

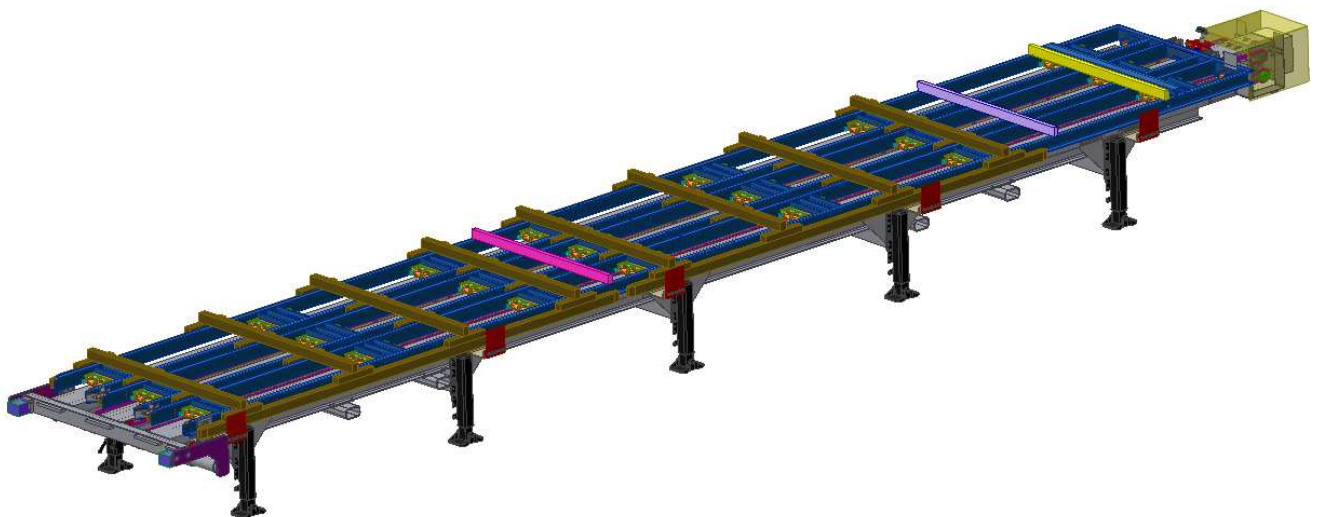
Original Operating Manual

Container-Filler

CFM 20

CFM 40

CFM 45



Version: March 2013

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1 General Information

1.1 Warranty

The warranty period is twelve months from the date of shipment under normal use and in compliance with the recommended maintenance and lubrication intervals.

In general, none of the wear and tear parts (such as seals, sealing elements, springs, bearings, etc.) are covered by the warranty. Please refer to our general terms and conditions on this topic!

1.2 Safety information

Regardless of the information described in this operating manual, the statutory safety and accident-prevention regulations apply.

Anyone who is charged with the operation, maintenance and repair of the product by the operator has to read and understand this operating manual, especially [Chapter 2 "Safety"](#), before commissioning. Detailed explanations can be found in [Chapter 1.5 "Notes on verified instructions of the operating personnel"](#).

The maintenance staff of the product generally bear their own responsibility for safety at work.

The compliance with all applicable safety and regulatory requirements is necessary to avoid personal injury and damage to the product during maintenance and repair work.

The maintenance staff must have read and understood these instructions before starting work.

The proper maintenance of the IBS products requires appropriately trained specialists. The operator or maintenance staff is responsible for the training. They must ensure that anyone who operates or maintains this product in the future receives the proper training.

This warranty is void if any damage is caused by improper operation.

Any warranty claims are invalidated in the case of repair work and/or interferences that were performed by persons that were not authorized to do them, as well as the use of accessories and spare parts that do not match our product.

Defects have to be repaired immediately to keep the extent of the damage at a minimum and not compromise the safety of the product.

Any further warranty claims become void in case of failure to comply.

We reserve the right to make changes due to technical improvements.

We have clearly highlighted all safety and warning information for you.

We used the following symbols and signal words:




Caution





Electr. voltage




Risk of crushing

	NOTE
	A note like this indicates particularly important information that is not directly risk-related.

	CAUTION
	CAUTION indicates a possible danger with a low risk that might result in light or moderate personal injury or material damages unless it is avoided.

	WARNING
	WARNING indicates a possible danger with a moderate risk that might result in death or severe personal injury unless it is avoided.

	DANGER
	DANGER indicates a direct danger with a high risk that might result in death or severe personal injury unless it is avoided.

We expressly point out that we do not assume any liability for damages resulting from non-compliance with this operating manual.

1.3 Documentation

The scope of delivery of the product designed and built by IBS GmbH includes comprehensive, equipment-specific documentation.

This documentation corresponds to the relevant standards and regulations. Assigning the correct part of the documentation to the proper target group is the user's responsibility. He has to ensure that at least one copy of the documentation is kept in the product's immediate vicinity and is accessible to the relevant target group.

The operating manual is part of the product and has to be retained throughout the product life.

