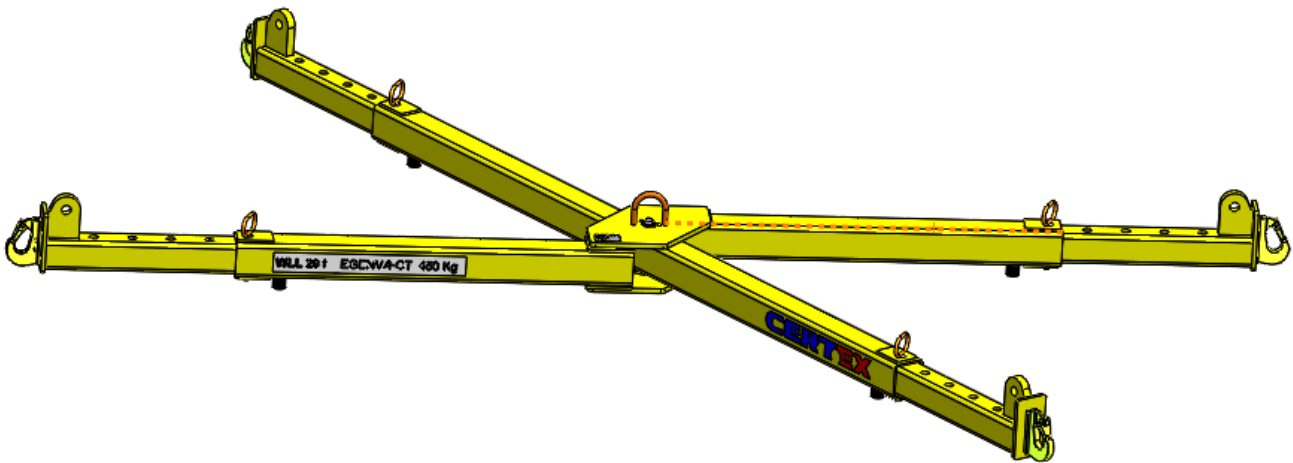


Helicopter Lifting Beam – Simplex, Duplex and Triplex

User Manual Maintenance and Operating Instructions



Description:	Helicopter lifting beam – Simplex, Duplex and Triplex
Certex Article Number:	13.4065-0250XXXX 13.4065-0600XXXX 13.4065-1000XXXX 13.4065-2000XXXX
Document:	13.4065-GM

Document:	Operating and Maintenance Instructions	Release date:	24-02-2021
Project:	Helicopter lifting beam	Author:	KKO
Doc. No:	13.4065-GM	Doc rev:	1



Document revision

Version	Date	Change description	Author
1	01-02-2021	New document, first official release.	KKO
2	24-02-2021	Text update	KKO



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1 Introduction

Dear Customer.

In order to avoid damage to property and/or injury to persons, the instructions in this user manual must be observed and the equipment must be properly and adequately maintained and stored.

The instructions provided in this user manual must be read, understood and observed by all people supervising, operating or working with the equipment, or people in the vicinity of the equipment and/or attached accessories when in operation.

This user manual specifies a recommended minimum safety level and personnel protective equipment requirement to operate the equipment and accessories described in this user manual. However, it must be noted that any additional safety rules and recommendations specified by legislation, authorities or operators company must be complied with.

It is important that user instruction manuals for all accessories are also read, understood and complied with.

This user manual must be retained with the equipment at all times.

In the case of damage and/or functional disturbance due to incorrect handling, as a result of the fact that the user manual instructions were not complied with, the manufacturer cannot be held responsible or liable.

