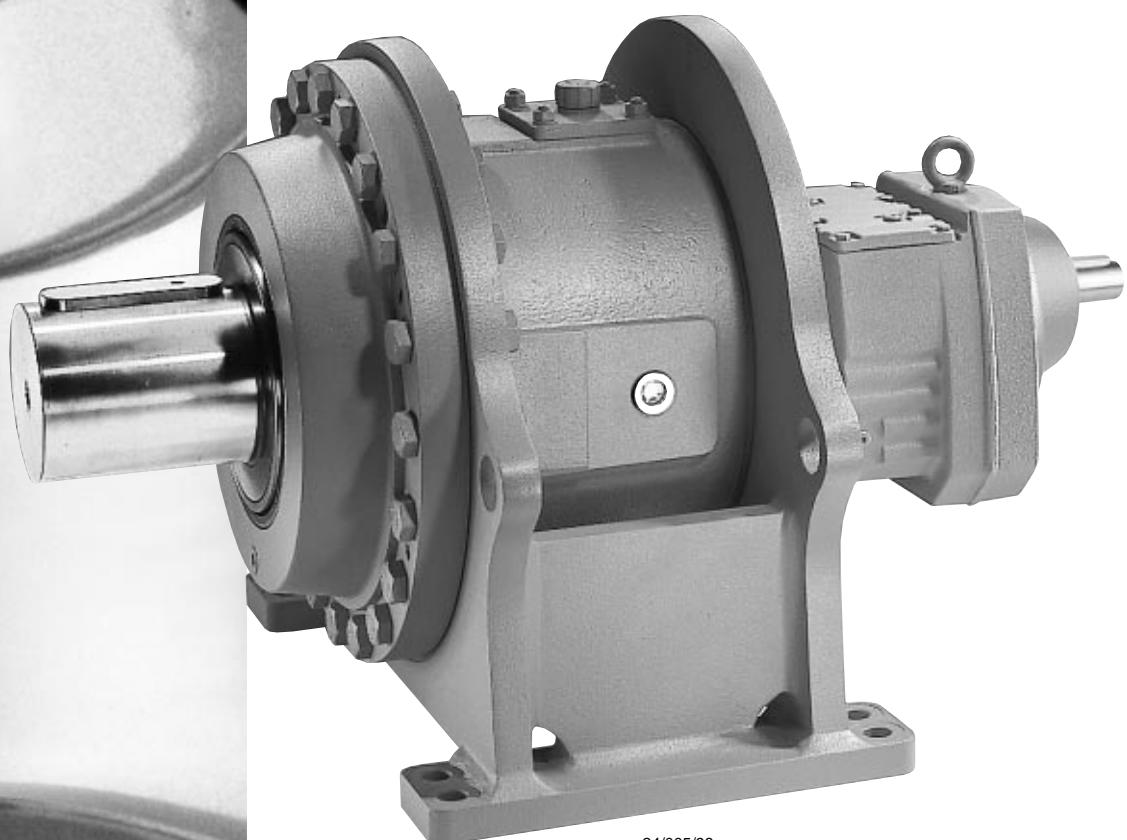




Planetary Gear Units

Operating Instructions Series P...RF..., P...KF..

Edition 09/98



24/005/98

0919 651X / 1098



SEW
SANTASALO

Important Notes

Always follow the safety and warning instructions contained in this publication!



Electrical hazard, e.g. during live working.



Mechanical hazard, e.g. when working on a running machine.



Important instructions for safe and fault-free operation.



A **requirement of fault-free operation** and fulfillment of any rights to claim under guarantee is that the information in the **operating instructions** is adhered to. Consequently, read the operating instructions **before** you start working with the unit!

The **operating instructions** contain **important information about servicing**; as a result, they should be kept **in the vicinity of the unit**.



Disposal (please follow the current instructions):

- Housing parts, gears, shafts and anti-friction bearings of the gear units must be disposed of as steel scrap. The same applies to castings unless there are separate collection arrangements.
- Collect waste oil and dispose of it correctly.

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1 Safety Notes

Preliminary remarks

The following safety notes are principally concerned with the use of gear units.



If using **geared motors**, please also refer to the safety notes for motors in the corresponding operating instructions.

Please also take account of the supplementary safety notes in the individual chapters of these operating instructions.

General information:

During and after operation, geared motors and gear units have live and moving parts and their surfaces may be hot.

All work related to transport, putting into storage, setting up/mounting, connection, startup, maintenance and repair may only be carried out by qualified specialists in accordance with

- the corresponding detailed operating instructions booklet(s) and wiring diagrams,
- the warning and safety signs on the gear unit/geared motor,
- the specific regulations and requirements for the system and
- national/regional regulations governing safety and the prevention of accidents.

Severe injuries and damage to property may result from

- incorrect use,
- incorrect installation or operation,
- removal of required protective covers or the housing when this is not permitted.

Designated use

These geared motors/gear units are intended for industrial systems. They correspond to the applicable standards and regulations. The technical data and the information about permitted conditions are to be found on the nameplate and in the documentation.

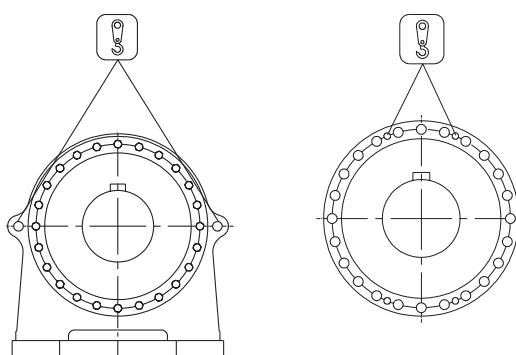
It is essential for all specified information to be observed!



Transport / putting into storage

Inspect the delivery for any damage in transit as soon as you receive the delivery. Inform the transport company immediately. It may be necessary to preclude startup.

SEW Santasolo planetary gear units and planetary geared motors are suspended from the transport points marked in the drawings below. Do not use the transport lugs or lifting eye-bolts on motors or primary gear units (RF../KF..).



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Use suitable, sufficiently rated handling equipment if necessary. Remove any transport fixtures prior to startup.

Installation/mounting

Refer to the instructions in sections 2 and 3!

Operation

Secure the shaft keys for test mode without output elements. Do not render monitoring and protection equipment inoperative even for test mode.

