

Original Operating Instructions

DIS Unloading System

Loading and unloading device for ISO containers (20', 40', 45')



Revision 0

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Contents:

	Page
1 General.....	4
1.1 Warranty.....	4
1.2 Safety information	4
1.3 Documentation	6
1.4 Copyright.....	6
1.5 Information on the briefing of operating personnel and the keeping of mandatory records	6
2 Safety	7
2.1 Designated use	7
2.2 Organisational measures.....	9
2.3 General safety information	10
3 Scope of supply.....	12
4 Product description	13
4.1 Design and function.....	13
4.2 Technical data.....	13
5 Transportation.....	14
5.1 Transportation instructions	14
5.2 Dimensions and weight	14
5.3 Permitted transport aids and equipment	14
5.4 Transport to the place of installation	14
6 Erection/installation	15
6.1 Ambient conditions and space requirement.....	15
6.2 Instructions for installation and assembly	15
6.3 Assembly.....	16
7 Start of operation	19
7.1 Establishing connections.....	19
7.2 Checks before starting for the first time	19
8 Operation	20
8.1 Safety information	20
8.2 Information with regard to operation	20
9 Help in the event of problems	21
10 Maintenance and servicing	22
10.1 Safety information.....	22
10.2 Service intervals	23
10.3 Cleaning and lubrication	23

11 Structural alterations to the machine.....	24
12 Removal from service / recommissioning	25
12.1 General	25
12.2 Disposal	25
13 Additional information.....	26
13.1 Service centre address.....	26

1 General

1.1 Warranty

The warranty period is 12 months from the date of delivery ex works subject to correct usage and adherence to the prescribed service and lubrication intervals.

In principle, wearing parts (e.g. gaskets, sealing elements, springs, bearings, etc.) are not covered by the warranty. Please also take note of our general Terms & Conditions in this regard.

1.2 Safety information

The statutory health and safety and accident prevention regulations apply independently of the information contained in these operating instructions.

Every person instructed by the owner to operate, service or repair the product must first have read and understood the operating instructions, especially [section 2 “Safety”](#). More detailed explanations are given in [section 1.5 “Information on the briefing of operating personnel and the keeping of mandatory records”](#).

Anyone who repairs the product is in principle responsible for ensuring their own health and safety.

Due regard for all the relevant safety regulations and legal requirements is essential to avoid injury to personnel and damage to the product during servicing and repair work.

Maintenance engineers must have read and understood these regulations before starting work.

Duly trained and qualified personnel are required in order for repairs to the IBS products to be carried out correctly. Responsibility for training lies with the owner and maintenance engineers, who are required to ensure that the operators and any future maintenance engineers are appropriately trained to work on the product.

No warranty claims for damage caused by improper operation will be accepted.

The warranty will also be invalidated in the event of unauthorised repair work and/or invasive action, and the use of accessories and spare parts which are not designed for use with our product.

Defects must be repaired immediately in order to minimise the extent of the damage and to preserve the safety of the product.

Failure to take prompt action will nullify any further warranty claims.

We reserve the right to make modifications in the interests of making technical improvements.

We have flagged up all the safety information and warning signs for you.


We have used the following symbols and warning words:





Caution




Risk of crushing

	NOTE
	<p>This symbol is used to flag up information which is very important but does not relate to any immediate danger.</p>

	CAUTION
	<p>The word CAUTION is used to warn of potential danger categorised as low risk which could lead to minor or slightly more severe injury or damage to property if not averted.</p>

	WARNING
	<p>The word WARNING is used as an alert for potential danger categorised as medium risk which could lead to death or serious injury if not averted.</p>

	DANGER
	<p>The word DANGER is used as an alert for immediate danger categorised as high risk which could lead to death or serious injury if not averted.</p>

Please note that we will not accept liability for damage caused by failure to follow these operating instructions.

1.3 Documentation

The product, as designed and built by IBS GmbH, is supplied with detailed and specific documentation.

The format of this documentation complies with the relevant standards and requirements. It is the responsibility of the user to distribute the relevant parts of the documentation to the right people. The user is required to ensure that at least one copy of the documentation is in the immediate vicinity of the product and is accessible to the relevant people.

