



**SENNEBOGEN**

**PREMIUM  
QUALITY  
FOR YOUR  
MACHINE**

***SEN protect***  
***SEN lube***

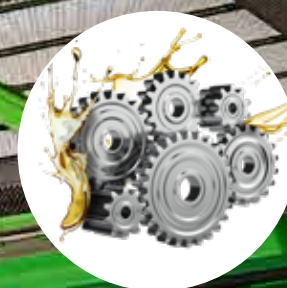
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**LUBRICANTS AND AUXILIARIES**

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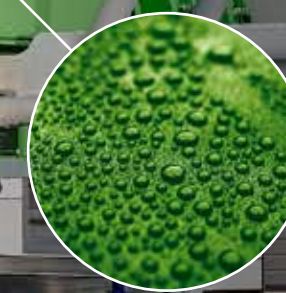
# MAXIMUM PERFORMANCE AND LIFETIME.



**SENlube GEAR SYNTH 220**  
Highest pressure stability and temperature resistance



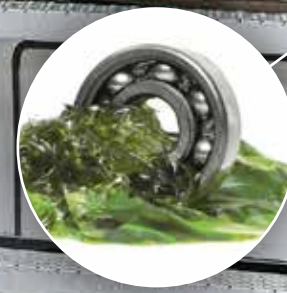
**SENlube HYDRO POLAR**  
Outstanding performance even at low temperatures



**SENprotect PAINT**  
Protects your machine under extreme operating conditions



**SENlube ENGINE LONGLIFE 5W-30-LA**  
Protects the engine and prevents wear




**SENlube MULTI GREASE**  
Premium quality for optimum component protection



**GEAR LONGLIFE**  
Reduces maintenance costs with the best wear protection

The lubricants and auxiliaries in the SENlube and SENprotect series are perfectly tailored to the needs of your SENNEBOGEN machines. They are based on our decades of experience and our commitment to the highest quality.

 You will find our entire product range on the following pages









# PREMIUM LUBRICANTS - PERFECT MATCH FOR YOUR MACHINE.

Quality that pays off: with premium lubricants from SENlube, you can ensure that your SENNEBOGEN machine delivers top performance over its entire service life. SENlube is also ideally suited to many machines from other manufacturers.

- ✓ **Maximum performance with low consumption**  
This makes every use even more efficient. You save time and money!
- ✓ **Extremely durable**  
Meaning you are well prepared for use in extreme weather and the toughest of conditions.
- ✓ **Highest level of protection**  
SENlube protects your machine from wear and corrosion through specially adapted compositions.
- ✓ **Especially long-lasting**  
Thanks to the perfect formulation, you benefit from a long service life and extended maintenance intervals.
- ✓ **Low total cost of ownership**  
SENlube ensures maximum machine availability and low maintenance and operating costs.

# PRODUCT OVERVIEW

AREA OF APPLICATION	PRODUCT	APPLICATION TEMPERATURE	AVAILABLE IN	PROPERTIES	SENNEBOGEN NO.
ENGINE 	SENLUBE ENGINE LONGLIFE 5W-30-LA	-30°C to +50°C	5 L	Synthetic, low-ash high-performance Longlife engine oil with a wide temperature range for state-of-the-art diesel engines with exhaust aftertreatment systems	403401
			20 L		295129
HYDRAULICS 	SENLUBE HYDRO D46	-20°C to +50°C	20 L	Longlife HVLP-D Multigrade hydraulic oil with proven wear protection and excellent stick-slip properties	295116
			209 L		295115
	SENLUBE HYDRO POLAR	-30°C to +40°C	20 L	Premium cryogenic hydraulic oil for up to -30°C ambient temperature	295119
HYDRAULICS + AXLES 	SENLUBE GEAR LONGLIFE	-20°C (axles)/-10°C (hydraulics) to +50°C	20 L	Premium special oil for hydraulic systems in connection with free-fall winches and for axles (e.g. Dana, ZF)	295122
			209 L		406990
GEARS 	SENLUBE GEAR HYPOID LS	-30°C to +50°C	20 L	Premium gear oil 85W-90 GL-5 with robust Limited Slip performance	295124
	SENLUBE GEAR SYNTH 220	-30°C to +50°C	20 L	Synthetic premium gear oil CLP 220 based on PAO	295126
LUBRICATED BEARINGS 	SENLUBE MULTI GREASE	-25°C to +150°C	400 g cartridge (Lube Shuttle)	Semi-synthetic high-performance grease for the lubrication of pressure loaded rolling and plain bearings - even at elevated operating temperatures and in humid environments. Special adhesion and corrosion protection.	303098
			25 kg		295133
TELESCOPIC BOOM 	SENLUBE TELE GREASE	-30°C to +110°C	400 g cartridge (Lube Shuttle)	Semi-synthetic special grease for lubrication of telescopic booms. Special adhesion and very high corrosion protection. Anti-stick-slip equipment to prevent stick-slip during telescoping.	303097
			25 kg		295135



