




## 6 Lubricants

### 6.1 Guidelines for lubricant selection

Unless a special arrangement is made, SEW-EURODRIVE delivers the planetary gear unit without an oil fill and the primary gear unit with an oil fill.

	<p><b>STOP</b></p> <ul style="list-style-type: none"> <li>The oil viscosity and type (mineral/synthetic) that are to be used are determined by SEW-EURODRIVE specifically for each order. This information is noted in the order confirmation and on the gear unit's nameplate. You must contact SEW-EURODRIVE in case of a deviation from this specification. This lubricant recommendation in chapter "Lubricant table" in no way represents a guarantee as to the quality of the lubricant delivered by each respective supplier. Each lubricant manufacturer is responsible for the quality of its product.</li> <li>Ensure that the planetary gear units and primary gear units are filled with the correct oil grade and volume before startup. You can obtain the corresponding information from the gear unit nameplate and the lubricant table on the following pages.</li> <li>Do not mix different synthetic lubricants and do not mix synthetic with mineral lubricants.</li> <li>Check the compatibility of the greases and oils used.</li> </ul>
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## 6.2 Lubricant tables

### 6.2.1 General information

The lubricant table on the following page shows the permitted lubricants for planetary gear units with output speeds  $\geq 1.0$  rpm. Observe the following legend with regards to the lubricant table.


### 6.2.2 Key to the lubricant table


Abbreviations, meaning of shading and notes:

CLP = Mineral oil


CLP HC = Synthetic polyalphaolefin


 = Synthetic lubricant (= synthetic-based anti-friction bearing grease)

 = Mineral lubricant (= mineral-based anti-friction bearing grease)


 1) = Ambient temperature

2) Pay attention to critical starting behavior at low temperatures

 Lubricant for the food industry (food grade oil)

 Biodegradable oil (lubricant for agriculture, forestry, and fisheries)

### 6.2.3 Notes on the lubricant table

	<b>STOP</b>
	<ul style="list-style-type: none"> <li>• The temperature ranges are to be considered guide values. The decisive factor is the viscosity information on the nameplate.</li> <li>• Contact SEW-EURODRIVE if you operate the unit under extreme conditions, such as cold, heat, or there are changes to the operating conditions since project planning.</li> <li>• Adhere to the oil information on the nameplate of the primary gear unit. If there is no oil information on the nameplate of the primary gear unit, you can use the oils specified in the operating instructions.</li> </ul>



