



ad10-id13

# PRODUCT REPORT

Compact Cleaning Cart





PHASE1: Program

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# Preface

This is the product report to the project performed at 10th semester of Industrial Design at Aalborg University in the project period of 4/2-2008 to 4/6-2008.

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# PRODUCT POTENTIAL

All companies have a need for cleaning. This means that the cleaning branch is large and employs a large amount of people, primarily cleaning personnel. The job is, and will always be, a very physical job as it demands many actions and movements for the cleaning personnel. Although branch organisations and government authorities in Scandinavia has focused much on the area the recent years, cleaning is still one of the most affected branches when it comes to injuries, sick days and early retirement.

A well known aid that contributes to creating better working conditions within cleaning is the cleaning cart. The cart eliminates much of the lifting and a lot of walking back and forth when cleaning, as the equipment always is nearby. For this reason cleaning carts are widely used by service providers and cleaning personnel, both in large and small companies. However, not all companies have room for storing a cleaning cart as they take up much space. Instead, buckets are used in the old-fashioned way. This leaves the cleaning personnel in a situation where unhealthy work conditions is unavoidable

This report describes a product proposal for a cleaning cart. It evolves around the storage aspect regarding companies with limited space for storing cleaning equipment. As well, ergonomically and safety related precautions has been taken in order to create an attractive product for service providers and cleaning personnel.



# VISION

**Reform the cleaning branch by providing a cleaning cart that improves cleaning assistants' work procedures in environments with limited storage space for cleaning equipment**



**NOW YOU CAN  
GET ALL THE  
FUNCTIONS OF  
THE CLEANING  
CART WITHOUT  
BUILDING AN  
EXTRA ROOM**

**FOLDS TO 45CM X 95CM X 43CM**







# COMPACT CLEANING CART



# SELLING POINTS

## FAST

The Compact Cleaning Cart's structure with the two clearly separated levels gives an easy overview and the cleaning personnel can quickly get the equipment she needs. With the cross placed in the middle there is easy access all the way around the cart without any bars getting in the way. The handle in both ends lets the cleaning personnel manoeuvre the cart from the side she attends and she saves time in always having to walk back to the main handle.

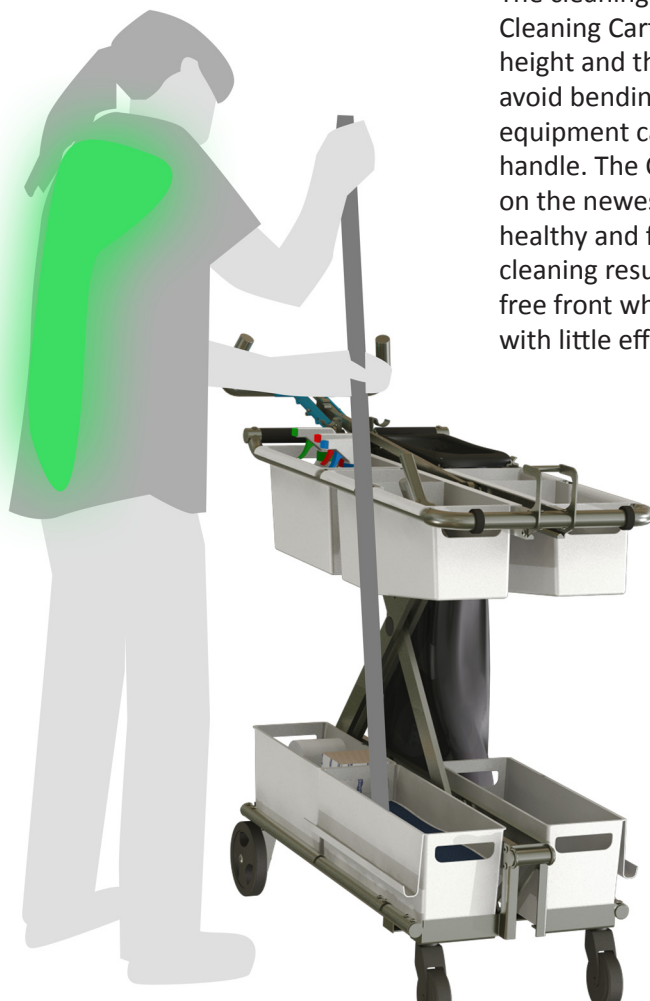






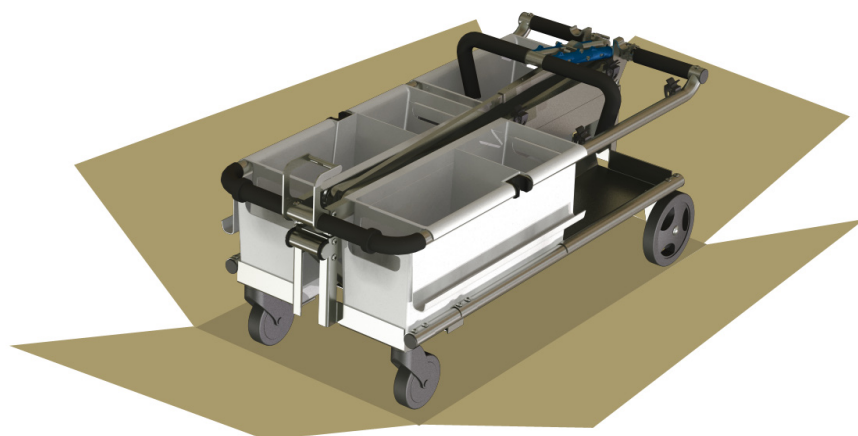
## LONGER LIFE

The cleaning personnel like the Compact Cleaning Cart. It can be adjusted to their height and the equipment is placed so they avoid bending down because the bottom equipment can be reached with the mop handle. The Compact Cleaning Cart is based on the newest cleaning method, securing a healthy and fast work procedure with a high cleaning result. The big back wheel and the free front wheel ensure easy manoeuvring with little effort.



