

User manual

SE25-40

Thank you for choosing SØBY In order for the machine to function optimally, it is important to forllow the instructions in this manual.

Enjoy.





Introduction

Thank you for choosing SØBY.

It is very important that you read this user manual to obtain the necessary knowledge regarding installation, operation, service, maintenance, and dismantling. It is important to keep the user manual in a safe location for future use.

At SØBY we always work to improve our machines therefore we reserve the right to improve and update our products continually. This mean that some machine parts will be removed from the product selection, but it will always be possible to get a corresponding machine part for our machines. SØBY will always be ready to help and guide regarding our products.

Enjoy.



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General Information



Please read the entire User Instructions before assembling and operating the installation.

If the purchaser makes any technical modifications to the machine, then any warranty from SØBY is cancelled. The declaration will lose its validity.

The guarantee is only granted, if the following conditions are met:

- The unit only is to be used as described in this User Instructions. Replacement of parts or changing in the construction of the device might cause that the equipment must be re-certified.
- Assembly, putting into operation and operation only by using this User Instructions.
- The chain elevators are designed for vertical transport and for inclined transport.
- Compliance with the intervals for maintenance in accordance with instructions must be documented.
- Only use the original spare parts of the manufacturer.
- Operation of the chain elevator only by using motor protection-connection or stardelta connection with motor-protection.
- In order to prevent dust emissions, all joints must be sealed by silicone.
- Emergency stops must be installed in accordance to current standard EN 60204-1.
- At normal operation at the machine, one must look into the pictogram devices and study the User/Assembly Instructions.
- When performing operations in areas where there might be a risk of explosion, the safety of personnel and equipment depends on compliance with the relevant safety regulations. Performing installation works and maintenance in such areas, involves a special responsibility of the people who are carrying out the works. The works mentioned requires that the assembly personnel and maintenance personnel have a thorough knowledge of laws, regulations and standards within the area. This construction provides a brief review of the most important safety issues, which are associated with installation, maintenance and use of the equipment. Please pay attention to the fact, that the end user has the final responsibility of identifying any possible explosion hazardous areas according to current regulations, with the following requirements for zone classification and possible reporting to the local authorities.
- Repair, service and maintenance must be performed carefully in strict compliance with the instructions of SØBY and must be performed by personnel who possess the qualifications required for the taking care of the explosion safety of the equipment. Inspection and maintenance must for the electrical equipment concerned be based on the instructions in EN60079-17.



- During the service life of the chain elevator and in connection to use, one must have a special focus on the mechanical parts:
 - Service lifetimes (see chart page 24)
 - Damages to parts and screens
 - Corrosion
 - After tightening of bolts and screws
 - Data and information on the allowable installation and operating conditions in the nameplate of the equipment
 - Instructions in possible types of certificates for equipment mounted onto the unit
- Modifications or alterations of the equipment, which influence the explosion safety of the equipment, are not allowed. Before using the equipment, check that the equipment is undamaged, assembled, and installed as directed by SØBY.

The manufacturer reserves the right of performing technical changes.



The machine can be used for transportation of feedstuff, which give reason for an inner Zone 22. If the machine is to be placed in a Atex-zone, one must select suitable gear and motor.

The machine can be used for transportation of the following materials, with data, which are shown in the following:

- Cereal, mixed dust
- Flour/meal
- Minerals
- Soya bean crushed corn/meal
- Rape/beans
- Feedstuff pellets and wooden pellets, up to 8mm in diameter

	Particle Size [µm] [Microns]	Ignitions- temperatu re Cloud of Dust [°C]	Ignition Temperat ure 5mm Cloud of Dust [°C]	LEL [g/m³]	MIE [mJ]	Kst [bar m/s]	Reference
Grænse værdier	12	400	280	30	50	131	-

If the medium, which is transported, contains stones or metal parts, the explosion safety cannot be guaranteed.

Must comply with EN 60079-10-2:2015 concerning explosive atmospheres/atmosphere of dust.



Safety Instructions

The manual and especially information concerning safety must be read carefully prior to assembling, operating, servicing and maintaining.



All plants and components must be assembled in accordance with the relevant regulations for prevention of accidents.

The machine must be shielded correctly in relation to the relevant Machinery Directive. Therefore, that it will be impossible to encounter moving parts. The shielding may only be removed by using tools. The shielding must be mounted before the machine is put into operation.

The motor must be properly protected through overload protection equipment. The chain elevator properly must be ensured capable potential compensation.

At any repair or maintenance, the power source must be separated from the drive motor.