Switch off the geared motor if in doubt whenever changes occur in relation to normal operation (e.g. increased temperature, noise, vibration). Determine the cause; contact SEW if necessary.

Inspection/maintenance

Refer to the instructions in section 4!



2 Installation

2.1 Before you begin



The drive may only be installed if

- the entries on the nameplate of the drive match the mains power supply,
- the drive is undamaged (no damage caused by transport or storage) and
- it is certain that the following requirements have been fulfilled:

With standard gear units: ambient temperature between 0 °C and +45 °C

no oil, acid, gas, vapors, radiation, etc.,

With special versions: drive configured in accordance with the ambient conditions

2.2 Preliminary work

The output shafts and flange surfaces must be thoroughly cleaned of anti-corrosion agents and contamination (use a commercially available solvent). Do not let the solvent come into contact with the sealing lips of the oil seals – danger of damage to the material!

Please note: The service life of the lubricant in the bearings is reduced if the unit is stored for ≥ 1 year.



Fill the planetary gear unit with the oil grade specified on the rating plate:

- Volume in accordance with the mounting position (see appendix)
- Oil level check at the oil sight glass

Check that the oil fill in the primary gear units RF.. or KF.. is correct for its installation position (→ Sec. 4.2.1).

2.3 Installing the gear unit

The gear unit or geared motor may only be mounted or installed in the specified mounting position on a level¹⁾, vibration damping and torsionally rigid support structure. Do not tighten the housing legs and mounting flanges against one another in the process!



The oil checking, drain and breather valves must be freely accessible!

Use plastic inserts (2 – 3 mm thick) if there is a risk of electrochemical corrosion between the gear unit and the driven machine (connection between different metals such as cast iron and high-grade steel)! Also fit the bolts with plastic washers! Ground the housing additionally – use the grounding bolts on the motor.

2.3.1 Installation in damp areas or in the open air

Gear units are supplied in corrosion-resistant versions for use in damp areas or in the open air. Any damage to the paintwork (e.g. on the breather valve) must be repaired.

¹⁾ Maximum permitted flatness error for flange mounting (approximate values with reference to DIN ISO 1101): with → flange 120 – 600 mm max. error 0.2 – 0.5 mm

3 Assembly / Disassembly / Startup

3.1 Required tools

- Set of spanners
- Torque wrench (for shrink discs)
- Mounting device
- Shims and distance rings if necessary
- Fixing devices for input and output elements, for foot mounting and flange attachment

Installation tolerances

Shaft end	Flanges
Diameter tolerance > 50 mm → ISO m6 Center bore to DIN 332, type DR.. d, d ₁ > 85 – 130 mm → M24 > 130 – 180 mm → M30 > 180 mm → – Keys to DIN 6885 (domed type B)	Centering shoulder tolerance ISO m8 IEC standard flanges of AC motors and explosion-proof AC motors are identified by having their dimensions printed in bold print.

3.2 Gear units with solid shafts

3.2.1 Mounting input and output elements

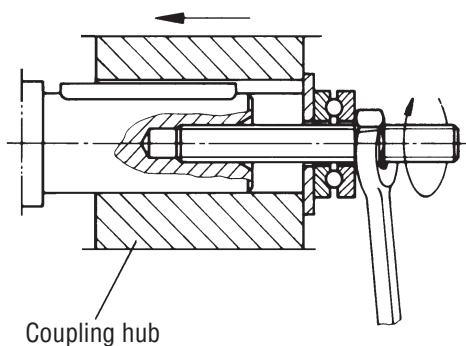


Fig. 1: Example of a mounting device for mounting couplings or hubs onto gear unit or motor shaft ends. It may be possible to dispense with the thrust bearing on the mounting device.

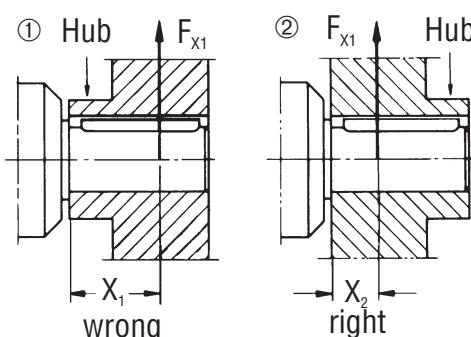


Fig. 2: Correct mounting arrangement ② of a gear or sprocket in order to avoid impermissibly high overhung loads.

Only use a mounting device (→ Fig. 1) for mounting input and output elements. Use the center bore and the thread on the shaft end for positioning purposes.

Never drive belt pulleys, couplings, pinions, etc. onto the shaft end by hitting them with a hammer (damage to bearings, housing and the shaft!).

In the case of belt pulleys, make sure the belt is tensioned correctly (in accordance with the manufacturer's instructions).

Power transmission elements should be balanced after fitting and must not give rise to any impermissible radial or axial forces. (→ Fig. 2; permitted values in the "Planetary Geared Motors" catalog.)

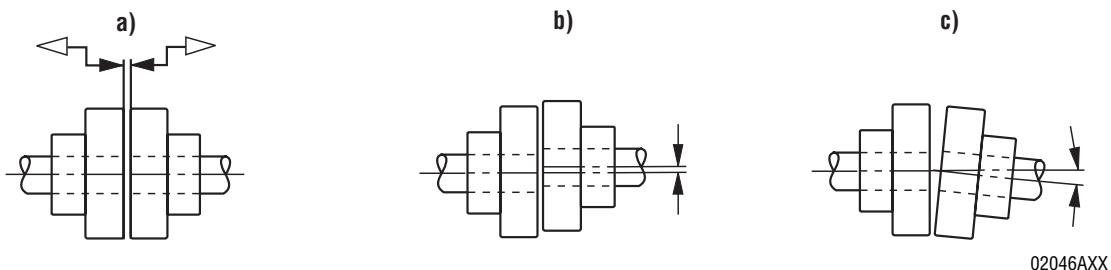
Note:

Assembly is easier if you first apply lubricant to the output element or heat it up briefly (to 80 – 100 °C).