RECOMMENDED FOR  
CUMMINS ENGINES  
AND MANY OTHER  
MANUFACTURERS\*



# ENGINE OIL ENGINE LONGLIFE 5W-30-LA

Synthetic, low-ash high-performance life-long engine oil with a wide temperature range for state-of-the-art diesel engines with exhaust aftertreatment systems.

**Save fuel**

The long-life engine oil has an innovative composition with which you will notice significant fuel savings compared to higher-viscosity oils.

**By using the SENlube Engine Longlife 5W-30-LA, you can optimize your maintenance regime by extending oil change intervals – and thus save money.**

By using the SENlube Engine Longlife 5W-30-LA, you can optimize your maintenance regime by extending oil change intervals – and thus save money.

**Reduce emissions**

The synthetic engine oil is particularly low in ash and so prevents blockage or poisoning of exhaust gas aftertreatment systems. This guarantees low emissions during the entire service life of the machine.

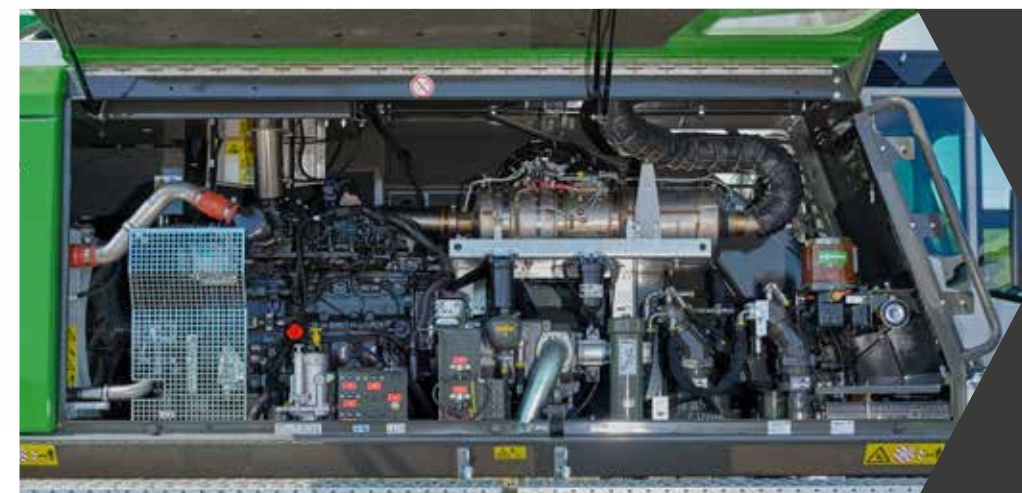
**Reduce wear**

The unique composition of the additives prevents engine wear and ensures high piston cleanliness. That's why the high-performance oil is recommended by leading manufacturers such as Cummins\*.

**PROPERTIES**

KINEMATIC VISCOSITY	@ -40°C	mm <sup>2</sup> /s	75
	@ 100°C	mm <sup>2</sup> /s	12.1
VISCOSITY INDEX			159
TEMPERATURE RANGE			-30°C to +50°C
AREA OF APPLICATION			Engine

RECOMMENDED FOR ALL SENNEBOGEN MACHINES.