When the chain elevator is running, do not put your hand or your fingers into the drive device or elsewhere.

Shielding must always be placed at inlet and at outlet, and here there is a requirement of a current mesh size of up to 120mm, with a safety minimum distance of min. 850mm. This must be observed in relation to DS/EN ISO 13857.

Shielding like shielding for pivots and shielding of backstops for preventing or elimination of risks must be maintained regularly.

The machine must be installed so there are ergonomic good conditions of service of the machine.

Safety equipment, which have been removed during repair, cleaning or maintenance work must be re-established before the installation again is put back into service.

All screws, bolts and trailers must be securely tightened.

If the machine is stuck/ is clogging, an overheating of the transmission might take place.

The chain elevator may only be put into operation, when it is assured that it is not defect. The operator is obliged to only using the plant when it is in perfect condition.

SØBY is not liable for damages arising from abuse or technical alterations to the installation and breach of the instructions given in this manual.



If the chain elevator is placed in areas classified as potentially explosive, use specially approved motor and gearbox for that zone. If in doubt, please contact SØBY for further information. It must be ensured that the ambient temperature in the area in which the equipment is going to be placed, remains within the allowed limit values of the equipment $-20^{\circ}C \leq TA \leq 40^{\circ}$. Therefore, one must, at installing of the unit take into account, that there might be possible heat sources that could affect the ambient temperature in the area in which the equipment is installed.

During any kind of work at the chain elevator, there must be adequate work lighting.

During any kind of work with/by the machine should respiratory protection, safety boots, earmuffs and other required precautions as they might be required by the local workplace assessment, in which the chain elevator is going to be installed, be used. Furthermore, helmet must be used during installation, service and assembly/disassembly.

When assembling of machines, there might be heavy lifting. People who set up the machine must read the assembly/user manual at first. Suitable lifting equipment must be used in connection to installation and assembly.

As there might be a danger of sharp edges, one must use gloves when handling the machine.

The equipment must not be exposed to more dust impact (dust layers) than allowed in EN60079-14.

One should be aware that if the chain elevator is expected to run empty for more than 5 minutes, one must mount a dry-running sensing device, which ensures that the machine stops; likewise, it is also ensured that the machine outlet is not clogged.

Special trained personnel only may carry out the electrical connection for the supplied machines.



Use of the Machine

The chain elevator is designed for transportation of grain and almost all core, seeds and flour products available in agriculture (see material specifications in general references). The bucket elevator **may not** be used for tasks beyond these ones.



Explanation of the Pictograms



Prior to repair, maintenance and cleaning work the motor must be turned off and the electric plug pulled out.



Moving parts can be dangerous. They are only to be touched when all parts are standing completely still.



Hearing protection is required during working at this machine



During test running, pay attention to the direction of the rotation.



Residual Risk

The chain elevator is produced in accordance with the health and safety requirements, which are set out in the ATEX and in the Machinery Directive, and in accordance with the consequently harmonized standards. If these regulations are disregarded, the elevator might be a danger to the operator/user or to the life and limb of a third party. See Declaration of Conformity.

Vers. 04 Dec. 2022



Specifications

Transport Capacity (Wheat 0,75 Hour/m3)

Chain elevator SE25 has a capacity of 25 tons/hour. Chain elevator SE40 has a capacity of 40 tons/hour.

The capacities of the chain elevators with side augers are the following:

SE25:

1 side Ø135	25 t/hour
2 side Ø90	25 t/hour

SE40:

1 side Ø180	40 t/hour
2 side Ø135	40 t/hour

The chain elevators are designed for inclined and vertical transportation.

Side augers to the one side or to both sides can be mounted onto the chain elevators.

SE25 is available with a total height of up to 18,6m SE40 is available with a total height of up to 18,6m.



Description of Components

Elevator head Q16 / Q20 for belt drive

Transmission



Elevator head for gear motor



Elevator foot, open or closed





Gear motor



Elevator foot, closed with Q16 / Q20 back inlet 45°



Inlet in delivery tube



Mounting box 45°



Side/back/rear inlet



Mounting box 90°





Flex-Elevator foot for 2 sides



Flex-Elevator foot for 1 side

0.5 m ST 205 side auger with adapter for flex foot



Side auger in trough



Feeding propeller

Extension incl. Chain w/ or w/out window for inspection



Gear motor for pulley through flex foot or side auger





Mounting

In General

Technical qualifications are necessary in order to be able to mount the chain elevators.