If difficulties or queries should arise when using the lifting equipment, please contact the manufacturer directly:

**CERTEX Danmark A/S
Trekanten 6-8
DK - 6500 Vojens
Denmark
Phone no.: (45) 74 54 14 37**



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1.1 Definitions

For this instruction user manual, the following definitions apply:

- **danger zone¹** Means any zone within and/or around machinery in which a person is subject to a risk to their health and safety.
- **guard¹** Part of a product specially used to provide protection by means of a physical barrier.
- **harm²** Physical injury or damage to the health of people or damage to property or the environment.
- **hazard¹** Means a potential source of injury or damage to health.
- **instruction (for use)²** Information by the producer of a product for the safe and efficient use of the product.
- **instruction manual²** Any applicable means for the transfer of information containing instructions.
- **intended use¹** The use of machinery in accordance with the information provided in the user manual.
- **lifting accessories¹** A linking device, part, chain, sling or another connection part which is attached to the lifting device for connection to the load. These must be independently marked if not forming a part of the full assembly.
- **maintenance²** Combination of all technical and administrative actions intended to retain an item or product in a usable and safe condition, in which it can perform the intended design function. This includes repairing, adjusting and cleaning.
- **manual²** A document containing all relevant user information.
- **marking¹** Legible sign or inscription for the identification of the type of a component or device, attached by the manufacturer of the component or device and the designation of certain features of the product for its safe use.
- **modification²** Change carried out on a product in order to alter its intended use, and /or a revision of the instructions after a modification of a product,
- **operating personnel / operator¹** A person entrusted by the owner of the machine with operating, maintaining, cleaning, repairing or moving the equipment. This person must be trained by the owner in accordance with the tasks to be performed.
- **risk¹** Combination of the probability and the degree of an injury, or damage to health that can arise in a hazardous situation.
- **skilled person²** A skilled person is an individual with relevant technical education, training, or experience to enable perceiving risks and avoiding hazards occurring during use of a product.

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- specification² A document that states requirements, functionally related characteristics, processes, or a product shall possess
- supervisor¹ A supervisor is an appointed responsible person for the productivity, training and actions of a small group of employees.
- WLL Working Load Limit – This is the maximum load that the non-fixed load lifting attachment is designed to lift under the conditions specified by the manufacturer. (EN13155).
- PPE Personal Protective Equipment
- N/A Not applicable.

Ref: 1) Directive 2006/42/EC
2) EN 82079-1

1.2 Signal words⁽¹⁾⁽²⁾

This User Manual classifies the safety information and precautions into four categories of “DANGER”, “WARNING”, “CAUTION” and “NOTICE”.

 DANGER
Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. ⁽¹⁾
 WARNING
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. ⁽¹⁾
 CAUTION
Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. ⁽¹⁾

NOTICE
Indicates information considered important, but not hazard related (e.g. messages relating to property damage). ⁽²⁾

 **INFORMATION**
Note with useful information, tips, and recommendations.

Ref: 1) ISO 3864-2
2) ANSI Z535.6

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1.3 Safety symbols



Mandatory

A blue circle with a white symbol within. This indicates a specific course of action which must be taken.



Warning!

A yellow triangle with a black border. The black symbol within denotes the warning of a hazard.



Prohibition

A red circular band with a diagonal crossbar on a white background. The black symbol within denotes that certain behaviour is prohibited.

1.4 Disclaimer

- CERTEX shall not be liable for any damage incurred thereof due to natural disasters such as fire, earthquake, and thunderbolt, conduct by the third party, accident, wilful conduct or negligence by a customer, erroneous use and other use exceeding the operational condition.
- CERTEX shall not be liable for any incidental damage due to the use or non-use of the product such as the loss of business profit, suspension of business and damage of the lifted load.
- CERTEX shall not be liable for any damage arising from the negligence of the contents in the Operator's and Maintenance Manual and the use of the product exceeding the scope of its specification.
- CERTEX shall not be liable for any damage arising from the malfunction due to the combination of the product with other devices in which CERTEX is not concerned.
- CERTEX shall not be liable to supply the spare parts for the product for which it has passed for 10 years since the discontinue of the product.

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2 Product specification

2.1 Product Type and designation

Helicopter Lifting Beam type Simplex, Duplex and Triplex, hereafter called "Lifting beam".