**AVAILABLE IN**

- 5 liters (403401)
- 20 liters (295129)

\* meets API CK-4 and Cummins CES 20086 requirements





# HYDRAULIC OIL HYDRO D46

Long-life HVLP-D Multigrade hydraulic oil with proven wear protection and excellent stick-slip properties.

- Smooth operation thanks to the high purity of the oil, outstanding stick-slip properties and resistance even in harsh operating conditions.
- Enduring performance**  
Longer service life and maintenance intervals due to excellent corrosion protection and excellent filterability.

- Innovative composition**  
Anti-wear technology protects both the oil and the machine from water and contamination.
- Perfect performance across a wide temperature range – from low start to high end temperatures.



PROPERTIES			
KINEMATIC VISCOSITY	@ -40°C	cSt	46
	@ 100°C	cSt	9.3
VISCOSITY INDEX	185		
TEMPERATURE RANGE	-20°C to +50°C		
AREA OF APPLICATION	Hydraulic oil		

## Anti-wear technology

Special additives bind dirt and water and separate them from the oil. This noticeably extends the service life of the hydraulic oil, even under the toughest of conditions!

### Peptization process



Dispersant molecules    Solid particles

### Solubilization process



Dispersant molecules    Oil insoluble liquid

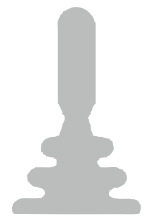
➤ **RECOMMENDED FOR ALL SENNEBOGEN MACHINES WITH HYDRAULIC APPLICATIONS.**



### AVAILABLE IN

- 20 liters (295116)
- 209 liters (295115)





# HYDRAULIC OIL HYDRO POLAR

Premium cryogenic hydraulic oil for up to -30°C ambient temperature.

RECOMMENDED FOR ALL  
SENNEBOGEN MACHINES WITH  
HYDRAULIC APPLICATIONS.

## PROPERTIES

KINEMATIC VISCOSITY	@ -30°C	cSt	1052
	@ 40°C	cSt	32
	@ 100°C	cSt	9.93
VISCOSITY INDEX			300
TEMPERATURE RANGE			-30°C to +40°C
AREA OF APPLICATION			Hydraulic oil

EXTRA HIGH  
VISCOSITY  
INDEX!



**Perfect for low-temperature use**

Thanks to its high viscosity index, SENlube Hydro Polar continues to flow in conditions where other hydraulic oils would become too viscous.

**Safe start**

Even at very low temperatures – only minimal heating of the system is required.

**Maximum protection**

SENlube Hydro Polar contains special anti-wear, low-ash additives.

**Rapid deployment**

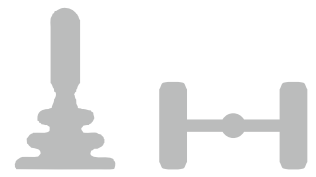
Your machine is up and running faster than with conventional hydraulic oils. You save time and money.

AVAILABLE IN

20 liters (295119)







# SPECIAL OIL GEAR LONGLIFE

Premium special oil for hydraulic systems in connection with free-fall winches and for axles (e.g. Dana, ZF).

**MAXIMUM COMFORT WHEN OPERATING FREE-FALL WINCHES**



- Reliable partner for hydraulics and axles**  
State-of-the-art additive technology protects against wear and oxidation, reduces downtime and at the same time lowers maintenance costs.
- Friction-reducing composition**  
Special additives reduce friction in the systems and so contribute to maintaining the value of the machine.
- Work smoothly all the time**  
The excellent flow characteristics enable the hydraulic systems of free-fall winches to work smoothly and quickly, even at low temperatures.