The terms left/right for aide augers are relating to the outlet of the elevator (see figure1), when you are placed with your nose pointing in the same direction as the outlet of the elevator.





Elevator Foot and Side Auger

The mounting box is put into place. It must be lined up exactly horizontal. Remove the covers. If the elevator is equipped by side augers in trough, then the cover and the inside augers have to be removed. The trough is to be mounted onto the mounting-box, the elevator foot (se figure 2 pos.1) is to be placed into the mounting box, feed propellers and inner augers (see figure 2 pos.2) are to be mounted onto the elevator foot. It should all be lined up so that all will be quite right, the augers must easily be able to rotate. Control that all screws are tightly fastened before the elevator tubes are mounted.



Alternatively, a flex-foot can be used instead of mounting box and elevator foot.

If you want a direct pulling power from side auger, a gear motor can be mounted respectively at the flex-foot or at the side auger. (See figure 3 and figure 4). The elevator foot must have idler axle.

Figure 3







If 40 tons intake is required at SE 40 with intake from 1 side, a ST 205 side auger can be mounted with adapter to flex-foot

Figure 5



Mounting of Elevator Tube

Be aware that all parting walls (head/extension/foot) are lined up over each other. If space is available, the elevator also can be erected lying on the floor in screwed together condition, with the help of a belt drive or chain drive.

The first extension with the control windows is screwed to the elevator foot, (se figure 6). After that, the other extensions and the elevator head are assembled.

NB! Be aware that the extension must be oriented in the correct direction with large and small shafts

Figure 6





Mounting of Chain

By removing the cover on the top of the elevator head (see figure 7, pos.1) and the control windows in the lowest extension; one can drop down a rope into the elevator shaft (side of transport), fasten the chain and pull it up around the upper chain wheel and down through the elevator shaft (return flow), then lastly join the chain through the control windows. The chain is to be tightened up by 2 bolts (see figure 7 pos.2)

Figure 7



The elevator must be fastened at the head and at the extensions by cross bracings for walls or for beams. Mounting of angle bars in 2m and 3m, that are adjusted, is ideal for this purpose.



Parts nos. 37580200 - 37580300.

The outlet must be secured in such a way that one cannot get to the transport chain with one's hands. In grain silos, the elevator must be protected against lateral pressure.

Outflow Pipes

In order to achieve maximum elevator efficiency, one must pay attention to the following: Outflow pipes under ø150mm may <u>not</u> be used

Pipes should be laid with downgrades of at least 45°

Clack valves, which restrict the flow of grain, are not to be built in until approximately 40 cm after the outlet of the elevator.



Mounting of Motor

Motor and motor pulley are to be mounted, and a so-called taperlock bush for securing the pulley (see figure 9). Moving of the motor fittings in the holes might be necessary in order for the motor and the pulley guard to fit together. The cone belts are tightened via tension bolt/ (figure 8 position1) and are to be secured by locknuts.



Taperlock

Figure 9

In order to tighten up the belt drive pulley to the axle, tighten the threaded pins in the 2 opposite holes, position1



In order to loosen the taperlock bushes, screw out the threaded pins. One of these threaded pins is to be screwed in again into the third hole, position 2, and to be tightened





Gear motor:

Important !!!

Before starting up, the stopple positon1 at the airscrew must be removed so that the overpressure can release

Figure 10



Mounting (Grain Pit)

If the chain elevator is built into a grain pit, the gaps between the auger trough and the concrete ought to be jointed or covered by dry Leca; thereafter one should plaster it into the edge of the auger trough. The pit is to be constructed according to the draft below.

Figure 11





Sealing of Flange between Gear and Motor

The assembly is to be jointed at the upper side, in order to prevent ingress of water.





Electrical Equipment

Specially trained staff only may perform the electrical connection to machinery delivered by SØBY.



During installation, be aware of the voltage and data indicated at the motor data plate.

The connection terminals of the motor are connected according to the instructions on the motor. The motor must be protected with thermal protection and by a lockable main cutout switch, as the guarantee from the motor manufacturer else will be nullified (This equipment is not included in the delivery standard).

Installation of connection of the unit must take place in accordance with national rules of installation, supplemented by the demands, which are stated in the Heavy Current Regulations nos. EN60204-1 and EN60079-14. Starting up of the electrical parts and subsequent maintenance must be in accordance with the instructions in EN60079-17.

Incidentally, we refer to the directions of the manufacturer for the motor and gear and possible demands for intervals of maintenance and service, concerning steady enforcement of the explosion security of these parts.

