

your global specialist

Seaworthy.

A selection of lubricants for marine
and offshore applications





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| We offer more than just lubricants | 4 |
| Selection of applications: Optimally equipped with our speciality lubricants | 6 |
| Selected lubricants for ships and offshore platforms | 8 |
| Lubricant dispensers | 18 |

We offer more than just lubricants

Efficiency, sustainability, competitiveness and profitability are crucial for your business success. Our lubricants and services can contribute to your success and competitiveness. In a personal exchange with you, we would like to introduce our services and discuss the comprehensive advantages of our products. Please take advantage of our knowledge and learn how we can help create comprehensive efficiency gains. If we do not have the right speciality lubricant for your application, let us talk about a new development.

The lubricant – a small investment that makes a big difference

Lubricants have a major impact on maintenance costs and the service life of equipment. We work in close cooperation with manufacturers of components and equipment to extend service intervals and component lifetime while increasing operational reliability and efficiency. The investment in a lubricant is relatively

small – however it can make a big difference. Even on OEM lubricant lists, there can be significant differences in the performance of the approved lubricants. Speciality lubricants from Klüber Lubrication are always a good choice.

Speciality lubricants from Klüber Lubrication – the benchmark for the marine industry

Our lubricants have proven effective for boats, ships and offshore platforms. Unique tribological know how, raw materials of highest quality and our experience in designing lubricants in close cooperation with leading OEMs from different industries are the backbone for our benchmark setting marine products. Whether hydrodynamic oil film thickness, load carrying capacity, corrosion protection, water wash out stability, resistance to hydrolysis and oxidation or very low temperature performance – our speciality lubricants are right at the forefront of lubrication technology.

An example: Test results show superior water resistance with Klüberplex AG 11-462

Grease loss due to rain, waves, and spray on steel wire rope and other deck equipment contributes to increased lubricant usage and higher operating costs. Klüberplex AG 11-462 with its excellent water resistance and adhesion offers:

- Extended re-lubrication intervals
- Lower grease consumption
- Better corrosion and wear protection

This helps lower your operating costs and increase your profits.

Test procedure ASDM D-4049

1. Application of approx. 3 g of grease onto steel plate and weigh
2. Spray water (38 °C, 2.8 bar) for 5 minutes
3. Clear all grease that was pushed off of the top surface of the plate
4. Dry at 66 °C for 1 hour, then reweigh
5. Calculate % of grease sprayed off of the plate

Test result ASDM D-4049 (Water spray off)



Standard EP2 grease after test:
88 % spray-off

Klüberplex AG 11-462:
1 % spray-off

We offer more than just lubricants

Unique product portfolio – complemented by outstanding bio-products

Reducing the impact on the environment is important to the shipping and offshore industry. We have a comprehensive selection of high performance lubricants including an industry leading range of speciality marine products that meet the highest environmental requirements.

Legislation, regulation and compliance – we are your reliable partner

We take our time to develop our powerful and innovative products to ensure superior performance in addition to meeting regulatory requirements such as the US Vessel General Permit (VGP),

Ecolabel program, OSPAR convention, and others. Compliance plus performance is a must for us.

Unique testing and analytic facilities – foundation for tailor-made products

Klüber Lubrication only launches a new lubricant after it has been put through extensive testing. Your specific requirements are our yardstick. In the lab we are able to simulate the extreme stresses placed on lubricants in the marine and offshore environments. Our unique testing facilities include more than 100 test rigs, some of which we developed for our own particular testing purposes. We also perform our own lubrication analysis of field samples to expand our formulation experience and safeguard quality and performance.

An example: Clean deck and increased safety – no drip down of Klüberplex AG 11-462

Adhesion is important for open gear and steel wire rope lubricants to prevent dripping down, especially in tropical temperatures or on sun heated surfaces.

Due to its unique composition, Klüberplex AG 11-462 shows excellent adhesion to metal. Customers benefit from reduced wear of machine elements and better corrosion protection.

In addition operators benefit from:

- Lower work load and grease consumption
- Cleaner decks – increasing worker safety
- Extended life of equipment operating in harsh environmental conditions.

In-house adhesion test



NLGI 2 open gear grease Klüberplex AG 11-462

Pictures show 2.5 mm thick grease layer after 48 h at 70°C on a vertically positioned sheet metal

Open slewing gear lubricated with



standard black lubricant

Klüberplex AG 11-462

Result: Klüberplex AG 11-462 achieves better adhesion on metal surfaces at higher temperatures than other open gear lubricants.



Market leader – more than 90 years of experience

We have decades of experience and know what the industry expects. Klüber Lubrication is the global market leader in speciality lubricants and tribological high-end solutions. Multinational groups as well as small- and medium-sized companies from a wide variety of industries have been relying on our competence and know-how.