6.2.4 Lubricant table


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			ISO VG class										
-20	+20	CLP	VG150	Mobilgear XMP 150 Mobilgear 600XP 150	Shell Omala F220	Klüber GEM 1-150N	Deqol BG 150 Plus	BP Energol GR-XF 150	Meropa 150	Renolin CLP 150 Renolin Plus	Goya NT 150	Alpha SP 150 Optigear BM 150 Tribol 1100/150	Carter EP 220
-15	+30	CLP	VG 220	Mobilgear XMP 220 Mobilgear 600XP 220	Shell Omala F320	Klüber GEM 1-320N	Deqol BG 220 Plus	BP Energol GR-XF 220	Meropa 220	Renolin CLP 220 Renolin High Gear synth 220	Goya NT 220	Alpha SP 220 Optigear BM 220 Tribol 1100/220	Carter EP 320
-10	+40	CLP	VG 320	Mobilgear XMP 320 Mobilgear 600XP 320	Shell Omala F460	KLÜBER GEM 1-460N	Deqol BG 460 Plus	BP Energol GR-XF 460	Meropa 460	Renolin CLP460 Renolin CL P460Plus Renolin High Gear 460	Goya NT 460	Alpha SP 460 Optigear BM 460 Tribol 1100/460	Carter EP 460
-5	+40	CLP	VG 460	Mobilgear XMP 460 Mobilgear 600XP 460	Shell Omala F680	KLÜBER GEM 1-680N	BP Energol GR-XF 680	Meropa 680	Renolin CLP680 Renolin CL P680Plus Renolin High Gear 680	Goya NT 680	Alpha SP 680 Optigear BM 680 Tribol 1100/680	Carter EP 680	
0	+50	CLP	VG 680	Mobilgear XMP 680 Mobilgear 600XP 680	Shell Omala F820	Klüber GEM 4-820N	Deqol PAS 150	BP Energol EP-XF 150	Pinnacle WM 150	Renolin CLP 150	ELGreco 150	Optigear Synthetic X 150 AlphaSyn EP 150 Tribol 1710/150	Carter SH 150
2)	+20	CLP HC	VG 150	Mobilgear SHC XMP150	Shell Omala OIL HD 220	Klüber GEM 4-220N	Deqol PAS 220	BP Energol EP-XF 220	Pinnacle WM 220	Renolin CLP 220	ELGreco 220	Optigear Synthetic X 220 AlphaSyn EP 220 Tribol 1710/220	Carter SH 220
-30	+30	CLP HC	VG 220	Mobilgear SHC XMP220	Shell Omala OIL HD 320	Klüber GEM4-320N	Deqol PAS 320	BP Energol EP-XF 320	Pinnacle WM 320	Renolin CLP 320 Renolin High Gear synth 320	ELGreco 320	Optigear Synthetic X 320 AlphaSyn EP 320 Tribol 1710/320	Carter SH 320
-25	+40	CLP HC	VG 320	Mobilgear SHC XMP320 Mobil SHC 632	Shell Omala OIL HD 460	Klüber GEM4-460N	BP Energol EP-XF 460	Pinnacle WM 460	Renolin CLP 460 Renolin High Gear synth 460	ELGreco 460	Optigear Synthetic X 460 AlphaSyn EP 460 Tribol 1710/460	Carter SH 460	
-20	+50	CLP HC	VG 460	Mobilgear SHC XMP460 Mobil SHC 634	Shell Omala OIL HD 680	Klüber GEM4-680N	BP Energol EP-XF 680	Pinnacle WM 680	Renolin CLP 680 Renolin High Gear synth 680	ELGreco 680	Optigear Synthetic X 680 AlphaSyn EP 680 Tribol 1510/680	Carter SH 680	
-20	+60	CLP HC	VG 680	Mobilgear SHC XMP680 Mobil SHC 636	Shell Casastda Fluid GL 460	Klüber UHT 6-460	Plantogear 460 S	Garalyn SF 460	Optiflab GT 460				
-20	+40	CLP HC	VG 460	Shell Casastda Fluid GL 460	Shell Naturelle Gear Fluid EP 460	Klüber UHT 6-460							
-20	+40	CLP HC	VG 460	Shell Naturelle Gear Fluid EP 460									



### 6.3 Lubricant fill quantity

The specified fill quantities are **recommended values**. The precise values vary depending on the number of stages and gear ratios. Check the oil level in a planetary gear unit at the oil sight glass or oil dipstick, and in a primary gear unit at the oil level plug.

	<p><b>STOP</b></p> <ul style="list-style-type: none"> <li>The oil chambers of both gear units are separate.</li> <li>Planetary gear units are supplied without lubricant.</li> <li>RF.. and KF.. gear units are filled with lubricant at the factory depending on the mounting position.</li> <li>In case of a pivoted mounting position, refer to the oil fill quantity specified on the nameplate.</li> </ul>
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The following tables show recommended values for lubricant fill quantities depending on the mounting position:

#### 6.3.1 Planetary gear unit

Size	Fill quantity in liters					
	M1	M2	M3	M4	M5	M6
P002	4	7	4	7	4	4
P012	6	11	6	11	6	6
P022	8	14	8	14	8	8
P032	11	20	11	20	11	11
P042	15	29	15	29	15	15
P052	20	38	20	38	20	20
P062	25	48	25	48	25	25
P072	30	58	30	58	30	30
P082	40	83	40	83	40	40

#### 6.3.2 Primary helical (RF-) gear units

Size	Fill quantity in liters					
	M1 0°	M2 0°	M3 180°	M4 0°	M5 270°	M6 90°
RF77	1.2	3.10	3.30	3.60	2.40	3.00
RF87	2.4	6.4	7.1	7.2	6.3	6.4
RF97	5.1	11.9	11.2	14.0	11.2	11.8
RF107	6.3	15.9	17.0	19.2	13.1	15.9
RF137	9.5	27.0	29.0	32.5	25.0	25.0
RF147	16.4	47.0	48.0	52.0	42.0	42.0
RF167	26.0	82.0	78.0	88.0	65.0	71.0

Key	
M1 / M2 / M3 / M4 / M5 / M6	= Mounting position of planetary gear unit
0° / 90° / 180° / 270°	= Mounting position of primary helical gear unit



### 6.3.3 Primary bevel (KF-) gear units

The lubricant fill quantity depends on the mounting position of the planetary gear unit and the mounting position of the KF primary gearmotor.

