

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 or 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 external 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, or request  **Document #2115**.

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.


 **Document #2116**.

Table 1. Standard Shaft Tolerance

Diameter (inch)	Solid Shaft Tolerance (inch)	Hollowshaft Tolerance (inch)
1.500 and smaller	+0.0000/-0.0005	+0.0005/-0.0000
Larger than 1.500	+0.000/-0.001	+0.001/-0.000


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 fig-

ure 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 recommends the use of a light coating of Never-Seez® (or equivalent) on the keyed output shaft. The Never-Seez® lubricant may prevent rusting and fretting corrosion between the reducer hollowshaft and the shaft of the driven machine. The lubricant will aid in shaft removal when necessary.

For additional information on shaft mounted reducers, drive shaft configuration and tolerances, refer to SEW-Eurodrive Catalog or request  **Documents #2201, 2202**.

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 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 as sealed gearcases, i.e., in place of the breather plug, a plastic capped socket head plug is installed. The breather plug accompanies the unit in a poly bag. **After final installation, install the breather plug in place of the plastic capped plug.** 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 R30/32, S30/31, W20 and W30 are sealed in any position.

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.

LUBRICANTS

LUBRICATION SCHEDULE FOR SEW-EURODRIVE GEAR UNITS									
¹⁾ Gear Reducer Type	Lubrication Type	Ambient air temperature range °F	kin viscosity at 40°C (cSt) approx.	GULF Oil Co.	CHEVRON Oil Co.	AMERICAN Oil Co.	MOBIL Oil Co.	SHELL Oil Co.	TEX-ACO Oil Co.
R F K	Oil	+104 to +32	220	Gulf EP. Lubricant S100	Chevron Non-Leaded Gear Compound 220	Permagear EP220	Mobilgear 630	Shell Omala Oil 220	Meropa 220
		+77 to +5	155	Gulf EP. Lubricant S60	Chevron Non-Leaded Gear Compound 150	Permagear EP150	Mobilgear 629	Shell Omala Oil 100	Meropa 150
S32	Oil	+140 to +32	430				SHC 634 (Synthetic)		
S	Oil	+104 to +32	680	Gulf EP. Lubricant HD 680	Chevron Non-Leaded Gear Compound 680	Permagear EP680	Mobilgear 636	Shell Omala Oil 680	Meropa 680
		+77 to +5	220	Gulf EP. Lubricant HD 220	Chevron Non-Leaded Gear Compound 220	Permagear EP220	Mobilgear 630	Shell Omala Oil 220	Meropa 220
General	Synth. Oil	+176 to +5	Consult Factory For Use of Synthetic Oils						
	Synth. Grease	+200 to -40	Consult Factory For Use of Grease Filled Reducers						
Ball & Roller Bearings	Grease Used for normal application Temp. range — 20°F to 250°F			Gulfcrown Grease EP. No. 2	Chevron Dura-Lith EP2	Amolith Grease No. 2 EP	Mobilux EP2	Alvania Grease R3	Multi-fak EP2

1)Applies to all reduces with or without motor and input shaft.

Refer to the SEW Catalog or request  Document #2111, #2112, #2113, or #2114 (R, F, K, or S, respectively) if a specific mounting position diagram is needed.

Please refer to the Motors and Brakemotors; VARIMOT®; or VARIGEAR® operating instructions for additional information on those units.

MAINTENANCE

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.

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 R30/32, S30/31, 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

Oil Capacities


Parallel Helical Gear Units - "R"