We are closer to you – wherever you are

Wherever your ship may be: you can rely on our experienced experts who provide support and advice on lubrication and help you select the right lubricant. It is our aim to offer you high-quality speciality lubricants and services around the globe along with the high technical competence Klüber Lubrication is known for. We meet this aim through our worldwide network of production

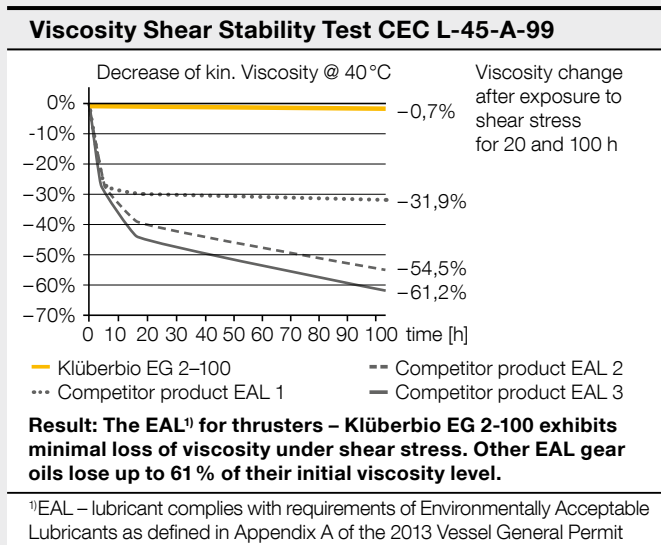
and sales companies, competent dealers and our highly specialised experts ready to respond to your individual requirements.

Klüber Lubrication – our worldwide mission

It is our mission to be your first choice and long-term partner for speciality lubricants. Our approach is different and sets us apart in a world filled with generic lubricant suppliers. Whether you are looking for a specific lubricant to maximise the efficiency of a single component or you are looking for a high performance general purpose lubricant to support standardization, we provide the service and consultation to select the most suitable lubricant for your equipment according to your requirements. In summary, we sell speciality lubricant solutions, not commodities. We will serve your whole fleet – locally or worldwide. Contact us soon to begin your partnership with Klüber Lubrication.

An example: High shear stability of Klüberbio EG 2 gear oils ensure long service of equipment and lubricant

One measure of a lubricant's protective value is how well it withstands shearing under pressure. "Shear Stability" describes a lubricant's ability to resist a decrease in viscosity due to exposure to mechanical loads. Maintaining the appropriate viscosity is critically important to both protect the equipment with a proper lubrication film and to extend the time between oil change intervals.



With our speciality lubricants you can increase your:

- Operation and maintenance efficiency
- Profitability
- Productivity
- Competitiveness
- Sustainability
- Workplace safety