The operating instructions constitute an integral part of the product and must be kept throughout its service life.

The operating instructions must be passed on to any subsequent owner or user of the product.



Any person assigned to work on the product must have read the relevant documentation before starting work, with particular reference to [section 2 "Safety"](#). This applies most notably to persons who are instructed to work on the product only occasionally, e.g. maintenance personnel.

1.4 Copyright

These operating instructions and the product documents are protected by copyright as the property of IBS GmbH. They are only supplied with the product to our customers and to the owners of our products and belong with the product.

These documents may not be duplicated or made accessible to third parties, especially to competing firms, without our express permission.

1.5 Information on the briefing of operating personnel and the keeping of mandatory records

We recommend that the owners of our products make the operating instructions available to all persons who are instructed to operate, service and repair the products, especially [section 2 "Safety"](#), so that they can acquire the relevant knowledge.

We also recommend that owners issue internal "**Operating procedures**", taking due account of the known skills and qualifications of the relevant personnel.


Written confirmation should be given to the owner to verify attendance at briefing sessions and training courses, etc., which cover the knowledge needed for the operation, maintenance and repair of the product.

2 Safety

2.1 Designated use

This machine, also referred to below as product, is an **auxiliary device for unloading long, bulky or heavy goods from standard sea containers of sizes 20', 40' and 45'**. There are risks involved in using the product for any other purpose. The specified technical limits must not be exceeded.

The product may only be used as indicated in its technical specification. This includes adhering to the conditions prescribed by the manufacturer with reference to its start-up, assembly, operation, location and maintenance.

	WARNING
	<p>The safe operation of the product cannot be guaranteed if it is not used for its intended purpose.</p> <p>The owner of the product rather than the manufacturer will be responsible for any injury and damage arising as a result of its improper use.</p>

Fundamental principles

The product, as built and placed into circulation by IBS GmbH, is designed for industrial use and meets the safety regulations applicable at the time of its delivery and set out in detail below. The product reflects the industry standard and conforms to the recognised codes of safe practice at the time of its delivery.

Any relevant customer specifications have been met insofar as they form part of the contract and did not impinge upon existing safety requirements.

Personal protective equipment

The minimum requirements in terms of personal protective equipment are as follows:

- Safety gloves
- Safety shoes

These symbols are used to remind you to wear your personal protective equipment.



Safety gloves



Safety shoes

Intended purpose

The product is designed to serve the purpose of use agreed in the contract between the manufacturer/supplier and user and to serve the purpose of use set out in the product specification and in line with its application as set out in the technical data.

The operational safety and reliability of the product are guaranteed if it is used as intended and with due regard for the relevant safety regulations, as far as can be foreseen.


Improper use of the product can entail the following risks:


- Risk of injury or death of the operator.
- Risk of damage to the product and to other valuable property

belonging to the operator or to third parties.

Improper use of the product might include the following:

- The product load limits are exceeded.
- The product is used to load containers.
- Safety installations are bypassed.

	DANGER
	Improper use of the product and disregard for the relevant safety standards and regulations can place the operator at risk of injury or death!

	WARNING
	Please ensure that adequate safety precautions are taken when transporting and manoeuvring the product.

Technical condition

The product must be in perfect working order when it is used and must be used as intended with due regard for the relevant regulations (see also [“Malfunctions” in section 2.2.](#)).

The owner of the product rather than the manufacturer will be responsible for any injury and damage arising as a result of its improper use.

2.2 Organisational measures

Adherence to regulations

The owner must take appropriate organisational measures and hold the necessary briefings to ensure that the relevant safety regulations and codes of safe practice are observed by the personnel assigned to the operation, maintenance and repair of the product.

Monitoring of conduct

The owner is required to carry out at least occasional checks on personnel to ensure safe working practices and due awareness of hazards.

Hazard warnings

The owner is required to ensure that due account is being taken of safety advice and hazard warnings relating to the product and that the signs are clearly legible.

Malfunctions

Take the product out of operation immediately if it is not working properly and is unsafe to use, or if the way in which it is operating gives reason to suppose that it is unsafe to use, and do not reuse it until the problem has been diagnosed and rectified. Faults may only be rectified by trained and authorised personnel.

