

TRANSLATION OF THE ORIGINAL INSTRUCTION MANUAL ELECTRIC CHAIN HOIST GP



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Spare parts / Ordering spare parts

The correct order numbers for original spare parts can be obtained from the relevant spare parts list. Please ensure that you have the following data on your electric chain hoist to hand. This will enable the correct spare parts to be supplied without delay.

Electric chain hoist type: _____

Serial number: _____

Year of manufacture: _____

Load capacity: _____

Original spare parts for the electric chain hoists can be acquired from the following addresses:

Manufacturer

GIS AG	
Swiss Lifting Solutions	Tel. +41 (0)41 984 11 33
Luzernerstrasse 50	tel@gis-ag.ch
CH-6247 Schötz	www.gis-ag.ch

Resellers / Agent

0 General information

0.1 General safety directions

0.1.1 Safety and hazard information

The following symbols and terms are used in this instruction manual for safety and hazard instructions:



WARNING !

Non-compliance, either in part or full, with operating instructions with this symbol can result in serious personal injury or fatal accidents. Warning information must be **strictly** adhered to.



ATTENTION !

Non-compliance, either in part or full, with operating instructions with this symbol can result in major damage to machinery, property or material. Information in the "Caution" category is to be **exactly** adhered to.



NOTE

Following the instructions marked with this symbol will lead to more effective and straightforward operation. "Note" directions make work easier.

0.2 General safety regulations and organisational measures

The instruction manual for the electric chain hoist must always be available within the operating area of the hoist. The information on the electric chain hoist's type and data plate must be checked against Table 5-1 or 5-2, page 27 and the corresponding dimensioned drawing. The dimensioned drawing also shows the dimensions of the electric chain hoist. This ensures that this instruction manual can be clearly assigned to the electric chain hoist. The instruction manual must be strictly adhered to. Furthermore, supplementary to the instruction manual, the statutory regulations governing general accident prevention and environmental protection are to be enforced. Operating and service personnel must have read and understood the instruction manual, in particular the safety instructions, before commencing work. Protective equipment must be made available for operating and service personnel and worn at all times. The operator or their representative is responsible for supervising operating personnel and ensuring they are aware of the hazards and safety implications of working with the electric chain hoist.

The manufacturer reserves the right to make technical changes to the product or changes to these instructions and assumes no liability for the completeness and currentness of these instructions. The original version of these instructions is in the German language. In case of doubt, the original German original version is exclusively valid as a reference document.

0.2.1 Warning markings / labels / warning plates

- Oil chain.....Figure 0-1
- CE signFigure 0-2
- Type plate Figure 0-3
- Data plate Figure 0-4
- Voltage..... Figure 0-5

Figure 0-1

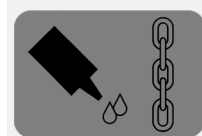


Figure 0-2



Figure 0-3

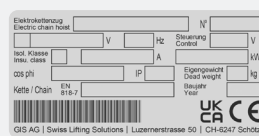


Figure 0-4

		EN 1482-2 (ISO 1482-1)					
		Last / Load t (max)					
Type	m/min 80 Hz	A3 (M3)	A4 (M4)	A5 (M5)	A6 (M6)	A7 (M7)	A7 (M7)
		12.5 t	16.0 t	20.0 t	25.0 t	31.5 t	31.5 t
		35% E3	35% E3	45% E3	35% E3	65% E3	65% E3

Figure 0-5



0.3 Special safety directions

Transport / assembly:

- Electric chain hoists, single parts and large components should be carefully fixed to suitable and technically acceptable hoisting apparatus / load handling devices.

Connecting:

- Connection work is only to be performed by personnel specifically designated and trained for the job.

Start-up / operation:

- Before initial start-up, as well as daily start-up, carry out a visual check and carry out the stipulated user-checks routine.
- Only operate the electric chain hoist if the protective and safety equipment provided is ready and working.
- Damage to the electric chain hoist and changes in its operational characteristics must be reported immediately to the responsible person.
- After use, or when in a non-operational mode, the electric chain hoist should be secured against unauthorised and unintentional use.
- Refrain from hazardous procedures.

Also see Appropriate use (section 0.6).

Cleaning / service / repair / maintenance / refitting:

- Use working platforms provided for installation work at high level.
- Do not use machine parts for this purpose.
- Check electrical cables for damage or wear.
- Ensure any oils or other agents used are collected and disposed of safely and in an environmentally sound manner.
- Reassemble and check safety devices that have been disassembled for maintenance or repair of the hoist once service and repair work has been completed.
- Adhere to predefined testing and service intervals specified in the instruction manual.
- Follow the directions in the instruction manual regarding exchanging parts.
- Operating personnel should be informed before commencing special or repair work.
- Secure the repair working area.
- Prevent the electric chain hoist from being unexpectedly switched on during maintenance or repair work.
- Attach warning plates.
- Disconnect the power cable and ensure it cannot be switched on again by unauthorised personnel.
- Retighten screw connections that have been loosened for repair or maintenance work.
- Replace non-reusable fixing elements (e.g. self-locking nuts, washers, cotter pins, O-rings and seals).

Shut down / storage:

- Clean and preserve (lubricate/grease) the electric chain hoist before long periods of inactivity or storage.

0.4 Hazard protection instructions

Hazardous areas must be clearly marked by warning plates and cordoned off. It must be ensured that warnings regarding hazardous areas are given due attention.

Hazards can stem from:

- incorrect application
- not following safety directions properly
- not carrying out test and service work thoroughly

0.4.1 Hazards - Mechanical

**Physical injury:****Unconsciousness and injury through:**

- crushing, shearing, cutting and twisting
- drawing in, ramming, piercing and rubbing
- slipping, stumbling and falling

Causes:

- crushing, shearing and twisting
- parts rupturing or bursting

Safety options:

- keep floor, equipment and machinery clean
- eliminate leakages
- observe the required safety distance

0.4.2 Hazards - Electrical

Work on electrical apparatus or machinery may only be performed by qualified electricians or persons under the supervision and guidance of qualified electricians, in accordance with electrical regulations.



Physical injury:

Death from electrical shock, injury and burns through:

- contact
- faulty insulation
- faulty maintenance or repair work
- short circuit

Causes:

- contact with, touching or standing too close to uninsulated power and live parts.
- use of uninsulated tools.
- exposed electricity supply terminals following insulation failure.
- inadequate safety checks following repair work.
- incorrect fusing.

Safety options:

- Isolate machinery and equipment designated for repair or maintenance work before commencing such work.
- First check isolated parts for voltage.
- Regularly check electrical equipment.
- Replace loose or damaged cables immediately.
- Always replace blown fuses with fuses of the correct type/value.
- Avoid contact with or touching live terminals.
- Only use insulated tools.

0.4.3 Sound pressure level

Tests on the chain hoist sound pressure level are performed at a range of 1, 2, 4, 8 and 16 metres from the centre of the electric chain hoist motor to the measuring device. The sound pressure level is measured in accordance with DIN 45635. The sound pressure level measurements in Table 0-1 are based on electric chain hoist types /-N.

The sound pressure level was measured:

- During operation of electric chain hoists on factory site.
- During open-air operation of electric chain hoists.

Table 0-1 Sound pressure level

Measuring distance		1 m	2 m	4 m	8 m	16 m
Series	Measurement type	dBA				
GP 250/500, GPM 250	a	65	62	59	56	53
	b	65	59	53	47	41
GP 250/500 1Ph, GPM 250 1Ph	a	76	73	70	67	64
	b	76	70	64	58	52
GP 1000, GP 1000 1Ph	a	80	77	74	71	68
	b	80	74	68	62	56
GP 1600/2500	a	80	77	74	71	68
	b	80	74	68	62	56



When working in a noisy environment, the use of ear protection is recommended.

0.5 Technical status

This instruction manual was issued in 2020. It corresponds to directive 2006/42/EC of the European Parliament and council of 17 May 2006 (including its amendments). The GP models are calculated for the case of operation with a shock factor of 1.4 (per EN 818-7 with max. 8 m/min.). The accidents audited by the laboratory generate smaller shock factors than the normal mode.

0.5.1 Periodic checks

Each device/unit operator should adequately note all checks, maintenance and inspections performed in the inspection pass, and have these confirmed by the competent person in charge. Incorrect or missing entries will lead to forfeiture of the manufacturer's warranty.



Devices and cranes are to be checked periodically by a specialist. Primarily, visual and functional checks are to be carried out, whereby the state of components with respect to damage, wear, corrosion or any other changes is determined. In addition, safety equipment is assessed for completeness and efficiency. It may be necessary to dismantle the equipment to correctly assess wear parts.



Load-bearing parts must be inspected over their entire length, including covered or hidden parts.



All periodical inspections should be arranged by the operator.

0.5.2 Warranty

The warranty is void if the assembly, operation, testing and maintenance is not carried in accordance with this instruction manual. Repairs and troubleshooting under warranty may only be carried out by qualified persons after consultation and agreement with the manufacturer/supplier. Any modifications to the product or the use of non-original spare parts will void the warranty.

0.6 Appropriate use

The electric chain hoists of the GP types are lifting equipment for various lifting capacities. They can be installed as stationary or mobile units, while a lateral oscillation must be ensured. The electric chain hoists are manufactured in accordance with the latest technical developments and recognised safety standards, and are tested for safe operation by the manufacturer. Electric chain hoists are approved by various international classification societies such as TÜV and others. Electric chain hoists of the above types may only be used when in an acceptable technical condition, in accordance with their intended use, by trained personnel in a safe and responsible manner.

General operating conditions:

- Ambient temperature : -15 °C to +50 °C
- Humidity : max. 80% relative humidity
- Protection class : IP65
- Electromagnetic compatibility : Immunity, industrial area

We recommend equipping GIS chain hoists working outdoors with a canopy to protect them from the weather or to move the chain hoist, trolley and travel drive under a canopy when not in use. Special operating conditions can be agreed in individual cases with the manufacturer. After consultation, appropriate, optimised equipment, and important information for safe, low-wear use can be supplied. The intended use of the electric chain hoist likewise assumes the adherence to the operating, maintenance and servicing prescribed by the manufacturer.

Improper use comprises:

- Failure to comply with the safety instructions and operating conditions (see section 0)
- exceeding the defined maximum permissible load capacity
- Transporting overloads
- pulling the load diagonally (permissible maximum angle 4°, see Figure 0-6)
- heaving, pulling or dragging the load
- Transporting loads under the influence of structural guides (e.g. slide guides)
- Moving loads over persons
- transporting persons
- Standing under suspended loads (see Figure 0-7)
- Failing to observe the load hook and load constantly
- Pulling on the control cable
- Inching operation
- running the chain over edges
- allowing the load to fall due to a slack chain
- Operation as a climbing hoist with slack chain (slack chain inlet for chain drive)
- Group travel with different types of electric chain hoists or different types of controls
- Use in potentially explosive atmospheres
(see operating instructions 9500.9004.1 Special models • Options GP for intended use)

Figure 0-6

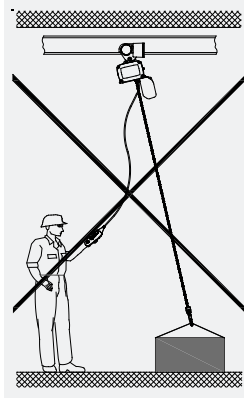
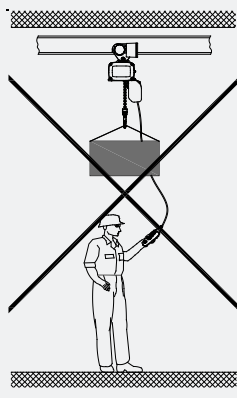


Figure 0-7



Excessive inching operations, slack chains and driving against the limit stops should be avoided. The loads shall be lifted off the ground with the lowest available lifting speed (per EN 14492). If these instructions are not followed, the manufacturer accepts no liability for damage to equipment and third parties caused by such actions.



