

# TRIMO



TRIMO MODULAR UNIT  
TRANSPORT AND STORAGE

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## 1 LOADING AND UNLOADING OF TRIMO MODULAR UNIT

Standard dimensions of Trimo modular units are adopted to meet all means of transport that are used to the transportation of ISO containers.

Assembled and/or flat-packed modular units can be handled (unloading, loading, transshipment) with a forklift (load bearing capacity of minimum 3 tons and length of fork minimum 2,450 mm) or by crane. Loading and unloading with forklift trucks that have special in-built grips (spreaders) for work with modules is also possible. By the manipulation of modular units should you be particularly careful to avoid mechanical damage of the modular unit.

If lifting device is used for handling assembled or flat-packed unit it is necessary to use load bands with an appropriate load capacity. When handling modular units without forklift openings insert protective rubber between unit and forks to prevent damages on steel frame.

When lifting, it is necessary to ensure that the centre of gravity is situated between the forks or the load bands.

Only one flat-packed modular unit may be handled at a time.

When loading into truck, cargo protection foam should be placed between truck's support framework and modular unit's frame to prevent damages on modular unit's frame.

When unloading from the truck, the truck tarpaulin must be uncovered, and the support framework must be removed to such an extent that the modular units cannot be damaged upon lifting.

### 1.1. Handling of modular units with forklift

#### 1.1.1 Modular units with forklift openings

Fig. 1.1a: Modular units with forklift openings

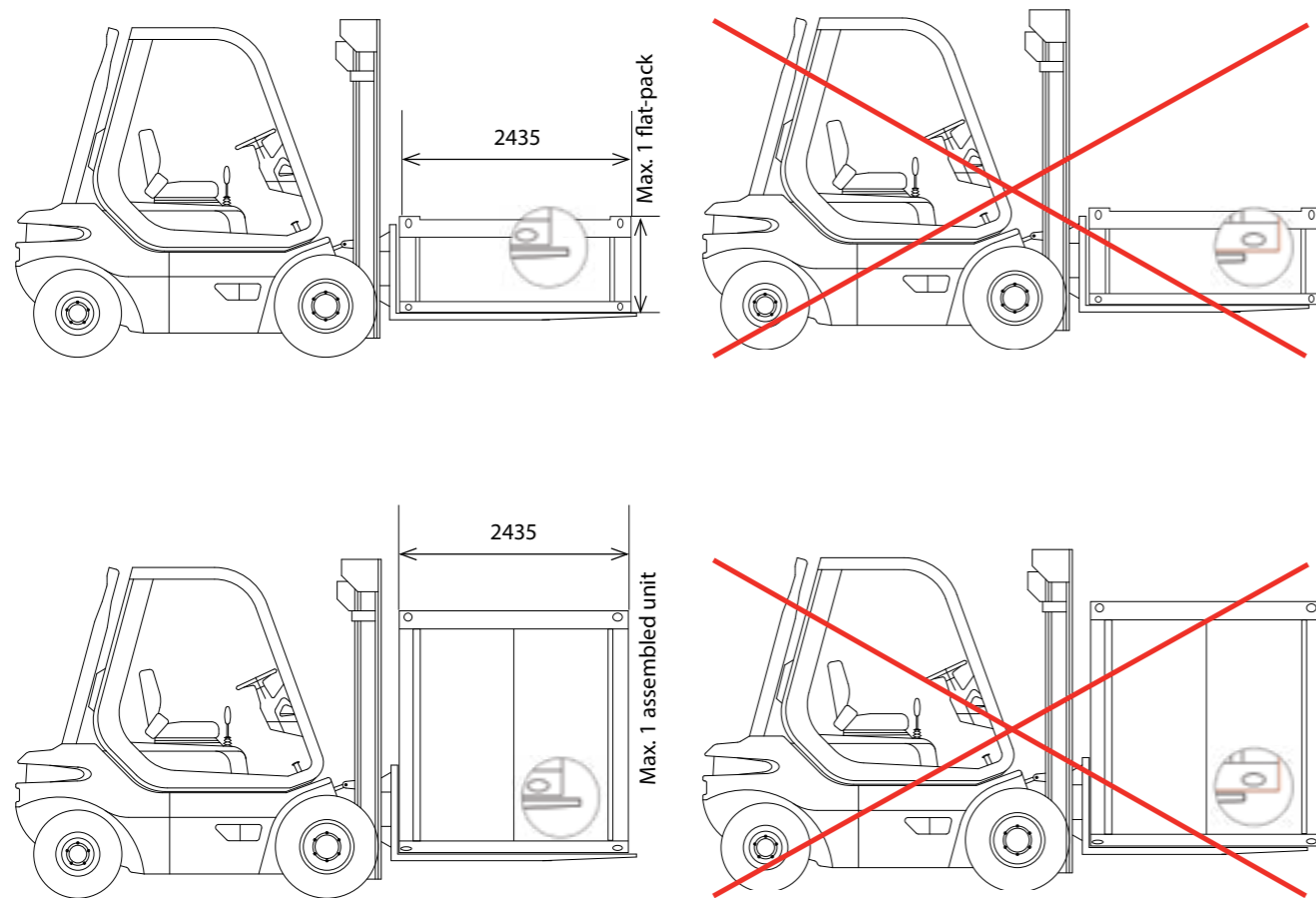


### 1.1.2 Modular units without forklift openings

Fig. 1.1b: Modular units without forklift openings



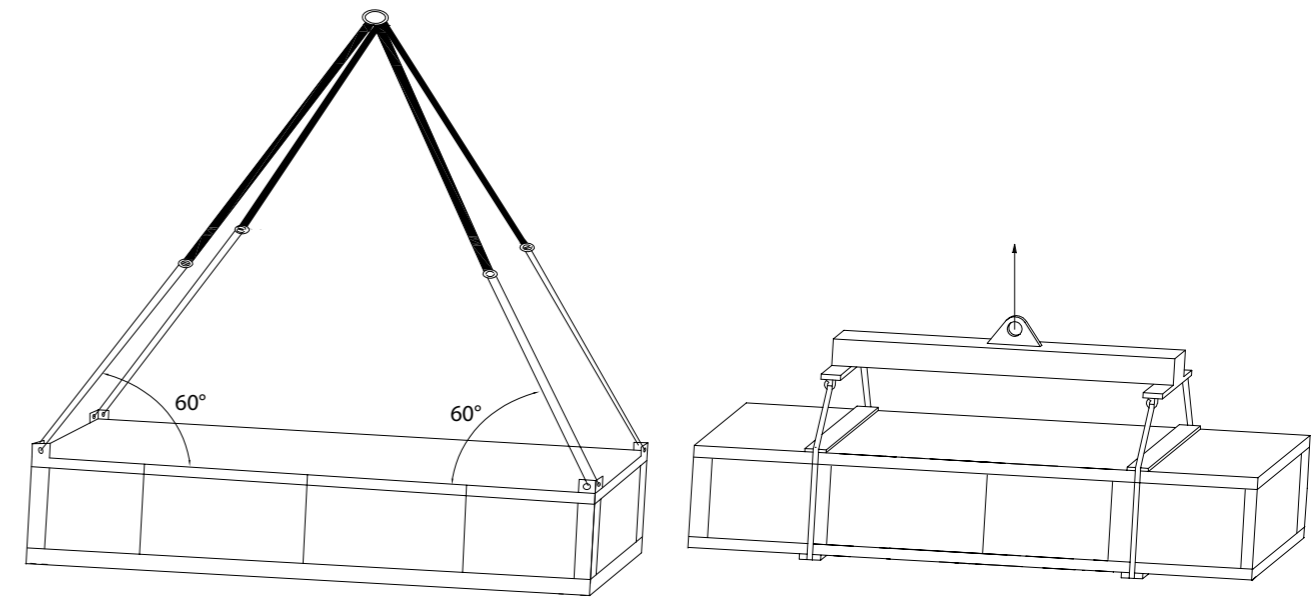
Fig. 1.1c: Handling of modular units without forklift openings



! **NOTE:**  
Forks must be long enough to exceed the floor frame from both sides completely!