## READY

When buying the Compact Cleaning Cart, no time is wasted on configuration or irrelevant combinations. And when receiving it, it is ready for use. It is already assembled and holds all the needed equipment; all you have to do is take it out of the box. It is made of durable materials that last long and can handle the daily wear and tear.



# BUYERS

Companies with limited space for storage are typically smaller companies. The cleaning can be handled in two ways; either by employing their own cleaning personnel or by hiring a service provider to apply cleaning assistants that come and clean. Service providers buy their equipment at cleaning retailers and some smaller companies do this as well. Common used detergents can also be bought at supermarkets, and therefore many smaller companies choose to do this – especially companies without cleaning carts.

From this, three different types of potential buyers of the Compact Cleaning Cart can be set up. Based on that there is no other cleaning cart on the market, that can provide the same as the Compact Cleaning Cart and based on an enquiry of possible buyers, estimation is made on how many carts they will buy.

## Professional cleaning service providers

Service providers like ISS Facility Services and IDA Service have cleaning as their main business. For this reason they have a great amount of experience and knowledge within cleaning. Because they have it as their main business, they have a lot of focus on cleaning assistants' working environment.

3700  
Compact  
Cleaning  
Carts

## Smaller companies hiring own cleaning assistant, buying at supermarket

Because cleaning is not their main business, the focus and knowledge about the cleaning assistants' working environment is often limited. Cleaning assistants these places often use older and less ergonomic cleaning methods.

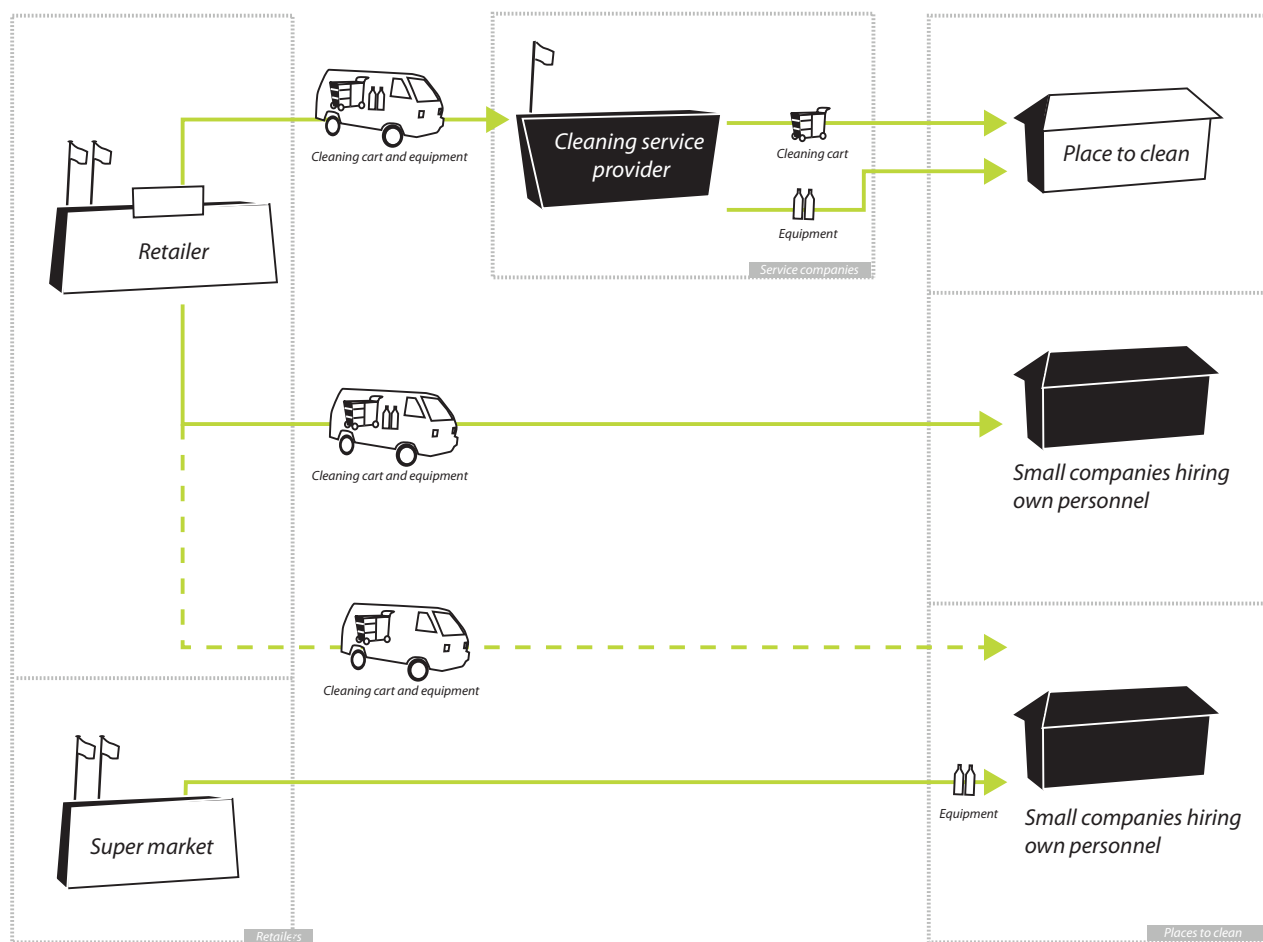
3900  
Compact  
Cleaning  
Carts

## Smaller companies hiring own cleaning assistant, buying at retailer

Like the previous group of buyers, this group also have limited focus and knowledge within the area of cleaning. The difference is that this group is periodically in contact with retailers and thereby they have a possibility to strengthening their knowledge e.g. by advises in the sales situation, reading in catalogues/brochures or by direct contact from the retailer.