With pole-changeable motors the low speed is only suitable for driving and braking. In short-term operation, the permissible duty cycle is a maximum of 20%. To protect the electric chain hoist from excessive wear, the lower speed must always be used when starting and stopping the lifting movement in multi-stage drive units.

0.6.1 Use of the instruction manual

This instruction manual includes the following sections:

- | | |
|-----------------------|---|
| 0 General information | 3 Care and maintenance |
| 1 Description | 4 Measures for achieving safe operating periods |
| 2 Start-up | 5 Appendix |

Supplementary to the instruction manual, attention must be paid to the following documentation from the operating company:

- Declaration of conformity
- Inspection pass
- Spare parts list(s)
- Circuit diagrams

Page and figure numbering:

The pages are consecutively numbered. Blank pages are not numbered, however are calculated together with the consecutive pages. Figures are numbered consecutively by section. Example: Figure 3-1 means: in section 3, figure 1.

1 Description

The GP series includes the following models: GPM, GP, GP special versions.

1.1 Operating conditions

Classification according to operating conditions:

Electric chain hoists and trolleys are categorised in accordance with the following regulations into classifications:

- EN 13001-1 (General principles/classification)
- EN 14492-2 (A5 = 125 000 cycles)
- ISO 4301-1 (M5 = 1 600 h)
- DIN 15401 / EN 13001-3-5 (load hook)
- Remarks about general overhaul (see section 4)

There is different coefficient data for the classifications that must be adhered to in operation.



The travel trolley must have at least the same lifting capacity as the electric chain hoist.



The classification of the electric chain hoist can be found on the data plate (see Figure 0-4).

The manufacturer will only guarantee the safety and lasting operation of the electric chain hoist when used for applications in accordance with valid standard values that fall within its classification.

Before the initial start-up, the user must estimate according to the parameters in Table 1-1, which of the four types of load is applicable to the use of the electric chain hoist during its whole service life. Table 1-2 shows standard values for the operating conditions of the classifications depending on the type of load and number of cycles.

Table 1-1 Load spectra

Load type Q2 light $kQ < 0.125$ $kQ = 0.125$	Load type Q3 medium $0.125 < kQ < 0.25$ $kQ = 0.25$	Load type Q4 heavy $0.25 < kQ < 0.50$ $kQ = 0.50$	Load type Q5 very heavy $0.50 < kQ < 1.00$ $kQ = 1.00$
Full load only by way of an exception, however predominantly low loads	Often fully loaded, however continuously lightly loaded	Frequently fully loaded, continuous average loading	Regular full loading

Q = Load spectrum (load type)

Table 1-2 Operating conditions

Classification according to EN 14492-2 (ISO 4301-1)	A3 (M3)	A4 (M4)	A5 (M5)	A6 (M6)	A7 (M7)
Load spectrum	Number of cycles per working day (hoisting class Dh3, lifting speed 8 m/min)				
Q2 - light $kQ < 0.125$	100	200	400	800	1 600
Q3 - medium $0.125 < kQ < 0.25$	50	100	200	400	800
Q4 - heavy $0.25 < kQ < 0.50$	25	50	100	200	400
Q5 - very heavy $0.50 < kQ < 1.00$	12	25	50	100	200



The manufacturer explicitly checks and verifies the classification of electric chain hoists in accordance with EN 14492-2 Annex J at full load collective Q5.



Values according to Table 1-2 require the use of a load collective storage facility. Otherwise, the manufacturer recommends reducing the values in Table 1-2 as follows:

- Operating cycle counter available: Reduction factor 0.9.
- No operating data recorded: Reduction factor 0.8.

Ascertaining the correct type of application for an electric chain hoist:

Either the number of cycles or expected type of load can be used as a basis for ascertaining the correct type of application for the electric chain hoist.



Before initial start-up of the electric chain hoist, it is necessary to ascertain which of the load types in Table 1-1 applies to the operation of the electric chain hoist. Assignment to a load type or a load spectrum (Q) applies for the whole service life of the equipment and may not be altered for operational safety reasons.

Example 1: Calculate permissible operating time of the electric chain hoist

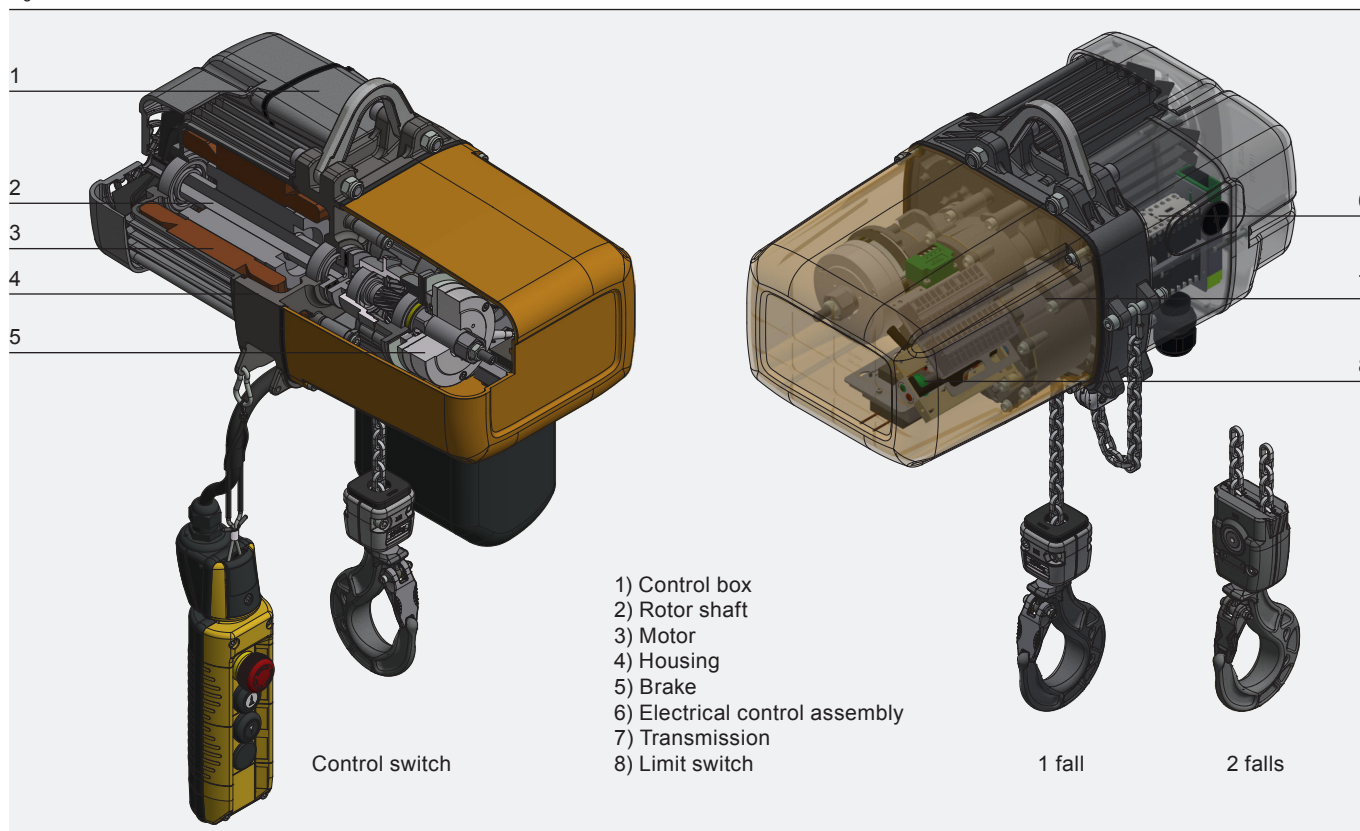
An electric chain hoist of the classification A4 is to be used for medium stress load tasks throughout its whole calculated service life. This corresponds to the type of load "Q4 heavy" (see Table 1-1). Corresponding to the values in Table 1-2, the electric chain hoist should not be used for more than 50 cycles per day.

Example 2: Calculate the permissible type of load

An electric chain hoist of the classification A5 is to be used for approximately 320 cycles per working day, throughout its whole service life. Thus, the electric chain hoist must be operated in accordance with the characteristics of the type of load 'Q2 light' (see Table 1-1).

1.2 General description

Figure 1-1



The electric chain hoist meets the requirements of the EC Machinery Directive and the harmonised EN standards. Housing and cover of the electric chain hoist are made of a sturdy die-cast aluminium. Cooling fins and a fan on the attached motor ensure optimum cooling. The chain container can be attached to the compactly constructed housing. A drilled hole is provided for the power supply cable gland and for the cable gland for the control cable. The eyebolt suspension or optional hook suspension are attached on the housing. GIS electric chain hoists are driven by asynchronous motors. Two-speed models include a pole-changeable version of the motor. The brake system consists of one DC-operated magnetic brake. When there is no current, pressure springs generate the braking torque. The slipping clutch is installed ahead of the brake system due to its function. It protects the chain hoist from overload. A geared limit switch is installed to limit the highest and lowest hook position. Optionally, downstream forced disconnecting emergency stop contacts can be retrofitted.

The electric chain hoists are equipped with a 42 V contactor control as standard. The generally built-in emergency stop contactor disconnects all three phases of the motor from the mains when the red emergency stop button is pressed.

The high tensile profile steel chain corresponds to grade DAT (8SS) according to EN 818-7. The chain wheel is hardened. The load hook, which complies with DIN 15401 / EN 13001, is fitted with a safety catch. The three-stage enclosed spur gears are generally helical. The gears are mounted on roller bearings and run with grease lubrication.

The standard equipment of the electric chain hoist includes a control switch (up/down with emergency stop). The special versions are described in a separate instruction manual (see 9500.9004.1 Special models • Options GP).

1.3 Emergency stop

By pressing the emergency stop button, the power supply to the electric chain hoist is interrupted in all phases. The movement of the electric chain hoist is stopped immediately. To unlock the emergency stop button, it must be turned in the indicated direction.



Danger to life due to electrical voltage when the emergency stop is activated! Even when the emergency stop button is activated, the transformer and the emergency stop contactor (K5) remain live. Before carrying out any work on the housing or the electrical system, disconnect the chain hoist from the mains at all poles via the on-site main switch and secure the unit against accidental restarting. Check that the components are de-energised before starting work.



After an emergency stop, the operator may only restart the electric chain hoist after a competent person is satisfied that the cause which led to the emergency stop has been eliminated and that there is no longer any danger from further operation of the system.

2 Start-up



Mechanical adjustments may be performed by authorised specialists.



Operating staff must carefully read the instruction manual of the electric chain hoist before initial start-up and carry out all the checks. The device shall be put back into operation only after operational safety has been established. Unauthorised persons may not operate the device or carry out work with it.