Mounting position of the KF primary gearmotor **0°**, **90°**, **180°**, **270°** see section "Mounting positions".

Size	Fill quantity in liters											
	M1				M2				M3			
	0° A	90° A	180° B	270° A	0° A	90° A	180° A	270° A	0° B	90° A	180° A	270° A
KF67	1.1	2.4	1.1	3.7	2.7	2.7	2.7	2.7	1.1	3.7	1.1	2.4
KF77	2.1	4.1	2.1	5.9	4.5	4.5	4.5	4.5	2.1	5.9	2.1	4.1
KF87	3.7	8.2	3.7	11.9	8.4	8.4	8.4	8.4	3.7	11.9	3.7	8.2
KF97	7.0	14.7	7.0	21.5	16.5	16.5	16.5	16.5	7.0	21.5	7.0	14.7
KF107	10.0	21.8	10.0	35.1	25.2	25.2	25.2	25.2	10.0	35.1	10.0	21.8
KF127	21.0	41.5	21.0	55.0	41.0	41.0	41.0	41.0	21.0	55.0	21.0	41.5
KF157	31.0	66	31.0	92.0	62.0	62.0	62.0	62.0	31.0	92.0	31.0	66.0

Size	Fill quantity in liters											
	M4				M5				M6			
	0° A	90° A	180° B	270° A	0° A	90° B	180° A	270° A	0° B	90° A	180° A	270° B
KF67	2.7	2.7	2.7	2.7	2.4	1.1	3.7	1.1	3.7	1.1	2.4	1.1
KF77	4.5	4.5	4.5	4.5	4.1	2.1	5.9	2.1	5.9	2.1	4.1	2.1
KF87	8.4	8.4	8.4	8.4	8.2	3.7	11.9	3.7	11.9	3.7	8.2	3.7
KF97	15.7	15.7	15.7	15.7	14.7	7.0	21.5	7.0	21.5	7.0	14.7	7.0
KF107	25.2	25.2	25.2	25.2	21.8	10.0	35.1	10.0	35.1	10.0	21.8	10.0
KF127	41.0	41.0	41.0	41.0	41.5	21.0	55.0	21.0	55.0	21.0	41.5	21.0
KF157	62.0	62.0	62.0	62.0	66.0	31.0	92.0	31.0	92.0	31.0	66.0	31.0

Key	
M1 / M2 / M3 / M4 / M5 / M6	= Mounting position of planetary gear unit
0° / 90° / 180° / 270°	= Mounting position of primary bevel gear unit
A / B	= Position of the mounting flange at the primary bevel gear unit



#### 6.4 Sealing greases/rolling bearing greases

The following overview shows the greases recommended by SEW-EURODRIVE. They are recommended for operating temperatures from  $-20\text{ °C}$  to  $100\text{ °C}$ .

Vendor	Grease
ARAL	ARALUB HLP 2
BP	Energrease LS-EPS
Castrol	Spheerol EPL2
Fuchs	Renolit CX TOM 15 OEM
Klüber	Centoplex EP2
Kuwait	Q8 Rembrandt EP2
Mobil	Mobilux EP 2
Shell	Alvania EP2
Texaco	Mulifak EP 2
Total	Multis EP 2



#### HINWEIS

If operators want to use a grease not listed here, they are responsible for obtaining confirmation from the lubricant manufacturer or supplier that the selected grease is suitable for the intended application and that the properties of the lubricant meet the requirements of the greases listed in our table at the least.

#### 6.5 Comments

##### 6.5.1 Planetary gearmotor with shared oil space (special design)



#### STOP

Lubricant fill quantity and viscosity depend on the data given on the nameplate of the planetary gear unit. The planetary gear unit and the primary gear unit will be delivered without oil fill.

##### 6.5.2 Selecting the viscosity when using mineral oil



#### STOP

If surface temperatures exceed  $110\text{ °C}$ , contact SEW-EURODRIVE.