

Gearmotors and Gear Reducers

OPERATING INSTRUCTIONS

01 805 52 US

GENERAL

These operating instructions are intended to help you install and operate the drive. For trouble free service, proper installation and operation are essential. Additionally, these instructions contain important recommendations on maintenance.

Before shipment, every SEW-Eurodrive gear unit is tested, checked and properly packed. However, please inspect the drive immediately upon arrival for shortage or transit damage. Note the damage or shortage on the freight bill of lading and file a claim with the carrier. Also, notify SEW-Eurodrive of the shortage or damage.

LUBRICANTS

All gearmotors and gear reducers are supplied with the correct grade and quantity of lubricating oil for the specified mounting position. Exceptions include reducers shipped without input assemblies. The recommended lubricants are found on page 2.

LONG TERM STORAGE

If the drive is not installed immediately, it should be stored in a dry, protected area. If the drive is to be stored for an extended period of time and was not ordered from SEW for long term storage, contact your nearest SEW assembly plant for information on Long Term Storage.

Drives which are used for standby service should be stored as a sealed gearcase.

INSTALLATION OF COMPONENTS ON DRIVE SHAFTS

Do not hammer on the shafts. Hammering can cause brinelling of the reducer's bearings shortening the bearing life. We recommend heating the components to approximately 175°F (when possible) and sliding them on the shaft. This will reduce possible damage to the reducer's bearings.

For both standard and metric SEW shaft tolerances, refer to the SEW Catalog.

Shaft couplings should be properly aligned to prevent vibration, coupling wear, and premature failure of the shaft bearings.

To prevent the output shaft and bearings from being subjected to excessive loads, the maximum overhung load, as shown in SEW-Eurodrive catalogs, should not be exceeded. Please consult our engineering department if the load may exceed the recommended figure given or where there are combined radial and axial loads. In such cases, the exact operating conditions must be stated including speed, direction of rotation, position, magnitude and direction of the external radial and axial loads being applied.

SHAFT MOUNTED REDUCERS

SEW-Eurodrive supplies the recommended hollowshaft mounting paste with every hollowshaft reducer. The mounting paste is to be applied on the keyed output shaft. The mounting paste is to aid in the prevention of rusting and fretting corrosion between the reducer hollowshaft and the shaft of the driven machine. The mounting paste will aid in shaft removal when necessary.

Warning! Always ensure exposed, rotating parts are properly covered to ensure safety.

For additional information on shaft mounted reducers, drive shaft configuration and tolerances, refer to the SEW-Eurodrive Catalog.

INSTALLATION AND OPERATION

The drive installation site should be selected to ensure:

- Ambient temperatures below 40°C (104°F).
- Unimpeded flow of air to the motor and variable speed units.
- Accessibility to the drain, level and breather plugs.
- Adequate space for the removal of brakemotor fanguard for brake adjustment and maintenance.

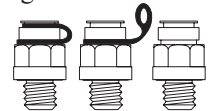
The drive unit should be mounted on a flat, vibration damping, and torsionally rigid structure. Careful alignment is critical. Mounting to an uneven surface will cause housing distortion. The flatness tolerance of the supporting surface should not exceed:

- For gear units size 80 and smaller — 0.004 inch.
- For gear units above size 80 — 0.008 inch.

For transportation, the units are supplied with the breather plug already mounted.

After the unit is installed, the black rubber seal located on the breather MUST BE REMOVED (Fig. 1). In addition, the oil level should be checked. Remove the plated (non-painted) oil level plug. The oil level is correct when the surface of the oil is level with the lowest point of that tapped hole, the exception is S37. Units W10, W20 and W30 are sealed in any position.

Fig. 1



After installation, the actual mounting position should be confirmed against the mounting position shown on the gear reducer nameplate. Adequate lubrication is only guaranteed if the unit is mounted in the specific nameplated mounting position.

Refer to the SEW Catalog if a specific mounting position diagram is needed.

MAINTENANCE

Warning! Always ensure equipment is secure and electrical power is off before removing or performing maintenance on the drive assembly. Oil levels and oil quality should be checked at regular intervals, determined by usage and the environment. Grease and oil should be changed per the recommendations on page 2. Check coupling alignment, chain or belt tension, and mounting bolt torque periodically. Keep the drive relatively free of dust and dirt.

