7.2 Construction of the brake

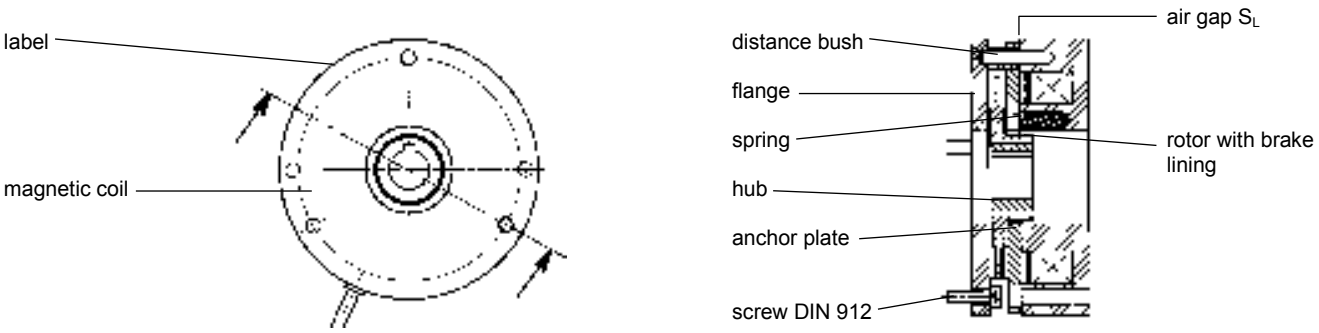


Figure 25: Construction of the brake

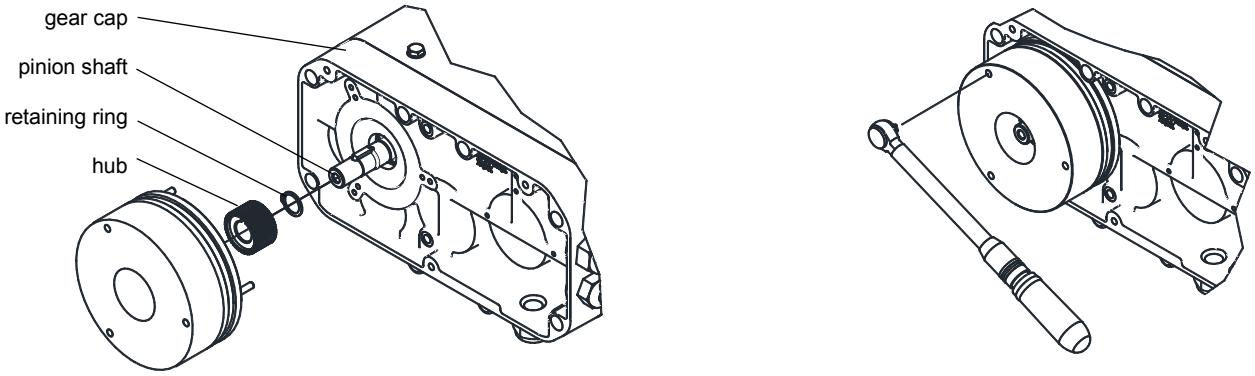
7.2.1 Replacement of the brake

1. Loosen the screws of the cap for gear cover.
2. Remove the cap for gear cover.
3. Disconnect brake cables.
4. Loosen the three fastening screws of brake unit.
5. Remove worn-out brake unit.
6. Fit new brake unit onto the motor shaft.
7. Tighten the three cylindrical screws of the new brake. (in scope of supply of the brake unit)
8. Tighten the screws with tightening torque acc. to Table 9.
9. Connect brake cables according to wiring diagram.
10. Replace cap for gear cover.

type	Brake type	Screws DIN 912	Tightening torque [Nm]	Coil resistance R20 nominal [Ω]	Air gap S_L nominal [mm]	Air gap S_L maximal [mm]
02../...; 03../...	BFK 457-06	3×M4	2.8	2101	0.2	0.5
05../...; 07../...	BFK 457-08	3×M5	5.5	1681		
09../... 1)	BFK 457-10	3×M6	9.5	1273	0.2	0.7
09../... 2); 11../...	BFK 457-12			1051	0.3	0.8

1) not valid for type 090/54 and type 090/57
2) valid for type 090/54 and type 090/57

Table 9: Data of the brake



Assembly of the brake on the gear cover

Tightening with a torque wrench

Figure 26: Assembly of the brake

For order of spare parts, the complete type number must be submitted.