If a frequency converter is installed, one carefully has to take stock of data from the converter and from the data plate. Pay attention to the labeling of the electrical components in classified areas.

Balancing of the potential:

An outside terminal for connection to the equalizer exists.

The connection must be carried out in accordance with the instructions in EN60079-14.

During test drive, please pay attention to the direction of rotation (see rotation direction arrow).





Operating

When the elevator is in operation, the relevant regulations for prevention of accidents must be observed.

Check that the material to be transported can flow freely, turn on the elevator and add transport material.

If the transport material is entering too fast, it will be recommended to build in a brake into the inlet pipe/tube.



Maintenance



During maintenance works, the safety regulations, which are described in the section Safety Instructions, must be observed.

The chain elevator is worn more or less, depending on how much dirt there is in the material transported, and once a year one has to control for abrasion or damages. Foreign objects, such as for instance pieces of wood, stone or iron, may cause damages.

If foreign objects are stuck inside the chain elevator, these can be removed by using appropriate tools, but under no circumstances by your own hands. In such case, one has to take apart the chain elevator. Parts that might be worn out should be changed during the same turn. Foreign objects must always be avoided and are not going to get into the machine.

Please be aware of that securities of motors, gearings and bearings are subject of compliances of intervals of maintenances/replacements.

The electrical motors are so sized that they cannot be overloaded during normal operations, if they have been correctly mounted and installed. The motor safety switch will disconnect the electricity supply if the motor is overloaded or if there is an error in the electricity supply. Fuses and the safety of the motor switch must be controlled and replaced by special instructed staff if necessary.

The chain tension should be checked regularly at an interval of every 200 hours, this is done by opening the inspection hatch in the lower extension, and thus you can lift up the chain and check the tension and the tightening of the chain (see previous section under mounting).





The following equipment at the unit is going to be maintenanced with the following intervals:

Equipment	Manufacturer	Intervals of Maintenance:
Bearing at head of the elevator	PTI	Must be replaced at every 10.000 operating hours
Bearing at elevator foot	PTI	Must be replaced at every 10.000 operating hours
Motor	Cantoni /techtop	Must be replaced at every 20.000 operating hours
Gear Box	Bockwoldt	It is important to emphasize that the explosion safety is subject to the fact that there will be carried out the below demanded maintenance: Dust layer more than 5 mm must be removed by vacuum-cleaner For every 500 hours of operation seals must be controlled for leaks For every 3.000 hours of operation or for every 6 months, a visual inspection of oil seals must be carried out and in cases of signs of abrasion, the seals must be replaced. Oil changes are to be carried out every 5 years.
Chain, chain wheel and side auger	SØBY/PTI	To be checked for every 200 hours, or at least once a year.



Technical Data

Noise Level: 79 dB(A) during transportation w/ grain and 82 dB(A) w/out grain.

Capacity of Motor: Between 1,5 kW and 7,5 kW. See nameplate of the motor for further information.

Gear Motor: BOCKWOLDT (See specifications of the supplier)

Capacity of Transport:

In barley w/ 17%	Inlet from	Inlet from
humidity	1 side	2 sides
SE25		
Without propeller:	6 tons	12 tons
With propeller:	10 —	20 –
With side auger in trough		
Ø 90 mm:	9 —	18 —
Ø135 mm:	18 —	25 –
SE 40		
Without propeller:	12 –	24 –
With propeller:	20 –	40 —
With side auger in trough		
Ø135 mm:	20 –	40 —



Туре	Α	В	С	D	E	F	G	Н
SE - 25	2000+Ext.	500	500 - 1000 - 2000	360	270	360	280	135
SE - 40	2000+Ext.	500	500 - 1000 - 2000	360	270	360	280	200

NB! At flex-foot for SE - 40 B=560



First Troubleshooting

Error	Possible Cause	Advice
The elevator does not start	Electricity supply is cut off	Check electric power cable and replace if necessary.
	The fuses of the motor are defect	Replace fuses
	The safety switch of the motor is defect	Replace the safety switch of the motor
	Motor is defect	Replace the motor
	Foreign objects block the auger	Remove the foreign objects via suitable remedies
Motor stops / is	The outlet is blocked	Clean outlet
overloaded	Too much transport material in the elevator	Adjust admission down to smaller quantities of transport material
	The power supply is interrupted	Check the power cable and replace if necessary
	The fuses of the motor are defect	Replace fuses
The elevator does not transport / transports	The drive shaft is broken	Replace the drive shaft
irregular	The inner auger is too worn	Renew the inner auger
	The inner auger is bent due to foreign object(s)	Remove the foreign object(s) via suitable tools, straighten out the inner auger, or replace if necessary
	The V-belt tension is too weak	Retighten the V-belt, replace if necessary
	Transport material is too much polluted	Clean the transport material
	The transport material is too moist	Dry transport material
	Insufficient material available	Add transport material





