

Klüberplex BE 31-102...-222...-502

Lubricating greases for extreme requirements



Benefits for your application

- **Longer component life**
 - due to reduced wear and good pressure absorption capacity
- **Reduced maintenance due to**
 - good sealing effect and resistance to water and other media
 - long relubrication intervals and good ageing and oxidation stability

Description

Klüberplex BE 31-102...-222...-502 are lubricating greases based on mineral oil and special calcium soap. They offer high resistance to mechano-dynamical loads and good adhesion properties. Klüberplex BE 31-102...-222...-502 are highly resistant to media, water and water vapour. We recommend testing compatibility prior to series application.

Application

Klüberplex BE 31-102...-222...-502 are lubricating greases for e.g. rolling and plain bearings, pivoting bearings, small gears. They can also be used as sealing and lubricating greases for labyrinth seals and industrial valves and fittings. These greases are used for the long-term and lifetime lubrication of e.g. rolling bearings in automotive components (water pump bearings, universal joint bushings), wet processing machines in the textile industry (festoon steamers, washing machines), spinning machines (top and bottom rollers of drafting frames), conveyors (load rollers in wet areas), paper machines (especially in wet sections), agricultural and construction machinery, machines in the food processing industry, as well as rolling bearings in electric motors, fans and pumps.

Application notes

Klüberplex BE 31-102...-222...-502 greases can be applied by grease guns, brush or spatula. For application via central lubrication systems, please check pumpability with the manufacturer. Commercial detergents can be used for pre-cleaning the friction points.

Compatibility with plastics and elastomers

Klüberplex BE 31-102...-222...-502 greases are compatible with plastics that are resistant to mineral oil or greases based on mineral oil. However, for safety reasons, we recommend checking compatibility prior to series application.

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.

| Pack sizes | Klüberplex BE 31-102 | Klüberplex BE 31-222 | Klüberplex BE 31-502 |
|-----------------|----------------------|----------------------|----------------------|
| Cartridge 400 g | + | + | + |
| Can 1 kg | + | + | + |
| Bucket 25 kg | + | + | + |
| Drum 180 kg | + | + | + |

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| Product data | Klüberplex BE 31-102 | Klüberplex BE 31-222 | Klüberplex BE 31-502 |
|--|--------------------------------|--------------------------------|--------------------------------|
| Article number | 017135 | 017132 | 017126 |
| Lower service temperature | -15 °C / 5 °F | -10 °C / 14 °F | -10 °C / 14 °F |
| Upper service temperature | 120 °C / 248 °F | 140 °C / 284 °F | 140 °C / 284 °F |
| Texture | fibrous | fibrous | fibrous |
| Colour space | brown | brown | brown |
| Density at 20 °C | approx. 0.96 g/cm ³ | approx. 0.96 g/cm ³ | approx. 0.96 g/cm ³ |
| Worked penetration, DIN ISO 2137, 25 °C, lower limit value | 265 x 0.1 mm | 245 x 0.1 mm | 245 x 0.1 mm |
| Worked penetration, DIN ISO 2137, 25 °C, upper limit value | 295 x 0.1 mm | 275 x 0.1 mm | 275 x 0.1 mm |
| Kinematic viscosity of the base oil, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 40 °C | approx. 100 mm ² /s | approx. 220 mm ² /s | approx. 500 mm ² /s |
| Kinematic viscosity of the base oil, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 100 °C | approx. 12 mm ² /s | approx. 19 mm ² /s | approx. 31 mm ² /s |
| Corrosion inhibiting properties of lubricating greases, DIN 51802, (SKF-EMCOR), test duration: 1 week, distilled water | | <= 1 corrosion degree | <= 1 corrosion degree |
| Drop point, DIN ISO 2176, IP 396 | >= 190 °C | >= 190 °C | >= 190 °C |
| Speed factor (n x dm) | 1 000 000 mm/min | 500 000 mm/min | approx. 200 000 mm/min |
| Flow pressure of lubricating greases, DIN 51805, test temperature: -10 °C | | <= 1 400 mbar | <= 1 400 mbar |
| Flow pressure of lubricating greases, DIN 51805, test temperature: -15 °C | <= 1 400 mbar | | |
| Water resistance, DIN 51807 pt. 01, 3 h/90 °C, rating | <= 1 - 90 | <= 1 - 90 | <= 1 - 90 |
| Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx. | 36 months | 36 months | 36 months |

Changeover of lubricating greases

Used grease removal and relubrication of bearings with a new grease

Having made the decision to use new grease in a rolling bearing, the old grease should be removed completely from the rolling bearings prior to applying the new grease. Alternatively, it may be possible in certain cases to purge the bearing with the new grease thus forcing out the original grease fill.

Purging should only be undertaken in rolling bearings equipped with a grease relief outlet to enable the existing grease to drain completely from the bearing. In systems lubricated-for-life or in oil-tight systems, relubrication should not be implemented as this could result in malfunctions or severe bearing damage.