SEW
EURODRIVE

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LUBRICANTS

	6) °C -50 0 +50 +100	DIN (ISO)	ISO, NLGI	Mobil®								
R... K...(HK...) F...	Standard	CLP(CC)	VG 220	Mobilgear 630	Shell Omala 220	Klüberoil GEM 1-220	Aral Degol BG 220	BP Energol GR-XP 220	Tribol 1100/220	Meropa 220	Optigear BM 220	Renolin CLP 220
	-25 +80	CLP PG	VG 220	Mobil Glygolyte 30	Shell Tivela WB	Klübersynth GH 6-220	Aral Degol GS 220	BP Enersyn SG-XP 220	Tribol 800/220	Synlube CLP 220	Optiflex A 220	
	4) -40 +80	CLP HC	VG 220	Mobil SHC 630	Shell Omala 220 HD	Klübersynth EG 4-220	Aral Degol PAS 220		Tribol 1510/220	Pinnacle EP 220	Optigear Synthetic A 220	Renolin Unisyn CLP 220
	4) -40 +40		VG 150	Mobil SHC 629		Klübersynth EG 4-150			Pinnacle EP 150			
	-20 +25	CLP (CC)	VG 150 VG 100	Mobilgear 627	Shell Omala 100	Klüberoil GEM 1-150	Aral Degol BG 100	BP Energol GR-XP 100	Tribol 1100/100	Meropa 150	Optigear BM 100	Renolin CLP 150
	-30 +10	HLP (HM)	VG 68-46 VG 32	Mobil D.T.E. 13M	Shell Tellus T 32	Klüberoil GEM 1-68	Aral Degol BG 46		Tribol 1100/68	Rando EP Ashless 46	Optigear 32	Renolin B 46 HVI
	4) -40 +10	CLP HC	VG 32	Mobil SHC 624		Klüber-Summit HySyn FG-32				Cetus PA D 46		
	4) -40 -20	HLP (HM)	VG 22 VG 15	Mobil D.T.E. 11M	Shell Tellus T 15	Isoflex MT 30 ROT		BP Energol HLP-HM 10		Rando HDZ 15		
	Standard	CLP (CC)	VG 680	Mobilgear 636	Shell Omala 680	Klüberoil GEM 1-680	Aral Degol BG 680	BP Energol GR-XP 680	Tribol 1100/680	Meropa 680	Optigear BM 680	Renolin CLP 680
	-20 +60	CLP PG	VG 680	1) Mobil Glygoyle HE 680		Klübersynth GH 6-680		BP Enersyn SG-XP 680	Tribol 800/680	Synlube CLP 680		
4) -30 +80	CLP HC	VG 460	Mobil SHC 634	Shell Omala 460 HD	Klübersynth EG 4-460				Pinnacle EP 460			
4) -40 +10		VG 150	Mobil SHC 629		Klübersynth EG 4-150				Pinnacle EP 150			
-20 +10	CLP (CC)	VG 150 VG 100	Mobilgear 627	Shell Omala 100	Klüberoil GEM 1-150	Aral Degol BG 100	BP Energol GR-XP 100	Tribol 1100/100	Meropa 100	Optigear BM 100	Renolin CLP 150	
-25 +20	CLP PG	VG 220	1) Mobil Glygoyle 30		Klübersynth GH 6-220			Tribol 800/220	Synlube CLP 220	Optiflex A 220		
4) -40 0	CLP HC	VG 32	Mobil SHC 624		Klüber-Summit HySyn FG-32				Cetus PA D 46			
4) -30 +40	HCE	VG 460		Shell Cassida Fluid GL 460	Klüberoil 4UH1-460	Aral Eural Gear 460					Optileb GT 460	
-20 +40	E	VG 460			Klüberbio CA2-460	Aral Degol BAB 460					Optisynth BS 460	
Standard	CLP PG	VG 460			Klübersynth UH1 6-460							
W...(HW...) 	Standard	SEW PG	VG 460	2)		Klüber SEW HT -460-5						
	4) -40 +10	API GL5	SAE 75W90 (-VG 100)	Mobilube SHC 75 W90-LS								
	-20 +40	CLP PG	VG 460	3)		Klübersynth UH1 6-460						
R32 R302	-25 +60	DIN 51 818	00	Glygoyle Grease 00	Shell Tivela GL 00	Klübersynth GE 46-1200				Multifak 6833 EP 00		
	Standard		000 - 0	Mobilux EP 004	Shell Alvania GL 00		Aralub MFL 00	BP Energrease LS-EP 00		Multifak EP 000	Longtime PD 00	Renolin SF 7 - 041
	-15 +40	5)										

