

The Co-bot Floor Cleaning Guide

for Logistics Applications Vol 2



**CLEAN IS
CHANGING**

Let's change it for the better.



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- 02** Introducing the Nilfisk Liberty autonomous floor scrubber dryer to your team and facility
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01

Introduction

If you're reading this guide, then you've already made the decision to welcome a Nilfisk Liberty autonomous floor scrubber dryer onto your cleaning team. Congratulations! You're about to take a significant step toward improving your cleaning performance and efficiency, enhancing your brand reputation, and earning customer trust and loyalty.

This guide will help you get the most out of your investment. It will walk you through the steps you need to take to prepare your team and your space for autonomous cleaning. Our experts will also work with you to help you become fully operational with your new robotic partner as quickly as possible.

Here's what you'll learn in this guide:

- How to successfully introduce and deploy the Nilfisk Liberty in your organization.
- Best practices for using autonomous cleaning solutions in retail environments.
- Where to get help when you need it.

Note: This is Volume 2 of our guides to autonomous cleaning. For an overview on intelligent cleaning solutions and their benefits please refer to Volume 1 of our Co-bot Floor Cleaning Guide series.



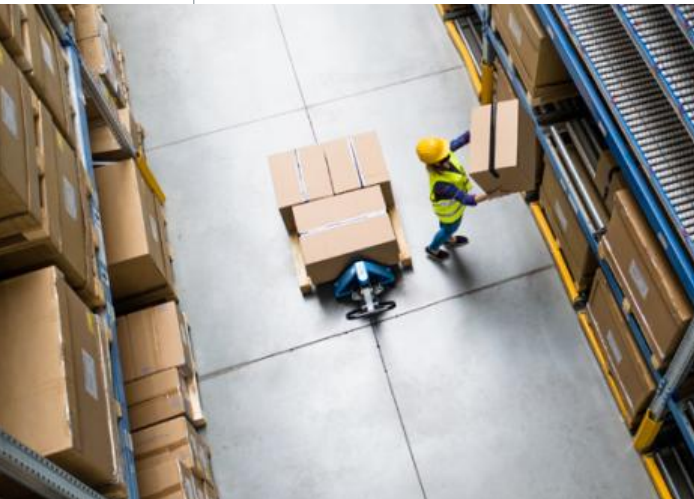
The importance of cleaning in the warehousing and logistics industry

Cleaning has always been central to warehouse operations, for three main reasons:

1. **Productivity** – When a warehouse is clean, it's easier to move through aisles, in and out of the loading bays, and so on. Optimizing the movement of people, vehicles, and goods throughout your facility helps you increase productivity.
2. **Health and safety** – Many workplace injuries are due to slip-and-fall accidents caused by unclean, slippery floors. Dust can also be inhaled, leading to allergies and lung disease. Cleaning minimizes these risks and helps you achieve regulatory compliance related to worker health and safety.

3. **Product quality** – In some facilities, such as food manufacturing warehouses and electronics distribution centers, dust and grime can impact product quality. Regular cleaning helps you ensure the quality of the parts, equipment, merchandise, and products you're storing and transporting.

Now, with the changes brought about by the pandemic, cleaning plays an even larger role. First, thanks to a boom in ecommerce, warehouses are busier than ever before, which means more people, goods, and vehicles are moving through the facilities.





02

Introducing the Nilfisk Liberty autonomous floor scrubber dryer to your team and facility

Setting the stage for autonomous cleaning

In the Volume 1 guide, we identified three steps you should take before your new cleaning robot arrives for its first day on the job:

- Getting buy-in from stakeholders
- Assigning roles and responsibilities
- Setting cleaning goals and KPIs

Here, we'll expand on these crucial steps and also discuss how to prepare your facility for autonomous cleaning.



Embrace the change at all levels

The number one factor that will determine the success of your autonomous cleaning implementation is the attitudes of your stakeholders. Everyone in your organization has a role to play in making the transition as smooth as possible:



Leadership is responsible for championing the change, as well as for developing the implementation plan and communicating it to all levels of the organization. This will set the tone for the entire project – if leadership is excited, everyone else will be too!