The operator must create an inspection pass during the start-up of the electric chain hoist. The inspection pass contains all the technical data and the date of start-up. It provides a record of all servicing and maintenance work.

2.1 Transport and assembly

The safety directions for handling with loads should be followed (see section 0.3) when transporting and assembling the electric chain hoist. Electric chain hoists must be assembled by qualified staff, always bearing in mind the accident prevention directions (see section 0.2). Before assembly, the electric chain hoist must be stored in an closed room or covered area. Should the electric chain hoist be destined for operation outdoors, then it is recommended that a protective cover is erected to shield it from the effects of the weather.

Wherever possible, the electric chain hoist should be transported in its original packaging. The goods delivered should be checked for completeness and the packaging disposed in an environmentally sound manner. It is recommended that the electric chain hoist is assembled and connected on-site by skilled personnel.

2.2 Connecting

2.2.1 Electrical connection



Electrical installations may only be performed by authorised specialists.

The mains connection cable, the main fuse and the main switch for connecting the electric chain hoist to the mains power supply must be provided by the client. A 4-wire cable with a PE protective conductor is needed as a supply line for three-phase versions (3Ph PE). A 3-wire cable with a protective conductor is adequate for single-phase version (1Ph PEN). The length and cross-section must be appropriate for the power consumption of the electric chain hoist. The wiring diagram is located in the control unit box of the electric chain hoist.

- Before connecting the electric chain hoist, it must be checked whether the operating voltage and frequency specified on the type plate correspond to the available power supply.
- The phase sequence on the mains side must be checked, and a clockwise rotating field must be ensured.
- Remove the cover from the control box.
- Introduce the power cable with cable gland M25 × 1.5 through the lower or side hole and connect in accordance with the attached electrical chart to L1, L2, L3 and PE (see Figure 2-1).
- Introduce the control cable through cable gland M20 × 1.5 in the hole below the housing and connect to terminals 1, 2, 3, 4, 10 (see Figure 2-2).
- Strain relief to housing (see Figure 2-3).
- Re-fit the cover from the control box.



- To maintain the predetermined protection class IP65, all cables must fit into the corresponding cable glands and the cover screws must be tightened after the connection with the torque specified in section 3.2.11.
- Open holes must be provided with a sealing plug.
- The control switch must be attached to the strain relief cord and not to the cable.

Figure 2-1

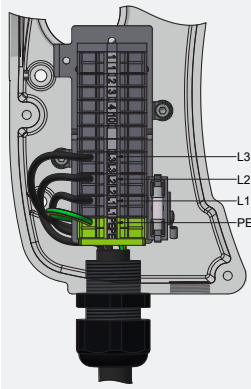


Figure 2-2

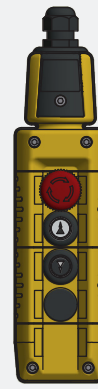
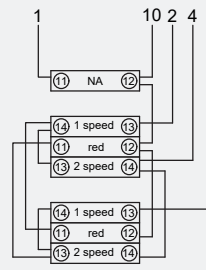
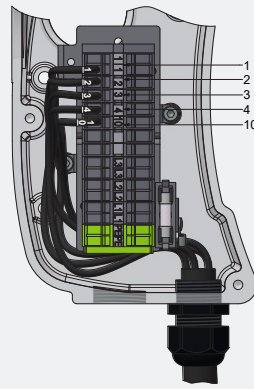


Figure 2-3



The protective conductor should not conduct any current during operation. With the installation of a motor protection breaker, the current of the electric chain hoist must be observed in accordance with the type plate.



- Checking direction of rotation: If the directions of movement do not match the button symbols of the control switch, the supply line wires L1 and L2 must be transposed.
- With the cover removed, observe the rotating fan wheel (Figure 2-4, Item 1).



Open the terminal used in accordance with Figure 2-5.

Figure 2-4

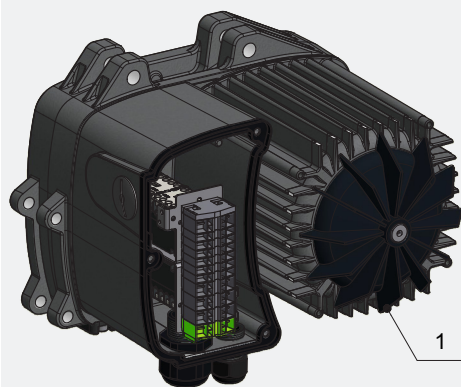
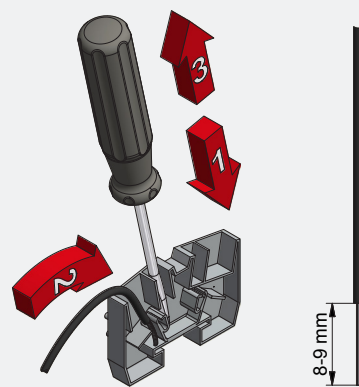


Figure 2-5



2.2.2 Load chain



- Only use original chains.
- Welding seam of the chain links must face inward on the chain wheel (see Figure 2-6).
- The geared limit switch must be mechanically deactivated for pulling in the chain, see section 2.2.3.

Before start-up and during operation, the load chain must be oiled along its full length periodically. The interlocking links/friction surfaces of the chain joints must always be lubricated with oil. Accordingly, the load chain must always be lubricated when it is not under load. The chain drive must also be oiled periodically before start-up and during use. Lubrication is carried out using a low-viscosity chain oil (GIS chain oil, kinematic viscosity ISO VG ≤ 180 mm/s², see Table 3-3) using the immersion method or with an oil can. The end of the chain (1) must be connected to a chain feed aid (2) and fed into the electric chain hoist via the chain wheel (3) using the lowest possible lifting speed (as shown in Figure 2-6). The lifting height must be adjusted such that the hook fittings lie on the ground in the lowest hook position.

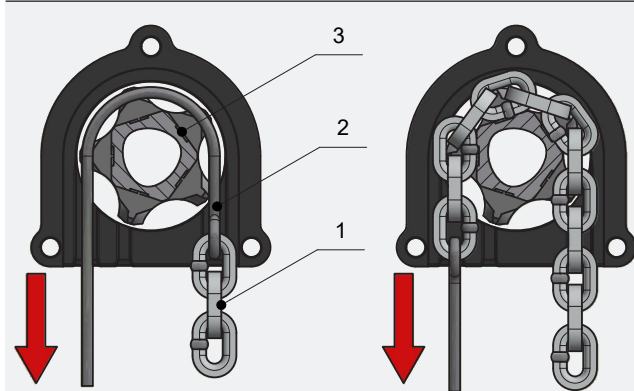


The use of alternative chain oils with different specifications can lead to dangerous situations. The manufacturer GIS guarantees reliable operation and safety only when using the lubricants specified by GIS.



The use of grease lubricants or thixotropic lubricants on the chain or chain drive is prohibited. Safety is not guaranteed.

Figure 2-6



Chain end:

The chain end is to be fixed to the housing in accordance with Figure 2-7 or 2-8 and the limit stop in accordance with Figure 2-9. Ensure that the end of the chain is not twisted. The section of chain after the limit stop (Figure 2-10, Item 1) must be adjusted to the height of the chain container. Here, the length of the chain section must be selected such that the limit stop lies on the floor of the chain container when the chain is pulled into it (see Figure 2-10).

Figure 2-7

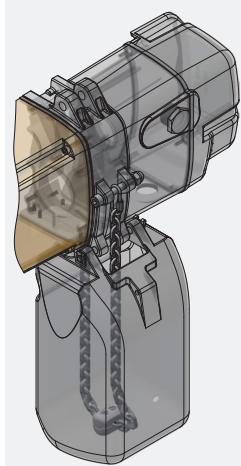


Figure 2-8

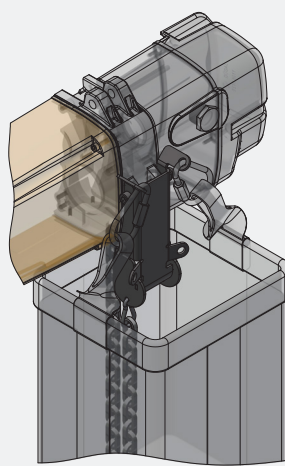
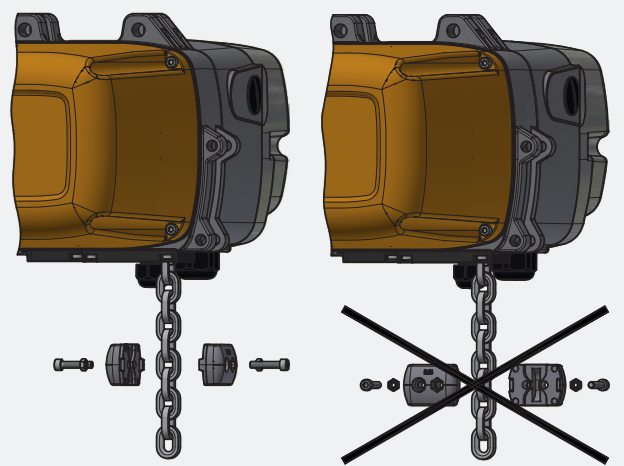


Figure 2-9



1 fall operation (GPM 250, GP 250/500, GP 1000, GP 1600/2500 - see Figure 2-11):

The load hook (1) is connected to the chain with a single fall hook clamp (2). For the power transmission, the assembly of the bolt (3) is important.



- Ensure correct suspension arrangement (except GPM 250): GP 250/500/1000/1600 see Figure 2-13 and for GP 2500 see Figure 2-15.
- The centre of the load must be aligned with the bore in the suspension part.
- Grease the bearings on the load hook (see Table 3-3 Lubricants).

2 fall operation (GP 250/500, GP 1000, GP 1600/2500 - see Figure 2-12):

Fit load hook (1) with double fall hook clamp (2) in accordance with figure. Connect load-side chain end with the chain holder (3) (Tightening torque for model GP 250/500: 10 Nm) and fasten into the guide rail of the housing. Secure the chain holder with screw (4) and spring washer (5).



- Ensure correct suspension arrangement: GP 250/500/1000/1600 see Figure 2-14 and for GP 2500 see Figure 2-16.
- The centre of the load must be aligned with the bore in the suspension part.
- No longitudinal twisting of the chain (see Figure 2-17).
- Grease the bearings thoroughly (deflection wheel / load hook, see Table 3-3 Lubricants).

