BEARINGS, INC.
HIGHTEMP
SET NEW LIMITS.

Proper Sizing of High Temperature Bearings (HU and HU-KX series)

Proper bearing size is determined based on the basic static load rating C_0. For high temperature, T>400 °F, the load carrying capacity of the bearing steel is reduced versus the room temperature load rating data. This is taken into account by multiplying the basic static load rating C_0 by a temperature factor f_T.

The requisite basic static load $C_{0\ req}$ rating can be found from:

$C_{0\ req} = 2\ P_0/f_T$

where

$C_{0\ req}$ = requisite basic static load rating (kN)

P_0 = equivalent static bearing load (kN)

f_T = temperature factor (See Table 3)

The equivalent static bearing load P_0 is found from:

$P_0 = 0.6\ F_r + 0.5\ F_a$

where

F_r = actual radial bearing load (kN)

F_a = actual axial bearing load (kN)

When calculating P_0 the maximum load that can occur should be used and its radial and axial components inserted in the equation above. If $P_0 < F_r$, then $P_0 = F_r$ should be used.

The bearing selected should have a C_0 value that is equal to or greater than the requisite value $C_{0\ req}$.

When ordering specify the High Temperature Part number (HU series) and HTB Corporation will provide the request bearing size with enhanced clearance, lubricant, seals and materials.

Table 3: Temperature factor f_T

Operating temperature	Factor f_T
°C/°F	-
150/302	1
200 /392	0.95
250 /482	0.9
300 /572	0.8
350 /662	0.64