

➔ CONTAINER HANDLING AND FIXATION

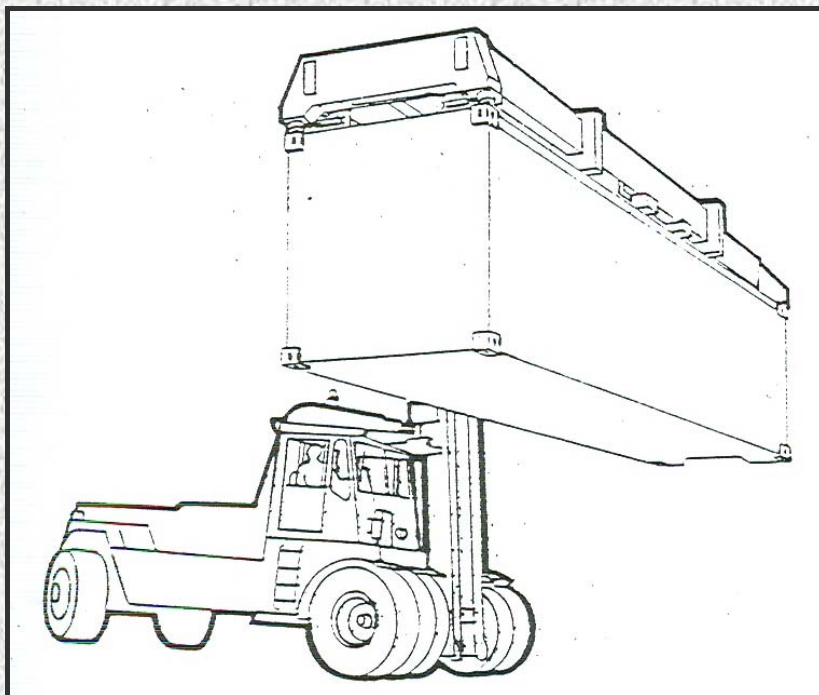
For any lifting operation, it is necessary to check that the equipment is adapted to the load and fixed to the container in a secure way.

A particular care should be taken in case of lifting by a single point at the risk of container imbalance due to the load eccentricity.

Lifting by the upper « corner parts » – the upper « corner parts » constitute the recommended lifting points.

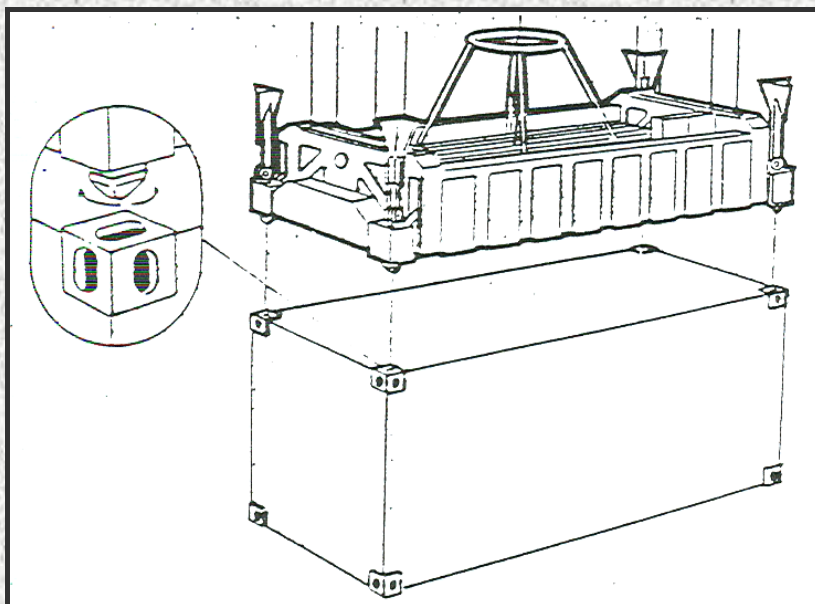
Containers 20' or 40' – lifting forces must be always vertically applied by using four « corner pieces ».

Lifting by means of spreader equipped with incorporated turning bolts – the spreader can be hung from a crane, a reach stacker or any other adequate equipment. It is necessary to check the correct inserting and releasing of turning bolts. The outside lifting devices should contact only the « corner pieces ».