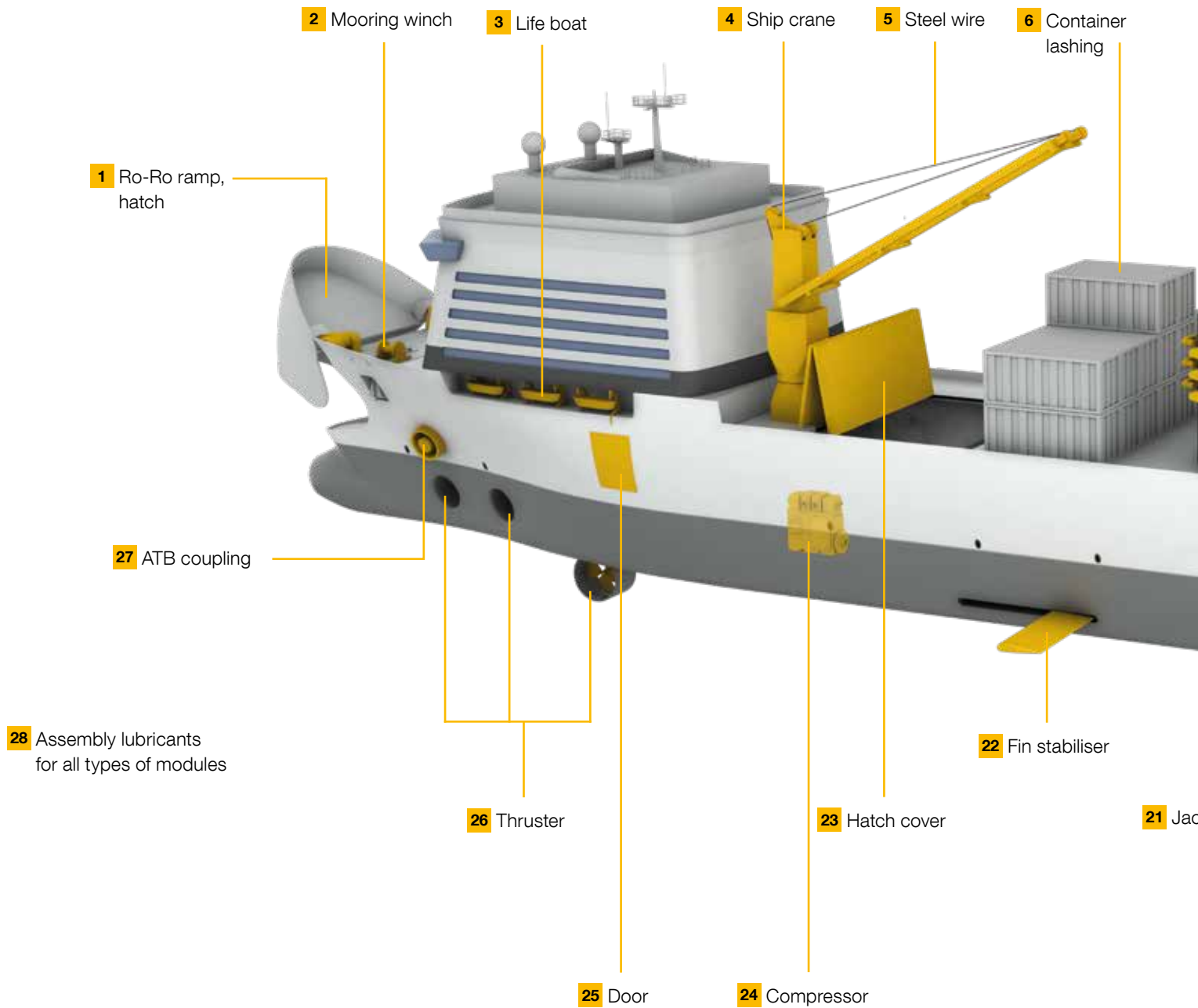
And you can reduce your:

- Maintenance costs
- Wear
- Failure risk
- Procurement costs
- Disposal costs

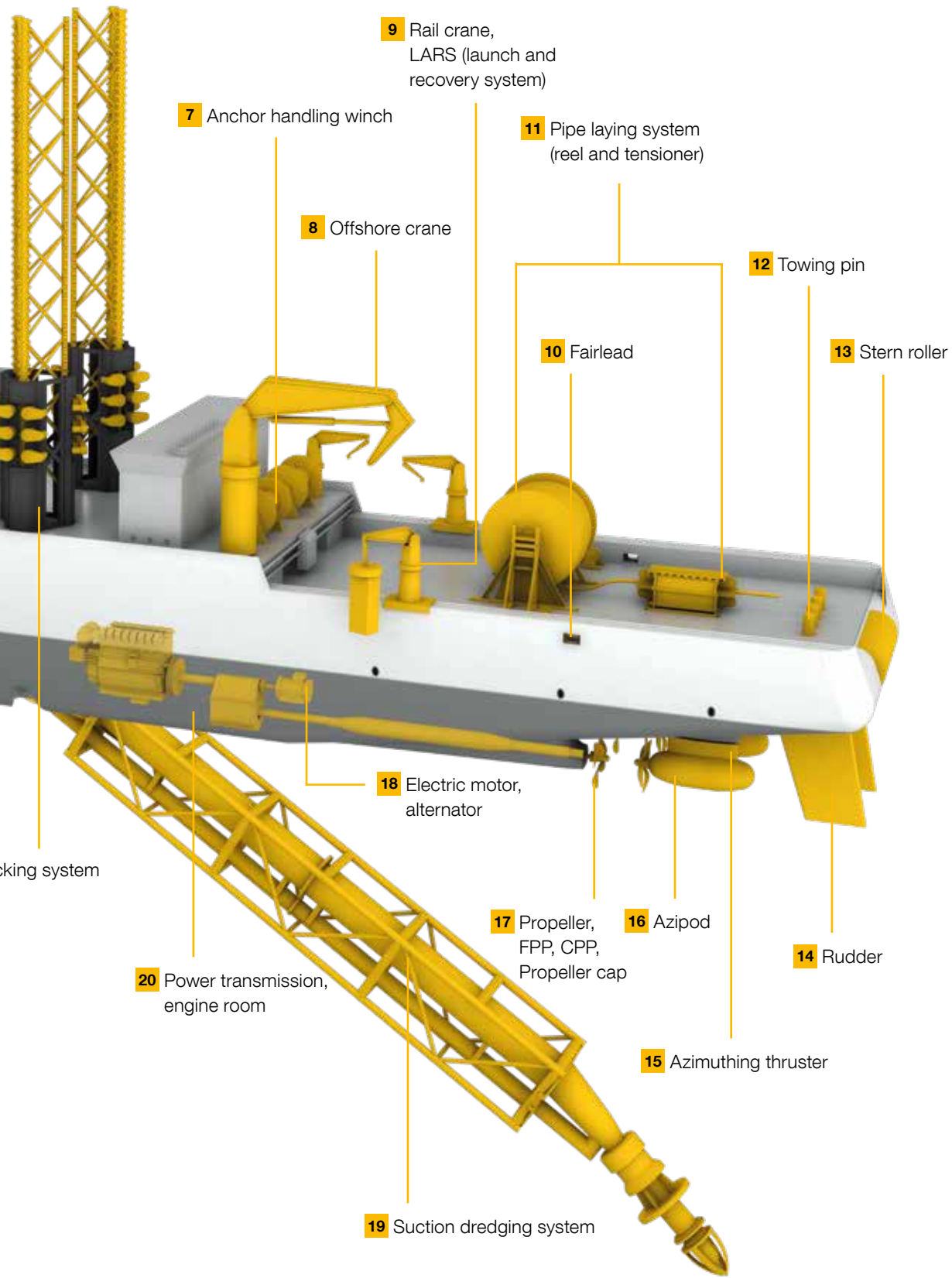


Please see www.klueber.com/marine for more information about us and our speciality lubricants for the marine industry.

Selection of applications: Optimally equipped with our speciality lubricants



This illustration shows the various applications of our marine lubricants. To show as many applications as possible in one illustration, we included components of the following ship types in this synthetic ship: Ro-ro ferry, cruise ship, cargo ship, wind turbine installation vessel, anchor handling tug supply vessel, pipe layer, cutter suction dredger, ATB tug boat.



Selected lubricants for ships and offshore platforms

| Module | Component/ lubrication point | Speciality lubricant from Klüber Lubrication | Base oil viscosity at 40 °C (104 °F) according to DIN 51562 part 1 [mm ² /sj, appr. | Compressor oil | Hydraulic oil according to HEES, ISO 15380 | Gear oil according to CLP, DIN 51517-3 | |
|------------------------------|--|---|---|----------------|--|--|--|
| 1 Ro-Ro ramp, hatch | Hydraulic system | Klüberbio LM 2-22 ¹⁾ | 22 | | ✓ | | |
| | | Klüberbio LM 2-32 ¹⁾ | 32 | | ✓ | | |
| | | Klüberbio LM 2-46 ¹⁾ | 46 | | ✓ | | |
| | Steel wire rope | Klüberplex AG 11-462 | 460 | | | | |
| | | Klüberbio AM 92-142 | 140 | | | | |
| | Hinge, bearing | Klüberplex AG 11-462 | 460 | | | | |
| Klüberbio AG 39-602 N | | 600 | | | | | |
| 2 Mooring winch | Hydraulic system | Klüberbio LM 2-22 ¹⁾ | 22 | | ✓ | | |
| | | Klüberbio LM 2-32 ¹⁾ | 32 | | ✓ | | |
| | | Klüberbio LM 2-46 ¹⁾ | 46 | | ✓ | | |
| | Enclosed gearbox | Klüberoil GEM 1-100 N | 100 | | | ✓ | |
| | | Klüberoil GEM 1-150 N | 150 | | | ✓ | |
| | Open gear | Klüberbio EG 2-100 | 100 | | | ✓ | |
| Klüberbio EG 2-150 | | 150 | | | ✓ | | |
| 3 Life boat | Hinge, bearing | Klüberplex AG 11-462 | 460 | | | | |
| | | Klüberbio AG 39-602 N | 600 | | | | |
| | Steel wire rope | Klüberplex AG 11-462 | 460 | | | | |
| | | Klüberbio AM 92-142 | 140 | | | | |
| | 4 Ship crane | Hydraulic motor / cylinder | Klüberbio LM 2-22 ¹⁾ | 22 | | ✓ | |
| | | | Klüberbio LM 2-32 ¹⁾ | 32 | | ✓ | |
| 8 Offshore crane | | Klüberbio LM 2-46 ¹⁾ | 46 | | ✓ | | |
| 9 Rail crane, LARS system | Sheave bearing / slewing bearing | Klüberplex BEM 34-131 N | 135 | | | | |
| | | Klüberbio BM 32-142 | 140 | | | | |
| | Hinge | Klüberplex AG 11-462 | 460 | | | | |
| | | Klüberbio AG 39-602 N | 600 | | | | |
| | Open gear on hoisting winch | Klüberplex AG 11-462 | 460 | | | | |
| | Open gear at slewing bearing and drive pinion tooth rack & pinion | Klüberplex AG 11-462 | 460 | | | | |
| 5 Steel wire rope | Umbilical cable | Klüberplex AG 11-462 | 460 | | | | |
| | Steel wire rope | Klüberplex AG 11-462 | 460 | | | | |
| | | Klüberbio AM 92-142 | 140 | | | | |
| 6 Container lashing | Twist lock | Klüberplex BE 11-462 | 500 | | | | |
| | Turnbuckle threads | Klüberplex AG 11-462 | 460 | | | | |

