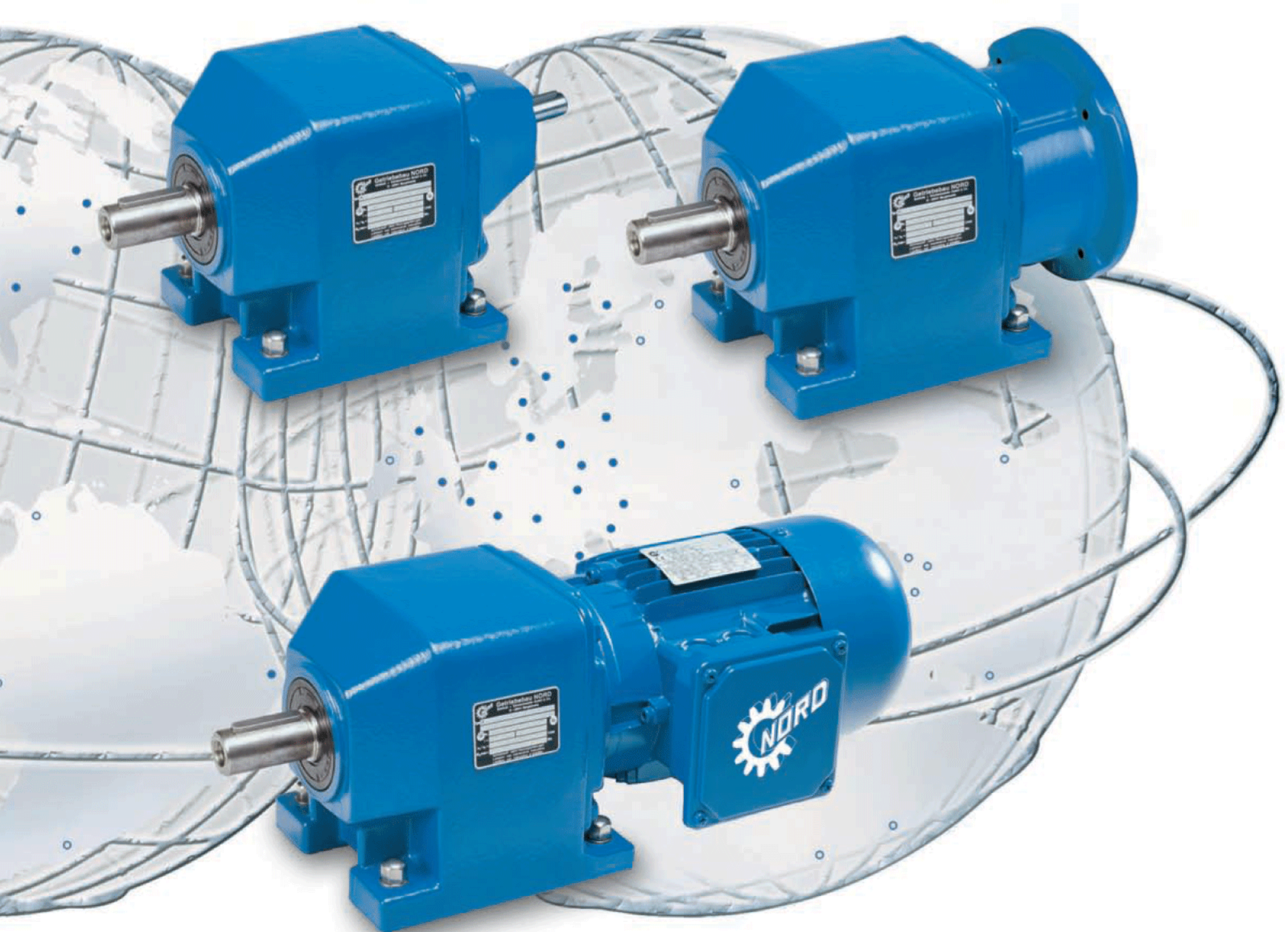


Operating & Maintenance Instructions

NORDBLOC-Helical Gearboxes



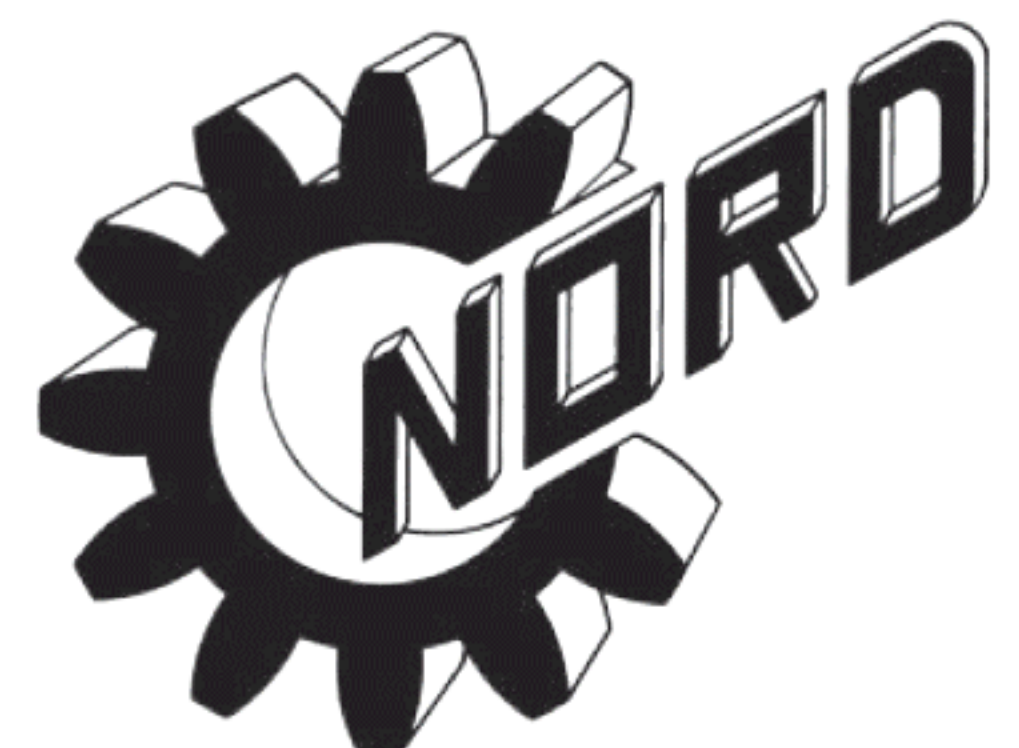
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Δ Caution

It is presumed that fundamental project work as well as all work with regard to transport, assembly, installation, starting-up, maintenance and repair is performed by qualified personnel or supervised by skilled labour taking overall responsibility. Make absolutely sure that no voltage is applied at all while work is being done on the geared motor. Drive must also be secured against switching on.

Δ Caution

Any deviation from normal operating conditions (increased power consumption, temperature, vibrations, noise etc.) or warning signals by monitoring equipment suggest malfunction. Inform the responsible maintenance personnel at once to prevent the trouble from getting worse and causing, directly or indirectly, serious physical injury or material damage.

Δ In case of doubt disconnect the machine immediately!

Preparing and performing installation

- Lifting devices on the drive are designed to carry the drive weight
- the foundation (base) should be of adequate size and vibration-proof
- install gear unit or geared motor rigid and braceless
- ensure sufficient ventilation
- make use of tapped hole (DIN-EN 332) to suit fastening to the shaft end
- avoid shocks on shafts (bearing damage!)
- preferably use flexible coupling between output shaft and driven machine
- fit output elements to shaft end or secure feather key before starting the motor
- use torque arm with rubber buffer on shaft mounting gearboxes