3200  
Compact  
Cleaning  
Carts

Expected sale over 10 years in Denmark



III xx | The different types of buyers and how they get their cleaning supplies

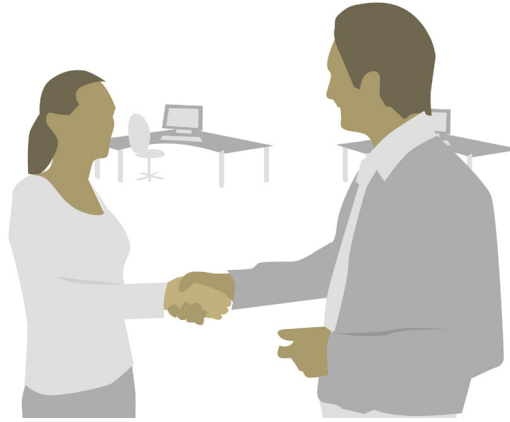


# SALES SITUATION

The Compact Cleaning Cart is sold in a number of ways.

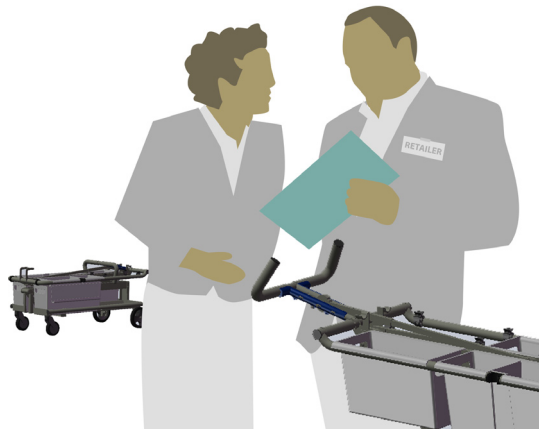
## Sales man driving around

One way of selling the cart is through a sales man driving around to the bigger companies. Here the Compact Cleaning Cart has the advantages that it, when folded, can be put in the bag of a car and brought to the potential customers.



## Sold in a shop

Also in the shops it is an advantage that the Compact Cleaning Cart can be stored. Even if it is chosen not to have the cart physically, the clear structure makes it easy to present in a magazine. However, when the cart is present a better understanding is gained and especially the folding principle becomes a great sales point.



## Sold through a mail box catalogue

The attention of the potential buyers, that the retailers currently are not in contact with, can be reached by advertisement in some of the branch magazines that many of them keep. Here contact information can be found on how to order a Compact Cleaning Cart.



# CLEANING ASSISTANTS

The Compact Cleaning Cart takes the users into consideration. There are three main groups of users: the experienced ones, the ones with other nationality than Scandinavian and the ones having cleaning as a secondary job.



## The experienced

The experienced cleaning assistant is often hired by a service provider and has more than 10 years of experience. She is very familiar with the cleaning branch and has developed her own routines in regard to how she finds it best to carry out the different assignments. This means that she trusts her own skills, but at the same time she knows from experience that having good equipment is very important. Therefore she appreciates the Compact Cleaning Cart as it is designed in regard to the work procedures revolving around the cart. However, she is a little skeptic on the method used as she is used to her own routines. In time she will be convinced that the moisturizing method has many advantages.



## Other nationality than Scandinavian

Having another nationality than Scandinavian means that the skills within the Danish language are often limited. Therefore the clear structure of the Compact Cleaning Cart is an advantage. It is easy to attend and get an overview of. A large amount of the people in this group is Asian, meaning they are often not very tall. Therefore it is essential that the cart can be adjusted in height.



## Cleaning as secondary job

Some companies choose to hire students or a family member to do the cleaning. A daughter of the boss is not very interested in cleaning and do not care much about whether the job is carried out in the healthiest way or not. Still the Compact Cleaning Cart is considered interesting as it gets the job done in a more efficient way.

