

Compactainer® Handling Guide

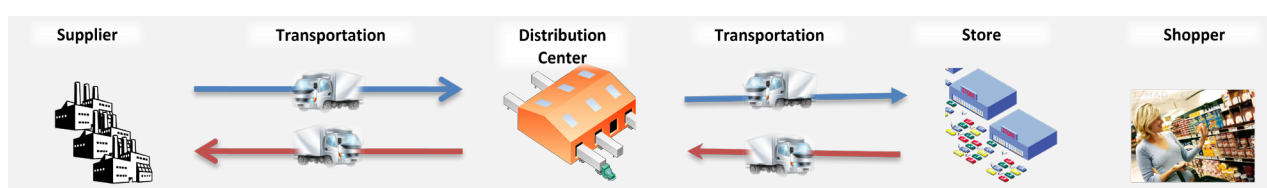


Table of contents

1. Introduction & Objectives
2. Compactainer Benefits in the Retail and Wholesale Supply Chain
3. Handling at warehouse
 - 3.1. General aspects
 - 3.2. Move of nested and empty Compactainers from storage to order picking zone(s)
 - A. Manual – Push a queue of nested units
 - B. Pull a queue with forklift handling equipment
 - C. Push a queue with forklift handling equipment
 - D. Automated flow of empty Compactainers
 - 3.3. Order picking
 - A. General aspects
 - B. Choice of order picking equipment
 - C. Prepare / Erect the Compactainer
 - D. Secure the load
 - E. Drive and park the Compactainers in the dispatch zone
4. Transportation
 - 4.1. Truck loading with full loaded Compactainers
 - A. Loading with low lift pallet trucks
 - B. Manual loading Roll containers
 - 4.2. Securing the load during transport
 - A. Securing with webbing straps (preferred way)
 - B. Trucks with fixed compartments and vertical poles
 - C. Trucks with fixed compartments and horizontal poles
 - D. Mixed pattern of roll containers and pallets
 - 4.3. Unloading
 - A. Tailifts
 - B. Manual handling of the queue
5. Nesting in the stores
6. Empty in reverse logistics
7. Unloading and transport of empty roll cages to storage

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1. Introduction & Objectives

This document provides information for K. Hartwall's retail customers, describing the best practices for organizing the Supply Chain based on Compactainer® store deliveries. Objective of this document is to help retailers to gain the optimal business benefits from their Compactainer® -based operations.

The approach of this document is very practical and "hands-on", and there will typically be several different alternatives and best practices for the main activities. This helps to define the best setup for an appropriate Supply Chain.

Chapter 2 includes general information of Compactainer®, focusing on the main business benefits potential.

Chapters 3-10 describe the best practices of the typical process phases in the retail Supply Chain: Distribution Centre, Store Transportation, Store Operations and Return Logistics.

Objectives:

- Provide training for proper roll container handling within a supply chain
 - Prevent damage to roll containers and implement an inspection program
 - Understand the basic usage of roll containers
 - Achieve the benefits offered by roll containers
-

2. Compactainer Benefits in the Retail and Wholesale Supply Chain

Compactainer® is a returnable goods carrier developed by K. Hartwall, one of the leading global goods carrier solution providers. Compactainer® is a roll container, which is developed to bring logistics efficiency to retailers' Supply Chains through perfect functionalities, space efficiency and easy handling.

Compactainers® are used widely all over the world, and during the last decades retailers have implemented several million Compactainers® to their Supply Chains.

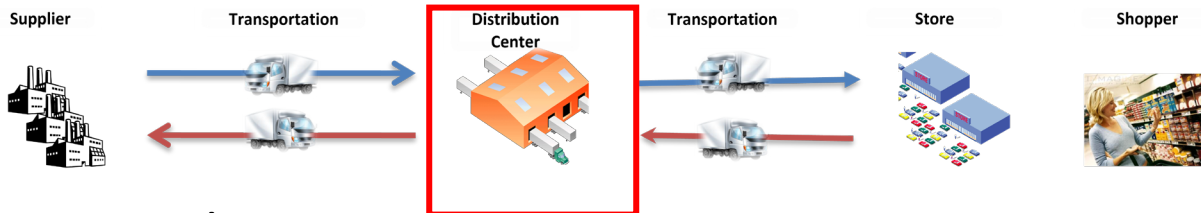
Typically, Compactainers® are used in centralized Supply Chains where the store delivery volumes are mostly combined to centralized deliveries through Distribution Centers. Another main characteristic of Compactainer® is the perfect suitability for mixed products deliveries.