PROPERTIES			
KINEMATIC VISCOSITY	@ -40°C	cSt	46
	@ 100°C	cSt	9.3
VISCOSITY INDEX	138		
TEMPERATURE RANGE	-20°C (axles)/ -10°C (hydraulics) to +50°C		
AREA OF APPLICATION	Axles, free-fall winches		

**RECOMMENDED FOR ALL SENNEBOGEN MACHINES, ESPECIALLY FOR MACHINES WITH FREE-FALL WINCHES.**

**AVAILABLE IN**

- 20 liters (295122)
- 209 liters (406990)







# GEAR OIL GEAR HYPOID LS

Premium gear oil 85W-90 GL-5 with robust limited slip performance.

**Intelligent protection**

Relies on innovative additives with particularly good wear and corrosion protection.

**Persistent**

Excellent limited slip additive, specially developed for axles with limited-slip differential and wet brakes.

**Resilient**

Ensures high thermal and oxidative stability and withstands large loads.

**Especially durable**

Not only does the axle oil have good low-temperature properties, but it also has high aging stability.

PROPERTIES			
KINEMATIC VISCOSITY	@ 100°C	cSt	16.5
VISCOSITY INDEX			101
TEMPERATURE RANGE	°C		-30°C to +50°C
AREA OF APPLICATION			Axles

➤ **RECOMMENDED FOR ALL SENNEBOGEN MACHINES.**

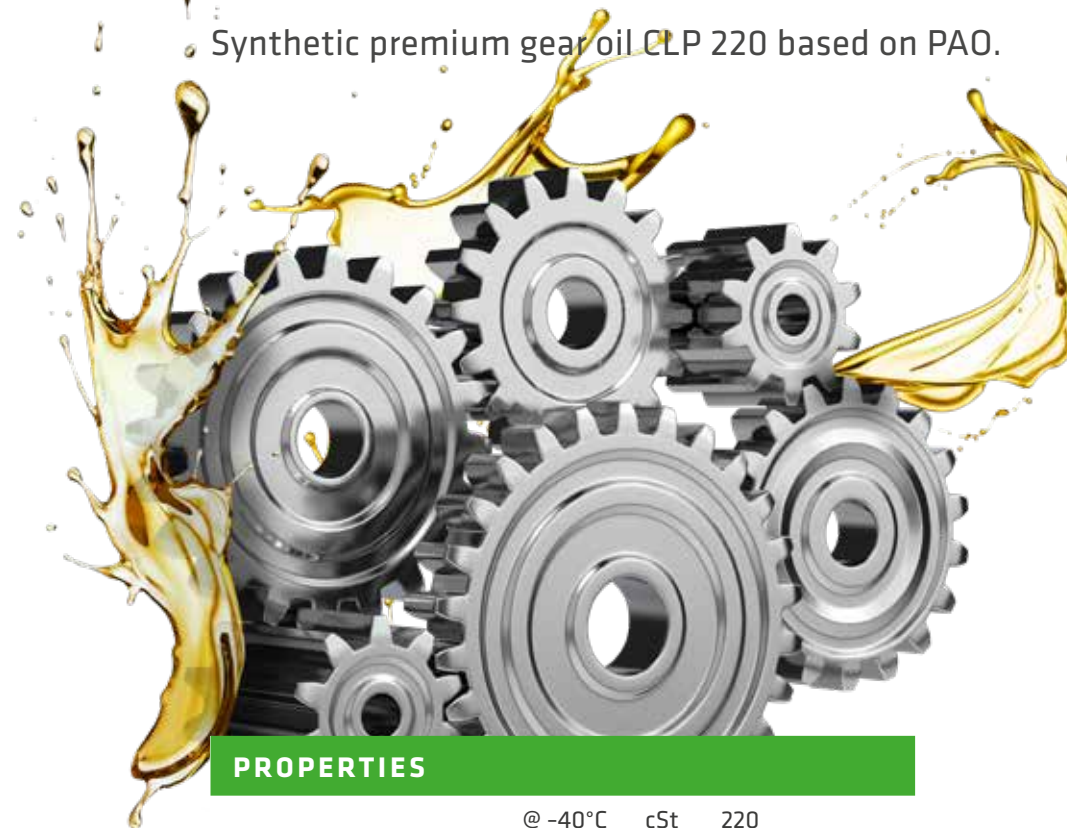


AVAILABLE IN

➤ 20 liters (295124)

# SYNTHETIC GEAR OIL GEAR SYNTH 220

Synthetic premium gear oil CLP 220 based on PAO.



