

Supplier Approval

SEW drives of the series

X.F... / X.K... / P... / XP... / P-X...

Lubricant approvals – latest version: www.sew-eurodrive.de/lubricants

47 049 09 05
63107848.09

SEW
EURODRIVE

EN Page 1/9

EGT-TD 31.01.2019

Change information:

Chap. /page	Description (changes to the previous edition)	Modification no.
1.1 /3	Service factor changed.	
1.1 /3	Peak torque added	
1.3 /4	Polyglycol lubricants deleted, FVA guideline 606 added	
1.4 /5	Cooling systems partly deleted	
2 /9	Cassida Fluid GL lubricant at supplier Fuchs added.	

Supplier Approval

SEW drives of the series

X.F... / X.K... / P... / XP... / P-X...

Lubricant approvals – latest version: www.sew-eurodrive.de/lubricants

47 049 09 05
63107848.09



EN Page 2/9

EGT-TD 31.01.2019

Table of contents

1.	Introduction/area of application	3
1.1	Explanations of the structure of the tables and abbreviations.....	3
1.2	Explanations on the individual lubricants.....	4
1.3	Lubricant change intervals.....	4
1.4	Explanations on oil supply systems and their viscosity	5
1.5	Compatibility of lubricants with radial oil seals	6
2.	Industrial gear units (X.F..., X.K..., P..., XP..., P-X...).....	7

1. Introduction/area of application

The present document describes the approved lubricants for SEW-EURODRIVE industrial gear units (helical gear units, bevel-helical gear units and planetary gear units). The approvals are valid worldwide.

SEW accepts no liability if different lubricants are used in the gear units and/or they are used outside of the recommended temperature ranges.

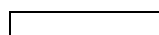
Lubricants for industrial gear units are subject to approval. The approval will be made according to the document "Supplier approval for qualification and approval of lubricants – gear unit oils" 07004__13 in its current version.

NOTE: Printed documents may not include the latest changes. For the latest version of this document, refer to <https://www.sew-eurodrive.de/lubricants>.

1.1 Explanations of the structure of the tables and abbreviations

Produkt / Product	Öltyp / Oil Type	ISO, SAE NLGI	SEW EURODRIVE	b bremer & leguil		Castrol	
X...	NSF H1	VG 68 ¹⁾		-35 -20 -10	+45	-40 -25 -15	+45
				Cassida Fluid HF 68		Optileb HY 68	
P...	CLP HC	VG 220 ¹⁾		-20 -5 +5	+75	-25 -5 +5	+75
				Cassida Fluid GL 220		Optileb GT 220	
						SEW 07004213	
	CLP HC	VG 460 ¹⁾		-15 +5 +20	+90	-15 +5 +20	+95
				Cassida Fluid GL 460		Optileb GT 460	
						SEW 07004213	

Abbreviations:



Mineral lubricant



Synthetic lubricant

CLP

Mineral oil

CLP HC

Synthetic hydrocarbons (PAO)

E

Oil based on esters



Lubricant for the food processing industry and feed industry. Oils are NSF-H1 registered and compliant according to FDA 21 CFR § 178.3570.



Biodegradable oil (lubricant for agriculture, forestry, and water management)

1)

Peak load factor F_F and peak output torque factor M_{K2per} are limited as follows:
 $F_F \geq 1.6 \rightarrow M_{K2per} \leq 1.25 \times M_{N2}$. In case of deviations, contact SEW-EURODRIVE.

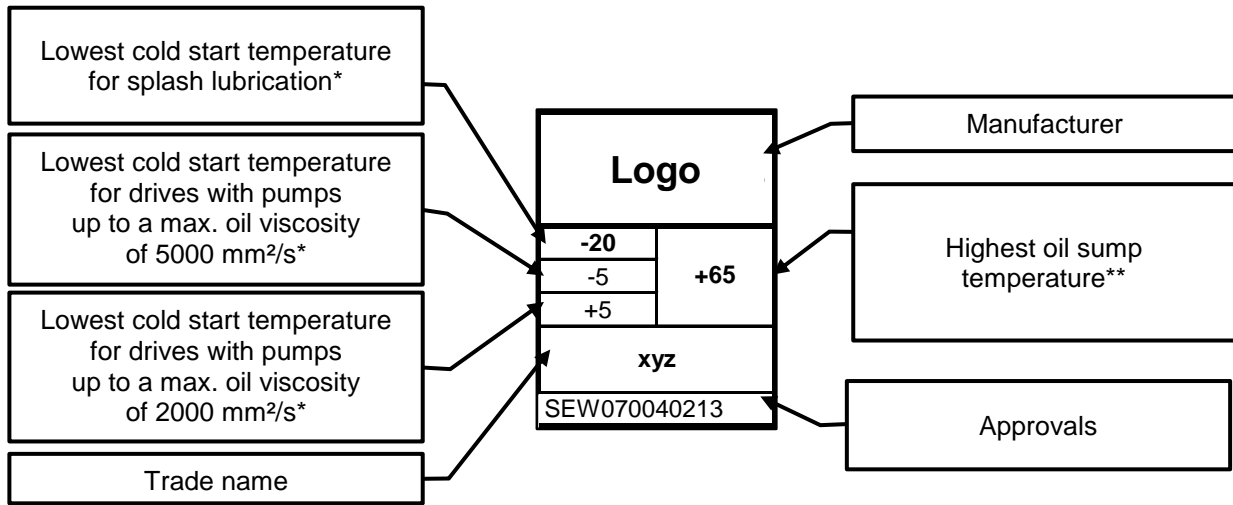
2)