Figure 2-10

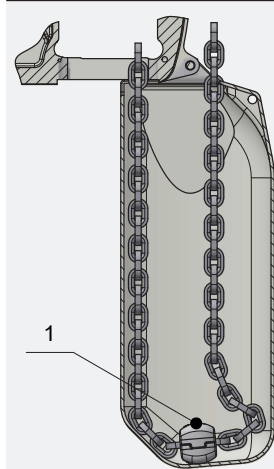


Figure 2-11

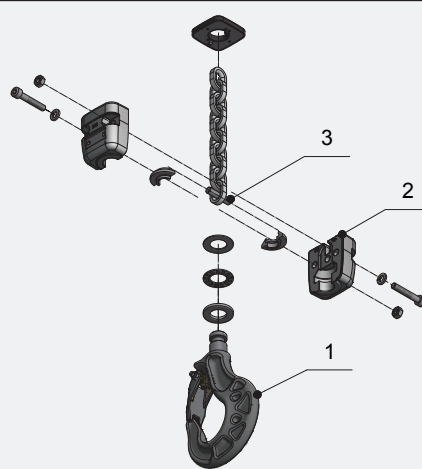


Figure 2-12

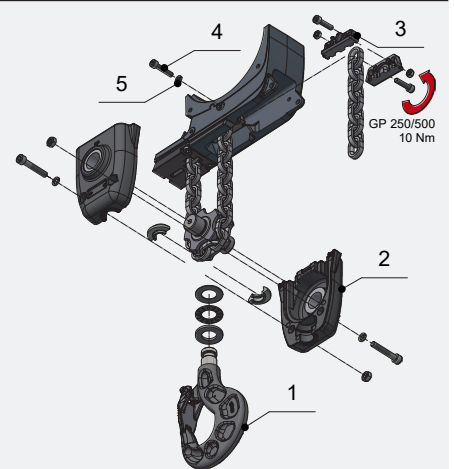


Figure 2-13



Figure 2-14

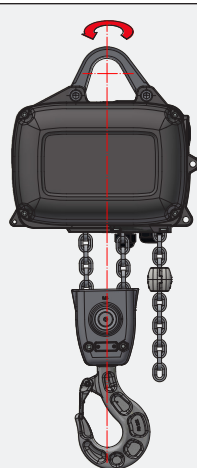


Figure 2-15

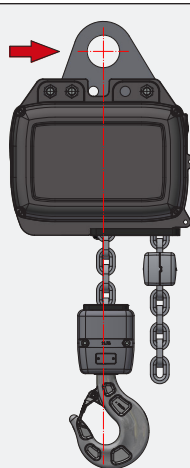


Figure 2-16

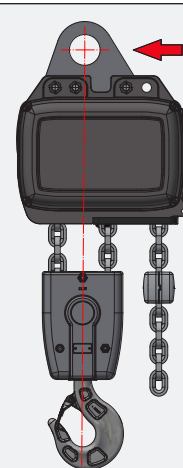
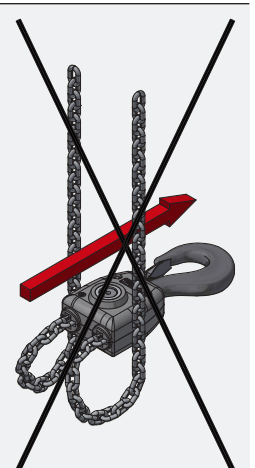


Figure 2-17



2.2.3 Limit switch

A geared limit switch is installed as standard in the electric chain hoist. This is suitable as a regular limit stop. The limit switch function (highest and lowest hook position) must be tested during start-up. Four different transmissions are available depending on the lifting height:

GPM 250			
Transmission	Colour	1 falls lifting height [m]	2 falls lifting height [m]
i = 1:1	Black	14	-
i = 1:1.5	Red	21	-
i = 1:3	Yellow	42	-
i = 1:6	Blue	90	-

GP 250/500			
Transmission	Colour	1 falls lifting height [m]	2 falls lifting height [m]
i = 1:1	Black	19	9.5
i = 1:1.5	Red	28	14
i = 1:3	Yellow	57	28.5
i = 1:6	Blue	114	57

GP 1000			
Transmission	Colour	1 falls lifting height [m]	2 falls lifting height [m]
i = 1:1	Black	30	15
i = 1:1.5	Red	45	23
i = 1:3	Yellow	90	45
i = 1:6	Blue	192	96

GP 1600			
Transmission	Colour	1 falls lifting height [m]	2 falls lifting height [m]
i = 1:1	Black	34	17
i = 1:1.5	Red	51	25.5
i = 1:3	Yellow	102	51
i = 1:6	Blue	204	102

GP 2500			
Transmission	Colour	1 falls lifting height [m]	2 falls lifting height [m]
i = 1:1	Black	42	21
i = 1:1.5	Red	63	31.5
i = 1:3	Yellow	126	63
i = 1:6	Blue	252	126

Adjustment description (see Figure 2-18):

- Provision only with model GPM 250: Loosen screws (1 + 2) and turn terminal strip (3) away (see Figure 2-19).
- The geared limit switch must be deactivated mechanically by pressing the rocker (1) before drawing the chain in or when changing the chain.
- Draw the chain in.
- Move to the highest hook position and turn the red switch wheel (2, rear) until it reaches the switch cam on the top limit switch (3) (turn clockwise for the lowest hook position and anticlockwise for higher hook positions).
- Activate the rocker (1) (the rocker must latch into the switch wheel).
- Move to the lowest hook position, press the rocker (1) and turn the green switch wheel (4, front) until it reaches the switch cam on the bottom limit switch (5) (turn clockwise for the lowest hook position and anticlockwise for higher hook positions).
- Activate the rocker (1) (the rocker must latch into the switch wheel).



Check the limit switch function: The limit stop and the bottom hook block may not touch the housing.



The standard geared limit switch has a technical hysteresis with regard to the chain length. The standard geared limit switch is not designed to determine highly accurate reference positions. Technical options are available for determining reference positions depending on the customer's specific accuracy requirements.

2.2.4 Chain container

- Extend the chain on the load side until the limit switch is triggered.
- Attach the free end of chain to housing (see section 2.2.2).
- Fit the chain container and allow the chain to run in: Plastic container (see Figure 2-20) or textile chain container:
GPM 250: Figure 2-21, GP 250/500: Figure 2-22; GP 1000: Figure 2-23, GP 1600/2500: Figure 2-24.



Chain container must hang freely. Badly lubricated chains will occupy more volume in a chain container. We recommend filling to a maximum of 50 % to 70 %.

Figure 2-18

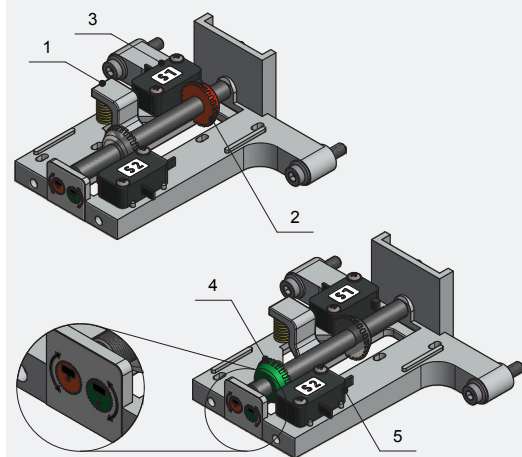


Figure 2-19

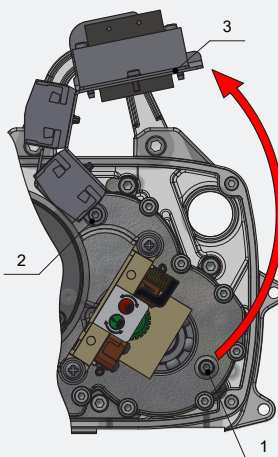


Figure 2-20

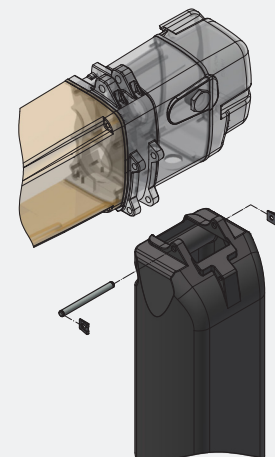


Figure 2-21

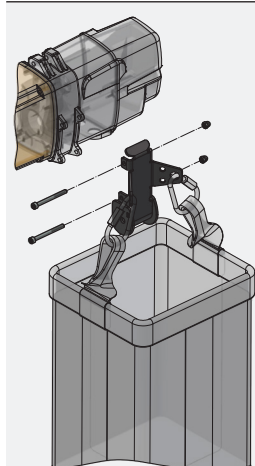


Figure 2-22

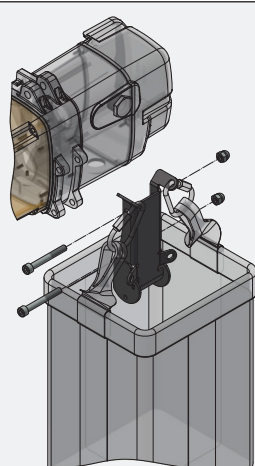


Figure 2-23

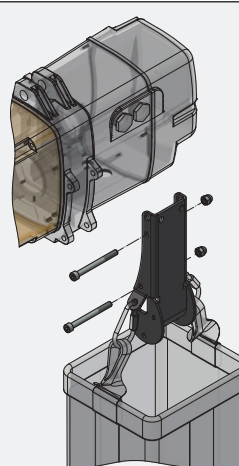
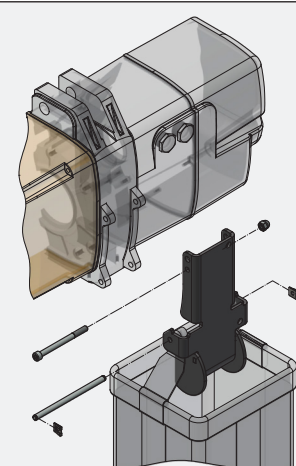


Figure 2-24



3 Care and maintenance

3.1 General guidelines for maintenance and repair

Operating failures in electric chain hoists affecting the safe operation of the device should be remedied immediately.



Maintenance and repair work on the electric chain hoist may only be carried out by qualified and trained personnel. Minimum requirements for specialist personnel:

- Successful completion of the 1st & 2nd level product and service training courses at the manufacturer's premises.
- Validity of course certificates or refresher courses with the manufacturer.



If the operator carries out maintenance, servicing or repair work on an electric chain hoist, the type and scope of the work must be noted in the inspection pass along with the date on which it was carried out.

Alterations, as well as modifications and additions to electric chain hoists, which may affect safety, must be authorised by the manufacturer in advance. Structural alterations to electric chain hoists not authorised by the manufacturer exempt the manufacturer from liability in the event of damage. Material warranty claims will only be recognised as valid if original manufacturer's spare parts are used exclusively. We explicitly advise that original parts and accessories not delivered by us are also not checked or approved by us.

General:

Care and maintenance tasks are preventive measures designed to preserve the full functionality of electric chain hoists. Non-compliance with care and maintenance routines can result in limited use and damage to electric chain hoists.

Care and maintenance should be carried out in accordance with the instruction manual at predefined time intervals (Table 3-1 and 3-2). During care and maintenance work, general accident prevention directions, special safety directions (section 0.3) as well as hazard protection instructions (section 0.4) should be followed.



Care and maintenance work should be performed only on electric chain hoists with no loads. The main switch must be off. The hook fittings must lie on the ground or on the maintenance platform.

Care work encompasses visual checks and cleaning routines. Maintenance work includes additional functional checks. During the functional checks, all fixing elements and cable clamps must be checked for tightness. Cables must be inspected for dirt, discolouration and arc spots.



Used operating materials (oil, grease, etc.) should be safely collected and disposed of in an environmentally friendly manner.

Care and maintenance intervals are defined as follows:

d (daily), 3 M (quarterly), 12 M (annually)

The predefined care and maintenance intervals should be reduced when the loading of the electric chain hoist is exceptionally large or when frequently operated in adverse conditions (e.g. dust, heat, humidity, steam, etc.).

