NTN INSIDER

TECH TIP

Maintaining Proper Lubrication & Understanding Application-Specific Preventative Maintenance

A bearing depends on the continuous presence of a thin film of lubricant between the raceway and rolling elements to perform at optimal levels. Although it doesn't take much, the lubricant is critical for superior performance in demanding application environments such as food and beverage production. In these environments, bearings are subjected to various levels of moisture, contaminants, caustic cleaning agents, and frequent washdown, which often results in more frequent preventative maintenance schedules.

The performance of a bearing is greatly influenced by the quantity of grease. When it comes to lubricating bearings, you want to avoid purging excessive grease past lip seals as they can lose contact and effectiveness, allowing moisture and contaminants in as grease escapes ***(Fig. 1)***. In order to avoid overfilling, it is advisable to replenish the grease while the machine is in operation. Standard relubrication quantity is shown in ***Table 1***.

Relubrication frequency varies with the grease type as well as the operating conditions. As general rule, under ordinary operating conditions, it is desirable to follow a standard relubrication interval guideline ***(Table 2 on next page)*** that takes into consideration such factors as the rotational speed of the bearings, operating temperatures and environmental conditions, with a view to safety. Although this is helpful for most applications, NTN recommends creating a preventative maintenance (PM) schedule that meets the needs of the specific application for most food producing applications. By doing this, you may find that a bearing may require a PM interval that differs from what is generally prescribed.

(continued on next page)

Figure 1: *Excess grease purging past lip seals due to over lubrication.*

Table 1: Relubrication Quantity

Bearing Number	Quantity (grams)	Bearing Number	Quantity (grams)
UC201D1	1.1	UC305D1	2.0
UC202D1	1.1	UC306D1	3.0
UC203D1	1.1	UC307D1	4.3
UC204D1	1.1	UC308D1	5.5
UC205D1	1.3	UC309D1	7.5
UC206D1	1.9	UC310D1	10.5
UC207D1	2.7	UC311D1	13
UC208D1	3.5	UC312D1	16.5
UC209D1	4.1	UC313D1	20
UC210D1	4.6	UC314D1	23.5
UC211D1	6.0	UC315D1	27.5
UC212D1	8.5	UC316D1	33
UC213D1	10.5	UC317D1	38
UC214D1	12	UC318D1	45
UC215D1	13	UC319D1	50
UC216D1	15.5	UC320D1	60
UC217D1	16.5	UC321D1	70
UC218D1	21	UC322D1	85
	22.5	UC324D1	100
	35.5	UC326D1	125
		UC328D1	150

Table 2: Relubrication Interval Guidelines					
Bearing Type	dn Value	Environmental Conditions	Operating Temperature (°F)	Relubrication Frequency	
				Hours	Period
Standard	40,000 and below	Ordinary	+5 to +175	1,500 to 3,000	6 to 12 months
Standard	70,000 and below	Ordinary	+5 to +175	1,000 to 2,000	3 to 6 months
Standard	70,000 and below	Ordinary	+175 to +212	500 to 700	1 month
Standard	70,000 and below	Very Dusty	+5 to +212	100 to 500	1 week to 1 month
Standard	70,000 and below	Water Splashes	+5 to +212	30 to 100	1 day to 1 week

dn = nominal bore diameter (mm) x rpm

For your relubrication needs, NTN offers a comprehensive line of automatic single point lubricators (Fig. 2) to ensure that your bearings are continuously, reliably, and precisely lubricated. Our single point lubricators can easily be incorporated into different types of applications, optimizing bearing lubrication and improving equipment uptime.

Figure 2: *NTN single point lubricator product offering.*

Using the right bearings for demanding washdown applications is also critical to achieving maximum equipment effectiveness. NTN's Sentinel™ Series bearings are designed for the demanding food and beverage production environments. Sentinel Series includes a full line of stainless bearing inserts, stainless and thermoplastic mounted units, and deep groove ball bearings to keep your line rolling.

Please contact your local NTN Sales Representative for more details.

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