

Operating manual

Lithium-ion Transport Container

Type LIP-F 400, LIP-F 400-1, LIP-F 400-2

(Version 1)

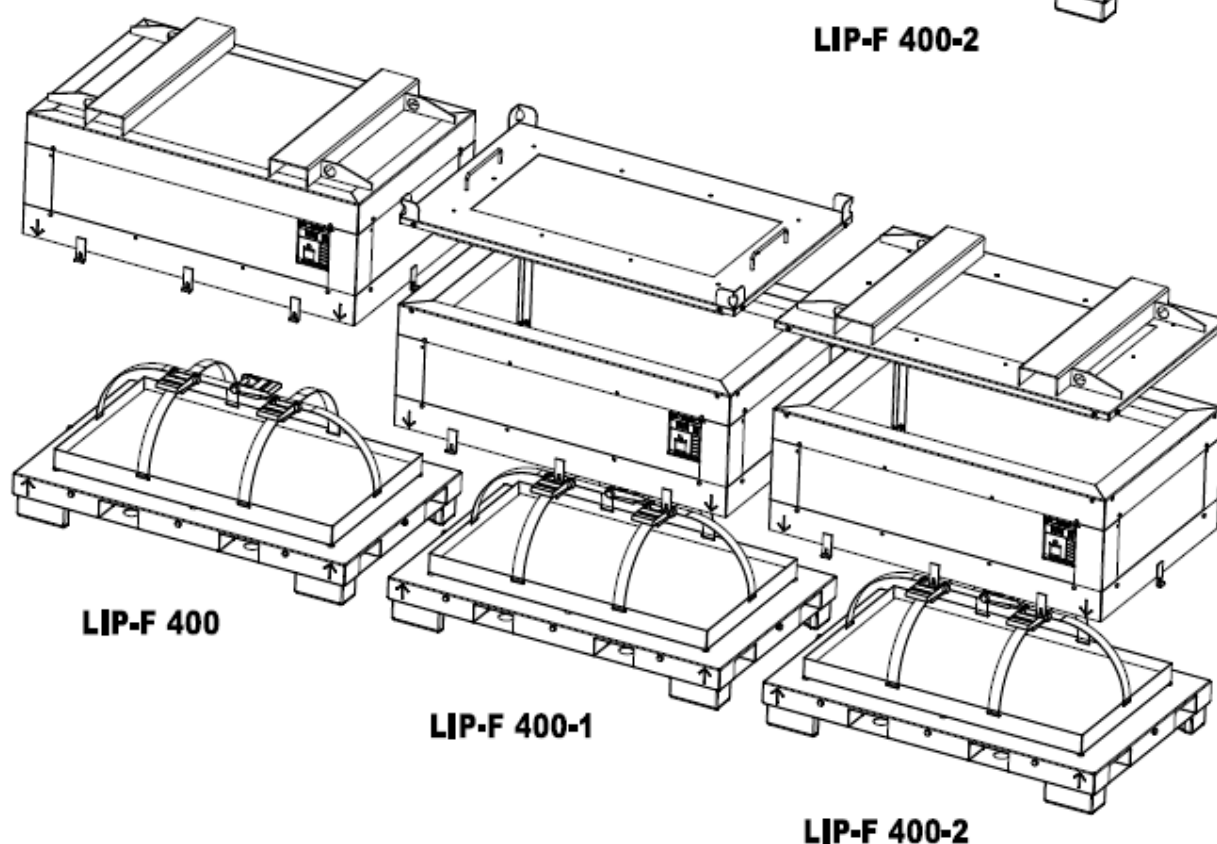
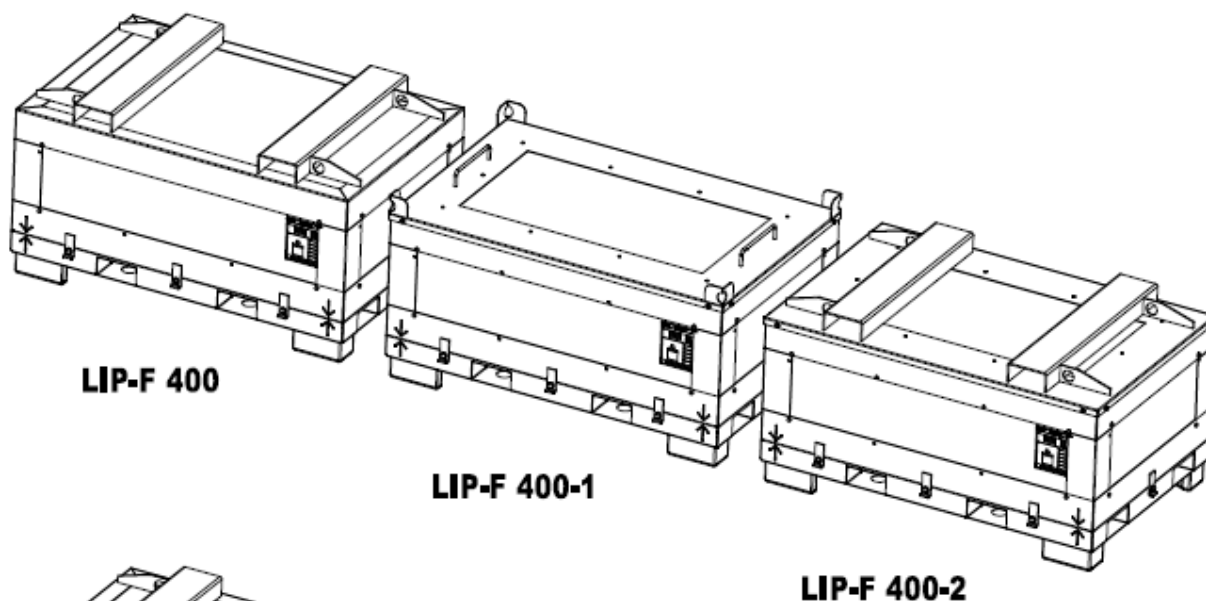