The lifting beam is designed with one straight fixed tube profile, and one profile which is offset with a central pivot plate.

There are four lifting eyes and four attachment points, in the form of hooks.

The Lifting beam will require a 4-part sling to support the Lifting beams own weight and the load. – This is not supplied with beam.

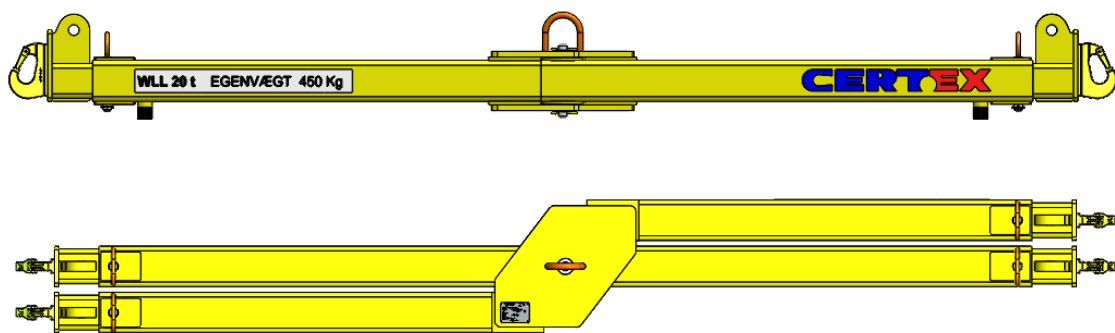


Figure 1: Lifting beam general view.

The Lifting beam is manufactured according to Directive 2006/42 / EC and tested with a static test coefficient of 1.5.

The Lifting beam is also equipped with a central lifting point which is only to be used to lift and position the beams own weight. See Figure 2.



Figure 2: Central lifting point

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2.2 General function and range of application, its intended use

The Lifting beam is intended to equalize the vertical and horizontal distances between the sling (lifting gear) and the load securing points and is used as a secure connection between the load and the lifting gear.

The Lifting beam is designed as a cross where the legs can be adjusted to the width of the load.

The Simplex model has a fixed leg length.

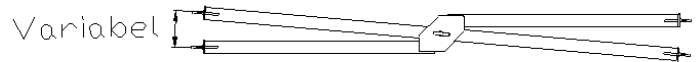


Figure 3: Simplex legs

The Duplex model has adjustable leg length
- 1 movable profiles pipe.



Figure 4: Duplex legs

The Triplex model has adjustable leg length.
- 2 movable profiles pipes.



Figure 5: Triplex

For crane hooks, the Lifting beam is prepared for mounting a 4-part sling. This sling can be made as a chain, wire, or round sling.

2.3 Dimensions and Weight

For information regarding dimension and weight see Chapter 7 and/or details on identification plate on the Lifting beam.

2.4 Restrictions

Before use.

The Lifting beam must not be used for purposes other than those for which it was designed. If the operator has any queries, they must contact the supervisor before using the equipment.

The lifting equipment must be capable of bearing the total weight of the Lifting beam, attached lifting accessories and the specified WLL.

The load must only be supported and retained in the lifting points which are designed for lifting or hanging the load.

The lifting accessories hanging below the beam, must be vertical and symmetrical evenly loaded.

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The loads centre of gravity must always be directly under the central axis of the lifting point on the four part lifting sling, so the Lifting beam and load is horizontal.

The Lifting beam is designed for a maximum of 16.000 lifting cycles.

No alterations may be made to the Lifting beam without written permission from the manufacturer. The manufacture can then confirm material which is in accordance with DS/EN 10027-2, and what modifications may be completed, and the process to be followed. The guarantee will be instantly terminated if this condition is not observed.

Never attempt or complete any welding or heat treating of the lifting beam. Should this be attempted or completed it will be classified as a significant change and the lifting beam must be fully tested in accordance with the manufacturers' recommendations. Contact the manufacturer for testing information and procedure.