Lubricants must only be used if service factor is $F_s \geq 1.3$

RWDR

Radial oil seal

1.2 Explanations on the individual lubricants



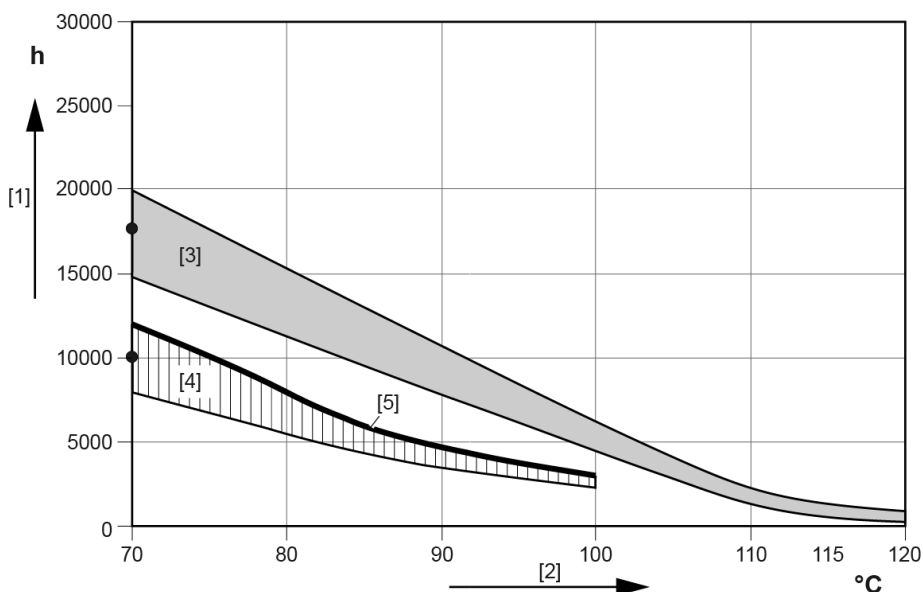
* In case of low temperatures, the oil must be heated to the specified minimum temperature, for example by using an oil heater. The maximum permitted oil viscosity per pump type can be found in chapter 1.4.

** The service life will be considerably reduced when exceeded. Observe the lubricant change intervals according to chapter 1.3.

1.3 Lubricant change intervals

The following image depicts the change intervals for industrial gear units under normal ambient conditions. In case of special designs under severe/aggressive ambient conditions, change the lubricant more frequently.

Notice: Filling of wrong lubricant may lead to a loss of the lubricant properties and thus damage the gear unit. Do not mix synthetic lubricants and mineral lubricants. In general, the guideline FVA 606 must be adhered to.



- [1] Operating hours
- [2] Sustained oil bath temperature
Average value per oil type at 70 °C
- [3] CLP HC/CLP HC NSF H1
- [4] CLP (CC)/E
- [5] SEW GearOil Base

Supplier Approval

SEW drives of the series

X.F... / X.K... / P... / XP... / P-X...