Prior to initiating the changeover procedure, the rolling bearings should be inspected. If there are fitting deficiencies, internal clearance issue or if bearing damage exists, the lubricant changeover may not prove worthwhile.

Preliminary inspections

Grease compatibility

Is the new grease really compatible with the old one? Compatibility should be checked with great care. If the two greases are incompatible, liquefaction, overheating or bearing damage can be the consequence. You will find an overview of various compatible lubricant compositions on the next page. If you have any further questions, please do not hesitate to contact our specialists.

The right amount of grease in the bearing

The correct quantity of grease will vary based on the bearing type and bearing rotational speed. It is therefore important to determine the precise grease quantity for the bearings prior to changeover. Purging of a bearing with fresh grease will involve completely filling the bearing with grease. This method may prove unsuitable for instance when considering high-speed bearings which require an extremely low percentage of grease fill.

Changeover from industrial grease to food-grade grease with NSF H1-registration

As described in the chapter “Food-grade greases”, particular attention is paid to applications under hygienically critical conditions. To attain the “H1 condition” as quickly as possible, relubrication intervals have to be reduced, particularly after the grease changeover process. The more frequently NSF H1-registered grease is applied to the bearing, the sooner the industrial grease is squeezed out completely.

How it's done:

To remove the old grease from the bearing, with hand rotation or slow idling, pump the fresh grease slowly into the rotating bearing until colour and consistency of the grease leaking out of the bearing correspond to that of the new grease. This change indicates that almost no old grease is left in the bearing and the feed channels are cleared. In case of a pillow-block housing, remove the cap and scrape out the grease in the free space of the housing by hand.

Repeat the relubrication process after 1-2 operating hours or during continuous operation. The first two relubrication intervals should be reduced: Implement the first relubrication after one week and the second after the second week of operation. Afterwards, relubrication can be undertaken at normal intervals. Once the lubricating grease has been changed, relative power and current consumption, relubrication intervals etc. have to be inspected in detail. If everything works according to plan or even better, changeover has been successful.

HINT: Clean the grease nipples prior to applying new grease to ensure contaminants are not forced into the bearing contact zones. Lubricate bearings whilst they are rotating. Pump the grease slowly and carefully into the bearing to prevent overheating.

Do you have any questions regarding grease changeover? Please do not hesitate to contact our experts.



Miscibility of base oils

| | Mineral oil | Synth. hydrocarbon | Esteroil | Polyglycol | Silicone oil (methyl) | Perfluoroalkyl-ether | Silicone oil (phenyl) | Polyphenylether oil |
|-----------------------|-------------|--------------------|----------|------------|-----------------------|----------------------|-----------------------|---------------------|
| Mineral oil | + | + | + | - | - | - | +/- | + |
| Synth. hydrocarbon | + | + | + | - | - | - | - | + |
| Ester oil | + | + | + | + | - | - | + | + |
| Polyglycol | - | - | + | + | - | - | - | - |
| Silicone oil (Methyl) | - | - | - | - | + | - | +/- | - |
| Perfluoroalkylether | - | - | - | - | - | + | - | - |
| Silicone oil (Phenyl) | +/- | - | + | - | +/- | - | + | + |
| Polyphenylether oil | + | + | + | - | - | - | + | + |

+ miscible

+/- partially miscible

- not miscible

Miscibility of thickeners*)

| | | Metal soaps | | | | Complex soaps | | | | | Other thickeners | | |
|------------------|-----------|-------------|-----|-----|-----|---------------|-----|-----|-----|-----|------------------|----------|------|
| | | Al | Ca | Li | Na | Al | Ba | Ca | Li | Na | Bentonite | Polyurea | PTFE |
| Metal soaps | Al | + | +/- | + | +/- | + | +/- | + | + | +/- | + | + | + |
| | Ca | +/- | + | + | + | + | + | + | +/- | + | + | + | + |
| | Li | + | + | + | - | + | + | + | + | - | +/- | +/- | + |
| | Na | +/- | + | - | + | + | + | +/- | +/- | + | - | + | + |
| Complex soaps | Al | + | + | + | + | + | + | +/- | + | +/- | +/- | +/- | + |
| | Ba | +/- | + | + | + | + | + | +/- | +/- | + | + | +/- | + |
| | Ca | + | + | + | +/- | +/- | +/- | + | + | + | +/- | + | + |
| | Li | + | +/- | + | +/- | + | +/- | + | + | +/- | + | +/- | + |
| | Na | +/- | + | - | + | +/- | + | + | +/- | + | - | + | + |
| Other thickeners | Bentonite | + | + | +/- | - | +/- | + | +/- | + | - | + | + | + |
| | Polyurea | + | + | +/- | + | +/- | +/- | + | +/- | + | + | + | + |
| | PTFE | ++ | + | + | + | + | + | + | + | + | + | + | + |

+ miscible

+/- partially miscible

- not miscible

*) Base oils must be miscible