Connection of motor

- Connect motor according to diagram
- make sure that mains voltage/frequency are in accordance with nameplate information
- make secure protective conductor connection
- if motor is running in reverse direction, interchange two phases
- Close unused cable entrances holes and the box itself in a dust- and watertight manner.
- install protective switches to prevent overload and phase failure
- set motor protection switch to nominal current
- wiring diagrams on the last page

Starting up

- in case of long-time storage take special precautions (as provided in works standard sheet "Extended Storage")
- check position of oil-level plug with help of mounting position tables in applicable catalogue
- check oil-level
- prior to starting-up, remove vent plug from vent screw if necessary
- if not specified otherwise, first oil filling as is shown in list of lubricants
- air-cooled motors are designed for ambient temperatures between -20°C and +40°C and for installation at altitudes ≤ 1.000 m above M.S.L.
- Their use in hazardous areas is prohibited unless they are expressly intended for such use (follow additional instructions)

Maintenance**MOTOR**

- remove dust deposit (overheating)
- dismount anti-friction bearings for cleaning and refill with grease
- ensure that the bearing cage is packed to about 1/3 with grease, distribute evenly
- select proper type of lubricating grease from following table

GEARBOX

- regular oil level check
- change lubricant every 10.000 working hours or after two years at the latest.
- combine the lubricant change with thorough cleaning of gear unit
- lubricant changing intervals will be twice as long if synthetic products are used
- extreme working conditions (high air humidity, aggressive media and large temperature variations) call for reduced lubricant changing intervals

Δ Synthetic and mineral lubricants must not be mixed either for filling or for disposal!

	[cm ³] CAPACITY [cm ³]								[cm ³]			
	Horizontal position								Vertical position			
	Helical Gearboxes double reduction											
	B 3	B 6	B 7	B 8	B 5	B 5I	B 5II	B 5III	V 1	V 3	V 5	V 6
SK 172	350	500	500	500	350	500	500	500	500	500	500	500
SK 272	600	1.000	1.000	1.000	600	1.000	1.000	1.000	1.000	1.000	1.000	1.000
SK 372	600	1.000	1.000	1.000	600	1.000	1.000	1.000	1.000	1.000	1.000	1.000
SK 472	1.000	1.800	1.800	1.900	1.000	1.900	1.900	1.500	1.900	1.900	2.000	1.900
SK 572	1.000	1.800	1.800	1.900	1.000	1.900	1.900	1.500	1.900	1.900	2.000	1.900
SK 672	1.400	3.600	3.600	3.600	1.400	3.600	3.600	3.600	3.600	3.600	3.600	3.600
SK 772	2.000	2.700	3.300	3.500	1.600	3.500	3.100	3.100	3.300	3.300	4.200	3.300
SK 872	3.700	4.700	8.000	9.100	3.500	7.900	3.900	7.200	7.700	9.000	7.300	9.600
SK 972	6.500	8.500	14.000	15.700	6.500	13.000	6.500	12.000	13.500	15.000	14.700	16.000
	Helical Gearboxes triple reduction											
	B 3	B 6	B 7	B 8	B 5	B 5I	B 5II	B 5III	V 1	V 3	V 5	V 6
SK 273	620	1.100	1.100	1.100	620	1.100	1.100	1.100	1.100	1.100	1.100	1.100
SK 373	550	1.100	1.100	1.100	550	1.100	1.100	1.100	1.100	1.100	1.100	1.100
SK 473	1.300	2.100	2.100	2.100	1.250	2.100	2.100	2.100	2.500	2.400	2.400	2.500
SK 573	1.300	2.100	2.100	2.100	1.250	2.100	2.100	2.100	2.500	2.400	2.400	2.500
SK 673	1.800	2.800	2.800	2.800	1.700	3.200	3.200	3.200	3.200	3.600	3.200	3.200
SK 773	2.500	3.300	3.300	3.700	2.300	3.600	3.900	3.900	4.500	5.000	4.600	4.500
SK 873	4.500	7.500	7.500	7.500	5.000	7.600	8.000	8.000	8.000	8.800	9.100	8.400
SK 973	8.000	13.300	13.000	13.000	7.900	13.000	14.000	14.000	16.000	16.500	16.000	15.800

The Gear Units **SK 172 - SK 373** are lubricated with mineralic oil. There are no vent or drain plug.

