



Relubrication Recommendations:

Mechanical Power ball bearings are furnished with a factory charge of lithium saponification radical grease, frequently referred to as “multipurpose grease”. It has outstanding properties consisting of resistance to high and low ambient operating temperatures, water expellant, and mechanical stability. Standard factory grease charge is 30-40% of available volume within the ball race of the bearing.

Replenishment of Grease

There are four main factors to consider in recommending a maximum time interval between relubrication of ball bearings:

1. Ambient operating temperature
2. Amount of solid matter (dirt and other contaminants) in the bearings operating environment
3. Amount of moisture in the operating environment;
4. Operating RPM of the bearing, as a function of its bore size. This factor may be expressed as “dn” where: **dn=d (bore size in inches) x n (operating RPM)**

Since **KBZ’s** ball bearings are factory supplied with high quality grease most suitable for precision ground ball bearings, the original grease can be used for a considerable period of time without relubrication if the bearing working conditions are favorable and the ambient operating temperature is not too high.

However, even with the best greases available, quality deterioration cannot be avoided over a period of time. When dust or moisture is present or operating temperature is too high, fresh grease should be supplied periodically so that the bearing will provide the long life it was designed to furnish.

As shown on Table 1, the recommended amount of grease to be added at each relubrication period for a 1” bearing is only 0.10 ounce, and for a 1-1/4” bearing is 0.15 ounce. Adding more than that small amount at any one time, and without doing so while the bearing is in operation, and by not adding the grease very slowly, runs the significant risk of “blowing one of the seals” from its seat, leading to the premature failure of the bearing. This can happen to *any* brand bearing made today and that is the main reason why more bearings are damaged by too much grease than by too little. It is also highly recommended to stay well within the guidelines of the maximum supply interval of grease charge as indicated on Table 2.

It is difficult to gauge or somehow measure the amount of grease to add to a bearing using a conventional hand-pump grease gun, the method of choice, but the point here is that whenever relubricating a bearing, great care must be exercised by the technician not to over grease. Even if over greasing does no apparent damage to the seals, it can cause “churning” within the ball race, leading to overheating during normal operation and thus reducing the useful life of the bearing. In any case, if bearings are relubricated, it should be done only by experienced technicians thoroughly familiar with the following proper procedure.

Grease pressure should always be applied very slowly and carefully. Furthermore, the bearing should also be rotating at the time, not stationary, and the serviceman should definitely stop adding grease just as soon as he sees any sign of fresh grease at one of the seals, if not before.

Table 1. Recommended Amount of Grease Charge for Each Relubrication

Shaft Size	Grease Charge (in Ounces)
3/4" or smaller	0.03
7/8" to 1-3/16"	0.10
1-1/4" to 1-1/2"	0.15
1-11/16" to 1-15/16"	0.20
2" to 2-7/16"	0.30
2-1/2" to 2-15/16"	0.50
3" to 3-7/16"	0.85
3-1/2" to 4"	1.50

Table 2. Maximum Supply Interval of Grease Charge Given Operating Conditions

Ambient Conditions	Ambient Temperature (°F)		Maximum Supply Interval	
	Over	Under	dn < 2000	dn > 2000
Fairly Clean	****	122	Not required	1.5-2 years
	122	158	1-2 years	6-12 months
	158	212	4-8 months	1-3 months
	212	****	2-4 months	1-2 weeks
Somewhat Dusty	***	122	1-2 years	6-12 months
	122	158	4-8 months	1-3 months
	158	212	2-4 months	1-2 weeks
	212	****	1-2 weeks	every week
Considerably Dusty	****	158	1-2 months	3-6 weeks
	158	212	2-4 weeks	1-2 weeks
	212	****	1- 7 days	1-3 days
High Moisture and Water Splash	****	****	1-3 days	every day