
PRODUCT GUIDE

Chapter 3 *TeraSpin grease*



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Research and Development is a continuous process. Hence, some of the information provided in this PRODUCT GUIDE may have become obsolete with TeraSpin's new developments in technology.

TeraSpin is a business unit of A.T.E. Enterprises Private Limited, a company engaged in the service of the textile industry since 1939. TeraSpin came into existence in 2012 after A.T.E.'s takeover of SKF India's textile spinning component business. Since then it has been innovating and making continual improvements in quality and reliability in the service of spinning mills and machinery manufacturers around the world.

TeraSpin's product range consists of weighting arms, top rollers & cradles for roving frame and ring frame, spindle bearing units and complete spindles for ring frames and doubling frames. TeraSpin also offers customized upgrades for existing ring spinning and roving frames.

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Chapter 3
TeraSpin grease



Grease TRG 5 for top rollers

Product information:

Normally, Lithium/Calcium based thickeners have low retaining capability. Hence, after a short period of operation, the base oil is lost, i.e. the lubricating oil is lost. Re-greasing has to be done for these bearings, else the bearings will run dry, thereby affecting the performance and life of the top rollers and quality of material delivered.

Further, with the loss of base/thickener, hard debris are left behind in the race, which, if not re-lubricated in time, leads to wear and tear of the ball races and also permanent damage of the rollers. These reasons lead to the logical conclusion that Lithium/Calcium base greased top rollers needs to be re-lubricated frequently.

Barium Complex Soap base: With the use of Barium as the base thickener and that too with a consistency class of 5, you are rest assured that the best lubricant is running in your top roller bearing and you need not worry about re-greasing for a minimum of 30000 hours (4 years approx)!

It has a high drop point temperature, which causes minimal loss of grease even at higher working temperatures. For Lithium/Calcium bases the drop point temperature is on lower side and hence they flow out within a shorter period. The working temperature range of Barium greases is higher, i.e. from -30° to 140° C, which makes it suitable for special applications.

Other properties like higher metal affinity of Barium based greases help the lubricant to be retained on the surfaces of the bearing ensuring lubrication for a longer time. Also water resistance, corrosion resistance and higher load carrying capacity make it the first choice for lubrication application in top rollers on ring frames and roving frames.

Barium based greases also have good resistance to the changes in the ambient conditions in mills and hence give an extended service life.

It is important to note that Barium has not been banned in the EU and other nations for general applications but only for consumption and applications in the areas where food grade items are processed. In top roller bearings, where just 2 gm of grease is used, there is hardly any scope for this argument to stand! Further, our grease is sourced from Klüber which has been categorically exempted from this list of banned lubricants.

Why TRG 5?

The top roller is a double row ball bearing unit specially designed to meet the operating requirements of drafting system. Versatility of the drafting equipment in terms of its capability to process a wider range of fibre types has led to the demand of higher speeds, higher loads and operational reliability. TeraSpin has done pioneering work in manufacturing these top rollers to meet all requirements.

Top roller bearings must be adequately lubricated to prevent direct metallic contact between the rolling elements, raceways and cages and also to protect the bearing surfaces from corrosion and wear.

Most favourable operating temperatures will be obtained when the minimum amount of lubricant is provided that enables reliable lubrication. The lubricant in a bearing arrangement gradually loses its lubricating properties as a result of mechanical work, ageing and the build-up of contamination/displacement from the working area. It is therefore necessary for grease to be replenished/topped-up or renewed. Careful maintenance of these top rollers is an essential pre-requisite to ensure optimum service life and therefore, the importance of lubrication is high. The entire exercise of lubrication can be explained in a few words as under:

“Right type of lubricant in the right place in the right quantity and at the right time ”

All top rollers supplied to the market by various manufacturers are essentially filled with grease specially formulated for this application. Each top roller is filled in with specified amount of grease to take care of the lubrication need for the intended service life, before being re-lubricated.

