

# Supplier Approval

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63085461.16



SEW drives of the series

R.../ K37-K187/ F.../ K.9/ S.../ HS.../ W.../ HW.../ PS-F/ PS-C/ BS-F/ MGF

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EN Page 1/18

EGT-TD 06.06.2018

Change information:

| Chapter/page | Description (changes to the previous edition)   | Modification no. |
|--------------|---|------------------|
| 5/14         | Introduction of the oil SEW GearOil Poly 460 W E <sup>1</sup> .<br>Oil seal: Restriction S1 not necessary. FKM compatible.<br>Upper service temperature increased to 115 °C.<br>Upper environment temperature increased to 60 °C.<br>Initial filling converted to SEW GearOil Poly 460 W E <sup>1</sup> . | 180489           |

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EN Page 2/18

EGT-TD 06.06.2018

## Table of contents

|      |   |    |
|------|---|----|
| 1.   | Introduction/area of application.....   | 3  |
| 1.1. | Explanations of the structure of the tables.....  | 3  |
| 1.2. | Explanations on the individual lubricants.....  | 5  |
| 1.3. | Lubricant change intervals.....   | 5  |
| 1.4. | Compatibility of lubricants with radial oil seals.....  | 6  |
| 2.   | Helical gear units (R.), helical-bevel gear units (K37-K187), parallel-shaft helical gear units (F.)..... | 7  |
| 3.   | Helical-bevel gear units (K19-K49).....   | 10 |
| 4.   | Helical-worm gear units (S., HS.).....  | 11 |
| 5.   | Spiroplan gear units (W., HW.).....   | 14 |
| 6.   | PS.F gear units.....  | 14 |
| 7.   | PS.C gear units.....  | 15 |
| 8.   | BS.F gear units.....  | 15 |
| 9.   | MGF gear units.....   | 16 |

## 1. Introduction/area of application

This document describes the approved/recommended lubricants for SEW gear unit series. The approvals/recommendations are worldwide valid.

If other lubricants are used in the gear units and/or lubricants are used with other temperature ranges than the ones recommended, the right to claim under warranty will become invalid.

Lubricants for standard gear units are subject to approval, the approval will be made according to the document 07004\_\_13 "Supplier approval for qualification and approval of lubricants – gear unit oils" 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

| Produkt / Product | Umgebungstemperatur / Environment Temperature | Öltyp / Oil Type | ISO, SAE NLGI        | bremer & leguil | Castrol                      | FUCHS                        | Mobil   |
|-------------------|---|------------------|----------------------|-----------------|------------------------------|------------------------------|---|
|                   | Standard<br>-15   40                          | CLP              | VG 220               |                 | -15   +80<br>Optigear BM 220 | -15   +80<br>Renolin CLP 220 | -15   +80<br>Mobilgear 600 XP 220<br>DE, FR<br>SEW070040013 |
|                   | -20   30                                      |                  | VG 150 <sup>4)</sup> |                 | -20   +70<br>Optigear BM 150 | -20   +70<br>Renolin CLP 150 | -20   +70<br>Mobilgear 600 XP 150<br>DE, FR<br>SEW070040013 |

The specified **ambient (environment) temperatures** are **rough guide values for a preselection** of a suitable lubricant. The exact upper and lower temperature limit for the project planning must be taken from the table with the corresponding trade name!

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EN Page 4/18

EGT-TD 06.06.2018

## Abbreviations:

 Synthetic lubricant

 Mineral lubricant


**CLP** Mineral oil


**CLP PG** Polyglycol (PG)

**CLP HC** Synthetic hydrocarbons – polyalphaolefins (PAO)

**E** Oil based on esters

 Lubricant suitable for ATEX environment

 Lubricant for the food processing industry – NSF-H1-compliant

 Easily biodegradable oil for environmentally sensitive areas

1) Helical-worm gear units with CLP-PG: contact SEW-EURODRIVE

2) Special lubricant only for Spiroplan® gear units

3) Recommendation: Select SEW  $f_B \geq 1.2$

4) Observe the critical starting behavior at low temperatures

5) Low-viscosity grease

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

7) Ambient temperatures up to -40 °C can be implemented with appropriate measures. Please contact SEW-EURODRIVE.

**RWDR** Radial oil seal

**PSS** Radial oil seal type PSS (Premium Sine Seal).  
The addendum "PSS" at the lubricant type signals compatibility with the sealing system.

# Supplier Approval

01 751 16 04  
63085461.16



SEW drives of the series

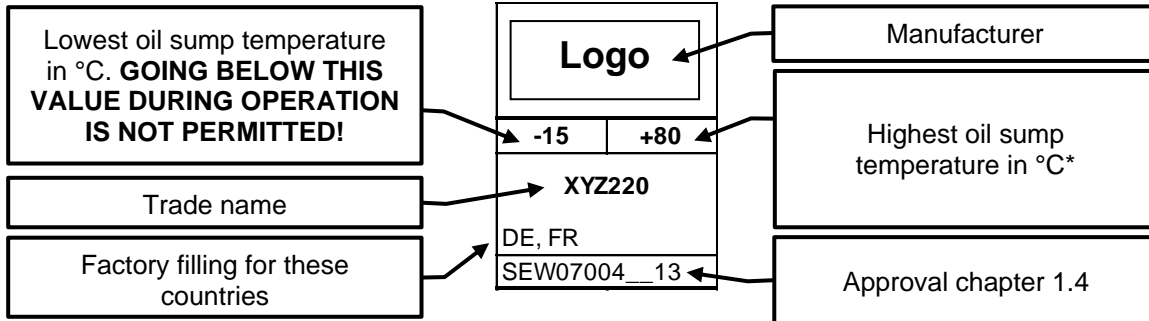
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EN Page 5/18

