1.4. Selecting a Link Ball®

A Link Ball model to be selected must satisfy both the permissible load obtained from equation (1) and the dynamic load capacity obtained from equation (2).

Permissible Load P

The yield point strength indicated in the dimensional tables in the "THK General Catalog - Product Specifications," provided separately, refers to the mechanical strength of the bearing. With models AL, BL and RBL, the yield point strength indicates the strength when a load is applied perpendicular to the ball shank axis. With mode RBI, it indicates the strength when an axial load is applied to the holder in the shank axis direction.

Table 2 Safety Factor (f_s)

Type of load	Lower limit of f_s
Constant load in a constant direction	2 to 3
Varying load in a constant direction	3 to 5
Load in varying directions	5 to 8

According to the type of the load, select a bearing that satisfies the following equation from a mechanical strength s viewpoint.

$$P \leqq \frac{P_k}{f_s} \quad \cdots\cdots\cdots(1)$$

where

P : Permissible load (N)
P_k : Yield point strength (N)
f_s : Safety factor (see table 2)

Dynamic Load Capacity C_d

The dynamic load capacity (C_d) refers to the upper limit of load that the spherical area of the Link Ball can receive without showing seizure while the Link Ball is rotating or rocking. The dynamic load capacity is obtained from the following approximation formula using the static load capacity (C_s) (note 1) indicated in the dimensional table in "THK General Catalog - Product Specifications," provided separately.

$$C_d = \frac{C_s}{\sqrt[3]{n}} \quad \cdots\cdots\cdots(2)$$

where

C_d : Dynamic load capacity (N)
C_s : Static load capacity (N)
n : Number of revolutions per minute (min^{-1})

Note 1: Static load capacity (C_s) refers to the value obtained by multiplying the projected area on the spherical section by the permissible surface pressure, and is used to obtain the dynamic load capacity.