It is known that a good lubricant

- ✓ Reduces friction
- ✓ Reduces the rate of wear of the bearing
- ✓ Maintains temperature during the operation
- ✓ Protects bearing/rolling elements against corrosion

It has been observed on occasion that in spite of clear recommendation from machinery/component manufacturers regarding use of designated greases for top rollers, over a period of time mills may end up lubricating top rollers with lower grade grease. The wrong choice of grease leads to short lubrication intervals and a higher rate of wear of the bearing components which reduces effective service life of top rollers and may result in inferior quality of yarn produced. High performance grease used by manufacturers in their top rollers, at present, is usually available in the market at higher prices, which discourage customers from using them.

To address the mills concern for quality grease, TeraSpin to offer the same high quality grease that is being filled in all of the best top rollers supplied to the market. This grease TRG-5 can be used on all TeraSpin top rollers as well as top rollers of other makes, being used on roving frames and ring frames.

TeraSpin grease “TRG- 5” is available in convenient 5 kg plastic container packages. Shelf life of this grease is approx 60 months, if kept in its original sealed condition. However, once opened, the grease should be consumed as soon as possible.

TeraSpin TRG-5 Grease is a Barium complex base grease and offers the following advantages:

- ✓ High load carrying capacity
- ✓ Higher metal affinity resulting in better retainability within the bearing ensuring longer service life
- ✓ Being insoluble in water, it has good water resistant properties and protects reliably against corrosion
- ✓ High frictional and wear resistance
- ✓ Higher range of working temperature (–30° to 140° C)

Maintenance

Normally, top rollers do not require de-greasing, if the same grease is filled, i.e. mill uses the same grease as used by OEMs.

However, in case the mill has filled-in a non-standard grease any time or is not sure of the grade/quality of grease, then de-greasing is advisable before filling in the TeraSpin TRG 5 grease.

De-greasing can be done by a suitable solvent, which does not have any corroding effect on the material of top rollers. Before filling the new grease, it should be ensured that the top roller is dried completely as any traces of the solvent inside the top roller will dilute the grease. Necessary amount of grease can then be filled in with the help of a suitable grease gun.

Properties of TRG 5	
Water resistance	Good
Temperature resistance	High
Corrosion resistance	Very Good
Friction and wear resistance	Good
Load carrying capacity	High
Metal affinity	Good
Compatibility	Good

General information for users	
Grease	TRG 5
Application	Top rollers of TeraSpin make and other makes used on roving frame and short staple spinning frame drafting system
Max. speed of top rollers (RPM)	< 500
Lubrication interval	*30000 hours (approx. 4 years)
Shelf life	60 months, if kept in its original sealed condition
Standard packing	5 kg plastic container

** The above interval is given as a general guideline. However, an exact schedule has to be decided based upon the actual working condition prevailing in the mills*

First-aid measures	
After inhalation	Supply fresh air; consult doctor in case of complaints
After skin contact	Wash off with soap and plenty of water. If skin irritation continues, consult a doctor.
After eye contact	Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor
After swallowing	If symptoms persist consult doctor.

Fire-fighting measures

- ✓ Suitable extinguishing agents: Water haze, foam, fire extinguishing powder, carbon dioxide
- ✓ For safety reasons unsuitable extinguishing agents: Water with full jet
- ✓ Special hazards caused by the substance, its products of combustion or resulting gases: In case of fire, carbon monoxide (CO) and hydrocarbons can be released
- ✓ Protective equipment: Do not inhale explosion gases or combustion gases. Follow standard procedure for chemical fires.
- ✓ Additional information: Cool endangered receptacles with water spray. Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Accidental release measures

- ✓ Person-related safety precautions: Not required.
- ✓ Measures for environmental protection: Do not allow to enter sewers/surface or ground water.
- ✓ Measures for cleaning/collecting: Pick up mechanically. Dispose of the material collected according to regulations.

Storage

- ✓ Store in cool, dry conditions in well sealed receptacles
- ✓ Store away from foodstuffs and oxidizing agents



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