U.S. Gallons

Gear Unit	Mounting Position											
	B3 ¹⁾	B5 ¹⁾	B5I	B5II	B5III	B6 ²⁾	B7 ²⁾	B8 ^{1), 2)}	V1	V3 ¹⁾	V5	V6 ¹⁾
RX/RXF61	0.21	0.11	0.13	0.18	0.13	0.11	0.13	0.18	0.16	0.13	0.24	0.13
RX/RXF71	0.42	0.21	0.18	0.37	0.16	0.26	0.26	0.42	0.32	0.24	0.53	0.26
RX/RXF81	0.66	0.34	0.24	0.66	0.32	0.42	0.42	0.71	0.58	0.40	0.82	0.48
RX/RXF101	1.6	0.92	0.77	1.6	0.66	1.1	1.0	2.0	1.2	0.95	2.3	1.1
R..32	0.29 gallon											
R..40	0.08	0.08	0.16	0.16	0.18	0.16	0.18	0.16	0.26	0.26	0.26	0.26
R..42/43	0.08	0.08	0.16	0.16	0.16	0.16	0.16	0.16	0.26	0.24	0.29	0.24
R..60	0.16 (0.40)	0.16 (0.40)	0.42	0.29	0.40	0.42	0.40	0.29 (0.50)	0.53	0.50	0.53	0.55
R..62/63	0.16 (0.34)	0.13 (0.34)	0.32	0.29	0.34	0.32	0.34	0.29 (0.50)	0.53	0.50	0.58	0.50
R..67	0.29 (0.61)	0.32 (0.66)	0.50	0.71	0.55	0.48	0.53	0.74	0.87	0.71 (0.95)	0.84	0.69 (0.92)
R..77	0.32 (0.79)	0.32 (0.69)	0.63	0.87	0.79	0.66	0.90	1.0	0.98	1.0 (1.1)	1.2	1.0 (1.3)
R..87	0.61 (1.6)	0.63 (1.6)	1.7	1.9	1.7	1.7	1.7	1.9	2.1	1.8 (2.1)	2.1	1.8 (2.4)
R..97	1.2 (2.6)	1.3 (2.7)	3.0	3.0	3.1	3.0	3.1	3.1	3.7	3.1 (3.9)	3.5	3.1 (3.9)
R..107	1.6 (3.6)	1.7 (3.9)	3.5	4.5	4.2	3.5	4.2	4.5	5.2	4.2 (5.5)	5.0	4.3 (5.6)
R..137	2.4 (6.5)	2.5 (6.6)	6.6	7.7	6.6	6.5	7.5	6.5	8.6	7.1 (9.1)	8.4	7.0 (9.0)
R..147	4.1 (11)	4.3 (11)	11	13	11	10	11	13	14	12 (16)	14	12 (16)
R..167	7.1 (18)	7.4 (19)	18	21	24	17	18	21	23	22 (25)	23	22 (25)

1) On compound gear units the larger gear unit is to be provided with the oil quantity in parenthesis.

2) On compound gear units having mounting positions B6, B7, or B8 the smaller gear unit is to be provided with the oil filling of the B5 mounting position.

Refer to the SEW Catalog or request  Document #2111 for R-Series mounting position diagrams.




For additional information call the SEW FAXline, 1-800-601-6195, and request document number shown.

Right Angle Helical-Worm Gear Units - "S"

U.S. Gallons

Gear Unit	Mounting Position															
	B3, B8II B6I	B3I B6II	B5	B5I	B5II	B5III ¹⁾	B6 B8I	B8 ¹⁾ B3II	V1A V1IB	V1B V1IA	V5, V5I V5II, V6 V6I	H1	H2 ¹⁾	H3	H4	H5 H6
S..37	0.07	0.16	0.11	0.07	0.16	0.13	0.11	0.13	0.11	0.11	0.11	0.07	0.13	0.16	0.11	0.11
S..47	0.09	0.229	0.26	0.11	0.37	0.24	0.21	0.18	0.29	0.26	0.24	0.11	0.18	0.29	0.21	0.24
S..57	0.11	0.42	0.32	0.13	0.48	0.29	0.29	0.26	0.34	0.37	0.32	0.13	0.32	0.48	0.34	0.37
S..67	0.26	0.95	0.69	0.26	0.92	0.61 (0.79)	0.61	0.58 (0.82)	0.77	0.71	0.69	0.26	0.48 (0.69)	0.82	0.53	0.66
S..77	0.45	1.6	1.1	0.5	1.8	1.0 (1.5)	1.1	0.9 (1.4)	1.3	1.2	1.2	0.5	0.9 (1.3)	1.6	1.1	1.2
S..87	0.95	3.2	2.2	1.0	3.4	2.0 (2.7)	2.1	1.8 (2.6)	2.5	2.1	2.2	1.0	1.6 (2.3)	3.0	2.0	2.1
S..97	1.8	5.9	2.7	1.9	6.4	4.5 (7.1)	4.0	3.5 (4.9)	4.8	4.8	4.2	1.9	3.0 (4.4)	5.7	3.7	4.1

1)On compound gear units, the larger unit is to be filled with the quantity in parenthesis.