EGT-TD 06.06.2018

## 1.2. Explanations on the individual lubricants



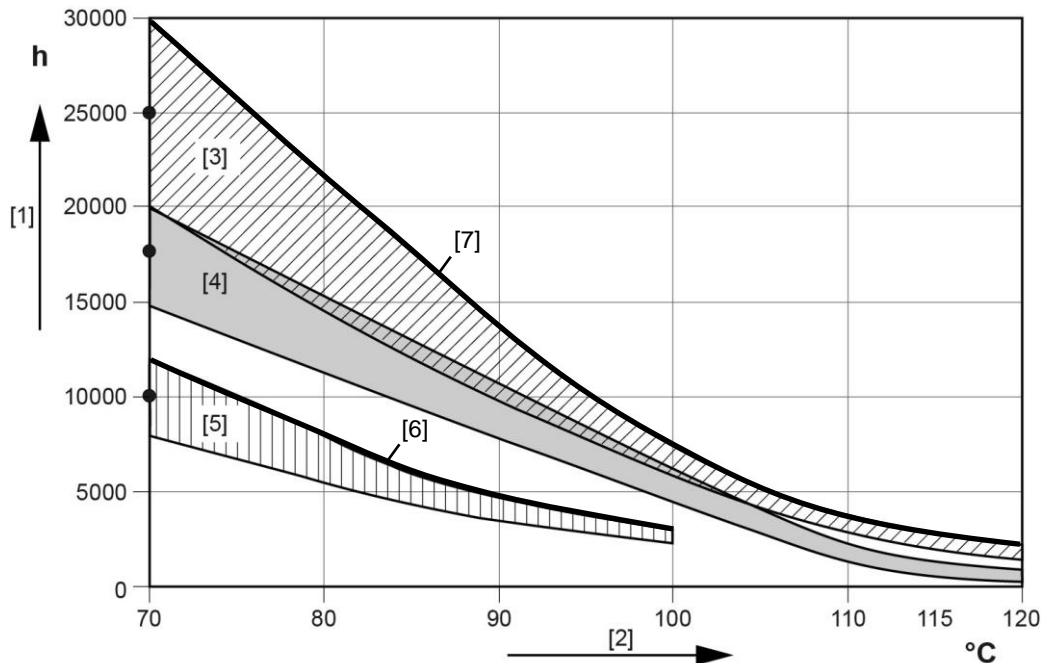
\* The service life will be considerably reduced when exceeded. Observe the lubricant change intervals according to chapter 1.3.

## Countries

- BR Brazil
- CN China
- EN Germany
- FR France
- US United States of America

## 1.3. Lubricant change intervals

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



- |   |                           |
|---|---------------------------|
| [1] Operating hours   | [4] CLP HC/CLP HC NSF H1  |
| [2] Sustained oil bath temperature<br>Average value per oil type at 70 °C | [5] CLP (CC)/E            |
| [3] CLP PG/CPL PG NSF H1  | [6] SEW GearOil Base      |
|   | [7] SEW GearOil Poly (H1) |

## 1.4. 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.

### Approved application temperature range of the oil seals

| Oil seal material class | Approved oil sump temperature    |
|-------------------------|----------------------------------|
| NBR                     | -40 °C <sup>6)</sup> ... +80 °C  |
| FKM                     | -25 °C <sup>6)</sup> ... +115 °C |
| FKM-PSS                 | -25 °C <sup>6)</sup> ... +115 °C |

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

| Material class | Manufacturer         | Material                   |
|----------------|----------------------|----------------------------|
| S              | 1 NBR                | 1 Freudenberg 72 NBR 902   |
|                |                      | 2 Trelleborg 4NV11         |
|                | 2 FKM                | 1 Freudenberg 75 FKM 585   |
|                |                      | 2 Trelleborg 75 FKM 170055 |
|                | 2 Trelleborg 1 VCBVR |                            |

#### 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

R.../ K37-K187/ F.../ K.9/ S.../ HS.../ W.../ HW.../ PS-F/ PS-C/ BS-F/ MGF

Lubricant approvals – latest version: [www.sew-eurodrive.de/lubricants](http://www.sew-eurodrive.de/lubricants)