Business Benefit	Description
Lower labor costs	Compactainer® enables time savings in the multiple steps in the Supply Chain. Especially in the store operations there are major potential for improvement when merchandizing the products. Also, the perfect fit to DC automation provides possibilities for labor cost savings.

Improved health & safety	Compactainer® has been designed over the years to be an easy-handling unit, to minimize the costs occurring from health & safety issues. Advanced functionalities, developed materials and lower weight are bringing these benefits both to the delivery and return logistics operations.
Better space efficiency	Compactainer® is typically providing better cubic efficiency in store deliveries, when comparing to pallet deliveries. This can be achieved through higher unit load. Also in the return logistics, Compactainer® is very space-efficient unit due to the nesting functionality. The new level of space efficiency has affect to DC operations, transportation and store operations.
Lower repair and maintenance costs	Compactainer® is a top quality unit, providing a robust solution with a long life span. This allows retailers to lower the cost occurring from repair & maintenance activities.
Lower product shrinkage costs	In some retail Supply Chains there are issues related to product shrinkage, either through theft or product damages due to incorrect handling. Compactainer® provides a solution for lowering the theft-related costs by security functionalities (walls, RFID-readiness, etc.). As a robust and well-designed unit, Compactainer® helps also to lower the product damage costs.

As a summary, for many major modern retailers Compactainer® is nowadays a returnable goods carrier solution, which provides an optimal Total Cost of Ownership.

3. Handling at warehouse



3.1. General aspects

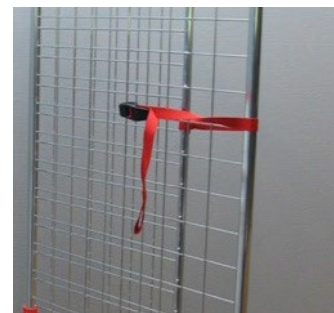
In this chapter are described the best practices for the Distribution Centre (DC) operations. Information is structured based on a typical timely order of a process, starting from storing of the empty Compactainers® to the phase when the full Compactainers® are ready to be loaded to the truck for store delivery after the order-picking.

3.2. Handling of empty Compactainers from storage to order picking zone(s)

When handling empty 4-sided Compactainers please always remember to secure the gates to the sides with the help of the straps as shown on picture below. Never let sides hanging loose as that they will be easily damaged.

When handling roll containers There are four ways to move the empty Compactainers to the order picking zone(s):

- Manual handling: push a queue of units (A)
- Handling with fork lift handling equipment: Pull a queue (B)
- Handling with forklift handling equipment: Push a queue (C)
- Automated flow of empty units (D)



A. Manual - Push a queue of nested units.

Depending on the floor pavement in the warehouse, a number of units can be transported manually in queue. This method should mainly be used for short internal movements around each ordering picking locations.

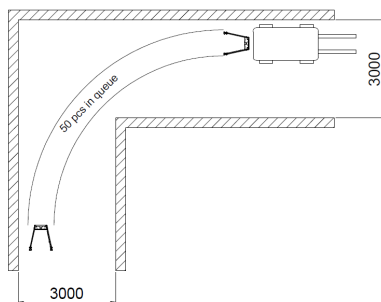
For more units (more than 10 units) please see the recommendation below.



B. Pull a queue with fork lift handling equipment

We recommend this method as it enables your warehouse employees to easy stop and steer the queue while moving.

You need a forklift truck or low lift pallet truck equipped with coupling catch for towing bar. Always pay attention to the required starting force and the maximum payload of the equipment. Further also the strength/capacity of the webbing strap.



It is very important that the strap is secured and tight on at least the two first units in the back of the entire row.



This way of manipulating units enables you to change direction within narrow corridors and little space between the pallets racks of your warehouse.

C. Push a queue with fork lift handling equipment

This requires one person to be steering in the front and another person to operate the fork lift handling equipment from the back. It is important that this handling is done within limited areas of the warehouse as a queue in motion cannot be stopped suddenly.