7.2.2 Electric control of the brake

Mode of functioning

The disk brake is supplied through a rectifier circuit. It operates according to the fail safe principle. If there is a power failure, the brake acts automatically so that the load is held securely in every position. To shorten the braking time the brake is operated in a DC circuit. The different methods of connection in direct control and low voltage control can be seen in the respective wiring diagram.

7.2.3 Faults on brake

Troubleshooting and fault elimination

Faults	Causes	Remedy
Brake does not release, air gap is not zero	Coil has contact to ground or between the windings	Replace the brake (see Table 11)
	Wrong or defective wiring	Check and correct wiring
	Defective or wrong rectifier	Compare wiring at rectifier with wiring diagram; especially correct setting of the bridge. Measure DC – voltage between terminals 5 and 6. If differences occur, change the rectifier
	Air gap too large	Replace the brake

Table 10: Troubleshooting and fault elimination

If rectifier defects occur repeatedly, the brake should be replaced even if no winding short circuit can be detected. Defect may occur only in warm operating conditions.

7.2.4 Checking brake functioning

When braking the nominal load during the lowering process, the load should be stopped after approx. two chain braking link lengths and the load should be in a jerking manner.

7.3 Safety clutch

The sliding clutch is located between the lifting motor and main pinion shaft and transmits the torque. The secondary function is that it limits the transmission of torque depending on the setting, hence preventing overloading of the electric chain hoist and/or suspension points.

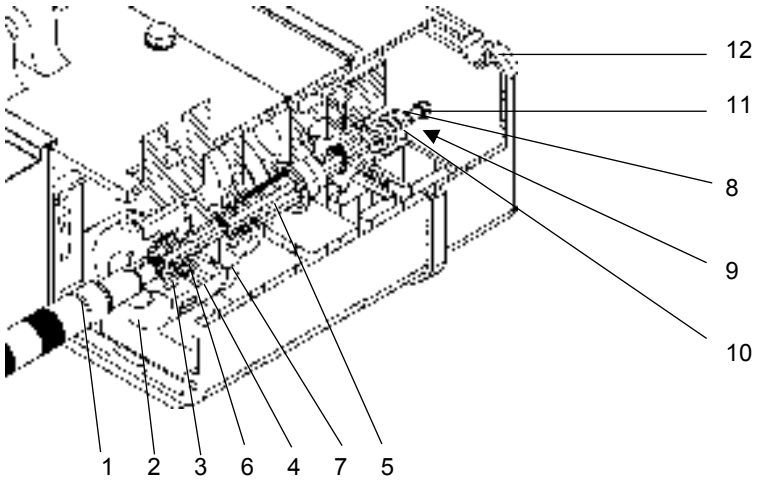
The safety clutch acts as an emergency stop should the hook or end stop run against the hoist body in top/bottom positions. This must only be used as an emergency limit and must not be used during regular operation of the hoist.

A special advantage of the patented safety clutch is that it is situated directly after the motor shaft and before the brake. In case of heavy wear on the clutch lining, one would not see an uncontrolled downward movement of the load, because the load can be held at every point by the brake.

The clutch unit acts as a sliding clutch with asbestos-free linings.

The clutch is easily adjustable and accessible. The wear resistant lining material doesn’t require re-adjustment under normal operational circumstances.

7.3.1 Construction of sliding clutch



1 main motor shaft
2 clutch hub
3 teeth ring
4 drive disc with clutch liner
5 motor pinion shaft
6 bearing
7 clutch disk
8 tension rod
9 adjusting nut *alternatively 2 pieces of hexagon nuts for counter-tightening*
10 pressure spring with plate
11 self-locking nut
12 cap for gear cover

Figure 27: Construction of the sliding clutch

7.3.2 Adjustment of the sliding clutch

Adjusting the sliding clutch should only be carried out by a trained or competent person.