The standard-lubrication for sizes **SK 472 - SK 973** is mineral-oil. There are vent and drain plugs (see mounting positions).

REMARK

Filling quantities are approx. figures. Oil level must be checked according to oil-level plugs.

Note:

This table lists compatible lubricants of different suppliers. Within the same viscosity class and type of lubricant the supplier can be chosen freely. In case you change the viscosity class resp. the type of lubricant you should contact us in advance as otherwise we cannot assure the proper function of our drive and the warranty becomes void.

Schmierstoffarten / Type of lubricant / Type de lubrifiant									
Schmierstoffart Type of lubricant Type de lubrifiant	Umgebungstemp. Ambient temp. Temp. ambiante	ARAL	BP	Castrol	ESSO	FUCHS	KLÜBER LUBRICATION	Mobil	Shell
Mineralöl Mineral oil Huile minérale	Schneckengetriebe 0 ... 40°C ISO VG 680	Degol BG 680 Degol BG 680 plus	--	Alpha SP 680	Spartan EP 680	Renolin CLP 680 CLP 680 Plus	Klüberoil GEM 1-680N	Mobilgear: - 636 - XMP 680	Shell Omala 680
	ISO VG 220 - 5 ... 40°C (normal)	Degol BG 220 BG 220 plus	Energol GR-XP 220	Alpha SP 220 Alpha MW220 Alpha MAX 220	Spartan EP 220	Renolin CLP 220 Renolin CLP 220 Plus	Klüberoil GEM 1-220N	Mobilgear 630 Mobilgear XMP 220	Shell Omala 220
	ISO VG 100 - 15 ... 25°C	Degol BG 100 BG 100 plus	Energol GR-XP 100	Alpha SP 100 Alpha MW 100 Alpha MAX 100	Spartan EP 100	Renolin CLP 100 Renolin CLP 100 Plus	Klüberoil GEM 1-100N	Mobilgear: - 627 - XMP 110	Shell Omala 100
	ISO VG 15 - 45 ... - 15°C *	Vitamol 1010	Bartran HV 15	Hyspin AWS 15 Hyspin SP 15 Hyspin ZZ 15	Univis J13	Renolin B 15 HVI	ISO FLEX MT 30 ROT	Mobil DTE 11 M	Shell Tellus T 15
Synthetisches Öl Synthetic oil Huile synthétique	Schneckengetriebe - 5 ... 60°C ISO VG 680	Degol GS 680	Energol SG-XP 680	--	--	Renolin PG 680	Klübersynth GH 6-680	Glygoyle HE 680	Shell Tivela S 680
	ISO VG 220 - 25 ... 80°C *	Degol GS 220	Energol SG-XP 220	Alphasyn PG 220	Glycolube 220	Renolin PG 220	Klübersynth GH 6-220	Glygoyle HE 220	Shell Tivela S 220
Biologisch abbaubares Öl Biodegradable oil Huiles biodégradables	Schneckengetriebe ISO VG 680 - 5 ... 40°C	--	--	--	--	Plantogear 680 S	--	--	--
	ISO VG 220 - 5 ... 40°C	Degol BAB 220	Biogear SE 220	Carelub GES 220	--	Plantogear 220 S	Klübersynth GEM 2-220	--	Shell Omala EPB220
Lebensmittel- verträgliches Öl ¹⁾ Food-grad oil ¹⁾ Huiles pour environnement alimentaire ¹⁾	Schneckengetriebe - 5 ... 40°C ISO VG 680	--	--	--	--	Gerayn SF 680	Klüberoil 4 UH1-680N Klübersynth UH1 6-680	Mobil DTE-FM 680	Shell Cassida Fluid GL680 Shell Cassida Fluid WG680
	ISO VG 220 - 25 ... 40°C	Eural Gear 220	--	Vitalube GS 220	Gear Oil FM 220	Gerayn AW 220	Klüberoil 4 UH1-220N	Mobil DTE FM 220	Shell Cassida Fluid GL220 Shell Cassida Fluid WG220
Synth. Fließfett Synth. fluid grease Graisse fluide synthétique	- 25 ... 60°C	Aralub BAB EP0	--	Alpha Gel 00	Fließfett S 420	Renolit LST 00	Klübersynth GE 46-1200 Klübersynth UH1 14- 1600 ¹⁾	Glygoyle Grease 00	Tivela GL 00

