PRODUCT MANUAL (with test log book)

ABUS chain hoist

ABUCompact GMC

AT A GLANCE:

AN 120282EN001
2023-08-24

Original Operating Instructions

ABUCOMPACT: VARIOUS VERSIONS AND OPTIONS

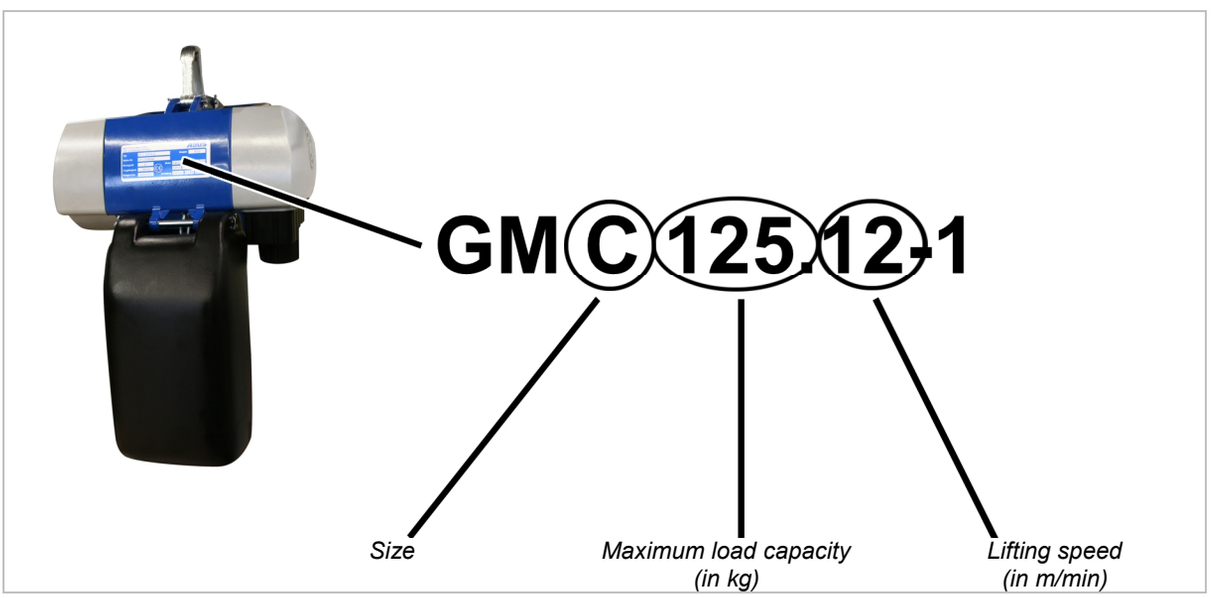
This product manual applies to GMC chain hoists in various versions and options. The work steps described and the technical data will vary according to the version or options of the chain hoist. The areas of this product manual which do not apply to all chain hoists, but are applicable only under certain conditions, are enclosed in a dashed box. At the start of the box, the version or option to which the section is applicable is specified.

If a work step is described in a dashed box:

- ➔ At the start of the dashed box text, read the version or option to which this box applies.
- ➔ Note page and turn to this page.
- ➔ Based on the images, determine which version or option applies.
- ➔ Turn back to the page with the associated dashed box for the next work steps.

- ➔ The version or option that applies can also be determined by consulting the scope of delivery or the planning documents.

TYPE PLATE



NUMBER OF FALLS (VERSION)

Single-fall

Twin-fall

SAFETY LOAD HOOK (OPTIONAL)

SUSPENSION HOOK (OPTIONAL)

CONTENTS

GENERAL INFORMATION

THIS SECTION APPLIES TO ANYONE WHO LIFTS LOADS USING THE CRANE, PERFORMS WORK ON THE CRANE, OR WORKS NEARBY.

AT THE START

USING THIS PRODUCT MANUAL

The following symbols are used in this product manual:

DANGER TO PERSONS!
This warning notice indicates hazards for persons.

DANGER FROM ELECTRIC SHOCK!
This warning notice indicates hazards for persons due to incorrect handling of the electrical system and electricity.

DANGER FROM FALLING SUSPENDED LOAD!
This warning notice describes hazardous situations that can lead to the suspended load falling.

NOTICE OF POSSIBLE DAMAGE!
This notice describes situations in which a component could be damaged.

➔ This is an instruction regarding an action and prompts you to perform a work step.

- This is the result of an action and describes what happens on the device.

– This is a list.

ONLY WITH...

A section that appears in a box framed by a dashed line is only applicable for certain types, versions or options. The condition to which the section applies is specified at the beginning in the heading “Only with...”.

INSTRUCTIONS FOR THE PRODUCT MANUAL

Read the product manual through carefully before beginning work. Also be sure to observe additional product manuals for accessories and components.

Afterwards, keep the product manual available in the vicinity of the crane. It must be accessible to all who work with or on the crane.

In the case of reselling or hiring out, always provide the product manual together with the crane.

PROPER USE

The chain hoist is suitable for the lifting and lowering of attached loads.

The chain hoist is designed for these applications:

- Independently as a solo chain hoist for the stationary lifting and lowering of loads.
- On a trolley running along an I-beam for moving loads in a linear direction.
- On a jib crane (with hoist trolley) for moving loads in a circular direction.
- On an HB crane installation for all-round moving of lightweight loads.
- During operation, observe the classification according to FEM, duty cycle and switching rate.
- Only use the chain hoist within its theoretical service life.
- Do not use in aggressive environments.

REGULATIONS

The installation has been built and tested according to European standards, rules and regulations applicable at the time of its manufacture. The conventions applied during design and construction are specified in the Declaration of Conformity or the Declaration of Incorporation. The conventions must also be observed for installation, operation, inspection and maintenance, as must the applicable occupational health and safety regulations.

DANGER TO PERSONS!
Non-observance of the regulations can result in the death of persons or serious accidents.

To ensure that the work can be performed safely, thorough instruction in regard to this product manual and the regulations is necessary.

Which provision applies in individual cases will greatly depend on the crane's use and the national regulations. Review and observe all applicable and current regulations, including the occupational health and safety regulations. Refer also to the Declaration of Conformity or Declaration of Incorporation.

WARRANTY

- ABUS assumes no liability for damages that were caused by improper use, inadequately trained personnel, incorrect performance of work, nor for any changes, reconstruction or other modification of the crane or crane components which were not approved by ABUS.
- Any warranty claim becomes invalid if components were modified without consent, the crane or crane components were installed, used or serviced in any way other than that described in this product manual, or if parts other than original ABUS replacement parts were used.
- Safe operation of the crane or crane components is only guaranteed if original ABUS replacement parts are used.

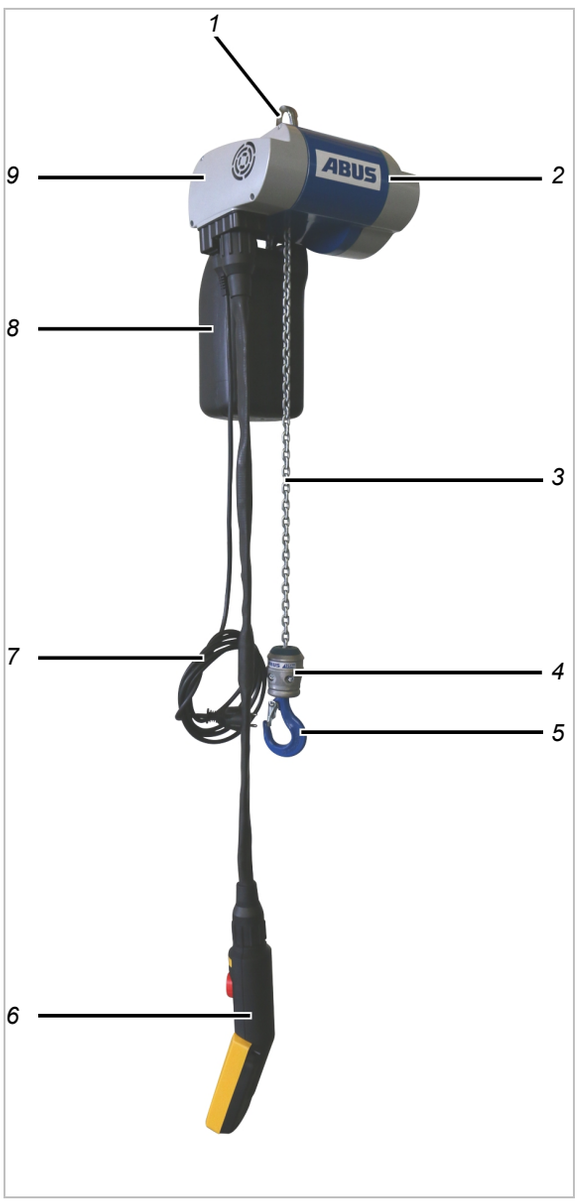
INSTRUCTIONS REGARDING SAFETY

Observe these instructions for safe handling of the crane. Special hazard notices are located in the corresponding sections in which the danger arises.

- Falling loads: Suspended loads can fall, injuring or killing people. Do not stand under suspended loads!
- Do not exceed the maximum load capacity!
- Do not pull, cut loose or tow loads at an angle!
- Do not transport any persons along with the load!
- Never twist suspended loads in the load hook or allow the load to fall into the load hook. The momentum can cause the load or chain hoist to fall, injuring or killing people.
- Only use the chain hoist if there are no visible signs of damage on it.
- Observe the current occupational health and safety regulations for working with the chain hoist.

THE CHAIN HOIST

DESCRIPTION OF THE DEVICE



- 1: Suspension bracket
- 2: Housing with gear unit
- 3: Chain, single-fall (version)
- 4: Hook assembly
- 5: Load hook
- 6: Pendant control
- 7: Connection cable with 230 V mains plug
- 8. Chain box
- 9: Motor cover

PERFORMANCE FEATURES

The chain hoist:

- The chain hoist has a continuously adjustable lifting speed.
- The chain hoist is controlled using the “ABUCommander” pendant control.
- Single-fall chain hoist:
  The chain hoist has a rotating hook assembly with a fixed load hook. The load hook can thus be guided by the hook assembly.
- The chain hoist has a chain.
- The chain hoist is equipped with a folding, removable suspension bracket for easier installation. A hinged suspension hook can be used as an option.
- The chain hoist is equipped with a friction clutch. It has been set ex-works. It is used as an emergency stop device and to protect against occasional mechanical overload.
- The chain hoist is of a modular construction. The motor can thus be easily removed and exchanged.
- The chain hoist has a replaceable chain guide and chain sprocket. This enables quick exchange of wearing parts.

TECHNICAL DATA

Electrical connection

	GMC (all versions)
Operating voltage	220 – 240 V
Mains frequency	50 Hz
Duty cycle	50 %
Switching rate	300 c/h
Rated power	470 W
cos phi A	0.84
Rated current IN	2.7 A
cos phi N	0.76

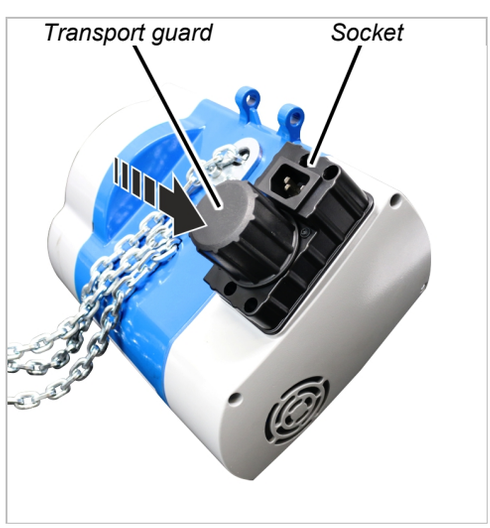
Ambient conditions for operation:

Ambient temperature (for normal operation)	-10 °C to +40 °C
Ambient temperature (for reduced duty cycle)	+40 °C to +60 °C
Housing	IP 21
Insulation class	F

TRANSPORTING THE CHAIN HOIST

- Detach the SL safety clip from the bolt.
- Hold the chain box firmly and pull out the bolt.
- Remove the chain box.
- Place the chain box next to the chain hoist.

PROTECTING PLUG-IN CONNECTIONS



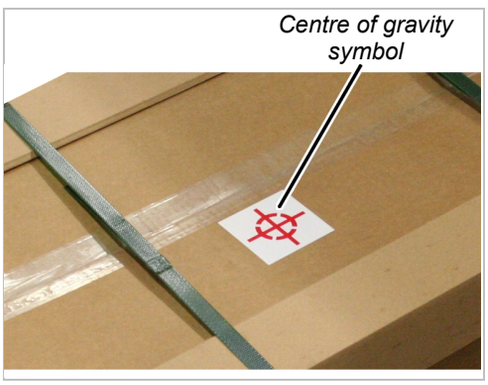
- Attach the transport guard (from the original packaging or, for example, firm cardboard) to the socket.

  Take care that the socket is not damaged.
- Set the chain hoist down.

LOADING AND UNLOADING THE CHAIN HOIST

Load the chain hoist in the original packaging.

The chain hoist does not always lie in the middle of the original box.



➔ When loading and unloading, note the centre of gravity symbol on the box.