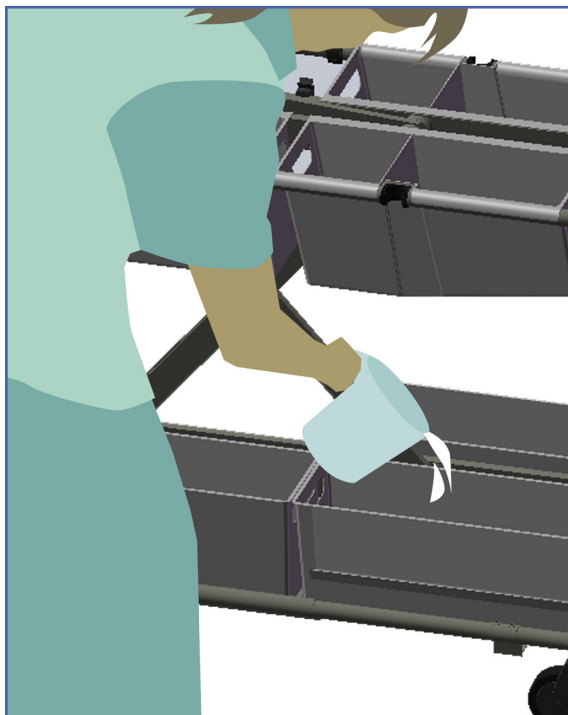
# LISBETH'S EXPERIENCE WITH



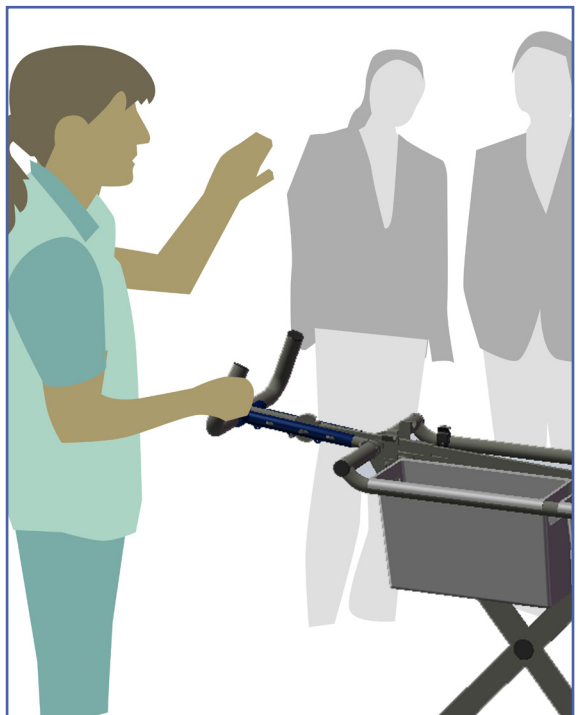
1: When Lisbeth arrives to the company, she walks to the closet where all her cleaning equipment is kept. It is nice both for her and the company to have it all gathered in one place. Lisbeth grabs the handle of the cart and tilts it out of the closet.



2: A mechanism helps her to she fold the cart open, so it goes very easy. Most of the content is already on the cart and Lisbeth just have to fill in clean mops and some toilet paper. Also she pumps a bit of detergent in a jug and pushes the cart to the sink.



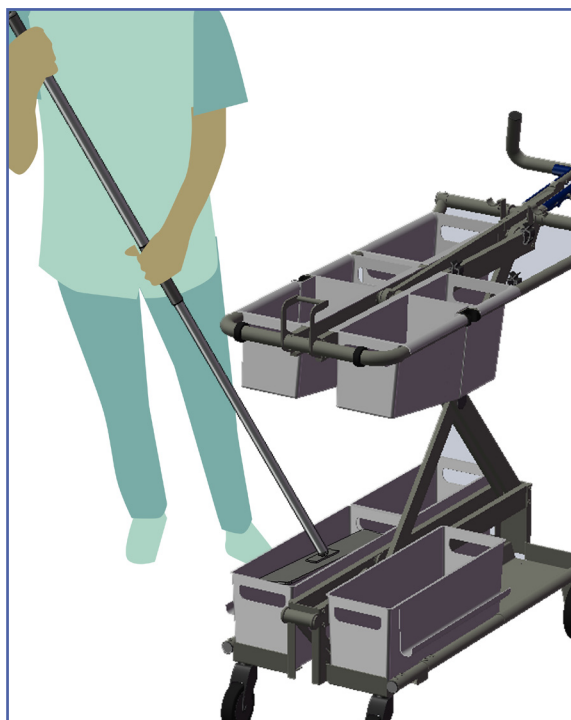
3: Here she fills up water and adds it to the mops. She really likes this method as she only uses the water necessary, which saves her trouble both when filling the bucket, driving around with the cart and emptying it again.



4: Lisbeth works while there are others in the small company. She feels much more confident with the Compact Cleaning Cart as she does not have to bend and stand in awkward positions to reach the buckets. She is proud that the cart always looks in order and by others it is conceived as a professional working tool.



# COMPACT CLEANING CART



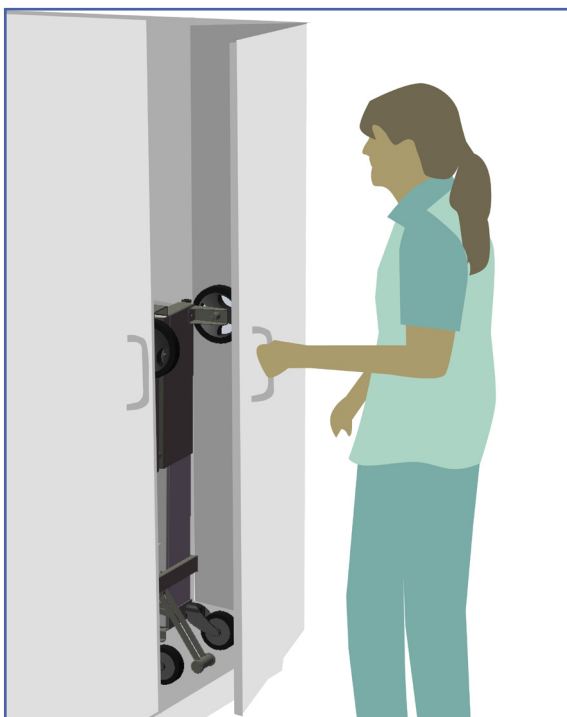
5: The Compact Cleaning Cart is designed so the mops can be reached with the mop handle. Lisbeth appreciates this. She is also satisfied with the results of the cleaning method used as she always cleans with a fresh mop and water.