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



Every person who will be working with the product must have read the appropriate documentation before starting work and become familiar especially with [Chapter 2 "Safety"](#). This applies particularly to personnel who are only occasionally working on the product, e.g. the maintenance staff.

1.4 Copyright

This operating manual and the operating documents remain the property of IBS GmbH in respect to copyright. It is only provided to our customers and the users of our products and belong to the product.

These documents may not be copied nor made accessible to third parties, especially competitive companies, without our express consent.

1.5 Note about verifiable training of the operating staff

To the operators of our products, we recommend that they make this operating manual, especially [Chapter 2 "Safety"](#) available to anyone who is charged with the products' operation, maintenance and repair so that they may gain the appropriate expertise.

Furthermore, we recommend that the operator creates in-house **Operating Instructions** in consideration of the operating staff's known qualifications.


Participation in instructions, training sessions, courses, etc., which serve to gain knowledge about the operation, maintenance and repair of the product, should be confirmed to the operator in writing.

2 Safety

2.1 Intended use

This machine, also referred to as “product” below, is suitable for the **loading and unloading of shipping containers (20’, 40’, 45’)**. Any other use may be dangerous. The specified maximum technical levels must not be exceeded!

The product may only be used in accordance with the technical data. This also includes compliance with the manufacturer’s specified commissioning, installation, operating, environmental and maintenance conditions.

	WARNING
	<p>If the machine is not used according to its intended use, safe operation cannot be guaranteed.</p> <p>The operator of the machine - not the manufacturer - is responsible for any personal injury or material damages caused by improper use!</p>

Basic principles

The product that is designed, built and placed on the market by IBS GmbH is intended for industrial use and complies with the specific safety regulations that are applicable at the time of delivery and which will be mentioned in detail below. The product uses state-of-the-art technology and corresponds to the acknowledged safety regulations at the time of delivery.

Any potential customer requirements were taken into account provided that they are part of the contract and do not violate existing safety regulations.

Personal protective gear

Your personal protective gear has to consist of at least the following:

- Protective gloves
- Safety shoes

These signs ask you to wear your personal protection gear.



Protective gloves



Safety shoes

Designated use

This product serves the designated use that was contractually agreed on by the manufacturer/supplier and the user, as well as the designated use that arises from the product description and the use in the scope of the technical values.

When used as intended and under consideration of the relevant safety regulations, the operational safety of the product can be guaranteed, as far as this can be predicted.


Improper use of the product may result in


- danger to the life and limb of the operator,
- danger for the product and other assets

danger to the operator or third parties.

For example, improper use may include

- exceeding the maximum load capacities or
- circumventing safety features.

	DANGER
	Improper use of the machine that does not comply with the valid safety norms and safety regulations can be a danger to the life and limb of the operator!

	WARNING
	Please ensure that the proper safety precautions are taking during the transport and handling of the machine. The machine may only be operated if all of the protective features are installed and functional. The existing protective features may not be circumvented, removed or disabled. Before starting work, ensure that it is in a safe operating condition.

Technical condition

The machine may only be used in technically flawless condition according to its intended use and in compliance with the relevant regulations. (Also see section [“Malfunctions” in Chapter 2.2](#))

The operator of the machine - not the manufacturer - is responsible for any personal injury or material damages caused by improper use!

2.2 Organizational Measures

Compliance with regulations

The operator has to take the appropriate organizational and instructional measures to ensure that the relevant safety rules and safety regulations are complied with by the people who are charged with the operation, maintenance and repair of the product.

Control of behavior

The operator has to check the safety and risk-conscious behavior of the staff at least occasionally.

Hazard warnings

The operator has to ensure that the safety notices and hazard information for the product are observed and that the signs are clearly legible.

Malfunctions

If there are any safety-related malfunctions in the product or if the working or production behavior indicates such malfunctions, the product has to be stopped immediately until the malfunction has been found and corrected. Malfunctions may only be remedied by trained and authorized personnel.

Modifications

No modifications, additions or alterations may be carried out on the product that might interfere with safety without the permission of the manufacturer/supplier. This also applies to the installation of safety features.

Spare parts

Only spare parts that meet the requirements specified by the manufacturer or supplier may be used. This is always guaranteed with original spare parts. Improper repairs or unauthorized spare parts will lead to the exclusion of the product liability/warranty.

Tests / inspections


Deadlines for routine tests and inspections that are prescribed or specified in the maintenance manual have to be observed.

Personnel selection, personnel qualification

- Work on/with the product may only be carried out by reliable personnel; the legal minimum age has to be observed.
- Only use trained and properly instructed personnel for the product and make use of the manufacturer's training offers if possible.
- Clearly and unambiguously define the spheres of the personnel's responsibility for the operation, maintenance and repair.
- Maintenance and repair work in the safety-relevant part of the product may only be carried out by personnel that can be regarded as technical experts in terms of the safety regulations.

- Define the operator's responsibility, also in terms of safety-conscious behavior; enable the refusal of instructions by third parties that are detrimental to safety
- Personnel that is undergoing training, instruction, advanced training or familiarization may only be allowed to work on/with the product under the constant supervision of an experienced person.

