

Bearing lubricating procedures

Grease filling a bearing



High precision rolling bearings should always be lubricated with clean, fresh grease. It is also important that they be lubricated in a clean, dry environment so as to minimize the possibility of moisture or debris damaging the bearing.

Assuming that you have already determined the specific lubricant to be used, the first step is to determine the proper amount to be introduced into the bearing (refer to section on **lubricant fill quantity**).

The easiest way to measure grease quantity is to repack the grease into a graduated syringe. With this tool, the quantity can be easily monitored.

A grease gun can be used for larger bearings, where the fill quantity is large. However, if a grease gun is used it must be calibrated first. The easiest way is to weigh the amount of grease that the gun puts out for each complete stroke. Knowing the density of the grease, one can then convert the weight into volume. Since most grease guns do not expel consistent amounts per stroke, an average measurement should be used.

$$\text{Volume (cm}^3\text{)} = \frac{\text{Weight (gms)}}{\text{Density (gms/cm}^3\text{)}}$$

Since most bearings are shipped with a corrosion protective coating, you must verify whether or not this coating has to be removed prior to lubrication. These coatings are typically miscible with mineral oil based products and therefore do not need to be removed. However, it is always advisable to remove these coatings when using silicone or perfluorinated based products. In addition, high speed applications may also require the removal of these anti-corrosion coatings (refer to section on **bearing cleaning**).

If the bearing is already mounted in a housing (i.e. pillow block bearings), the grease should be introduced slowly into the grease fitting while rotating the bearing without load.

If the bearing is in its free state, an equal amount of product should be introduced into the pockets between the rolling elements (Note: Divide the fill quantity by the number of rolling elements). The bearing should then be rotated without load so as to distribute the grease throughout the raceways. For precision bearings or pre-loaded bearings running in high speed applications, bearing run-in may be required (refer to section on **bearing run-in procedures**).

Once a bearing has been lubricated it should be put into service. If the lubricated bearing is to be stored, it should be wrapped in specially treated anti-corrosion paper (VCI paper) and placed in a clean, dry area.



Klüber Lubrication München KG, a member of the Freudenberg group