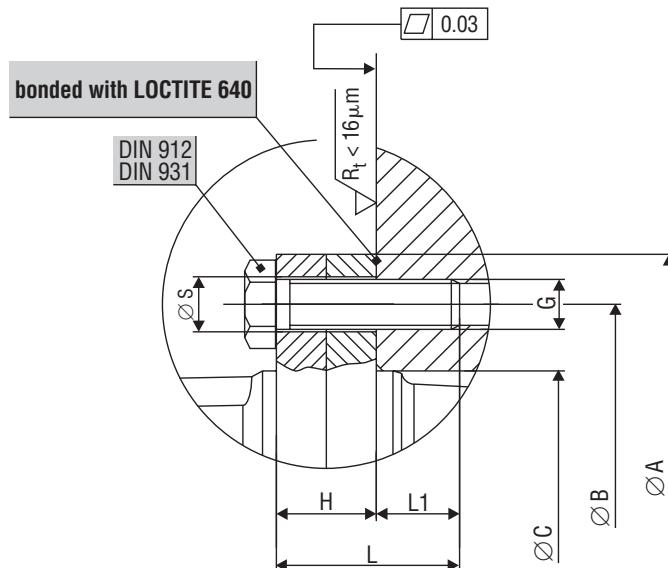


Harmonize the following factors when mounting couplings:

a) Maximum and minimum clearance, b) Axial misalignment, c) Angular misalignment

**Output elements such as belt pulleys, couplings, etc. must have protection against contact!****3.3 Flange attachment**

Only use class 8.8 bolts in accordance with Table 1 and tighten them to the specified tightening torque. Also apply Loctite 640 to the bolt contact surface.



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Fig. 3: Flange mounting bolts

Gear unit type P	Bolt DIN	Thread	Number	Strength class	Tightening torque Nm $\pm 20\%$	Dimensions in mm						
						S	H	L	L1	A	B	C
001	912.931	M20	20	8.8	310	22	36	70	34	410	370	330 f8
011	912.931	M20	20	8.8	310	22	38	70	32	450	410	370 f8
021	912.931	M20	24	8.8	310	22	44	80	36	500	460	410 f8
031	912.931	M24	20	8.8	540	26	46	80	34	560	510	460 f8
041	912.931	M30	20	8.8	1100	33	60	110	50	620	560	480 f8
051	912.931	M30	24	8.8	1100	33	60	110	50	650	590	530 f8
061	912.931	M36	24	8.8	1830	39	70	130	60	760	690	610 f8
071	912.931	M36	24	8.8	1830	39	80	140	60	840	770	690 f8
081	912.931	M42	24	8.8	3200	45	80	150	70	920	840	750 f8

Table 1: Flange bolts

3.4 Foot mounting

Only use class 8.8 bolts in accordance with Table 2 and tighten them to the specified tightening torque.

Gear unit type P	Bolt	Thread	Number	Strength class	Tightening torque
					Nm ±20 %
001	912.931	M20	8	8.8	310
011	912.931	M20	8	8.8	310
021	912.931	M20	8	8.8	310
031	912.931	M24	8	8.8	540
041	912.931	M30	8	8.8	1100
051	912.931	M36	8	8.8	1830
061	912.931	M36	8	8.8	1830
071	912.931	M42	8	8.8	3200
081	912.931	M42	8	8.8	3200

Table 2: Hold-down bolts

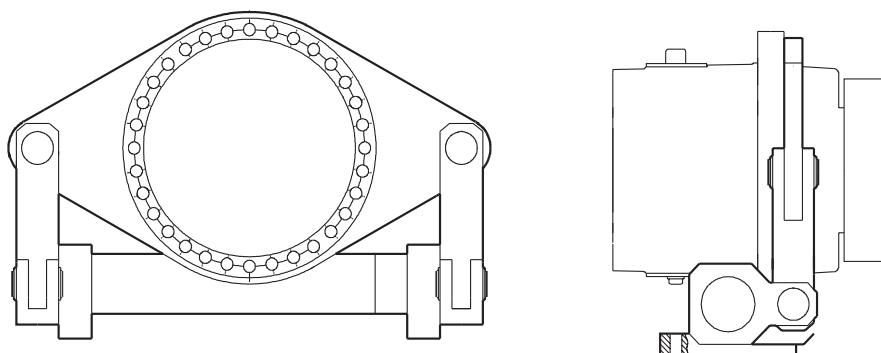
3.5 Shaft mounted gear units

3.5.1 Mounting torque arms

Do not place torque arms under strain during installation!

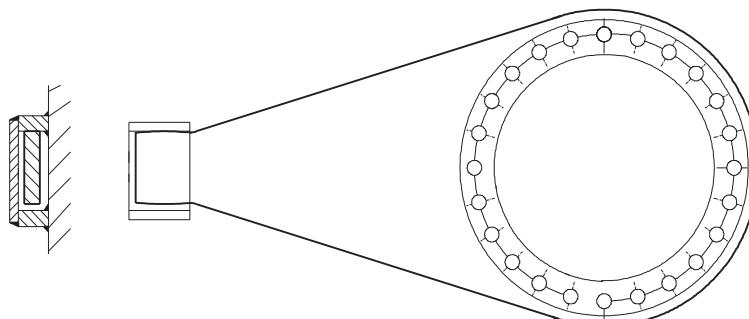


3.5.1.1 Double-sided torque arms



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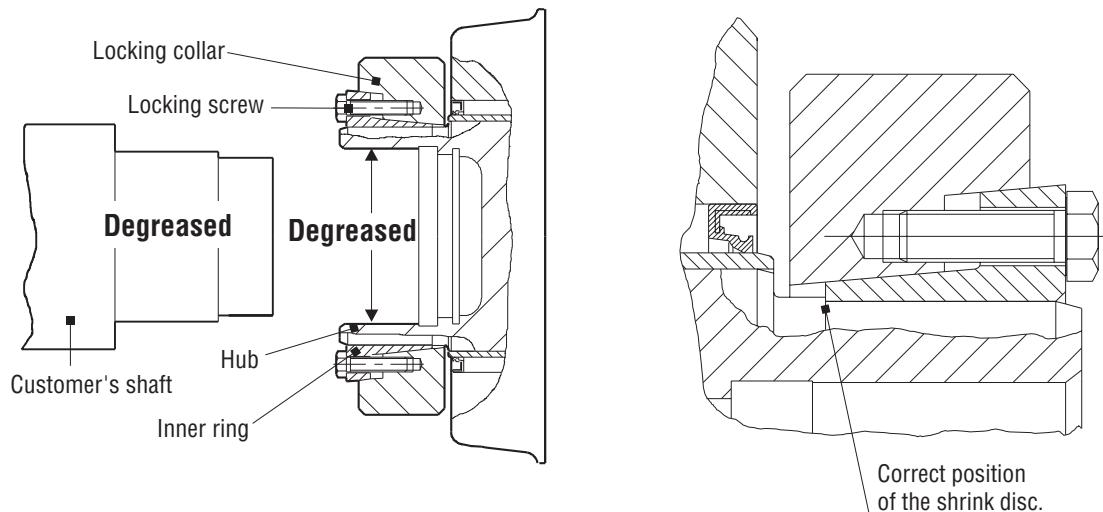
3.5.1.2 Single-sided torque arms