2.3 General safety instructions

	NOTE
	To avoid damages and endangering any persons, the machine has to be protected against unauthorized use when it is not being used.

- The loading and unloading equipment must be on a level and firm surface that is sufficiently measured for the support pressure.
- The loading and unloading equipment may only be used by authorized, trained and appointed persons.
- In addition to the operator, a second person must be present during the loading to monitor the driving motion with cargo, especially in the docking area.
- In general, the entire loading process must be monitored.
- The loading and unloading equipment may only be loaded when the vehicle is docked safely at the loading and unloading equipment or when the lifting frame and technical equipment are secured with a safety bolt; this ensures that the cargo will not roll off if a supporting device breaks.
- Staying underneath the base frame is strictly prohibited.
- A total of three emergency off-switches are mounted to the machine to stop the system in an emergency.
- Before maneuvering, the operator has to ensure that no one is inside the container and in the docking area.
- Before any maneuver, it has to be ensured that the selector is set to the correct cargo length (20', 40', 45').
- The lifting frame may never be traversed in an undocked condition, otherwise there is a risk of tipping.
- The chassis vehicle must generally be secured against rolling, e.g. by wheel chocks.
- When the machine is set up, a vertical angle of inclination of 1° (forward and backward) and a horizontal angle of inclination of 2° (lateral) has to be ensured.

Main switch



The product is equipped with a lockable main switch (according to EN 60204), which securely prevents any unauthorized operation of the product. The operator must ensure that the key for this switch is stored securely and that only authorized persons have access to this key.

Emergency off-switch

“Emergency off-switches” are installed in order to bring the product to an immediate stop in case of emergency.

Safety during maintenance

- Refrain from any work method with questionable safety.
- Only operate the product when all safety features are installed and functional.
- Check the product for exterior visible damage and defects at least once a day.
- Immediately report any changes including the operating behavior to the competent authorities/persons; if necessary, stop using the product immediately and secure it.
- Start the product again only when the source of the fault is removed.

Dangers in the use of the product

- Switch off power before eliminating any malfunctions caused by jamming machine parts or jammed parts.
- Any damages and errors that may endanger people have to be remedied immediately and properly; the equipment may not be used until these are eliminated; turn off the machine, secure the main switch against restarting with a lock and affix a sign with a notification.
- Perform measurement and control tasks only when the machine is at a standstill.

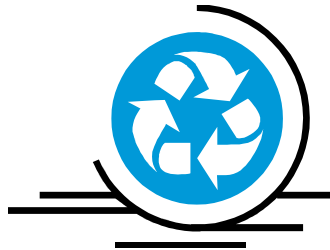
Maintenance instructions

The reliability of the product can only be guaranteed if the maintenance instructions in the operating manual are followed exactly. See notes in [Chapter 10 “Maintenance and Servicing”](#).

Environmental protection regulations


The applicable environmental protection regulations have to be complied with during all repair and maintenance work. When using cold cleaners, the most important regulations and laws are:


- Dangerous Substance Ordinance (GefStoffV)
- Water Resources Act (WHG)
- Waste Act (AbfG)
- Waste Documentation Ordinance (AbfNachwV)





When selecting lubricants and lubricating oils, pay attention to the environmental compatibility, health risks, disposal regulations and your local options for proper disposal.


Dangers of electricity

	DANGER
	<p>Follow the guidelines for switching the machine on and off. When you turn on the main switch, the electrical components are supplied with voltage. Open components in the control panel might be subject to voltage.</p>

	DANGER
	<p>Make sure that the machine is completely disconnected from the network and secured against switching on before undertaking any work in the control panel or on electrical equipment.</p>

	DANGER
	<p>Check the machine's electrical equipment regularly. Immediately have an expert remedy loose connections and singed cables.</p>

	DANGER
	<p>The design of electrical parts in the control panels and distribution boxes is finger-proof, but using tools still poses a risk of contact with live parts.</p>

	DANGER
	<p>Work on electrical equipment may only be performed by qualified professionals, specialists in specified electronic activities or persons with electrotechnical training.</p>

The control panel always has to be locked. Access is only permitted to authorized personnel.

3 Scope of delivery

The machine is supplied in a complete state (ready to use). The scope of delivery includes:

- Container Filler (20', 40' or 45')
- Operating instructions
- Electr. switch plan

The following accessories are available for the Container Filler:

- Adjustment device (Order no. ...)
- List of spare and wear and tear parts (Order no. ...)
- Transport equipment (Order no. ...)
- Integrated piston compressor (Order no. ...)