Modifications

The consent of the manufacturer/supplier must be obtained before making any modifications to the product, fitting anything on the product or making alterations to the product which may affect its safety. This also applies to the installation of safety devices.

Spare parts

The only spare parts which may be used are those that meet the specifications laid down by the manufacturer/supplier. This is always the case with original spare parts. Neither liability for the product nor warranty claims will be accepted if repairs are carried out improperly and if spare parts are used which are not approved.

Checks/inspections


It is essential to adhere to the prescribed intervals for regular checks and inspections as set out in the maintenance manual.

Staff selection and qualifications

- Work on/with the product may only be carried out by reliable personnel who are not below the minimum legal age.
- Personnel must be duly trained and briefed before working on the product, taking advantage of the training offered by the manufacturer, where necessary.
- Responsibility for operating, servicing and repairing must be clearly delineated so that staff are in no doubt as to their remit.

- Personnel must have the necessary expert knowledge of the safety regulations before being allowed to conduct servicing and repair work on the safety-related parts of the product.
- Set out the responsibility of operators, including in respect of safe working practices, allowing the rejection of instructions from third parties which go against the codes of safety.
- Personnel who are being trained, briefed, instructed or familiarised with the product may only be allowed to work on/with the product under the constant supervision of an experienced person.

2.3 General safety information

	NOTE
	When the product is out of use, take measures to prevent unauthorised use of the product in order to avoid damage and to prevent people from being put at risk.

- The unloading system must stand on a firm, level surface that is sufficiently dimensioned for the support pressure (see technical data).
- The unloading system may only be operated by authorised, trained and instructed persons.
- In addition to the operator, a second person must be present during unloading to monitor travel with the load.
- Monitoring is a fundamental requirement throughout the unloading process.
- Before initiating travel, the operator must satisfy himself that there is no one in the container.

Safety during maintenance work

- Never engage in dangerous working practices.
- Check the product at least once a day for visible external signs of damage and defects.
- Report any changes and unusual behaviour immediately to the relevant body/supervisor; if necessary, shut the product down immediately and secure it.
- Do not start the product up again until the cause of the malfunction has been remedied.

Hazards in connection with using the product

- Do not rectify faults caused by jammed machine parts or trapped parts until the power has been disconnected.
- Any damage or faults which could put people at risk must be remedied immediately and correctly. The system is to be taken out of use until such time as faults have been rectified.

- Disconnect the product from the power supply
- Affix a warning sign (out of order, do not use, etc.)
- Tests and inspections may only be carried out when the machine is at a standstill.

Maintenance instructions

The reliable operation of the product can only be guaranteed in case of precise adherence to the maintenance procedures in the operating instructions (cf. instructions in [section 10 “Maintenance and servicing”](#)).

Environmental protection regulations

The relevant environmental protection regulations must be adhered to when carrying out any servicing and repair work. The main German regulations and laws governing the use of cold cleaning solvents are as follows:

- Dangerous Chemicals Ordinance (GefStoffV)
- Water Resources Law (WHG)
- Waste Management Law (AbfG)
- Waste Documentation Ordinance (AbfNachwV)



Apply careful selection criteria even before buying lubricants and lubricating oils, researching their environmental impact, health risks, regulations for their disposal, and local facilities for approved disposal.

Dangers from pneumatic energy

	WARNING
	The system must be depressurised before any work is carried out on pneumatic elements and before any work is carried out within range of the product.

3 Scope of supply

The product is supplied part assembled. The scope of supply comprises:

Component	DIS 20	DIS 40	DIS 45
Lift carriage 235 JR	2 x	4 x	4 x
Bellows cylinder	8 x	16 x	16 x
Drawbar S 235 JR	1 x	1 x	1 x
Connecting rod S 235 JR	1 x	1 x	1 x
Lift carriage rollers PN 85/90/5K	8 sets	16 sets	16 sets