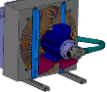

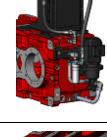
Lubricant approvals – latest version: www.sew-eurodrive.de/lubricants

47 049 09 05
63107848.09

SEW
EURODRIVE

EN Page 5/9
EGT-TD 31.01.2019

1.4 Explanations on oil supply systems and their viscosity

Type	Name	Supplier	Maximum oil viscosity [mm ² /s]	Picture	Comment
Shaft end pump for pressure lubrication	SEP		5000		Flanged on the gear unit housing
Shaft end pump for pressure lubrication	SEP		2000		Mounted inside the vertical agitator gear unit housing
Motor pump for pressure lubrication (light)	ONP1L		5000		
Motor pump for pressure lubrication	ONP1		5000		
Device for oil cooling by air	OAC		2000		
Device for oil cooling by water	OWC		2000		
Motor pump and heat exchanger for pressure lubrication and cooling by water	OWP		2000		
Device for oil cooling by air	OAC1		5000		
Motor pump and heat exchanger for pressure lubrication and cooling by air	OAP1		5000		
Device for oil cooling by water	OWC1		5000		
Motor pump and heat exchanger for pressure lubrication and cooling by water	OWP1		5000		

Supplier Approval

47 049 09 05
63107848.09



SEW drives of the series

X.F... / X.K... / P... / XP... / P-X...

EN Page 6/9

EGT-TD 31.01.2019

Lubricant approvals – latest version: www.sew-eurodrive.de/lubricants

1.5 Compatibility of lubricants with radial oil seals

SEW07004__13: A lubricant especially recommended by SEW-EURODRIVE, also in regard of compatibility with the approved oil seals. The lubricant exceeds the state-of-the-art requirements.

Limitations of use of radial oil seals with the specific lubricant are indicated in the following table:

Material class	Manufacturer	Material	Permitted oil sump temperature	
S	1 NBR	1 Freudenberg	72 NBR 902	-40° C ²⁾ to +80 °C
		2 Trelleborg	4NV11	-40° C ²⁾ to +80 °C
	2 FKM	1 Freudenberg	1 75 FKM 585	-25° C ²⁾ to +115 °C
			2 75 FKM 170055	-25° C ²⁾ to +115 °C
		2 Trelleborg	1 VCBVR	-25° C ²⁾ to +115 °C

In the low temperature range, oil seals can withstand shaft deflections (e. g. through overhung load) only to a limited extent. Especially avoid or limit pulsating or changing radial displacements of the shaft. Please contact SEW-EURODRIVE if required.

Example 1:

S11 - Only the elastomer Freudenberg 72 NBR 902 meets the requirements of the SEW-EURODRIVE approval in regard of the specific lubricant.

Example 2:

S2 - Only the elastomer FKM meets the requirements of the SEW-EURODRIVE approval in regard of the specific lubricant.

Supplier Approval

SEW drives of the series

X.F... / X.K... / P... / XP... / P-X...

