

# Lubrication and Maintenance of Reali-Slim Thin Section Bearings

The lubricant in an anti-friction bearing serves to reduce friction and wear between moving parts, to dissipate heat, and to prevent corrosion of critical surfaces. Kaydon recommends the selection of the proper lubricant be based on an evaluation by the system design engineer of the operating conditions, including at a minimum: rotational speed, type and magnitude of loads, and ambient temperature.

The three types of lubricant commonly used are oil, grease, and dry film or surface treatment.

Oil normally provides more complete lubrication. Because of its liquid state, it provides better coverage of the critical surfaces and assists in dissipating heat more readily, the latter being especially true when circulation and cooling are provided. In high-speed applications where the heating effect is more pronounced, oil is specified (see [page 105](#)). Where minimum torque is a requirement, oil will usually provide lower friction values.

Grease offers certain advantages of its own. Because it is more easily retained, the design of bearing housings and seals is simplified. In many applications, the lubricant itself serves to exclude contaminants when used in conjunction with labyrinths or close clearances between the rotating and stationary structures. For the higher speeds within the range suitable for grease lubrication, a channeling type of grease is often selected.

Dry films and surface treatments have been used as bearing lubricants in applications subject to environmental extremes, particularly where conventional lubricants cannot be tolerated or will not survive. A wide variety of types are available for selection;

options include Tungsten disulfide, graphite, and Molybdenum disulfide.

It is important to note that the quantity of lubricant affects bearing performance under certain operating conditions. Only relatively small amounts of lubricant are necessary to reduce friction and wear if a film can be maintained on all contacting surfaces. Where speed is significant, excessive amounts of oil or grease will result in higher operating temperatures, leading to the possibility of early bearing fatigue. Depending on the bearing design and application, typical grease fill volumes vary from 10% to 30% of the free space available in the bearing.

**Unsealed bearings are supplied with a coating of preservative-type oil for the prevention of corrosion during storage.** Kaydon recommends that this preservative be removed with clean petroleum solvent prior to lubrication. If the preservative oil is not removed, the compatibility of the lubricant with the preservative oil must be confirmed.

In applications where minimum torque is required, the coating should be removed by washing with a clean petroleum solvent followed by immediate relubrication with an oil selected for the application. An option is to have Reali-Slim bearings factory lubricated with a commercial grease or oil selected by the customer in order to facilitate installation.

Sealed bearings are packed approximately one-third full with a multi-purpose industrial grease. Exterior surfaces are given a light coating of the same lubricant for protection during storage in the original package.

## Lubrication and Maintenance of Reali-Slim Thin Section Bearings (continued)

Bearings, with or without seals, can be supplied with optional lubricants. Shown in the accompanying table are some of the greases and oils more frequently specified. Several have been developed to meet the requirements of unusual operating conditions. **Because of this and the variation in cost, it is recommended that lubricants be selected with the assistance of a lubrication expert.**

Due to the finite shelf life of any wet lubricant, factory lubricated bearings should not be held more than two years prior to use. Contact Kaydon for refurbishment instructions for product held beyond two years of receipt.

**To realize the full potential of a Reali-Slim bearing, Kaydon recommends that the customer's maintenance instructions and schedules consider the operating conditions and include procedures to assure the bearings are adequately protected against the intrusion of foreign matter of all types, and fresh oil or grease introduced with sufficient frequency to cleanse the bearing and assure adequate lubrication.**

Figure 5-16

### Lubrication Temperature Ranges