PROPERTIES			
KINEMATIC VISCOSITY	@ -40°C	cSt	220
	@ 100°C	cSt	30
VISCOSITY INDEX			171
TEMPERATURE RANGE	°C		-30°C to +50°C
AREA OF APPLICATION			Gears

➤ **RECOMMENDED FOR ALL SENNEBOGEN MACHINES.**



**Long oil service life**

Synthetic base oils and innovative additives enable extended service intervals.

**Runs smoothly**

Significantly reduced friction increases the efficiency of your machine compared to mineral oil-based products.

**Robust**

The premium gear oil withstands long operating times and high temperatures. Can also be used at low start temperatures.

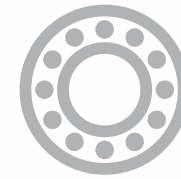
**Protects your machine**

Excellent wear and corrosion protection – for long component service life even under impact loads or in contact with water or solids.

AVAILABLE IN

➤ 20 liters (295126)





# HIGH-PERFORMANCE MULTI GREASE

Semi-synthetic high-performance grease for the lubrication of pressure loaded rolling and plain bearings and gearing on slewing rings

Withstands elevated operating temperatures and humid environments. Premium quality for best component protection and variety simplification. SENlube Multi Grease is particularly strong and offers very high corrosion protection.

**Intelligent active agent system**  
Semi-synthetic technology offers high lubrication and pressure absorption capacity as well as the best protection against vibration wear and rust. Solid lubricants enable excellent emergency running properties.

**Flexible to use and durable**  
Universally usable lifetime grease for highly stressed lubrication points.

## PROPERTIES

TEMPERATURE RANGE	°C	-20°C to +140°C
FOUR BALL TEST WELDING LOAD		> 4,000 N
THICKENER		Lithium complex
AREA OF APPLICATION		Bearings

**RECOMMENDED FOR ALL SENNEBOGEN MACHINES.**

## AVAILABLE IN

- 400 g LUBE SHUTTLE (303098)
- 25 kg (295133)





# SPECIAL GREASE TELE GREASE

Semi-synthetic special grease for lubrication of telescopic booms.

- Special adhesion and very high corrosion protection
- Premium quality for component protection and optimized friction characteristics
- Anti-stick-slip equipment to prevent stick-slip during telescoping thanks to semi-synthetic technology
- Highly weather-resistant

RECOMMENDED FOR ALL SENNEBOGEN MACHINES WITH TELESCOPIC BOOMS.

### PROPERTIES

TEMPERATURE RANGE	°C	-30°C to +110°C
DROP POINT		≥ 140°C
AREA OF APPLICATION		Telescopic boom

### AVAILABLE IN

- 400 g LUBE SHUTTLE (303097)
- 25 kg (295135)

## MODERN CUSTOMER SERVICE FROM A SINGLE SOURCE

Just outside Straubing, we are combining international spare parts and customer service in our new Customer Service Center. This will provide you with even faster order processing and the best possible support.

- Warehouse automation for fastest order processing
- Optimized logistics processes and direct motorway connection
- State-of-the-art equipment and combined expertise for customer service





# AUXILIARIES PREMIUM PROTECTION FOR YOUR MACHINE.

/// **Maximum value retention**

With SENprotect products, you can keep your machine in as-new condition for much longer – especially in tough operating conditions.

/// **Reduced maintenance costs**

The SENprotect series is designed to help you reduce downtime and lower your costs. An investment that pays off!

/// **Maximum protection**

Is your machine often used in extreme conditions? Does it need to withstand low or high temperatures, humidity, salt water and dirt? SENprotect products protect important components over the long term.