1. Apply the test load =1.1 times the nominal/rated load onto the load hook or the clutch testing device.
2. Switch on the chain hoist and check that the test load can be lifted or the clutch testing device shows approximately 1.3 times the nominal load. The factor 1.3 is dependent on the hoisting speed.
3. Lower the test load to the floor.
4. Decrease or increase clutch torque until the test load is just lifted or the clutch testing device shows the required value.
5. Adjust the clutch torque as follows:
   a. Loosen and remove the cap for gear cover (12).
   b. Use a spanner to hold the retaining self-locking nut (11).
   c. Use a second spanner to loosen/tighten the adjusting nut (9) until the required test load is just lifted or the clutch testing device shows the required value.
   Alternatively if using 2 pieces of hexagon nuts:
   Use two spanners to loosen the counter-tightening. Tighten (turn adjusting nut clockwise) or loosen (turn adjusting nut counter-clockwise) the pressure spring until the required test load is just lifted or the clutch testing device shows the required value. After adjustment use two spanners to counter-tighten the two hexagon nuts.
   d. Finally: Recheck the clutch torque by lifting the test load.
   Record the adjusting value in the inspection book of the electric chain hoist.

The sliding clutch is set with the test load by the manufacturer. After changing or replacing the lift motor, it is not necessary to reset the clutch. A test with nominal load is required.

The original distance between the end of the tension rod and the pressure plate of the coupling is marked on a tag on the brake coil.

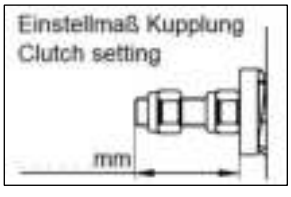


Figure 28: Adjustment of the sliding clutch

7.3.3 Checking the release limit of the sliding clutch during regular inspections

The release limit of the sliding clutch has to be checked by a specialist during the annual work safety inspection in accordance with DGUV V52 (BGV D6) §26, or DGUV V54 (BGV D8) §23. If the hoist lifts the nominal load should be checked! The hoist must not lift more than a 1.6 x nominal load.

If test loads larger than nominal load are not available, then the release limit of the slipping clutch can be checked by a clutch testing device. In this case, the slipping limit should be approximately 1.3 x nominal load. After checking the release limit, verify again if the hoist lifts the nominal load.

When measuring the wrong release value, the sliding clutch has to be readjusted in accordance with chapter 7.3.2 and verification of chapter 7.3.3 must be repeated. The adjustment value must also be recorded.

7.4 Load chain

Hoist chains are a means of carrying which require official approval. Therefore, it is important to observe the guidelines issued by the trade association's centre for accident prevention with regard to round steel chains in hoisting operation, the guidelines for general inspection and test specifications in accordance with DIN 685, section 5:1981, the accident prevention regulations in DGUV V54 (BGV D8) and in DGUV V52 (BGV D6) and EN 818-7:2002 or equivalent regulations in the respective country.

7.4.1 Lubricating the load chain before starting and during operation

The links along the entire length of the load chain must be lubricated with penetrating gear lubricant oil before starting operation for the first time and during operation with no load. Subsequent lubrication, whereby the links must be cleaned first, depends on the frequency of use and the operating conditions.
A dry-film lubricant, e.g. lubricating varnish, graphite powder, should be used when ambient influences are conducive to wear (sand, emery).

7.4.2 Testing of wear of the load chain

The continuous monitoring of the load chain is compulsory according to DIN 685 section 5 and DGUV V54 (BGV D8), § 27. The load chain must be tested before starting operation and after approx. 200 operating hours or 10,000 load cycles under normal conditions or more often under harsh and severe conditions.

Testing must cover checking links, particularly at their points of contact, for wear, cracks, deformation and other damages.

The chain must be replaced:
- if the nominal thickness at the points of contact is reduced by 10%,
- if the chain or a link is elongated by 5 %, or an eleven-links piece of chain is elongated by 2%
- if the links are rigid

Caution! For replacement of chains should only be used the original chains from the manufacturer. The chain guide and hold-down must also be replaced with the chain.

7.4.3 Measuring wear and replacing chain

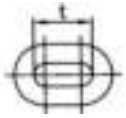
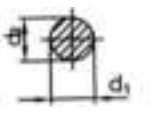
Chain dimensions [mm]	Chain measurements	4×12	5.2×15	7.2×21	9×27	11.3×31
Measure 1 link inside max. measurement t 11 chain links		12.6 134.6	15.8 168.3	22.1 235.6	28.4 302.9	32.6 347.8
Measure chain link diameter $d_m = \frac{d_1 + d_2}{2}$ minimum measurement $d_m = 0{,}9d$		3.6	4.7	6.5	8.1	10.2

Table 11: Measurement of chain dimensions

See points 0 et seq. Follow them on how to change the chain.

7.4.4 Measuring wear and replacing load hook

According to DIN 15401-1 load hooks must be replaced if the length between the chisel punch marks (dimension Y) are widened more than 10%. The permissible values are shown on the hook certificate in the inspection book.