DISPOSING OF THE CHAIN HOIST

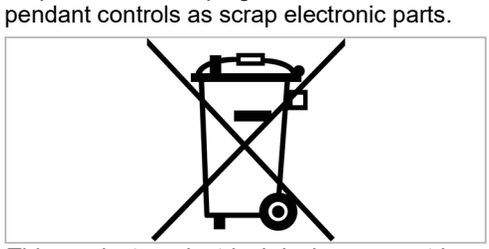
If the chain hoist must be disposed of:

➔ Dismantle the chain hoist as far as possible.

➔ Observe local regulations concerning disposal and recycling.

➔ Dispose of the individual parts sorted by material in an environmentally sound manner.

- Dispose of the oil from the gear unit as a lubricant.
- Dispose of brake linings and friction clutch linings as multiple components (hazardous waste).
- Dispose of electronic components as scrap electronic parts.
- Dispose of the housing, chain sprocket, chain, suspension bracket, gear unit and load hook as scrap metal.
- Parts of the chain hoist that have been repainted are to be disposed of in accordance with the paint manufacturer's instructions.
- Dispose of cables, plug-in connections and pendant controls as scrap electronic parts.



This product or electrical device may not be disposed of at the end of its service life with regular domestic waste.

INSTALLING AND CONNECTING

THIS SECTION APPLIES TO ANYONE WHO WORKS ON THE CRANE PRIOR TO ITS USE

The end user of the crane is responsible for the proper qualifications of the commissioning personnel.

DANGER TO PERSONS!
Persons can be injured if the crane is incorrectly put into operation.

If personnel other than that of the ABUS company are employed to perform the crane commissioning, it is the end user's responsibility to ensure that these persons are adequately qualified. Follow the procedures described here precisely.

Examples of qualified persons:

- Persons with comprehensive knowledge from specialist training in engineering and in the electrical systems of cranes.
- Persons with sufficient experience in the operation, installation and maintenance of cranes.
- Persons with comprehensive knowledge regarding the relevant technical rules, directives and safety regulations applicable in the respective country.
- Persons receiving regular training from ABUS.

ABUS assumes no liability for damage due to incorrectly performed commissioning work done by unqualified personnel.

ABUS recommends having the commissioning work performed by the ABUS assembly team.

CHECKING THE REQUIREMENTS

The following requirements must be met in order for the chain hoist to be mounted.

CHECKING THE LOAD CAPACITY

- The supporting structure (steelwork, building, crane installation) from which the chain hoist is to be suspended must have a sufficient load capacity.

  The load capacity of the supporting structure is derived from the weight of the chain hoist, the maximum load capacity of the chain hoist, the weight of the trolley (if applicable) and possibly the additional weight of the chain as well.

➔ For the weight of the chain hoist, refer to the table.

➔ If the hook path of the chain hoist is longer than 3 metres: Add the additional weight of the chain.

Size	Number of falls	Weight without trolley	Additional weight per metre hook path for hook paths longer than 3 metres
GMC	Single-fall	10.7 kg	0.34 kg
GMC	Twin-fall	12.6 kg	0.68 kg

➔ Add the maximum load capacity.

➔ Only for trolley: Add the weight of the trolley.

➔ Check the entire supporting structure as to whether it will support the expected load.

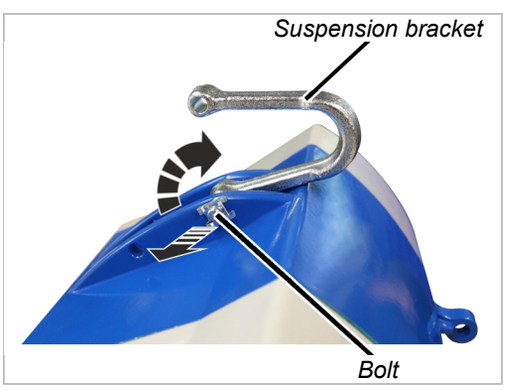
INSTALLATION OVERVIEW

The following sections show how the chain hoist is installed.

- First, the suspension bracket of the chain hoist is prepared and the chain hoist is attached to the supporting structure. See page 11.
- Then the connection cable is connected to the chain hoist. See page 12.
- Then the chain box is installed. See page 12.
- If the chain is not adequately lubricated, it must be relubricated. See page 13.

INSTALLING THE CHAIN HOIST

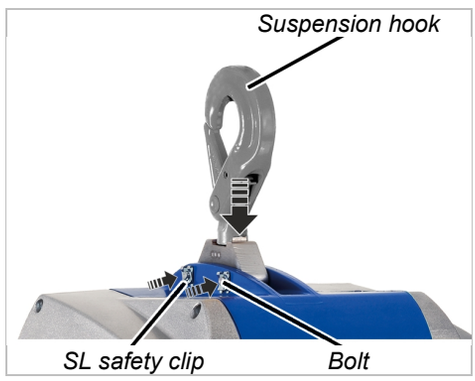
FOLDING OUT THE SUSPENSION BRACKET AND ATTACHING THE CHAIN HOIST



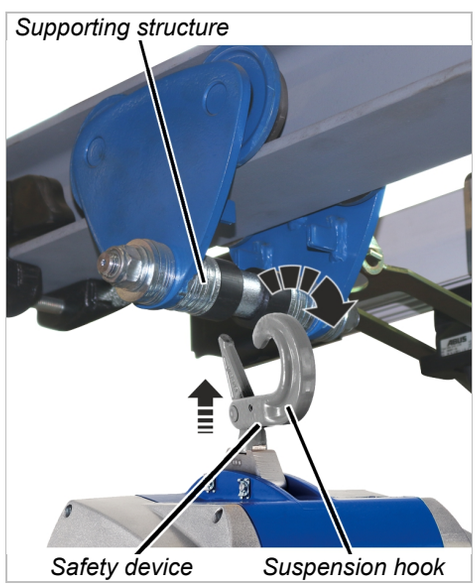
- Detach the SL safety clip from the bolt.
- Pull out the bolt.
- Fold out the suspension bracket.
- Lift the chain hoist and attach it under the supporting structure, under the trolley or under the crane.
- Fold the suspension bracket over an appropriate anchorage or the travelling gear bolt of the trolley.
- Insert the bolt.
- Secure bolt with SL safety clip.

ONLY WITH SUSPENSION HOOK

If required, the chain hoist can be installed with an optional suspension hook.



- Insert suspension hook.
- Insert bolts (2x).
- Secure bolts with SL safety clips (2x).



- Undo the safety device and open the suspension hook.
- Lift the chain hoist and attach it under the supporting structure, under the trolley or under the crane.
- Close the suspension hook over an appropriate anchorage or the travelling gear bolt of the trolley.

CONNECTING THE CHAIN HOIST

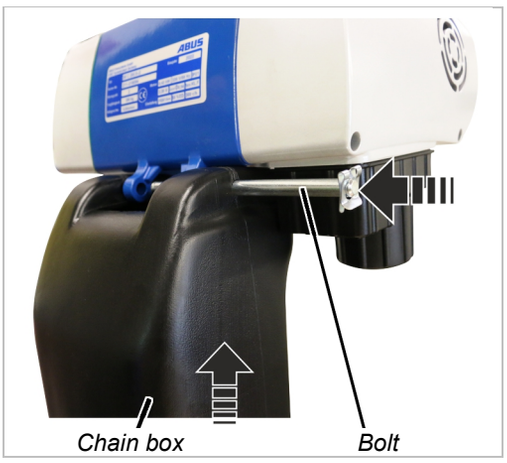
DANGER FROM ELECTRIC SHOCK!
Electrical work performed incorrectly could result in electrical shocks.

Work on electrical systems and components may only be performed by a qualified electrician when the system is in a voltage-free state.

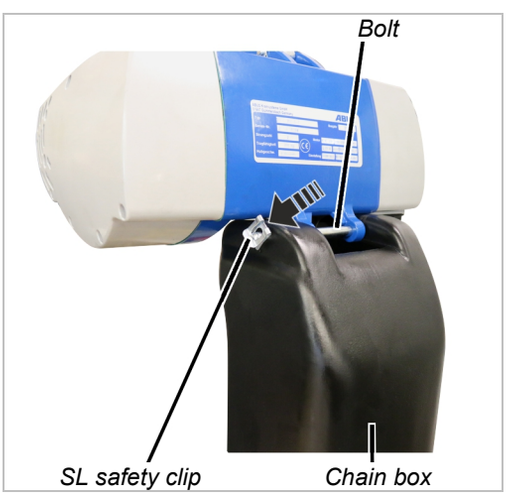
CONNECTING THE CHAIN HOIST

- Insert the connector of the connection cable into the chain hoist.
- Slide on the bayonet nuts of the pendant control.
- Insert the bayonet connector in the chain hoist.
- Tighten the bayonet nuts of the pendant control.

INSTALLING THE CHAIN BOX



- Turn the chain box so that it appears as shown in the figure.
- Place the chain in the chain box.
- Use the bolt to install the chain box on the chain hoist.



- Push the SL safety clip onto the bolt.

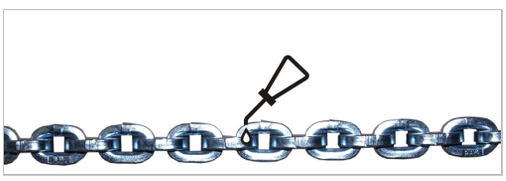
LUBRICATING THE CHAIN

If the chain is dry and no lubricant can be seen on its surface, it must be lubricated.

For very dusty or dirty operations:

The lubricant enables dirt to adhere to the chain, making it stiff and susceptible to greater wear in the chain hoist. Under these conditions, the chain may require more frequent replacement instead of lubrication. Shorten the test intervals.

A well-lubricated chain wears much slower and can be used considerably longer. The chain must be lubricated before operation.



➔ Press the LIFT button and allow the chain to run into the chain box. Lubricate the chain during its movement.

Lubricant: “Chainlife S”. For details, see “Lubricants”, page 45.

➔ Apply additional lubricant to the unstressed chain in the chain box so that it flows into the joints of the chain links.

INSPECTION

THIS SECTION APPLIES TO ANYONE WHO INSPECTS AND ACCEPTS THE CRANE IN ACCORDANCE WITH OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS

The chain hoist must be regularly inspected in order to guarantee safe operation. The end user is responsible for this regular inspection.

AT THE START

TEST INTERVALS

The regular inspection is performed at least once annually.

Under certain conditions, more frequent regular inspections may be necessary. Reasons include:

- Frequent operation at the load capacity
- Working in multiple shifts
- Frequent use
- Dusty or chemically aggressive environment

The end user is responsible for checking the requirements and determining the test intervals. ABUS will gladly assist you if questions arise.

REQUIREMENTS FOR THE EXAMINER

The end user of the crane is responsible for the proper qualifications of the examiner.

DANGER TO PERSONS!
Persons can be injured if the test is performed incorrectly.

If personnel other than that of the ABUS company are employed to perform the test, it is the end user's responsibility to ensure that these persons are adequately qualified.

Examples of qualified persons:

- Persons with comprehensive knowledge from specialist training in engineering and in the electrical systems of cranes.
- Persons with sufficient experience in the operation, installation and maintenance of cranes.
- Persons with comprehensive knowledge regarding the relevant technical rules, directives and safety regulations applicable in the respective country.
- Persons receiving regular training from ABUS.

SCOPE OF THE TEST

The qualified person inspecting the chain hoist is responsible for the type and scope of the test.

OVERVIEW: TESTING THE CHAIN HOIST

The decision regarding the technically faultless condition of the chain hoist lies solely with the examiner. Any inadequacies, if found, must be eliminated. The examiner will decide if the chain hoist then requires additional testing.

If locally applicable regulations specify further tests, these are likewise to be carried out.

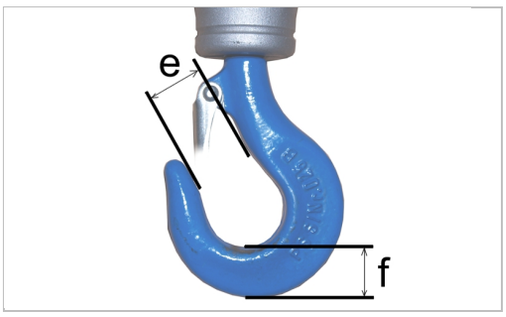
Additionally, at least the following points must be checked:

- ➔ Check the load hook. See page 16.
- ➔ Check the suspension bracket. See page 16.
- ➔ Check the condition of the chain. See page 17.
- ➔ Check the lubrication of the chain.
  The chain may not be dry; lubricant must be visible on its surface. If it is not, lubricate the chain. See page 32.
- ➔ Check the installation of the chain.
  It should not be installed twisted. If it is, remove the chain and reinstall it so that it is free of any twisting.
- ➔ Check the C-link.
  It must be present and attached to the next to last or third-last chain link in such a way that the opening, when installed, points in the direction of the inner fall (the fall under load). Otherwise, reinstall the C-link.
- ➔ Check the chain anchor point.
- ➔ Test the deep groove ball thrust bearing on the load hook.
  It must turn easily and exhibit no damage. Otherwise, replace the deep groove ball thrust bearing.

Document the test:

- ➔ If the chain hoist is part of a crane installation: Document the results of the test in the test log book of the crane installation.
- ➔ If the chain hoist is operated independently: Document the results of the test in the test log book. See page 19.