01 751 16 04  
63085461.16



EN Page 7/18  
EGT-TD 06.06.2018

## 2. Helical gear units (R..), helical-bevel gear units (K37-K187), parallel-shaft helical gear units (F..)

| Produkt / Product                           | Umgebungstemperatur / Environment Temperature | Öltyp / Oil Type | ISO, SAE NLGI | SEW EURODRIVE  | bremer & leguil  | Castrol                                  | FUCHS                             | Mobil                                       | KLÜBER LUBRICATION                                   | Shell   | TOTAL                             |
|---|---|------------------|---------------|--|--|--|-----------------------------------|---|--|---|-----------------------------------|
| <br>R.<br>RES<br>K..7<br>KES<br>HK..<br>F.. | Standard<br>-15   40                          | CLP              | VG 220        | -15   +80<br>SEW GearOil Base 220 E <sup>1</sup><br>SEW070040313 |  | -15   +80<br>Optigear BM 220             | -15   +80<br>Renolin CLP 220 Plus | -15   +80<br>Mobilgear 600 XP 220<br>DE, FR | -15   +80<br>Klüberoil GEM 1-220 N                   | -15   +80<br>Shell Omala S2 G 220<br>CN, US   | -15   +80<br>Carter EP 220        |
|   | -20   30                                      |                  |               | VG 150 <sup>4)</sup>   | -20   +80<br>SEW GearOil Base 150 E <sup>1</sup><br>SEW070040313 |  | -20   +80<br>Optigear BM 150      | -20   +80<br>Renolin CLP 150 Plus           | -20   +80<br>Mobilgear 600 XP 150<br>DE, FR          | -20   +80<br>Klüberoil GEM 1-150 N            | -20   +80<br>Shell Omala S2 G 150 |
| <br>F..                                     | -25   80                                      | CLP PG           | VG 220        |  |  | -25   +115<br>Optigear Synthetic 800/220 | -25   +115<br>Renolin PG 220      | -25   +115<br>Mobil Glygoyle 220<br>DE, FR  | -25   +115<br>Klübersynth GH 6-220                   | -25   +115<br>Shell Omala S4 WE 220<br>CN, US | -25   +115<br>Carter SY 220       |
|   | -25   80                                      | CLP PG - PSS     | VG 220        |  |  |  |                                   |   | -25   +115<br>Klübersynth GH 6-220<br>DE,FR,US,BR,CN |   |                                   |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

# Supplier Approval

SEW drives of the series






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01 751 16 04  
63085461.16



EN Page 8/18  
EGT-TD 06.06.2018

| Produkt / Product  | Umgebungstemperatur / Environment Temperature   | Öltyp / Oil Type  | ISO, SAE NLGI        | SEW EURODRIVE | bremer & leguil | Castrol | FUCHS | Mobil                           |                     | KLÜBER LUBRICATION      |      | Shell                         |      | TOTAL                           |                         |               |      |     |                      |     |     |     |
|--|---|---|----------------------|---------------|-----------------|---------|-------|---------------------------------|---------------------|-------------------------|------|-------------------------------|------|---------------------------------|-------------------------|---------------|------|-----|----------------------|-----|-----|-----|
|  |   |   |                      |               |                 |         |       | -25                             | +110                | -25                     | +110 | -25                           | +110 | -25                             | +110                    | -25           | +110 |     |                      |     |     |     |
| <br>R..<br>RES<br>K..7<br>KES<br>HK..<br>F..<br><br> | Standard<br>-25   60  | <br>CLP HC | VG 220 <sup>7)</sup> |               |                 |         |       | -30                             | +110                | -25                     | +110 | -25                           | +110 | -25                             | +110                    |               |      |     |                      |     |     |     |
|  | Optigear Synthetic PD 220   |   |                      |               |                 |         |       | Renolin Unisyn CLP 220          |                     | Mobil SHC 630<br>DE, FR |      | Klübersynth GEM 4-220 N<br>BR |      | Shell Omala S4 GX 220<br>CN, US |                         | Carter SH 220 |      |     |                      |     |     |     |
|  | -30   |   |                      |               |                 |         |       | +100                            | -30                 | +95                     | -30  | +100                          | -30  | +100                            | -30                     | +100          | -30  | +95 |                      |     |     |     |
|  | Optigear Synthetic PD 150   |   |                      |               |                 |         |       | Renolin Unisyn CLP 150          |                     | Mobil SHC 629<br>DE, FR |      | Klübersynth GEM 4-150 N       |      | Shell Omala S4 GX 150           |                         | Carter SH 150 |      |     |                      |     |     |     |
|  | -35   |   |                      |               |                 |         |       | 20                              | VG 68 <sup>4)</sup> |                         |      |                               |      |                                 | -40                     | +75           |      |     | -40                  | +75 |     |     |
|  |   |   |                      |               |                 |         |       | Renolin Unisyn CLP 68           |                     |                         |      |                               |      |                                 | Mobil SHC 626<br>DE, FR |               |      |     | Shell Omala S4 GX 68 |     |     |     |
|  | -40   |   |                      |               |                 |         |       | 0                               | VG 32 <sup>4)</sup> |                         |      |                               |      |                                 | -40                     | +50           |      |     |                      |     | -40 | +50 |
|  |   |   |                      |               |                 |         |       | Renolin Unisyn OL32             |                     | Mobil SHC 624<br>DE, FR |      |                               |      |                                 |                         | Dacnis SH 32  |      |     |                      |     |     |     |
| Standard<br>-25   60   | <br>CLP HC - PSS | VG 220 <sup>7)</sup>  |                      |               |                 |         |       | -25                             | +110                |                         |      |                               |      |                                 |                         |               |      |     |                      |     |     |     |
|  |   |   |                      |               |                 |         |       | Mobil SHC 630<br>DE,FR,US,BR,CN |                     |                         |      |                               |      |                                 |                         |               |      |     |                      |     |     |     |
| -30  | 50  | VG 150 <sup>4),7)</sup>   |                      |               |                 |         |       | -30                             | +100                |                         |      |                               |      |                                 |                         |               |      |     |                      |     |     |     |
|  |   | Mobil SHC 629<br>DE,FR,US,BR,CN   |                      |               |                 |         |       |                                 |                     |                         |      |                               |      |                                 |                         |               |      |     |                      |     |     |     |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.