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1 Product description

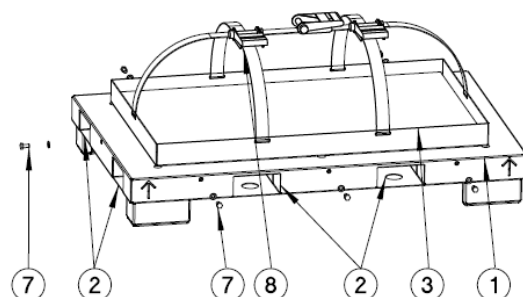
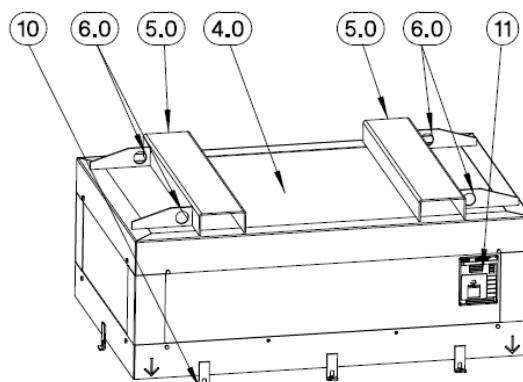
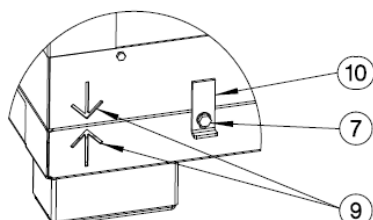
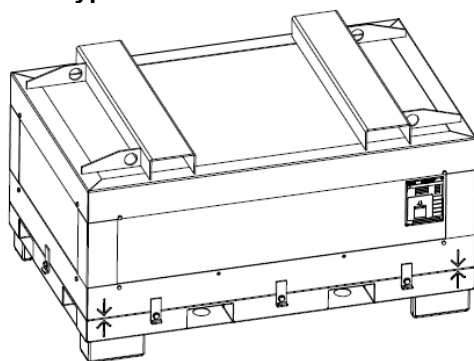
1.1 Technical data

Type	LIP-F 400	LIP-F 400-1	LIP-F 400-2
External dimensions in mm			
Length	1040		
Width	1590		
Height	842		
Internal dimensions in mm			
Length	788		
Width	1344		
Height	411		
Ground clearance in mm	100		
Collection volume of tray to upper edge in litres	25		
Packaging code	4A/X650/S/./GB/6923		
Permissible total weight in kg	650		
Tare weight in kg	360	367	398
Material container	Steel		
Filling material	Isorock fire protection panels resp. Pflaum fire protection panel F, Priodek fire protection panel		

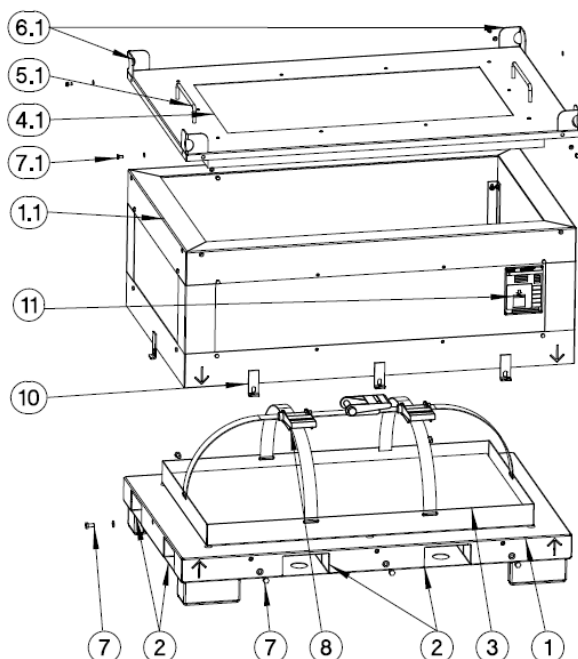
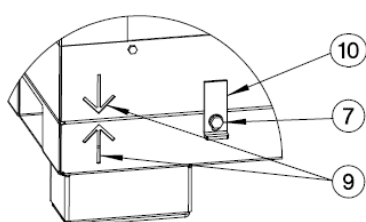
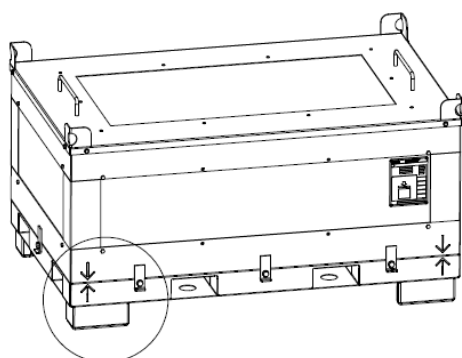
1.2 Layout