6: There is only one step in the company and Lisbeth can easily get the cart over it by pushing down on the handle. In general she is surprised that the cart is so easy to push around. Often she used the handle in the end to drag the cart instead of pushing it.



7: When Lisbeth is done cleaning she pushes the cart to the washing machine where she unloads the dirty mops. Now the cart is empty in the bottom and she can fold it. Again the mechanism helps her, so she does not have to carry all the weight.



8: She puts the cart back in the closet and closes the door. She is happy that all her equipment is stored away so it does not make a mess. Lisbeth leaves the company happy about the job she has done.

# THE COMPACT CLEANING CART

## STORING

The Compact Cleaning Cart is designed to be stored in all environments. It has possibilities for storage due to the small size and the fact that it can stand both vertical and horizontal. The buckets are designed with an 8 degree tilt in order for them to hold the equipment when raised to vertical position. The cart can e.g. be stored in a closet, under a table or behind the door.



The buckets can store equipment while standing vertical



A holder on the cart can hold two mops while being stored.



# IN THE ENVIRONMENT

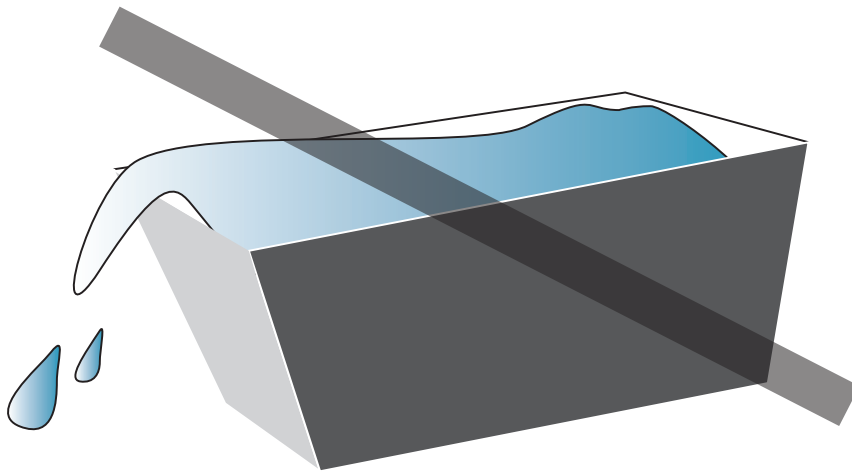
## CART WITH STYLE

The Compact Cleaning Cart does not act like other cleaning carts and it does not look like other cleaning carts. The colours make it more neutral than a typical cleaning cart and it can enter a room without being an alienated object. Its dynamic lines tell the story about that this is an efficient tool. The large surfaces and the simple structure with two levels make it look organized.



# REDUCE THE DAYS LOST THROUGH ILLNESS

As the cleaning branch is one of the branches with most injuries and sick days, it is important that the cart helps the cleaning personnel and reduces their work loads. This is not only in the interest of the cleaning personnel themselves but also the ones hiring them.



## CLEANING METHOD

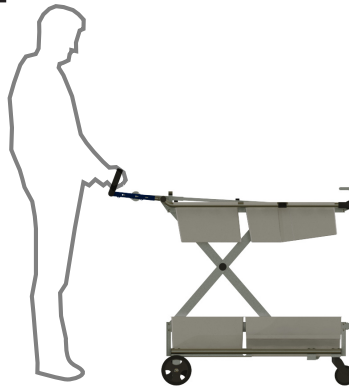
The method the Compact Cleaning Cart is based on is the moisturising system. This is the most efficient and healthy system for several reasons. The mops have the right humidity and therefore it is not necessary to dry mop after the floor wash, saving time and saving the cleaning personnel for repetitive work. Another advantage is that the cleaning personnel only have to bring the necessary water. At the same time the mops are always clean and this gives the best result.



## HEIGHT ADJUSTABILITY



~150-165cm



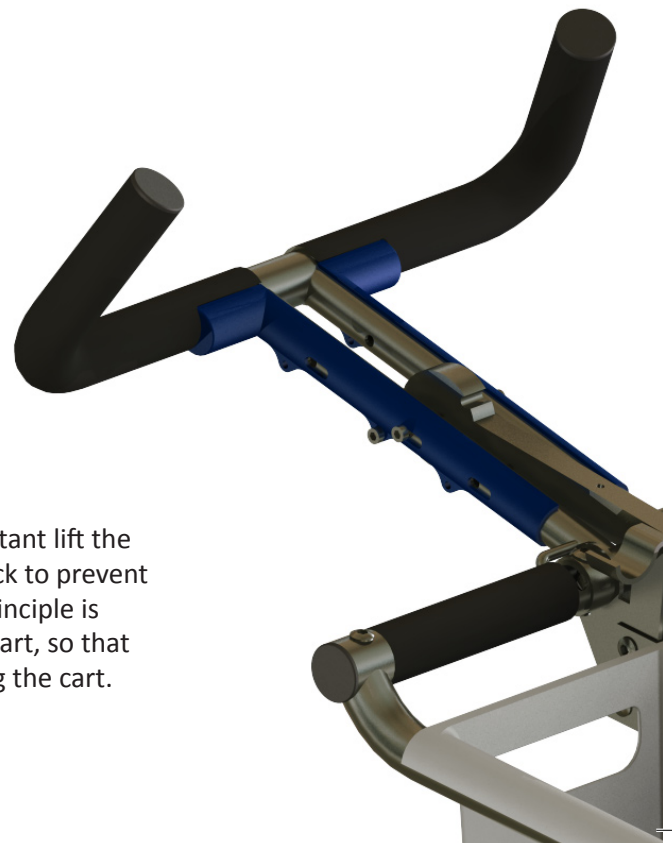
~165-180cm



~180-195cm

The height of the cleaning personnel varies and therefore the Compact Cleaning Cart can be adjusted in height to secure a good work height for all cleaning assistants. The cart is often used by the same person and therefore the adjustment is only to be made once or when the cart shifts cleaning personnel. The height is adjusted by loosening the two nuts and moving the stick to the wanted position. The longest tube holding the handle should be adjusted in regard to this.