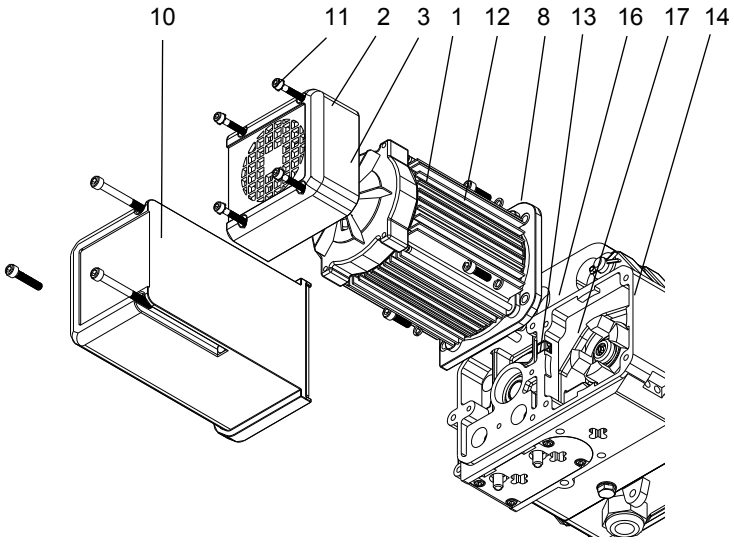
7.5 Maintenance work on trolley

The checks and maintenance work on the electric trolley and push trolley have to be done in accordance with Table 8 of point 7.1.

The brake is maintenance-free.

7.6 Dismantling and assembly of the lifting motor

The lifting motor (1) is an independent assembly group. The cooling fan is mounted on the shaft on the B-side under the fan cap. The clutch hub (4) with a coupling (5) is mounted with a key and retaining ring onto the A-side (drive side) of the motor. The motor flange (8) has a centring and four holes for fixing it to the gear housing. The motor cables (9) leave the motor at the motor flange A-side.



1 lifting motor
2 cap of fan
3 fan
4 clutch hub
5 coupling teeth
6 feather key
7 retaining ring
8 motor flange
9 motor wires
10 control cover
11 screws
12 screws of motor flange
13 rubber seal
14 gear housing
15 motor shaft
16 sealing paste
17 drive disc

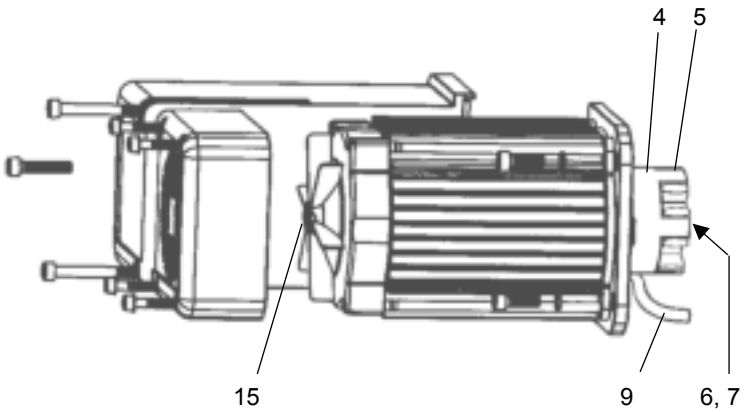


Figure 29: Dismantling and assembly of the lifting motor

7.6.1 Dismantling the lifting motor

1. Loosen the screws of the control cover (10) and remove cover.
2. Loosen the screws (11) of the fan cover (2) and remove it.
3. Disconnect the motor wires from the distribution panel on the control plate using the wiring diagram. The motor wires are directly led through the gear housing on hoists with direct control and are clamped on the terminal board under the cap on the brake side.
4. Loosen the screws of the motor flange (12) and remove the motor from the gear casing. Be careful not to damage the motor wires (9) and do not loosen the rubber seal (13) of the motor cables, which is located inside the gear casing (14).

7.6.2 Assembling the lifting motor

The assembly of a complete hoisting motor with fan is taken into consideration.