# PROTECTIVE FLUID CHROME / ELECTRIC PLUG

Protective fluid for piston rods and electrical plug connectors.



REDUCES  
MOISTURE  
PENETRATION



- /// **Water displacing properties** to protect predominantly smooth surfaces
- /// **Protects your machine** against aggressive environmental influences such as salt water
- /// **Reduces corrosion** even during extended shutdowns and optimizes conductive contact surfaces
- /// **Free from** paint-wetting impairment substances (PWIS), VOC-free solvent
- /// No cleaning required

Recommended as protective fluid for piston rods during longer downtimes

AVAILABLE IN

- /// 400 ml (303095)

# PROTECTIVE FLUID PAINT

Protective fluid for painted surfaces under extreme operating conditions.



- /// **Premium quality** for lifetime surface protection under adverse conditions
- /// **Well-coated** Non-slip, waxy, transparent protective layer – protects surfaces over a long period of time with highly effective inhibitors!
- /// **Long-lasting** Prevents paint damage over several months depending on environmental conditions and keeps your machine in as-new condition



AVAILABLE IN

- /// 400 ml (303096)



# LIFETIME COOLANT ANTIFREEZE



Lifetime coolant with 4,000 hours service intervals

➤ **RECOMMENDED FOR ALL SENNEBOGEN MACHINES WITH CUMMINS OR DEUTZ ENGINES.**

AVAILABLE IN

➤ 20 liters (187301)

- **Reduces maintenance costs:** 4,000 hours service interval and increased lifetime of the water pump
- **Optimized cooling system performance** and protection against pitting and corrosion
- **Aluminum and solder joint protection**
- **Boiling and frost protection (down to -37°C)**
- **Ready-to-use mixture**
- **Meets ASTM D-6210 and Cummins CES 14602 requirements**

## GLOBAL CUSTOMER FOCUS – ON A LOCAL LEVEL

SENNEBOGEN will provide you with comprehensive technical support from your first contact right through to after sales, whether that be with project planning, maintenance requirements or repairing your machine.

- More than 180 sales partners worldwide
- More than 300 service stations
- Subsidiaries and agents in all the most important key regions



Are you interested in SENlube and SENprotect? Contact your SENNEBOGEN dealer for advice.

[www.sennebogen.com](http://www.sennebogen.com)



# KNOWLEDGE FROM A TO Z

## ADDITIVES

Additives are used to give lubricants specific properties. The composition of high-quality base oils and additives determines the quality of the lubricant. Depending on the area of application and requirements, SENlube products contain different types of perfectly matched additives, such as antioxidants (delays oil aging), detergents (removes impurities from the surfaces), dispersants (binds impurities and transports them to the filter), corrosion protection (neutralizes harmful impurities) or wear protection (prevents metal surfaces from welding).

## DROP POINT

The drop point is the temperature at which a substance starts to flow under standardized test conditions.

## FOUR BALL TEST WELDING LOAD

The four-ball device is a test device for determining the welding load and wear characteristics of lubricating greases and lubricating oils. The welding force is given in N (Newton). The higher the value of the lubricant, the better its lubricating effect under load pressure.

## FRICTION COEFFICIENT

Measure of the frictional force in relation to the contact force between two bodies.

## HVLP-D OIL

These high-performance oils (e.g. SENlube HYDRO D46) have particularly good viscosity-temperature behavior and are used in highly stressed systems with fluctuating temperatures.

## INHIBITORS

Additives (see above) that change certain properties of the lubricant in such a way that a chemical or physical reaction (e.g. corrosion) is slowed down, inhibited or prevented.

## LIMITED SLIP ADDITIVE

Addition of additives specially developed for axles with multi-disc self-locking differentials and wet brakes.

## MULTIGRADE OIL

Through the use of special base oils and additives, multigrade oils are designed in such a way that they can be used at both low and high temperatures. They have a high viscosity index.

## PAO BASE

Synthetic oil composed from a modern base oil based on polyalphaolefins (PAO), see also synthetic oils.