Supervisors and site managers need to prepare their teams and their operations for autonomy. One of the biggest reasons technology implementations fail is a lack of acceptance by the team. Supervisors and site managers can encourage acceptance by communicating thoroughly and frequently about issues such as what type of training will be offered, how cleaning schedules will change, and the overall benefits of having a robot as a team member.



Finally, the **operators** are the ones who will work alongside the autonomous solution every day. To do this competently and confidently, they will need to complete training and also have the opportunity to practice using the new machine.



Define roles and responsibilities

The Nilfisk Liberty will function as an additional member of your cleaning team, and it will only be as successful as the team itself. Although the machine is easy and intuitive to operate, it is still an advanced piece of technology, so think carefully about who you task with using the equipment.

The ideal employee to engage with an autonomous solution is:

- Highly motivated
- Interested in learning new things
- Trustworthy
- Experienced in floor scrubbing equipment and processes

Through research with our customers, we've identified the personas that are best-suited to programming and operating autonomous cleaning machines. In general, we recommend that the people assigned to program the Liberty have high tech proficiency and the ability to think strategically about cleaning processes. In terms of daily use, even people with low tech proficiency are typically able to operate the machine as long as they've been properly trained.

Here are a few questions to ask when assembling your autonomous cleaning team:

- **Is your staff ready to adapt to a new cleaning plan?**

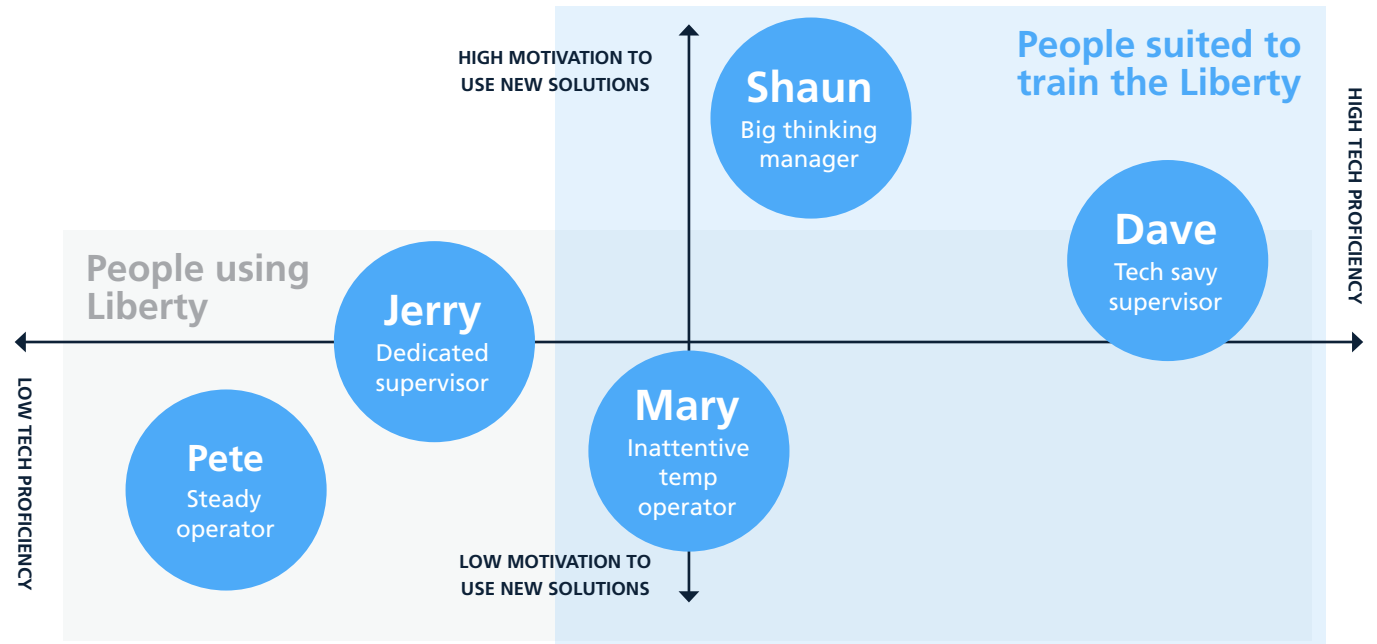
If not, then this is where you need to start. Change can be scary, so communicate with your team well in advance about what the new cleaning plan will look like. This is a good time to reinforce the message that the robot is not replacing anybody, but rather allowing your human workers to focus on higher-value and more engaging tasks.