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3.5.2 Gear unit with hollow shaft and shrink disc

3.5.2.1 Mounting



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1. Degrease the hub bore and the shaft!
2. Check the correct position of the shrink disc. The shrink disc is positioned correctly when it is in contact with the shoulder. The outside surface of the hub can be greased in the area of the shrink disc seat.
- Important: Never tighten the locking screws until the shaft has been installed.**
3. Install the shaft or push the hub onto the shaft.
4. Tighten all locking screws (at evenly spaced intervals) to the correct tightening torques.
Tighten all locking screws until the front lateral surfaces of the locking collar and inner ring are in alignment.

Gear unit type P	Bolt	Rated torque		Tightening torque Nm ±20 %
		Nm		
001	M14	30200		160
011	M16	61400		250
021	M16	77500		250
031	M20	109000		490
041	M20	159000		490
051	M20	207000		490
061	M24	300000		840
071	M24	427000		840
081	M24	539000		840

Table 3: Tightening torques of the locking screws

3.5.2.2 Notes on disassembly

Important: Risk of injury if the shrink disc is not removed correctly!

- 1. Unscrew the locking screws evenly one after the other.**
2. If the locking collar does not separate from the inner ring automatically, unscrew a few locking screws and screw them into the adjacent forcing threads.
This makes the job of unfastening easy.
3. Remove the shaft or pull the hub off the shaft (If it is necessary to remove any rust which may have formed between the hub and the end of the shaft.)
4. Pull the shrink disc off the hub.



Cleaning and lubrication

There is no need to take apart and re-grease disassembled shrink discs before they are screwed back on.

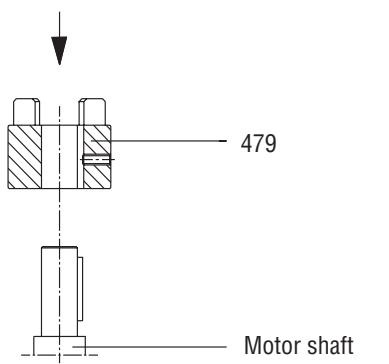
The shrink disc only needs to be cleaned and re-greased if it is contaminated.

Use a solid lubricant with a friction factor of 0.04.

Lubricant	Sold as / manufacturer
Molykote 321 R (lube coat)	Spray / Dow Corning
Molykote Spray (powder spray)	Spray / Dow Corning
Molykote G Rapid	Spray or paste / Dow Corning
Aemasol MO 19R	Spray or paste / Dow Corning
Molykombin UMFT 1	Spray / Klüber Lubric.
Unimoly P5	Powder / Klüber Lubric.

3.6 Mounting the coupling for LP/LQ adapter

3.6.1 Mounting coupling LP adapter / LQ adapter with key



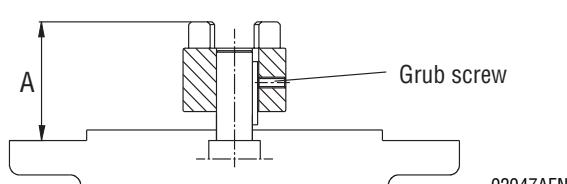
1. Clean the motor shaft and flange surfaces of the motor and the adapter.

2. Push coupling half 479 onto the motor shaft.

3. Check the position of the coupling half (clearance "A", see Table 4).

4. Use a grub screw to secure the coupling half.

5. Fit the motor onto the adapter, making sure that the dogs of the coupling pieces engage.

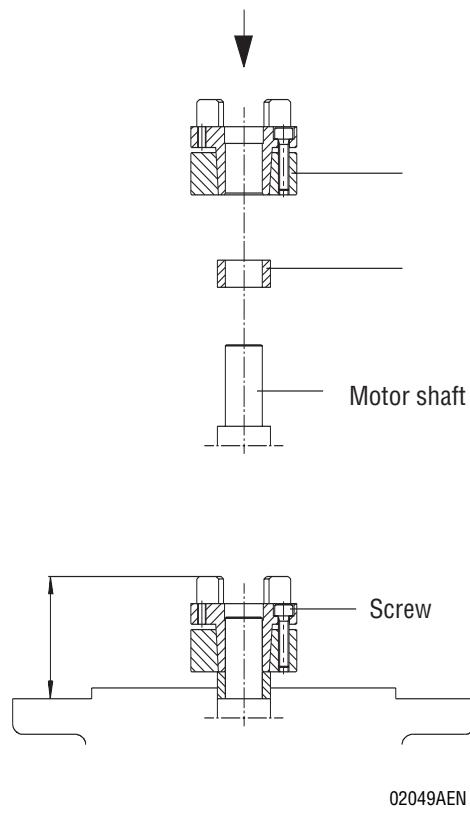


Type	Coupling size	Clearance "A" [mm]
LP 63	19/24	31.5
LP 71		
LP 80	24/28	41
LP 90	28/38	50.5
LP 100		
LP 112	38	61
LP 132S/M		
LP 132ML	42	82
LP 160		
LP 180	55	
LP 200		
LP 225	65	118
		150

Type	Coupling size	Clearance "A" [mm]
LQ 100/1/2		49
LQ 100/3/4	19/24	53
LQ 115/1		59
LQ 115/2/3		62
LQ 140/1/2	24/28	64
LQ 155/1		76.5
LQ 190/1/2	28/38	86.5
LQ 190/3	38/45	100

Table 4

3.6.2 Mounting coupling LQ adapter without key



1. Clean the motor shaft and flange surfaces of the motor and the adapter.
2. Push distance piece (491) onto the motor shaft.
3. Unscrew the bolts (DIN 912) of the coupling half (479) and loosen the conical connection of the coupling halves.
4. Heat the coupling half to 80 – 100 °C and push it onto the motor shaft until it touches the distance piece.
5. Tighten the bolts on the coupling half several times in sequence until all bolts have the tightening torque T_A specified in the table.
6. Check the position of the coupling half (clearance "A", see Table 5).
7. Fit the motor onto the adapter, making sure that the dogs of the coupling pieces engage.