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01 751 16 04  
63085461.16

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EN Page 9/18  
EGT-TD 06.06.2018

| Produkt / Product  | Umgebungstemperatur / Environment Temperature | Öltyp / Oil Type  | ISO, SAE NLGI       | SEW EURODRIVE | bremer & leguil | Castrol | FUCHS | Mobil | KLÜBER LUBRICATION | Shell | TOTAL |            |                                  |                          |            |                          |
|--|---|---|---------------------|---------------|-----------------|---------|-------|-------|--------------------|-------|-------|------------|----------------------------------|--------------------------|------------|--------------------------|
| <br>R..<br>RES<br>K..7<br>KES<br>HK..<br>F..   | Standard<br>-15   40                          | <br>CLP HC - NSF H1<br>       | VG 460              |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       | -15   +100 | Cassida Fluid GL 460             | Optileb GT 460<br>DE, FR | -15   +105 | Klüberoil 4UH1-460 N     |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
| <br>R..<br>RES<br>K..7<br>KES<br>HK..<br>F..   | -25   30                                      | <br>CLP HC - NSF H1 - PSS<br> | VG 220              |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       | -25   +80  | Cassida Fluid GL 220             | Optileb GT 220<br>DE, FR | -25   +80  | Klüberoil 4UH1-220 N     |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
| <br>R..<br>RES<br>K..7<br>KES<br>HK..<br>F..  | -35   0                                       | <br>E<br>                 | VG 68 <sup>9)</sup> |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       | -40   +50  | Cassida Fluid HF 68              | Optileb HY 68<br>DE, FR  | -35   +50  | Klüberoil 4UH1-68 N      |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
| <br>R..<br>RES<br>K..7<br>KES<br>HK..<br>F.. | -40   -10                                     | <br>E<br>                 | VG 32 <sup>9)</sup> |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       | -40   +30  | Cassida Fluid HF 32              | Optileb HY 32<br>DE, FR  | -40   +30  | KlüberSummit HySyn FG 32 |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
| <br>R..<br>RES<br>K..7<br>KES<br>HK..<br>F.. | Standard<br>-15   40                          | <br>E<br>                 | VG 460              |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       | -15   +100 | Optileb GT 460<br>DE,FR,US,BR,CN |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
| <br>R..<br>RES<br>K..7<br>KES<br>HK..<br>F.. | -25   30                                      | <br>E<br>                 | VG 220              |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       | -25   +80  | Optileb GT 220<br>DE,FR,US,BR,CN |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
| <br>R..<br>RES<br>K..7<br>KES<br>HK..<br>F.. | -20   40                                      | <br>E<br>                 | VG 460              |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       | -20   +80  | Plantogear 460 S<br>DE, FR       |                          |            |                          |
|  |   |   |                     |               |                 |         |       |       |                    |       |       |            |                                  |                          |            |                          |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

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01 751 16 04  
63085461.16



EN Page 10/18  
EGT-TD 06.06.2018

## 3. Helical-bevel gear units (K19-K49)

| Produkt / Product | Umgebungstemperatur / Environment Temperature | Öltyp / Oil Type           | ISO, SAE NLGI       | SEW EURODRIVE | bremner & leguil | Castrol | FUCHS | Mobil | KLÜBER LUBRICATION                                    | Shell | TOTAL |
|-------------------|---|----------------------------|---------------------|---------------|------------------|---------|-------|-------|---|-------|-------|
| K.9<br>           | Standard<br>-20   60                          | CLP PG (- PSS)<br>         | VG 460              |               |                  |         |       |       | -20   +95<br>Klübersynth GH 6-460<br>DE,FR,US,BR,CN   |       |       |
|                   | -15   80                                      |                            | VG 680              |               |                  |         |       |       | -15   +115<br>Klübersynth GH 6-680<br>DE,FR,US,BR,CN  |       |       |
|                   | -25   40                                      |                            | VG 220              |               |                  |         |       |       | -25   +70<br>Klübersynth GH 6-220<br>DE,FR,US,BR,CN   |       |       |
|                   | -30   30                                      |                            | VG150 <sup>9)</sup> |               |                  |         |       |       | -30   +60<br>Klübersynth GH 6-150<br>DE,FR,US,BR,CN   |       |       |
|                   | Standard<br>-20   60                          | CLP PG - NSFH1 (- PSS)<br> | VG 460              |               |                  |         |       |       | -20   +95<br>Klübersynth UH1 6-460<br>DE,FR,US,BR,CN  |       |       |
|                   | -15   80                                      |                            | VG 680              |               |                  |         |       |       | -15   +115<br>Klübersynth UH1 6-680<br>DE,FR,US,BR,CN |       |       |
|                   | -25   40                                      |                            | VG 220              |               |                  |         |       |       | -25   +70<br>Klübersynth UH1 6-220<br>DE,FR,US,BR,CN  |       |       |
|                   | -30   30                                      |                            | VG150 <sup>9)</sup> |               |                  |         |       |       | -30   +60<br>Klübersynth UH1 6-150<br>DE,FR,US,BR,CN  |       |       |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

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
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01 751 16 04  
63085461.16