Refer to the SEW Catalog or request  Document #2114 for S-Series mounting position diagrams.

LUBRICANTS

Oil Capacities


Right Angle Helical-Bevel Gear Units - "K"

U.S. Gallons

Gear Unit	Mounting Position							
	B3, H1 B5I	B3I, B6II	B5	B5II	B5III,	B6, B8I	B6I	B8
K37	0.13	0.34	0.26	0.37	0.29	0.26	0.16	0.26
K47	0.21	0.50	0.34	0.55	0.42	0.34	0.21	0.37
K67	0.29	0.87	0.63	0.92	0.74	0.63	0.40	0.69
K77	0.55	1.56	1.11	1.58	1.19	1.08	0.74	1.16
K87	0.98	2.88	2.22	2.88	2.32	2.11	0.98	2.30
K97	1.85	5.28	3.88	5.68	4.57	3.70	1.85	4.14
K107	2.64	8.45	5.94	9.11	7.39	5.54	2.64	6.73
K127	5.54	13.07	10.96	13.73	12.14	10.56	5.54	11.62
K157	8.18	22.97	17.42	22.97	18.22	16.37	8.18	17.16
K/KH166	8.18	31.15	-	31.15	-	-	-	-
K/KH186	15.05	51.22	-	51.22	-	-	-	-

Gear Unit	Mounting Position						
	V1, V1I	V5, V5I	V6/V6I	H2	H3	H4	H5, H6
K37	0.26	0.26	0.26	0.26	0.37	0.26	0.26
K47	0.45	0.37	0.42	0.42	0.55	0.34	0.45
K67	0.71	0.69	0.69	0.74	0.92	0.63	0.69
K77	1.16	1.11	1.14	1.14	1.53	1.11	1.11
K87	2.22	2.09	2.11	2.30	2.77	2.22	2.11
K97	4.36	4.14	4.09	4.14	5.28	3.88	4.14
K107	6.60	6.34	6.34	6.73	8.45	5.94	6.34
K127	10.82	10.30	10.82	11.35	12.94	10.96	10.56
K157	16.37	15.31	16.37	17.69	22.44	17.42	16.37
K/KH166	25.08	-	-	-	-	-	-
K/KH186	40.92	-	-	-	-	-	-

Refer to the SEW Catalog or request  Document #2113 for K-Series mounting position diagrams.

 For additional information call the SEW FAXline, 1-800-601-6195, and request document number shown.

LUBRICANTS


Oil Capacities

the **SNUGGLER®** Shaft Mounted Helical Gear Units - "F"

U.S. Gallons

Gear Unit	Mounting Position										
	H1	B5	B6	H2, B5II, B6II	H3, B5III, B3I, B8I	H4, B3, B8	B5I	H5	V1	V5	H6, V3, V6
F37	0.26	0.26	0.26	0.18	0.29	0.26	0.26	0.34	0.34	0.34	0.32
F47	0.37	0.37	0.37	0.29	0.45	0.40	0.40	0.50	0.50	0.50	0.48
F67	0.71	0.71	0.71	0.53	0.85	0.77	0.77	1.00	1.00	1.00	1.00
F77	1.35	1.35	1.35	1.14	1.66	1.59	1.59	2.14	2.14	2.14	1.93
F87	2.64	2.72	2.64	2.06	2.96	2.91	2.91	3.65	3.72	3.65	3.49
F97	4.89	5.02	4.89	3.33	5.42	4.89	4.99	6.74	6.74	6.74	5.94
F107	6.47	6.74	6.47	5.15	7.40	7.13	7.26	9.91	10.17	10.04	8.45
F127	10.30	10.96	10.70	8.98	12.94	12.28	12.28	16.11	16.64	16.11	14.79

Refer to the SEW Catalog or request  Document #2112 for F-Series mounting position diagrams.

 For additional information call the SEW FAXline, 1-800-601-6195, and request document number shown.



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