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CLP = Mineral oil	1) Helical-worm gear units with PG oil: Please contact SEW-EURODRIVE
CLP PG = Polyglycol (W gear units, conforms to USDA-H1)	2) Special lubricant for Spiroplan® gear units only
CLP HC = Synthetic hydrocarbons	3) Recommendation: Select SEW $f_b \geq 1.2$
E = Ester oil (water pollution danger category WGK 1)	4) Pay attention to critical starting behavior at low temperatures!
HCE = Synthetic hydrocarbons + ester oil (USDA - H1 certification)	5) Low-viscosity grease
HLP = Hydraulic oil	6) Ambient temperature
= Synthetic lubricant (= synthetic anti-friction bearing grease)	Lubricant for the food industry (food grade oil)
= Mineral lubricant (= mineral-based anti-friction bearing grease)	Biodegradable oil (lubricant for use in agriculture, forestry and water resources)

Oil levels and oil quality should be checked at frequent intervals, depending on usage. Oil changes are required at intervals of 10,000 operating hours or every two years, whichever comes first. If a synthetic oil lubricant is used, then this period can be extended to 20,000 operating hours or every four years, whichever comes first. In applications where hostile operating conditions exist, such as high humidity, corrosive environment, or large temperature changes, the lubricant should be changed at more frequent intervals.

The gear units W10, W20 and W30 are supplied with a synthetic oil which is good for the life of the reducer, independent of the mounting position.

Grease packed bearings should be cleaned and regreased every 10,000 hours or 20,000 hours for synthetic grease. Input (high speed) bearings should not be overgreased. They should be filled with grease not to exceed 1/3 of the bearing's free volume. For output bearings and bearings with replaceable grease shields, fill to 2/3 of their free volume.

ATTENTION

When the recommended lubricant is not available, it is permissible to use a lubricant having equivalent characteristics but we do not recommend that lubricants of different brands be mixed. Under no circumstances should synthetic lubricants be mixed with one another or with one having a mineral base.

LUBRICANTS

The approximate lubricant in US gallons and liters per mounting position is as follows:

Gear Unit	Mounting Positions											
	M1 ¹⁾		M2 ¹⁾		M3		M4		M5		M6	
	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters
RX57	0.16	0.60	0.21	0.80	0.34	1.30	0.34	1.30	0.24	0.90	0.24	0.90
RX67	0.21	0.80	0.21	0.80	0.45	1.70	0.50	1.90	0.29	1.10	0.29	1.10
RX77	0.29	1.10	0.40	1.50	0.69	2.60	0.71	2.70	0.42	1.60	0.42	1.60
RX87	0.45	1.70	0.66	2.50	1.25	4.80	1.25	4.80	0.77	2.90	0.77	2.90
RX97	0.55	2.10	0.90	3.40	1.95	7.4	1.85	7.0	1.25	4.80	1.25	4.80
RX107	1.05	3.90	1.50	5.6	3.05	11.6	3.15	11.9	2.05	7.7	2.05	7.7
RXF57	0.13	0.50	0.21	0.80	0.29	1.10	0.29	1.10	0.18	0.70	0.18	0.70
RXF67	0.18	0.70	0.21	0.80	0.40	1.50	0.37	1.40	0.26	1.00	0.26	1.00
RXF77	0.24	0.90	0.34	1.30	0.63	2.40	0.53	2.00	0.42	1.60	0.42	1.60
RXF87	0.42	1.60	0.51	1.95	1.30	4.90	1.05	3.95	0.77	2.90	0.77	2.90
RXF97	0.55	2.10	0.98	3.70	1.85	7.1	1.65	6.3	1.25	4.80	1.25	4.80
RXF107	0.82	3.10	1.50	5.7	2.95	11.2	2.45	9.3	1.90	7.2	1.90	7.2
R07	0.032	0.12	0.055	0.20	0.055	0.20	0.055	0.20	0.055	0.20	0.055	0.20
R17/R17F	0.065	0.25	0.15	0.55	.090	0.35	0.15	0.55	0.09	0.35	0.11	0.40
R27/R27F	0.065 (0.11)	0.25 (0.40)	0.18	0.70	0.13	0.50	0.18	0.70	0.13	0.50	0.13	0.50
R37/R37F	0.080 (0.25)	0.30 (0.95)	0.22	0.85	0.25	0.95	0.28	1.05	0.20	0.75	0.25	0.95
R47/R47F	0.18 (0.40)	0.70 (1.50)	0.42	1.60	0.40	1.50	0.44	1.65	0.40	1.50	0.40	1.50
R57/R57F	0.21 (0.45)	0.80 (1.70)	0.50	1.90	0.45	1.70	0.55	2.10	0.45	1.70	0.45	1.70
R67/R67F	0.29 (0.61)	1.10 (2.30)	0.69 (0.92)	2.60 (3.50)	0.74	2.80	0.84	3.20	0.48	1.80	0.53	2.00
R77/R77F	0.32 (0.79)	1.20 (3.00)	1.00 (1.10)	3.80 (4.10)	0.95	3.60	1.10	4.10	0.66	2.50	0.90	3.40
