ing conditions. To relubricate bearings, follow the machine manufacturer's specifications. Begin by cleaning the grease fitting and removing the drain plug. After adding the new grease, run the unit for about an hour before reinstalling the drain plug. This purges excess grease without damaging the windings. If the manufacturer's lubrication specifications are not available, the "Bearing Relubrication Intervals" chart (Table 3) may be used [2].

TABLE 3: MOTOR BEARING GREASE RELUBRICATION INTERVALS

(IN MONTHS)

rpm	Frame range	Type of service	
		8 hours/day	24 hours/day
3600	143T - 256T	*	*
	284TS - 286TS	6 months	2 months
	324TS - 580US	4 months	2 months
1800	143T - 256T	*	*
	284T - 326T	4 years	18 months
	364T - 365T	1 year	4 months
	404T - 449T	9 months	3 months
	505U - 580U	6 months	2 months
1200 and below	143T - 256T	*	*
	284T - 326T	4 years	18 months
	364T - 449T	1 year	4 months
	505U - 580U	9 months	3 months

Note: Intervals may vary depending upon environmental factors in which the motors operate and the application. For roller bearings, divide above times by 3.

* Bearings in these motors often cannot be relubricated. They should be replaced at least every 5 years for 8 hours/day service, or every 2 years for 24 hours/day service.

WASHING–SEALED AND SHIELDED BEARINGS

During overhaul of electric machines, open bearings in good condition may be washed, cleaned, and packed with grease for reuse. **Sealed or shielded bearings, however, should never be washed, regardless of their condition.**

Thorough washing of sealed or shielded bearings is usually not possible without removing seals and shields. If washing is attempted without removing the seals or shields, dirt and solvent can remain and contaminate the new grease. Furthermore, attempting to remove the seal or the shield for thorough washing of the bearing could easily damage the bearing assembly.

GREASE FILL

Open bearings that are not packed with grease by the manufacturer must be hand-packed by the user. The amount of grease to use depends upon the operating conditions of the machine (speed, temperature, etc.) and the free space available in the housing adjacent to the bearing.

Table 4 (Page 9-5) lists the grease fill used by the manufacturers for their factory-packed closed bearings, as well as the recommended grease fill for their hand-packed open bearings and housing cavities.

GREASE LEAKAGE—SEALED AND SHIELDED BEARINGS

A small amount of grease leakage is normal for shielded and sealed bearings. This relieves the bearings of surplus lubricant and protects them from penetration by contaminants.

Excessive leakage, however, indicates an over-fill of grease or a high operating temperature. In general, bearing manufacturers do not recommend refilling double-sealed or shielded bearings. Bearing replacement is recommended because these types of bearings are lubricated for life.

REFERENCES

[1] *NLGI Spokesman*, National Lubricating Grease Institute, April 1983.

[2] *Mechanical Reference Handbook,* Electrical Apparatus Service Association, June 2009.

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