Item	Name
1	Base frame
1.1	Frame (LIP-F 400-1)
1.2	Frame (LIP-F 400-2)
2	Base frame forklift pockets
3	Collecting tray including fire protection plate
4.0	Hood incl. fire protection panels (LIP-F 400)
4.1	Cover incl. fire protection panels (LIP-F 400-1)
4.2	Cover incl. fire protection panels (LIP-F 400-2)
5.0	Hood entry pockets (LIP-F 400)
5.1	Cover handle (LIP-F 400-1)
5.2	Cover entry pockets (LIP-F 400-2)
6.0	Hood crane eyelets (LIP-F 400)
6.1	Cover crane eyelets (LIP-F 400-1)
6.2	Cover crane eyelets (LIP-F 400-2)
7	Hood screw connection with the base frame
7.1	Screwing of the cover to the frame (LIP-F 400-1)
7.2	Screwing of the cover to the frame (LIP-F 400-2)
8	Strap including ratchet
9	Marking arrows
10	Screw connection strap
10.1	Holes for screwing with cover (LIP-F 400-1)
10.2	Holes for screwing with cover (LIP-F 400-2)
11	Type plate

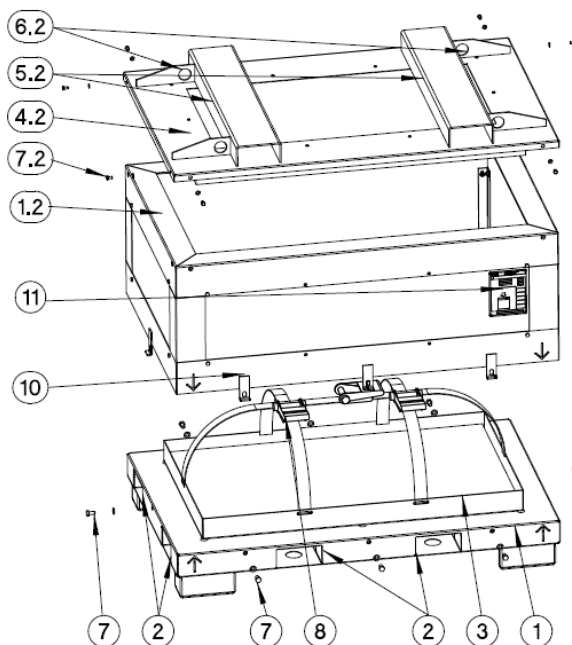
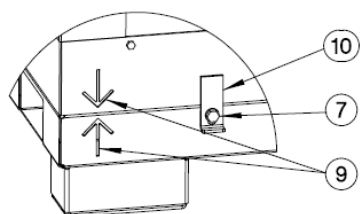
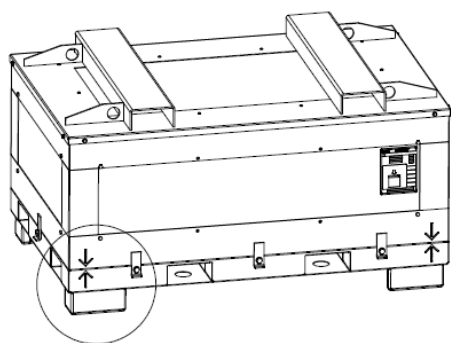
Type LIP-F 400



Type LIP-F 400-1



Type LIP-F 400-2



2. Safety instructions

2.1 Intended use

The transport container is used to store and transport lithium-ion and lithium-metal cells and batteries. The transport container may only be used in an undamaged and unmodified state. The integrity of the transport container must be checked before each use.

2.2 Information about fire protection panels and fire protection plates

The fire protection panels have a fire resistance class EI 90 according to EN 13501-2 and have a thickness of 100 mm.

The fire protection plate consists of a non-combustible plate building material with a thickness of 42 mm.

3 Use

Attention

Before each use, check the integrity of the transport container and the other components such as fire protection panels, fire protection plates, lashing straps including ratchets and the screw connections.

3.1 Storage

3.1.1 Safety instructions



Warning

Risk of injury due to falling parts.

Serious to fatal injuries.

Only move transport containers with suitable forklifts / pallet trucks at the designated pick-up points, as well as with suitable lifting tackle at the intended crane eyes.

No person standing in the working area of the forklift / pallet truck or the lifting gear.



Danger

Risk of poisoning due to toxic, sometimes odourless gases.

Serious to fatal injuries.

Leave the danger area as soon as possible in the event of a thermal runaway of the cells or batteries.



Danger

Risk of explosion due to explosive gases.

Serious to fatal injuries.

Avoid sources of ignition in the event of a thermal runaway of the cells or batteries. Provide adequate ventilation if possible.

3.1.2 Storage instructions

- Only personnel who have received training and instruction may be commissioned to set up and store the containers.
- **The storage of dangerous goods in defective and leaky transport containers is prohibited.**
- **The storage space must be well ventilated.**

- The transport container must be set up on a level surface **beneath roofing**.
- The transport container must be protected from the weather, direct sunlight and radiant heat.
- The transport container must not be endangered by the vehicle traffic, work equipment or loads.

3.2 Transport

3.2.1 Safety instructions



Danger

Risk of poisoning due to toxic, sometimes odourless gases.

Serious to fatal injuries.

Leave the danger area as soon as possible in the event of a thermal runaway of the cells or batteries.



Danger

Risk of explosion due to explosive gases.

Serious to fatal injuries.

Avoid sources of ignition in the event of a thermal runaway of the cells or batteries. Provide adequate ventilation if possible.