CHECKING THE LOAD HOOK

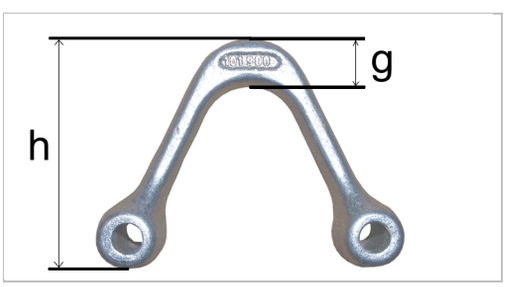


- ➔ Measure the opening width 'e' of the load hook.
- ➔ Measure the base height 'f' of the load hook.
- ➔ The measured values should neither exceed nor fall short of the values in the table.

Size of load hook	Type of load hook	Max. opening width 'e' [mm]	Min. base height 'f' [mm]	Material
012	single	26.4	18.1	STE 355
05	single	37.4	29.9	34 CrMo 4

- ➔ If the load hook has been widened to a greater degree than is allowed or if the base height is below the permissible limit, replace the load hook.
- ➔ If the load hook is deformed (even if within the measurements given above): Inspect the surface for cracks.

CHECKING THE SUSPENSION BRACKET



- ➔ Remove the suspension bracket. See “Installing the chain hoist”, page 11.
- ➔ Measure the bracket thickness of the suspension bracket.

  The bracket thickness must be at least 8 mm.
- ➔ If the bracket thickness is thinner than is allowed, replace the suspension bracket.

CHECKING THE SUSPENSION HOOK OR SAFETY LOAD HOOK

ONLY WITH A SUSPENSION HOOK OR SAFETY LOAD HOOK

This step only applies if a suspension hook is used instead of a suspension bracket or if a safety load hook is used instead of a normal load hook.

Safety load hooks (left) and suspension hooks (right) are tested according to the same procedure.

- ➔ Measure the base height ‘H’ of the suspension hook or safety load hook.
- ➔ Measure the gap ‘A’ between the hook safety latch and the hook body.
- ➔ Measure the lateral displacement ‘B’ between the hook safety latch and the hook body.
- ➔ The measured values should neither exceed nor fall short of the values in the table.

Size of load hook	Maximum gap ‘A’ [mm]	Maximum lateral displacement ‘B’ [mm]	Minimum base height ‘H’ [mm]
BKT 6-10	2.2	3.5	17.1
BKT 7-10/8	2.7	4.5	20.7
BKT 10-10	3	6	26.1
BKT 13-10	3.3	7	34.2

- ➔ If the load hook has been widened to a greater degree than is allowed or if the base height is below the permissible limit, replace the load hook.

INSPECTING THE CHAIN

INSPECTING THE CONDITION

➔ Check the lubrication of the chain.

– The chain must be lubricated over its entirety.

– Pay particular attention to the area of the joints.

➔ Check for chain corrosion.

There must be no visible corrosion.

➔ Check for surface damage on the chain links and between the joints.

There should be no visible damage such as undercuts, constrictions or abrasion.

➔ Inspect the entire chain for damage. The damage shown here or any similar damage should not be detectable on the chain.

Examples of damage:

The chain link is heavily worn.

The chain link is mechanically damaged.

DANGER FROM FALLING SUSPENDED LOAD!
Damage and corrosion reduce the load capacity of the chain and could lead to the chain breaking.

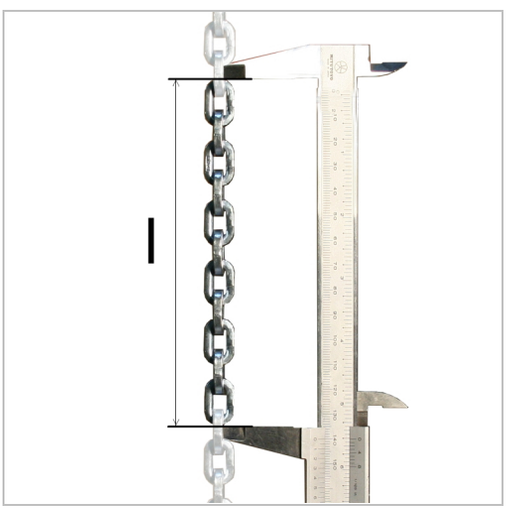
Replace damaged chains immediately!

CHECKING THE WEAR

To check the wear, the length of eleven chain links is measured. Depending on the calliper used and the chain hoist, this can be measured directly or in three stages.

➔ Raise a lightweight load slightly to tension the chain.

Measuring directly:



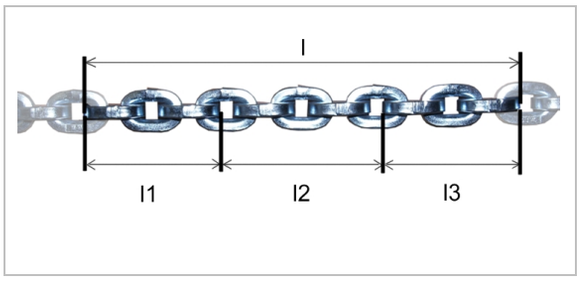
➔ Measure the length ‘l’ over 11 chain links of the chain (from outer edge to outer edge).

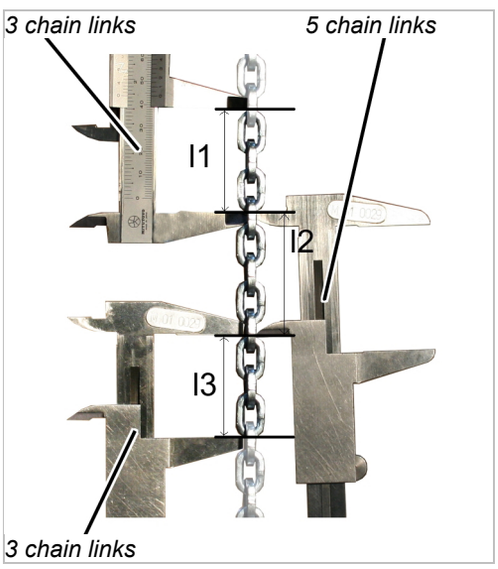
➔ Compare the measured value with the table (see page 18). The measured value should not exceed the maximum ‘l’.

➔ Measure again at several points and compare them.

➔ If the length exceeds the specified value, the chain has been stretched too much through operation. Exchange the chain and chain sprocket. See page 24.

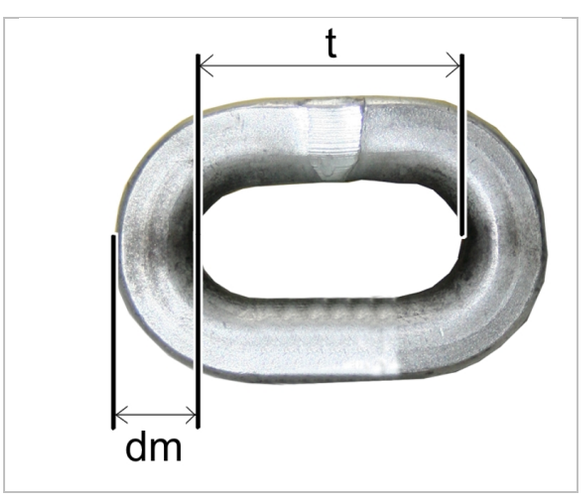
Measure in steps:





- ➔ Measure 3 chain links from outside to outside ‘l1’.
- ➔ Measure 5 chain links from inside to inside ‘l2’. When doing so, do not measure the five chain links completely from inside to inside, but only place the calliper on the respectively next chain link.
- ➔ Measure 3 chain links from outside to outside ‘l3’.
- ➔ Add the measured values together.
- ➔ Compare the measured value with the table. The measured value should not exceed the maximum ‘l’.
- ➔ Measure again at several points and compare them.
- ➔ If the length exceeds the specified value, the chain has been stretched too much through operation. Exchange the chain and chain sprocket. See page 24.

Size	GMC
Standard designation of chain	HEP – 3.7 x 12 DATC
Thickness in the joint, setting ‘dm’	3.7 mm
Thickness in the joint, min. ‘dm’	3.3 mm
Individual spacing, inside, setting ‘t’	12 mm
Individual spacing, inside, max. ‘t’	12.7 mm
Length over 11 chain links, max. ‘l’	142.2 mm
Surface	galvanised
Material	special chain steel
Max. load capacity per fall	125 kg
Min. manufacturing test force	12.5 kN
Min. breaking strength	20 kN
Min. elongation at fracture	10 %
Weight per metre	0.34 kg/m
Stamp	H 16



TEST LOG BOOK

TEST BEFORE INITIAL OPERATION OR TEST FOLLOWING MAJOR MODIFICATIONS

The observance of structural and building requirements in accordance with EU guideline 2006/42/EC is confirmed by the enclosed Declaration of Conformity or Declaration of Incorporation.

Test before initial operation in accordance with applicable health & safety requirements

❑ Declaration of Conformity available ❑ Declaration of Incorporation available

Test before initial operation carried out. Putting into operation elicits

❑ no objections ❑ objections (see test sheet)

Reexamination is

❑ not required ❑ required

Place, date	Signature of examiner	Certificate number, if applicable

Verification

Place, date	Signature of examiner	Certificate number, if applicable

REGULAR INSPECTIONS

Inspected on by	Remarks	Remaining service life of chain hoist	
		In hours	Determination (see attachment)
	The regular inspection has been performed. ❑ No faults were found ❑ Faults were found (see attachment)		
	The regular inspection has been performed. ❑ No faults were found ❑ Faults were found (see attachment)		
	The regular inspection has been performed. ❑ No faults were found ❑ Faults were found (see attachment)		
	The regular inspection has been performed. ❑ No faults were found ❑ Faults were found (see attachment)		
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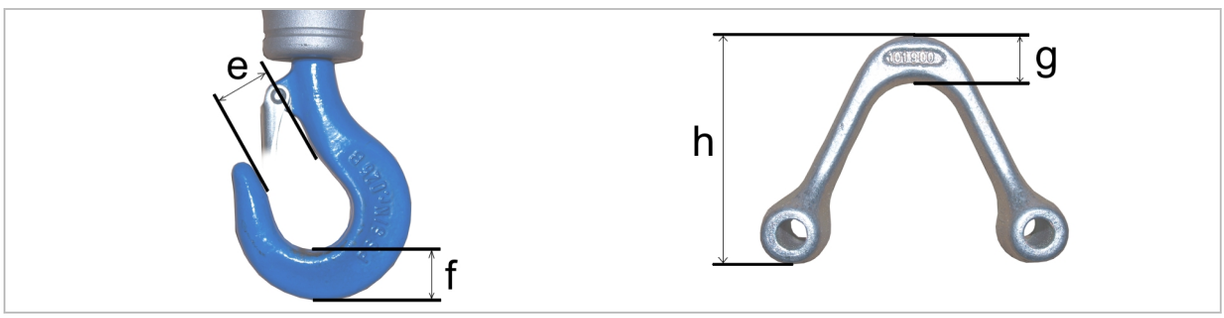
	The regular inspection has been performed. ❑ No faults were found ❑ Faults were found (see attachment)		
	The regular inspection has been performed. ❑ No faults were found ❑ Faults were found (see attachment)		

LOAD HOOK AND SUSPENSION BRACKET

Hook designation	DIN 15401 (see “Checking the load hook”, page 16)
Type	Single load hook
Maximum load capacity	see label on front
Classification according to FEM	see label on front
Material	(see “Checking the load hook page 16)
Test interval	at least once annually
Maximum opening width	(see “Checking the load hook” page 16)
Minimum bracket thickness	(see “Checking the suspension bracket” page 16)



Inspected on by	Designation	Measurement ‘e’ [mm]	Measurement ‘f’ [mm]	Measurement ‘g’ [mm]	Load capacity [kg]	Remarks

CHAIN

For data on the chain, see “Inspecting the chain”, page 17. Use a separate sheet for each chain!

Inspected on by	Measurement over 11 chain links [mm]	Measurement ‘t’ [mm]	Measurement ‘dm’ [mm]	Load capacity [kg]	Remarks

MAINTENANCE

THIS SECTION APPLIES TO ANYONE WHO MAINTAINS, REPAIRS OR MODIFIES THE CRANE.

The end user of the crane is responsible for the selection and proper qualifications of the maintenance personnel.

DANGER TO PERSONS!
Persons can be injured if the crane is incorrectly serviced.

If personnel other than that of the ABUS company are employed to perform maintenance on the crane, it is the end user's responsibility to ensure that these persons are adequately qualified. Follow the procedures described here precisely.

Examples of qualified persons:

- Persons with comprehensive knowledge from specialist training in engineering and in the electrical systems of cranes.
- Persons with sufficient experience in the operation, installation and maintenance of cranes.
- Persons with comprehensive knowledge regarding the relevant technical rules, directives and safety regulations applicable in the respective country.
- Persons receiving regular training from ABUS.

ABUS assumes no liability for damage due to incorrectly performed maintenance work done by unqualified personnel.

ABUS recommends having the maintenance work performed by ABUS Service.

Use only original ABUS replacement parts. Otherwise, all warranty claims will be rendered invalid.

INSTRUCTIONS REGARDING SAFETY WHEN PERFORMING MAINTENANCE WORK

Observe the following safety instructions for any maintenance work on the chain hoist:

- Switch off the mains switch. Secure the switch to ensure it cannot be turned back on accidentally.
- Unplug the mains disconnector plug from the socket on the crane panel. Secure the socket with a padlock to ensure it is not plugged back in accidentally.
- Use suitable lifting platforms and fall protection equipment.
- Adequately cordon off the operating range around the lifting platform.
- Switch off any other cranes using the same crane track or cranes working above or below the crane undergoing maintenance. Secure the switches to ensure they cannot be turned back on accidentally. Otherwise, other cranes could overturn the hoisting platform or crash into the crane undergoing maintenance.
- Notify personnel in the area that maintenance work will be performed.
- Only trained electricians should work on the crane electrical system!
- Even after pressing the emergency stop button, life-threatening high voltages are still present in the chain hoist.