R87/R87F	0.61 (1.60)	2.30 (6.0)	1.75 (2.15)	6.7 (8.2)	1.90	7.2	2.05	7.7	1.65	6.3	1.70	6.5
R97	1.20 (2.60)	4.60 (9.8)	3.10 (3.70)	11.7 (14.0)	3.10	11.7	3.55	13.4	3.00	11.3	3.10	11.7
R107	1.60 (3.60)	6.0 (13.7)	4.30	16.3	4.45	16.9	5.1	19.2	3.50	13.2	4.20	15.9
R137	2.65 (6.6)	10.0 (25.0)	7.4	28.0	7.8	29.5	8.3	31.5	6.6	25.0	6.6	25.0
R147	4.05 (10.6)	15.4 (40.0)	12.3	46.5	12.7	48.0	13.7	52.0	10.4	39.5	10.8	41.0
R167	7.1 (18.5)	27.0 (70.0)	21.6	82.0	20.6	78.0	23.2	88.0	17.4	66.0	18.2	69.0
RF07	0.032	0.12	0.055	0.20	0.055	0.20	0.055	0.20	0.055	0.20	0.055	0.20
RF17	0.065	0.25	0.15	0.55	.090	0.35	0.15	0.55	0.09	0.35	0.11	0.40
RF27	0.065 (0.11)	0.25 (0.40)	0.18	0.70	0.13	0.50	0.18	0.70	0.13	0.50	0.13	0.50
RF37	0.090 (0.25)	0.35 (0.95)	0.24	0.90	0.25	0.95	0.28	1.05	0.20	0.75	0.25	0.95
RF47	0.17 (0.40)	0.65 (1.50)	0.42	1.60	0.40	1.50	0.44	1.65	0.40	1.50	0.40	1.50
RF/RM57	0.21 (0.45)	0.80 (1.70)	0.48	1.80	0.45	1.70	0.53	2.00	0.45	1.70	0.45	1.70
RF/RM67	0.32 (0.66)	1.20 (2.50)	0.71 (0.95)	2.70 (3.60)	0.71	2.70	0.69	2.60	0.50	1.90	0.55	2.10
RF/RM77	0.32 (0.69)	1.20 (2.60)	1.00 (1.10)	3.80 (4.10)	0.87	3.30	1.10	4.10	0.63	2.40	0.79	3.00
RF/RM87	0.63 (1.60)	2.40 (6.0)	1.80 (2.10)	6.8 (7.9)	1.85	7.1	1.85	7.0	1.65	6.3	1.70	6.4
RF/RM97	1.35 (2.70)	5.1 (10.2)	3.15 (3.70)	11.9 (14.0)	2.95	11.2	3.70	14.0	2.95	11.2	3.10	11.8
RF/RM107	1.65 (3.95)	6.3 (14.9)	4.20	15.9	4.50	17.0	5.1	19.2	3.45	13.1	4.20	15.9
RF/RM137	2.50 (6.6)	9.5 (25.0)	7.1	27.0	7.7	29.0	8.6	32.5	6.6	25.0	6.6	25.0
RF/RM147	4.35 (11.1)	16.4 (42.0)	12.4	47.0	12.7	48.0	13.7	52.0	11.1	42.0	11.1	42.0
RF/RM167	6.9 (18.5)	26.0 (70.0)	21.6	82.0	20.6	78.0	23.2	88.0	17.2	65.0	18.7	71.0