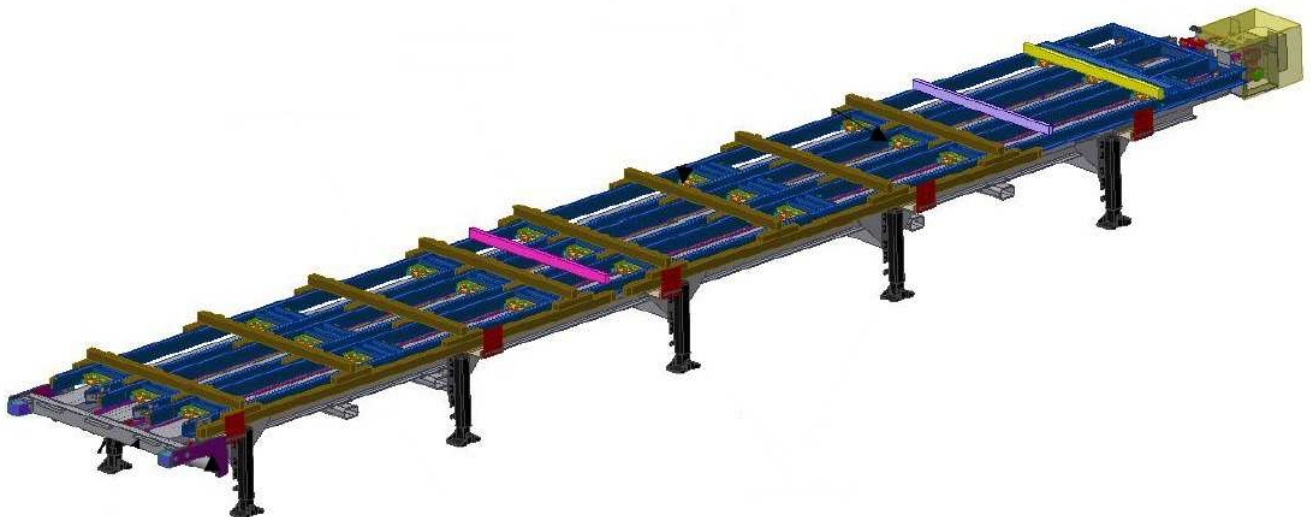


Image 01 – Container Filler

4 Product description

4.1 Structure and function of the machine

The loading and unloading Container Filler is an independent, functional machine.

Depending on the type, it is intended for the loading or unloading of shipping containers in the sizes of 20', 40' or 45'.

The machine may only be operated when docked to the container chassis vehicle. Precommissioning in an undocked state is possible in a secure basic position. Other uses are not permitted.

4.2 Technical data

	CFM 20	CFM 40	CFM 45
Length	8,000 mm	14,800 mm	16,400 mm
Width	2,600 mm	2,600 mm	2,600 mm
Height	1,200 mm	1,200 mm	1,200 mm
Dead weight	6,200 kg	9.,700 kg	10,500 kg
Max. load	25,000 kg	45,000 kg	45,000 kg
Max. compressed air connection	6 – 8 Bar	6 – 8 Bar	6 – 8 Bar
Electr. connection	400 Volts	400 Volts	400 Volts

Drive: Chain drive on both sides, roller chain DIN 8187-16 B1

Engine type: Bevel gear motor 1,5 kW

5 Transport

5.1 Transport information

The safety measures, occupational safety and hazard warnings described in [Chapter 1.2](#) and [Chapter 2.3](#) have to be observed and complied with for the transport of the machine.

- The machine has to be prepared for transport carefully.
 - Secure moving machine parts.
 - Close open line ends and protect them against penetration of dirt
 - Before lifting and removal, make sure that all connections have been removed.
 - Otherwise the power supply and connection cables might get damages.
- Only qualified personnel may disconnect all of the energy, supply and disposal connections.
- Select suitable packaging for the transport of the machine and secure it against slipping.
- Observe the accident-prevention regulations and local regulations.

5.2 Dimensions and weight

See [Chapter 4.2 “Technical data”](#)

5.3 Permitted devices and aids for transport

- The machine may only be transported/loaded with the appropriate forklift or crane (observe lifting capacities).
- Only suitable, undamaged and fully functional means of transport with sufficient load capacity may be used; the respective transport dimensions and transport weight (max. assembly weight) can be found in [Chapter 4.2 “Technical data”](#).

5.4 Transport to the assembly site

- A specialized company must be used for the external transport.

6 Assembly / Installation

6.1 Environmental conditions and space requirements

- The equipment may not be assembled in **explosion-risk areas**.
- No special foundation is required.
- Make sure that the ground has adequate load-bearing capacity (see [Chapter 4.2 “Technical data”](#) Column: Dead weight + max. load)
- When the machine is set up, a vertical angle of inclination of 1° (forward and backward) and a horizontal angle of inclination of 2° (lateral) has to be ensured.
- Ensure that there is a sufficient amount of work and traffic area.

6.2 Assembly and installation

The safety measures, occupational safety and hazard warnings described in [Chapter 1.2](#) and [Chapter 2.3](#) have to be observed and complied with for the assembly and installation of the machine.