EXCHANGING THE CHAIN AND CHAIN SPROCKET

If the chain exhibits signs of wear or is too stretched from operation (see “Inspecting the chain”, page 17), it must be exchanged.

Chain, chain sprocket and chain guide are wearing parts that are subjected to great strain from the load. During operation they wear against each other. The chain, chain sprocket and chain guide should therefore always be replaced together.

Because of the modular construction of the chain hoist, the gear unit does not need to be disassembled in order to exchange the chain guide and chain sprocket. Instead, the motor cover is removed and the chain sprocket is then exposed.

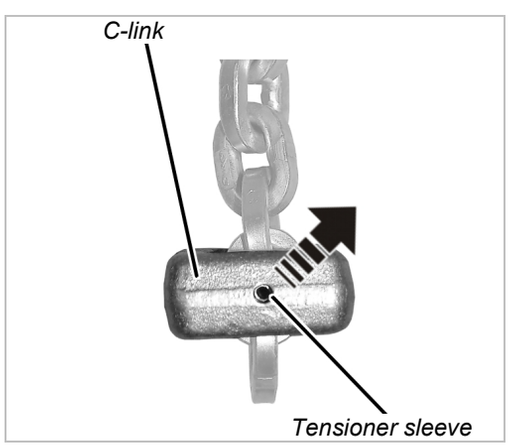
DETACHING THE CONNECTION CABLE AND CONTROL CABLE

- Detach connection cable.
- Remove bayonet nut of the control cable.
- Detach control cable.

REMOVING THE CHAIN BOX

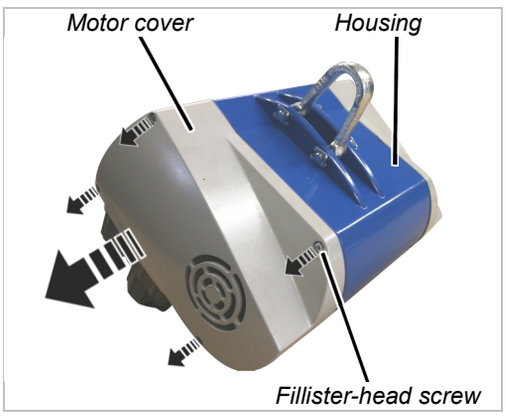
- Detach the SL safety clip from the bolt.
- Hold the chain box firmly and pull out the bolt.
- Remove the chain box.

REMOVING THE C-LINK

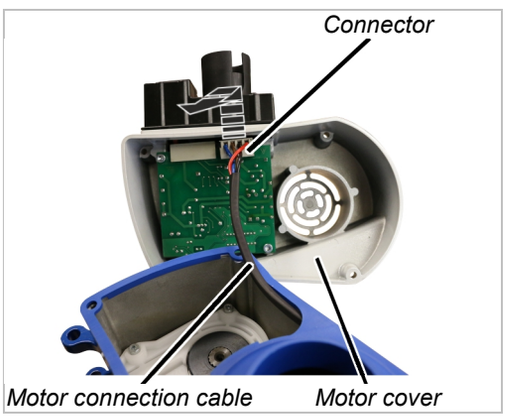


- Hammer the tensioner sleeve out of the C-link.

REMOVING THE MOTOR COVER



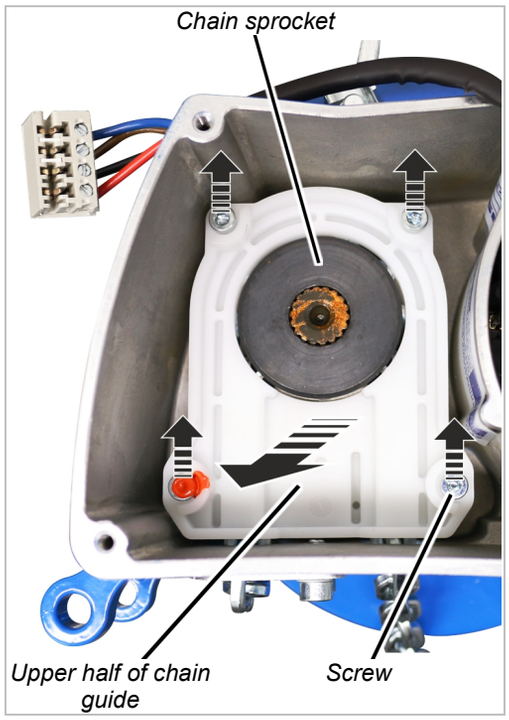
➔ Unscrew the motor cover from the housing.



➔ Unplug the connector of the motor connection cable from the circuit board.

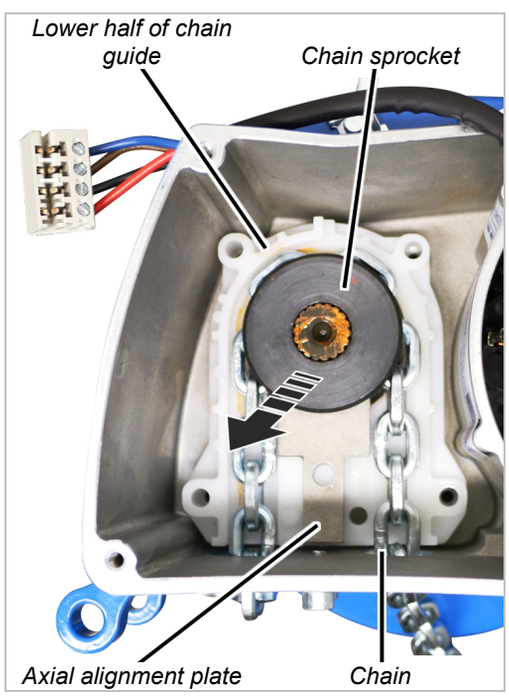
TAKING OUT THE CHAIN GUIDE

➔ Remove seal.



➔ Unscrew the screws (4x) from the chain guide.

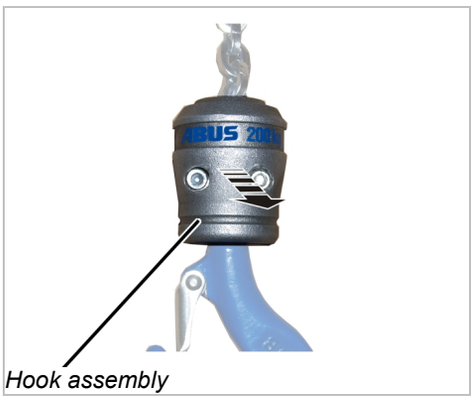
➔ Take out upper half of chain guide.



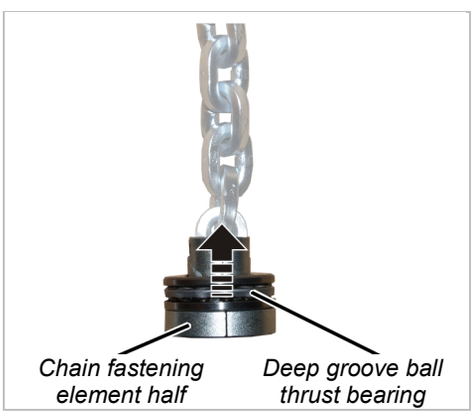
➔ Remove lower half of the chain guide with chain sprocket, chain, and axial alignment plate from the housing.

ONLY FOR SINGLE-FALL CHAIN HOISTS

DISASSEMBLING THE LOAD HOOK



➔ Screw the hook assembly apart.



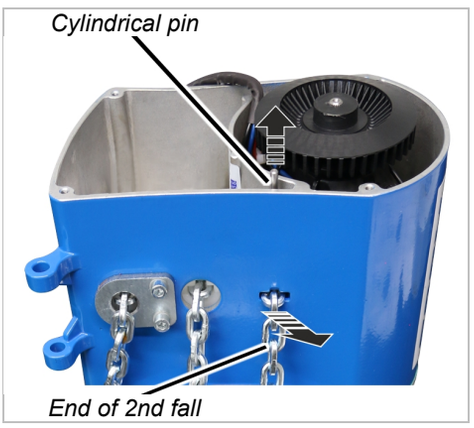
➔ Push the three-piece deep groove ball thrust bearing upward.

➔ Remove both chain fastening element halves from the chain.

Note the layout position of the deep groove ball thrust bearing and remove it from the chain.

ONLY FOR TWIN-FALL CHAIN HOISTS

DISASSEMBLING THE BOTTOM BLOCK AND CHAIN ANCHOR POINT



➔ Firmly hold the end of the 2nd fall and pull out the pin.

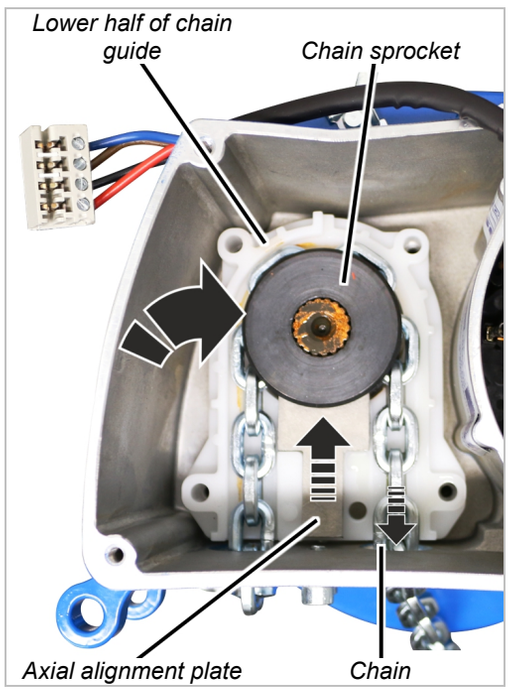
- The chain is now released.

➔ Pull the chain out of the bottom block.

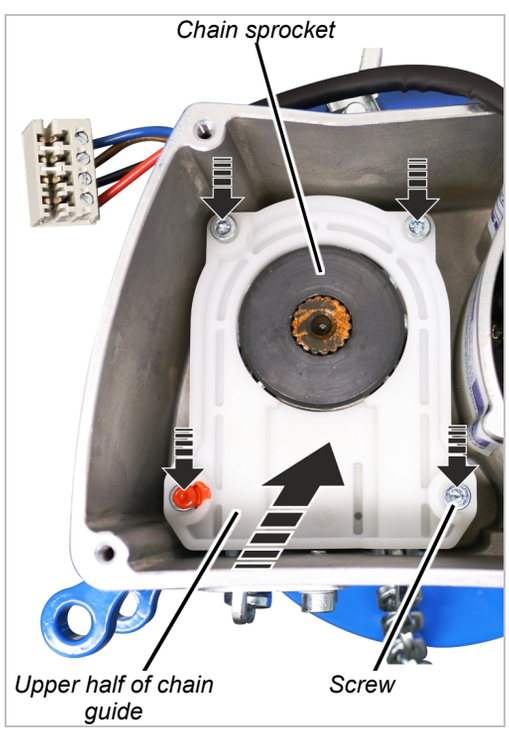
INSTALLING THE NEW CHAIN GUIDE

- Lay lower half of chain guide in the housing.
- Lubricate the new chain sprocket.

  Lubricant: “High-Lub LT1 EP”. For details, see “Lubricants”, page 45.
- Pull the new chain through the left opening in the housing.
- Place the new chain around the chain sprocket.
- Push the axial alignment plate in the chain sprocket.



- Lay the chain sprocket with axial alignment plate and chain in the lower half of the chain guide.
- Pull the end of the chain out of the housing through the right opening.

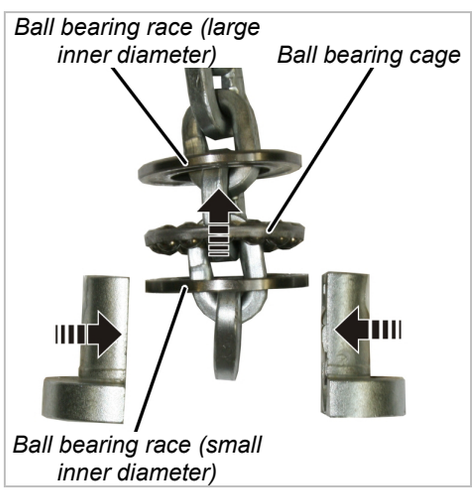


- Place the upper half of the chain guide flush on the lower half of the chain guide.
- Screw the chain guide tight with screws (4x). 3 Nm

ONLY FOR SINGLE-FALL CHAIN HOISTS

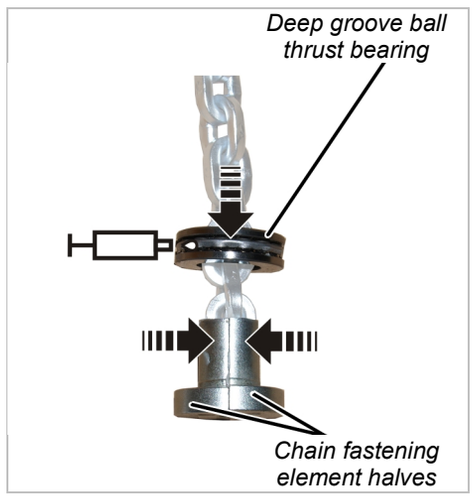
INSTALLING THE HOOK ASSEMBLY

➔ Use the inside end of the chain to install the load hook.