Frontal truck (Reach Stacker / PPM) – lifting by spreader with incorporated turning bolts

Useful Informations



Gantry crane - lifting by spreader with incorporated turning bolts

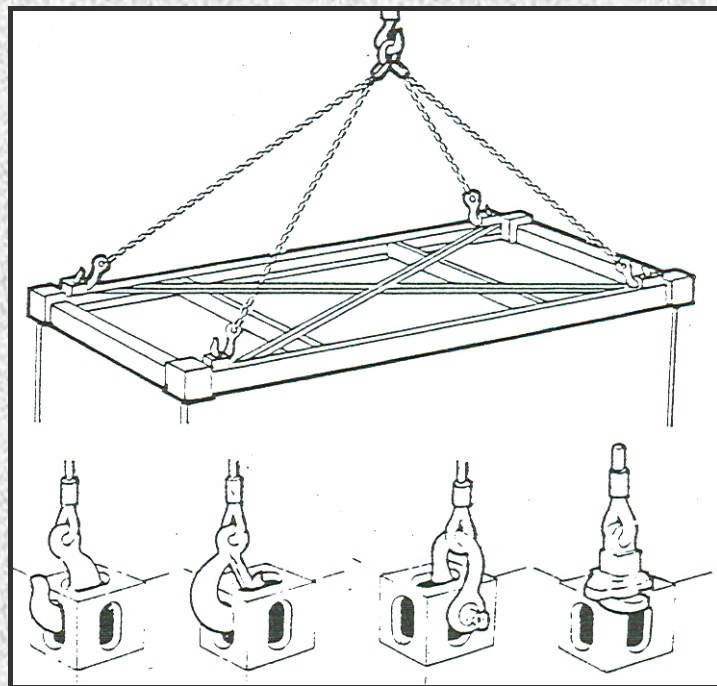
Lifting by the upper « corner pieces » by means of spreader equipped with hooks, shackles or manually inserted bolts – it is necessary to check the correct inserting and releasing of such equipment.

Useful Informations

A common hook must be always inserted from inside to outside.

For a safety hook, the inserting from outside inwards is acceptable because of its particular construction.

It should be not possible to turn the manually inserted bolts while a container is hanging from them.



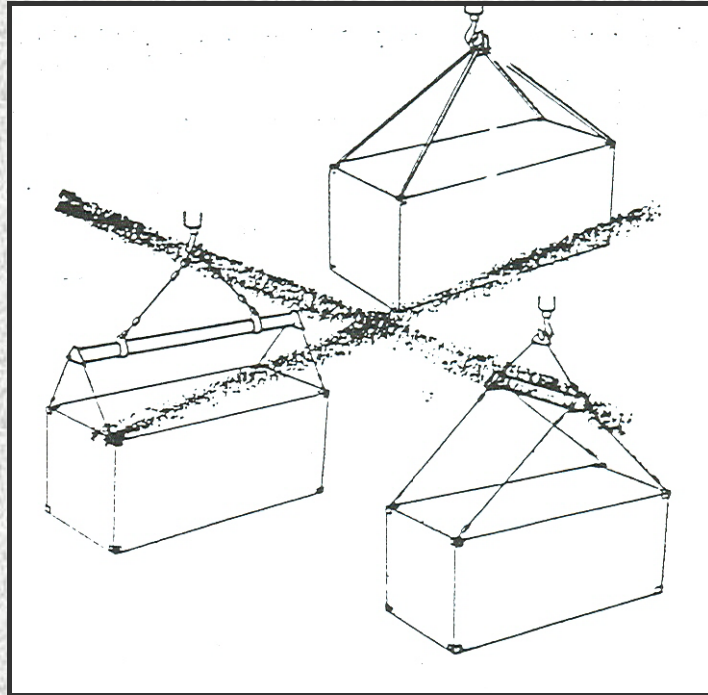
Common
hook

Safety
hook

Shackle

Bolt with
manual
inserting

Useful Informations



Forbidden lifting methods

Type « 9m3 » or less containers – the principles expressed above can be applicable, as well as the lifting forces with a 60 ° minimum horizontal angle.