Warning

Risk of injury due to falling parts

Serious to fatal injuries

Only move transport containers with suitable forklifts / pallet trucks at the designated pick-up points, as well as with suitable lifting tackle at the intended crane eyes.

No person standing in the working area of the forklift / pallet truck or the lifting gear.

3.2.2 Transport instructions

- The relevant legal regulations must be observed during transport. This also applies to any additional markings and labels.
- Only personnel who have received training and instruction may be commissioned to transport and carry out the moving procedures of the transport container. Moving procedures and transportation of the containers may only be carried out using suitable, operationally reliable means.
- The hood / cover must be screwed tightly to the base frame / frame before transport.
- The transport container may only be transported
 - with the forklift truck/pallet truck at the forklift pockets provided on the base frame
 - with suitable lifting gear at the lifting eyes provided on the hood / cover.
- The entry pockets of the hood / cover are only for lifting the hood / cover, **not** for transporting the container.

- Anti-slip mats must be placed beneath the feet of the transport container to increase the adhesion resistance. The load is secured by lashing down with lashing straps that are placed over the hood / cover.

3.3 Opening the transport container

3.3.1 Safety instructions



Caution

Jamming hazard between hood / cover and base frame / frame.

Minor injuries to fingers and hands.

Wear work gloves. Do not place fingers or hands between the hood / cover and the base frame / frame.



Warning

Risk of injury due to falling parts.

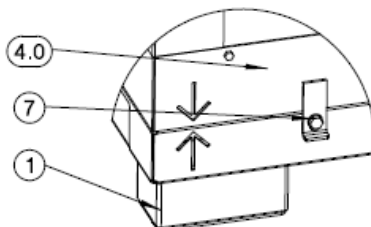
Serious to fatal injuries

Only move the hood / cover of the transport containers with suitable forklifts / pallet trucks at the designated pick-up points, as well as with suitable lifting tackle at the intended crane eyes.

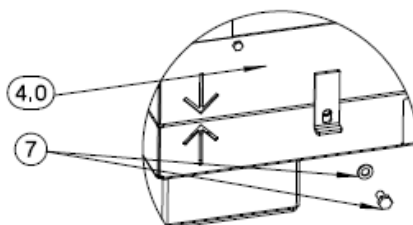
No person standing in the working area of the forklift / pallet truck or the lifting gear.

3.3.1.1. Work flow LIP-F 400

In the delivery state, the transport container is closed by the screw connection (7) on the hood (4.0) and base frame (1).



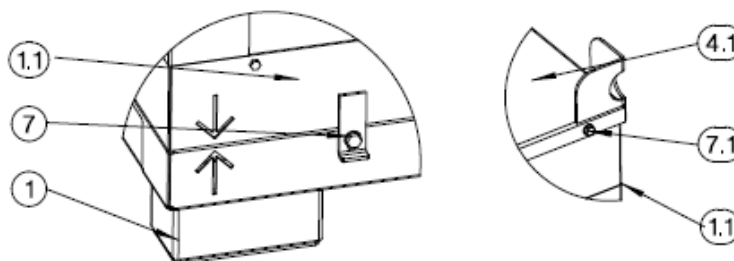
1. To **open the hood** (4.0), loosen the eight hexagon bolts (7) and remove them together with the washers.



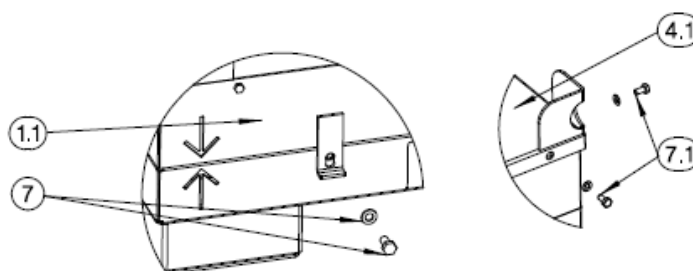
- 2.1 Drive the **forklift truck** into the pockets (5.0) of the hood (4.0), lift the hood (4.0) and place it next to the base frame (1).
- 2.2 Attach the **lifting gear** with the safety catches to the crane eyes (6.0) of the hood (4.0). Lift the hood (4.0) with the crane and place it next to the base frame (1).

3.3.1.2. Work flow type LIP-F 400-1

In the delivery state, the transport container is closed by the screw connection (7) on the frame (1.1) and base frame (1) and the cover (4.1) is firmly closed by the screw connection (7.1) with the frame (1.1).



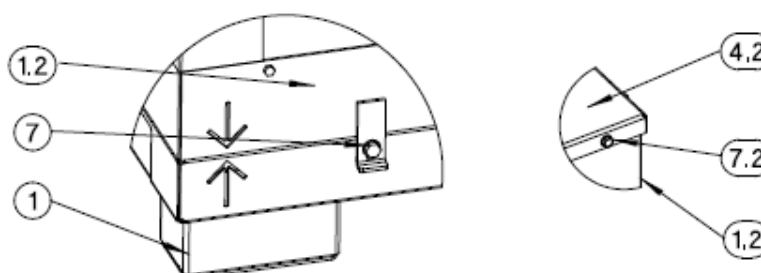
- 1.1 To **open the frame (1.1) incl. cover (4.1)**, cover remains firmly screwed to the frame) loosen the eight hexagon head screws (7) and remove them together with the washers.
- 1.2 To **open the cover (4.1)**, loosen the eight hexagon bolts (7.1) and remove them together with the washers.