## THE ROLE OF LUBRICANTS

Lubricants are all-rounders. They not only lubricate the systems in which they are used, they also cool, protect, transport, seal, transmit forces and keep the components clean.

## SEMI-SYNTHETIC TECHNOLOGY

Semi-synthetic lubricants consist of a mixture of mineral oil, synthetic oil and additives. They combine the special properties of synthetic lubricants with the proven advantages of mineral oils.

## SOLID LUBRICANTS

Thanks to their special properties, solid lubricants are always used when the lubricant has to adhere to the friction point for as long as possible.

## STICK-SLIP EFFECT

The stick-slip effect refers to the undesired jerk-slip of solids moving against each other, for example on piston rods and pistons. If the friction is reduced by using SENlube products, this effect can be significantly reduced.

## SYNTHETIC OIL

Manufactured with especially high-quality base oils and special additives. They offer many advantages over conventional oils. These include, for example, improved cold-start properties and higher, excellent aging stability under high thermal loads in machines, systems and engines.

## TEMPERATURE RANGE

The properties of lubricants change depending on the ambient temperature. The higher the temperature, the thinner the oil becomes, the lower the thicker the oil becomes. Various properties and additives of the oil optimize the properties in the desired operating temperature range (see also viscosity index, multigrade oil).

## VISCOSITY/TEMPERATURE RANGE

Lubricants differ in their viscosity, i.e. in their flow behavior. The higher the viscosity, the less well the oil flows. The possible areas of application and temperatures of a lubricant can be determined, among other things, by its viscosity (see viscosity index). The indicated kinematic viscosity is derived from the ratio of dynamic viscosity and density, the "viscosity-density ratio".

## VISCOSITY INDEX

Viscosity index (VI) describes the behavior of a lubricant as a function of temperature. The higher the viscosity index of an oil, the less its flowability changes at different temperatures (see also multigrade oil).







### SENNEBOGEN ACADEMY

Increase your knowledge because success is based on knowledge. In the SENNEBOGEN ACADEMY we place great importance on ensuring it flows powerfully.  
[www.sennebogen-academy.com](http://www.sennebogen-academy.com)



### SENtrack

Efficient fleet management with SENtrack. Use information that would otherwise stay hidden and increase your efficiency:  
[www.sennebogen.com/sentrack](http://www.sennebogen.com/sentrack)



### RENTAL

Discover the unique range of rental machines available from SENNEBOGEN for your project.  
[rental.sennebogen.com](http://rental.sennebogen.com)



### USED

Discover used SENNEBOGEN machines with high quality and service life.  
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### JOIN OUR OPERATORS' CLUB

The spotlight is on you and your machine! We focus on exclusive information, sharing experiences with other SENNEBOGEN operators as well as fun and enthusiasm.

All the benefits here [www.sennebogen.com/operators-club](http://www.sennebogen.com/operators-club)



# MOVE BIG THINGS WITH US



over **70**  
years of  
experience

**100%**  
family company

over **1800**  
experienced  
specialists worldwide

**5**  
production plants  
in Germany

over **180**  
sales and service  
partners worldwide

we export to  
over **100**  
countries



Telehandler  
4-5.5 t

Balancer  
130-300 t

Material handler  
17-420 t

Duty cycle crane  
13.5-300 t

Crawler crane  
50-300 t

Telescopic crane  
16-130 t

Port crane  
300 t



# **SEN protect**

# **SEN lube**

Order no. 406555  
SEN lube 092220

This catalog details the lubricants and auxiliaries in the SENNEBOGEN Maschinenfabrik GmbH range. Please contact your local SENNEBOGEN sales partner for information about the lubricants and auxiliaries that can be used on your machine.

The specifications of the operating and maintenance instructions valid for the respective machine apply. All information, including the availability of the specified container sizes, technical specifications and approvals, is provided without guarantee. Subject to product range changes and further developments. All product designations used may be trademarks of SENNEBOGEN Maschinenfabrik GmbH or other supplying companies, and any use by third parties for their own purposes may violate the rights of the owners.

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