For smaller queues up to 20 units of Roll Containers:

A pile of wooden pallets (wider than the width of the Roll Container) can be put on the forks of the handling equipment to push the queue forward. Please bear in mind the load/transport capacity given by the supplier of the handling equipment is never exceeded. Many low lifters and warehouse trucks have a maximum load capacity of 2000 kg.

For longer queues up to 80 units of Roll containers:

Use a Roll Container Adaptor device to ensure that the forces from pushing are evenly and correctly spread forward between the units in the queue. Please bear in mind that a queue of Roll container will have a starting force impacted by following factors: Tare weight of the RC x number of units in queue, surface of the floor in the warehouse, condition and type of castors in use.

D. Automated flow of empty Compactainers

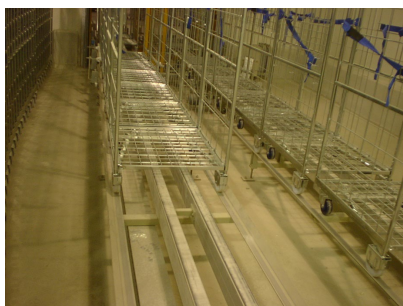
In case of high usage and output of deliveries of Roll Containers, an automated conveyor system can be an alternative to the options above.

So far automated conveyor systems are only able to move erected and “ready to order pick” Roll containers. We have more installations for different customers and therefore sure we can help and advice. Our Compactainer® can be transported by belt and chain conveyors touching the A-frame or the H-frame. Alternatively, a pair of castors can drive on the floor and the bottom structure of the Roll Container can be moved by a conveyor.



Compactainer Roll Containers moving sideways on the conveyors.

Alternatively if you would like easy roll-in and roll-out stations, this is also possible. See pictures below:



3.3 Order picking

A. General aspects

The picking sequences vary depending on how standardised the stores layouts are.

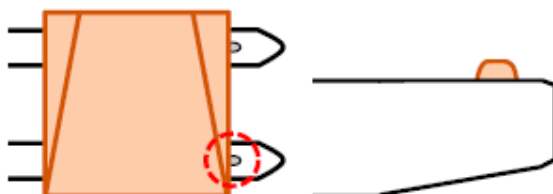
- Most retailers nowadays have organised the shelves in the stores and DC in the same way. The Roll containers are order picked in reverse sequence as they will be un-loaded in the stores to save time for replenishment time of shelves.
- Others retailers and wholesalers have several different store chains that they supply and whose store layouts differ. In order to make the deliveries and replenishment as systematic as possible these operations have organised their DCs into product families. (i.e. fruit and vegetables, dairy, cosmetics, beverages, candy etc.)

Most companies use a computer terminal giving the driver instruction what goods to pick and in what sequence. Also “pick-to-voice” systems are utilized to avoid failures in the order picking.

B. Choice of order picking equipment

Normally forklift handling equipment is used to boost the order picking operations. However, it is important to pay attention to the forklift equipment in use:

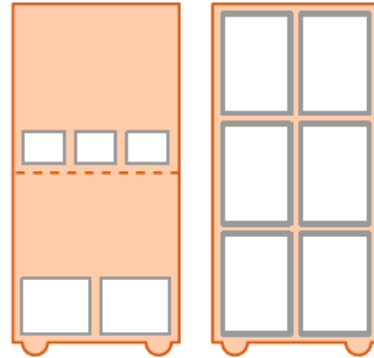
- Ensure that the forks are at the right fork width. If the fork width is too large it may damage the wheels and castors. If the fork width is too narrow the roll container can be unstable and tip.
- Ensure that the forks have the right fork length. The forks must be long enough so that it stretches the full length of the roll containers.
- Ensure that the wheels of the roll containers do not make contact with the ground.
- Always ensure the machine has come to a complete stop before unloading roll containers from the forks.
- It is recommended to use a stopping device at the end of the fork to prevent roll containers from sliding off:



Anyhow 75% of all damages occurring to roll containers are related to handling with forkliffling equipment therefore it is crucial to pay extra attention when moving from manual handling to forklift handling.

C. Prepare/Erect the Compactainer

One by one put each unit on the forks of the low lift pallet trucks. Retailers/Wholesalers normally put from 2 to 4 Compactainer® Roll Containers per forklift.



