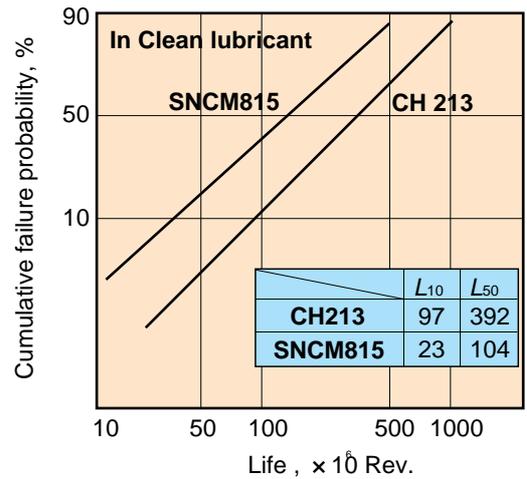
### GTS



### KUJ 7



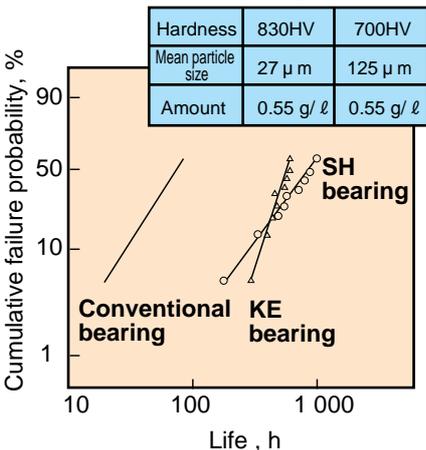
### CH 213



### SH and KE

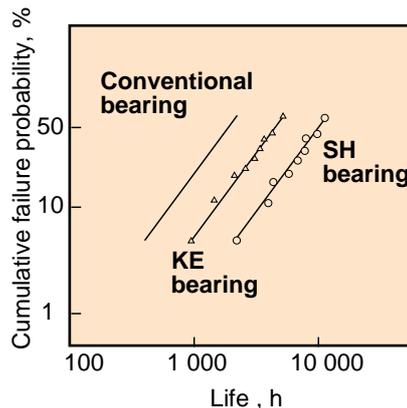
#### Life in contaminated lubricant

SH bearing, KE bearing  
:10 times or longer



#### Life in clean lubricant

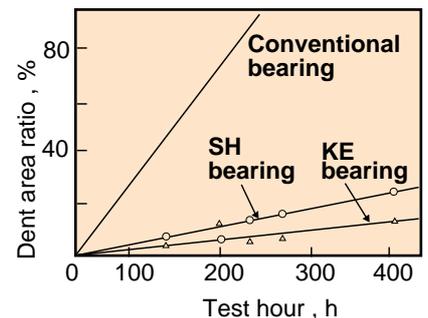
SH bearing: 6 times or longer  
KE bearing: 2 times or longer



#### Dent resistance

SH bearing: 8 times or more  
KE bearing: 10 times or more

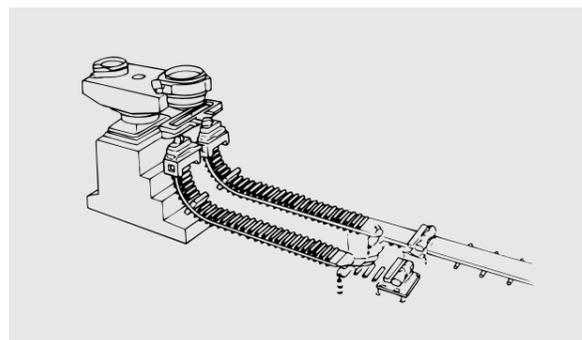
Dent area ratio measured at 20 points of inner ring raceway center and analyzed by computer



### 3. Bearing Types and Performance

LONG LIFE BEARINGS	MATERIAL	CHARACTERISTICS AND EFFECTS	PERFORMANCE (Compared with Conventional Bearings)		APPLICABLE BEARINGS					APPLICATIONS
			Life in clean lubricant	Life in contaminated lubricant	Ball Brg.	Cylindrical Roller Brg.	Tapered Roller Brg.	Spherical Roller Brg.	Needle Roller Brg.	
<b>HRS</b> (High Refining Steel Bearings)	Through Hardened Steel (SUJ2)	<ul style="list-style-type: none"> <li>Equivalent to special remelting steel</li> <li>Long life by minimizing inclusions</li> <li>HRS with SH treatment is more better</li> </ul>	3 times or longer	Same	●	●	●	●		<ul style="list-style-type: none"> <li>For Automobile</li> </ul>
<b>GTS</b> (Greater Toughness Steel Bearings)	Through Hardened Steel	<ul style="list-style-type: none"> <li>Significant toughness and matrix strength by controlling alloy element</li> </ul>	6 times or longer	2 times or longer	●	●	●	●		<ul style="list-style-type: none"> <li>Extra long life under heavy load</li> </ul>
<b>KUJ 7</b> (Medium Heat Resistant Steel Bearings)		<ul style="list-style-type: none"> <li>High resistance against hardness reduction by tempering</li> </ul>	7 times or longer (at 150 °C)	2 times or longer	●	●	●	●		<ul style="list-style-type: none"> <li>For Continuously casting equipment</li> <li>For Turbocharger</li> </ul>
<b>CH 213</b> (Carburized Steel for Large Size Bearings)	Carburized Steel	<ul style="list-style-type: none"> <li>High resistance against hardness reduction by tempering</li> <li>Controlled alloy element</li> </ul>	4 times or longer	2 times or longer		●	●			<ul style="list-style-type: none"> <li>For Steel rolling mill</li> </ul>
<b>SH</b> (Special Heat Treated Bearings)	Through Hardened Steel	<ul style="list-style-type: none"> <li>High surface hardness</li> <li>Adequate resistance to wear</li> </ul>	6 times or longer	10 times or longer	●	●	●		●	<ul style="list-style-type: none"> <li>In contaminated lubricant such as differential and transmission</li> </ul>
<b>KE</b> (New HI-CAP Tapered Roller Bearings)	Carburized Steel	<ul style="list-style-type: none"> <li>High surface hardness</li> <li>Controlled retained austenite</li> </ul>	2 times or longer	10 times or longer			●			