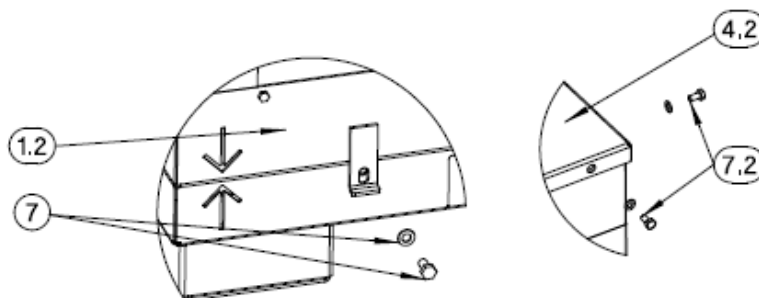
- 2.1 With **2 persons**, hold the **open cover (4.1)** by the handles (5.1), lift the cover (4.1) and place it next to the frame (1.1).
- 2.2 Attach the **lifting gear** with the safety catches to the crane eyes (6.1) of the cover (4.1). Lift the hood (4.1) or frame (1.1) including the cover (4.1) with the crane and place it next to the base frame (1).

3.3.1.3. Work flow type LIP-F 400-2

In the delivery state, the transport container is closed by the screw connection (7) on the frame (1.2) and base frame (1) and the cover (4.2) is firmly closed by the screw connection (7.2) with the frame (1.2).

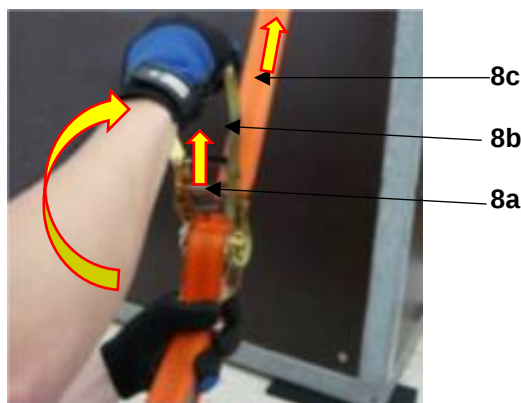


- 1.1 To **open the frame (1.2) incl. cover (4.2)**, cover remains firmly screwed to the frame) loosen the eight hexagon head screws (7) and remove them together with the washers.
- 1.2 To **open the cover (4.2)**, loosen the eight hexagon bolts (7.2) and remove them together with the washers.



- 2.1 Drive the **forklift truck** into the entry pockets (5.2), lift the cover (4.2) or the frame (1.2) including the cover (4.2) and place it next to the base frame (1).
- 2.2 Attach the **lifting gear** with the safety catches to the crane eyes (6.2) of the cover (4.2). Lift the hood (4.2) or frame (1.2) including the cover (4.2) with the crane and place it next to the base frame (1).

3.3.1.4. Opening the strap-



Pull the gate valve (8a) while turning the ratchet handle (8b) to the 180° position. Pull out the strap (8c).

3.4 Packing the hazardous substance

3.4.1 Safety instructions



Warning

Risk of poisoning due to toxic substances escaping from the cells or batteries.

Serious to fatal injuries.

Wear protective equipment suitable for the hazardous substance.



Warning

Danger due to high electrical voltage.

Serious to fatal injuries.

Cover the battery contacts with electrically insulating materials. Wear sufficient electrically insulating protective equipment.

Attention

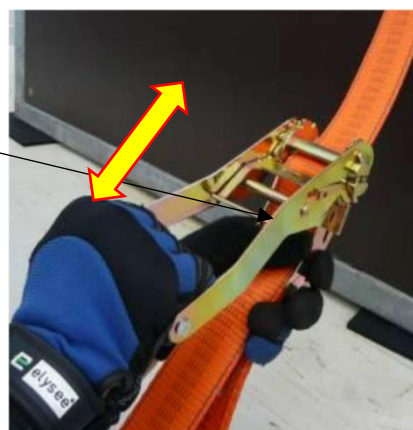
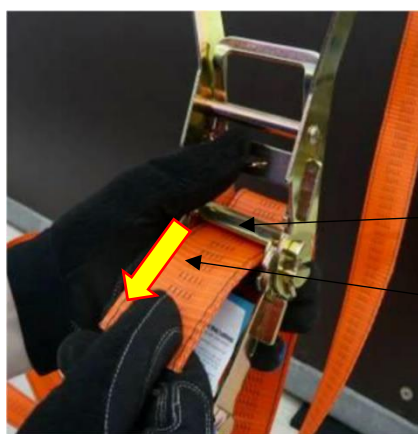
Due to the production of dust that occurs, the use of respiratory protection (filter type P2) is recommended to prevent damage to the respiratory organs.

3.4.2 Packaging instructions

The distance between the battery and the container walls depends on the battery (design, energy content, condition, etc.). If the minimum distances are not specified in the transport specifications, a minimum distance of 20 cm to the container walls and cover is recommended.

3.4.3 Work flow

1. Open the transport container (see section 3.3.1).
2. Insert the dangerous goods according to the packaging instructions (see section 3.4.2).



3. Place the strap around the dangerous goods, thread the strap (8c) through the gap (8d) and pull it through as far as possible by hand. Move the ratchet handle (8b) up and down several times until the required preload force is achieved, then close the ratchet.
4. Close the transport container (see section 3.5.1).

3.5 Closing the transport container

3.5.1 Safety instructions



Warning

Risk of injury due to falling parts.

Serious to fatal injuries.