Proceed to pick goods according to the picking order or instruction. Heavier goods should preferably be placed on the base. Once the lower part is full, consider utilizing a shelf and continue to pick goods on the remaining part of the roll Container. If the Roll Container has a fixed shelf it may be raised if it obstructs larger goods from fitting into the roll container.

Do not overload the roll containers. Avoid packing products which overhang outside the sides of the roll container. This might cause damage to the products during handling and reduce the efficient use of space in the delivery truck.

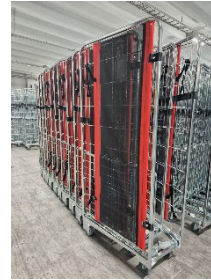
Another way to do the order-picking of full units is to use a LiftLiner RC to collect efficiently the roll cages and deliver them to dispatch (see picture below).



D. Secure the load

When the Compactainers are ready the person in charge shall ensure that the load is secured according to the actual Compactainer configuration. In other words:

- attach straps for 2- and 3-sided units
- foil wrapping if necessary
- close doors for 3- and 4-sided units
- Add-on door Flex (see picture) or Add-on door Fold
- or other relevant means of securing the units

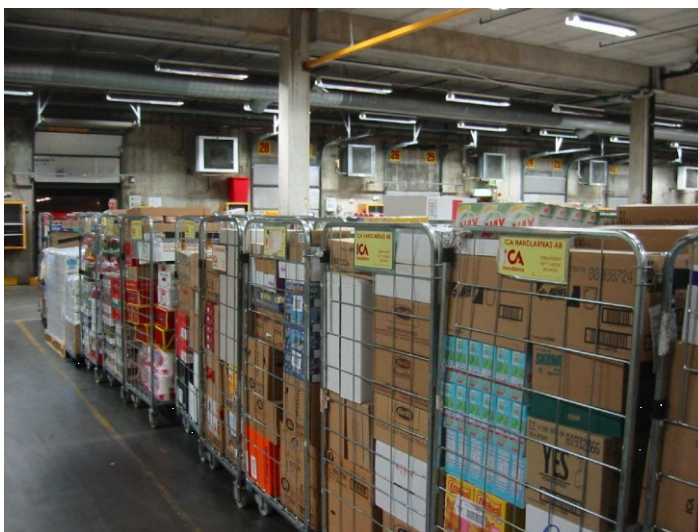


E. Drive and park the Compactainers in the dispatch zone

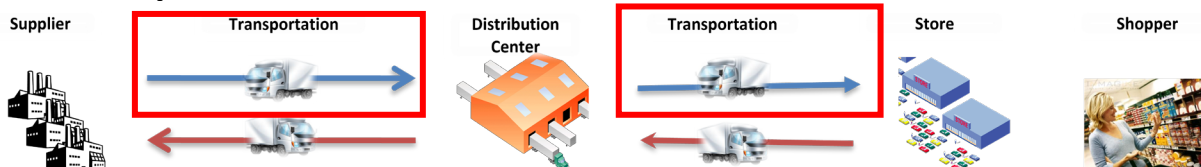
Park the order picker close to the dispatch lane. Lower the forks and reverse out:

ALWAYS STOP THE FORKS LIFTING EQUIPMENT COMPLETELY BEFORE lowering the forks and start of unload the Compactainer® Roll Containers.

The Roll containers that are ready for dispatch are put in front of the loading dock. They are placed in a “first-in last-out” order according to the pre- determined delivery route.



4. Transportation



This chapter includes the best practice information for the activities related to transportation.

There are several points that are important to take into account when choosing what trucks to use when transporting Roll containers:

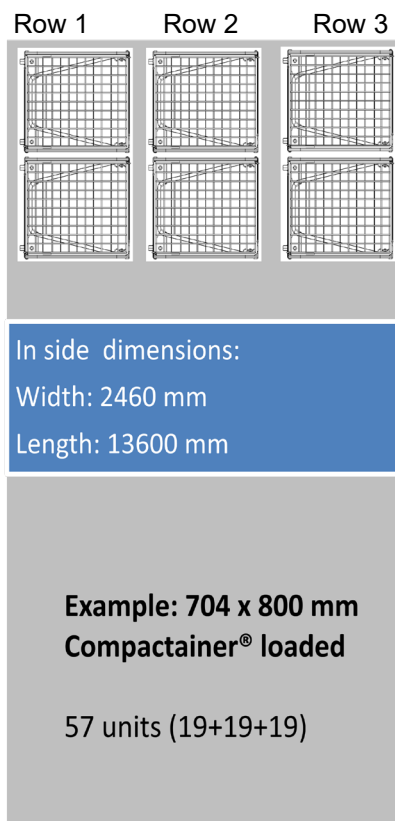
- **Restraining possibilities.** All trucks transporting Roll containers must have sufficient restraining possibilities.
- **The Tail- lift.** For secure and easy handling a well functioning tail-lift is essential
- **The dimensions of the truck.** To be able to optimise the costs for each delivery it is important that the trucks used are of the optimal size, with respect to the Roll container.

4.1. Truck loading with full loaded Compactainer® Roll Container

Generally more aspects are taken into account when loading the truck compartments with the Compactainer® :

A. Loading with low lift pallet trucks

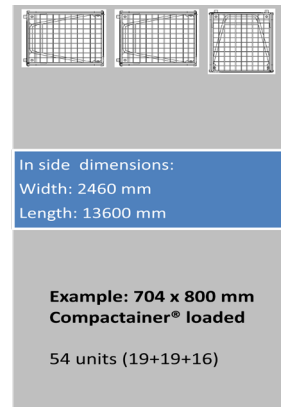
Depending on the overall use of RTI (Returnable transit Items), the most common procedure is to load with low lift pallet truck with the long side of the Roll Container across the compartment of the truck. Standard European trucks have an internal width 2460+ mm. It means that either 3 units of Euro pallets, 3 units of Compactainer® can be placed in the width of the truck (all three standard footprint of Compactainer® have 800 mm long sides). Alternative is to mix Euro pallets and Compactainers).



This loading pattern will require low lift pallet trucks to load the Roll Container into the compartment. However it is possible to load 2 to 4 Roll Containers into each row in one go.

B. Manual loading Roll Containers

This is mainly used for retailers delivering all items (Fresh, frozen and dry goods) in Roll Containers. It is the most careful way of loading rolling equipment into truck compartments.

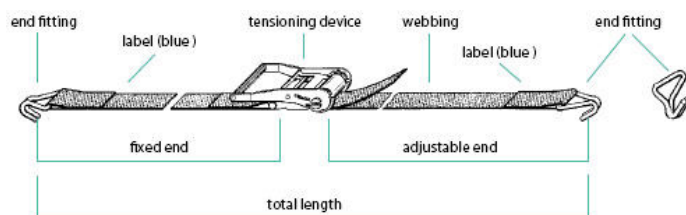


4.2 Securing the load during transport

When securing loaded Roll Containers it is always important to follow safety instructions of the manufacture of the truck compartment/Body. And by that also calculate how many Roll Containers you can pack into the compartment before securing the load.

A. Securing with webbing straps – possible on box- and curtain trucks

Securing with straps can also be used and is flexible and fast. It combines the board profiles and tracks on the right and left side of the truck compartment with the straps.



Above a principal design of the webbing strap. They must be manufactured accordance with EN 12195-2 (European countries).

B. Trucks with fixed compartments and vertical poles

Adjustable poles placed vertically in the trucks. This is a fast, flexible and easy way of securing the Roll Containers. This requires some poles in each truck – however these can also be used for securing loads on pallets. Cargo Stop® is one example of this system (Trade name of Allsafe Group).



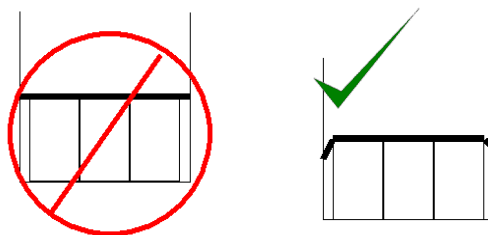
C. Trucks with fixed compartments and horizontal poles

Adjustable poles situated horizontal in the trucks. These poles can secure the load in the vertical direction by using the side board profiles (tracks) at the right and left side of the box vans (solid sides and roof).