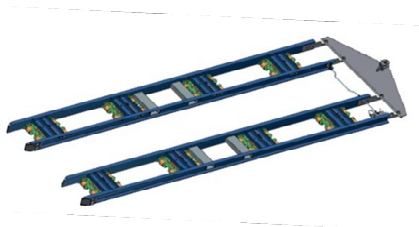


Fig. 01 – DIS 20



Fig. 02 – DIS 40

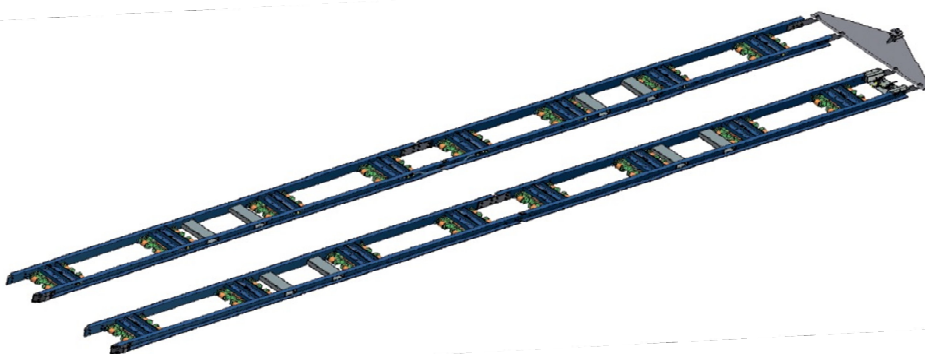


Fig. 03 – DIS 45

4 Product description

4.1 Design and function

IBS has developed a simplified unloading system for the unloading of containers that have previously been loaded with the CFM container filler. The container must be unloaded on a ramp or on the ground.

The basic structure consists of two steel frames that are connected by means of a drawbar. Roller carriages with compressed air bellows cylinders are integrated in the steel frames.

The goods in the container are raised by means of the bellows cylinder and pulled out of the container. The unloading system is available for 20, 40 and 45 foot containers.

No other purpose of use is permitted.

4.2 Technical data

	DIS 20	DIS 40	DIS 45
Overall length	approx. 6054 mm	approx. 12,555 mm	approx. 14,075 mm
Overall width	approx. 2100 mm	approx. 2100 mm	approx. 2100 mm
Overall height	approx. 140 mm	approx. 140 mm	approx. 140 mm
Unladen weight	approx. 1324 kg	approx. 2700 kg	approx. 2800 kg
Maximum load	approx. 25,000 kg	approx. 45,000 kg	approx. 45,000 kg
Compressed air supply (max.)	6 – 8 bar	6 – 8 bar	6 – 8 bar

5 Transportation

5.1 Transportation instructions

The safety precautions, safety advice and hazard warnings set out in [section 1.2](#) and [section 2.3](#) must be heeded and adhered to in respect of the transportation of the product.

- Exercise care when preparing the product for transportation.
 - Fasten moving parts.
 - Close any open line ends and protect them against the ingress of dirt.
 - Check that it is disconnected at all the relevant points before it is lifted up and carried away.
 - Otherwise hoses and cables may get damaged
- Always have power, connecting and disposal terminals disconnected only by a qualified professional.
- Select appropriate wrapping for the product and take measures to prevent it from slipping out of place.
- Comply with the accident prevention regulations and local provisions.

5.2 Dimensions and weight

See [section 4.2 “Technical data”](#)

5.3 Permitted transport aids and equipment

- The product may only be transported/handled by forklift truck or crane (capable of withstanding the load).
- Means of transport must be fit for purpose, in perfect condition, in full working order and must have sufficient loading capacity. Please refer to [section 4.2 “Technical data”](#) for the relevant transport dimensions and transport weight (max. installed weight).

5.4 Transport to the place of installation

- A specialist firm must be used for transport off the factory premises.

6 Erection/installation

6.1 Ambient conditions and space requirement

- The unit must **not be installed in areas at risk of explosion**.
- No special foundation is required.
- Make sure the floor has sufficient load-bearing capacity (see [section 4.2 “Technical data”](#), Dead weight + Maximum load columns).
- Make sure there is sufficient space for working and moving!

6.2 Instructions for installation and assembly

The safety precautions, safety advice and hazard warnings set out in [section 1.2](#) and [section 2.3](#) must be heeded and adhered to in respect of the installation and assembly of the product.