The inclination angle of the lifting slings must not exceed 45 °. See Figure 6.

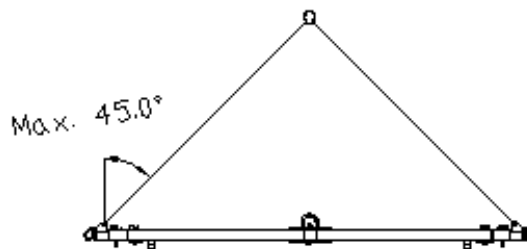


Figure 6: Central lifting point

2.5 Emissions

Noise: A weighted emission sound pressure level: <70 dB(A).

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3 General safety information

Wear all required Personal Protective Equipment (PPE) when using the transport frame.

	<p>Mandatory! Wear head protection Wear head protection all the time when using equipment to prevent objects from damaging your head.</p>		<p>Mandatory! Wear safety footwear Wear safety footwear all the time when using equipment to prevent objects from damaging your feet.</p>
	<p>Mandatory! Wear protective gloves Wear protective gloves all the time when using equipment to protect your hands from sharp edges.</p>		



	<p style="text-align: center;"> WARNING</p>
<p>All local, national and international health & safety regulations and PPE requirements MUST be followed in addition to CERTEX safety recommendations.</p>	

	<p style="text-align: center;"> DANGER</p>
<ul style="list-style-type: none"> Always ensure that the Lifting beam is correctly adjusted and connected to the lifting equipment to give a secure positive connection between the lifting equipment and the Lifting beam. Never exceed the specified WLL. Never stand work or pass under a hanging load, and when lowering the Lifting beam, the operator must ensure that the beam or any attached lifting accessories do not swing into other personnel in the danger zone. Always ensure the Lifting beam is in a horizontal longitudinal attitude under lifting as failure could result in damage to the main beam. Lifting must be controlled, with no sudden movements, and the lifting equipment must not swing in a pendulum action or tilt from the horizontal, as this can cause a possible dropping of the load or can cause a crush risk to personnel in the danger zone. When lowering the load, the operator must ensure that it is on a secure base, so that it will not fall or rotate, when the Lifting beam is disconnected and removed. During lifting, if there is a potential crush risk between the Lifting beam, container, machines, building parts etc, may no personal or operator remain in the danger zone. 	

	<p style="text-align: center;"> WARNING</p>
<ul style="list-style-type: none"> Never put hands or other body parts close to the Lifting beam especially in the areas where the lifting accessories are assembled, as there is a crush risk. 	

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	 WARNING
	<ul style="list-style-type: none"> • Floor area must be free from any objects which could lead the operator to stumble or fall when operating the Lifting beam. • All lifting equipment which can be attached to the Lifting beam or used in the lifting operation, must be CE marked and approved for the load it will be lifting. • The lifting device must never be left unattended during a lifting operation, the load must be secured before leaving the danger zone. • The Lifting beam must never be used for lifting persons or other living things. • Never use the Lifting beam with visible defects or deficiencies, such as wear, distortion, rust damage or similar. • The Lifting beam must never be used outdoors if there is the chance of lightning in the area. • When the Lifting beam is not in use, it should be closed and packed together, and stored on a rack or other base, so that it not a risk to personnel in the area.



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4 Operating instruction

4.1 Transport and Storage

The Lifting beam must be transported with legs together and shortest leg length, or any hollow tube may be removed, and stored beside the Lifting beam.

The Lifting beam must be strapped to the pallet under transport or when in storage to prevent it tipping off the pallet/base plate.

See Section 2.3 for weights and dimensions.

4.2 Unpacking

The packing material protecting the Lifting beam can be removed. The securing strap can be cut over, the person unpacking must have gloves, safety footwear and safety glasses when cutting the securing strap.

The Lifting beam can then be lifted off its base using the specified red lifting loop.