3.2 Care and maintenance

3.2.1 Care overview

Table 3-1 Care overview

Designation	d	3 M	12 M	Task	Remark
1. Load chain, chain inlet	x x			Visual inspection Clean and lubricate as needed	See section 2.2.2
2. Lifting device and trolley	x			Check for abnormal noises / sealing	
3. Electric power supply cable	x			Visual check	
4. Limit switch	x			Function check	See section 2.2.3
5. Sealing		x		Visual check	
6. Strain relief control cable	x			Visual check	

3.2.2 Maintenance overview

Table 3-2 Maintenance overview

Designation	d	3 M	12 M	Task	Remark
1. Load chain		x	x	Oiling Measure wear	See section 3.2.3 See section 3.2.5
2. Chain guidance			x	Check for wear	See section 3.2.6
3. Brake system	x		x	Function test with load Function test with nominal load	See section 3.2.4 See section 3.2.4
4. Electrical equipment			x	Function check	
5. Fixing screws of suspension parts and load hook with accessories			x x	Check screw torques Check for cracks	See section 3.2.11
6. Limit switch			x	Check switching elements	See section 2.2.3
7. Slipping clutch			x	Function check	See section 3.2.9
8. Leak tightness			x x x	Check screw torques of the covers Check cover seals Check cable glands	See section 3.2.11

3.2.3 Lubricants

Table 3-3 Lubricants

Place of operation	Designation	Item number
Load chain	GIS chain oil Universal chain lubricant (100 ml)	9041.0007
Load chain	Chain oil, food-safe Food Lube 150 (250 ml)	9041.0008
Load hook bearing, deflection wheel	Bearing grease Multi Duty Grease EP 2 (4.5 kg)	9041.0010
Load hook bearing, deflection wheel	Bearing grease, food-safe CALOR USDA H1 NLGI 2 (0.9 kg)	9041.0018
Polygonal connection P3G of the slipping clutch (GPM 250, GP 250/500, GP 1000)	Assembly paste MOLYKOTE® DX Paste (0.25 kg)	9041.6054



The polygonal connections P3G of the slipping clutch (GPM 250, GP 250/500, GP 1000, see Figure 3-1) are lubricated at the factory. When replacing slipping clutch components during maintenance, the P3G polygonal connections should be lightly lubricated with the appropriate lubricant (see Table 3-3). The amount of grease should be kept to a minimum so that no lubricant enters the friction system.



- The polygonal connection P4G of the slipping clutch (GP 1600/2500, see Figure 3-2) must not be lubricated.
- The polygonal connection of the chain wheel (see Figure 3-3) must not be lubricated.

Figure 3-1

Figure 3-2

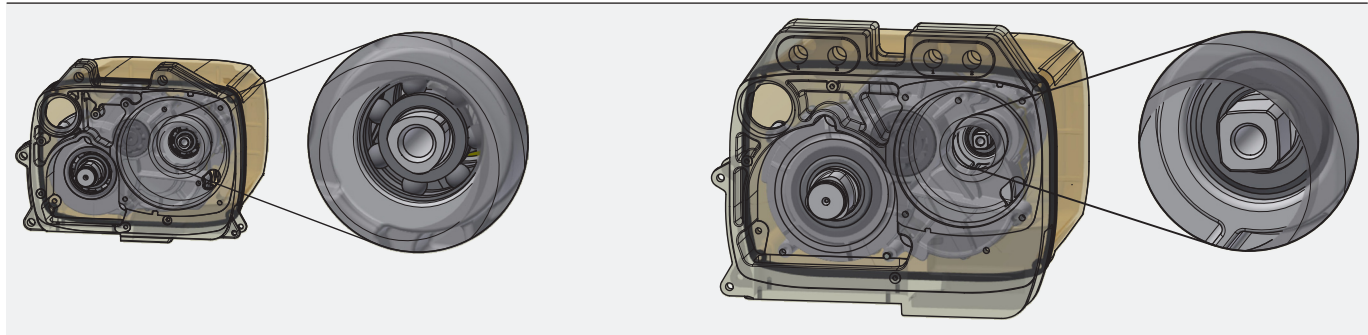
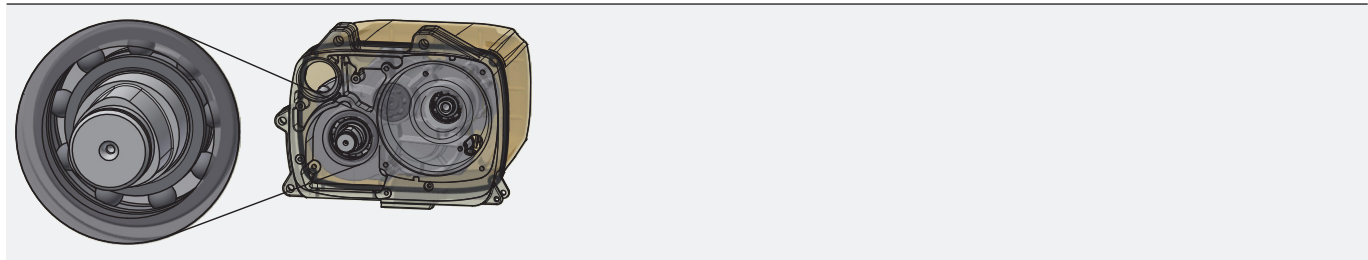


Figure 3-3



3.2.4 Brake system

The spring-loaded brake is an electromagnetic DC-operated single disc brake with two friction surfaces. The braking force is applied by springs. The braking torque is generated when no current is applied. The brake release is solenoid-operated. The brake operates with DC current. The brake must be able to hold the nominal load in power free mode without any problems.



This is a non-adjustable brake.



The voltage of the brake coil is always lower than the operating voltage due to the half-wave rectification.



Once the maximum air gap (a max., Table 3-4 and Figure 3-4) has been reached, the brake rotor (1) and friction plate (2) must be replaced. When placing a new brake on the market as a spare part, the values (a, Table 3-4 and Figure 3-4) must be checked when installed. It is possible to make a slight adjustment to the air gap using the three adjusting screws arranged in a circle (see Figure 3-5).

Table 3-4 Air gap

Designation		GPM/GP 250	GP 500	GP 1000	GP 1600/2500
Nominal value air gap (a)	[mm]	0.3 (+0.1/-0.05)	0.3 (+0.1/-0.05)	0.3 (+0.15/-0.05)	0.3 (+0.15/-0.05)
Air gap (a max.)	[mm]	0.7	0.7	0.9	0.9
Holding torque	[Nm]	4	7	12	22.5
Screw tightening torque	[Nm]	3	3	7	10

Figure 3-4

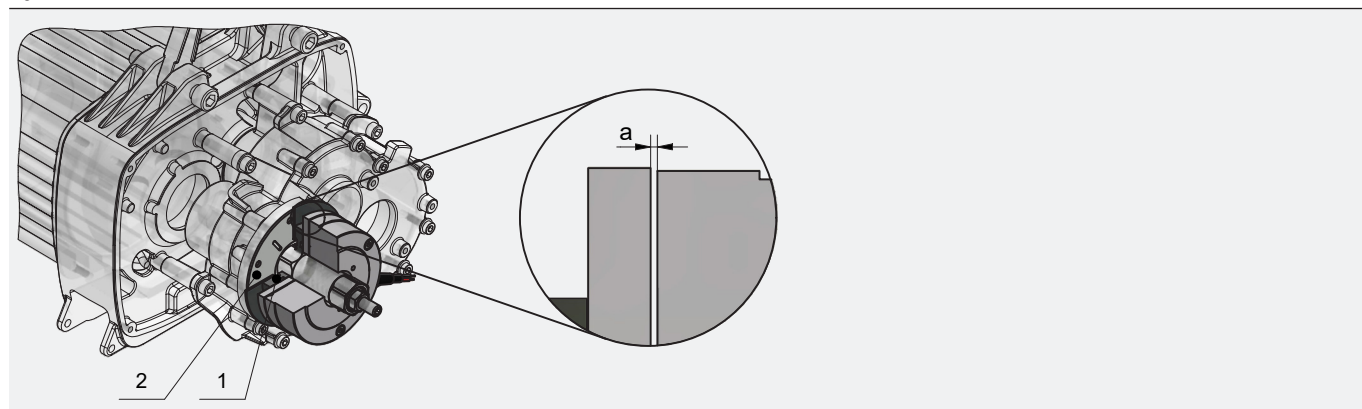
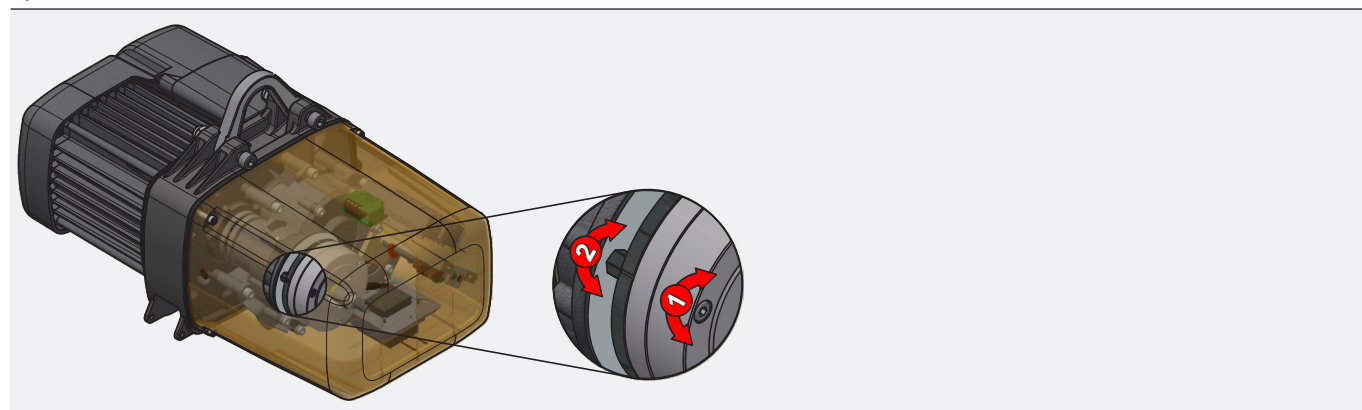


Figure 3-5



3.2.5 Load chain

The load chain should be periodically checked for wear. The check is based on three measurements: See permissible wear values (Table 3-5) and measuring points (Figure 3-6).



The chain should be replaced when the measurements no longer comply with those defined in the table. The chain wheel and chain guidance should be checked for wear at the same time and, where necessary, be replaced. Only use original chains. The chain links should not be welded.

The new chain is installed in accordance with section 2.2.2.