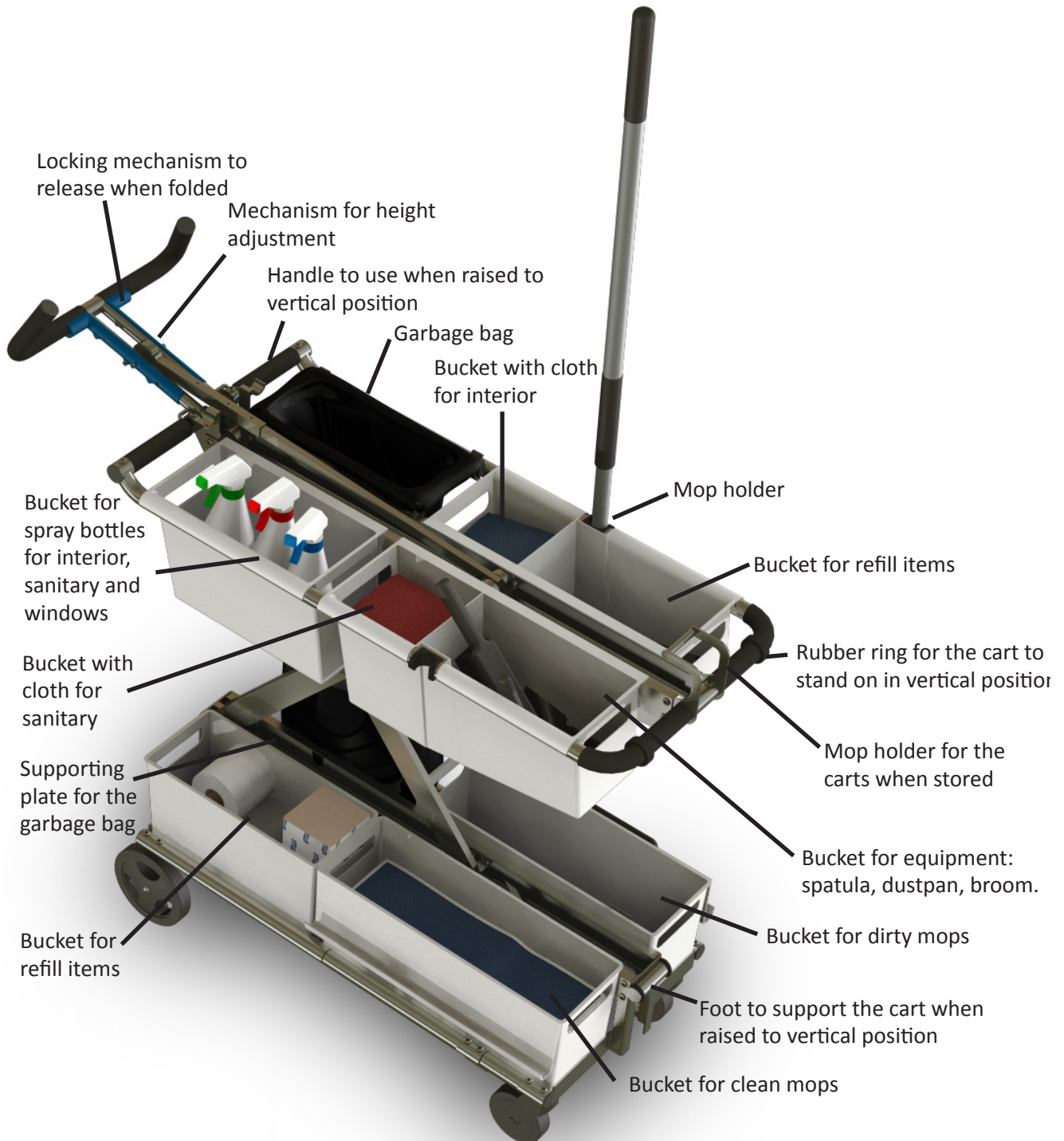
## HELPING MECHANISM



The spring in the joint of the handle help the cleaning assistant lift the cart when unfolding it. When folding it the spring holds back to prevent the cleaning personnel from carrying all the weight. The principle is based on, that the spring is compressed when folding the cart, so that the energy stored in the spring can be used when unfolding the cart.