There are forcing threads available for dismantling the coupling. The locking screws can be removed and used as forcing bolts.

Forcing off must also be performed evenly and several times in sequence.

Type	Coupling size	Bolts DIN 912	Tightening torque T_A [Nm]	Clearance "A" [mm]
LQ 100/1/2				49
LQ 100/3/4	19/24	M 4	2.9	53
LQ 115/1				59
LQ 115/2/3	24/28	M 5	6.0	62
LQ 140/1/2				64
LQ 155/1	28/38	M5	6.0	76.5
LQ 190/1/2				86.5
LQ 190/3	38/45	M 6	10.0	100

Table 5

4 Inspection and Maintenance

4.1 Inspection and maintenance periods

Frequency	Measures	→ Sec.
After 500 machine hours	Change the oil in the planetary gear unit	4.2.2
Every 3000 machine hours At least every six months	Check the oil	4.2.1
Depending on operating conditions (→ Fig. 4) at least every 2 years	Change mineral oil	4.2.2
	Renew the anti-friction bearing grease	-
Depending on operating conditions (→ Fig. 4) at least every 3 years	Change synthetic oil	4.2.2
	Renew the anti-friction bearing grease	-

Table 6: Inspection and maintenance periods

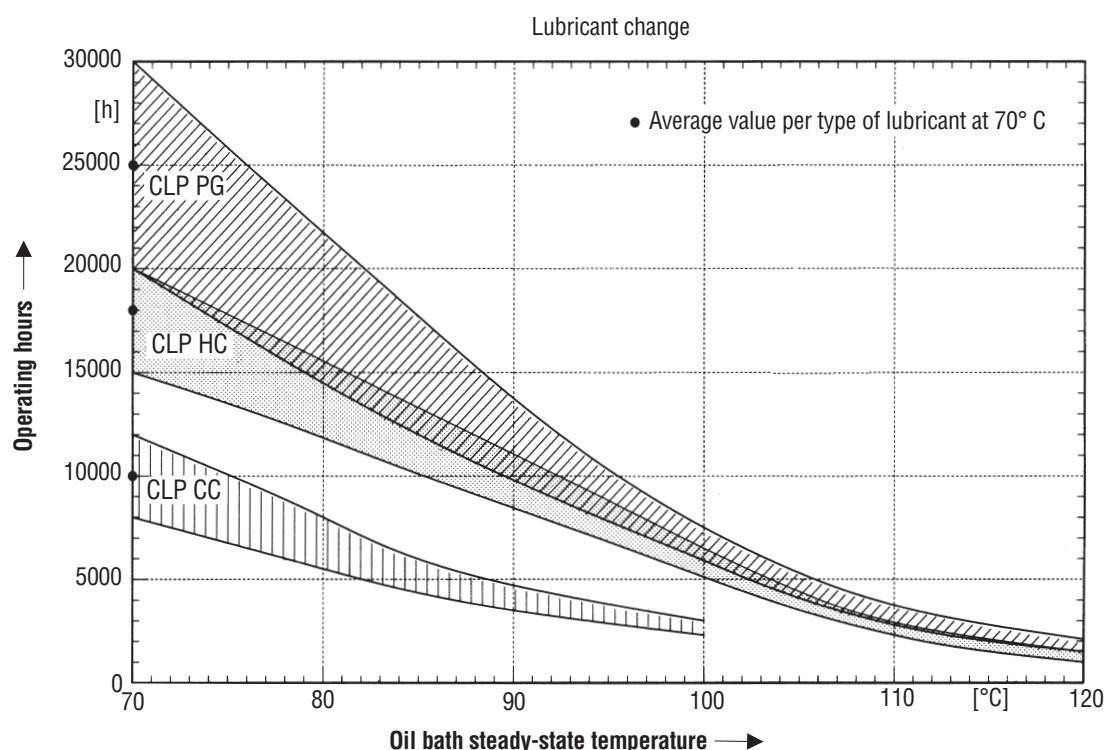


Fig. 4: Oil change intervals for standard gear units under normal environmental conditions.
Change the oil more frequently when using special versions subject to more severe/aggressive environmental conditions!

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4.2 Inspection and maintenance

Do not intermix synthetic lubricants and do not mix synthetic and mineral lubricants!
Oil is the standard lubricant.



4.2.1 Checking the oil

1. **De-energize the drive and secure it against unintentional switch-on!**
Wait until the gear unit has cooled down – Danger of burns!
2. Remove some oil from the oil drain plug.
3. Check the oil consistency (colour, consistency).
– Change the oil if it is contaminated (→ Sec. 4.2.2)
4. Check the oil level at the oil sight glass – correct the level if required.
5. For gear units with an oil level screw:
Remove the oil level screw, check the fill level and correct it if necessary.
Screw the oil level screw back in.



4.2.2 Changing the oil

Only change the oil when the gear unit is at operating temperature.

1. **De-energize the drive and secure it against unintentional switch-on!**
Wait until the gear unit has cooled down – Danger of burns!

Note: However, the gear unit must still be warm, otherwise the high viscosity of excessively cold oil will make it harder to drain the oil correctly.

2. Place a container underneath the oil drain plug.
3. Remove the oil level screw, breather valve and oil drain plug.
4. Drain all the oil.
5. Screw in the oil drain plug.
6. Fill new oil through the breather hole.
– Volume in accordance with the mounting position (→ appendix)
– Check at the oil sight glass/oil level screw
7. Screw the oil level screw back in.
8. Screw in the breather plug/breather valve.