➔ Push the deep groove ball thrust bearing onto the chain facing the right direction: First push on the ball bearing race with the larger inner diameter (smoothed), then the ball bearing cage, then the ball bearing race with the smaller inner diameter (not smoothed).

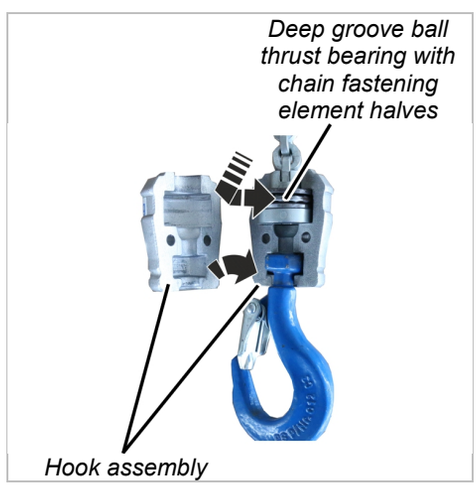
➔ Place the chain fastening element halves on the chain from both sides.



➔ Push the deep groove ball thrust bearing over the chain fastening element halves.

➔ Lubricate the deep groove ball thrust bearing.

Lubricant: “High-Lub LT1 EP”. For details, see “Lubricants”, page 45.



➔ Insert the deep groove ball thrust bearing with chain fastening element halves into one half of the hook assembly.

➔ Assemble the hook assembly.

➔ Bolt the hook assembly with the fillister-head screw and self-locking nut (2x).

ONLY FOR TWIN-FALL CHAIN HOISTS

INSTALLING THE BOTTOM BLOCK AND CHAIN ANCHOR POINT

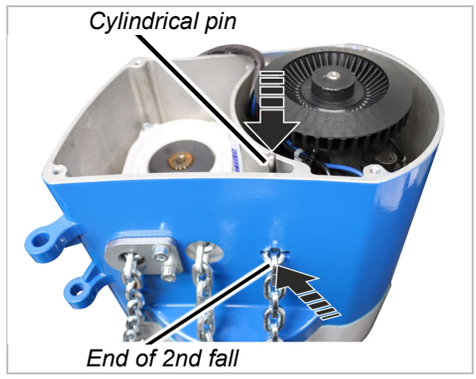
➔ Align the 2nd fall of the chain so it is without any twists.

➔ Place the 2nd fall around the deflection roller of the bottom block.

The 2nd fall should not be twisted.

➔ Place the upper half of the bottom block flush on the lower half of the bottom block.

➔ Screw the bottom block together with fillister-head screws (2x) and self-locking nuts. 10 Nm.



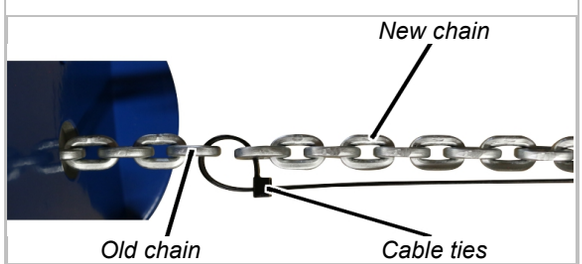
➔ Push the end of the 2nd fall into the housing recess on the right.

➔ Hammer in the cylindrical pin.

● The end of the chain is fixed.

If only the chain is to be replaced:

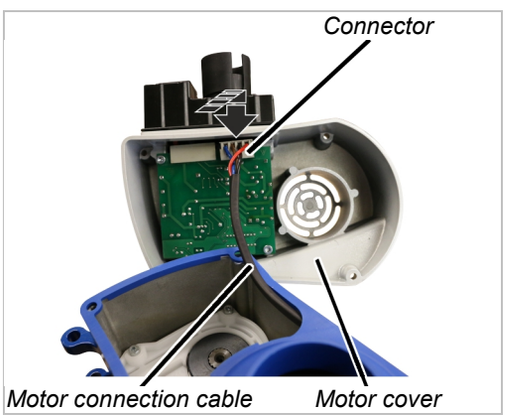
Tip:



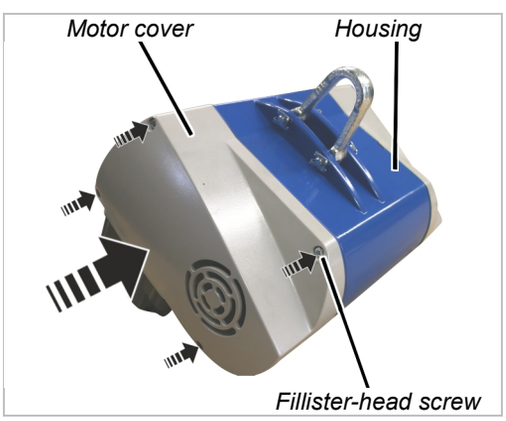
Affix cable ties or wire to the end of the old chain and use that to pull the new chain slowly through the chain guide.

CLOSING THE CHAIN HOIST

➔ Press seal flush onto the housing.



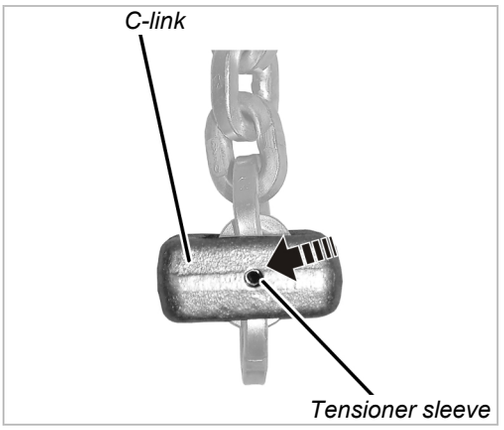
➔ Plug the connector of the motor connection cable into the circuit board in the motor cover.



➔ Hold the motor cover on the housing.

➔ Screw the motor cover tight with M4x55 fillister-head screws (3x) and a M4x20 fillister-head screw (1x). 5 Nm.

INSTALLING THE C-LINK



➔ Use the outside end of the chain to install the C-link.

➔ Turn the C-link so that the opening, when installed, points in the direction of the inner fall (the fall under load).

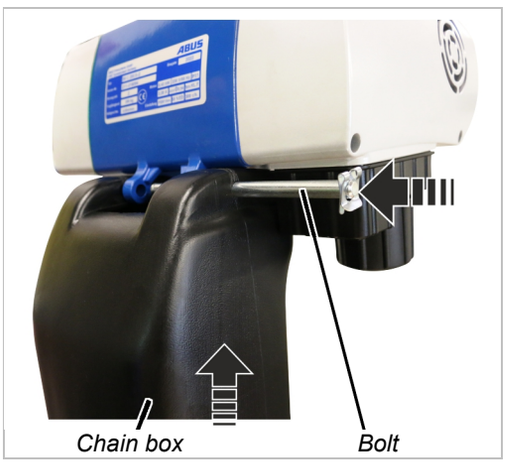
➔ Push the C-link onto the second-last or third-last chain link (depending on the orientation from the previous step).

➔ Hammer the tensioner sleeve into the C-link.

➔ Place the chain in the chain box.

➔ Check whether the chain completely fits in the chain box. If the chain box is too small, contact ABUS Service. See page 48.

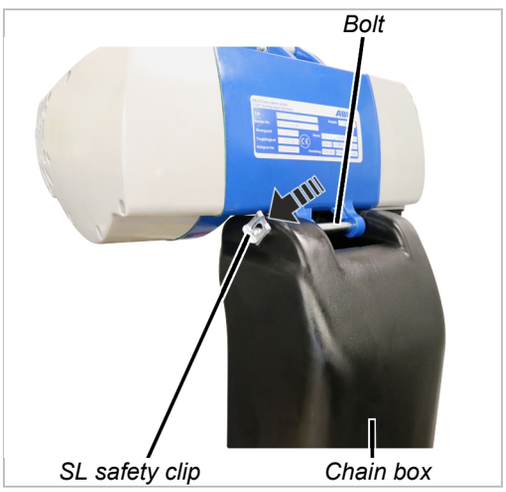
INSTALLING THE CHAIN BOX



➔ Turn the chain box so that it appears as shown in the figure.

➔ Place the chain in the chain box.

➔ Use the bolt to install the chain box on the chain hoist.



➔ Push the SL safety clip onto the bolt.

Note

If the chain is not adequately lubricated, it must be relubricated. See page 32.

CONNECTING THE CHAIN HOIST

➔ Insert the connector of the connection cable into the chain hoist.

➔ Slide on the bayonet nuts of the pendant control.

➔ Insert the bayonet connector in the chain hoist.

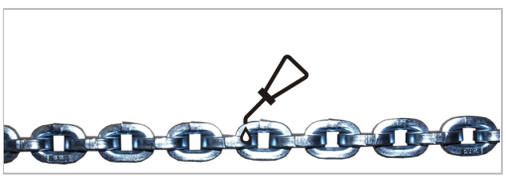
➔ Tighten the bayonet nuts of the pendant control.

LUBRICATING THE CHAIN

If the chain is dry and no lubricant can be seen on its surface, it must be lubricated.

For very dusty or dirty operations:

The lubricant enables dirt to adhere to the chain, making it stiff and susceptible to greater wear in the chain hoist. Under these conditions, the chain may require more frequent replacement instead of lubrication. Shorten the test intervals.



➔ Press the LIFT button and allow the chain to run into the chain box. Lubricate the chain during its movement.

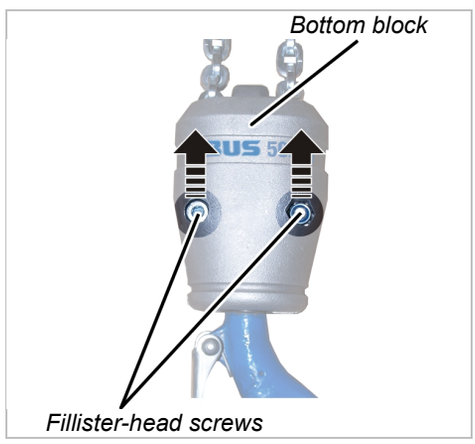
Lubricant: “Chainlife S”. For details, see “Lubricants”, page 45.

➔ Apply additional lubricant to the unstressed chain in the chain box so that it flows into the joints of the chain links.

DISASSEMBLING THE BOTTOM BLOCK

ONLY FOR TWIN-FALL CHAIN HOISTS

For repairs or replacing, it may be necessary to disassemble the bottom block.



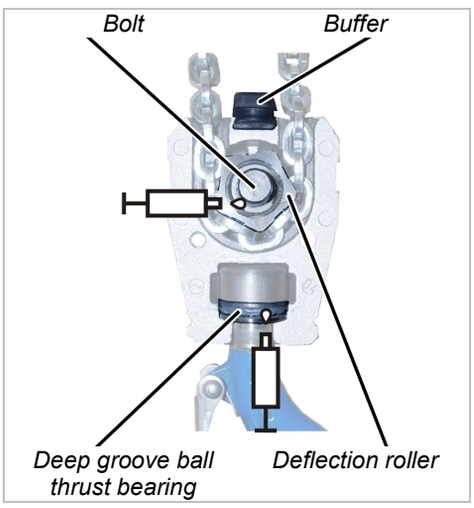
➔ Unscrew the fillister-head screws (2x).

➔ Dismantle the bottom block.

INSTALLING THE BOTTOM BLOCK

ONLY FOR TWIN-FALL CHAIN HOISTS

ASSEMBLING THE BOTTOM BLOCK

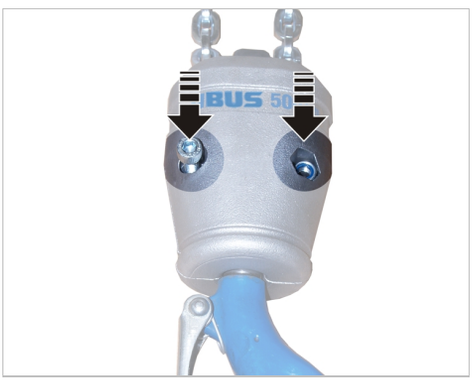


- Insert the load hook in the bottom block.
- Lubricate the deep groove ball thrust bearing on the load hook.

  Lubricant: “High-Lub LT1 EP”. For details, see “Lubricants”, page 45.
- Insert the buffer.
- Twist the chain straight and place it around the deflection roller. The chain must not be allowed to twist when it is placed on the deflection roller.
- Insert the deflection roller and bolt in the bottom block.
- Lubricate the needle bush on the deflection roller.

  Lubricant: "Kluber Staburags NBU 12 Alltemp". For details, see “Lubricants”, page 45.

ASSEMBLING THE BOTTOM BLOCK



- Lay the bottom block halves flush against one another.
- Tighten the fillister-head screws (2x) with self-locking nuts.

EXCHANGING THE CARBON BRUSHES

If the carbon brushes have reached their wear limit, they must be replaced so that trouble-free running of the motor is ensured.