# MAPPING OF COMPACT CLEANING CART

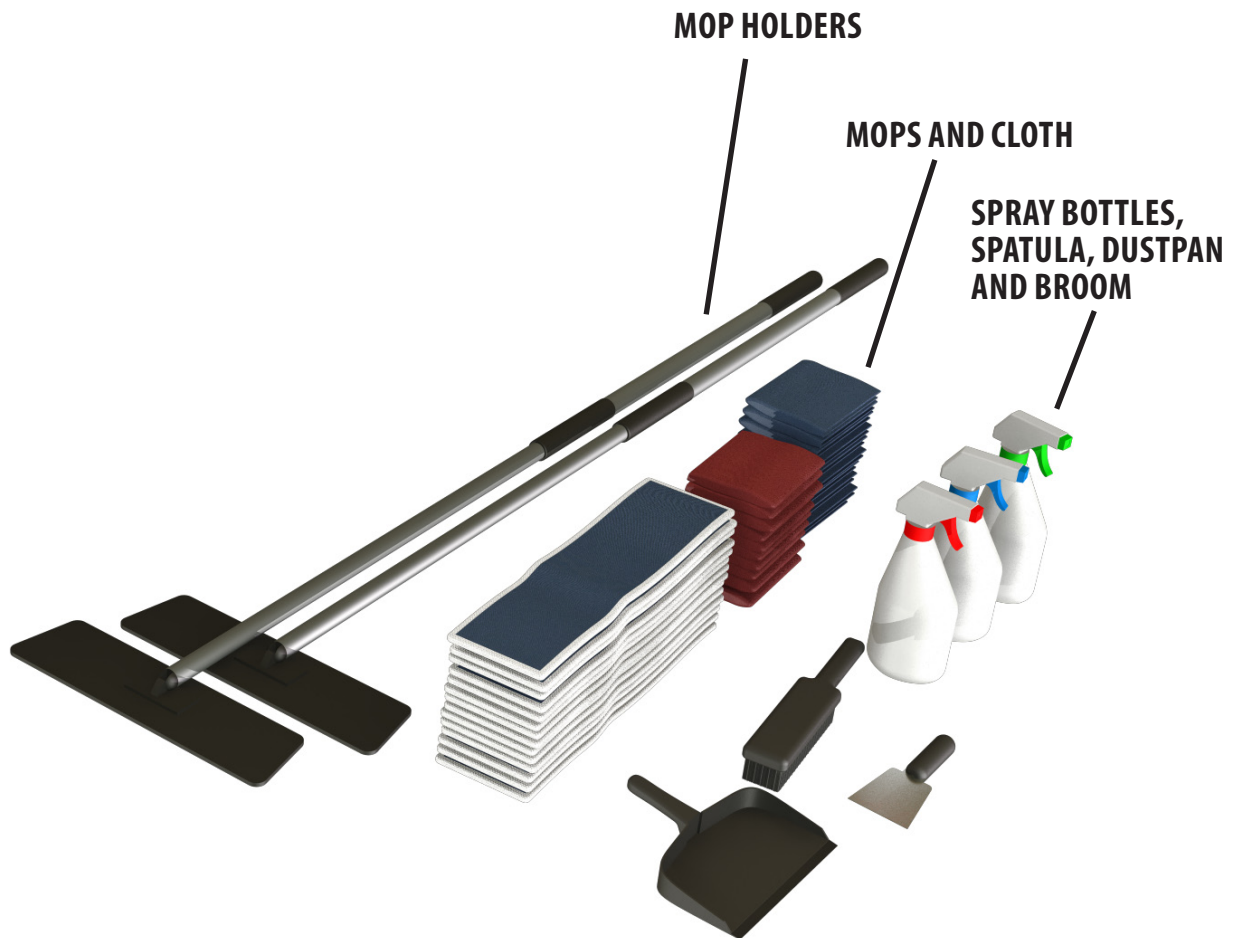






# CONTENT AND CONFIGURATION

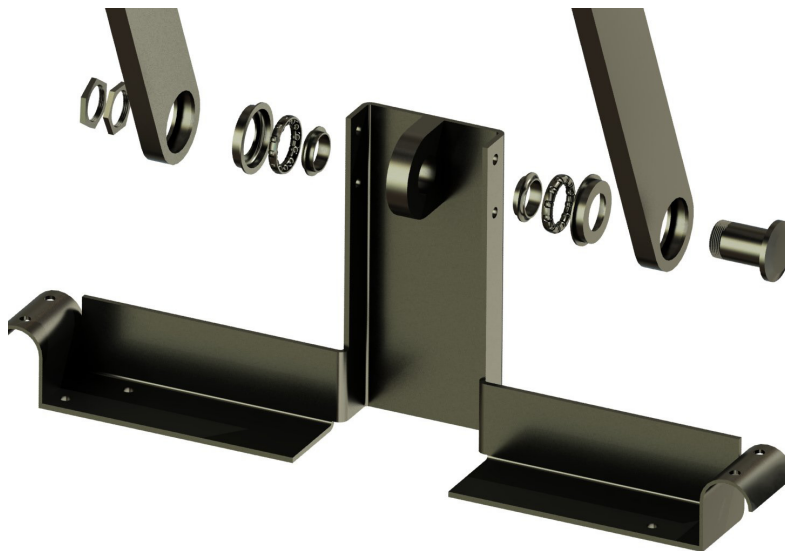
When receiving the Compact Cleaning Cart it is ready for use. It holds all the necessary items to start cleaning. The Compact Cleaning Cart is made so it fits the typical assignments that are carried out in smaller places where storage of a cleaning cart could be a problem. Thereby a lot of trouble is saved in configuring the cart. This is an advantage for both the production company, the retailer and the buyer. The retailer saves time when selling the cart and the risk of getting the order wrong is reduced. The production company can produce the carts beforehand and have them stored until the retailer calls. This secures quick delivery for retailer and buyer.





# PARTS OF THE COMPACT CLEANIN

An exploded view of the top frame shows its complexity. Even though many of the parts are designed to be used more places than one, there are still many different items.