5 Troubleshooting

Problem	Possible cause	Solution
Unusual, regular running noise	a) Meshing/grinding noise: Bearing damage b) Knocking noise: Irregularity in the gearing	1. Check the oil 2. Contact customer service
Unusual, irregular running noise	Foreign bodies in the oil	1. Check the oil 2. Stop the drive, contact customer service
Oil leaking ¹⁾ • from the motor flange • from the motor oil seal • from the gear unit flange • from the output end oil seal	a) Seal defective b) Gear unit not vented	Call customer service for a) Vent the gear unit for b)
Oil leaking • from the breather valve	a) Too much oil b) Breather valve not fitted properly c) Frequent cold starts (oil foams) and/or high oil level	a) Correct the oil level b) Fit the breather valve correctly
Output shaft is not rotating although the motor is running or the input shaft is rotating	Shaft hub connection in the gearbox interrupted	Contact customer service or send in the gear unit/geared motor for repair

1) It is normal for oil to leak out of the oil seal during the **running-in phase (24 hour running time)**.

Table 7: Troubleshooting

Please have the following information to hand if you require the assistance of our customer service:

- Nameplate data (complete)
- Type and extent of the fault
- Time and circumstances of the fault
- Presumed cause

Lubrication table for SEW drives

01 763 098 E

Appli-cation	At ambient temperature				Lubricant type DIN (ISO)	ISO viscosity resp. NLGI class	ARAL	BP	ESSO	MOBIL	Shell	DEA	KÜBLER LUBRICATION	TriboL / wintershall
	-50	0°C	+50	+100										
Helical gear units														
Application	-25		+80		CLP PG	VG 220	Aral Degol GS 220	BP Energyn SG-XP 220	Mobil Glygoyle 30	Shell Tivela Oil WB	Klüber synth GH 6-220	Tribol 800/220		
	0		+40		CLP (CC)	VG 220	Aral Degol BG 220	BP Energol GR-XP 220	Mobilgear 630	Shell Omala Oil 220	Falcon CLP 220	Klüberoil GEM 1-220	Tribol 1100/220	Wintershall Ersolan 220
	-15		+25		CLP (CC)	VG 150	Aral Degol BG 100	BP Energol GR-XP 100	SPARTAN EP 150	Shell Omala Oil 100	Falcon CLP 150	Klüberoil GEM 1-150	Tribol 1100/100	Wintershall Ersolan 100+150
	-30		+10		CLP (HLP)	VG 68-46	Aral Degol BG 46	BP Energol GR-XP 68	ESSO ATF D-21611	Mobil D.T.E. 15M	Shell Tellus Oil T 32	Klüberoil GEM 1-68	Tribol 1100/68	Wintershall Ersolan 68
	-45		-20		CLP (HLP)	VG 32			BP Energol HLP-HM 10	UNIVIS J 13	Mobil D.T.E. 11M	Aircraft Hydraulic Oil 15	ISOFLEX MT 30 ROT	Wintershall Wiolan HV 15
Planetary gear units														
Application		+30	+60		CLP PG	VG 680	Aral Degol BG 680	SPARTAN EP 680	Mobilgear 636	Falcon CLP 680	Klüberoil GEM 1-680	Tribol 1100/680	Wintershall Ersolan 680	GF
	+10		+40		CLP (CC)	VG 460	Aral Degol BG 460	SPARTAN EP 460	Mobilgear 634	Falcon CLP 460	Klüberoil GEM 1-460	Tribol 1100/460	Wintershall Ersolan 460	GF
	0		+30		CLP (CC)	VG 320	Aral Degol BG 320	SPARTAN EP 320	Mobilgear 632	Falcon CLP 320	Klüberoil GEM 1-320	Tribol 1100/320	Wintershall Ersolan 320	GF
	-10		+20		CLP (CC)	VG 220	Aral Degol BG 220	SPARTAN EP 220	Mobilgear 630	Falcon CLP 220	Klüberoil GEM 1-220	Tribol 1100/220	Wintershall Ersolan 220	GF
	-20		+10		CLP PG	VG 150	Aral Degol BG 150	SPARTAN EP 150	Mobilgear 629	Falcon CLP 150	Klüberoil GEM 1-150	Tribol 1100/150	Wintershall Ersolan 150	GF
Anti-friction bearings														
Special lub-ger unit for	0		+60		CLP PG	VG 220						SYNTHESO D 220 EP	Tribol 800/220	
	-15		+25		CLP PG	VG 150						SYNTHESO D 150 EP	Tribol 800/150	
	-30		+10		CLP PG	VG 100						SYNTHESO D 100 EP	Tribol 800/100	
			00 ²⁾		CLP PG	Aralub SKA 00						Klüber synth GE 46-1200		
	-25		+60		CLP PG	000 - 0 ²⁾	Aralub MFL 00	FIBRAX EP 370	Mobilux EP 004	Shell Special-Gear Grease H	Klüberplex GE 11-680	CENTOPLEX 2 EP	Wintershall Wiolub GFW	
	-15		+40		CLP PG	2 - 3	Aralub HL 3	BP Energrease LS - EP 00	Exxon BEACON 2	Mobilux EP 2	Orona FG EP 0			
	-30		+60		CLP PG	2			Unirex S2	Mobiltemp SHC 100	Glissando 30	BARRIERA L55/2	Wintershall Wiolub LKF 3	
	-40		+80		CLP PG	2				Unirex N3				
	-25		+80		CLP PG	3					Shell Alvania Fett R 3			
	-25		+60		CLP PG	3					Aero Shell Grease 16			
	-45		-25		CLP PG	2								

¹⁾ Lubricants supplied at the assembly plants SEW USOCOME (France)

²⁾ Only for gear units R302, R32 - for other gear units consult SEW-EURODRIVE

¹⁾ Helical-worm gear units with increased output torques

²⁾ Only for gear units R302, R32 - for other gear units consult SEW-EURODRIVE

CLP PG = Mineral oil
CLP HC = Hydrocarbons

CLP = Polyglycol
HLP = Hydraulic oil

= Synthetic lubricants

= Mineral lubricants

**Schmierstoff-Füllmengen
Richtwerte***

**Lubricant Filling Quantity
Approximate Values***

**Quantités de remplissage de
lubrifiant
Valeurs approximatives***



44 751 098

Füllmenge (l) als Richtwert* bei Baufom	Filling quantity (l) (approximate values *) per mounting position	Capacité approximative* de remplissage (l) pour position de montage	
Type/Size/Type	Bauform IM	Mounting positions IM	Positions de montage IM
P..001	8		16
P..011	10		20
P..021	15		30
P..031	20		40
P..041	25		50
P..051	32		64
P..061	55		110
P..071	65		130
P..081	100		200
Type/Size/Type	Bauform IM	Mounting positions IM	Positions de montage IM
RF77	1.2	3.7	3.8
RF87	2.4	7.9	6.8
RF97	5.1	14	11.9
RF107	6.3	19.6	15.9
RF137	9.5	32.5	27
RF147	16.4	52	47
RF167	26	88	82
Type/Size/Type	Bauform IM	Mounting positions IM	Positions de montage IM
KF77	1.1		2.7
KF77	2.2		4.5
KF87	3.7		8.4
KF97	7		16.5
KF107	10		25
KF127	21		41
KF157	31		62