- Be sure to observe the instructions of the suppliers when using individual components.
- When using supplied parts, observe the CE marking and declaration of conformity.
- Control the supply parts for damage and functionality prior to the installation.
- All modifications require a written confirmation from the manufacturer.
- In addition to the operating manual, observe the generally applicable and local regulations regarding accident prevention and environmental protection.
- Electrical installations may only be set up, changed and repaired by a qualified electrician.
- Observe the requirements for lubricating the machine and its component (see [Chapter 10.3 “Cleaning and lubricating”](#))
- When assembling the machine, make sure that all energy sources (electricity, pneumatics) are switched off and that there is no residual energy.
- When the packaging is removed:
 - Check the machine and accessories for transport damage.
 - Check for completeness based on the delivery slip.

6.3 Moving at the assembly site

- Internally, the operational machine can be moved on level ground with transport wheels.
- A “transport device” is available from the IBS company that allows moving the machine with a forklift (see [Chapter 8.12 “Notes on mobility”](#))

7 Initial operation

7.1 Setting up supply connections

	CAUTION
	All supply connections (electricity, pneumatics) may only be set up by qualified technicians.

Electrical connection

- Compare the network conditions and connection data with the data on the type plate.
- Mains voltage fluctuations max. $\pm 10\%$
- Information about the power supply and required fuses according to EL switch plan.
- Observe the clockwise rotation for the power supply.
- Observe the technical connection requirements.
- The grounding, offsetting, circuit breaker must be carried out according to local regulations.
- Observe the direction of rotation of the bevel gear motor.
- The motor protection switch and bi-metallic timer have to be set to the rated current of the respective consumer.
- All terminal points have to be checked for tightness and tightened further if necessary.

Compressed air connection

- Check the main compressed air connection
- Check the operating pressure to be set and readjust if necessary (see **Chapter 4.3** **“Technical data”**).

7.2 Checks before the initial start

Before the commissioning, the operating manual must be read carefully.

To avoid malfunctions at the startup, please note the following:

- Perform functional tests of the movements individually.
- Check the aggregates for functionality.

Before starting work, make sure the machine is in a safe operating condition.

8 Operation

8.1 Safety information


The safety measures, occupational safety and hazard warnings described in [Chapter 1.2](#) and [Chapter 2.3](#) have to be observed and complied with for the operation of the machine.

Stop work if there are any irregularities or malfunctions:

- Switch off the machine
- Wait for standstill
- If there is no visual contact with the location of the main switch, it has to be secured with a lock against restarting.
- Also install signs (e.g. machine out of service).
- Remedy the malfunction
- If necessary, notify the operational supervisor / customer service / service.

Switch off power (electricity, pneumatics) before eliminating any malfunctions caused by jamming machine parts or jammed parts.

Any damages and errors that may endanger people have to be remedied immediately and properly. The equipment may not be used until these are eliminated. Turn off the machine, secure the main switch against restarting with a lock and affix a sign with a notification.

	WARNING
	Follow the guidelines for switching the machine on and off. When you turn on the main switch, the electrical components are supplied with voltage. Open components in the control panel might be subject to voltage.

8.2 Notes on the operation of the support winches

- The manufacturer's operating manual must be followed when handling the support winches.
- The support winch may only be operated by authorized persons.
- When releasing the crank handle, watch for crank handle kickback.
- It always has to be set to the speed gear or load gear.
- When supporting the feet of the winch, make sure the ground is sufficiently solid.
- The lower and upper lift stop of the support winch may not be exceeded.
- No persons are allowed to stay beneath the machine during the up and down movements of the support winch.

8.3 Notes for docking the container chassis

- When docking the container chassis vehicle to the machine, no person may stay in the area between the device and the chassis vehicle.

- An authorized person must stand in the field-of-view of the truck driver at the side of the truck to execute the docking instructions.
- Once the docking to the machine's fixture has been completed, both tension screws for the container have to be locked and hand-tightened; additionally, a bolt plate has to be pivoted in on both sides for the power transmission.
- The tension screws and bolt plates may only be loosened and unlocked when the loading process is finished.

8.4 Description of the control elements



- Switch the **main switch** in the control panel to the "ON" position. When you turn on the main switch, the electrical components are supplied with voltage. The controls and sensors are already being supplied with voltage at "MAIN SWITCH ON".



Release any **EMERGENCY OFF-switches** that may be activated.

The EMERGENCY-OFF-switches are installed on the control console and to the right and left of the docking side.

Figure 02 - Control console with Emergency Off switch

8.5 Standstill in case of emergency



- Activate "EMERGENCY OFF"
- The push button "EMERGENCY OFF" acts like the button "system off".
- To reactivate:
 - Release the "EMERGENCY OFF" push button.
 - Switch the system on again.

8.6 Control console

The operation of the lifting movement is performed via a compressed air system with a 6 Bar connection line. Through the manual valve (figure 03), the load is raised by air actuators (lever to the right) or lowered (lever to left).



Figure 03: Manual valve - pneumatic system

Another control element is the electrical control console that is installed in the control panel (figure 04).