empty field = not relevant; + = good; ++ = excellent; ✓ = applicable, fulfilled; ¹⁾ available from 2021; ²⁾ from Q3/2021



| | Grease, NLGI class | Wear protection and load carrying capacity | Corrosion protection | Adhesion | Resistance to water spray-off and washout | Low temperature performance | Demulsifying oil | Biodegradation > 60 %, OECD 301 B or F | European Ecolabel | OSPAR | Environmentally Acceptable Lubricant |
|--|--------------------|--|----------------------|----------|---|-----------------------------|------------------|--|-------------------|-------|--------------------------------------|
| | | + | + | | | ++ | ++ | ✓ | | | ✓ |
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Selected lubricants for ships and offshore platforms

| Module | Component/ lubrication point | Speciality lubricant from Klüber Lubrication | Base oil viscosity at 40 °C (104 °F) according to DIN 51562 part 1 [mm ² /s], appr. | Compressor oil | Hydraulic oil according to HEES, ISO 15380 | Gear oil according to CLP, DIN 51517-3 |
|---|---|---|---|----------------|--|--|
| 7 Anchor handling winch | Open gear Running-in lubricant | GRAFLOSCON B-SG 00 ULTRA | 500 | | | |
| | Open gear Operational lubricant for central lubrication systems | Klüberfluid C-F 3 ULTRA | 16,500 | | | |
| | | Klüberbio LG 39-700 N | 680 | | | |
| | Open gear Operational lubricant for manual lubrication | Klüberplex AG 11-462 | 460 | | | |
| | | Klüberbio AG 39-602 N | 600 | | | |
| | Enclosed gear box | Klübersynth GEM 4-220 N | 220 | | | ✓ |
| | | Klübersynth GEM 4-320 N | 320 | | | ✓ |
| | | Klüberbio EG 2-320 | 320 | | | ✓ |
| | Bearing – rolling bearing | Klüberplex AG 11-462 | 460 | | | |
| | | Klüberplex BEM 34-131 N | 135 | | | |
| Klüberbio BM 32-142 | | 140 | | | | |
| Anchor winch spooling device | Klüberplex AG 11-462 | 460 | | | | |
| | Klüberbio AG 39-602 N | 600 | | | | |
| Hydraulic motor | Klüberbio EG 2-68 | 68 | | ✓ | | |
| 10 Fairlead | Bearing | Klüberplex AG 11-462 | 460 | | | |
| | | Klüberbio AG 39-602 N | 600 | | | |
| | | Klüberbio BM 32-142 | 140 | | | |
| 11 Pipe laying system (reel and tensioner) | Bearing – reel | Klüberplex BEM 34-131 N | 135 | | | |
| | Bearing – tensioner | | | | | |
| 12 Towing pin | Bushing, bronze plain bearing | Klüberplex AG 11-462 | 460 | | | |
| | | Klüberbio AG 39-602 N | 600 | | | |
| 13 Stern roller | Bearing – plain bearing | Klüberbio LG 39-700 N | 680 | | | |
| 14 Rudder | Bearing and seal | Klüberbio LG 39-701 N | 680 | | | |
| | | Klüberbio AG 39-602 N | 600 | | | |
| | | Klüberbio BM 32-142 | 140 | | | |
| 15 Azimuthing thruster | Gear and bearing | Klüberbio EG 2-68 | 68 | | | ✓ |
| | | Klüberbio EG 2-100 | 100 | | | ✓ |
| | | Klüberbio EG 2-150 | 150 | | | ✓ |
| | Steering shaft seal | Klüberbio AG 39-602 N | 600 | | | |

empty field = not relevant; + = good; ++ = excellent; ✓ = applicable, fulfilled; ²⁾ from Q3/2021



| | Grease, NLGI class | Wear protection and load carrying capacity | Corrosion protection | Adhesion | Resistance to water spray-off and washout | Low temperature performance | Demulsifying oil | Biodegradation > 60 %, OECD 301 B or F | European Ecolabel | OSPAR | Environmentally Acceptable Lubricant |
|--|--------------------|--|----------------------|----------|---|-----------------------------|------------------|--|-------------------|-------|--------------------------------------|
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| | | ++ | + | | | ++ | ++ | ✓ | | | ✓ |
| | | ++ | + | | | ++ | ++ | ✓ | | | ✓ |
| | | ++ | + | | | ++ | ++ | ✓ | ✓ | | ✓ |
| | 1-2 | ++ | ++ | ++ | ++ | + | | ✓ | √ ²⁾ | | ✓ |