Lubricant approvals – latest version: www.sew-eurodrive.de/lubricants












47 049 09 05
63107848.09

SEW
EURODRIVE

EN Page 7/9

EGT-TD 31.01.2019

2. Industrial gear units (X.F..., X.K..., P..., XP..., P-X...)

Typ / Type	Öltyp / Oil Type	ISO, SAE NLGI	SEW EURODRIVE				Mobil																	
X... 	CLP	VG 150 ¹⁾	-20	+65	-20	+65	-20	+65	-20	+65	-20	+65	-20	+65	-20	+65	-20	+65	-20	+65	-20	+65		
			-5		-5		-5		-5		-5		-5		-5		-5		-5		-5		-5	-5
			+5		+5		+5		+5		+5		+5		+5		+5		+5		+5		+5	+5
			SEW Gear Oil Base 150 E ¹			Optigear BM 150	Alpha SP 150	Renolin CLP 150 Plus	Renolin HighGear 150	Mobilgear 600 XP 150	Klüberoil GEM 1-150 N													
			SEW070040313			SEW070040313			SEW070040013															
P... 	CLP	VG 220	-15	+75	-15	+75	-15	+75	-15	+75	-15	+75	-15	+75	-15	+75	-15	+75	-15	+75	-15	+75		
			0		0		0		0		0		0		0		0		0		0		0	
			+10		+10		+10		+10		+10		+10		+10		+10		+10		+10		+10	
			SEW Gear Oil Base 220 E ¹			Optigear BM 220	Alpha SP 150	Renolin CLP 220 Plus	Renolin HighGear 220	Mobilgear 600 XP 220	Klüberoil GEM 1-220 N			Shell Omala Oil F 220	Carter EP 220									
			SEW070040313			SEW070040313			SEW070040013															
P... 	CLP	VG 320	-10	+85	-10	+85	-10	+85	-10	+85	-10	+85	-10	+85	-10	+85	-10	+85	-10	+85	-10	+85		
			+5		+5		+5		+5		+5		+5		+5		+5		+5		+5		+5	
			+15		+15		+15		+15		+15		+15		+15		+15		+15		+15		+15	
			SEW Gear Oil Base 320 E ¹			Optigear BM 320	Alpha SP 320	Renolin CLP 320 Plus	Renolin HighGear 320	Mobilgear 600 XP 320	Klüberoil GEM 1-320 N			Shell Omala Oil F 320	Carter EP 320									
			SEW070040313			SEW070040313			SEW070040013															
P... 	CLP	VG 460	-5	+90	-5	+90	-5	+90	-5	+90	-5	+90	-5	+90	-5	+90	-5	+90	-5	+90	-5	+90		
			+10		+10		+10		+10		+10		+10		+10		+10		+10		+10		+10	
			+20		+20		+20		+20		+20		+20		+20		+20		+20		+20		+20	
			SEW Gear Oil Base 460 E ¹			Optigear BM 460	Alpha SP 460	Renolin CLP 460 Plus	Renolin HighGear 460	Mobilgear 600 XP 460	Klüberoil GEM 1-460 N			Shell Omala Oil F 460	Carter EP 460									
			SEW070040313			SEW070040313			SEW070040013															
P... 	CLP	VG 680	0	+90	0	+90	0	+90	0	+90	0	+90	0	+90	0	+90	0	+90	0	+90	0	+90		
			+15		+15		+15		+15		+15		+15		+15		+15		+15		+15		+15	
			+25		+25		+25		+25		+25		+25		+25		+25		+25		+25		+25	
			SEW Gear Oil Base 680 E ¹			Optigear BM 680	Alpha SP 680	Renolin CLP 680 Plus	Renolin HighGear 680	Mobilgear 600 XP 680	Klüberoil GEM 1-680 N			Carter EP 680										
			SEW070040313			SEW070040313			SEW070040013															
P... 	CLP	VG 1000	+5	+90	+5	+90	+5	+90	+5	+90	+5	+90	+5	+90	+5	+90	+5	+90	+5	+90	+5	+90		
			+20		+20		+20		+20		+20		+20		+20		+20		+20		+20		+20	
			+30		+30		+30		+30		+30		+30		+30		+30		+30		+30		+30	
						Optigear BM 1000																		

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.5) have to be considered as well.

Supplier Approval

SEW drives of the series

X.F... / X.K... / P... / XP... / P-X...

Lubricant approvals – latest version: www.sew-eurodrive.de/lubricants









47 049 09 05

63107848.09

SEW
EURODRIVE

EN Page 8/9

EGT-TD 31.01.2019

Typ / Type	Öttyp / Oil Type	ISO, SAE NLGI	SEW EURODRIVE				Mobil				
X... 	CLP HC	VG 32 ¹⁾									
		VG 68 ¹⁾									
		VG 150 ¹⁾									
		VG 220									
		VG 320									
		VG 460									
		VG 680									
		VG 1000									
P... 											

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.5) have to be considered as well.

Supplier Approval

SEW drives of the series




X.F... / X.K... / P... / XP... / P-X...

Lubricant approvals – latest version: www.sew-eurodrive.de/lubricants

47 049 09 05
63107848.09



EN Page 9/9
EGT-TD 31.01.2019

Typ / Type	Öltyp / Oil Type	ISO, SAE NLGI	SEW EURODRIVE	bremer & leguil	Castrol	FUCHS	Mobil	KLÜBER LUBRICATION	Shell	TOTAL											
X... 	II	VG 68 ¹⁾	SEW EURODRIVE	Cassida Fluid HF 68	Optileb HY 68	Cassida Fluid HF 68	Cassida Fluid HF 68	Klüberoil 4UH1-68 N													
											-35	+45	-40	+45	-35	+45	-35	+45			
											-20		-25		-20		-20				
											-10		-15		-10		-10				
											P... 	CLP HC NSF H1	VG 220 ¹⁾	SEW EURODRIVE	Cassida Fluid GL 220	Optileb GT 220	Cassida Fluid GL 220	Cassida Fluid GL 220	Klüberoil 4UH1-220 N		
-5	-5	-5	-5																		
+5	+5	+5	+5																		
E 	E	VG 460	SEW EURODRIVE	Cassida Fluid GL 460	Optileb GT 460	Cassida Fluid GL 460	Cassida Fluid GL 460	Klüberoil 4UH1-460 N													
											+5	+5	+5	+5							
											+20	+20	+20	+15							
																			Klüberbio CA2-460		
+5	+5	+5	+5																		
+15	+15	+15	+15																		
						Plantogear 460 S															
						S2															

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.5) have to be considered as well.