* Genaue Werte abhängig von Stufenzahl und Übersetzung. Bei Befüllung unbedingt die Ölstands-schraube bzw. das Ölschauglas als Anzeige der genauen Ölmenge benutzen.

* The exact values depend on the number of stages and the gear ratio. Therefore it is essential to use the oil level screw or the oil sight glass as an indicator of the correct lubricant quantity.

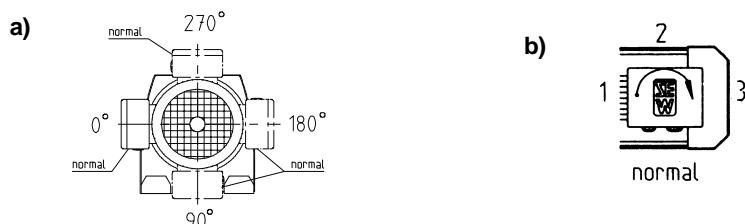
* Les quantités exactes sont fonction du nombre de trains et du rapport de réduction. Lors du remplissage, vérifier impérativement la quantité de lubrifiant à partir du bouchon de niveau ou du regard d'huile.

Symbol Symbol Légende	Bedeutung Definitions Définition
	Befestigung / Mounting surface / Fixation
○	Entlüftung / Breather Plug / Event
--●--	Ölstand / Oil level / Niveau
●	Ölablaß / Drain Plug / Vidange

Zur genauen Festlegung des Antriebs sind die folgenden Bestellangaben neben der obligatorischen Bauformangabe möglich. Fehlen sie, so werden die Normalausführungen geliefert:

For the precise specification of a drive the following ordering details are possible, in addition to the essential mounting position stipulation. If these are absent, the standard feature is supplied:

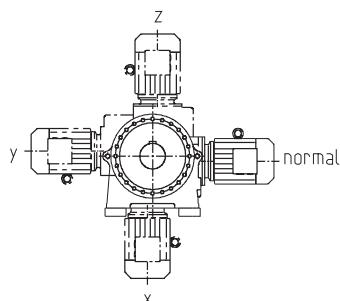
Pour la détermination exacte du réducteur, les données ci-dessous permettent de compléter l'indication obligatoire de la position de montage. En l'absence de ces données, c'est l'exécution normale qui est prise en compte.



- a) Lage des Klemmenkastens:**
0°, 90°, 180° oder 270°, 0° = Normalausführung
b) Lage der Kableinführung:
normal, 1, 2 oder 3.
Bei Bremsmotoren und Ausführung KS bitte
größere Abmessungen (siehe Maßblatt)
beachten. Bei integriertem Steckverbinder IS kunden-
seits frei wählbar.

- a) Position of the terminal box:**
0°, 90°, 180° or 270°, 0° = normal feature
b) Position of the cable entry:
Normal, 1, 2 or 3
On brake motors and feature KS please take the
larger dimensions into account. Please refer
to the dimension sheet. With the IS connector
cable, entry position can be selected by the
customer.

- a) Position de la boîte à bornes:**
0°, 90°, 180° ou 270°, 0° = exécution normale
b) Position des entrées de câbles:
normale, 1, 2 ou 3
Pour les moteurs-frein et l'exécution KS, tenir compte
des dimensions de boîte à bornes plus grandes
(voir feuille de cotés correspondante).
Avec un connecteur IS, le client peut choisir la position
librement.



Bei der Ausführung Planetengetriebemotoren mit Kegelradvorschaltstufe sind Schwenkbauformen möglich.

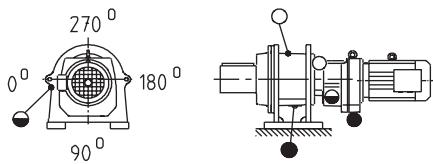
Lage der Kegelradvorschaltstufe: normal, x, y, und z.

Swivel mounting positions are also possible in the planetary geared motor versions with helical-bevel preliminary stages.
Position for the helical-bevel preliminary stage: normal, x, y, and z.

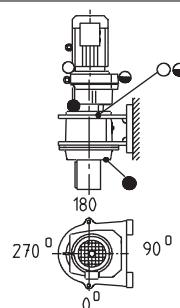
Dans le cas de motoréducteurs planétaires accouplés à un réducteur amont à renvoi d'angle, il existe des positions de montage mixtes.
Position du réducteur amont à renvoi d'angle ; normal, x, y et z.

P..RF..DT/DV..

B3

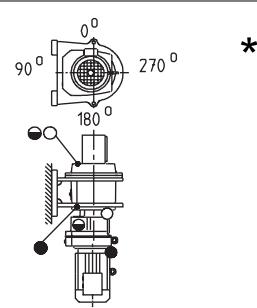


V5



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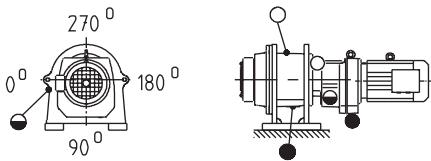
V6



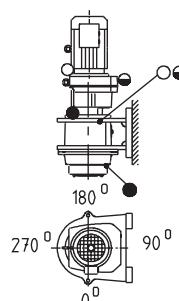
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PH..RF..DT/DV..