¹⁾ Standard level (increased oil level) - The larger gear unit of a multi-stage unit must be filled with the larger oil volume.

For additional information on R-Series mounting positions, refer to the SEW Catalog.

LUBRICANTS

The approximate lubricant in US gallons and liters per mounting position is as follows:

Gear Unit	Mounting Position											
	M1		M2		M3		M4		M5		M6	
	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters
F27	0.16	0.60	0.21	0.80	0.17	0.65	0.18	0.70	0.16	0.60	0.16	0.60
F37	0.25	0.95	0.33	1.25	0.18	0.70	0.33	1.25	0.26	1.00	0.29	1.10
F47	0.40	1.50	0.48	1.80	0.29	1.10	0.50	1.90	0.40	1.50	0.45	1.70
F57	0.69	2.60	0.92	3.50	0.55	2.10	0.92	3.50	0.74	2.80	0.77	2.90
F67	0.71	2.70	1.00	3.80	0.50	1.90	1.00	3.80	0.77	2.90	0.84	3.20
F77	1.55	5.9	1.95	7.3	1.15	4.30	2.10	8.0	1.60	6.0	1.65	6.3
F87	2.85	10.8	3.45	13.0	2.05	7.7	3.65	13.8	2.85	10.8	2.90	11.0
F97	4.90	18.5	5.9	22.5	3.35	12.6	6.7	25.2	4.90	18.5	5.3	20.0
F107	6.5	24.5	8.4	32.0	5.1	19.5	9.9	37.5	7.1	27.0	7.1	27.0
F127	10.7	40.5	14.4	54.5	9.0	34.0	16.1	61.0	12.2	46.3	12.4	47.0
F157	18.2	69.0	27.5	104.0	16.6	63.0	27.7	105.0	22.7	86.0	20.6	78.0
FF27	0.16	0.60	0.21	0.80	0.17	0.65	0.18	0.70	0.16	0.60	0.16	0.60
FF37	0.26	1.00	0.33	1.25	0.18	0.70	0.34	1.30	0.26	1.00	0.29	1.10
FF47	0.42	1.60	0.49	1.85	0.29	1.10	0.50	1.90	0.40	1.50	0.45	1.70
FF57	0.74	2.80	0.92	3.50	0.55	2.10	0.98	3.70	0.77	2.90	0.79	3.00
FF67	0.71	2.70	1.00	3.80	0.50	1.90	1.00	3.80	0.77	2.90	0.84	3.20
FF77	1.55	5.9	1.95	7.3	1.15	4.30	2.15	8.1	1.60	6.0	1.65	6.3
FF87	2.85	10.8	3.50	13.2	2.05	7.8	3.70	14.1	2.90	11.0	2.95	11.2
FF97	5.00	19.0	5.9	22.5	3.35	12.6	6.8	25.6	5.00	18.9	5.4	20.5
FF107	6.7	25.5	8.4	32.0	5.1	19.5	10.2	38.5	7.3	27.5	7.4	28.0
FF127	11.0	41.5	14.7	55.5	9.0	34.0	16.6	63.0	12.2	46.3	12.9	49.0
FF157	19.0	72.0	27.7	105.0	16.9	64.0	28.0	106.0	23.0	87.0	20.9	79.0
FA/FH/FV27 FAF/FHF/FVF27 FAZ/FHZ/FVZ27	0.16	0.60	0.21	0.80	0.17	0.65	0.18	0.70	0.16	0.60	0.16	0.60
FA/FH/FV37 FAF/FHF/FVF37 FAZ/FHZ/FVZ37 FT37	0.25	0.95	0.33	1.25	0.18	0.70	0.33	1.25	0.26	1.00	0.29	1.10
FA/FH/FV47 FAF/FHF/FVF47 FAZ/FHZ/FVZ47 FT47	0.40	1.50	0.48	1.80	0.29	1.10	0.50	1.90	0.40	1.50	0.45	1.70
FA/FH/FV57 FAF/FHF/FVF57 FAZ/FHZ/FVZ57 FT57	0.71	2.70	0.92	3.50	0.55	2.10	0.90	3.40	0.77	2.90	0.79	3.00
FA/FH/FV67 FAF/FHF/FVF67 FAZ/FHZ/FVZ67 FT67	0.71	2.70	1.00	3.80	0.50	1.90	1.00	3.80	0.77	2.90	0.84	3.20
FA/FH/FV77 FAF/FHF/FVF77 FAZ/FHZ/FVZ77 FT77	1.55	5.9	1.95	7.3	1.15	4.30	2.10	8.0	1.60	6.0	1.65	6.3
FA/FH/FV87 FAF/FHF/FVF87 FAZ/FHZ/FVZ87 FT87	2.85	10.8	3.45	13.0	2.05	7.7	3.65	13.8	2.85	10.8	2.90	11.0
FA/FH/FV97 FAF/FHF/FVF97 FAZ/FHZ/FVZ97 FT97	4.90	18.5	5.9	22.5	3.35	12.6	6.7	25.2	4.90	18.5	5.3	20.0
FA/FH/FV107 FAF/FHF/FVF107 FAZ/FHZ/FVZ107	6.5	24.5	8.4	32.0	5.1	19.5	9.9	37.5	7.1	27.0	7.1	27.0
FA/FH/FV127 FAF/FHF/FVF127 FAZ/FHZ/FVZ127	10.3	39.0	14.4	54.5	9.0	34.0	16.1	61.0	11.9	45.0	12.3	46.5
FA/FH/FV157 FAF/FHF/FVF157 FAZ/FHZ/FVZ157	18.0	68.0	27.2	103.0	16.4	62.0	27.5	104.0	22.4	85.0	20.3	77.0