EN Page 11/18  
EGT-TD 06.06.2018

## 4. Helical-worm gear units (S., HS..)

| Produkt / Product   | Umgebungstemperatur / Environment Temperature | Öltyp / Oil Type     | ISO, SAE NLGI | SEW EURODRIVE                         | bremer & leguil            | Castrol         | FUCHS                       | Mobil                       | KLÜBER LUBRICATION                  | Shell                   | TOTAL         |   |
|---|---|----------------------|---------------|---------------------------------------|----------------------------|-----------------|-----------------------------|-----------------------------|-------------------------------------|-------------------------|---------------|---|
|   |   |                      |               |                                       |                            |                 |                             |                             |                                     |                         |               | 0 |
| S..<br>HS..<br> | Standard<br>0   40                            | CLP                  | VG 680        | SEW GearOil Base 680 S E <sup>1</sup> |                            | Optigear BM 680 | Renolin CLP 680 Plus DE, FR | Mobilgear 600 XP 680        | Klüberoil GEM 1-680 N               | Shell Omala S2 G 680 US | Carter EP 680 |   |
|   |   |                      |               | SEW070040313                          |                            | SEW070040313    | SEW070040013                |                             |                                     |                         |               |   |
|   |   |                      |               |                                       |                            |                 |                             |                             |                                     |                         |               |   |
|   | -20   25                                      | CLP PG               | VG 150        | SEW GearOil Base 150 E <sup>1</sup>   |                            | Optigear BM 150 | Renolin CLP 150 Plus        | Mobilgear 600 XP 150 DE, FR | Klüberoil GEM 1-150 N               | Shell Omala S2 G 150 US | Carter EP 150 |   |
|   |   |                      |               | SEW070040313                          |                            | SEW070040313    | SEW070040013                |                             |                                     |                         |               |   |
|   |   |                      |               |                                       |                            |                 |                             |                             |                                     |                         |               |   |
| Standard<br>-15   80  | CLP PG  | VG 680 <sup>1)</sup> |               |                                       | Optigear Synthetic 800/680 | Renolin PG 680  | Mobil Glygoyle 680          | Klübersynth GH 6-680 DE, FR | Shell Omala S4 WE 680               |                         |               |   |
|   |   |                      |               |                                       |                            |                 |                             |                             |                                     |                         |               |   |
| -25   40  | CLP PG - PSS                                  | VG 220 <sup>1)</sup> |               |                                       | Optigear Synthetic 800/220 | Renolin PG 220  | Mobil Glygoyle 220 DE, FR   | Klübersynth GH 6-220        | Shell Omala S4 WE 220               | Carter SY 220           |               |   |
|   |   |                      |               |                                       |                            |                 |                             |                             |                                     |                         |               |   |
| Standard<br>-15   80  | CLP PG - PSS                                  | VG 680 <sup>1)</sup> |               |                                       |                            |                 |                             |                             | Klübersynth GH 6-680 DE,FR,US,BR,CN |                         |               |   |
|   |   |                      |               |                                       |                            |                 |                             |                             |                                     |                         |               |   |
| -25   40  | CLP PG - PSS                                  | VG 220 <sup>1)</sup> |               |                                       |                            |                 |                             |                             | Klübersynth GH 6-220 DE,FR,US,BR,CN |                         |               |   |
|   |   |                      |               |                                       |                            |                 |                             |                             |                                     |                         |               |   |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

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


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**SEW**  
**EURODRIVE**

EN Page 12/18  
EGT-TD 06.06.2018

| Produkt /<br>Product   | Umgebungstemperatur /<br>Environment Temperature | Öltyp /<br>Oil Type   | ISO, SAE<br>NLGI | <b>SEW</b><br>EURODRIVE |  |  |  | Mobil |                            |  | Shell                    |               | TOTAL |      |   |                           |  |  |  |  |  |                                    |  |  |  |  |  |  |
|--|--|---|------------------|-------------------------|---|--|---|-------|----------------------------|---|--------------------------|---------------|-------|------|---|---------------------------|--|--|--|--|--|------------------------------------|--|--|--|--|--|--|
|  |  |   |                  |                         |   |  |   | -20   | +105                       |   | -15                      | +105          | -15   | +105 | -15   | +105                      |  |  |  |  |  |                                    |  |  |  |  |  |  |
|  | Standard<br>-15   60                             | <br>CLP HC | VG 460           |                         |   |  |   |       | Mobil<br>SHC 634<br>DE, FR | Klübersynth<br>GEM 4-460 N  | Shell Omala<br>S4 GX 460 | Carter SH 460 |       |      |   |                           |  |  |  |  |  |                                    |  |  |  |  |  |  |
|  | -30   30   |   |                  |                         |   |  |   |       |                            |   |                          |               |       |      | Optigear Synthetic<br>PD 460  | Renolin Unisyn<br>CLP 460 |  |  |  |  |  |                                    |  |  |  |  |  |  |
|  | -35   20   |   |                  |                         |   |  |   |       |                            |   |                          |               |       |      |   |                           |  |  |  |  |  |                                    |  |  |  |  |  |  |
|  | -40   0  |   |                  |                         |   |  |   |       |                            |   |                          |               |       |      |   |                           |  |  |  |  |  |                                    |  |  |  |  |  |  |
|  | Standard<br>-15   60                             |   |                  |                         |   |  |   |       |                            |   |                          |               |       |      | <br>CLP HC - PSS | VG 460                    |  |  |  |  |  | Mobil<br>SHC 634<br>DE,FR,US,BR,CN |  |  |  |  |  |  |
|  | -30   30   |   |                  |                         |   |  |   |       |                            |   |                          |               |       |      |   |                           |  |  |  |  |  |                                    |  |  |  |  |  |  |
|  |  |   |                  |                         |   |  |   |       |                            |   |                          |               |       |      |   |                           |  |  |  |  |  |                                    |  |  |  |  |  |  |
|  |  |   |                  |                         |   |  |   |       |                            |   |                          |               |       |      |   |                           |  |  |  |  |  |                                    |  |  |  |  |  |  |
|  |  |   |                  |                         |   |  |   |       |                            |   |                          |               |       |      |   |                           |  |  |  |  |  |                                    |  |  |  |  |  |  |
|  |  |   |                  |                         |   |  |   |       |                            |   |                          |               |       |      |   |                           |  |  |  |  |  |                                    |  |  |  |  |  |  |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