B3

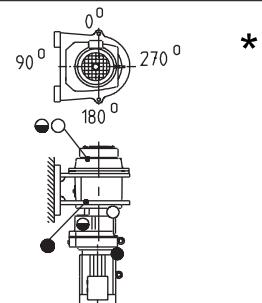


V5



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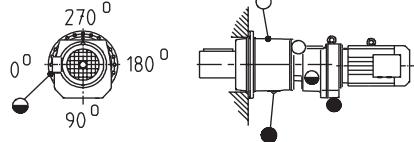
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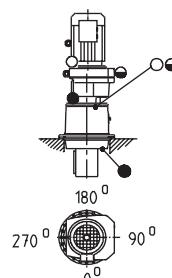
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PF..RF..DT/DV..

B5

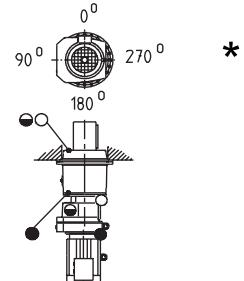


V1



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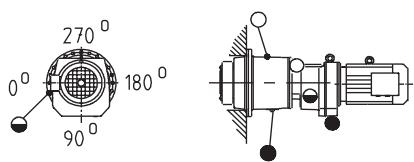
V3



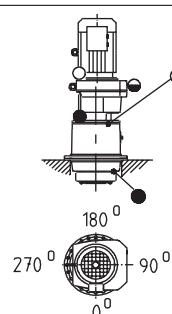
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PHF..RF..DT/DV..

B5

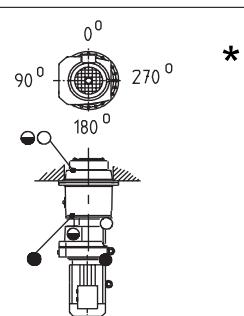


V1



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V3



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* Bitte Einschränkung auf S. 9 unter „Nachprüfung auf Erwärmung“ beachten.
Bitte bei Bauformenbeschreibung unbedingt Kapitel „Bauformen-Allgemeines“ beachten.

* Please note the restriction on page 9 under „Overheating Monitoring“.
When specifying the mounting position please take special note of the chapter “Mounting Positions In General”.

* Tenir compte des restrictions mentionnées à la page 9 sous “Contrôle de la puissance thermique (échauffement)”.
Tenir compte des remarques énoncées au chapitre “Positions de montage-Divers”.

**Kegelrad-Planeten-
getriebemotoren
Bauformen IM**

**Helical-Bevel Planetary
Geared Motors
Mounting Positions IM**

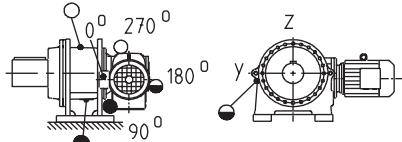
**Motoréducteurs planétaires
à renvoi d'angle
Positions de montage IM**

SEW
SANTASALO

44 194 098

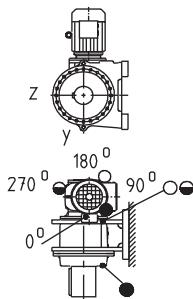
P..KF..DT/DV..

B3



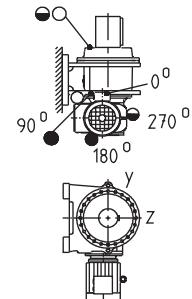
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V5



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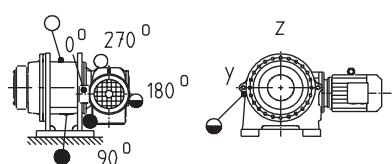
V6



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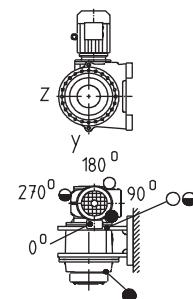
PH..KF..DT/DV..

B3



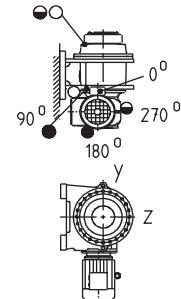
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V5



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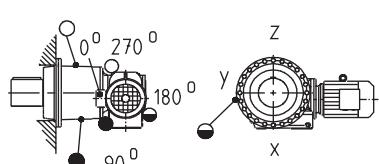
V6



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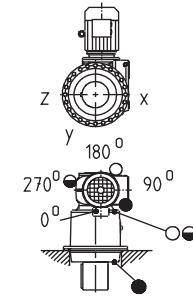
PF..KF..DT/DV..

B5



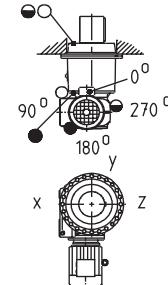
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V1



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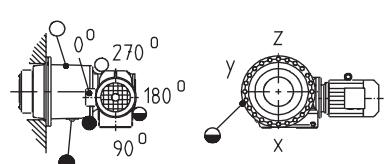
V3



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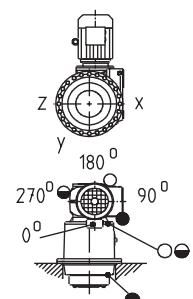
PHF..KF..DT/DV..

B5



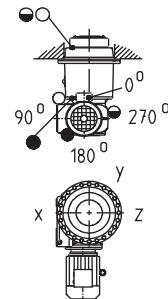
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V1



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V3



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* Bitte Einschränkung auf S. 9 unter „Nachprüfung auf Erwärmung“ beachten.

Bitte bei Bauformenbeschreibung unbedingt Kapitel „Bauformen-Allgemeines“ beachten.

* Please note the restriction on page 9 under “Overheating Monitoring”.

When specifying the mounting position please take special note of the chapter “Mounting Positions In General”.

* Tenir compte des restrictions mentionnées à la page 9 sous “Contrôle de la puissance thermique (échauffement)”.

Tenir compte des remarques énoncées au chapitre “Positions de montage-Divers”.

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	Assembly Sales, Service	Philadelphia/PA	SEW-EURODRIVE INC. Pureland Ind. Complex 200 High Hill Road, P.O. Box 481 Bridgeport, New Jersey 08014	Tel. (609) 4 67-22 77 Telefax (609) 8 45-31 79
		Dayton	SEW-EURODRIVE INC. 2001 West Main Street Troy, Ohio 45373	Tel. (513) 3 35-00 36 Telefax (513) 2 22-41 04 Telex: 6 874 204
		Dallas	SEW-EURODRIVE INC. 3950 Platinum Way, Dallas, Texas 75237	Tel. (214) 3 30-48 24 Telefax (214) 3 30-47 24
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