Lifting by the bottom « corner pieces » – in this case the lifting devices have to lean only on four internal « corner pieces » and do not have to contact any container part. The fixation devices must be used so as to apply the lifting forces no more than 38 mn to the face of « corner piece ».

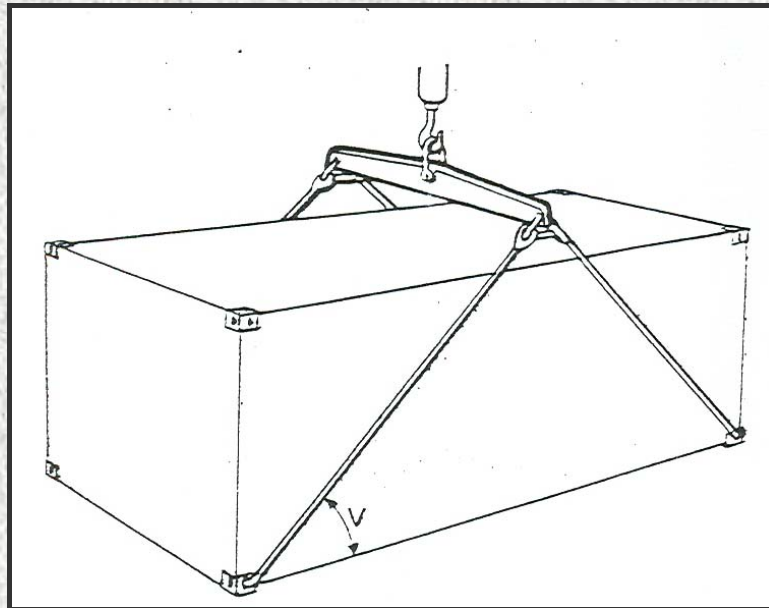
Before the lifting by the bottom « corner pieces », it suits to check that the ropes extremities are correctly inserted in the « corner pieces ».

The « V » angle of lifting indicated on the following drawing has not to be lower than the minimal values given in this table:

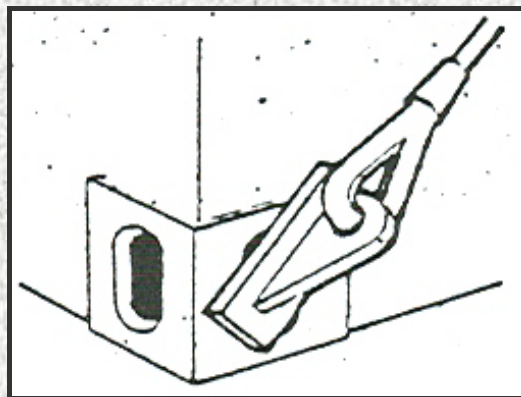
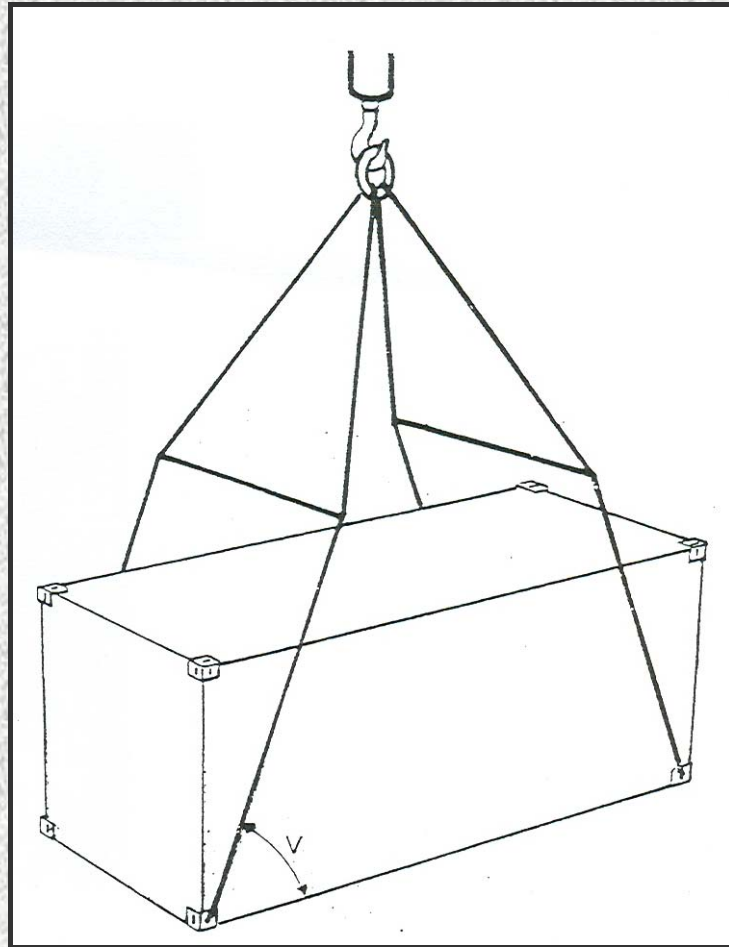
Useful Informations