Selected lubricants for ships and offshore platforms

| Module | Component/ lubrication point | Speciality lubricant from Klüber Lubrication | Base oil viscosity at 40 °C (104 °F) according to DIN 51562 part 1 [mm ² /s], appr. | Compressor oil | Hydraulic oil according to HEES, ISO 15380 | Gear oil according to CLP, DIN 51517-3 | |
|--|---|---|---|----------------|--|--|--|
| 16 Azipod V | Azipod V and X – slewing bearing with gear teeth | Klübersynth GEM 4-320 N LWC | 320 | | | ✓ | |
| | | Klüberbio EG 2-320 | 320 | | | ✓ | |
| | Azipod X | Klüberfluid C-F 3 ULTRA | 16,500 | | | | |
| | | Azipod V and X – sealing grease for turning shaft seal | Klüberbio AG 39-602 N | 600 | | | |
| | Azipod VI – seal and support bearing (ice operation) | Klüberbio LG 39-701 N | 680 | | | | |
| | Azipod V – thrust bearing | Klübersynth GEM 4-320 N LWC | 320 | | | ✓ | |
| | Azipod X – thrust bearing (hybrid bearing) | Klübersynth GEM 4-150 N LWC | 150 | | | ✓ | |
| | Azipod V and X – propeller shaft bearing | Klübersynth GEM 4-320 N LWC | 320 | | | ✓ | |
| | Azipod C and D | Azipod X – propeller shaft seal | Klüberbio RM 2-150 | 150 | | | |
| | | Azipod C and D – slewing bearing | MICROLUBE GL 262 | 280 | | | |
| Azipod C and D – propeller shaft bearing and seal | | MICROLUBE GL 262 | 280 | | | | |
| Azipod C and D – gear teeth on slewing bearing | | GRAFLOSCON C-SG 0 ULTRA | 680 | | | | |
| Azipod C and D – thrust bearing | Klübersynth GEM 4-320 N LWC | 320 | | | ✓ | | |
| 17 Propeller | Stern tube bearing and propeller shaft seal | Klüberbio RM 8-100 | 100 | | | | |
| | | Klüberbio RM 2-100 | 100 | | | | |
| | | Klüberbio RM 2-150 | 150 | | | | |
| | Servo system for pitch setting | Klüberbio EG 2-68 | 68 | | | ✓ | |
| Klüberbio LM 2-46 ¹⁾ | | 46 | | ✓ | | | |
| Propeller cap | Klüberbio AG 39-602 N | 600 | | | | | |
| | Klüberbio BM 32-142 | 140 | | | | | |
| 18 Electric motor | Electric motor bearing, Generator bearing | Klüberplex BEM 41-132 | 120 | | | | |

empty field = not relevant; + = good; ++ = excellent; ✓ = applicable, fulfilled; ¹⁾ available from 2021; ²⁾ from Q3/2021



| | Grease, NLGI class | Wear protection and load carrying capacity | Corrosion protection | Adhesion | Resistance to water spray-off and washout | Low temperature performance | Demulsifying oil | Biodegradation > 60 %, OECD 301 B or F | European Ecolabel | OSPAR | Environmentally Acceptable Lubricant |
|--|--------------------|--|----------------------|----------|---|-----------------------------|------------------|--|-------------------|-------|--------------------------------------|
| | | ++ | + | | | + | ++ | | | | |
| | | ++ | + | | | + | ++ | ✓ | | | ✓ |
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| | 1-2 | ++ | ++ | ++ | ++ | + | | ✓ | √ ²⁾ | | ✓ |
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Selected lubricants for ships and offshore platforms