Only move the hood / cover (with entry pockets) of the transport containers with suitable forklifts / pallet trucks at the designated pick-up points, as well as with suitable lifting tackle at the intended crane eyes.

No person standing in the working area of the forklift / pallet truck or the lifting gear.



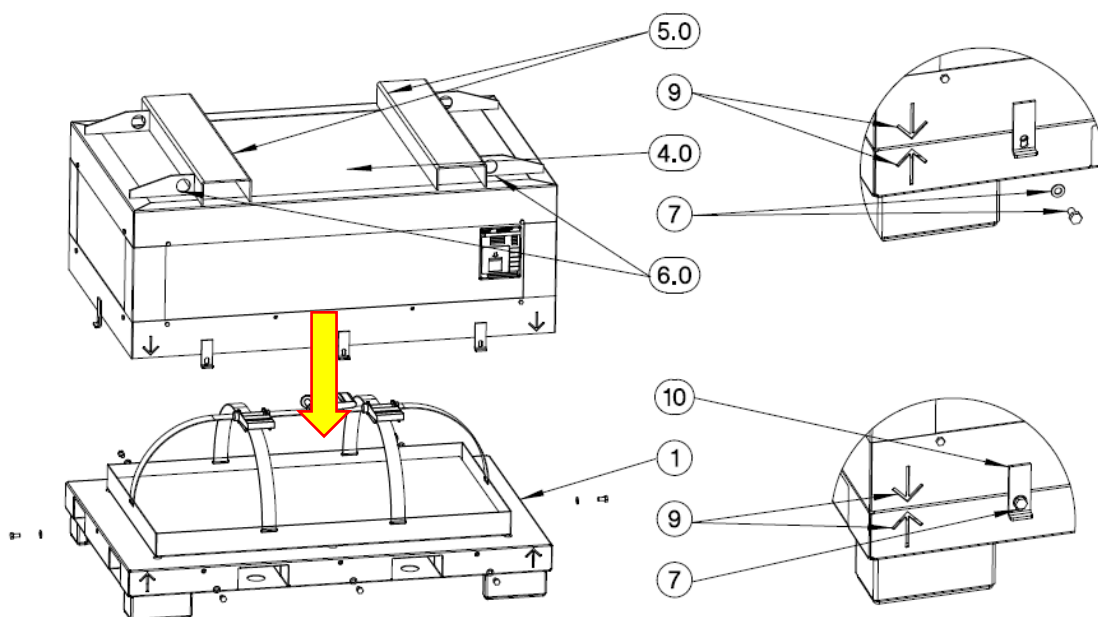
Caution

Jamming hazard between hood / cover and base frame / frame.

Minor injuries to fingers and hands.

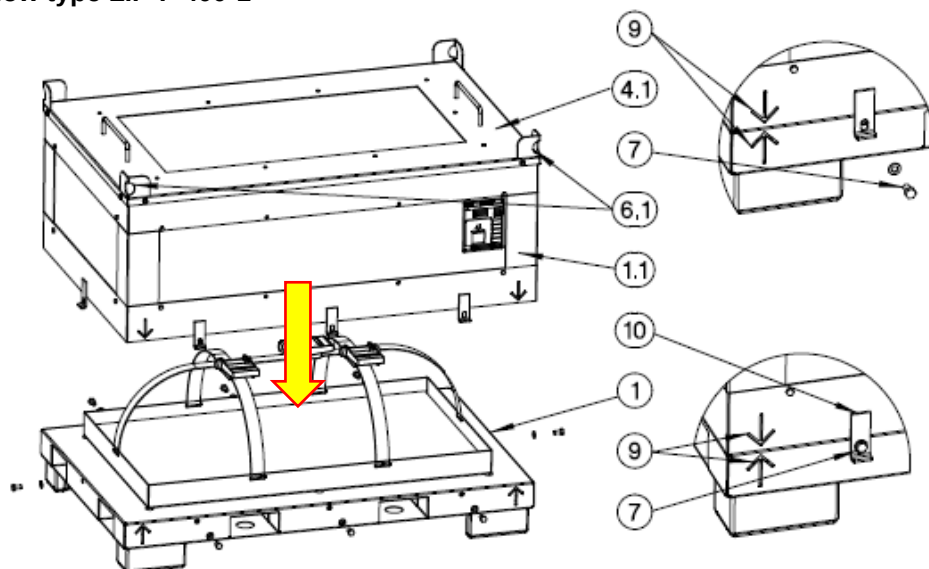
Wear work gloves. Do not place fingers or hands between the hood / cover and the base frame / frame.