IMPORTANT: Poles not recommended for units with brake castors, as units are not completely fixed and can allow for some movements which can damage brake pedals

When loading a truck with Roll containers, it is important to pay attention to four aspects:

- That the Roll containers are secured properly. If one truck is filled with Roll containers it is advisable to secure the load with several separate restraining straps (in accordance with the maximum load capacity of the strap from specified by the supplier) taking the weight of the load roll containers into account.
- Apply the strap correctly. Do not tighten the strap from one side of the truck to the other in a straight line. This makes the strap weaker (please see the drawing below).



- Do not tighten the restraining strap too much or you risk damaging the Roll containers as well as the goods.



- Make sure that the straps buckle is not in a position where it can damage the goods. Below is a good example of the buckle not touching the goods.



D. Mixed pattern of Roll Containers and pallets

If the load includes pallets, they can also be used to keep the Roll Containers secured during transport. **However** it is still required to get the load secured with webbing straps or in combination with one of the above alternatives.



4.3 Unloading

Unstrap and pull out Compactainers® from the truck onto the tail-lift or dock leveler.

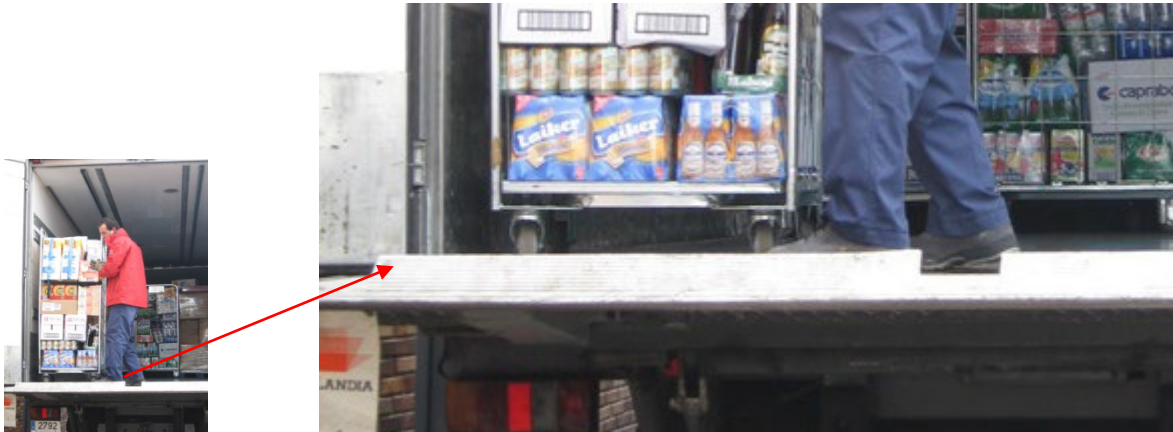
When unloading one needs to remember all safety recommendations:

A. Taillifts

- The taillift is a very valuable tool for loading and unloading the Roll container and Dolly. In order to use the tail lift efficiently it is important to have some form of stopping device for the following reasons:
- It eases the drivers work of unloading Roll Containers and avoid negative impact on health and safety aspects.

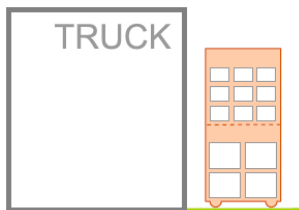
- It prevents the Roll container or Dolly falling off and damaging the products or breaking.
- It allows the driver to lower several Roll containers at the same time without needing to hold on to them.

The tail lift of a truck should be equipped with a stopper. There are different types of stoppers in use. See examples shown on the picture below.

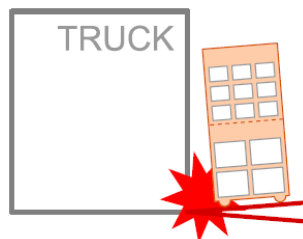


IMPORTANT: THE TRUCK SHOULD ALWAYS BE ON AN EVEN SURFACE WHEN UNLOADING.