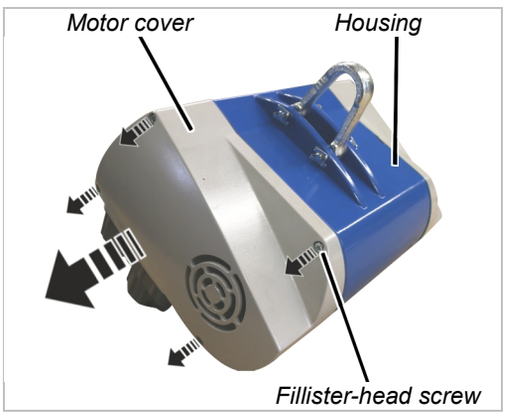
DETACHING THE CONNECTION CABLE AND CONTROL CABLE

- Detach connection cable.
- Remove bayonet nut of the control cable.
- Detach control cable.

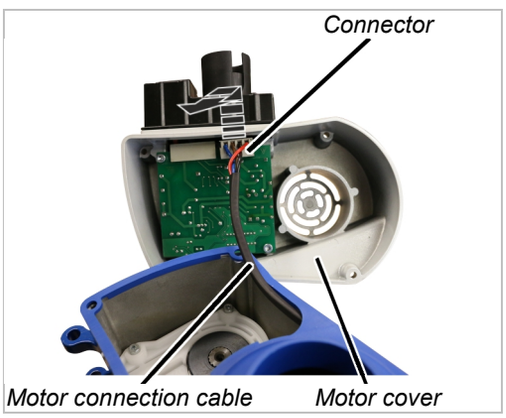
REMOVING THE CHAIN BOX

- Detach the SL safety clip from the bolt.
- Hold the chain box firmly and pull out the bolt.
- Remove the chain box.

REMOVING THE MOTOR COVER



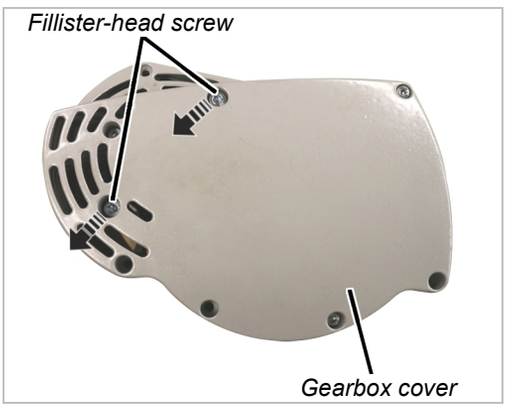
➔ Unscrew the motor cover from the housing.



➔ Unplug the connector of the motor connection cable from the circuit board.

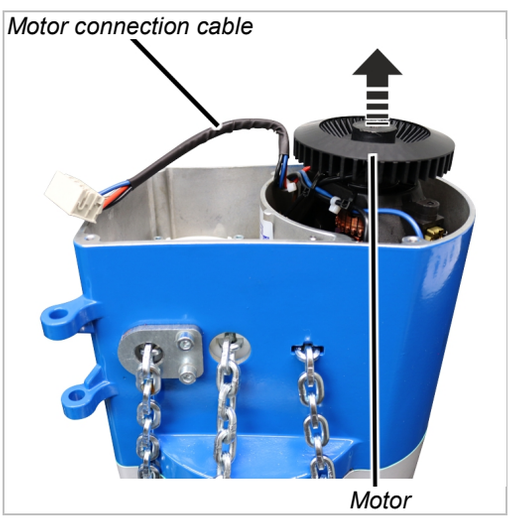
➔ Remove seal.

DISASSEMBLING THE MOTOR



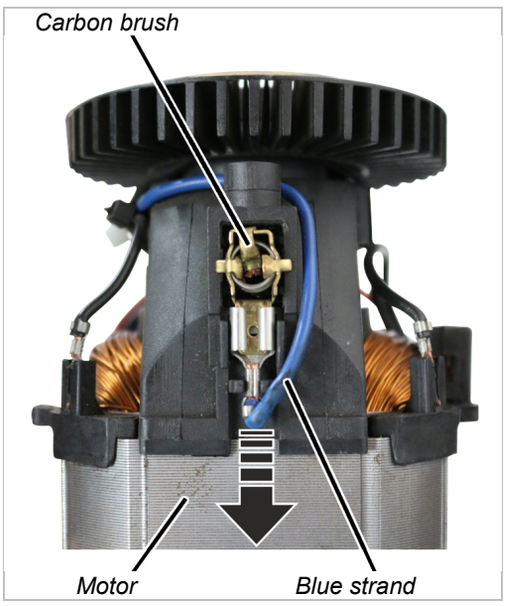
➔ Turn housing over.

➔ Unscrew the M5 fillister-head screws (2x) from the gearbox cover and detach the motor.

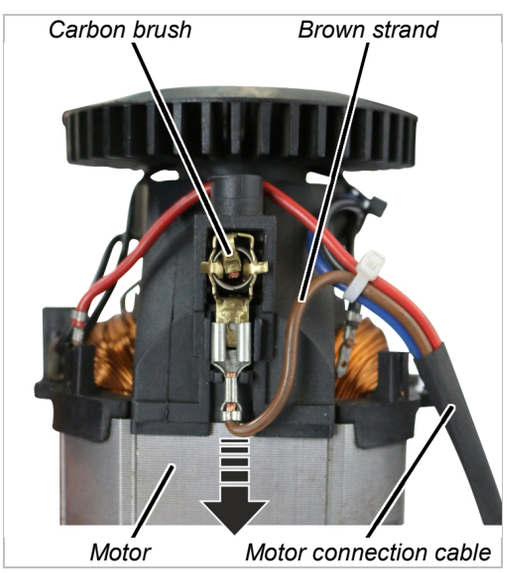


➔ Pull the motor out of the housing.

PULLING OUT THE CARBON BRUSHES



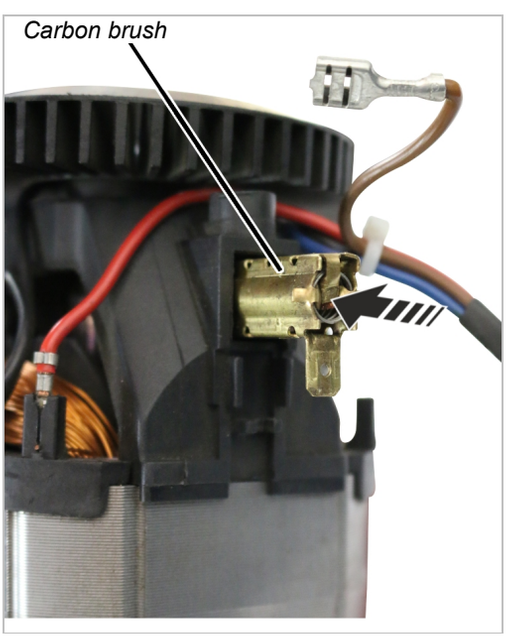
➔ Pull the blue strand of the motor connection cable from the carbon brush.



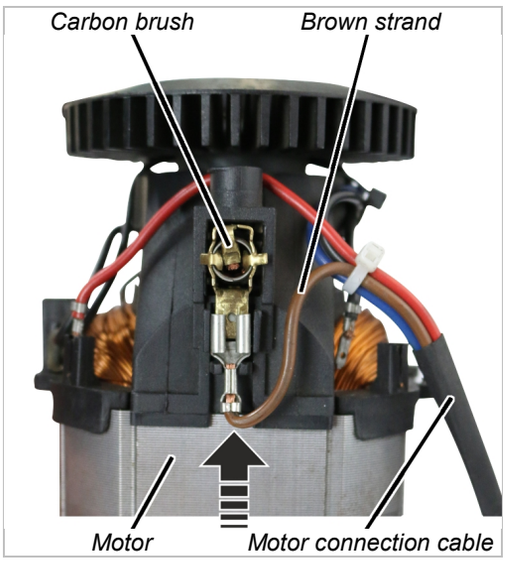
➔ Pull the brown strand of the motor connection cable from the carbon brush.

➔ Pull the carbon brushes (2x) out of the motor.

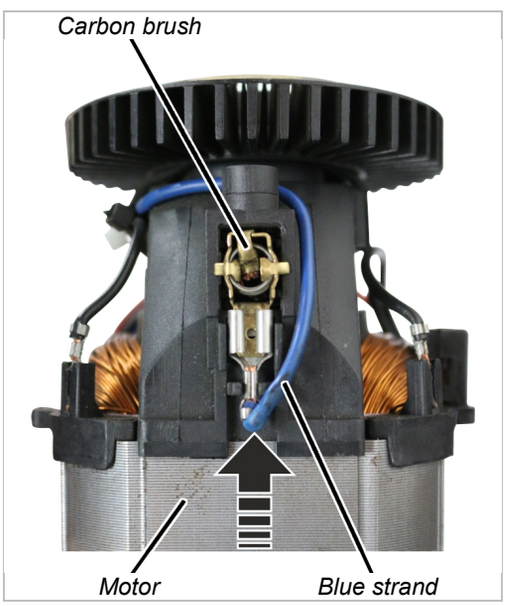
INSERTING NEW CARBON BRUSHES



➔ Push new carbon brushes (2x) into the motor.



➔ Push the brown strand of the motor connection cable onto the carbon brush.

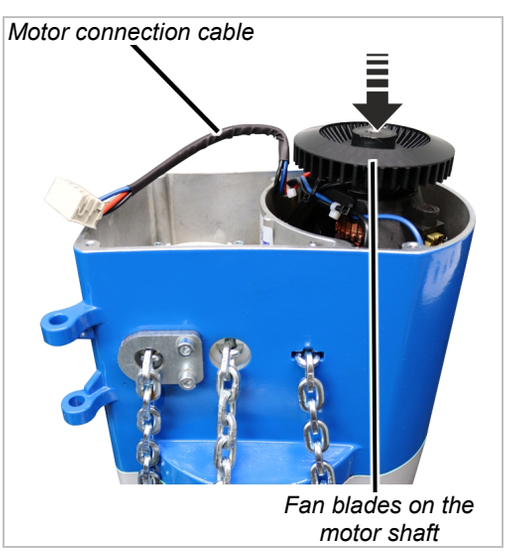


➔ Push the blue strand of the motor connection cable onto the carbon brush.

INSTALLING THE MOTOR

➔ Insert motor in the housing.

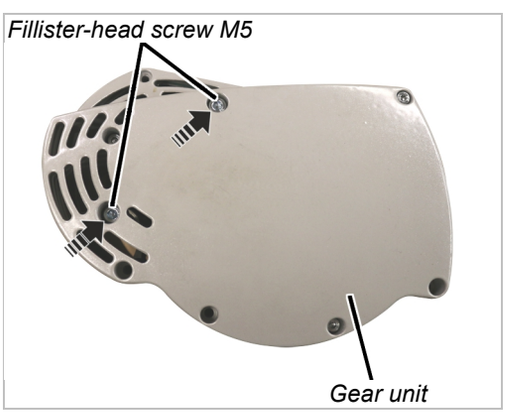
When doing this, ensure that the motor shaft fits precisely in the hole of the plastic pinion of the gear unit.



➔ Press motor into the plastic pinion as far as it will go.

By moving the fan blades slightly back and forth, the square-end on the motor shaft can be brought together with the square-end in the plastic pinion.

- The motor shaft sits precisely in the plastic pinion of the gear unit.

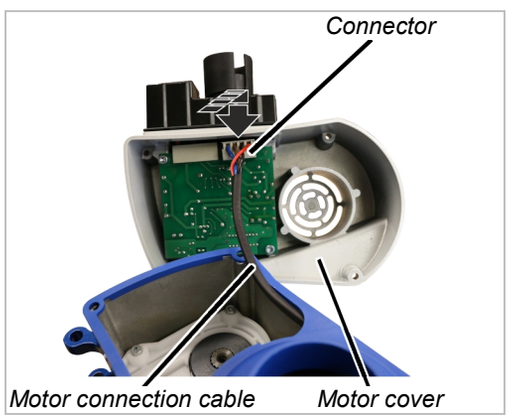


➔ Turn housing with motor over.

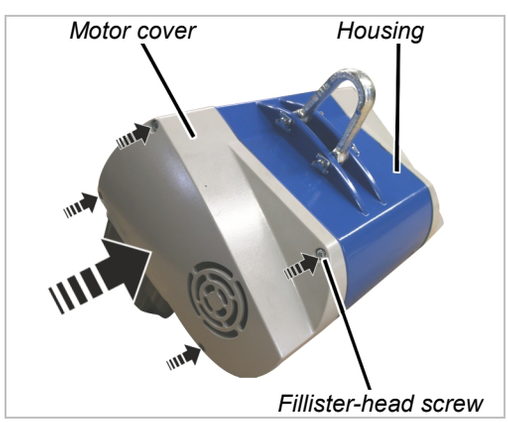
➔ Screw the M5 fillister-head screws (2x) into the gear unit and screw the motor tight. 6 Nm.

CLOSING THE CHAIN HOIST

➔ Press seal flush onto the housing.



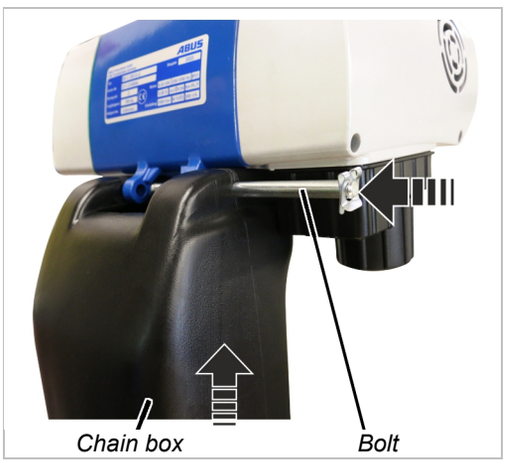
➔ Plug the connector of the motor connection cable into the circuit board in the motor cover.