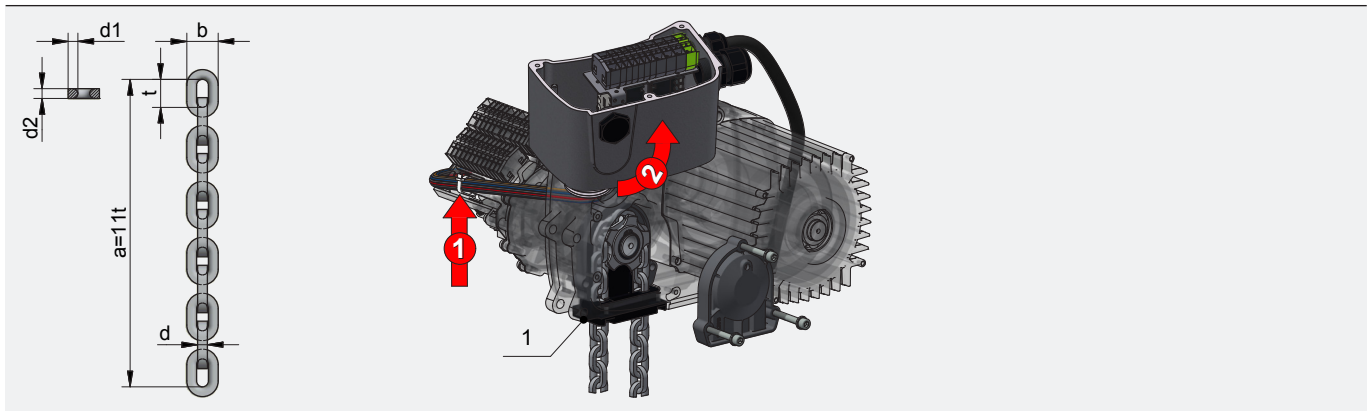
To make replacement easier, the old and new chain can be connected by a piece of flexible wire.

Table 3-5 Load chain wear values

Designation		GPM/GP 250	GP 500	GP 1000	GP 1600	GP 2500
Chain type d x t	[mm]	3.75 x 10.75	5.25 x 15	7.45 x 23	9.4 x 27.4	11.75 x 32.9
Limit values according to DIN 685, part 5, EN 818-7						
1. Measurement over 11 chain links, a = 11t	[mm]	120.6	168.3	258.1	307.4	369.1
2. Measurement over 1 chain link, 1t	[mm]	11.3	15.7	24.1	28.7	34.5
3. Measurement of the chain link diameter dm = d1 + d2 / 2 (dm min. = 0.9 x d)	[mm]	3.4	4.7	6.7	8.5	10.6

Figure 3-6

Figure 3-7



3.2.6 Chain guidance

The inlet openings of the chain on the stop plate must be visually inspected. The 2-part chain guide on the chain wheel must be opened as shown in Figure 3-7 in order to check it correctly for wear.



To turn the control box away, the cable holder must first be loosened on the gearbox side.



A damaged stop plate (Figure 3-7, Item 1) at the bottom of the housing must be replaced.

3.2.7 Limit stop

Check the screw fitting on the end stop and single fall hook clamp and check the tightening torque of the screw connections. For guide values, see section 3.2.11.

3.2.8 Transmission

The transmission has permanent lubrication.



The housing of the transmission may not be opened.

3.2.9 Slipping clutch

The slipping clutch is factory-set to product-specific values and reliably prevents overloading of the chain hoist and the suspension structure above it. The factory settings are documented inside the electric chain hoist on the gearbox (see Figure 3-8). The meaning of the settings according to Figure 3-8 can be seen in Table 3-6.

The resultant forces arising from the adjustment of the slipping clutch must be able to be absorbed by the suspension parts.

Figure 3-8

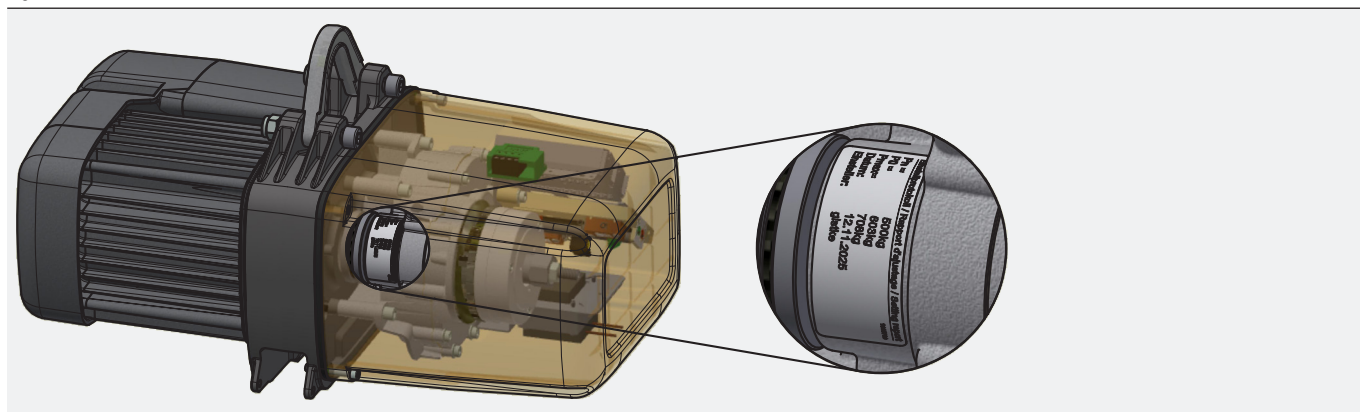


Table 3-6 Meaning of setting values

Designation	Description	Limits and tolerances
Nominal load Pn [kg]	Lifting capacity guaranteed by the manufacturer according to the load plate.	Limit value according to product specification.
Setting value Pü [kg]	Slipping clutch setting value above Pn. Above this value, constant slip at the slipping clutch is to be expected.	Limit values: 1.15-1.35 x Pn Adjustment tolerance: ±5% The limit values are specified for each product depending on the lifting capacity, lifting speed and control type. Electric chain hoists with a nominal load <160 kg are consistently set to Pn = 160 kg.
Limit value Pmax [kg]	Setting value at which the nominal load Pn can no longer be lifted off the ground.	Limit values: 1.25-1.55 x Pn Adjustment tolerance: ±5% The limit values are specified for each product depending on the lifting capacity, lifting speed and control type. The maximum normative upper limit is $\Phi_{DAL} = 1.6$ according to EN 14492-2 and is not exceeded.



The product-specific limit values for Pü and Pmax are determined by the manufacturer, taking into account the static and dynamic standardised test procedures for devices and systems.

The feasibility of dynamic test procedures during start-up with 110% of the nominal load is guaranteed throughout.

The feasibility of static test procedures during start-up with 125% of the nominal load can only be guaranteed in isolated cases for GP 1600/2500 products by adding additional loads (this involves a proportional reduction in the setting values to protect the higher-level equipment, e.g. in the case of high lifting capacities or high lifting speeds).



Adjustment and testing of the slipping clutch may only be carried out by authorised personnel and must be documented in the inspection pass. If the nominal load is no longer lifted, or there is delay in achieving the lifting speed, the slipping clutch must be maintained and readjusted.



- P3G polygonal connections on the slipping clutch (GPM 250, GP 250/500, GP 1000) are lubricated at the factory. When replacing slipping clutch components during maintenance, the P3G polygonal connections should be lightly lubricated with the appropriate lubricant (see Table 3-3). The amount of grease should be kept to a minimum so that no lubricant enters the friction system.
- P4G polygonal connections on the slipping clutch (GP 1600/2500) are not lubricated at the factory and must not be lubricated under any circumstances, even during maintenance.

3.2.10 Suspension parts

All statically loaded parts are considered to be suspension parts. The bearing surfaces of the slewing suspension parts must be periodically greased. The screws must be tightened to the torque specified in section 3.2.11.

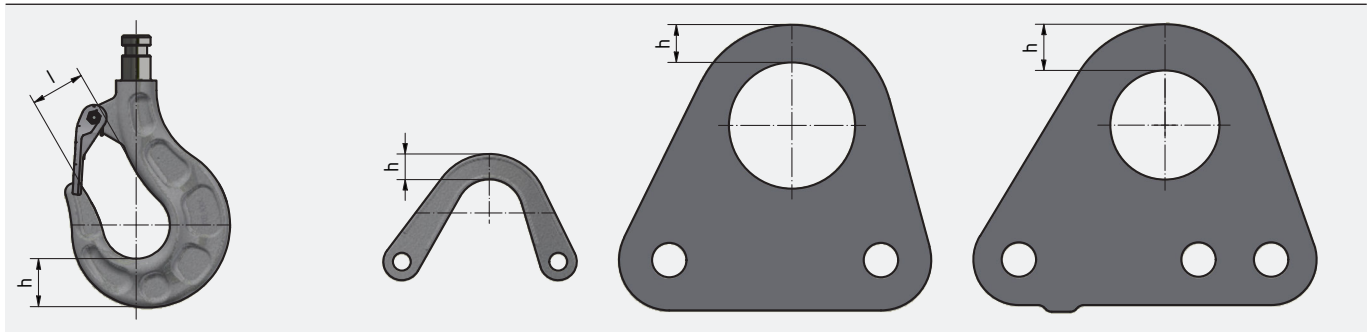


If hook or eyebolt shows damage, cracks, deformation or corrosion, it must be replaced. If the prescribed dimensions (min./max.) no longer comply with Table 3-7 and Figure 3-9, the parts must also be replaced. The hook safety catch must be fully functional and fully closed, replace if necessary.

Table 3-7 Wear values suspension parts

Suspension part		GPM 250	GP 250	GP 500	GP 1000	GP 1600	GP 2500
Load hook	h [mm]	18.0	28.0	28.0	35.5	48.0	47.2
	h min. [mm]	17.1	26.6	26.6	33.8	45.6	44.8
Hook suspension	h [mm]	18.0	28.0	28.0	35.5	48.0	47.2
	h min. [mm]	17.1	26.6	26.6	33.8	45.6	44.8
Eyebolt suspension	h [mm]	11.0	15.0	15.0	20.0	22.5	27.5
	h min. [mm]	10.5	14.3	14.3	19.0	21.4	26.1
Hook opening	l [mm]	24.0	34.5	32.0	42.6	44.6	49.0
	l max. [mm]	26.4	37.9	35.2	46.8	49.0	53.8

Figure 3-9



3.2.11 General tightening torques

General torque values for screws of strength class 8.8 per DIN ISO 898:

M 4	M 5	M 6	M 8	M 10	M 12
3.3 Nm	6.5 Nm	10 Nm	24 Nm	48 Nm	83 Nm

4 Measures for achieving safe operating periods

The statutory and health requirements of the EU directives stipulate that specific dangers which may arise from overuse, fatigue or ageing must be prevented. Accordingly, the operator of electric chain hoists is obliged to determine the actual usage and to keep the inspection pass available for periodic inspections. As part of the periodic inspection (at least once a year) carried out by qualified personnel, the actual usage is documented in the inspection pass for the electric chain hoist. All checking and the general overhaul itself must be arranged by the operator of the lifting device.

The following theoretical operating full load cycles apply throughout the whole service life of electric chain hoists that are categorised per EN 14492-2, depending on the load spectrum:

Classification according to EN 14492-2 (ISO 4301-1)	A3 (M3)	A4 (M4)	A5 (M5)	A6 (M6)	A7 (M7)
Load spectrum	Number of load cycles throughout the whole service life				
Q2 = 0.125	250 000	500 000	1 000 000	2 000 000	4 000 000
Q3 = 0.25	125 000	250 000	500 000	1 000 000	2 000 000
Q4 = 0.50	63 000	125 000	250 000	500 000	1 000 000
Q5 = 1.00	31 500	63 000	125 000	250 000	500 000

4.1 Determining the actual use

The actual use depends on the daily operating cycles and the load spectrum. Operating cycles are determined from information provided by the operator or recorded using an operating data counter or a load collective storage facility. The load spectrum is determined in accordance with Table 1-1, page 10. With both of these values, the annual use can be found in table 4-1. If an operating data acquisition system (BDE) is used, the actual use can be read out directly by our experts during the annual inspection.