1. Press the coupling hub with the coupling teeth onto the motor shaft until the shaft collar is reached. Take care that the feather key (6) is tightly connected between the shaft (15) and hub (4).
2. Secure the clutch hub onto the shaft with a retaining ring (7).
3. Coat sealing paste (16) on the motor flange (8) very thinly.
4. Put the lifting motor on the gear casing (14). The motor cables must be placed in the provided gap in the gear casing and sealed with a rubber profile. Prevent the cables from damage or pinching. When attaching the clutch hub (4) it may be necessary to rotate the motor shaft on the fan gently until the teeth of the hub engage.
5. Tighten the screws of the motor flange using spring washers.
6. Connect the motor wires to the distribution panel at the control plate using the wiring diagram. Check that the wires are not pinched or obstructed and that they are well sealed.

Caution! Following the assembly of the control and fan covers, check the rotation orientation of the motor.

If the direction shown on the buttons is reversed, change the positions of motor wires L1 and L2.

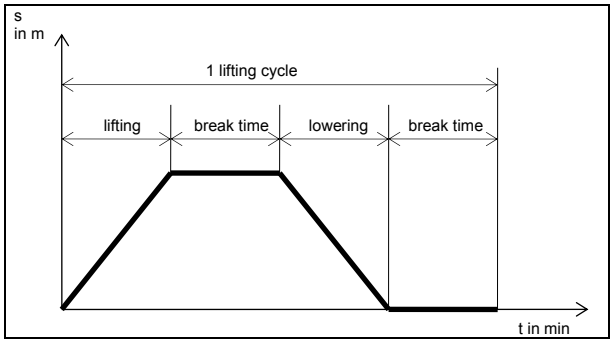
8 Duty rate of an electric chain hoist (acc. to FEM 9.683)

The duty rate and the number of operating cycles for one hour must not be higher than shown on the specification plate of the hoist or a technical data table (European regulation FEM 9.683).

The duty rate, expressed as the cyclic duration factor (c.d.f.), is the ratio of **running time to running time + period of rest.**

formula:

$$c.d.f. = \frac{running\ time\ x\ 100\%}{running\ time + period\ of\ rest}$$



The duty rate is limited by the permissible temperature of the windings in the lifting motor. The running time depends on the necessary lifting height, lifting speed of the electric chain hoist and the number of lifting motions required for a particular transport procedure (unloading trucks, feeding machines).

It is difficult in practice to take note of the duty rate during the lifting operation. We, therefore, give the following practical guidelines:

8.1 Short-time duty

The duty type is not permissible for the slow speed of dual speed hoisting motors. After having reached the maximum running time, a break is required, and the hoist can be further used in intermittent mode.

Duty group FEM 9.511	Duty group ISO 4301	Duty rate [c.d.f. %]	Operating period * acc. to FEM 9.683 (t_B in min)
1Bm	M3	25 %	15
1Am	M4	30 %	15
2m	M5	40 %	30
3m	M6	50 %	30
4m	M7	60 %	60

*** The operating periods t_B of the electric chain hoists are higher than required acc. to FEM 9.683.**

Table 12: Permissible operating period without cooling interval when operation starts and with a initial motor temperature of approx. 20° C.

8.2 Intermittent duty

Operation must be interrupted whenever the highest permissible operating time is reached. The following breaks are necessary depending on the duty rate c.d.f. of the electric chain hoist:

Duty rate [c.d.f. %]	Break [min]
15 %	5 times running time
20 %	4 times running time
25 %	3 times running time
30 %	2.5 times running time
40 %	1.5 times running time
50 %	1 times running time
60 %	0.66 times running time

Table 13: Required breaks depending on the duty cycle

8.3 Example

The electric chain hoist type 030/50 is to lift loads of 250 kg to a height of 6 m.

Performance data:

Carrying load:	250 kg
Lifting speed:	12 m/min
Duty rate:	60 %
Duty group of the hoist:	2 m

At the beginning of the lifting operation the electric chain hoist has a temperature of approx. 20 °C.

$$c.d.f. = \frac{6\ m\ lifting + 6\ m\ lowering}{12\ m/min\ lifting\ speed} = 1\ min\ for\ each\ lifting\ cycle$$

During operation without a break (short-time duty = max. 30 minutes without a break acc. to FEM 9.683), a maximum of 30 lifting cycles are possible.

After 30 minutes of operating time, a 40-second break for each minute of operating time must be taken (i.e. 0.66 times the operating time). This break is usually necessary for slinging and taking off loads.

Caution! Cooling periods are imperative for extreme lifting heights (above 10 metres).

Low lifting speed should only be used for precise lowering and lifting.
It is not suitable when greater lifting heights should be driven through.

Option To protect the lifting motor a thermal overload device is offered as an option (24 Volts low voltage control is required!).