- **Which operators are willing and able to handle new technology?**

The attitude of your team toward autonomous cleaning will play a large role in the success of the project. Choose operators who are excited about the new technology to lead the initiative.

- **If a challenge arises, who will be best able to work their way out of a problem?**

For the most part, autonomous machines work on their own. But sometimes they may need assistance, for example, if they encounter an unexpected obstacle. Ensure your operators are willing and able to support the machine in these situations.





Top 5 logistic cleaning challenges...and how the Nilfisk Liberty solves them



Challenge: **Time pressure**

The Liberty multiplies the cleaning power of your team. Every hour it's in use frees up an hour of a human cleaner's time to perform higher-value tasks.



Challenge: **Inconsistent or low-quality cleaning results**

The Liberty cleans in exactly the same way every day, achieving up to 99.5% coverage.



Challenge: **Cost pressure**

The Liberty allows you to minimize your costs by refocusing your labor resources on business-critical activities.



Challenge: **Increased hygienic standards**

The Liberty does the boring work of cleaning the floors so your cleaning team can focus on the tasks necessary to keep employees safe.



Challenge: **Labor shortages**

The Liberty is like an additional member of your cleaning team – one who shows up to work every day and doesn't mind doing repetitive tasks.





Prepare your facility

Once your team is assembled, it's time to prepare your facility for autonomous cleaning. This consists of two steps:

- Deciding what area your Liberty will clean (if you haven't already).
- Making any necessary layout adjustments.

Deciding where to use your Liberty

The Liberty relieves members of your cleaning team from having to spend multiple hours walking behind or riding on a floor scrubber. However, it won't provide the same benefits in all spaces. For example, if you have one large area and several smaller areas to clean, you'll get more bang for your buck using the Liberty in the large area rather than the smaller ones.

By selecting the area to be cleaned strategically, you can position yourself well to immediately achieve the cleaning results you want as well as optimize your investment over time.



Here are a few questions to help you decide where to put your Liberty to work:

Is the total area to be scrubbed large enough to provide the desired return on investment (ROI)?

Depending on your application and environment, if your team spends hours a day in scrubbing the floors with a manual scrubber dryer then you're a good candidate for autonomous cleaning. Even saving just a few hours every day will allow you to significantly increase cleaning productivity.

Is there typically heavy traffic in the area during cleaning?


While the Liberty is safe to operate in areas where people are, heavy traffic will impact its productivity. We recommend using the machine when traffic is limited, such as early in the morning or after closing time.





Storing your Liberty autonomous floor scrubber

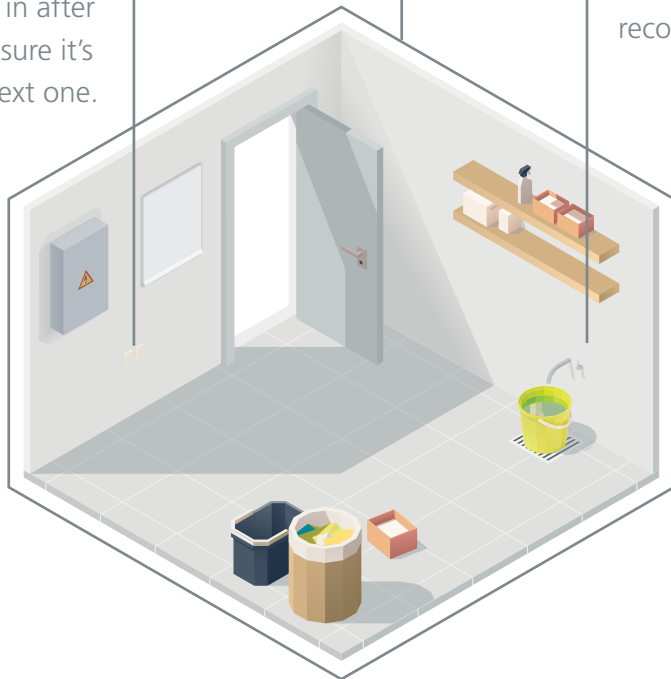
Most of this guide focuses on how you can use the Liberty to maximize your cleaning team's productivity and efficiency. To do that, you'll want to use your machine as much as possible!