The values periodically calculated or read-off are to be recorded in the inspection pass.

Example:

An electric chain hoist with A4 classification is used with the load type "Q4 heavy" (kQ = 0.50, see Table 1-1). Use per working day is 50 cycles. According to Table 4-1, this results in a theoretical annual use of 6 300 full load cycles. A theoretical operating period of 19.8 years can thus be derived from the theoretical total service life of 125 000 full load cycles. A general overhaul must be carried out after 10 years at the latest, during which the further use is determined.

Table 4-1 Annual usage

Number of cycles per working day	<= 12	<= 25	<= 50	<= 100	<= 200	<= 400	<= 800	<= 1 600
Load spectrum	Annual use in full load cycles							
Q2 = 0.125	400	800	1 600	3 150	6 300	12 500	25 000	50 000
Q3 = 0.25	800	1 600	3 150	6 300	12 500	25 000	50 000	100 000
Q4 = 0.50	1 600	3 150	6 300	12 500	25 000	50 000	100 000	200 000
Q5 = 1.00	3 150	6 300	12 500	25 000	50 000	100 000	200 000	400 000



Table 4-1 refers to single-shift operation with 250 working days per year.

4.2 General overhaul

On reaching the theoretical full load cycles (however, no later than 10 years for recording without BDE), a general overhaul should be performed. This enables the equipment to continue operating safely for a further period of time. The check and release for the further use must be performed by a specialist person authorised by the manufacturer or by the manufacturer themselves.

The requirements for authorisation to carry out a general overhaul are:

- A valid certificate of completion of the 2nd Level Service Training.
- At least 2 years of service experience with GIS electric chain hoists of the relevant product generation or in consultation with the manufacturer.
- Possession of the documents required for the general overhaul.
- Explicit authorisation by the manufacturer.

The inspector determines:

- What new theoretical full load cycles are possible.
- The max. period until the next general overhaul (but max. 5 years).

This data should also be recorded in the inspection pass.

The general overhaul and the associated work steps are listed in document 9500.9039.1 General overhaul of GP electric chain hoist.

4.3 Disposal

If the device can no longer be used, it must be disposed of in an environmentally safe manner. Lubricants, such as oils and greases, must be disposed in accordance with the applicable waste law. Metals and plastics are to be recycled.

5 Annex

5.1 Technical data

Table 5-1 Technical data GP (three-phase version)

EN (ISO) classification	A3 (M3) 12 C/d (25% DF)	A4 (M4) 25 C/d (30% DF)	A5 (M5) 50 C/d (40% DF)	A6 (M6) 100 C/d (50% DF)	A6 (M6) 100 C/d (50% DF)	A6 (M6) 100 C/d (50% DF)	Lifting speed 50 Hz	Lifting speed 60 Hz	Motor type	Number of falls	Dead weight 3 m lift	Main fuse (400 V, slow-blow)
Series	Load capacity [kg]						[m/min]	[m/min]			[kg]	[A]
GPM 250/1NF	-	320	250	200	160	125	8/2	9.6/2.4	71 B 8/2	1	17	6
GPM 250/1SF	-	-	125	100	80	-	16/4	19.2/4.8	71 B 8/2	1	17	6
EN (ISO) classification	A3 (M3) 12 C/d (25% DF)	A4 (M4) 25 C/d (30% DF)	A5 (M5) 50 C/d (40% DF)	A6 (M6) 100 C/d (50% DF)	A7 (M7) 200 C/d (60% DF)	A7 (M7) 200 C/d (60% DF)	Lifting speed 50 Hz	Lifting speed 60 Hz	Motor type	Number of falls	Dead weight 3 m lift	Main fuse (400 V, slow-blow)
Series	Load capacity [kg]						[m/min]	[m/min]			[kg]	[A]
GP 250/1NF	400	320	250	200	160	125	8/2	9.6/2.4	80 B 8/2	1	24	6
GP 250/1SF	-	160	125	100	-	-	16/4	19.2/4.8	80 B 8/2	1	24	6
GP 250/1NL	400	320	250	200	160	125	4	4.8	80 A 4	1	24	6
GP 250/1N	400	320	250	200	160	125	8	9.6	80 B 2	1	24	6
GP 250/2NF	-	630	500	400	320	250	4/1	4.8/1.2	80 B 8/2	2	25	6
GP 250/2NL	-	630	500	400	320	250	2	2.4	80 A 4	2	25	6
GP 250/2N	-	630	500	400	320	250	4	4.8	80 B 2	2	25	6
GP 500/1NF	800	630	500	400	320	250	8/2	9.6/2.4	80 B 8/2	1	26	6
GP 500/1SF	-	320	250	200	160	125	16/4	19.2/4.8	80 B 8/2	1	26	6
GP 500/1NL	800	630	500	400	320	250	4	4.8	80 A 4	1	26	6
GP 500/1N	800	630	500	400	320	250	8	9.6	80 B 2	1	26	6
GP 500/2NF	-	1250	1000	800	630	500	4/1	4.8/1.2	80 B 8/2	2	28	6
GP 500/2NL	-	1250	1000	800	630	500	2	2.4	80 A 4	2	28	6
GP 500/2N	-	1250	1000	800	630	500	4	4.8	80 B 2	2	28	6
GP 1000/1NF	1600	1250	1000	800	630	500	8/2	9.6/2.4	100 B 8/2	1	58	10
GP 1000/1SF	-	630	500	-	-	-	16/4	19.2/4.8	100 B 8/2	1	58	10
GP 1000/1NL	1600	1250	1000	800	630	500	4	4.8	90 B 4	1	57	10
GP 1000/1N	1600	1250	1000	800	630	500	8	9.6	100 B 2	1	57	10
GP 1000/2NF	-	2500	2000	1600	1250	1000	4/1	4.8/1.2	100 B 8/2	2	62	10
GP 1000/2NL	-	2500	2000	1600	1250	1000	2	2.4	90 B 4	2	61	10
GP 1000/2N	-	2500	2000	1600	1250	1000	4	4.8	100 B 2	2	61	10
GP 1600/1NF	2500	2000	1600	-	-	-	8/2	9.6/2.4	100 C 8/2	1	93	16
GP 1600/1SF	-	1000	800	-	-	-	16/4	19.2/4.8	100 C 8/2	1	93	16
GP 1600/1NL	2500	2000	1600	1250	1000	-	4	4.8	100 AL 4	1	88	16
GP 1600/2NF	5000	4000	3200	-	-	-	4/1	4.8/1.2	100 C 8/2	2	102	16
GP 1600/2NL	5000	4000	3200	2500	2000	-	2	2.4	100 AL 4	2	97	16
GP 2500/1BF	4000	3200	-	-	-	-	6.4/1.6	7.8/1.9	100 C 8/2	1	100	16
GP 2500/1NF	-	-	2500	2000	-	-	8/2	9.6/2.4	100 C 8/2	1	100	16
GP 2500/1SF	-	-	1250	1000	-	-	16/4	19.2/4.8	100 C 8/2	1	100	16
GP 2500/1BL	4000	3200	-	-	-	-	3.2	3.8	100 AL 4	1	95	16
GP 2500/1NL	-	-	2500	2000	-	-	4	4.8	100 AL 4	1	95	16
GP 2500/1B	-	3200	-	-	-	-	6.4	7.8	100 C 2	1	100	16
GP 2500/2BF	-	6300	-	-	-	-	3.2/0.8	3.8/1	100 C 8/2	2	117	16
GP 2500/2NF	-	-	5000	4000	-	-	4/1	4.8/1.2	100 C 8/2	2	117	16
GP 2500/2BL	-	6300	-	-	-	-	1.6	1.9	100 AL 4	2	112	16
GP 2500/2NL	-	-	5000	4000	-	-	2	2.4	100 AL 4	2	112	16
GP 2500/2B	-	6300	-	-	-	-	3.2	3.8	100 C 2	2	117	16

Table 5-2 Technical data GP (single-phase version)

EN (ISO) classification	A3 (M3) 12 C/d (25% DF)	A4 (M4) 25 C/d (30% DF)	A5 (M5) 50 C/d (40% DF)	A5 (M5) 50 C/d (40% DF)	A5 (M5) 50 C/d (40% DF)	A5 (M5) 50 C/d (40% DF)	Lifting speed 50 Hz	Lifting speed 60 Hz	Motor type	Number of falls	Dead weight 3 m lift	Main fuse (230 V, slow-blow)
Series	Load capacity [kg]						[m/min]	[m/min]			[kg]	[A]
GPM 250/1NL 1Ph	-	-	250	200	160	125	4	4.8	71 A 4	1	17	10
GPM 250/1N 1Ph	-	-	125	100	80	-	8	9.6	71 A 4	1	17	10
GP 250/1NL 1Ph	-	-	250	200	160	125	4	4.8	80 A 4	1	24	10
GP 250/1N 1Ph	-	-	250	200	160	125	8	9.6	80 A 4	1	24	10
GP 250/2NL 1Ph	-	-	500	400	320	250	2	2.4	80 A 4	2	25	10
GP 250/2N 1Ph	-	-	500	400	320	250	4	4.8	80 A 4	2	25	10
GP 500/1NL 1Ph	-	-	500	400	320	250	4	4.8	80 A 4	1	26	10
GP 500/1N 1Ph	-	-	250	200	160	125	8	9.6	80 A 4	1	26	10
GP 500/2NL 1Ph	-	-	1000	800	630	500	2	2.4	80 A 4	2	28	10
GP 500/2N 1Ph	-	-	500	400	320	250	4	4.8	80 A 4	2	28	10
GP 1000/1NL 1Ph	-	-	1000	800	630	500	4	4.8	90 B 4	1	56	16
GP 1000/1N 1Ph	-	-	500	400	-	-	8	9.6	90 B 4	1	56	16
GP 1000/2NL 1Ph	-	-	2000	1600	1250	1000	2	2.4	90 B 4	2	60	16
GP 1000/2N 1Ph	-	-	1000	800	-	-	4	4.8	90 B 4	2	60	16

5.2 Electrical parameters

Table 5-3 Electrical parameters GP (three-phase version)