➔ Hold the motor cover on the housing.

➔ Screw the motor cover tight with M4x55 fillister-head screws (3x) and a M4x20 fillister-head screw (1x). 5 Nm.

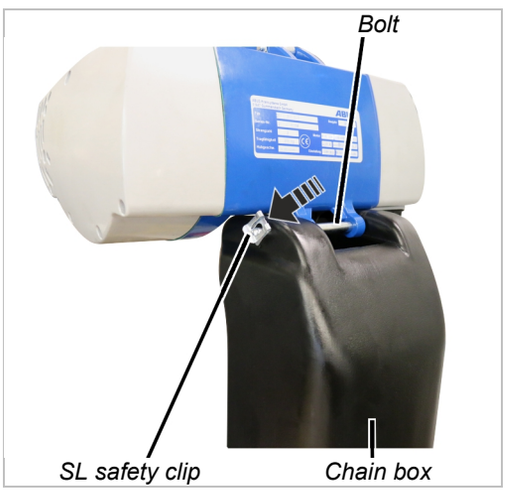
INSTALLING THE CHAIN BOX



➔ Turn the chain box so that it appears as shown in the figure.

➔ Place the chain in the chain box.

➔ Use the bolt to install the chain box on the chain hoist.



➔ Push the SL safety clip onto the bolt.

CONNECTING THE CHAIN HOIST

➔ Insert the connector of the connection cable into the chain hoist.

➔ Slide on the bayonet nuts of the pendant control.

➔ Insert the bayonet connector in the chain hoist.

➔ Tighten the bayonet nuts of the pendant control.

REPLACING THE MOTOR

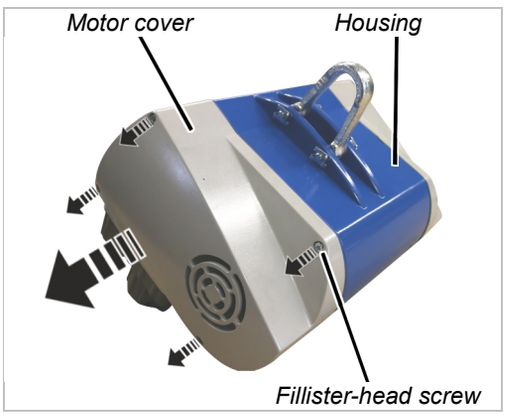
DETACHING THE CONNECTION CABLE AND CONTROL CABLE

- Detach connection cable.
- Remove bayonet nut of the control cable.
- Detach control cable.

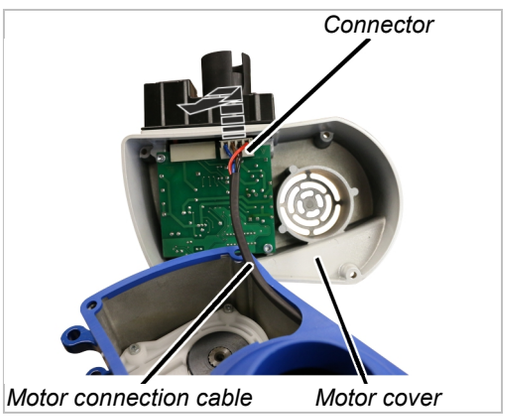
REMOVING THE CHAIN BOX

- Detach the SL safety clip from the bolt.
- Hold the chain box firmly and pull out the bolt.
- Remove the chain box.

REMOVING THE MOTOR COVER



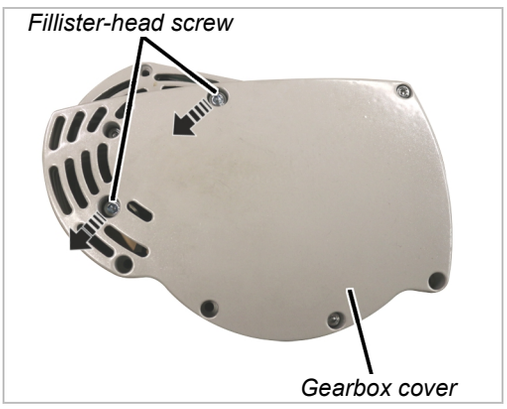
➔ Unscrew the motor cover from the housing.



➔ Unplug the connector of the motor connection cable from the circuit board.

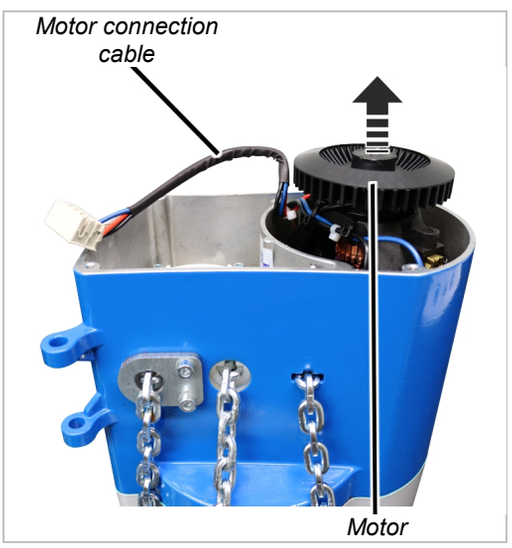
➔ Remove seal.

DISASSEMBLING THE MOTOR



➔ Turn housing over.

➔ Unscrew the M5 fillister-head screws (2x) from the gearbox cover and detach the motor.

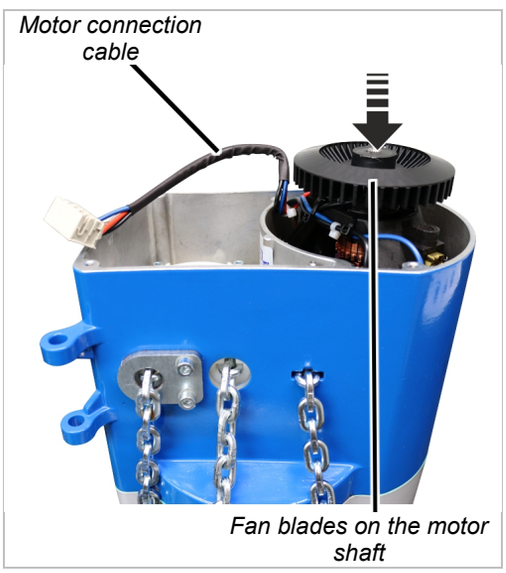


➔ Pull the motor out of the housing.

INSTALLING THE NEW MOTOR

➔ Insert the new motor in the housing.

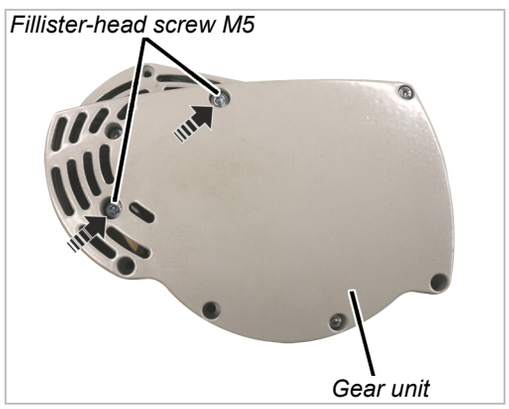
When doing this, ensure that the motor shaft fits precisely in the hole of the plastic pinion of the gear unit.



➔ Press motor into the plastic pinion as far as it will go.

By moving the fan blades slightly back and forth, the square-end on the motor shaft can be brought together with the square-end in the plastic pinion.

- The motor shaft sits precisely in the plastic pinion of the gear unit.

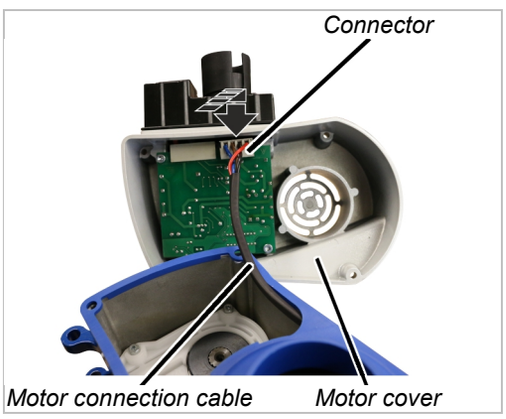


➔ Turn housing with motor over.

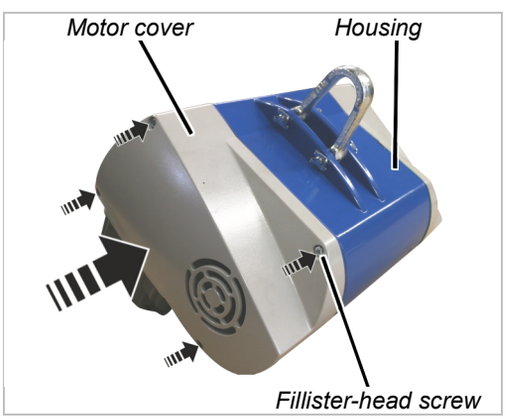
➔ Screw the M5 fillister-head screws (2x) into the gear unit and screw the motor tight. 6 Nm.

CLOSING THE CHAIN HOIST

➔ Press seal flush onto the housing.



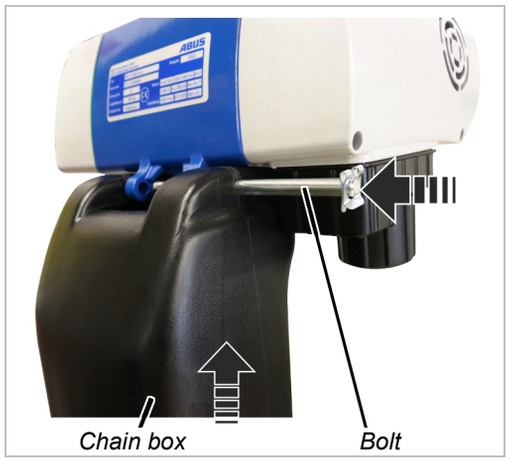
➔ Plug the connector of the motor connection cable into the circuit board in the motor cover.



➔ Hold the motor cover on the housing.

➔ Screw the motor cover tight with M4x55 fillister-head screws (3x) and a M4x20 fillister-head screw (1x). 5 Nm.

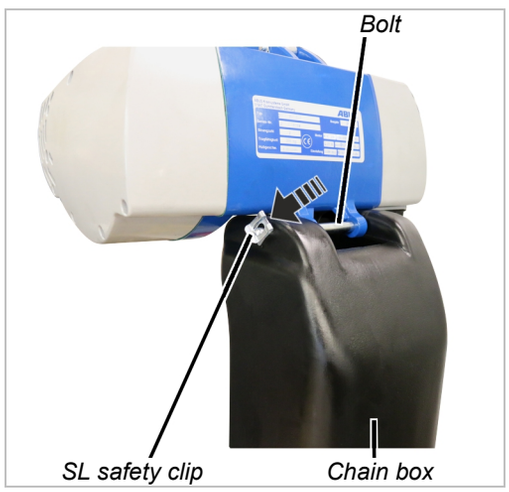
INSTALLING THE CHAIN BOX



➔ Turn the chain box so that it appears as shown in the figure.

➔ Place the chain in the chain box.

➔ Use the bolt to install the chain box on the chain hoist.



➔ Push the SL safety clip onto the bolt.

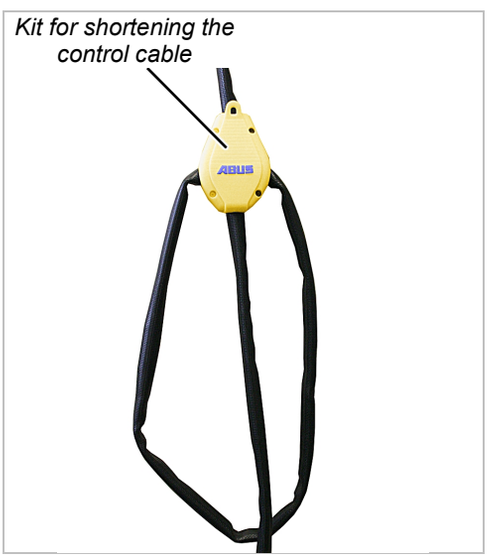
CONNECTING THE CHAIN HOIST

- Insert the connector of the connection cable into the chain hoist.
- Slide on the bayonet nuts of the pendant control.
- Insert the bayonet connector in the chain hoist.
- Tighten the bayonet nuts of the pendant control.

ACCESSORIES

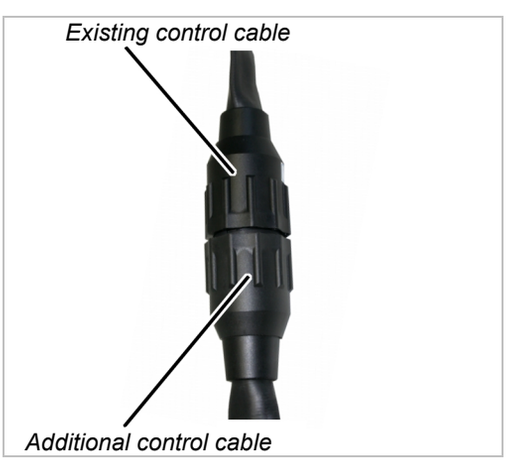
SHORTENING THE CONTROL CABLE

The sheath of the control cable serves to protect the wiring while also acting as a strain reliever. Therefore do not simply wind up the control cable and glue the ends together to shorten it. This would eliminate any function as a strain reliever.