3.5.1.1. Work flow type LIP-F 400

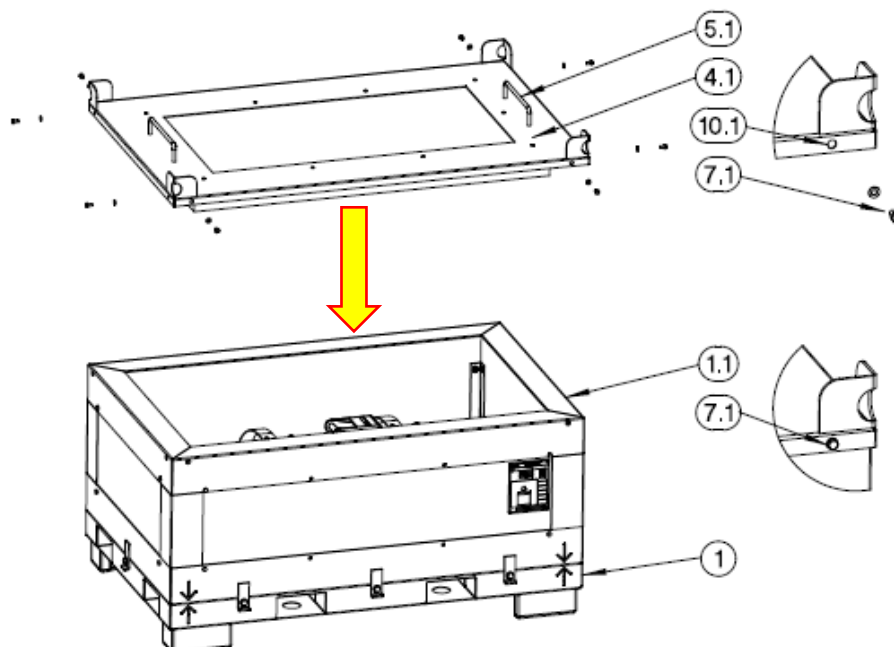


- 1.1 Drive the **forklift** into the forklift pockets (5.0) of the hood (4.0), lift the hood (4.0) and place it on the base frame (1) so that the marking arrows (9) on the hood (4.0) and the base frame (1) match.
- 1.2 Attach the **lifting gear** with the safety catches to the crane eyes (6.0) of the hood (4.0). Place the hood (4.0) on the base frame (1.0) with the crane so that the marking arrows (9) on the four corners of the hood (4.0) and the base frame (1) match.
2. Insert the eight hexagon bolts (7), underlaid with the washers, through the screw connection straps (10) and screw tight.
The hood (4.0) is therefore firmly sealed to the base frame (1).

3.5.1.2. Work flow type LIP-F 400-1



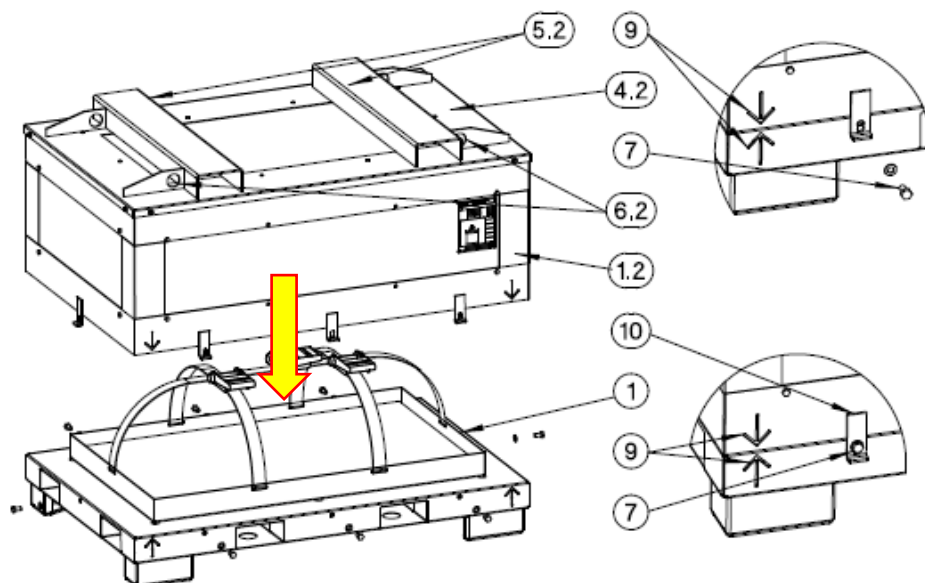
- 1.1 When the **frame (1.1) including the cover (4.1) is open**, hook the lifting gear with the safety catches into the crane eyelets (6.1) of the cover (4.1), lift it with the crane and place it on the base frame (1) so that the marking arrows (9) on the four corners of the frame (1.1) and the base frame (1) are aligned.
- 2.1 Insert the eight hexagon bolts (7), underlaid with the washers, through the screw connection straps (10) and screw tight.
The frame (1.1) is therefore firmly sealed to the base frame (1).



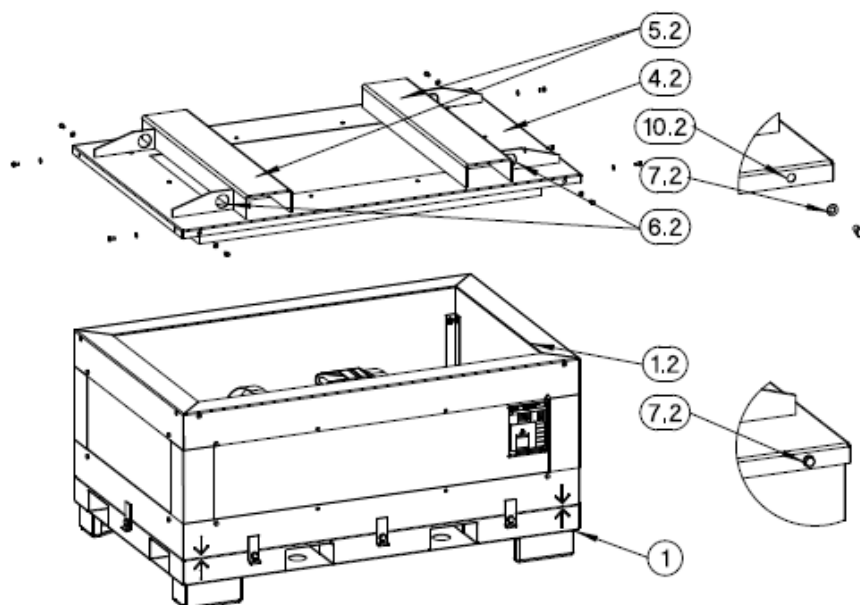
- 1.3 With the **cover (4.1) open**, have **2 people** hold the handles (5.1) of the cover (4.1), lift the cover (4.1) and place it on the frame (1.1).
- 1.4 With the **cover (4.1) open**, hook the **lifting gear** with the safety catches into the crane eyelets (6.1) of the cover (4.1), lift with the crane and place on the frame (1.1).