Series	Motor type	No. of poles	P _N [kW]	n _N [rpm]	min./max. currents and start-up current									
					3 x 400 V, 50 Hz					3 x 230 V, 50 Hz				
					I _{N 380} [A]	I _{N 415} [A]	I _{max.} [A]	I _A /I _{N 415}	cos phi _N	I _{N 220} [A]	I _{N 240} [A]	I _{max.} [A]	I _A /I _{N 240}	cos phi _N
GPM 250	71 B 8/2	8	0.10	675	1.2	1.4	1.6	1.45	0.56	2.2	2.4	2.7	1.45	0.56
		2	0.37	2825	1.6	2.1	2.4	2.75	0.63	2.6	3.2	3.8	2.75	0.63
GP 250/500	80 B 8/2	8	0.18	665	1.4	1.9	2.2	1.45	0.51	2.4	3.1	3.5	1.45	0.51
		2	0.72	2745	2.4	3.4	3.7	2.75	0.77	3.2	4.3	4.7	2.75	0.77
GP 250/500	80 A 4	4	0.55	1420	1.3	1.9	2.2	1.65	0.68	2.6	3.2	4.1	1.65	0.68
GP 250/500	80 B 2	2	0.72	2745	3.2	3.4	3.7	2.75	0.77	5.6	5.9	6.2	2.75	0.77
GP 1000	100 B 8/2	8	0.57	675	3.8	4.3	5.1	1.45	0.58	7.1	7.4	9.0	1.45	0.58
		2	2.3	2790	5.3	6.2	7.8	2.75	0.77	8.2	9.3	10.7	2.75	0.77
GP 1000	90 B 4	4	1.5	1430	3.4	3.8	4.2	1.65	0.76	6.1	6.5	7.4	1.65	0.76
GP 1000	100 B 2	2	2.3	2790	6.2	7.3	8.6	2.75	0.77	10.4	13.2	15.8	2.75	0.77
GP 1600/2500	100 C 8/2	8	0.93	685	4.8	6.0	6.5	2.35	0.53	8.2	9.7	11.0	2.35	0.55
		2	3.7	2820	9.8	9.7	10.5	4.95	0.82	15.8	15.2	16.5	4.95	0.82
GP 1600/2500	100 AL 4	4	2.2	1415	5.3	5.7	6.1	1.65	0.80	7.6	7.8	10.5	1.65	0.80
GP 1600/2500	100 C 2	2	3.7	2820	10.4	10.8	11.7	4.95	0.82	17.8	18.5	19.8	4.95	0.82

Table 5-4 Electrical parameters GP (three-phase version)

Series	Motor type	No. of poles	P _N [kW]	n _N [rpm]	min./max. currents and start-up current									
					3 x 460 V, 60 Hz									
					I _{N 460} [A]	I _{N 480} [A]	I _{max.} [A]	I _A /I _{N 480}	cos phi _N					
GPM 250	71 B 8/2	8	0.11	825	1.2	1.3	1.6	1.45	0.55					
		2	0.44	3425	1.6	1.8	2.4	2.75	0.62					
GP 250/500	80 B 8/2	8	0.22	815	1.2	1.5	1.9	1.45	0.50					
		2	0.86	3345	2.3	2.8	3.2	2.75	0.76					
GP 250/500	80 A 4	4	0.66	1720	1.4	1.5	2.0	1.65	0.67					
GP 250/500	80 B 2	2	0.86	3345	3.2	3.4	3.7	2.75	0.76					
GP 1000	100 B 8/2	8	0.68	825	3.8	4.1	4.7	1.45	0.57					
		2	2.8	3390	5.3	5.8	7.3	2.75	0.76					
GP 1000	90 B 4	4	1.8	1730	3.4	3.8	4.2	1.65	0.75					
GP 1000	100 B 2	2	2.8	3390	6.2	6.5	8.1	2.75	0.76					
GP 1600/2500	100 C 8/2	8	1.15	835	5.1	5.3	5.9	2.35	0.54					
		2	4.5	3420	9.4	9.6	10.2	4.95	0.81					
GP 1600/2500	100 AL 4	4	2.7	1715	5.3	5.7	6.1	1.65	0.79					
GP 1600/2500	100 C 2	2	4.5	3420	10.4	10.8	11.7	4.95	0.81					

Table 5-5 Electrical parameters GP (three-phase version)

Series	Motor type	No. of poles	P _N [kW]	n _N [rpm]	min./max. currents and start-up current									
					3 x 230 V, 60 Hz					3 x 575 V, 60 Hz				
					I _{N 220} [A]	I _{N 240} [A]	I _{max.} [A]	I _A /I _{N 240}	cos phi _N	I _{N 575} [A]		I _{max.} [A]	I _A /I _{N 575}	cos phi _N
GPM 250	71 B 8/2	8	0.11	825	2.6	3.2	3.5	1.45	0.55	0.9		1.0	1.35	0.65
		2	0.44	3425	3.1	3.8	4.2	2.75	0.62	1.0		1.4	3.5	0.63
GP 250/500	80 B 8/2	8	0.22	815	3.1	3.7	4.0	1.45	0.50	1.1		1.3	1.35	0.54
		2	0.86	3345	3.8	5.3	5.6	2.75	0.76	1.7		2.0	3.5	0.88
GP 250/500	80 A 4	4	0.66	1720	3.7	3.9	4.7	1.65	0.67	1.5		2.0	1.65	0.67
GP 250/500	80 B 2	2	0.86	3345	5.4	6.0	6.7	2.75	0.76	1.9		2.3	3.5	0.88
GP 1000	100 B 8/2	8	0.68	825	8.5	9.3	11.2	1.45	0.57	2.9		3.5	1.65	0.62
		2	2.8	3390	13.0	13.8	16.7	2.75	0.76	4.7		5.3	3.5	0.83
GP 1000	90 B 4	4	1.8	1730	7.7	8.9	9.7	1.65	0.75	3.1		3.5	1.65	0.75
GP 1000	100 B 2	2	2.8	3390	12.4	15.6	16.3	2.75	0.76	5.2		5.8	2.75	0.83
GP 1600/2500	100 C 8/2	8	1.15	835	11.8	12.2	12.5	2.35	0.54	6.0		6.7	2.35	0.59
		2	4.5	3420	21.2	20.0	21.5	4.95	0.81	11.0		14.0	4.95	0.87
GP 1600/2500	100 AL 4	4	2.7	1715	10.8	11.2	11.9	1.65	0.79	4.9		5.4	1.65	0.79
GP 1600/2500	100 C 2	2	4.5	3420	20.8	21.6	23.4	4.95	0.81	8.4		9.4	4.95	0.81

Table 5-6 Electrical parameters GP (single-phase version)

Series	Motor type	No. of poles	P_N [kW]	η_N [rpm]	min./max. currents and start-up current									
					1 x 115 V, 50 Hz					1 x 230 V, 50 Hz				
					$I_{N\ 115}$ [A]		$I_{max.}$ [A]	$I_A/I_{N\ 115}$	$\cos \phi_{i_N}$	$I_{N\ 230}$ [A]		$I_{max.}$ [A]	$I_A/I_{N\ 230}$	$\cos \phi_{i_N}$
GPM 250	71 A 4	4	0.25	1385	5.7		5.9	1.65	0.55	3.0		3.2	1.95	0.55
GP 250/500	80 A 4	4	0.55	1420	10.3		11.4	1.95	0.68	5.1		5.9	2.45	0.68
GP 1000	90 B 4	4	1.5	1420	13.0		17.0	1.95	0.76	6.0		7.5	2.45	0.76

Table 5-7 Electrical parameters GP (single-phase version)

Series	Motor type	No. of poles	P_N [kW]	η_N [rpm]	min./max. currents and start-up current									
					1 x 115 V, 60 Hz					1 x 230 V, 60 Hz				
					$I_{N\ 115}$ [A]		$I_{max.}$ [A]	$I_A/I_{N\ 115}$	$\cos \phi_{i_N}$	$I_{N\ 230}$ [A]		$I_{max.}$ [A]	$I_A/I_{N\ 230}$	$\cos \phi_{i_N}$
GPM 250	71 A 4	4	0.30	1685	9.2		9.5	1.65	0.54	3.4		3.7	1.95	0.54
GP 250/500	80 A 4	4	0.66	1720	13.2		15.1	1.95	0.67	6.6		7.6	2.45	0.67
GP 1000	90 B 4	4	1.8	1720	14.7		15.0	1.95	0.75	6.9		7.0	2.45	0.75

5.3 EC Declaration of Conformity

Declaration for a machine in accordance with the EU directives 2006/42/EC, Annex II A, 2014/30/EU, Annex I and 2014/35/EU, Annex III



We,

GIS AG, Swiss Lifting Solutions, Luzernerstrasse 50, CH-6247 Schötz

hereby declare that the machine

**GIS electric chain hoist, series
with a lifting capacity of
serial number range**

**GP
80 kg to 12 500 kg
1000001 to 2000000**

developed for lifting and lowering loads, meets the essential requirements of the following EU directives, insofar as applicable to the scope of the delivery, in standard production form including load control, from the 2016 year of manufacture:

EC Machinery Directive	2006/42/EC
EC Directive on Electromagnetic Compatibility	2014/30/EU
EC Low Voltage Directive	2014/35/EU

Harmonised standards applied:

EN 14492-2	Cranes, power driven winches and hoists; Part 2: Power driven hoists
EN 818-7	Chains for lifting purposes; Part 7: Grade T
EN ISO 13849-1	Safety-related parts of control systems; Part 1: General principles for design
DIN EN 60204-32	Electrical equipment of machines; Part 32: Requirements for hoisting machines

Standards and technical specifications applied:

FEM 9.751	Power driven lifting device series; safety
FEM 9.755	Measures for achieving safe operating periods

Authorised to compile relevant technical documentation:
GIS AG, Luzernerstrasse 50, CH-6247 Schötz

Schötz, 19/11/2025

GIS AG

I. Muri
Director

E. Widmer
Sales Manager

The completion, assembly and start-up as per instruction manual is documented in the inspection pass.

5.4 EC Declaration of incorporation

Declaration for the incorporation of an incomplete machine in accordance with the EU directives 2006/42/EC, Annex II B, 2014/30/EU, Annex I and 2014/35/EU, Annex III



We,

GIS AG, Swiss Lifting Solutions, Luzernerstrasse 50, CH-6247 Schötz

hereby declare that the partly completed machinery

**GIS electric chain hoist, series
with a lifting capacity of
serial number range**

**GP
80 kg to 12 500 kg
1000001 to 2000000**

developed for lifting and lowering loads and intended to be integrated in a machine, meets the essential requirements of the following EU directives, insofar as applicable to the scope of the delivery, in standard production form including load control, from the 2016 year of manufacture:

EC Machinery Directive	2006/42/EC
EC Directive on Electromagnetic Compatibility	2014/30/EU
EC Low Voltage Directive	2014/35/EU

We also declare that the technical documentation has been compiled in accordance with Annex VII, Part B of Directive 2006/42/EC. We undertake to submit the specific documents relating to the lifting device to national authorities on receipt of a reasonable request. The information will be supplied by electronic means.

Harmonised standards applied:

EN 14492-2	Cranes, power driven winches and hoists; Part 2: Power driven hoists
EN 818-7	Chains for lifting purposes; Part 7: Grade T
EN ISO 13849-1	Safety-related parts of control systems; Part 1: General principles for design
DIN EN 60204-32	Electrical equipment of machines; Part 32: Requirements for hoisting machines

Standards and technical specifications applied:

FEM 9.751	Power driven lifting device series; safety
FEM 9.755	Measures for achieving safe operating periods

This declaration refers only to the lifting device. Start-up is prohibited until it has been proven that the entire system into which the lifting device is integrated corresponds with the above EC Directives.

Authorised to compile relevant technical documentation:
GIS AG, Luzernerstrasse 50, CH-6247 Schötz

Schötz, 19/11/2025

GIS AG



I. Muri
Director



E. Widmer
Sales Manager

The completion, assembly and start-up as per instruction manual is documented in the inspection pass.