Declaration of Conformity

The Company Søby Maskinaktieselskab Viborgvej 306 DK-7840 Højslev Denmark

Hereby declares that this machine type supplied by Søby Maskinaktieselskab

type: SE25-SE40

Complies with the following normative documents:

DIRECTIVE 2006/42/EC	OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery, and
DIRECTIVE 2014/34/EU	OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems
DS/EN ISO 12100:2011	Safety of machinery – General principles for design – Risk assessment and risk reduction
DS/EN ISO 13857:2019	Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs
DS/EN IEC 60079-0:2018	Explosive atmospheres – Part 0: Equipment – General requirements
DS/EN ISO 80079-36:2016	Non-electrical equipment for use in potentially explosive atmospheres Part 1: Basic method and requirements
DS/EN ISO 80079-37:2016	Non-electrical equipment for use in potentially explosive atmospheres Part 5: Protection by constructional safety 'c'
DS/EN ISO 1127-1:2011	Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology
Th	ne electrical components mounted on this machine type

complies with the following normative documents:

DIRECTIVE 2014/30/EU	OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the barmonisation of the laws of the Member States relating to electromagnetic compatibility
DIRECTIVE 2014/35/EU	OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of
DIRECTIVE 2011/65/EU	electrical equipment designed for use within certain voltage limits OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

This machine is designed for equipment group II category 3/- D and have the following marking.

CE UK (Ex) || 3D/- Ex |||C 135C° Dc/- X

Højslev, Nov-22

Morten Frantsen Co-Owner



Leverandørvejledninger BOCKWOLDT

Vedligeholdelse og vedligeholdelsesintervaller for gear



Betriebsanleitung Operating instructions BOCKWOLDT GETRIEBEMOTORENWERK

Wartung

Maintenance



7.1 Wartungsintervalle

- alle 3000 Betriebsstunden Getriebeöl überprüfen.
 Dabei Sichtkontrolle der Dichtungen auf Leckage.
- spätestens alle 10.000 Betriebsstunden oder nach 2 Jahren mineralisches Öl wechseln und Wälzlagerfett tauschen.
- spätestens nach 25.000 Betriebsstunden oder nach 5 Jahren synthetisches Öl wechseln und Wälzlagerfett tauschen.

Bei extremen Betriebsbedingungen (z.B. hohe Luftfeuchtigkeit, hohe Temperaturschwankungen, aggressive Umgebung und hohe Umgebungstemperatur) sind kürzere Schmierstoffintervalle vorteilhaft.

Es ist empfehlenswert, den Schmierstoffwechsel mit gründlicher Reinigung des Getriebes zu verbinden. Die mit Fett gefüllten Wälzlager sind ebenfalls zu reinigen und mit neuem Fett zu versehen. Dabei ist zu beachten, daß der Lagerraum ca. 1/3 mit Fett gefüllt wird. Geschlossene Lager (2 RS Lager und 2Z Lager) können nicht ausgewaschen und nachgefettet werden. Diese Lager sind zu erneuern.



7.2 Wartungsarbeiten

In Abhängigkeit der äußeren Einflüsse ist je nach Bedarf der Oberflächen-/Korrosionsschutzanstrich auszubessern bzw. zu erneuern. Hierbei ist zu beachten, daß beim Lackieren der Aggregate Wellendichtringe, Entlüftungsventile und Laufflächen der Wellen abgedeckt bzw. abgeklebt sind. Nach Beendigung der Lackierarbeiten sind die Klebestreifen zu entfernen.



7.3 Ölstand prüfen

- Getriebemotor spannungslos schalten, gegen unbeabsichtigtes Wiedereinschalten sichern und erhöhte Oberflächentemperatur beachten.
 Um Verbrennungen zu vermeiden, geeignete Schutzkleidung tragen oder abwarten, bis das Getriebe abgekühlt ist.
- Ölstandsschraube bzw. Entlüftungsventil entfernen, Füllhöhe überprüfen, ggf. korrigieren, Ölstandsschraube bzw. Entlüftungsventil eindrehen.