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SEW drives of the series

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**SEW**  
**EURODRIVE**

EN Page 13/18  
EGT-TD 06.06.2018

| Produkt / Product   | Umgebungstemperatur / Environment Temperature   | Öltyp / Oil Type  | ISO, SAE NLGI  | SEW EURODRIVE | bremner & leguil | Castrol              | FUCHS                          | Mobil     | KLÜBER LUBRICATION | Shell                    | TOTAL |           |           |                      |
|---|---|---|----------------|---------------|------------------|----------------------|--------------------------------|-----------|--------------------|--------------------------|-------|-----------|-----------|----------------------|
| S..<br>HS..<br> | Standard<br>-15   40  | CLP HC - NSF H1<br><br>           | VG 460         |               |                  | -15   +85            | -15   +90                      |           |                    |                          |       |           |           |                      |
|   | -25   30  |   |                |               |                  | Cassida Fluid GL 460 | Optileb GT 460                 |           |                    |                          |       | -25   +70 | -25   +70 | KLüberoil 4UH1-460 N |
|   |   |   |                |               |                  | DE, FR               | SEW070040313                   |           |                    |                          |       |           |           |                      |
|   |   |   |                |               |                  |                      |                                |           |                    |                          |       |           |           |                      |
|   | -35   0   | Cassida Fluid GL 220  | Optileb GT 220 | -25   +70     | -25   +70        | KLüberoil 4UH1-220 N |                                |           |                    |                          |       |           |           |                      |
|   |   | DE, FR  | SEW070040213   |               |                  |                      |                                |           |                    |                          |       |           |           |                      |
|   | -40   -10   | Cassida Fluid HF 68   | Optileb HY 68  | -35   +40     | -35   +40        | KLüberoil 4UH1-68 N  |                                |           |                    |                          |       |           |           |                      |
|   |   | DE, FR  |                |               |                  |                      |                                |           |                    |                          |       |           |           |                      |
|   | Standard<br>-15   40  | CLP HC - NSF H1 - PSS<br><br>    | VG 460         |               |                  |                      | -15   +90                      | -20   +80 | -20   +80          | KLüberSummit HySyn FG 32 |       |           |           |                      |
|   |   |   |                |               |                  |                      | Optileb GT 460                 |           |                    |                          |       |           | -25   +70 | -25   +70            |
|   |   |   |                |               |                  |                      | DE,FR,US,BR,CN<br>SEW070040313 |           |                    |                          |       |           |           |                      |
|   | -25   30  | CLP HC - NSF H1 - PSS<br><br> | VG 220         |               |                  |                      | Optileb GT 220                 | -20   +80 | -20   +80          | KLüberbio CA2-460        |       |           |           |                      |
| DE,FR,US,BR,CN<br>SEW070040213  |   |   |                |               |                  |                      |                                |           |                    |                          |       |           |           |                      |
| -20   40  | E<br><br> | VG 460  |                |               |                  | Plantogear 460 S     | -20   +80                      | -20   +80 | KLüberbio CA2-460  |                          |       |           |           |                      |
|   |   |   |                |               |                  | DE, FR<br>S2         |                                |           |                    |                          |       | S2        |           |                      |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

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



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**SEW**  
**EURODRIVE**





EN Page 14/18  
EGT-TD 06.06.2018

## 5. Spiroplan gear units (W.., HW..)

| Produkt / Product   | Umgebungstemperatur / Environment Temperature | Öltyp / Oil Type  | ISO, SAE NLGI                        | SEW EURODRIVE  | bremser & leguil | Castrol | FUCHS | Mobil   | KLÜBER LUBRICATION                                       | Shell | TOTAL |
|---|---|---|--------------------------------------|--|------------------|---------|-------|---|--|-------|-------|
| <br>W..<br>HW.. | Standard<br>-20   60                          |  CLP PG                | VG 460 <sup>2)</sup>                 | -20   +115<br>SEW GearOil<br>Poly 460 W E <sup>1</sup><br>DE,FR,US,BR,CN |                  |         |       |   | -20   +80<br>Klüber SEW<br>HT-460-5<br>S1                |       |       |
|   | -20   60                                      |  CLP PG NSF H1 (- PSS) | VG 460 <sup>3)</sup>                 | -20   +115<br>SEW GearOil<br>Poly 460 H1 E <sup>1</sup><br>DE, FR        |                  |         |       |   | -20   +115<br>Klübersynth<br>UH1 6-460<br>DE,FR,US,BR,CN |       |       |
|   | -40   10                                      |  API GL5               | SAE 75W90<br>(-VG 100) <sup>4)</sup> |  |                  |         |       | -40   +65<br>Mobil Synth Gear<br>Oil 75 W90<br>DE,FR,US,BR,CN |  |       |       |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