### 1.2. Handling of modular units with crane

Fig. 1.2: Handling of modular units with crane



! **NOTE:**  
Only one package may be lifted at a time!

## 2. TRANSPORT OF TRIMO MODULAR UNIT

The transport of Trimo modular units is conducted using trucks adjusted to modular unit transport, though partially by wagons or ship and air transport as well. Modular units can be delivered flat-packed or factory assembled.

### 2.1. Road transport

When transport is performed with trucks, modular units must be appropriately fastened to the means of transport using textile bands so that any movement of a unit is prevented. The local laws for load securing must be adhered to. During transport, the driver must occasionally (at least every 300 km) check the stability of the cargo on the truck, as well as the firmness of the bonds. If the bonds are loose, it is necessary to appropriately tighten them again.

When the loading or unloading of the truck is not done by crane or modular units do not have forklift openings, 10 cm wooden beams are putted under modular units and should be considered in total transport height of the cargo.

Fig. 2.1: Truck transport



Tab. 2.1: Cargo maximal dimension

Dimensions of cargo (W x H x L) (m)	Modular unit packing type	Truck type	Note
up to 2.45 x 2.60 x 12.60	flat-packed/assembled	Standard semi-trailer	loading from side, back-side or top
up to 2.45 x 2.90 x 12.60	flat-packed/assembled	Mega semi-trailer	loading from side, back-side or top
up to 2.45 x 2.90 x 6.3+7.1 or 2.45 x 2.90 x 6.7+6.7	flat-packed/assembled	Mega trailer (swap body)	loading from side or top
up to 2.45 x 2.90 x 7.1+8.1 or 2.45 x 2.90 x 7.6+7.6	assembled	Mega trailer (swap body)	loading from back-side
up to 3.00 x 3.20 x 13.60	flat packed/assembled	Special open semi-trailer	

For modular unit (flat-packed) longer than 7.1 m and assembled modular unit longer than 8.1 m transport is performed with 13.6 m mega semi-trailer or special open truck.

Fig. 2.2: Truck transport of flat-packed/assembled modular units with forklift openings

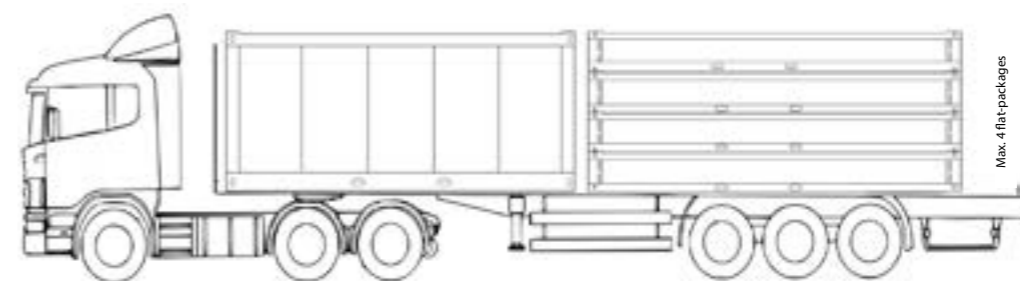
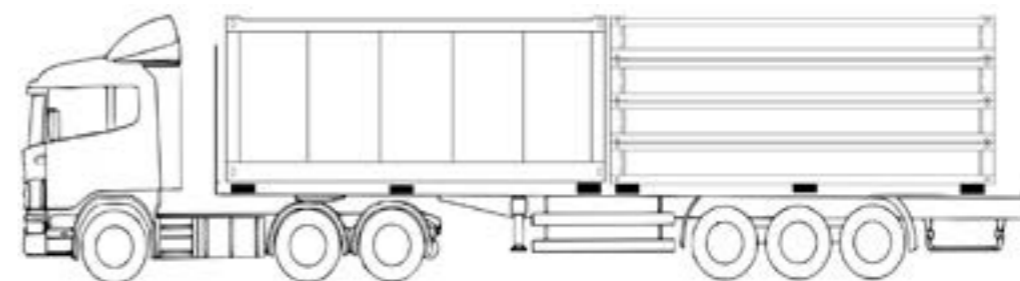