Schmierstoffarten für Wälzlager / Type of lubricant for anti friction bearings / Type de lubrifiant pour roulements à rouleaux									
Schmierstoffart Type of lubricant Type de lubrifiant	Umgebungstemp. Ambient temp. Temp. ambiante	ARAL	BP	Castrol	ESSO	FUCHS	KLOBER LUBRICATION	Mobil	Shell
Fett (Mineralölbasis) Grease (mineral oil basis) Graisse (base huile minérale)	- 30 ... 60°C (normal) * - 50 ... 40°C	Aralub HL 2 Aralub SEL 2	Energrease LS 2 --	Spheerol AP 2 LZV-EP Spheerol EPL2	Mehr- zweckfett Beacon2 --	Renolit FWA 160 Renolit JP 1619	Klüberplex BEM 41-132 --	Mobilux 2	Shell Alvania RL 2
Synthetisches Fett Synthetic grease Graisse synthétique	* - 25 ... 80°C	Aralub SKL 2	--	Product 783/46	Beacon 325	Renolit S 2 Renolit HLT 2	ISOFLEX TOPAS NCA 52 PETAMO GHY 133 N	Mobiltemp SHC 32	Aero Shell Grease 16 oder 7
Biologisch abbaubares Fett Biodegradable Grease Graisse biodégradables	- 25 ... 40°C	Aralub BAB EP 2	BP Bio- grease EP 2	Biotec	--	Plantogel 2 S	Klüberbio M 72-82	Schmierfett UE 100 B	Shell Alvania RLB 2
Lebensmittelver- trägliches Fett ¹⁾ Food-grade grease ¹⁾ Graisse pour environnement alimentaire ¹⁾	- 25 ... 40°C	Eural Grease EP 2	BP Energrease FM 2	Vitalube HT Grease 2	Carum 330	Renolit G 7 FG 1	Klübersynth UH1 14-151	Mobil- grease FM 102	Shell Cassida RLS 2

* Bei Umgebungstemperaturen unterhalb -30°C und oberhalb 60°C sind Wellendichtringe in besonderer Werkstoffqualität einzusetzen

* With ambient temperatures below -30°C and above approx. 60°C shaft sealing rings of a special material quality must be used

* Lors d'une température ambiante inférieure à -30°C ou supérieure à environ 60°C, il y a lieu d'utiliser des joints d'étanchéité spéciaux

¹⁾ Lebensmittelverträgliche Öle + Fette nach Vorschrift H1 / FDA 178.3570

¹⁾ Food grade lubricants with USDA-H1 approval FDA 178.3570

¹⁾ Huiles pour environnement alimentaire + graisses suivant prescription H1 / FDA 178.3570

BAUFORMEN MOUNTING POSITIONS POSITION DE MONTAGE



Waagerechte Anordnung

Horizontal position

Position horizontale

B3 	B6 	B7
B8 	B5 	B5I
B5 II 	B5 III 	



Senkrechte Anordnung

Vertical position

Position verticale

V1 	V3 	V5
V6 		

Symbole:
Symboles:
Symboles:



Entlüftung
Vent plug
Event

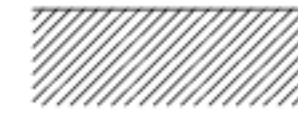
Ölstand
Oil level
Niveau d'huile



Ölablaß
Drain plug
Vidange



Befestigung
Mounting surface
Fixation



Achtung / Attention / Attention:

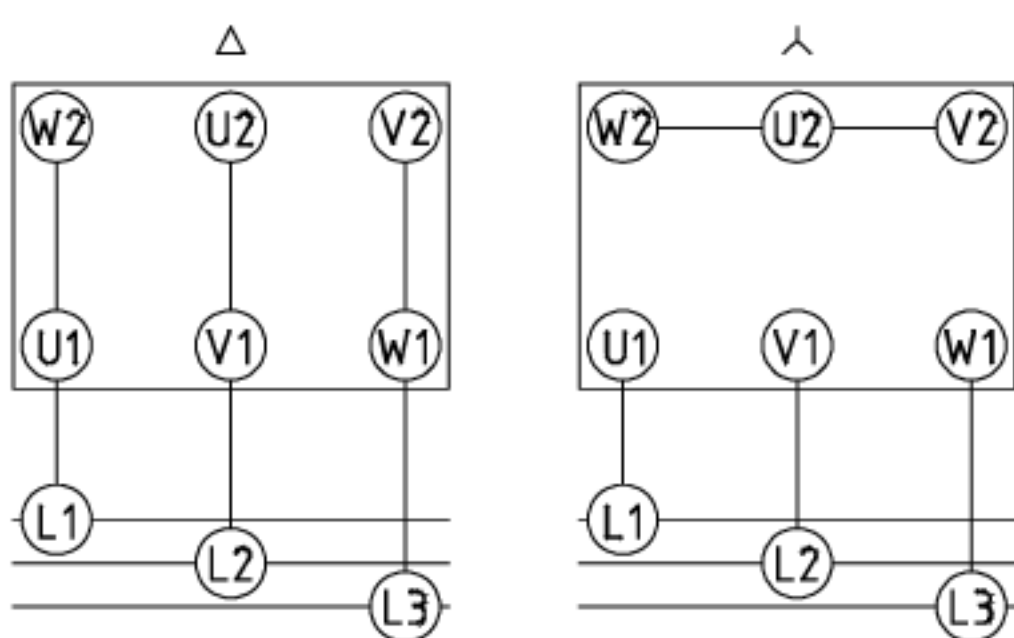
Die NORDBLOC-Getriebe der Baugröße **SK 172 - SK 373** sind Lebensdauer geschmiert. Entlüftungs-, Ölstands- und Ablasschrauben sind nicht vorhanden.

The NORDBLOC gearboxes of sizes **SK 172 - SK 373** are supplied with lifetime-lubrication. Vent-, oil-level- and drain-plugs are not provided.

Les réducteurs NORDBLOC, types **SK 172 - SK 373** sont lubrifiés à vie. Ils sont exempts de vis d'évent, de niveau et de vidange.

Schaltbilder / Wiring diagrams / Schémas de branchement

Drehstrom-Motor mit Kurzschlußläufer
Three phase squirrel-cage motor
Moteur triphasé à cage d'écureuil