| Module | Component/ lubrication point | Speciality lubricant from Klüber Lubrication | Base oil viscosity at 40 °C (104 °F) according to DIN 51562 part 1 [mm ² /s], appr. | Compressor oil | Hydraulic oil according to HEES, ISO 15380 | Gear oil according to CLP, DIN 51517-3 |
|------------------------------------|---|---|---|----------------|--|--|
| 19 Suction dredging system | Gearbox | Klüberoil GEM 1-150 N Klüberoil GEM 1-320 N | 150 320 | | | ✓ ✓ |
| | Plain bearing on shaft for cutter head | Klüberlub BE 71-501 | 490 | | | |
| 20 Power transmission | Marine reduction gearbox | Klüberoil GEM 1-100 N Klüberoil GEM 1-150 N | 100 150 | | | ✓ ✓ |
| | | Klübersynth GEM 4-100 N Klübersynth GEM 4-150 N | 100 150 | | | ✓ ✓ |
| | | Curved tooth gear coupling – oil lubrication | STRUCTOVIS BHD MF Klüberoil GEM 1-460 N | 4,750 460 | | |
| | Curved tooth gear coupling – grease lubrication | GRAFLOSCON C-SG 500 PLUS Klüberlub BE 41-1501 | 680 1,500 | | | |
| | | Klüberplex GE 11-680 | 680 | | | |
| | | Split roller bearing for propeller shaft | Klüberplex BEM 41-132 | 120 | | |
| | 20 Electric motor Alternator/ generator | Electric motor bearing Alternator bearing (grease lubricated) | Klüberplex BEM 41-132 | 120 | | |
| Generator bearing (oil lubricated) | | Klüber Summit SH 46 | 46 | ✓ | | |
| 21 Jacking system | Tooth rack and pinion – manual lubrication | Klüberbio AG 39-602 N | 600 | | | |
| | Tooth rack and pinion – automatic lubrication | Klüberbio LG 39-700 N Klüberbio LG 39-701 N | 680 680 | | | |
| | | Planetary gearbox | Klübersynth GH 6-320 | 320 | | |
| 22 Fin stabiliser | Shaft bearing, rigging axis bearing | Klüberbio EG 2-100 Klüberbio EG 2-150 | 100 150 | | | ✓ ✓ |
| | | Mechanical arm and pivot bearing | Klüberbio AG 39-602 N Klüberbio BM 32-142 | 600 140 | | |
| | Hydraulic power unit | | Klüberbio LM 2-32 ¹⁾ Klüberbio LM 2-46 ¹⁾ Klüberbio EG 2-68 | 32 46 68 | | ✓ ✓ |

empty field = not relevant; + = good; ++ = excellent; ✓ = applicable, fulfilled; ¹⁾ available from 2021; ²⁾ from Q3/2021



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| 1-2 | | ++ | ++ | ++ | ++ | + | | ✓ | ✓ ²⁾ | | ✓ |
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| 2 | | ++ | + | | | ++ | | ✓ | ✓ ²⁾ | | ✓ |
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| | | ++ | ++ | | | ++ | ++ | ✓ | | | ✓ |

Selected lubricants for ships and offshore platforms

| Module | Component/ lubrication point | Speciality lubricant from Klüber Lubrication | Base oil viscosity at 40 °C (104 °F) according to DIN 51562 part 1 [mm ² /sj, appr. | Compressor oil | Hydraulic oil according to HEES, ISO 15380 | Gear oil according to CLP, DIN 51517-3 | |
|---|---|---|---|----------------|--|--|---|
| 23 Hatch cover | Hydraulic system | Klüberbio LM 2-22 ¹⁾ | 22 | | ✓ | | |
| | | Klüberbio LM 2-32 ¹⁾ | 32 | | ✓ | | |
| | | Klüberbio LM 2-46 ¹⁾ | 46 | | ✓ | | |
| | Tooth rack (MacRack) | Klüberplex AG 11-462 | 460 | | | | |
| Hinge | Hinge | Klüberplex AG 11-462 | 460 | | | | |
| | | Klüberbio AG 39-602 N | 600 | | | | |
| 24 Compressor | Gas screw compressor | Klüber Summit PGS 68 | 68 | ✓ | | | |
| | | Klüber Summit PGS 100 | 100 | ✓ | | | |
| | | Klüber Summit PGS 150 | 150 | ✓ | | | |
| | Gas piston compressor | Gas piston compressor | Klüber Summit NGL-444 | 80 | ✓ | | |
| | | | Klüber Summit NGL-555 | 100 | ✓ | | |
| | | | Klüber Summit NGL-777 | 150 | ✓ | | |
| | | | Klüber Summit NGL-888 | 220 | ✓ | | |
| | Screw and piston compressors for refrigeration | Screw and piston compressors for refrigeration | Klüber Summit R 100 | 32 | ✓ | | |
| | | | Klüber Summit R 150 | 46 | ✓ | | |
| | | | Klüber Summit R 200 | 68 | ✓ | | |
| Compressed air screw and piston compressor | Compressed air screw and piston compressor | Klüber Summit PGI 68 | 68 | ✓ | | | |
| | | Klüber Summit PGI 100 | 100 | ✓ | | | |
| | | Klüber Summit PGI 150 | 150 | ✓ | | | |
| 25 Door | Hydraulic system | Klüberbio LM 2-22 ¹⁾ | 22 | | ✓ | | |
| | | Klüberbio LM 2-32 ¹⁾ | 32 | | ✓ | | |
| Klüberbio LM 2-46 ¹⁾ | | 46 | | ✓ | | | |
| Hinge | Hinge | Klüberbio AG 39-602 N | 600 | | | | |
| | | | | | | | |
| 26 Thruster Swing-up thruster Tunnel thruster | Gear and bearing | Klüberoil GEM 1-68 N | 68 | | | ✓ | |
| | | Klüberoil GEM 1-100 N | 100 | | | ✓ | |
| | | Klüberoil GEM 1-150 N | 150 | | | ✓ | |
| | Gear and bearing | Gear and bearing | Klüberbio EG 2-68 | 68 | | | ✓ |
| | | | Klüberbio EG 2-100 | 100 | | | ✓ |
| | | | Klüberbio EG 2-150 | 150 | | | ✓ |
| 27 ATB coupling | Cylinder Pin and bushing Rack and pinion gear Connection system and pads | Klüberbio AM 12-501 | 500 | | | | |
| | | | | | | | |
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| | | | | | | | |
| 28 Assembly lubricants for all types of modules | Assembly paste for screws and connections | Klüberpaste 46 MR 401 | 350 | | | | |
| | | Klüberpaste HEL 46-450 | 42 | | | | |