Fig. 2.3: Truck transport of flat-packed/assembled modular units without forklift openings



#### 2.1.1 Loading/Unloading flat-packed modular units without forklift openings

Unloading handling steps are:

1. Top flat-pack is lifted from one side 2 wooden beams are inserted under the corners.
2. Top flat pack is lifted from the other side, additional 2 wooden beams are inserted under the corners (in total 4 wooden beams under the corners of the flat-pack)
3. Top flat-pack is then lifted out of the truck.
4. Once the top flat-pack is unloaded, the same unloading procedure is required for other flat-packs.
5. The bottom flat-pack is loaded on 4 wooden beams and needs only be lifted out of the truck.
6. Care must be taken to prevent any possible damage and tilting the packages. (Use reverse procedure for loading)



## 2.2. Rail transport

Usually rail transport is combined with truck transport, therefore cargo is handled as for truck transport see chapter 2.1.

Fig. 2.4: Modular units needs to be fixed with metal profiles to prevent modular units from sliding



Fig. 2.5: Prepared packages for rail transport



Fig. 2.6: Rail transport of flat-packed modular units

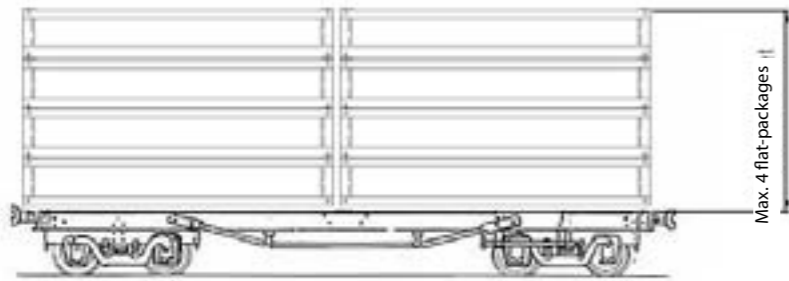
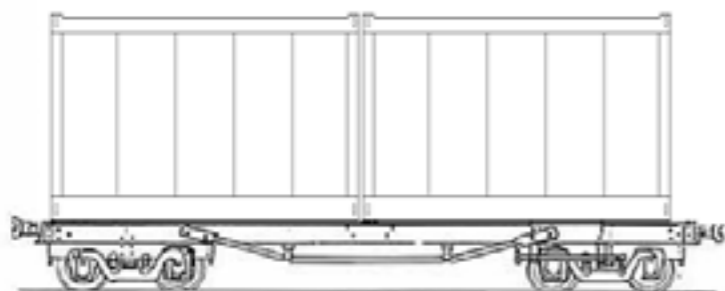


Fig. 2.7: Rail transport of assembled modular units



## 2.3. Overseas transport

### 2.3.1. High Cube Freight containers 40ft or 45ft

Packing for sea transport is adjusted to individual size of modular unit project. Vertically orientated packages up to 2.41 m width are pushed in / drawn out of a HC Freight container on adjusted pallets (sledge).

Fig. 2.8: Container loading



### 2.3.2. Flat Racks and Platforms

Transportation on flat racks and platforms is also possible. For securing against sliding, modular units needs to be secured with lashings.