- 2.2 Insert the eight hexagon bolts (7.1), underlaid with the washers, through the holes (10.1) on the cover (4.1) and screw tight.
The cover (4.1) is therefore firmly sealed to the frame (1.1).

3.5.1.3. Work flow type LIP-F 400-2



- 1.1 With the **frame (1.2) including the cover (4.2)** open, drive the **forklift truck** into the entry pockets (5.2) of the cover (4.2), lift the frame (1.1) including the cover (4.2) and place it on the base frame (1) so that the marking arrows (9) of the frame (1.1) and the base frame (1) are aligned.
- 1.2 When the **frame (1.2) including the cover (4.2)** is open, hook the **lifting gear** with the safety catches into the crane eyes (6.2) of the cover (4.2), lift it with the crane and place it on the base frame (1) so that the marking arrows (9) on the four corners of the frame (1.2) and the base frame (1) are aligned.
- 2.1 Insert the eight hexagon bolts (7), underlaid with the washers, through the screw connection straps (10) and screw tight.
The frame (1.2) is therefore firmly sealed to the base frame (1).



- 1.3 With the **cover (4.2) open**, drive with the **fork lift truck** into the entry pockets (5.2) of the cover (4.2), lift the cover (4.2) and place it on the frame (1.2).
- 1.4 With the **cover (4.2) open**, hook the **lifting gear** with the safety catches into the crane eyelets (6.2) of the cover (4.2), lift with the crane and place on the frame (1.2).
- 2.2 Insert the eight hexagon bolts (7.2), underlaid with the washers, through the holes (10.2) on the cover (4.2) and screw tight.
The cover (4.2) is therefore firmly sealed to the frame (1.2).

3.6 Removal of dangerous goods

3.6.1 Safety instructions

If deposits, discolouration or a pungent odour are detected on the storage container, you must assume that electrolytes are leaking or there is thermal runaway of the battery.



Danger

Risk of poisoning due to the inhalation of contaminated dust.

Serious to fatal injuries.

After a thermal runaway of the cells or batteries or the leaking of electrolytes, only open storage containers with protective equipment suited to the hazardous substance.



Warning

Risk of explosion due to explosive gases.

Serious to fatal injuries.

Avoid sources of ignition after a thermal runaway of the cells or batteries.
Provide adequate ventilation if possible



Warning

Danger due to high electrical voltage.

Serious to fatal injuries.

Cover the battery contacts with electrically insulating materials. Wear sufficient electrically insulating protective equipment.

3.6.2 Work flow

1. Open the transport container (see section 3.3.).
2. Remove the battery.

Attention

The mechanical strain on the battery can lead to a thermal breakdown of the battery (see section 3.6.1).

4 Maintenance and repair

4.1 Maintenance

4.1.1. Safety instructions



Warning

Risk of poisoning due to toxic substances escaping from the cells and batteries

Serious to fatal injuries

Wear protective equipment suitable for the hazardous substance

4.1.2 Maintenance instructions

Any soiling caused by substances escaping from cells or batteries on the transport containers must be removed. Only cleaning agents that do not attack the material of the transport container (steel) or that of the fire protection panels and fire protection plate may be used for this.

4.2 Repairs

Damaged transport containers must not be re-used. Repairs may only be carried out by specialists authorised by the manufacturer or by the manufacturer themselves.

5 Disposal/environmental protection

The reusable materials in the transport container can be recycled and taken to an appropriate waste collection centre.



Danger

Risk of poisoning due to the inhalation of contaminated gases

Serious to fatal injuries

Wear protective equipment suitable for the contamination.

Contaminated components must be disposed of properly according to their contamination.



6 Spare parts

All details you need to obtain spare parts can be found in the spare parts list. We need the following details to be able to process your order rapidly:

- our item number for each spare part
- our item designation for each spare part
- the order quantity
- designation of the container, manufacturer's number and year of manufacture

Store the spare parts in a dry, dust-free environment and protect them from frost and heat. We also recommend creating a small storage area for these parts.

We would like to explicitly state that spare parts and accessories not supplied by us have not been checked and approved by us. The installation, attachment and use of such parts may influence the structural properties of the container, under certain circumstances.

We give no guarantee and assume no liability for damage caused by the use of non-original parts and accessories.

7 Contact data

Bauer GmbH
Eichendorffstraße 62
46354 Südlohn, Germany
Tel. +49 2862 / 709-0
Fax + 49 2862 709-155 /-156
E-mail: info@bauer-suedlohn.de

8 Customer service

Customer service is provided within the scope of the warranty. The warranty period is 1 year after the initial commissioning of all parts except wear parts. Customer service beyond this period requires a separate agreement or it can be arranged with us if necessary and carried out for a fee.

For any technical problems, please contact the address specified above.

Please note the current legal provisions for the above mentioned points