Betriebsanleitung Operating instructions

Wartung

Maintenance



7.4 Öl wechseln

- Getriebemotor spannungslos schalten, gegen unbeabsichtigtes Wiedereinschalten sichern, Verbrennungsgefahr beachten. Getriebe muß aber betriebswarm sein, da mangelnde Fließfähigkeit durch zu kaltes Öl eine korrekte Entleerung erschwert.
- Geeignetes Gefäß unter die Ablassschraube stellen.
- Entlüftungsventil, Ölstandsschraube und Ablassschraube entfernen.
- Öl vollständig ablassen.
- Ablassschraube eindrehen.
- Neues Öl entsprechend Schmierstofftabelle über Entlüftungsbohrung einfüllen. Dabei Angaben in Tabelle für Schmierstoffmengen beachten.
- Entlüftungsventil und Ölstandsschraube eindrehen.

Bei jedem Ölwechsel sind alle Dichtungen und Verschraubungen auf Dichtigkeit zu überprüfen.

Generell ist darauf zu achten, daß kein Öl in den Boden, in das Grund- und Oberflächenwasser oder in die Kanalisation gelangt.

Getriebe und Getriebemotoren (außer F - Getriebe) sind bei der Auslieferung betriebsfertig mit Öl befüllt.

Standardmäßig wird mineralisches Öl verwendet.

Niemals mineralische mit synthetischen Schmiermitteln mischen.

Die Lage des Entlüftungsventils sowie der Ölstandsschraube und der Ablassschraube sind bauformabhängig und den Darstellungen der Füllmengen



BOCKWOLDT Getriebemotorenwerk

Vers. 04 Dec. 2022

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Operating instructions Betriebsanleitung

Lubricants

Schmierstoffe

9.1 Schmierstofftabelle

Getriebe und Getriebemotoren (außer F-Getriebe) sind bei der Auslieferung betriebsfertig mit Mineralöl entsprechend des standard Umgebungstemperaturbereiches der nachfolgenden Schmier stofftabelle befüllt. Maßgebend hierfür ist die Angabe der Bauformen bzw. Einbaulage bei der Bestellung des Antriebes. Bei späterer Einbaulagenänderung muß die Schmierstoff-Füllung der ge änderten Bauform angepasst werden.

elf	Carter EP 320	Carter SY 220						etischen	MWOLDT
Shell (Shell Omala 320	Shell Tivela Oil WB	Shell Omala 220 HD	Tivela Oil SD		Cassida Fluid GL 460	Alvania Fett R 3	ien und synth	BOG
Mobil	Mobilgear 632	Glygoyle 30	Mobil SHC 630	Glygoyle HE 460			Mobilux 3	n mineralisch Jlässig !	
(33)	Spartan EP 320	Glycollube 220					Beacon 3	as Mischen vo eln ist nicht zu	
	Falcon CLP 320	Polydea PG LP 220		Polydea PG LP 460			Glissando 30	Achtung I Da Schmiermitte	
Castrol	Alpha SP 320	Alphasyn PG 220		Alpha PG 460			Spheerol AP 3		
da 🛟	Energol GR-XP 320	Energol SG-XP 220		Energol SG-XP 460			Energrease LS 3		
ARAL	Degol BG 320	Degol GS 220	Degol PAS 220	Degol GS 460	Degol BAB 460	Eural Gear 460	Aralub HL 3	rdungsklasse 1) offe + Esteröl	- 28 -
Viskositātsklasse	VG 320	VG 220	VG 220	VG 460	VG 460	VG 460		sergefähr wasserst	
(OSI) NIQ	CLP	PG	CLP	9d CLP	ш	HCE		röl (Wasi). Kohlen	
hsttoteneimrto&	Mineralöl	Synthetisches Öl	Synthetisches Öl	Synthetisches Öl	biologisch abbaubares Öl	Lebensmittel- verträgliches Öl	Fett (mineralölbasis)	E = Este HCE = synti	
nbient 00									
rbereich an range 50 +1	+50	+80	+80	+80	40	40	09+	offe	
mperature perature (°C)	Standard-				+	+	-	lenwasserste	
gebungste ten 50	-10	-30	-40	-30	-20	-30	-30	neralöl lyglykol nthetische Koh	
								= Min = Po	
L. C.		Stimradgetriebe	Flachgetriebe	Schnockengetriebe	Stirnradgetriebe Flachgetriebe Schneckengetriebe	Stirmradgetriebe Flachgetriebe Schneckengetriebe	Wälzlager	Legende : CLP PG CLP PG CLP HC	Betriebsanleitung







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