9 Duty rate of the electric trolleys (acc. to FEM 9.683)

If the hoist is equipped with an electric trolley, the operators must take care of the duty rate of the trolley as well. This especially applies to very long track systems.

Electric trolley type	Duty rate	Running time
Trolleys with a **single** speed	40 %	30 min
Trolleys with **double** speeds	40/20 %	30 min*

* The ratings are relevant for fast travelling speed.

Table 14: Duty rate for electric trolley

10 Strainer clamp for the control cable

The strainer clamp must be fixed in such a way as to prevent any tensile forces affecting the control cable. Pulling the chain hoist at the control pendant by means of the strainer clamp is not permitted.

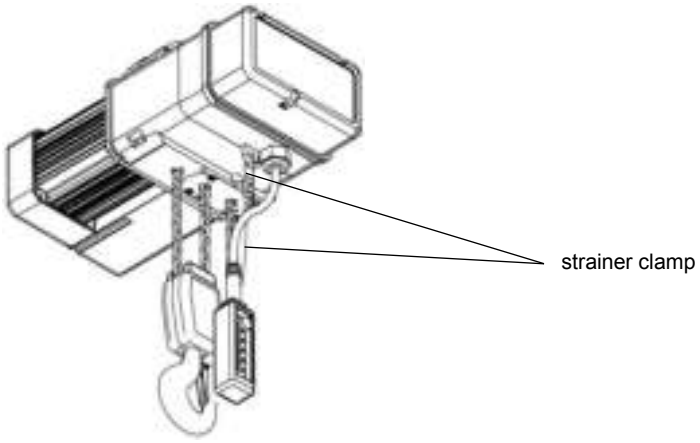


Figure 30: Assembly of the strainer clamp

11 Lubrication/Auxiliary materials

11.1 Lubrication of the gear

The gear is already filled with gear oil by the manufacturer. It is lifetime lubrication.

The oil must be changed:

- during general overhaul of the electric chain hoist
- in case of visible leakages
- in case of excessive breathing out of the gear vent
- after each opening of the gear box

Caution! Make sure that the gear box is filled with the right amount of gear oil.

Change of oil:

For that purpose, an oil filling screw is located on the upper side and an oil draining screw is located on the bottom side of the hoist body.

Gear oil specification: mineral oil; viscosity 220 mm²/s at 40°C.

The amount of oil is shown in the following table:

Version	Amount [ml]
020 to 031	175
050 to 071	350
090 to 111	525

Table 15: Amount of oil

Alternative oils are:

Producer	Oil designation	Remarks
Tectrol ©	Tectrol Gear CLP 220	
Tectrol ©	Tectrol Food CLP 220	food industry
Fuchs Europe ©	Renolin CLP 220	
Mobil ©	Mobil SHC 630	
Shell ©	Omala 220 S2 G220	
Total ©	Carter EP 220	
Castrol ©	Alpha SP 220	

Table 16: Alternative oils

Caution! The waste oil has to be disposed in accordance with the law of environmental protection.

11.2 Lubrication of the chain

Caution! **Before first operation** and during the operation of the electric chain hoist the chain links must be lubricated over the whole length of the chain by a creeping gear oil.

Lubrication of chain:

- Lubricate chain without load.
- Lubricate the shaded areas of the chain link.
- Also lubricate the chain in the chain box.
- Clean the chain before repeated lubrication.
- The amount of lubricant and the frequency of lubrication may vary due to operating conditions.
- Lubricate chain minimum each 3 month.
- Shorten lubrication intervals if necessary /in dependence of operating conditions.
- Use a dry-film lubricant, if the operating conditions are conducive to wear (sand, emery).

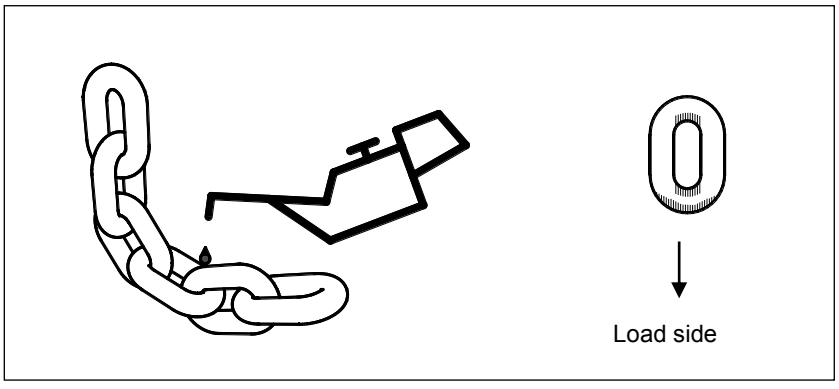


Figure 31: Lubrication of the chain

The following lubricants are recommended for lubrication of chain depending on operating conditions:

Producer	Lubricant designation	Remarks
Tectrol ©	Kettenöl K50	
Tectrol ©	Tectrol Multi Spray XL	dry lubricant
Tectrol ©	Food Kettenspray	food industry
Klüber ©	Klüberoil CA 1-460	
Klüber ©	Klüberoil 4UH 1-1500	food industry
Castrol ©	Optimol Viscogen KL300	
Fuchs Lubritech ©	Ceplattyn 300	dry lubricant
Fuchs Lubritech ©	Stabylan 2001	
Fuchs Lubritech ©	Stabylan 5006	
Fuchs Lubritech ©	Decordyn 350	
Fuchs Europe ©	Renolit SO-GFB	grease
Klüber ©	Microlube GB 00	grease

Table 17: Alternative lubricants for chain

11.3 Lubrication of the hook block and hook tackle

Caution! Lubricate the anti-friction bearings on the hook and the chain sprocket after approx. 20,000 lifting cycles or once a year. If in heavy use, shorten the interval and use a special anti-friction bearing grease.

Lubricants recommended for lubrication of bearings:

Producer	Lubricant designation
Tectrol ©	Tectrol Spezial-Fett LX 2
Fuchs Europe ©	Renolit Duraplex EP3
Fuchs Lubritech ©	Lagermeister LX EP2

Table 18: Alternative lubricant for bearing

11.4 Lubrication of the trolleys

Caution! The pinion, the geared wheels and the roller bearings of the electric trolley have to be lubricated with grease once a year or after 10,000 driving cycles, if in heavy use the interval has to be shortened.

Lubricants recommended for lubrication of gearing:

Producer	Lubricant designation
Tectrol ©	Tectrol Spezial-Fett LX 2
Fuchs Europe ©	Renolit Duraplex EP3
Fuchs Lubritech ©	Lagermeister LX EP2

Table 19: Alternative lubricant for gearing of the trolley

11.5 Auxiliary materials

The following locking pastes are recommended for the locking of the fastening screws of chain guides:

Producer	Designation	Characteristics
Weicon ©	Weiconlock AN 302-42	locking paste, appropriate to connections up to M36, breakaway dismantle torque min. 14 -18 Nm
Henkel ©	Loctite 243	locking paste, appropriate to connections up to M20, breakaway dismantle torque min. 20 Nm

Table 20: Locking paste

12 Measures to be taken at the end of the S.W.P.

After the hoist or its components have reached the end of the S.W.P. the hoist or its components must be overhauled or taken finally out of operation completely.

The parts have to be disposed in accordance to the laws of environmental protection. Metals, rubber and plastics have to be disposed or recycled separately.

13 Example of Declaration of Conformity

LIFTKET	**Declaration of Conformity** (Machine Directive 2006/42/EC supplement II 1 A) CE	Doc.-nr. / Sprache HPTxxxxxxx / DE Page 1/1

Herewith the manufacturer:

LIFTKET Hoffmann GmbH
Dresdener Straße 64-68
04808 Wurzen
Germany

declares that the **electric chain hoist**

Type: Serial number:

meets the appropriate requirements of the Machine Directive 2006/42/EC.

The protection targets of the Low Voltage Directive 2014/35/EU were observed in accordance with supplement I, no. 1.5.1 of the Machine Directive 2006/42/EC.

The conformity with the rules of the following further EC-Directives will be declared:

2014/30/EC	Directive relating to electromagnetic compatibility

The following harmonised regulations are applied:

EN ISO 12100: 2010	Safety of machinery
EN 60204-32: 2008	Electrical equipment of machines; Requirements for hoisting machines
EN 818-7: 2002 + A1: 2008	Short link chain for lifting purposes; Fine tolerance hoist chain, Grade T
EN 14492-2: 2006 + A1: 2009	Power operated winches and hoists

The following national regulations and technical specifications are applied:

FEM 9.511: 1986	Rules for the design of series lifting equipment; Classification of mechanisms
FEM 9.751: 1998	Series lifting equipment; Power driven series hoist mechanisms; Safety