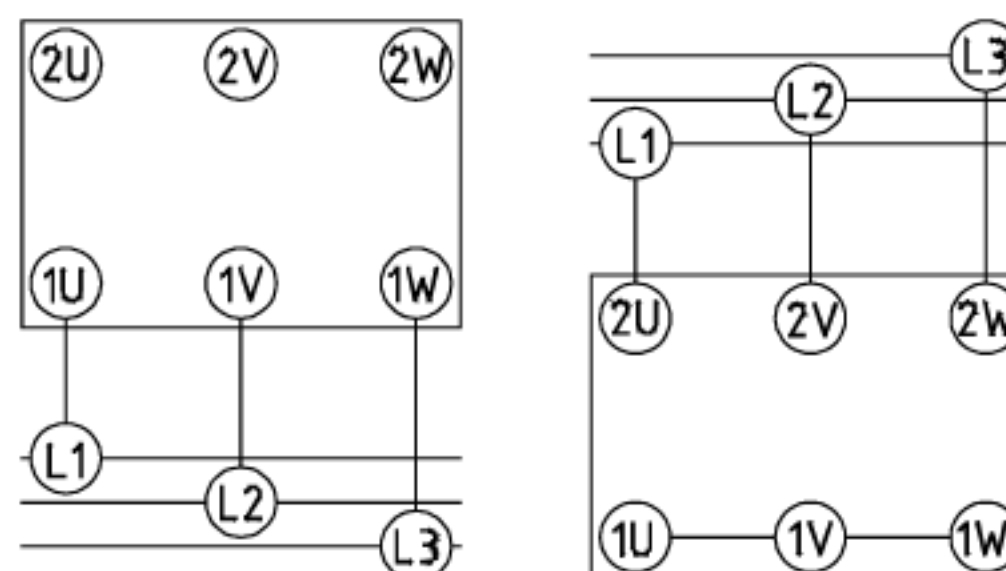


niedrige
low
inférieure

- Drehzahl
- speed
- vitesse

- hohe
- high
- supérieure

Drehstrom-Motor, polumschaltbar, in
Dahlander-Schaltung
Three phase motor, polechanging,
Dahlander connection
Moteur triphasé à commutation de pôles,
couplage Dahlander

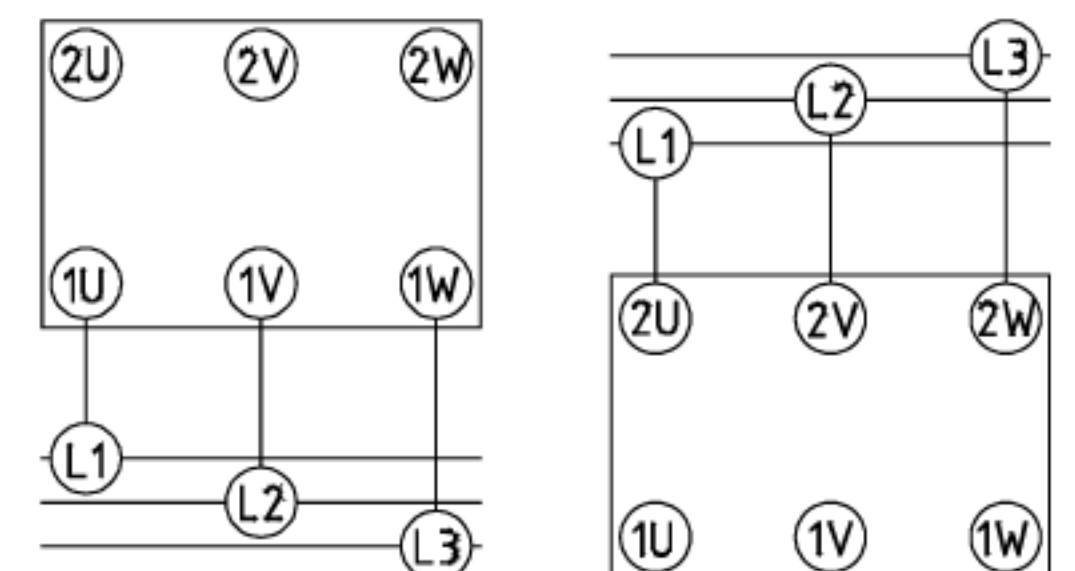


niedrige
low
inférieure

- Drehzahl
- speed
- vitesse

- hohe
- high
- supérieure

Drehstrom-Motor, polumschaltbar, zwei
getrennte Wicklungen
Three phase motor, polechanging, two
separate windings, two speeds
Moteur triphasé à commutation de pôles,
deux bobinages séparés, deux vitesses



niedrige
low
inférieure

- Drehzahl
- speed
- vitesse

- hohe
- high
- supérieure