- To shorten the control cable, use the kit for shortening the control cable sheath, AN 308859.

LENGTHENING THE CONTROL CABLE



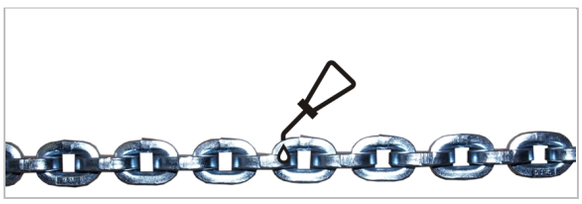
- To lengthen the control cable, use the kit for lengthening the control cable sheath, AN 102282.

LUBRICANTS

Note:

Synthetic lubricants may not be mixed with mineral-based lubricants!

CHAIN



On-site lubrication with “Chainlife S”, ABUS item number 2717

Lubrication ex works with “Chainlife S”, ABUS item number 2718.

Alternatives:

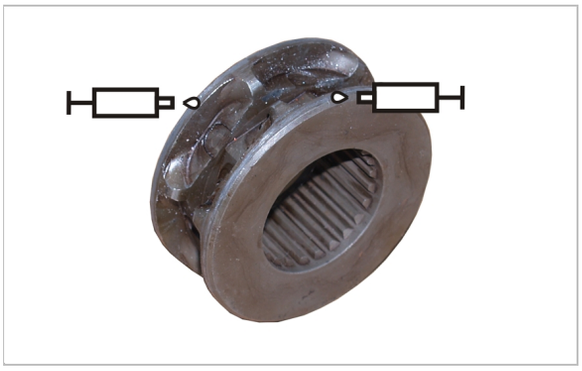
- Castrol “Viscogen KL 23”
- Klüber “Grafloscon CA 901 Ultra Spray”
- Optimol “KL 23”
- Shell “Malleus GL 95”

Lubricate the chain during:

- installation
- Regular inspection
- Exchanging the chain and chain sprocket

For details, see “Lubricating the chain”, page 32.

CHAIN SPROCKET



On-site lubrication with “High-Lub LT1 EP”, ABUS item number 318490.

Lubrication ex works with “High-Lub LT1 EP”, ABUS item number 317880.

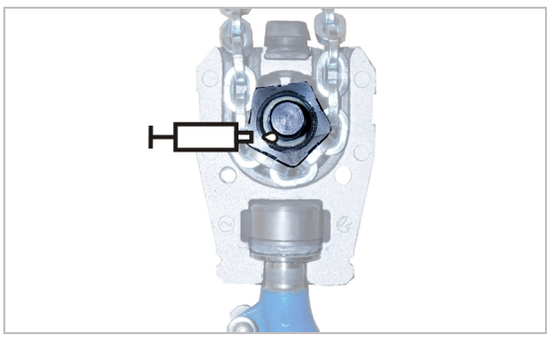
Lubricate the chain sprocket during:

- Exchanging the chain and chain sprocket

For details, see “Installing the new chain guide”, page 27.

ONLY FOR TWIN-FALL CHAIN HOISTS

DEFLECTION ROLLER ON THE BOTTOM BLOCK



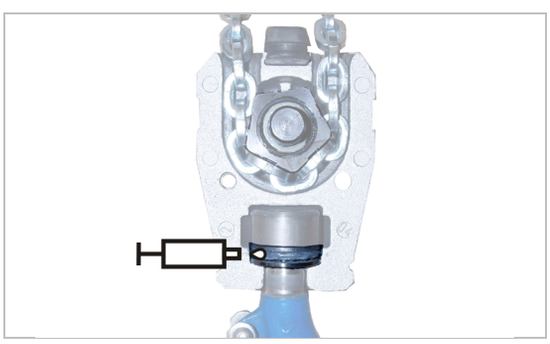
Lubrication on-site/ex works with “Klüber Staburags NBU 12 Alltemp”, ABUS item number 14980.

Lubricate the deflection roller during:

- Installation of the bottom block

For details, see “Installing the bottom block”, page 33.

LOAD HOOK ON THE BOTTOM BLOCK



On-site lubrication with “High-Lub LT1 EP”, ABUS item number 318490.

Lubrication ex works with “High-Lub LT1 EP”, ABUS item number 317880.

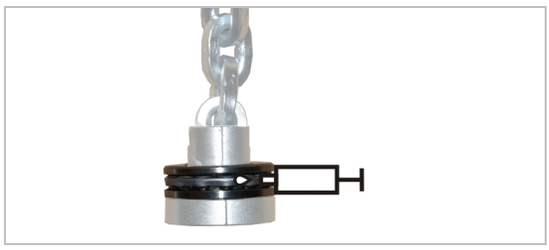
Lubricate the load hook during:

- Installation of the bottom block

For details, see “Installing the bottom block”, page 33.

ONLY FOR SINGLE-FALL CHAIN HOISTS

HOOK ASSEMBLY



On-site lubrication with “High-Lub LT1 EP”, ABUS item number 318490.

Lubrication ex works with “High-Lub LT1 EP”, ABUS item number 317880.

Lubricate the hook assembly during:

- Exchanging the chain and chain sprocket

For details, see “Installing the hook assembly”, page 28.

OVERVIEW OF SCREW TIGHTENING TORQUES

MOTOR COVER

Size	Type, size and length	Number	Tightening torque
GMC	Fillister-head screw M4x55	3x	5 Nm
GMC	Fillister-head screw M4x20	1x	5 Nm

ONLY FOR SINGLE-FALL CHAIN HOISTS

HOOK ASSEMBLY

Size	Type, size and length	Number	Tightening torque
GMC	Fillister-head screw with self-locking nut M6x25	2x	6 Nm

ONLY FOR TWIN-FALL CHAIN HOISTS

BOTTOM BLOCK

Size	Type, size and length	Number	Tightening torque
GMC	Fillister-head screw with self-locking nut M6x30	2x	6 Nm

ABUS SERVICE

ONLY IN GERMANY

➔ If available, have the product number, serial number and customer number handy.

➔ Call the ABUS Service Centre:

– Phone: +49-2261-37-237

➔ If calling outside the usual business hours, leave a message on the answering machine.

● ABUS Service will return your call promptly.

➔ If necessary, send a description of the problem by fax or e-mail:

– Fax: +49-2261-37-265

– E-mail: service@abus-kransysteme.de

ONLY OUTSIDE GERMANY

➔ Call the local ABUS branch or crane service partner.

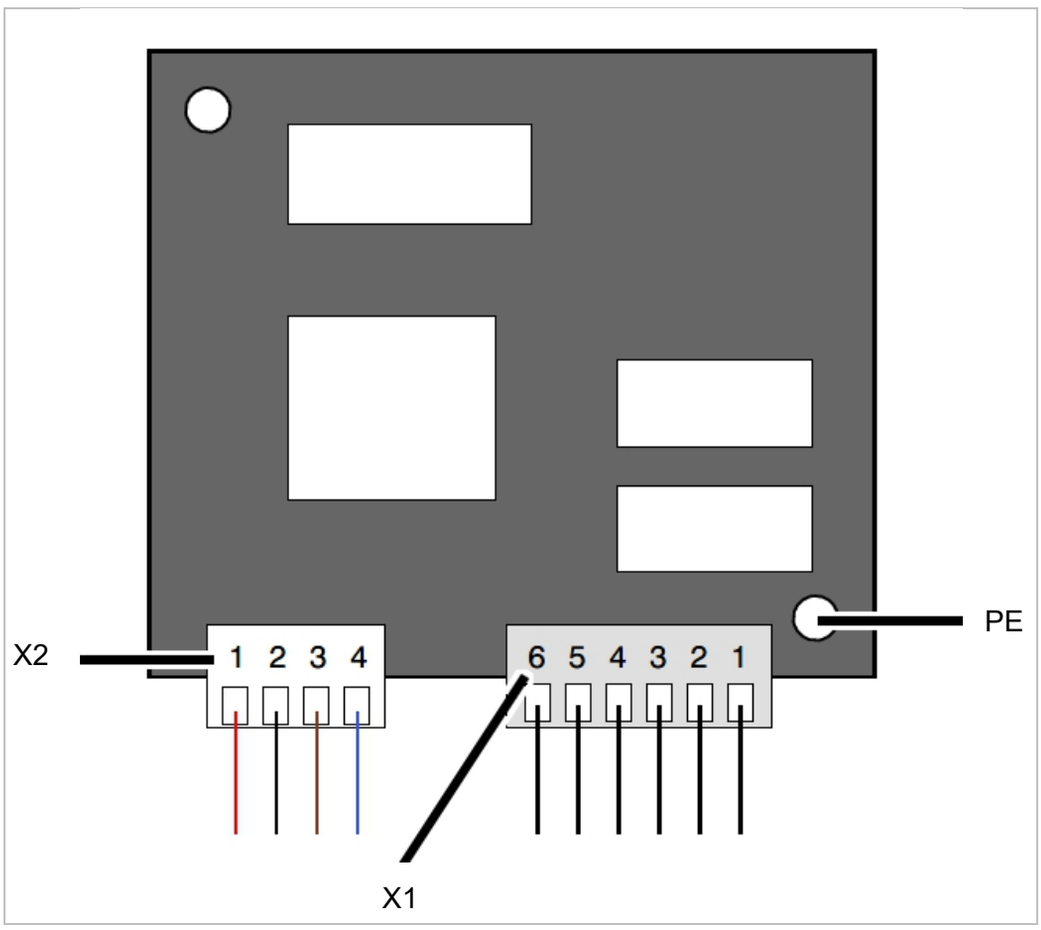
Your local ABUS branch or crane service partner will provide details of contact data, contacts and availability.

ELIMINATING ERRORS ON THE CHAIN HOIST

If the chain hoist is not working or functions other than as expected, a malfunction of the chain hoist may be the cause.

Fault	Possible cause	Eliminating the fault
The chain hoist does not lift or lower; hoist motor does not hum when a button on the pendant control is pressed.	No mains voltage.	Check the power line. See “Connecting the chain hoist”, page 12.
	Power line not correct.	Check the rotary field and phases. See “Connecting the chain hoist”, page 12.
	Emergency stop button pressed.	Unlock the emergency stop switch.
	Bayonet couplings of the power connection cable or control cable are not properly inserted.	Insert the bayonet couplings. See “Connecting the chain hoist”, page 12.
	Broken wire in the control cable.	Replace the control cable.
	Pendant control is defective.	Replace the pendant control.
	With electronic control: control is defective.	Replace the control.
	With direct control: pendant control is defective.	Replace the control.
The chain becomes worn very quickly.	The chain is not sufficiently lubricated.	See “Lubricating the chain”, page 32.

WIRING DIAGRAM



Abbreviation	Terminal	Designation
X1	1	L1
	2	N
	3	Operating voltage 1
	4	Lifting 2
	5	Lowering 3
	6	Acceleration 4
X2	1	Red
	2	Black
	3	Brown
	4	Blue
PE		Protective conductor

DECLARATION OF CONFORMITY, DECLARATION OF INCORPORATION

This declaration applies as a Declaration of Conformity if the chain hoist is operated as an independent machine. It is also valid as a Declaration of Incorporation in terms of the machinery directive of Appendix II 1B if the chain hoist is installed in another machine. It is then prohibited to put the chain hoist into service until it has been ascertained that the equipment into which the chain hoist is to be installed meets all requirements of the EU directive versions applicable at the time of issuance. If the chain hoist is part of an ABUS crane installation, the Declaration of Conformity in the test log book of the crane is valid. The declaration here is then invalid.

Manufacturer	ABUS Kransysteme GmbH Sonnenweg 1 51647 Gummersbach Germany	
Product	**ABUS Chain Hoist ABUCompact GMC in series design**	
Year of construction	From 2022	
Order number and serial number	See title page	
Person responsible for putting together the special technical documentation	Michael Müller Technical Documentation Department manager ABUS Kransysteme GmbH Sonnenweg 1 51647 Gummersbach Germany	
We hereby declare that the product specified above complies with all requirements in the EU directives listed here in the version applicable at the time of issuance.	2006/42/EG 2014/35/EU 2014/30/EU	Machinery Low voltage Electromagnetic compatibility
In particular, the harmonised standards and national standards, directives and specifications and any other applicable standards have been applied.	EN ISO 12100 EN 61000-6-4 EN 61000-6-2 EN 60204-32 DIN EN 14492-2 FEM 9.511 FEM 9.671 FEM 9.683 FEM 9.755 FEM 9.811	Safety of machinery, devices and systems Electromagnetic compatibility; Emission standard for industrial environments Electromagnetic compatibility; Immunity for industrial environments Electrical equipment of machines, hoisting equipment Cranes, power-driven winches and hoists Classification of the drives Chains for hoists Selection of hoist and travel motors Measures for achieving safe working periods Requirement specification for electric trains

Technical documentation is available in full.

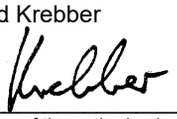
The corresponding operating manuals are available in the national language of the user.

With our department for “Technical Documentation”, we have committed ourselves to submitting the specific documentation for the incomplete machine in response to a reasoned request by the market surveillance authorities.

Gummersbach, Germany, 24 August 2023

Head of the Development department

Gerald Krebber



Signature of the authorised person

The content of this declaration complies with EN ISO 17050.

ABUS Kransysteme GmbH supports a quality management system in accordance with DIN EN ISO 9001.

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AN 120282EN001
2023-08-24