CORRECT



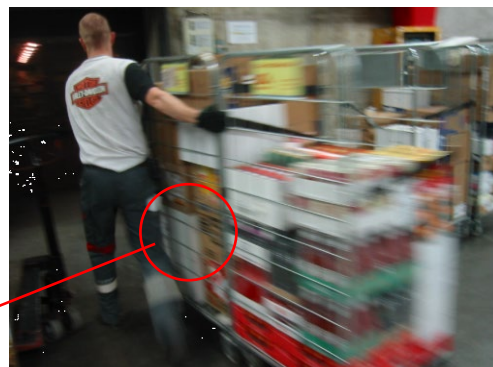
INCORRECT



B. Manual Handling

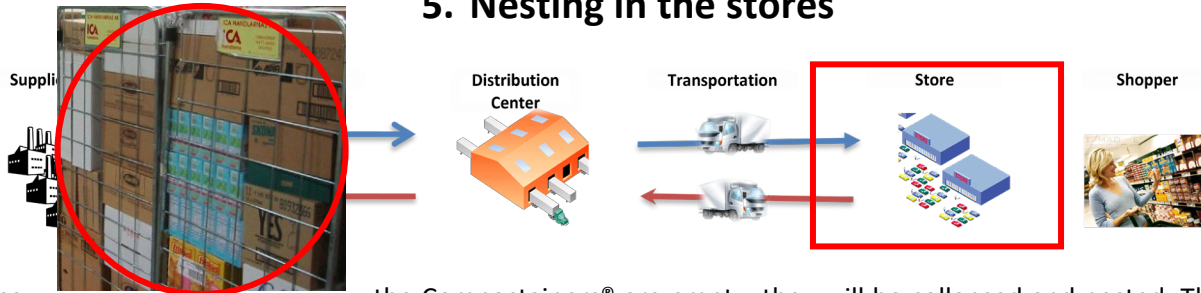
When transporting Roll containers manually, always take into account the following:

- Only handle Roll containers that you can manage safely. If the Roll container weight is so great that you cannot stop the Roll container in a slope, you should not be handling it.
- If transporting more than one Roll same time, make sure that you do heels. One way of ensuring this is to containers so that there is no empty the two. Please see



container at the not hurt your transport the Roll space between picture below.

5. Nesting in the stores



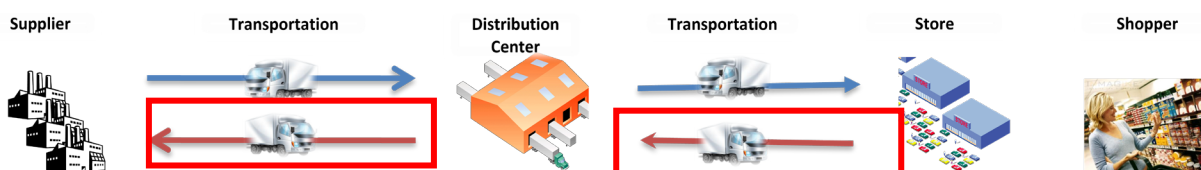
Once the Compactainers® are empty, they will be collapsed and nested. This guarantees that they will require minimal space in store backroom and return logistics. In the following are presented best practices for collapsing and nesting a Compactainer®.

Once the Compactainers® have been nested, it is suggested that they will be queued and stored in the right location in store backroom or loading area. The exact location and process for these operations should be defined depending on the store layout and the return logistics principles.

When handling empty 4-sided Compactainers please always remember to secure the gates to the sides with the help of the straps as shown on picture below before nesting them into each other.
Never let sides hanging loose as that they will be easily damaged.



6. Empty in reverse logistics



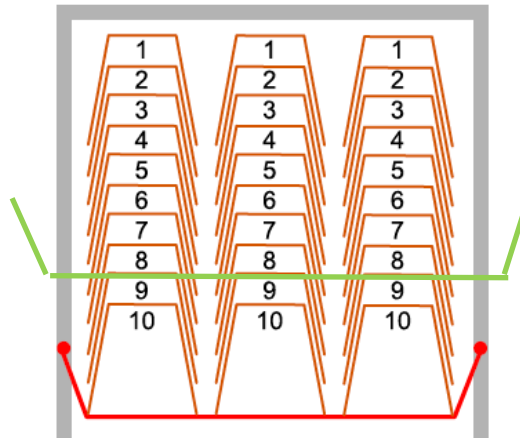
Compactainers® are designed for space-efficient return logistics operations, all the way from the store

backroom through return transportation to the Distribution Centre. This chapter includes important information for organizing the return logistics.