- Follow the instructions of the relevant suppliers of any purchased parts which are used.
- If using parts from suppliers, check the CE mark and conformity declaration.
- Before fitting parts from suppliers, check that they are not damaged and that they are in working order.
- Any modifications require the written approval of the manufacturer.
- The universally applicable and the local regulations on accident prevention and environmental protection must be followed in addition to the operating instructions.
- Electrical installations may only be established, modified and maintained by a qualified electrician.
- Follow the lubrication instructions for the product and for components.
- When assembling the product, make sure that all power sources (electrics, pneumatics) are switched off and that there is no residual energy.
- After removing the packaging,
 - Check the product and accessories for damage in transit.
 - Check for completeness against the delivery note.

6.3 Assembly

The DIS unloading system has a modular design, i.e. the DIS 20 system can be expanded to a DIS 40 system by additional lifting carriages, bellows cylinders and lift carriage rollers.

DIS 20 system:

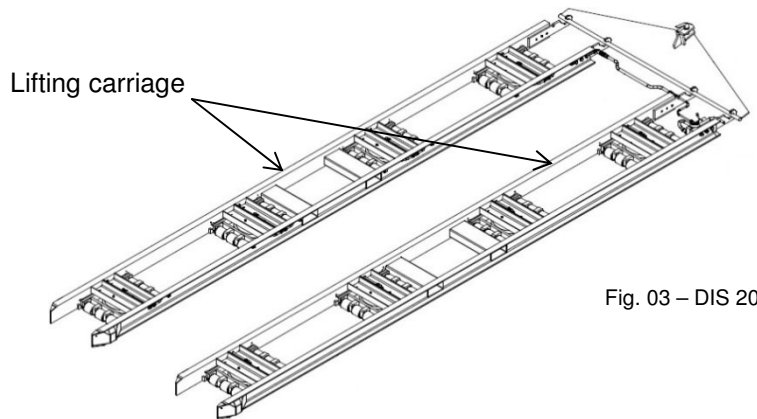


Fig. 03 – DIS 20

DIS 40 system:

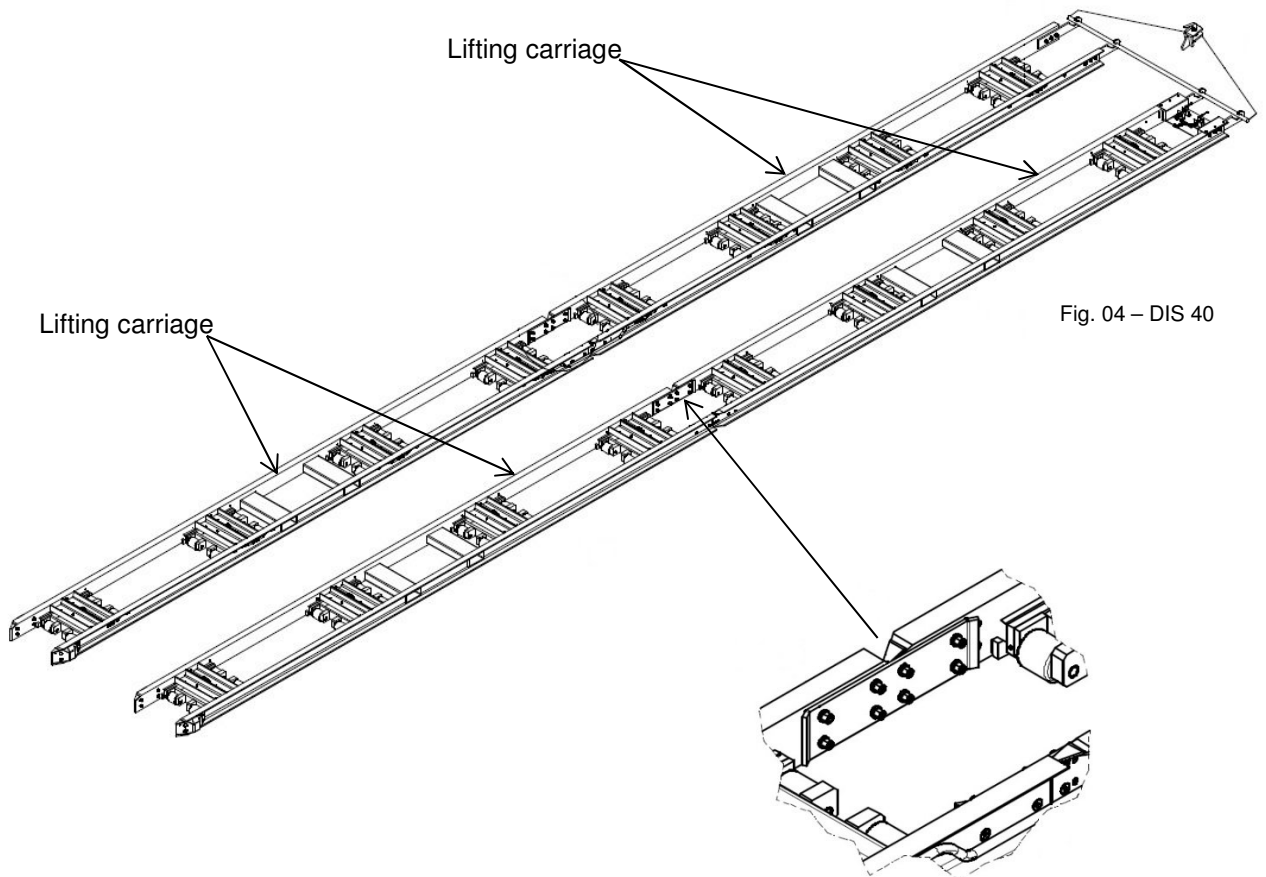


Fig. 04 – DIS 40

Fig. 05 – Connection of two lifting carriages

DIS 45 system:

Pneumatic connection plate:



Pneumatic connection plate

Fig. 06

Drawbar and connecting rod:




Fig. 07

Drawbar

Connecting rod

7 Start of operation

7.1 Establishing connections

	CAUTION
	Always arrange for power supplies (electrics, pneumatics) to be connected by qualified professionals.

Compressed air connection

- Check the main compressed air connection.
- Check the operating pressure that is to be set and adjust if necessary (see [section 4.2 “Technical data”](#)).

7.2 Checks before starting for the first time

Read the operating instructions carefully before putting the system into operation.

The following points are important in order to avoid problems with initial operation:

- Check that all the screws and bolts are securely fitted.
- Carry out a functional check of each movement.
- Check that assemblies are functioning properly.

Check that the product is safe to use before starting work.

8 Operation

8.1 Safety information

The safety precautions, safety advice and hazard warnings set out in [section 1.2](#) and [section 2.3](#) must be heeded and adhered to in respect of the use of the product.

Stop work as follows in case of irregularities or malfunctions:

- Shut off energy supply.
- Wait for system to come to a standstill.
- Affix warning signs (e.g. out of order).
- Rectify problem.
- Notify company manager / customer service / service engineer if necessary.

Do not rectify faults caused by jammed machine parts or trapped workpieces until the power (electric, pneumatic) has been disconnected.

Any damage or faults which could put people at risk must be remedied immediately and correctly. The system is to be taken out of use until such time as faults have been rectified.

8.2 Information with regard to operation

The device can be pushed under the special container filler pallet in the container by hand or by means of an industrial truck.




Fig. 08

The goods in the container are raised by means of the bellows cylinder and pulled out of the container.

9 Help in the event of problems

It is essential to heed the following points in order to avoid damage or life-threatening injuries when rectifying faults on the product:

- Do not attempt to rectify a fault unless you have the necessary skills and training to do so.
- Cordon off access to the working range of the moving machine parts.
- Read [section 2.3 “General safety information”](#).
- Wear personal protective equipment.
- Be aware of the risk of residual energy.
- Use aids to help rectify faults (insertion aids, gauges, auxiliary tools, etc.).

	WARNING
	Do not rectify faults caused by jammed machine parts and/or trapped workpieces until the power has been disconnected (electrics, pneumatics) and any residual energy has dissipated.




Wear personal protective equipment!