## 6. PS.F gear units

| Produkt / Product  | Umgebungstemperatur / Environment Temperature | Öltyp / Oil Type  | ISO, SAE NLGI        | SEW EURODRIVE   | bremser & leguil | Castrol | FUCHS | Mobil   | KLÜBER LUBRICATION                                       | Shell | TOTAL |
|--|---|---|----------------------|---|------------------|---------|-------|---|--|-------|-------|
| <br>PS.F | Standard<br>-25   80                          |  CLP PG (- PSS)        | VG 220               |   |                  |         |       |   | -25   +100<br>Klübersynth<br>GH 6-220<br>DE,FR,US,BR,CN  |       |       |
|  | -20   80                                      |  CLP PG NSF H1 (- PSS) | VG 460 <sup>3)</sup> | -20   +115<br>SEW GearOil<br>Poly 460 H1 E <sup>1</sup><br>DE, FR |                  |         |       |   | -20   +100<br>Klübersynth<br>UH1 6-460<br>DE,FR,US,BR,CN |       |       |
|  | -40   0                                       |  CLP HC                | VG 32 <sup>4)</sup>  |   |                  |         |       | -40   +50<br>Mobil<br>SHC 624<br>DE,FR,US,BR,CN |  |       |       |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

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**EURODRIVE**

EN Page 15/18  
EGT-TD 06.06.2018

## 7. PS.C gear units

| Produkt / Product  | Umgebungstemperatur / Environment Temperature | Öltyp / Oil Type | ISO, SAE NLGI         | SEW EURODRIVE  | bremer & leguil     | Castrol | FUCHS | Mobil   | KLÜBER LUBRICATION                           | Shell | TOTAL |
|--|---|------------------|-----------------------|--|---------------------|---------|-------|---|--|-------|-------|
| <br>PS.C | Standard<br>-15   40                          | CLP              | VG 220                | -15   +80<br>SEW GearOil Base 220 E <sup>1</sup><br>SEW070040313 |                     |         |       | -15   +80<br>Mobilgear 600 XP 220<br>DE,FR,US,BR,CN<br>SEW070040013 |  |       |       |
|  | -40   0                                       |                  |                       | CLP HC   | VG 32 <sup>4)</sup> |         |       |   | -40   +50<br>Mobil SHC 624<br>DE,FR,US,BR,CN |       |       |
|  | -20   40                                      | Fett/ Grease     | NLGI 00 <sup>5)</sup> |  |                     |         |       | -20   +80<br>Mobilux EP 004<br>DE,FR,US,BR,CN                       |  |       |       |
|  | -20   40                                      |                  | NLGI 1                |  |                     |         |       | -20   +80<br>Klübersynth UH1 14-151<br>DE,FR,US,BR,CN               |  |       |       |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

## 8. BS.F gear units

| Produkt / Product  | Umgebungstemperatur / Environment Temperature | Öltyp / Oil Type     | ISO, SAE NLGI | SEW EURODRIVE | bremer & leguil | Castrol | FUCHS | Mobil | KLÜBER LUBRICATION                                    | Shell | TOTAL |
|--|---|----------------------|---------------|---------------|-----------------|---------|-------|-------|---|-------|-------|
| <br>BS.F | Standard<br>-25   60                          | CLP PG (-PSS)        | VG 220        |               |                 |         |       |       | -25   +100<br>Klübersynth GH 6-220<br>DE,FR,US,BR,CN  |       |       |
|  | -20   60                                      | CLP PG NSF H1 (-PSS) | VG 460        |               |                 |         |       |       | -20   +100<br>Klübersynth UH1 6-460<br>DE,FR,US,BR,CN |       |       |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

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SEW drives of the series

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
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EN Page 16/18  
EGT-TD 06.06.2018

## 9. MGF gear units

| Produkt /<br>Product   | Umgebungstemperatur /<br>Environment Temperature | Öltyp /<br>Oil Type  | ISO, SAE<br>NLGI     | SEW<br>EURODRIVE | b<br>bremer & leguil | Castrol | FUCHS | Mobil                        |                           | KLÜBER<br>LUBRICATION              |                                  | Shell                              |               | TOTAL |      |
|--|--|----------------------|----------------------|------------------|----------------------|---------|-------|------------------------------|---------------------------|------------------------------------|----------------------------------|------------------------------------|---------------|-------|------|
|  |  |                      |                      |                  |                      |         |       | -25                          | +110                      | -25                                | +110                             | -25                                | +110          | -25   | +110 |
| MGF..2<br>MGF..4<br> | Standard<br>-25   60                             | CLP HC               | VG 220               |                  |                      |         |       | -30                          | +110                      | -25                                | +110                             | -25                                | +110          | -25   | +110 |
|  |  |                      |                      |                  |                      |         |       | Optigear Synthetic<br>PD 220 | Renolin Unisyn<br>CLP 220 | Mobil<br>SHC 630<br>DE             | Klübersynth<br>GEM 4-220 N<br>BR | Shell Omala<br>S4 GX 220<br>CN, US | Carter SH 220 |       |      |
|  | -30   50   | CLP HC - PSS         | VG 150 <sup>4)</sup> |                  |                      |         |       | -30                          | +100                      | -30                                | +95                              | -30                                | +100          | -30   | +95  |
|  |  |                      |                      |                  |                      |         |       | Optigear Synthetic<br>PD 150 | Renolin Unisyn<br>CLP 150 | Mobil<br>SHC 629<br>DE             | Klübersynth<br>GEM 4-150 N       | Shell Omala<br>S4 GX 150           | Carter SH 150 |       |      |
| Standard<br>-25   60   | CLP HC - PSS                                     | VG 220               |                      |                  |                      |         |       | -25                          | +110                      |                                    |                                  |                                    |               |       |      |
|  |  |                      |                      |                  |                      |         |       |                              |                           | Mobil<br>SHC 630<br>DE,FR,US,BR,CN |                                  |                                    |               |       |      |
| -30   50   | CLP HC - PSS                                     | VG 150 <sup>4)</sup> |                      |                  |                      |         |       | -30                          | +100                      |                                    |                                  |                                    |               |       |      |
|  |  |                      |                      |                  |                      |         |       |                              |                           | Mobil<br>SHC 629<br>DE,FR,US,BR,CN |                                  |                                    |               |       |      |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.