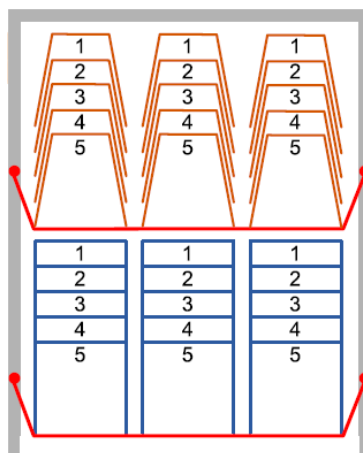
Loading Empty Compactainers® to Return Transportation

Empty Compactainers® are planned to be stored in nested queues in store backroom area, waiting for return logistics.

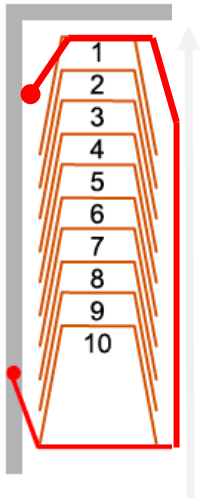
Load the Compactainers® in nested queues into the delivery truck once they are ready for collection. It is suggested to load and strap together 10 rows of roll containers as a unit:



In cases where space can be optimized, fewer rows of Compactainers® may be strapped together as units and loaded in the delivery truck. If different types of units are used, match similar sized Compactainers® based on their depth and strap them together securely:



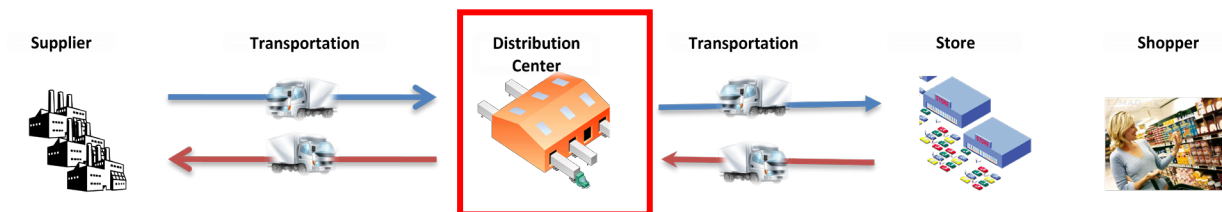
Empty Compactainers® must be secured with vertical poles or horizontal poles in combination with webbing straps based on the same principles as during the delivery transportation. See chapter 4.2.



It is also possible to load empty roll cages across the compartment and to secure them with a flexible horizontal bar to avoid damage caused by side forces during transport.



7. Unloading and transport of empty Compactainers to the storage zone



Upon return at the DC, unstrap the nested Compactainers® and move them manual out of the truck compartment in batches of 4-8 units as shown below.



Perform the following inspection for Compactainers®:

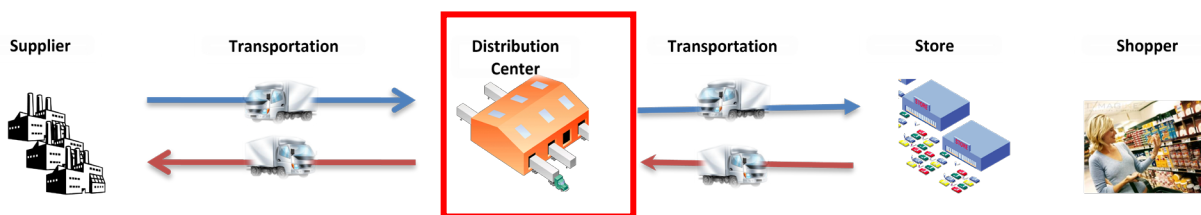
- If necessary, send the unit for cleaning.
- If the Compactainer® is flagged for maintenance (see picture below) or if it fails the standard inspection, send the unit for maintenance. Please always keep damaged roll containers in a separate area.



Roll container marked for repair

Move nested Compactainers® to the agreed location in the DC (typically near the issuing office). if required, utilize forklift when moving the nested units. See handling recommendation for moving of empty Compactainer® Roll Containers in queues under Chapter 3.2.

8. Storage zone for Roll Containers



It is recommended to store roll containers in FIFO lanes and in a predefined area. The optimum solution will be an inside area of the warehouse or alternatively a covered area to avoid being deteriorated by snow/rain and dirt during storage.