4.2.1 Safe Disposal of packing material

All packing materials used by CERTEX Danmark A/S are recyclable. Pallets, cases, and all wooden packing materials must be reused or recycled.

All plastic, cardboard, can be sent to local recycling centres.

Please Note: If there are no local recycling facilities, all package material must be returned to manufacturer for disposal at the customers own costs.

4.3 Installing and assembling

After unpacking the Lifting beam, it must be checked for any visual damage. Check that the lifting points are free from dirt or other obstructions.

The Lifting beam is supplied ready for use. After unpacking and visual inspection, it can be used.

A 4-part lifting sling must be assembled to the lifting eyes, and the central lifting point of the sling can be attached to the crane.

4.4 Instructions before use

Before use of the Lifting Beam, the condition of the equipment must be checked. Make sure that the surface of the Lifting Beam is clean and free of any object.

Visually the lifting beam must seem to be in good condition and safe to use. No apparent deformation, damage, flaw, cracks, or corrosion maybe observed.

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If there are found any faults in the Lifting Beam, they must be reported to the site supervisor and the lifting beam must be removed from service.

Do not use is until a maintenance person has fully inspected the Lifting Beam, and confirmed it is safe to use.

	WARNING
	<ul style="list-style-type: none"> No modifications, alterations to the Lifting beam should be made without the prior advice and written approval from CERTEX. Unauthorised modifications, alterations, and use of non-original spare parts could result in death or serious injury.

4.5 Use

The Lifting beam is attached at the top lifting points, through adequate lifting accessories (shackles and sling), to a crane. Crane hook must be positioned directly above the lifting point and the inclination angle of the lifting slings must not exceed 45 ° - see Figure 6.