The relevant technical documents according to the Machine Directive 2006/42/EC supplement VII 1 A are issued and will be provided on reasonable request to national authorities.
Authorised person of technical documents:
Matthias Müller, LIFTKET Hoffmann GmbH, Dresdener Straße 64-68, 04808 Wurzen

The type was certified by:

TÜV Rheinland Industrie Service GmbH
Prüflaboratorium für Maschinen
Burger Chaussee 9
03044 Cottbus
Germany

Test certificate number:

Wurzen, 01.08.2017

Matthias Müller
Technical Manager

14 Example of Declaration of Incorporation

LIFTKET	**Declaration of Incorporation for partly completed machinery** (Machine Directive 2006/42/EC supplement II 1 B)	Dok.-nr. / Sprache HFT.0000001 / DE Seite V1

Herewith the manufacturer: **LIFTKET Hoffmann GmbH**
Dresdener Straße 64-68
04808 Wurzen
Germany

of the partly completed machinery **(electric chain hoist)**

Type: Serial number:

declares that the use is not allowed until it has been certified that - as appropriate - the machinery which the electric chain hoist has been installed into meets the regulations of the Machine Directive 2006/42/EC.

The following essential health and safety requirements relating to the supplement I of the Machine Directive 2006/42/EC are applied and observed:

1.1	General	1.1.1; 1.1.2; 1.1.3; 1.1.5; 1.1.6
1.2	Control systems	1.2.1; 1.2.2; 1.2.3; 1.2.4; 1.2.4.1; 1.2.4.2; 1.2.4.3; 1.2.6
1.3	Protection against mechanical hazards	1.3.2; 1.3.3; 1.3.4; 1.3.7; 1.3.9
1.5	Risks due to other hazards	1.5.1; 1.5.4; 1.5.6; 1.5.8; 1.5.11
1.6	Maintenance	1.6.1; 1.6.3; 1.6.4
1.7	Information	1.7.1; 1.7.2; 1.7.3; 1.7.4; 1.7.4.1; 1.7.4.2; 1.7.4.3
4.1	General	4.1.1; 4.1.2; 4.1.2.3; 4.1.2.4; 4.1.2.6; 4.1.3
4.2	Requirements for machinery whose power source is other than manual effort	4.2.1; 4.2.2
4.3	Informationen and markings	4.3.3
4.4	Instructions	4.4.2

All relevant essential health and safety requirements relating to the Machine Directive 2006/42/EC are applied and observed up to the interfaces described in the order confirmation, in the operating instructions and in the wiring diagram.

The conformity with the rules of the following further EC-Directives will be declared:

2014/30/EU	Directive relating to electromagnetic compatibility

The following harmonised regulations are applied:

EN ISO 12100: 2010	Safety of machinery
EN 60204-32: 2008	Electrical equipment of machines; Requirements for hoisting machines
EN 818-7: 2002 + A1: 2008	Short link chain for lifting purposes; Fine tolerance hoist chain, Grade T
EN 14492-2: 2006 + A1: 2009	Power operated winches and hoists

The following national regulations and technical specifications are applied:

FEM 9.511: 1986	Rules for the design of series lifting equipment; Classification of mechanisms
FEM 9.751: 1998	Series lifting equipment; Power driven series hoist mechanisms; Safety

The relevant technical documents according to the Machine Directive 2006/42/EC supplement VII 1 B are issued and will be provided on reasonable request to national authorities.
Authorised person of technical documents:
Matthias Müller, LIFTKET Hoffmann GmbH, Dresdener Straße 64-68, 04808 Wurzen

The type was certified by:

TÜV Rheinland Industrie Service GmbH
Prüflaboratorium für Maschinen
Burger Chaussee 9
03044 Cottbus
Germany

Test certificate number:

Wurzen, 01.08.2017

Matthias Müller
Technical Manager

The following operators have been instructed on how to use this hoist, have read the manual and especially the safety advice:

Name, Surname	Date	Signature

The advice contained in this manual is limited to such matters / facts which are necessary to ensure safe operation and maintenance of the industrial hoists, to be observed by appropriate skilled and qualified operators. Further information about other operational conditions are not considered herewith.
In case of any deviations to the normal operations (such as unusual noises, vibrations, higher input current or frequently blowing fuses) the hoist must be taken out of operation. The area underneath the load has to be secured and blocked off; a possible fault could result in danger to people or goods. The operator or owner of the hoist must call a trained specialist to repair the hoist.