Fig. 2.9: Flat-rack / Platform transport



### 2.3.3. Handling vertical flat-pack to horizontal position

Fig. 2.10: Handling vertical flat-pack to horizontal position



## 3. STORAGE

When storing Trimo modular units, it is necessary to observe the following:

- Units are stored on dry and clean surface, protected against strong gusts of wind, on a solid and fixed wooden pads. At least 4 wooden pads are needed to support 10' units and 6 wooden pads to support 16' or 20' units. 24' and 30' modular unit must be placed on 8 wooden pads provided on site. (Fig.3.1 and Fig. 3.2).
- Maximum 3 assembled modular units (Fig 3.1) and maximum 4 flat-packed units (Fig. 3.2) can be stacked on top of each other.
- When flat packs are stored outdoor longer than one month it is necessary to protect them by tarpaulin or store them under the covered place. It has to be ensured that water does not penetrate into flat packs during storing!
- In case modular units are stored on top of each other a fixation element should be placed in a joint among the bottom and upper unit. Such element prevents sliding of units.
- Assembled open frame modular units must have properly closed openings due to weather conditions until the end of the installation. In case they are stored longer than one month it is also necessary to store them under the covered place.

Fig. 3.1: Stack of assembled modular unit

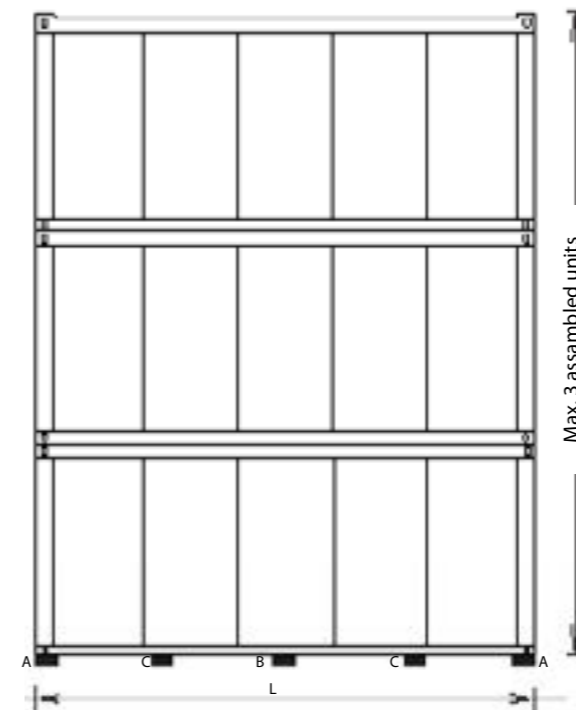
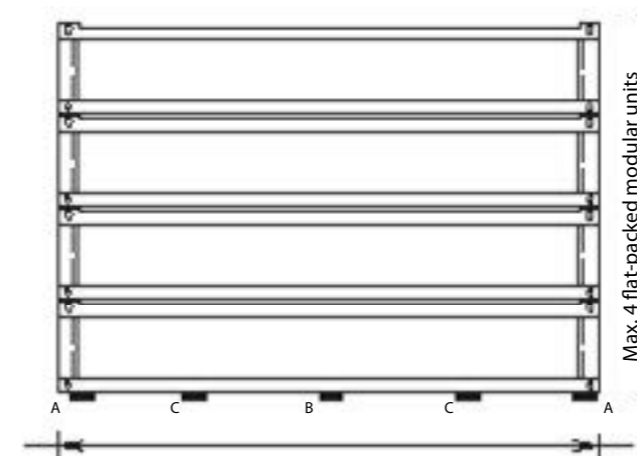


Fig. 3.2: Stack of flat-packed modular unit



A - for length 8" (2435 mm), 10" (2989 mm), 16" (4880 mm)  
A and B - for length 20" (6055 mm)  
A and C - for length 24" (7325 mm), 30" (9125 mm)

### ACTIONS TO BE TAKEN IN THE EVENT OF DAMAGED MODULAR UNIT

Delivered goods has to be checked for any possible damage caused during transport before unloading. A recipient shall write down its name legibly on a delivery note or CMR. A recipient has to write down any visible damage in delivery note and take the picture of damaged goods before unloading, when they are still on a truck.

Complaints for visible defects that are submitted contrary to the instructions stated above shall not be dealt with. The units complained about, have to be available until the complaint is resolved.





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