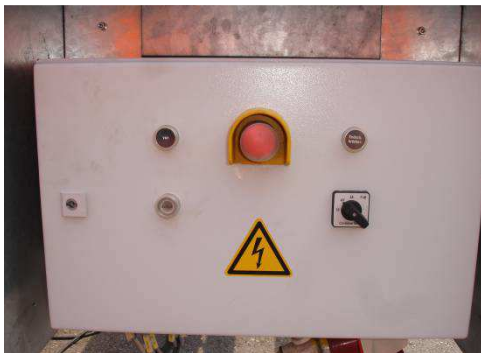


Figure 04: Control console in the control panel

The control console allows the lift truck to move in two directions ("forward", "back").

A limit-switch bypass button (two-hand operation) is installed for the fine adjustment of the limit switches.

The drive consists of a two-sided chain drive.

A travel movement with a load may only be carried out with a raised lifting frame.

A travel movement without a load is possible with a lowered as well as raised lifting frame.

8.7 Docking the container chassis vehicle to the machine

When docking the container chassis vehicle, the doors of the container must be open.

During the backward movement of the container chassis vehicle, the corners of the container are brought into position via the guides on the machine.

The height position can be adjusted with the support winches. By raising or lowering both supports in a coupled condition, the support that is not equipped with a crank handle first has to be adjusted to the required height. Then, by coupling the connecting shaft between the two supports, the height adjustment of the support with the crank handle is performed.

Another height adjustment to the machine may be accomplished by raising or lowering the chassis vehicle.

When the docking position has been reached, the tension screws (figure 05) must be locked and hand-tightened.



Figure 05

In addition, a bolt plate (figure 06) must be pivoted in on both sides for the power transmission from the machine.

When these snap in easily and with both bolts, a neutral docking position has been reached.



Figure 06

8.8 Equipping the machine

The machine can be equipped with a docked container or without a container (pre-commissioned).

In both cases, the locking pin (figure 07) that is located above the control panel has to be inserted. As long as this locking pin is inserted, there is no power supply - the lifting frame can not be moved.



Figure 07: Locking pin


A matching pallet is placed up to the stop on the lifting frame. Now it can be loaded.

The weight of the load must be distributed on the device as evenly as possible. The load itself may not protrude beyond the side of the pallet.

The load must be secured against sliding or rolling off the machine in accordance with the loading provisions from the cargo manufacturer.

If needed, loading aids can be attached to the device e.g. to make it easier for the forklift operator to lift the load onto the machine.

The loading aid makes it possible position the load optimally via a lateral limit and length restrictions.

	DANGER
	<p>Important! The lifting frame may never be moved in an undocked condition.</p> <p style="text-align: center;">Otherwise there is a risk of tipping!</p>


In case of loads that weigh five tons or more, the machine and the chassis vehicle must be leveled out before the load transfer.


The device should be lowered by 1 mm for each additional ton. This creates a neutral and level path between the machine and the container.

8.9 Container loading process

8.9.1 Option A: with tractor unit

Process: Moving the loaded lifting frame into the container

	DANGER
	<p>Before maneuvering, the operator has to ensure that no one is inside the container and in the docking area.</p> <p>Risk of injury!</p>

	DANGER
	<p>In addition to the operator, a second person must be present during the loading to monitor the driving motion with cargo, especially in the docking area.</p> <p>Risk of injury!</p>

Before the loading process, the load must be raised via the compressed air actuators to the maximum distance (4 cm).

This is done by moving the lever of the compressed air valve to the right (“Lift” symbol). Once the air actuators are completely filled (after about one minute), the lever has to be returned to its original position in the center. Then the compressed air line has to be disengaged.

Now the locking pin can be removed, which activates the electric circuit.

By pressing a button (“Forward” without self-locking), the chain drive becomes active and moves the lifting frame and its load into the container.

The end position of the load in the container is reached when the system is shut down automatically by the drive limit switch. When the load position is observed (see **Chapter 2.3 “General safety information”**), there is now a safety distance of about 2 cm between the cargo and the container wall.

The lifting frame has to be lowered to the end position via the lever of the hydraulic control valve (“Lower” the lever to the left). Then the lever has to be returned to the center starting position.

When another button is pressed (the “Back” button without self-locking), the lifting frame moves back out of the container. The button must be pressed until the system switches off automatically through the drive limit switch when it has reached the starting position.

8.9.2 Option B: without tractor unit

The same process applies for this variant, but here wheel chocks must be positioned on both sides of the chassis vehicle.

8.10 Container unloading process

8.10.1 Option A: with tractor unit

Process: Movement of the loaded lifting frame from the container.

Before unloading, make sure that the pallet in the container is compatible with the lifting frame.


During the loading process, the lifting frame is moved under the pallet in the container in a lowered position. This is triggered by pressing a button on the control panel ("Forward").

The compressed air line is connected and the pallet with its load is raised to its maximum extent through the "Lift" function on the control valve. When the lever is moved to the starting position (center), the compressed air line must be disconnected again.

By pressing the "Back" button, the chain drive is then activated and the lifting frame carries the cargo from the container back to the machine.

When the drive end position is reached, the locking pin has to be inserted.

Then the lifting frame must be lowered.