For additional information on F-Series mounting positions, refer to the SEW Catalog.

LUBRICANTS

The approximate lubricant in US gallons and liters per mounting position is as follows:

Gear Unit	Mounting Position											
	M1		M2		M3		M4		M5		M6	
	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters
K37	0.13	0.50	0.26	1.00	0.26	1.00	0.33	1.25	0.25	0.95	0.25	0.95
K47	0.21	0.80	0.34	1.30	0.40	1.50	0.53	2.00	0.42	1.60	0.42	1.60
K57	0.32	1.20	0.61	2.30	0.66	2.50	0.74	2.80	0.69	2.60	0.63	2.40
K67	0.29	1.10	0.63	2.40	0.69	2.60	0.91	3.45	0.69	2.60	0.69	2.60
K77	0.58	2.20	1.10	4.10	1.15	4.40	1.55	5.8	1.10	4.20	1.15	4.40
K87	0.98	3.70	2.10	8.0	2.30	8.7	2.90	10.9	2.10	8.0	2.10	8.0
K97	1.85	7.0	3.70	14.0	4.15	15.7	5.3	20.0	4.15	15.7	4.10	15.5
K107	2.65	10.0	5.5	21.0	6.7	25.5	8.8	33.5	6.35	24.0	6.35	24.0
K127	5.5	21.0	11.0	41.5	11.6	44.0	14.3	54.0	10.6	40.0	10.8	41.0
K157	8.2	31.0	16.4	62.0	17.2	65.0	23.8	90.0	15.3	58.0	16.4	62.0
K/KH167	8.7	33.0	25.1	95.0	27.7	105.0	32.5	123.0	22.4	85.0	22.2	84.0
K/KH187	14.0	53.0	40.1	152.0	44.1	167.0	53.0	200	37.8	143.0	37.8	143.0
KF37	0.13	0.50	0.29	1.10	0.29	1.10	0.40	1.50	0.26	1.00	0.26	1.00
KF47	0.21	0.80	0.34	1.30	0.45	1.70	0.58	2.20	0.42	1.60	0.42	1.60
KF57	0.34	1.30	0.61	2.30	0.71	2.70	0.83	3.15	0.77	2.90	0.71	2.70
KF67	0.29	1.10	0.63	2.40	0.74	2.80	0.98	3.70	0.71	2.70	0.71	2.70
KF77	0.55	2.10	1.10	4.10	1.15	4.40	1.55	5.9	1.20	4.50	1.20	4.50
KF87	0.98	3.70	2.15	8.2	2.40	9.0	3.15	11.9	2.20	8.4	2.20	8.4
KF97	1.85	7.0	3.90	14.7	4.55	17.3	5.70	21.5	4.15	15.7	4.35	16.5
KF107	2.65	10.0	5.8	21.8	6.8	25.8	9.3	35.1	6.7	25.2	6.7	25.2
KF127	5.5	21.0	11.0	41.5	12.1	46.0	14.5	55.0	10.8	41.0	10.8	41.0
KF157	8.2	31.0	17.4	66.0	18.2	69.0	24.3	92.0	16.4	62.0	16.4	62.0
KA/KH/KV37 KAF/KHF/KVF37 KAZ/KHZ/KVZ37 KT37	0.13	0.50	0.26	1.00	0.26	1.00	0.37	1.40	0.26	1.00	0.26	1.00
KA/KH/KV47 KAF/KHF/KVF47 KAZ/KHZ/KVZ47 KT47	0.21	0.80	0.34	1.30	0.42	1.60	0.57	2.15	0.42	1.60	0.42	1.60
KA/KH/KV57 KAF/KHF/KVF57 KAZ/KHZ/KVZ57 KT57	0.34	1.30	0.61	2.30	0.71	2.70	0.83	3.15	0.77	2.90	0.71	2.70
KA/KH/KV67 KAF/KHF/KVF67 KAZ/KHZ/KVZ67 KT67	0.29	1.10	0.63	2.40	0.71	2.70	0.98	3.70	0.69	2.60	0.69	2.60
KA/KH/KV77 KAF/KHF/KVF77 KAZ/KHZ/KVZ77 KT77	0.55	2.10	1.10	4.10	1.20	4.60	1.55	5.9	1.15	4.40	1.15	4.40
KA/KH/KV87 KAF/KHF/KVF87 KAZ/KHZ/KVZ87 KT87	0.98	3.70	2.15	8.2	2.30	8.8	2.95	11.1	2.10	8.0	2.10	8.0
KA/KH/KV97 KAF/KHF/KVF97 KAZ/KHZ/KVZ97 KT97	1.85	7.0	3.90	14.7	4.15	15.7	5.30	20.0	4.15	15.7	4.15	15.7
KA/KH/KV107 KAF/KHF/KVF107 KAZ/KHZ/KVZ107	2.65	10.0	5.4	20.5	6.3	24.0	8.6	32.4	6.3	24.0	6.3	24.0
KA/KH/KV127 KAF/KHF/KVF127 KAZ/KHZ/KVZ127	5.5	21.0	11.0	41.5	11.4	43.0	13.7	52.0	10.6	40.0	10.6	40.0
KA/KH/KV157 KAF/KHF/KVF157 KAZ/KHZ/KVZ157	8.2	31.0	17.4	66.0	17.7	67.0	23.0	87.0	16.4	62.0	16.4	62.0

For additional information on K-Series mounting positions, refer to the SEW Catalog.

