Klüberoil FT 1-10, 1-22, 1-46

Long-life, energy-saving spindle oils

Your benefits at a glance

- More efficient production due to less downtime
- Extended maintenance intervals due to verifiable longer lubricating oil service life
- Economical consumption of spindle oil due to improved evaporation behavior
- Contribution to achieving your sustainability goals
    - Resource preservation and cost savings due to extended spindle service life
    - Lower heat generation reduces air conditioning costs and improves room temperature of the working environment
    - Proven significant reduction in energy consumption helps to reduce operating costs and protects the environment

Your requirements - our solution

For you as an operator of textile mills or manufacturer of spindles for the spinning industry, lubrication of the high-speed spindle bearings in ring frames is the key point for the efficiency of production. Tough requirements related to high speeds in combination with fine clearances often lead to short lifetimes of the spindles and high energy consumption when the lubricant is not tailored to these special needs. Unnecessarily high maintenance and replacement costs in combination with high energy costs are the result.

The Klüberoil FT 1-series provides optimum support for this requirement profile as these products have been especially developed as wear-protecting and energy-saving spindle oils for application in high-speed ring frames in textile mills.

Klüberoil FT 1-series oils are formulated using a high-viscosity-index, hydro-treated mineral base oil and selected additives to enhance oxidation resistance and provide maximum protection against wear, corrosion and foaming. This enhances the smooth functioning of the spindles and leads to an increase of relubrication intervals. The low coefficient of friction lowers bearing operating temperatures and substantially reduces power consumption. This is especially important considering that the spindles are the single largest power consumer in a ring frame.

Increased spindle life and an improved energy efficiency over competing lubricants was shown under standardized conditions and also in the field.

The excellent air-release and anti-foam properties of Klüberoil FT 1 ensure consistent lubrication under the high agitation conditions found in spindle bearings.

Application

The Klüberoil FT 1-series is preferably used in spindles in high-speed ring frames of textile spinning mills. The oils are designed to lubricate all components of spindle like neck bearings, foot bearings, blade, springs etc.

Klüberoil FT 1-10 is suitable for spindle bearings with high speeds and low loads.

Klüberoil FT 1-22 and 1-46 can be used for special spinning conditions, e.g. for tube lengths above 250 mm and simultaneous spinning of yarn counts coarser than 20 tex, or for spinning without an anti-balloon ring. Please contact your Klüber Lubrication specialist and refer to the instructions of the spindle manufacturer in order to select the correct viscosity.

Application notes

Klüberoil FT 1-series oils can be applied using drip feed oilers, brushes, oil cans or suitable automatic lubricating systems.

Do you need to prove your savings by measurements, e.g. for your energy audit acc. to ISO50001? KlüberEnergy Service can measure how your energy-efficiency-related costs and CO2 emissions have improved by using state-of-the-art methods and international standards. Talk to your Klüber sales engineer or our KlüberEnergy Service experts. We look forward to hearing from you.

Material safety data sheets

Material safety data sheets can be requested via our website www.klueber.com. You may also obtain them through your contact person at Klüber Lubrication.

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Pack sizes	Klüberoil FT 1-10	Klüberoil FT 1-22	Klüberoil FT 1-46
Canister 10 l	+	+	+
Canister 50 l	+		
Drum 200 l	+	+	+

Characteristics	Klüberoil FT 1-10	Klüberoil FT 1-22	Klüberoil FT 1-46
Article number	030169	030170	030171
Appearance	clear	clear	clear
Colour	colourless	colourless	colourless
Service temperature, lower limit	-10 °C	-10 °C	-10 °C
Service temperature, upper limit	100 °C	100 °C	100 °C
Density, DIN 51757, 20°C	approx. 0.85 g/cm³	approx. 0.85 g/cm³	approx. 0.85 g/cm³
Foam test, ISO 6247 / ASTM D892, 24°C, sequence I	≤ 75/10 ml	≤ 75/10 ml	≤ 75/10 ml
Foam test, ISO 6247 / ASTM D892, 24°C, sequence III	≤ 75/10 ml	≤ 75/10 ml	≤ 75/10 ml
Foam test, ISO 6247 / ASTM D892, 93.5°C, sequence II	≤ 75/10 ml	≤ 75/10 ml	≤ 75/10 ml
ISO viscosity grade, DIN ISO 3448, ISO VG	-	22	46
Kinematic viscosity, DIN EN ISO 3104 / DIN 53000-1, based on standard / ASTM D445 / ASTM D7042, 100°C	approx. 2.5 mm²/s	approx. 5 mm²/s	approx. 7.5 mm²/s
Kinematic viscosity, DIN EN ISO 3104 / DIN 53000-1, based on standard / ASTM D445 / ASTM D7042, 40°C	approx. 10 mm²/s	approx. 22 mm²/s	approx. 46 mm²/s
Viscosity index, DIN ISO 2909	≥ 120	≥ 120	≥ 120
Copper corrosion, DIN EN ISO 2160, 3 h, 100°C	1 - 100 - 3 corrosion degree	1 - 100 - 3 corrosion degree	1 - 100 - 3 corrosion degree
Steel corrosion, DIN ISO 7120 / ASTM D665, method A, 24 h, 60°C	rust-free	rust-free	rust-free
Pour point, DIN ISO 3016, ASTM D97, ASTM D5950, ASTM D7346	≤ -30 °C	≤ -30 °C	≤ -30 °C
Ageing behaviour, Klüber method: PA 055, 312 h, 95°C, increase in viscosity at 100°C	≤ 6 %	≤ 6 %	≤ 6 %
Four-ball tester: wear characteristics, ASTM D4172, method: B, 1200 min⁻¹ / 40 kgf, 60 min, 75°C, wear scar diameter	-	≤ 0.65 mm	≤ 0.65 mm
Four-ball tester: wear characteristics, DIN 51350-3, B: 300 N, 60 min	≤ 0.65 mm	-	-
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	24 months	24 months	24 months

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Klüber Lubrication – your global specialist

Innovative tribological solutions are our passion. Through personal contact and consultation, we help our customers to be successful worldwide, in all industries and markets. With our ambitious technical concepts and experienced, competent staff we have been fulfilling increasingly demanding requirements by manufacturing efficient high-performance lubricants for more than 95 years.

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