However, you also need to have a plan for storing the Liberty when it's not in use. Here's what we recommend for your storage area:

Security: A secure space will help you protect your investment, not only from theft but also from wear and tear caused by being bumped or jostled. 

Access to electricity:  Plug your Liberty in after each shift to ensure it's ready for the next one.

Access to water:  This will make it easy for you to both drain and fill the recovery tank.



Set your cleaning goals

Having clear goals and key performance indicators (KPIs) will help you keep the project on track and all stakeholders on the same page. Our team will help you specify KPIs based on your facility, your current cleaning processes, and how you plan to use the Liberty.



03

Installation and deployment



Following the steps above will ensure your team and your facility is ready to receive the Liberty and start using it as soon as possible. This section details the steps for deploying the machine in a retail environment. Your local Nilfisk team will be available to help you throughout the entire process.

1. Logistics

Once you've placed your order, a member of the Nilfisk team will contact you to organize the logistics of receiving, installing, and deploying your Liberty. They will schedule a call to organize a date for installation and provide you with a detailed overview of the entire process. In essence, purchasing an autonomous scrubber dryer is similar to purchasing a traditional floorcare machine but with additional support.

2. Preliminary information

To speed up the installation process, the Nilfisk team will collect information about your application. Here is the information you should have at the ready:



Basic information about the cleaning area, including size and layout, with images if possible – This will help your local service technician prepare plans and suggestions in advance.



How many people will be authorized to use the machine – The technician will use this information to order the correct number of keys for the different roles (i.e., supervisors, simple users).

3. Training

One of the benefits that sets Nilfisk apart from the competition is our extensive training programs.

We will provide access to an online course on the Liberty for your cleaning supervisor to complete in advance of the installation so that they will understand the machine and be able to facilitate adoption by the cleaning team. During the installation process, we will provide on-site training for your team.



What happens on installation day?

The day you receive your Liberty will be an exciting one, especially if it represents your first experience with autonomous cleaning. Our team will collaborate with you to ensure that the newest member of your cleaning team is ready to get to work!

Here's an overview of what you can expect:



1. Initial setup

- Uncrate the unit and prepare it to start cleaning



2. Product introduction

- What you need to know about the Liberty
- Location tags – where to place them and how to use them
- How to record, play, stop, and resume a cleaning plan
- When and where to use the different cleaning modes
- Digital tools setup