LUBRICANTS

The approximate lubricant in US gallons and liters per mounting position is as follows:

Gear Unit	Mounting Position											
	M1		M2		M3 ¹⁾		M4		M5		M6	
	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters
S37	0.065	0.25	0.11	0.40	0.13	0.50	0.15	0.55	0.11	0.40	0.11	0.40
S47	0.090	0.35	0.21	0.80	0.18 (0.24)	0.70 (0.90)	0.26	1.00	0.21	0.80	0.21	0.80
S57	0.13	0.50	0.32	1.20	0.26 (0.32)	1.00 (1.20)	0.38	1.45	0.34	1.30	0.34	1.30
S67	0.26	1.00	0.53	2.00	0.58 (0.82)	2.20 (3.10)	0.82	3.10	0.69	2.60	0.69	2.60
S77	0.50	1.90	1.10	4.20	0.98 (1.45)	3.70 (5.4)	1.55	5.9	1.15	4.40	1.15	4.40
S87	0.87	3.30	2.15	8.1	1.80 (2.75)	6.9 (10.4)	3.00	11.3	2.20	8.4	2.20	8.4
S97	1.80	6.8	3.95	15.0	3.55 (4.75)	13.4 (18.0)	5.8	21.8	4.50	17.0	4.50	17.0
SF37	0.065	0.25	0.11	0.40	0.13	0.50	0.15	0.55	0.11	0.40	0.11	0.40
SF47	0.11	0.40	0.24	0.90	0.24 (0.28)	0.90 (1.05)	0.28	1.05	0.26	1.00	0.26	1.00
SF57	0.13	0.50	0.32	1.20	0.26 (0.40)	1.00 (1.50)	0.41	1.55	0.37	1.40	0.37	1.40
SF67	0.26	1.00	0.58	2.20	0.61 (0.79)	2.30 (3.00)	0.84	3.20	0.71	2.70	0.71	2.70
SF77	0.50	1.90	1.10	4.10	1.05 (1.55)	3.90 (5.8)	1.70	6.5	1.30	4.90	1.30	4.90
SF87	1.00	3.80	2.10	8.0	1.85 (2.65)	7.1 (10.1)	3.15	12.0	2.40	9.1	2.40	9.1
SF97	1.95	7.4	3.95	15.0	3.65 (4.95)	13.8 (18.8)	6.0	22.6	4.75	18.0	4.75	18.0
SA/SH37 SAF/SHF37 SAZ/SHZ37 ST37	0.065	0.25	0.11	0.40	0.13	0.50	0.13	0.50	0.11	0.40	0.11	0.40
SA/SH47 SAF/SHF47 SAZ/SHZ47 ST47	0.11	0.40	0.21	0.80	0.18 (0.24)	0.70 (0.90)	0.26	1.00	0.21	0.80	0.21	0.80
SA/SH57 SAF/SHF57 SAZ/SHZ57 ST57	0.13	0.50	0.29	1.10	0.26 (0.40)	1.00 (1.50)	0.40	1.50	0.32	1.20	0.32	1.20
SA/SH67 SAF/SHF67 SAZ/SHZ67 ST67	0.26	1.00	0.53	2.00	0.48 (0.69)	1.80 (2.60)	0.77	2.90	0.66	2.50	0.66	2.50
SA/SH77 SAF/SHF77 SAZ/SHZ77 ST77	0.48	1.80	1.05	3.90	0.95 (1.30)	3.60 (5.0)	1.55	5.8	1.20	4.50	1.20	4.50
SA/SH87 SAF/SHF87 SAZ/SHZ87 ST87	1.00	3.80	1.95	7.4	1.60 (2.30)	6.0 (8.7)	2.85	10.8	2.10	8.0	2.10	8.0
SA/SH97 SAF/SHF97 SAZ/SHZ97 ST97	1.85	7.0	3.70	14.0	3.00 (4.20)	11.4 (16.0)	5.4	20.5	4.15	15.7	4.15	15.7

¹⁾ Standard level (increased oil level) - The larger gear unit of a multi-stage unit must be filled with the larger oil volume.

The approximate lubricant in US gallons and liters for ALL mounting positions for the W-Series is as follows

Gear Unit	Gallons	Liters
W/WF/WA/WAF10	0.042	0.116
W/WF/WA/WAF20	0.065	0.24
W/WF/WA/WAF30	0.11	0.40

Note: The Spiroplan[®] series gear units are mounting position independent of oil filling.

For additional information on S-Series mounting positions, refer to the SEW Catalog.