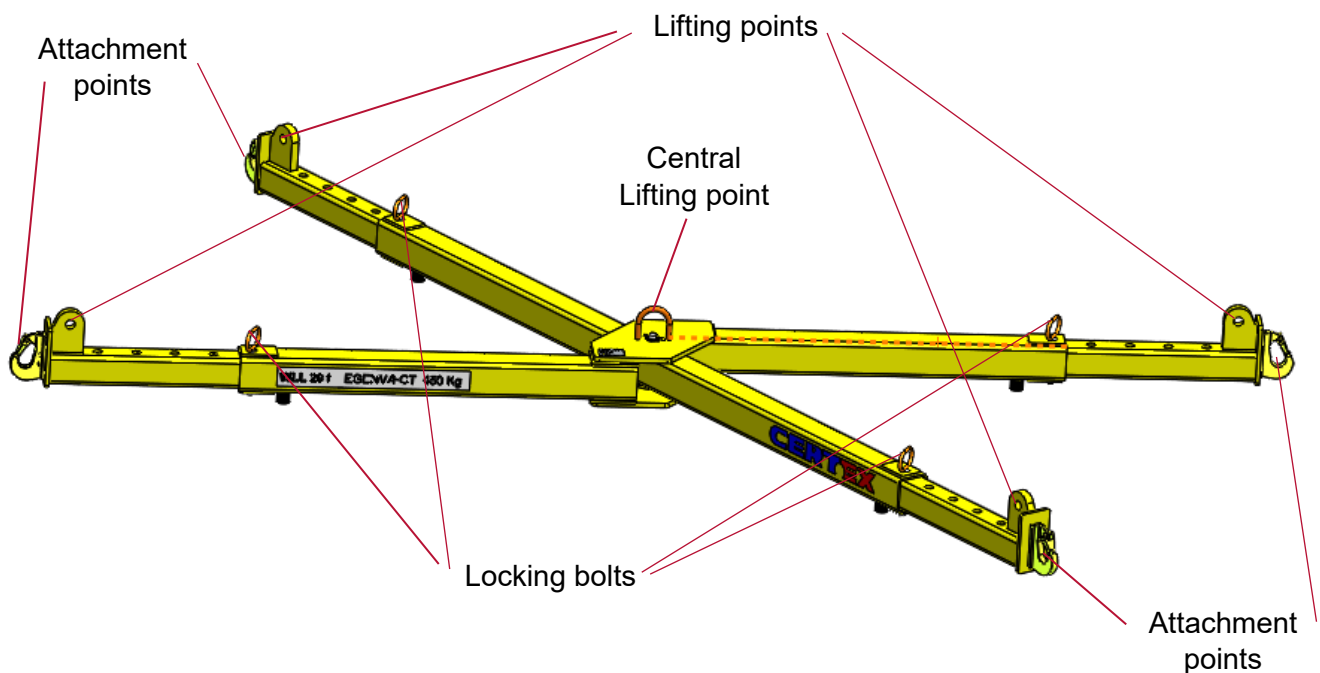


Figure 7: Connecting points

The load is attached to the Lifting beam through suitable approved lifting accessories to the attachment points – hooks. The load must be connected directly below the attachment points. This will ensure that the Lifting beam is level when lifting the load.

The length of the Lifting beam can be controlled by movable profile pipes secured by locking bolts. See Section 2.2. and Chapter 7.

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When tilting risk occurs between the load and the items, building parts, machines, etc., the operator must make all CoGs (Center of Gravity) aligned. Operator must ensure smooth and controlled movement.

The central lifting point in the centre of Lifting beam must only be used to lift and position the beams own weight.

	! DANGER
	Please be aware that it is NOT allowed to use the Central lifting point to lift the frame with a load.

4.6 Limits of use

The Lifting beam is designed to be used indoors or outdoors.

Maximum wind speed 15 m/sec.

Temperature Range: -15° up to 40°C.

Never to be used outdoors if there is a risk of lightning.

4.7 Storage

The Lifting beam is either painted C3 standard, or galvanised and if not stored correctly, it can be affected by corrosion.

When not used the Lifting beam should always be stored indoors in a clean and dry environment and free of any chemical interaction to reduce risk of corrosion.

4.8 Disposal of waste

The lifting beam produces no waste.

All steel parts must be sent to a recycling centre or returned to the manufacturer for disposal.

4.9 Information assignment

All operators or persons in the danger zone, must receive operating instructions, training from the supervisor, and must be familiar with the Lifting beam and its usage, prior to lifting any loads.

The crane operator must be trained in the use of the crane and all its functions and must be positioned so that he/she always has a general overview of the complete lifting operation.

The crane operator must be trained in how to minimise swinging of the load and how to correct it, should it occur.

4.10 Location of the Instruction

This user manual must be retained with the Lifting beam at all times.

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5 Maintenance

The Lifting beam must be on a secure base and unloaded before any checks are carried out by a maintenance person.

If the Lifting beam has not been used in the last fourteen days, a monthly check will be required before use.

If the lifting beam has not been used in the previous three months, an annual service must be completed.



INFORMATION

All servicing, part replacement, reparation must be recorded in a service report and retained with the lifting beam.

No welding or heat treatment is permitted on the lifting beam.

If corrosion has occurred the service specialist must check for notching, indentation before repainting to C3 standard.

5.1 Regular maintenance and cleaning by User

Daily:

Check and maintain the lifting beam so that it is constantly kept in a safe condition during use.

After use, clean and inspect the equipment for defects and deficiencies.

If these are found any faults in the lifting beam, they must be reported to the supervisor and maintenance personnel so affected parts can be replaced or repaired.

If rusting or corrosion is discovered the equipment must be taken out of use immediately and be clearly marked as "Out of Service". Contact supervisor and maintenance personnel.

Weekly:

The lifting beam must be inspected for any visual damage:

- wear and tear on the lifting eyes.
- wear and tear on the weld-on hooks.
- check safety latch on weld-on hooks will retain lifting slings.
- check locking bolts and securing pins for damage or wear and tear.
- check central pivot point and plates for damage or wear and tear.