Type of container	40'	20'	10'
V min.	30°	45°	60°

The « V » angle has not to be lower than limits which are function of the size and weight. In practice it is careful to never get down below 60°, especially if the container is loaded. It is very important to pay attention to the length and fixation of ropes.

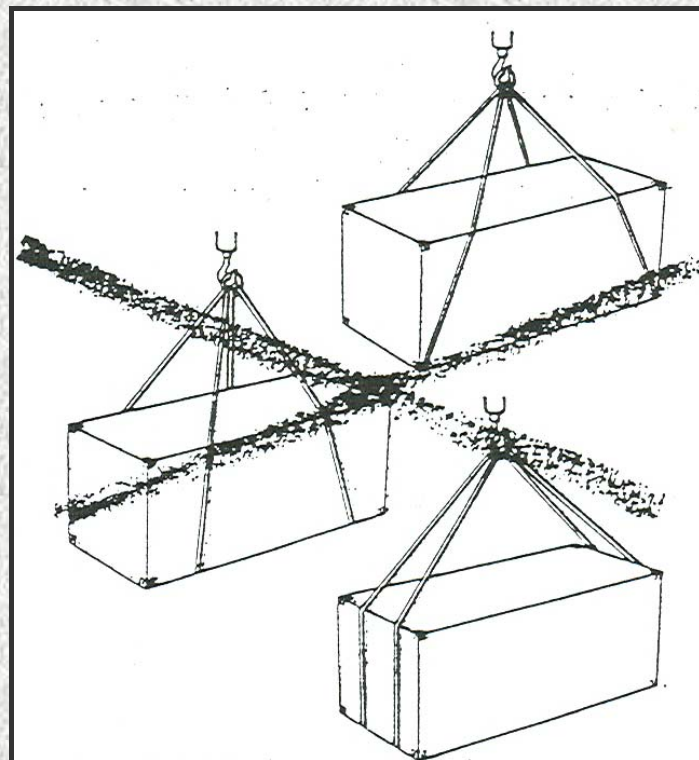
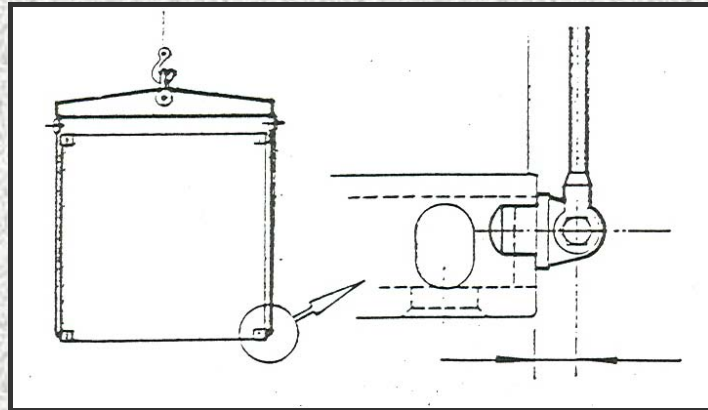


Useful Informations



The lifting bolts have to be in contact only with the bottom « corner parts ».

Useful Informations



Forbidden lifting methods

**Source: « Port container Terminal » work, CELSE Paris edition*