#### Applications



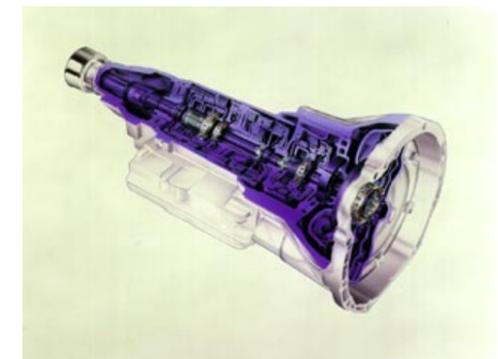
Continuously casting equipment



Steel rolling mill

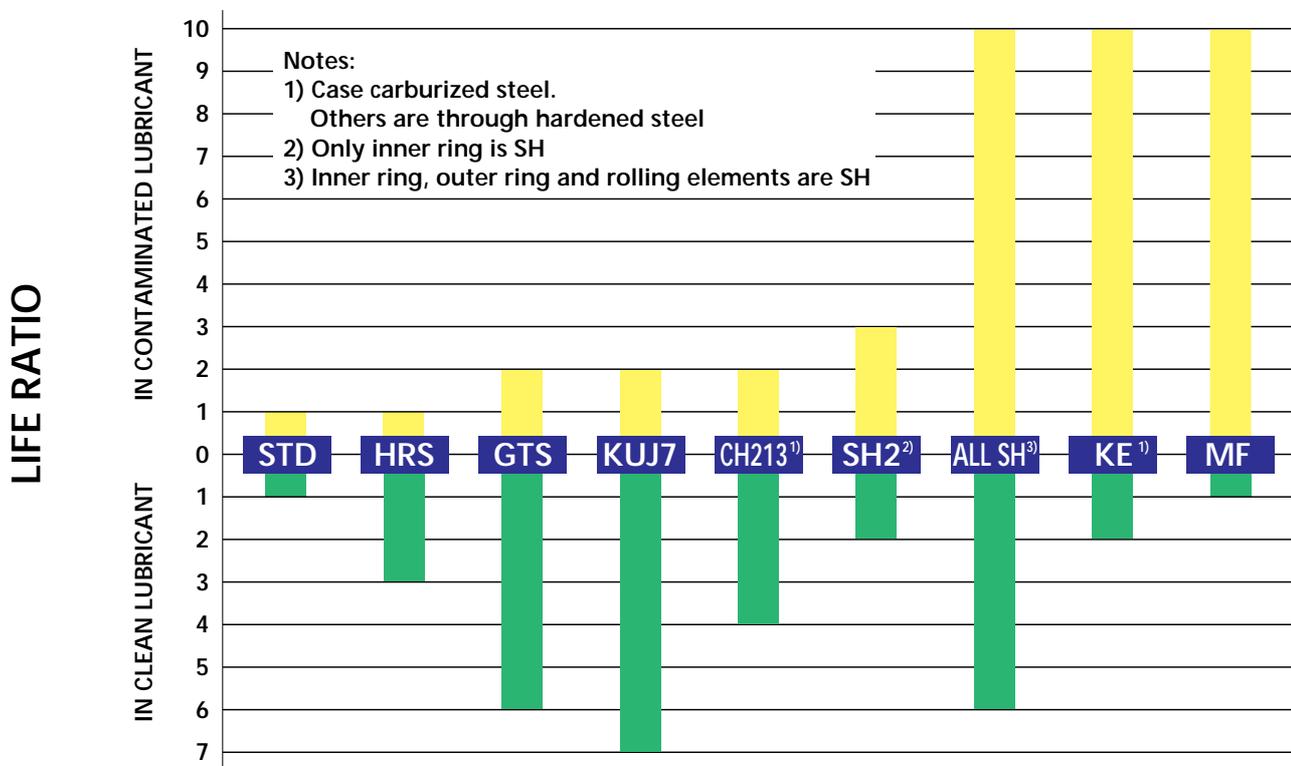


Turbocharger



Transmission

## 4. Life Comparison



### INTERNATIONAL NETWORK

KOYO SEIKO CO.,LTD. HEAD OFFICE  
TEL: 81-6-245-6087 FAX: 81-6-244-0814

KOYO CANADA INC.  
TEL: 1-905-681-1121 FAX: 1-905-681-1392

\*\* KOYO CORPORATION OF U.S.A.  
TEL: 1-216-835-1000 FAX: 1-216-835-9347

\*\* KOYO CORPORATION OF U.S.A.  
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TEL: 52-5-358-0214, 0077 FAX: 52-5-576-8827

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TEL: 44-1908-664422 FAX: 44-1908-607971

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KOYO SEIKO CO.,LTD.(Japan) is certified to ISO9001.  
\*: ISO9002 certified. \*\*: ISO9001 certified.



ISO 9001  
Certificate No. 927265

VALUE & TECHNOLOGY