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5.2 Maintenance table

	WARNING
	<ul style="list-style-type: none"> • Only original spare parts may be installed, and these must be replaced by authorized personal. • The annual inspection must be performed by a suitable qualified person, who have received training in maintenance of lifting equipment. • All service should be recorded and stored.

- D Daily
W Weekly
M Monthly, or max 200 hours of operation
A Annually, or max 2400 hours of operation

Inspection	D	W	M	A
Check marking is clear and legible.	X			
Visually check all welding for signs of cracking or damage	X			
Check beams, shafts and plates with regard to deformation, wear or other damage.			X	
Check attachment points are not damaged or deformed.				X
Check lifting points for damage and wear and tear.				X
Damaged Lifting beams or with unclear marking, must be taken out of service immediately and clearly marked as "Out of Service".	X	X		

If there are found any faults in the Transport Frame, they must be reported to the site responsible and the frame should be replaced.

NOTICE
No modifications, alterations to the lifting beam should be made without the prior advice and written approval by CERTEX.

	WARNING
	<p>Unauthorised modifications, alterations, and use of non-original spare parts could result in death or serious injury.</p>

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6 Service and repair by Service agent

6.1 Service cycle for the safe operating

The Lifting beam must be inspected at least once a month.

It must be thoroughly serviced every twelve months.

The service inspection must only be completed by suitably qualified personnel or lifting equipment technicians, who have the suitable required training.

Only approved spare parts may be used.

6.2 Service agent address

CERTEX Danmark A/S
Trekanten 6-8
DK - 6500 Vojens
Denmark
Phone no.: (+45) 74 54 14 37

info@certex.dk

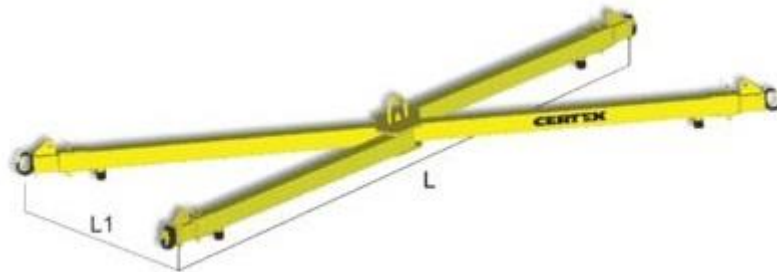
The Lifting beam must be serviced and maintained as specified by the manufacturer or after updated regulations as required.

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7 List of Helicopter Lifting Beam types

The general list of types and dimensions of Lifting beam is presented below. As the lengths and working loads can be manufactured upon request, all needed information (type, WLL, dimensions) should be read directly from the plate on the Lifting beam.



Part Code	Type	WLL ton	Beam length - L Min. m	Beam length - L Max m.	L1 max. m
13.4065-02502500	Simplex 2,5	2,5	3,6	3,6	2,6
13.4065-06002500	Simplex 6	6	3,7	3,7	2,6
13.4065-10002600	Simplex 10	10	3,7	3,7	2,6
13.4065-20002600	Simplex 20	20	3,7	3,7	2,7
13.4065-02503400	Duplex 2.5	2,5	3,6	4,8	3,4
13.4065-06003400	Duplex 6	6	3,7	4,8	3,4
13.4065-10003400	Duplex 10	10	3,7	4,9	3,5
13.4065-20003400	Duplex 20	20	3,7	4,9	3,5
13.4065-02504200	Triplex 2,5	2,5	3,6	6,0	4,3
13.4065-06004510	Triplex 6K	6	2,3	4,7	3,3
13.4065-06004500	Triplex 6	6	3,9	6,5	4,5
13.4065-10004510	Triplex 10K	10	2,25	4,4	3,2
13.4065-10004500	Triplex 10	10	4,0	6,4	4,5
13.4065-20004510	Triplex 20K	20	2,25	4,4	3,2
13.4065-20004500	Triplex 20	20	4,0	6,4	4,6

TRIPLEX model K is special designed to fit in the side direction of a truck.