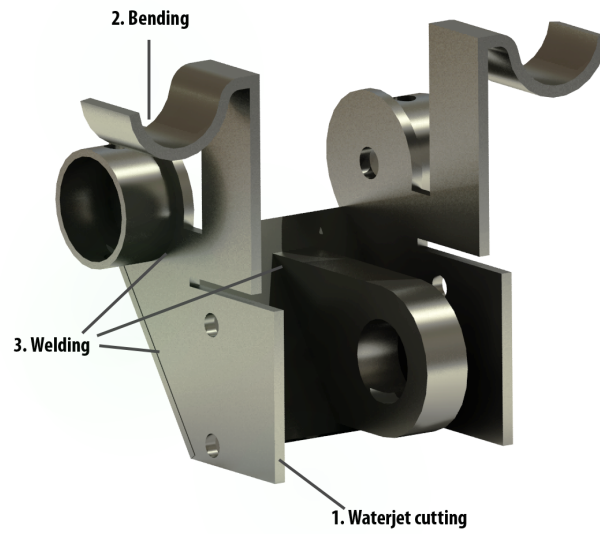


The exploded view of joint at the bottom rear end part shows the principle of how all the joint are made. This principle gives the cart joints with no play and this is ensures that the Compact Cleaning Cart is stable.

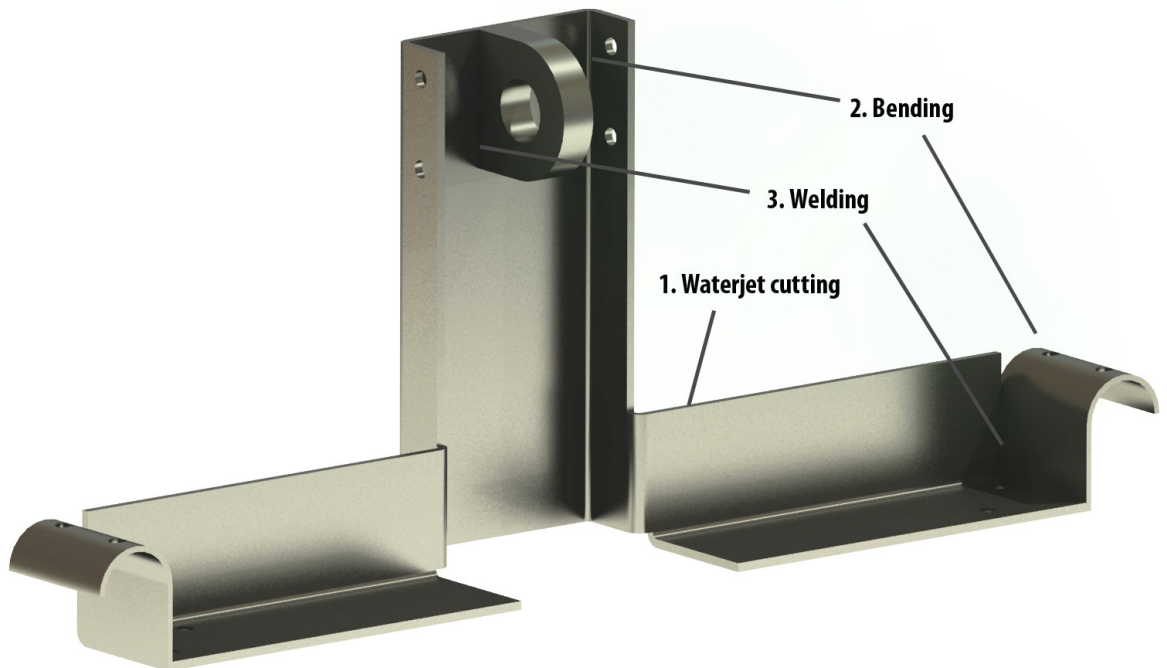




# NG CART



Some of the parts are complicated to produce because of the many functions that is built in to them. The two shown parts require 3 different kinds of processing.





PHASE1: Program

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# THE COMPACT CLEANING CART

## CONCLUSION

The Compact Cleaning Cart can be stored in limited spaces and is thereby attractive for companies with limited space for storage. Not only does it provide the same functions as a typical cleaning cart, but it also improves many of the aspects especially focused around the workflow i.e. efficiency and healthy work procedures.

The Compact Cleaning Cart is based on parameters created from how the market looks. By comparing the Compact Cleaning Cart to other carts it can be seen, that the Compact Cleaning Cart is competing on many of the same parameters as the competitors. In addition to these common competition parameters, the Compact Cleaning Cart also has a strong sales argument in its storage possibilities.

Price is one of the common parameters but this is not been a main focus for the Compact Cleaning Cart. As this is a parameter which many buyers focus on, the Compact Cleaning Cart will not be chosen by this group of buyers. In stead of the price, the workflow around the cart is highly valued. Thereby the focus is on a cart that supports both efficient and healthy work procedures. Efficiency and health are also something some of the other brands are selling their carts on. To support the Compact Cleaning Carts focus on these subjects its appearance is important in order to signal a healthy and efficient cart. Here the Compact Cleaning Cart sets itself apart from the competitors as it has a different look than them and still it is evident that it is a cleaning cart. This is important as the cleaning branch is a very conventional market and therefore will not accept a cart which is totally different from what they know.

Many of the competitors have “configuration possibilities” as their main selling point. The Compact Cleaning Cart only comes in one edition and this is a main selling point for it. It is hard to convince the market that more choices is not always better, but seeing how the service providers often buys the same configuration and how the sales personnel also often sell the same configuration, it is reasonable having only one type of cart, which everybody needs; and that is

## THE COMPACT CLEANING CART





# DIMENSIONS