	DANGER
	<p>In addition to the operator, a second person must be present during the loading to monitor the driving motion with cargo, especially in the docking area.</p> <p style="text-align: center;">Risk of injury!</p>

8.10.2 Option B: without tractor unit

The same process applies for this variant, but here wheel chocks must be positioned on both sides of the chassis vehicle.

8.11 Undocking the container chassis vehicle from the machine

8.11.1 Option A : Load in the container (after loading)

In this process, the machine moved the load to the container and chassis vehicle.

There is no longer a neutral docking position.

It is not possible to pivot the bolt plates.

By slightly raising the chassis vehicle lowering the machine through the support winches, a neutral docking position can be reached again. This makes it possible to pivot the bolt plates.

Then the tension screws can be loosened and released.

The process is completed with the forward movement of the chassis vehicle.

8.11.2 Option B : Load on the machine (after unloading)

In this process, the load was transferred from the container with the chassis vehicle to the machine.


There is no longer a neutral docking position. It is no longer possible to pivot the bolt plates.

By slightly lowering the chassis vehicle or raising the machine through the support winches, a neutral docking position can be reached again. This also makes it possible to pivot the bolt plates.

Then the tension screws can also be loosened and released.

The process is completed with the forward movement of the chassis vehicle.

8.12 Information about the mobility

	DANGER
	The system may only be moved in an unloaded condition! Otherwise there is a risk of tipping!

Approved towing vehicles:

Only towing vehicles with enough loading capacity may be used (see load capacity diagram from the manufacturer).

Maximum vertical load: 3 tons

Maximum speed: 8 km/h

Terrain:

The system may only be moved on level terrain and sufficiently solid ground.

8.13 Information about the adjusting device

The adjusting device makes it easier for the container on the truck to dock to the container filler.




Figure 08: Adjusting device



Figure 09: Detail A of adjusting device


The loaded container filler can be moved across spindles via support feet with wheels that are located in the front and back of the system in guide troughs. This makes it possible to offset shifts in the lateral direction as well as inclined positions.

	DANGER
	<p>Before shifting, the pair of rollers that is positioned in the driving direction must be cranked up (figure 08, detail A).</p> <p>Otherwise there is a risk of tipping!</p>

9 Troubleshooting

To avoid damage or serious injury while repairing malfunctions on the machine, make sure to observe the following points:

- Only remedy a malfunction if you have the specified qualification.
- First secure the machine against unintentional restarting.
- Always have a second person ensure that the safety shutdown of the machine is effective.
- Secure the active areas of the movable machine parts.
- Also refer to **Chapter 2.3 “General safety information”**.
- Wear personal protective gear.
- Watch out for residual energy.
- Use tools for troubleshooting (joining aids, apprenticeship, tools, etc.)

	WARNING
	Switch off power (electricity, pneumatics) and make sure the residual energy is safely discharged before eliminating any malfunctions caused by jamming machine parts and/or jammed parts.




Wear personal protective gear!

10 Maintenance and servicing

Regular and accurate monitoring and maintenance are essential for the reliability and durability of the machine.

10.1 Safety information

	WARNING
	The safety measures, occupational safety and hazard warnings described in Chapter 1.2 and Chapter 2 have to be observed and complied with for the maintenance of the machine.

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

Repairs may only be performed by **authorized and qualified persons**.

Notify the operating personnel before beginning any maintenance and repair work.

The machine must not be loaded during the maintenance.

Before maintenance work, the machine has to be secured with the bolt in its default condition and the lifting frame must be lowered.

In general, all moving parts must be secured against slipping, tilting, twisting, etc. to prevent crushing or heavy injury before starting work.

Work on electrical equipment may only be performed by qualified professionals, specialists in specified electronic activities or persons with electrotechnical training. The design of electrical parts in the control panels and distribution boxes is finger-proof, but using tools still poses a risk of contact with live parts.

For all maintenance, inspection and repair work, the **voltage must be switched off in the machine** and the **main switch must be secured against restarting** (lock); also install signs (System off for repair).

Only perform maintenance or repair work **after switching off the power** (electricity, pneumatics) and safely releasing the residual energy (e.g. accumulator).

Larger assemblies must be carefully attached and secured to lifting jacks during the replacement.

Perform measurement and control tasks only when the machine is at a standstill.

Supplied parts have to be maintained **according to the manufacturer's instructions**.

Keep traffic routes clear.

After completion of all maintenance and repair work, check the **correct operation** of the machine and all **safety devices**.

The machine may only be restarted in flawless condition.

- Check loosened screw connections for tightness.
- After completing the work, check all connections leaks.
- Ensure that the safety devices are fully attached and functional.

10.2 Maintenance intervals

The maintenance intervals should be set according to lift performances.

Maintenance is recommended after about 100 lifts.

The maintenance instructions for purchased parts are described in detail in the latest operating instructions of the manufacturer.

These documents are included in the Appendix.

Make sure to observe guidelines by suppliers of spare parts.

Observe the CE marking (declaration of conformity or declaration of incorporation) for components.

10.3 Cleaning and lubricating

When cleaning, make sure that the electrical system corresponds to the protection policy IP 54.