empty field = not relevant; + = good; ++ = excellent; ✓ = applicable, fulfilled; ¹⁾ available from 2021; ²⁾ from Q3/2021



| | Grease, NLGI class | Wear protection and load carrying capacity | Corrosion protection | Adhesion | Resistance to water spray-off and washout | Low temperature performance | Demulsifying oil | Biodegradation > 60 %, OECD 301 B or F | European Ecolabel | OSPAR | Environmentally Acceptable Lubricant |
|--|--------------------|--|----------------------|----------|---|-----------------------------|------------------|--|-------------------|-------|--------------------------------------|
| | | + | + | | | ++ | ++ | ✓ | | | ✓ |
| | | + | + | | | ++ | ++ | ✓ | | | ✓ |
| | | + | + | | | ++ | ++ | ✓ | | | ✓ |
| | 2 | ++ | ++ | ++ | ++ | | | | | | |
| | 2 | ++ | ++ | ++ | ++ | | | | | | |
| | 1-2 | ++ | ++ | ++ | ++ | + | | ✓ | ✓ ²⁾ | | ✓ |
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| | | ++ | + | | | ++ | | | | | |
| | 1-2 | ++ | ++ | ++ | ++ | + | | ✓ | ✓ ²⁾ | | ✓ |
| | | ++ | + | | | | ++ | | | | |
| | | ++ | + | | | | ++ | | | | |
| | | ++ | + | | | | ++ | | | | |
| | | ++ | + | | | ++ | ++ | ✓ | | | ✓ |
| | | ++ | + | | | ++ | ++ | ✓ | | | ✓ |
| | | ++ | + | | | ++ | ++ | ✓ | ✓ | | ✓ |
| | 1 | ++ | ++ | ++ | ++ | + | | ✓ | | | ✓ |
| | 0 | ++ | ++ | + | | | | | | | |
| | 1 | ++ | ++ | | | | | | | | |

Lubricant dispensers

Many lubrication points are difficult to access or a special challenge from a health and safety perspective.

To increase safety, reliability and machine availability, Klüber Lubrication supplies high-performance oils and greases in “intelligent packages” for automatic lubrication of your machines and components.

Selected lubricants are available in automatic lubricant dispensers for single-point lubrication.

These tried-and-tested electromechanical or electrochemical devices are available with various speciality lubricants.



Engine room applications:

- fan bearings
- electric motor bearings
- pump bearings

Lubrication system:

- Klübermatic FLEX 60 cm³
- Klübermatic FLEX 125 cm³



Life raft davit applications:

- rolling bearings
- cable pulley

Lubrication system:

- Klübermatic FLEX 60 cm³

Flexible – for use in demanding applications

Klübermatic FLEX is a compact, ready-to-use lubricator. It can be used for diverse applications at temperatures between –20 °C and +60 °C. The lubrication interval can be selected in monthly increments between 1 and 12 months. An electronically controlled chemical reaction generates the pressure to ensure continuous fresh lubricant supply to the lubrication point at set intervals. Klübermatic FLEX is available in volumes of 60 cm³ and 125 cm³.

Applications

Klübermatic FLEX is particularly suitable for single-point lubrication in rolling and plain bearings, slideways, open gears, toothed racks, shaft seals and chains. The lubrication system is dust-tight and protected against splash water (according to IP 68).



Example:

Klübermatic FLEX filled with Klüberplex AG 11-462 for on-deck applications



For an overview of our biodegradable and environmentally acceptable lubricants, please see our brochure 'Powerful, Naturally'.

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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 90 years.

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