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
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EN Page 17/18  
EGT-TD 06.06.2018

| Produkt /<br>Product   | Umgebungstemperatur /<br>Environment Temperature | Öltyp /<br>Oil Type   | ISO, SAE<br>NLGI | SEW<br>EURODRIVE | b bremer & leguit |                         | Castrol           |      | FUCHS | Mobil | KLÜBER<br>LUBRICATION   |      | Shell | TOTAL |
|--|--|-----------------------|------------------|------------------|-------------------|-------------------------|-------------------|------|-------|-------|-------------------------|------|-------|-------|
|  |  |                       |                  |                  | -15               | +100                    | -15               | +100 |       |       | -15                     | +105 |       |       |
| MGF..2<br>MGF..4<br> | Standard<br>-15   40                             | CLP HC - NSF H1       | VG 460           |                  |                   | Cassida<br>Fluid GL 460 | Optileb<br>GT 460 |      |       |       | Klüberoil<br>4UH1-460 N |      |       |       |
|  |  |                       |                  |                  |                   |                         | DE                |      |       |       |                         |      |       |       |
|  |  |                       |                  |                  |                   |                         |                   |      |       |       |                         |      |       |       |
|  |  |                       |                  |                  |                   |                         |                   |      |       |       |                         |      |       |       |
|  | -25   30   | CLP HC - NSF H1 - PSS | VG 220           |                  |                   | Cassida<br>Fluid GL 220 | Optileb<br>GT 220 |      |       |       | Klüberoil<br>4UH1-220 N |      |       |       |
|  |  |                       |                  |                  |                   |                         | DE                |      |       |       |                         |      |       |       |
|  |  |                       |                  |                  |                   |                         |                   |      |       |       |                         |      |       |       |
|  |  |                       |                  |                  |                   |                         |                   |      |       |       |                         |      |       |       |
|  | Standard<br>-15   40                             | CLP HC - NSF H1 - PSS | VG 460           |                  |                   |                         | Optileb<br>GT 460 |      |       |       |                         |      |       |       |
|  |  |                       |                  |                  |                   |                         | DE,FR,US,BR,CN    |      |       |       |                         |      |       |       |
|  |  |                       |                  |                  |                   |                         |                   |      |       |       |                         |      |       |       |
|  |  |                       |                  |                  |                   |                         |                   |      |       |       |                         |      |       |       |
|  | -25   30   | CLP HC - NSF H1 - PSS | VG 220           |                  |                   |                         | Optileb<br>GT 220 |      |       |       |                         |      |       |       |
|  |  |                       |                  |                  |                   |                         | DE,FR,US,BR,CN    |      |       |       |                         |      |       |       |
|  |  |                       |                  |                  |                   |                         |                   |      |       |       |                         |      |       |       |
|  |  |                       |                  |                  |                   |                         |                   |      |       |       |                         |      |       |       |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.

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
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**SEW**  
**EURODRIVE**

EN Page 18/18  
EGT-TD 06.06.2018

| Produkt / Product   | Umgebungstemperatur / Environment Temperature | Öltyp / Oil Type       | ISO, SAE NLGI        | SEW EURODRIVE | bremer & leguil | Castrol | FUCHS  | Mobil   | KLÜBER LUBRICATION | Shell | TOTAL |
|---|---|------------------------|----------------------|---------------|-----------------|---------|--|---|--------------------|-------|-------|
| MGF..1-<br>DSM-C  | Standard<br>-25   60                          | CLP HC (-PSS)          | VG 220               |               |                 |         |  | -25   +110<br>Mobil SHC 630<br>DE,FR,US,BR,CN |                    |       |       |
|   | MGF..2<br>/PG<br>-30   50                     |                        | VG 150 <sup>4)</sup> |               |                 |         |  | -30   +100<br>Mobil SHC 629<br>DE,FR,US,BR,CN |                    |       |       |
| MGF..4<br>/PG<br> | Standard<br>-15   40                          | CLP HC - NSF H1 (-PSS) | VG 460               |               |                 |         | -15   +100<br>Optileb GT 460<br>DE,FR,US,BR,CN<br>SEW070040313 |   |                    |       |       |
|   | -25   30                                      |                        | VG 220               |               |                 |         | -25   +80<br>Optileb GT 220<br>DE,FR,US,BR,CN<br>SEW070040213  |   |                    |       |       |

NOTICE: The thermal application limits of radial oil seal materials (chapter 1.4) have to be considered as well.