When lubricating the support base spindle and spindle nut, use the special grease BP JS 14-2 Renolit LZR 2H.

Chain lubrication

The chain lubrication must be performed during standstill.

Check the chain tension (on both sides!) at regular intervals.

Optimal tension: Distance of 15-20 mm between the chain and mounting bracket of the protective cover (figure 10, 11).



Figure 10



Figure 11: Detail X

IMPORTANT: The chain must not rest on the console!

To change the chain tension, proceed according to the following points:

Point 1: Remove the engine cover (by loosening the four screws).

Point 2: Slightly loosen the engine screws (figure 12): max. half rotation (180°)!



Figure 12: Engine console

Point 3: Change the chain tension by turning the nuts (M24).

Tightening: **clockwise** (viewed from the control panel)

Loosening: **counterclockwise** (viewed from the control panel) (figure 13,14)

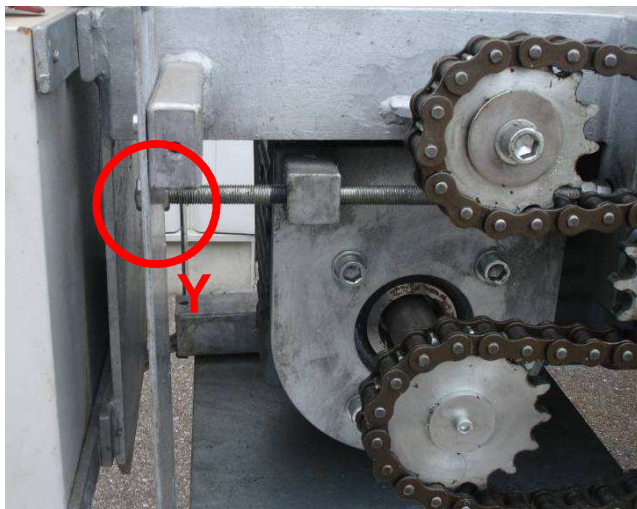



Figure 13



Figure 14: Detail Y

	DANGER
	When working on the chain drive, you must ensure that all possible injuries through compressions or shearing are avoided.

10.4 Inspection

The machine's safety devices must be inspected by a qualified person at least once a year.

Additional inspection regulations of the countries in which the device is used must be followed.


11 Structural modifications to the machine

No alterations, additions or modifications to the machine must be carried out without approval by the manufacturer. This also applies to the welding of structural components.


All modifications require a written confirmation from the manufacturer.

Immediately replace any machine parts that are not in flawless condition.

Only use original spare and wear and tear parts.

	WARNING
	For parts supplied by third parties, there is no guarantee that they will be designed and manufactured in a reliable and safe way.

12 Shutdown / return to service

	WARNING
	The safety measures, occupational safety and hazard warnings described in Chapter 1.2 and Chapter 2 have to be observed and complied with for the shutdown and return to service of the machine.

12.1 General information

If there is a prolonged shutdown (more than six months), it is advised to preserve the system.

If the machine is stored, the following points must be observed:

- Dry, clean storage area
- Protect against corrosion
- Level, horizontal storage (warping)
- Observe temperature
- Check hoses for scuffed areas and leaks

When restarting the machine after a long standstill, follow the information in the “Commissioning” section.

Take the following measures when returning the machine to service:

- Check that the machine is in a safe condition, including the protective devices.
- Perform a thorough cleaning of the machine to remove dirt and debris.
- If there is no visual contact with the location of the main switch during the shutdown/return to service, it has to be secured with a lock against restarting. Also attach information signs.
- Check and clean strainers, filters and magnetic separators, replace if necessary (follow the manufacturer's instructions).
- Check the tightness of the sealing elements.

12.2 Final decommissioning / final shutdown


- Switch off the machine.
- The power and ancillary supply lines must be disconnected only by qualified technicians and in compliance with the safety rules/regulations.

12.3 Dismantling / disassembly

- Switch off the machine, wait for standstill and secure against restarting.
- Only perform the dismantling/disassembly after the power (electricity, hydraulics, pneumatics) are shut off and after the safe release of residual energy.
- If there is no visual contact with the location of the main switch during the disassembly, it has to be secured with a lock against restarting. Also attach information signs.

- Disconnection of all power and supply connections.
- Open line ends must be protected to prevent dirt from entering them.
- Do not remove the line markings.

12.4 Disposal

	NOTE
	Disposal according to the operating instructions “Waste disposal”!

All substances and materials must be handled and disposed of properly, especially

- in case of work on lubricated systems and equipment
- when cleaning with solvents

Follow the legal waste disposal regulations that are applicable at the assembly site.

In our view, the following substances must be disposed of:

- Waste materials: aluminum, steel, pneumatic lines, electric/electronic components, plastics
- Hazardous waste: e.g. grease, oils, etc.

13 Additional information

13.1 Service address

Do you have any questions or requests? We would be glad to help you.

Our company address is:

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Gemeindewald 4-6

D-86672 Thierhaupten

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