10 Maintenance and servicing

Regular servicing and careful monitoring and maintenance are essential for the operational reliability and longevity of the product.

10.1 Safety information

	WARNING
	The safety precautions, safety advice and hazard warnings set out in section 1.2 and section 2 must be heeded and adhered to in respect of the maintenance of the product.

Ensure **compliance with the accident prevention regulations!**

Repairs are to be carried out by **authorised and skilled professionals** only.

Inform operating staff before the start of servicing and maintenance work.

There must be no load on the unloading system during maintenance.

Measures should generally be taken before starting work to prevent moving parts from slipping, tilting, twisting, etc. in order to prevent injuries caused by crushing or cutting.

Work on electrical installations may only be carried out by qualified electricians, electricians qualified for specific electronic activities (FET) or persons trained in electrical engineering. Live parts in the control cabinets and distribution boxes are safe to touch with fingers, but there is a risk of tools coming into contact with live parts.

During servicing, inspection and repair work on the product, safety measures must be taken to **prevent it from being switched back on** (lock) and warning signs must be displayed (out of order - repairs in progress).

Do not embark on maintenance and servicing work **until the power has been disconnected** (electric, pneumatic) and any residual energy has dissipated (e.g. accumulator).

Exercise care when replacing relatively large assemblies and when attaching and securing them to hoisting gear.

Tests and inspections may only be carried out when the product is at a standstill.

Parts from suppliers are to be serviced **as specified by the manufacturer** in any given case.

Keep transportation routes clear.

On completion of all servicing and repair work, check that the product is in **perfect working order** and check all the **safety installations**.

The product must be in perfect condition before it can be put back into operation.

- Check that the screw fittings have been tightened back up.
- Check that all connections are tight when the maintenance work has been completed.

10.2 Service intervals

The service intervals should be appropriate to the conditions of use (weather influences, frequency of use).

Servicing instructions for purchased parts are set out in detail in the latest versions of the operating instructions of the manufacturer in any given case.

These documents are appended.

Always follow the instructions of the suppliers of spare parts.

Make sure components have CE markings (declaration of conformity/incorporation).

10.3 Cleaning and lubrication

To ensure smooth operation, clean and lubricate lift carriage rollers regularly.


11 Structural alterations to the machine

The consent of the manufacturer must be obtained before making any modifications to the product, fitting anything on it or making alterations to it. This also applies to welding on load-bearing parts.


Any modifications require the written approval of the manufacturer.

Replace immediately any parts that are not in perfect working order.

Use only original spare and wearing parts.

	WARNING
	Externally sourced parts cannot be guaranteed to be appropriate for the type of duty and to meet the safety requirements in terms of their design and build.

12 Removal from service / recommissioning

	WARNING
	<p>The safety precautions, safety advice and hazard warnings set out in section 1.2 and section 2 must be heeded and adhered to in respect of the removal from service / recommissioning of the product.</p>

12.1 General

If the product is to be out of operation for a long time (more than 6 months), it is advisable to preserve it.

If the product is put into interim storage, make sure of the following:


- The storage area is dry and clean.
- Take measures to prevent corrosion.
- Store level and horizontal (due to danger of warping).
- Check pressure hoses for chafing and leaks.

Read the section on "Start of operation" when putting the product back into operation after a long period out of use.

The following steps must be taken for the recommissioning process:

- Check that the product is safe to use.
- Clean the product carefully to remove dirt and deposits.
- Check that the pneumatic lines are tight.

12.2 Disposal

	NOTE
	<p>Follow the instructions under "Waste disposal" in the operating instructions!</p>

Always handle substances and materials carefully and dispose of them correctly, especially in the following cases:

- When working on lubricating systems and lubrication facilities.
- When using solvents for cleaning.

Follow the statutory waste disposal regulations which apply at the place of installation.

From our point of view, the following substances will need to be disposed of:

- Waste materials: aluminium, steel, pneumatic lines, plastics.
- Special waste: e.g. lubricating grease, oils,

13 Additional information

13.1 Service centre address

Do you have any further questions or requests? Please do not hesitate to contact us.

Our company address is as follows:

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D-86672 Thierhaupten

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