3. Environmental considerations

- Best practices for your cleaning area
- Suggested cleaning plans



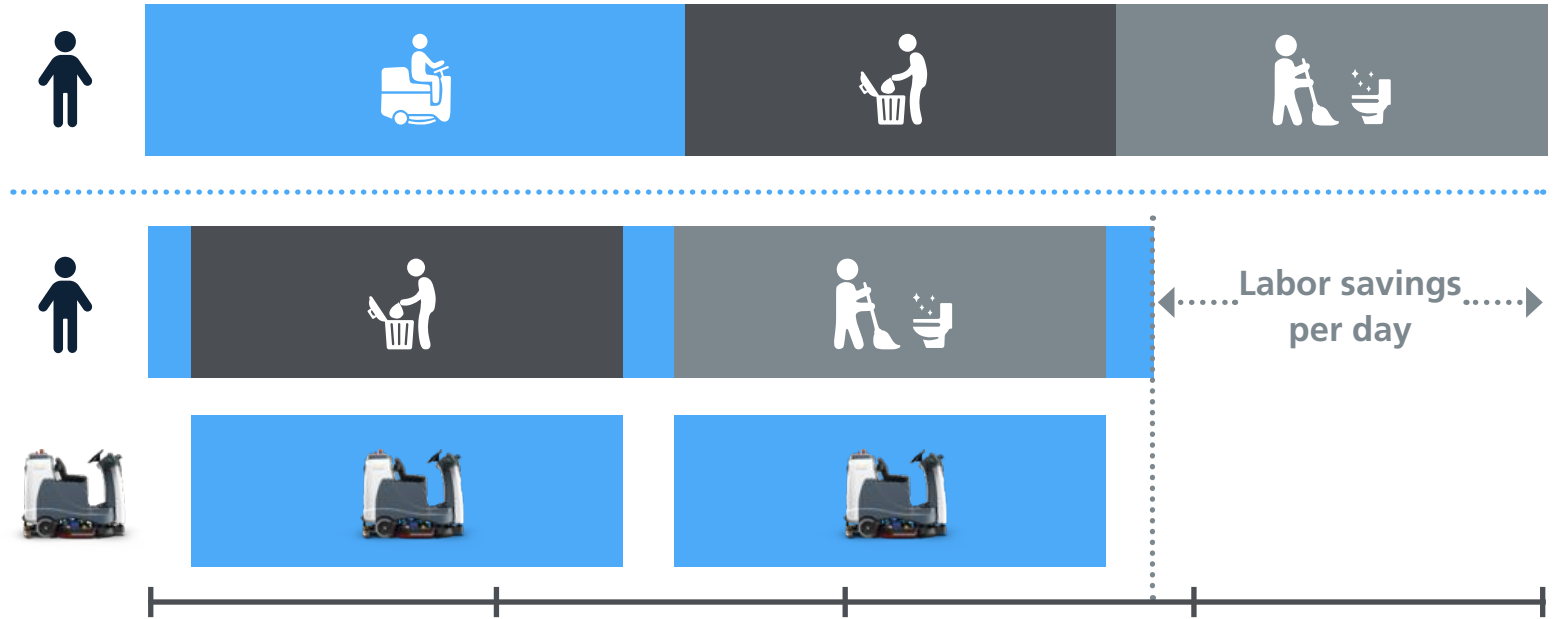
4. Troubleshooting and service

- Most common issues and their solutions
- Service contacts and how to get help



Scheduling cleaning tasks

Now, your team is assembled, your facility is prepared, and your Liberty is ready to get to work! How should you organize your cleaning schedule to maximize your productivity and optimize your labor resources?



We recommend assessing your jobs to be done and establishing a parallel schedule for autonomous and manual cleaning tasks. The table below shows a sample cleaning schedule for a distribution center.

Time	Warehouse cleaning team		Liberty
Morning shift (6 am - 8.30 am)	Moving/store merchandise	Prepare the scrubber	Autonomous floor scrubbing area A+B
	Control and inventory of stored products	Dust mopping (pre sweep) A+B	
			Bathroom cleaning / Clear aisles from products/equipment
		Refill the Liberty	
Evening shift (5 pm - 6 pm)	Preparation and dispatch of orders	Dust mopping (pre sweep) C	Autonomous floor scrubbing area C
		Disinfect and clean high touch points (cleaning shelves, carts)	
	Daily closing activities	Sweep sides and top of the stacks	



04

Processes and best practices



How to create an effective cleaning plan

1

Placing the location tag

The Location tag (QR code) is the anchor of the machine. Once scanned, it will allow the machine to recognize where it is in the cleaning area and start cleaning:

- The area around the tag should remain as static as possible and free of obstacles
- Do NOT remove the tag. If you do, all plans must be recreated.



2 Recording the cleaning plan

Once you've placed the location tag, you will be ready to start creating your cleaning plans.

Divide the warehouse into cleaning zones based on when you want to run the machine. For example, you may want to touch up the floors in low-traffic areas during the day and save the bulk of cleaning in high-traffic areas for after the activities are completed for the day.

Tips for recording your cleaning plans

Always take flared turns when driving in and out of the hallways, as well as when making U-turns. Do not cut the corners.

Stay clear of complex objects and spaces, including:



Flat-based objects (e.g. completely lowered forklift forks 10 cm).



Spaces that are too small for the machine to turn around (e.g., the machine needs to have enough space to turn at the ends of aisles).



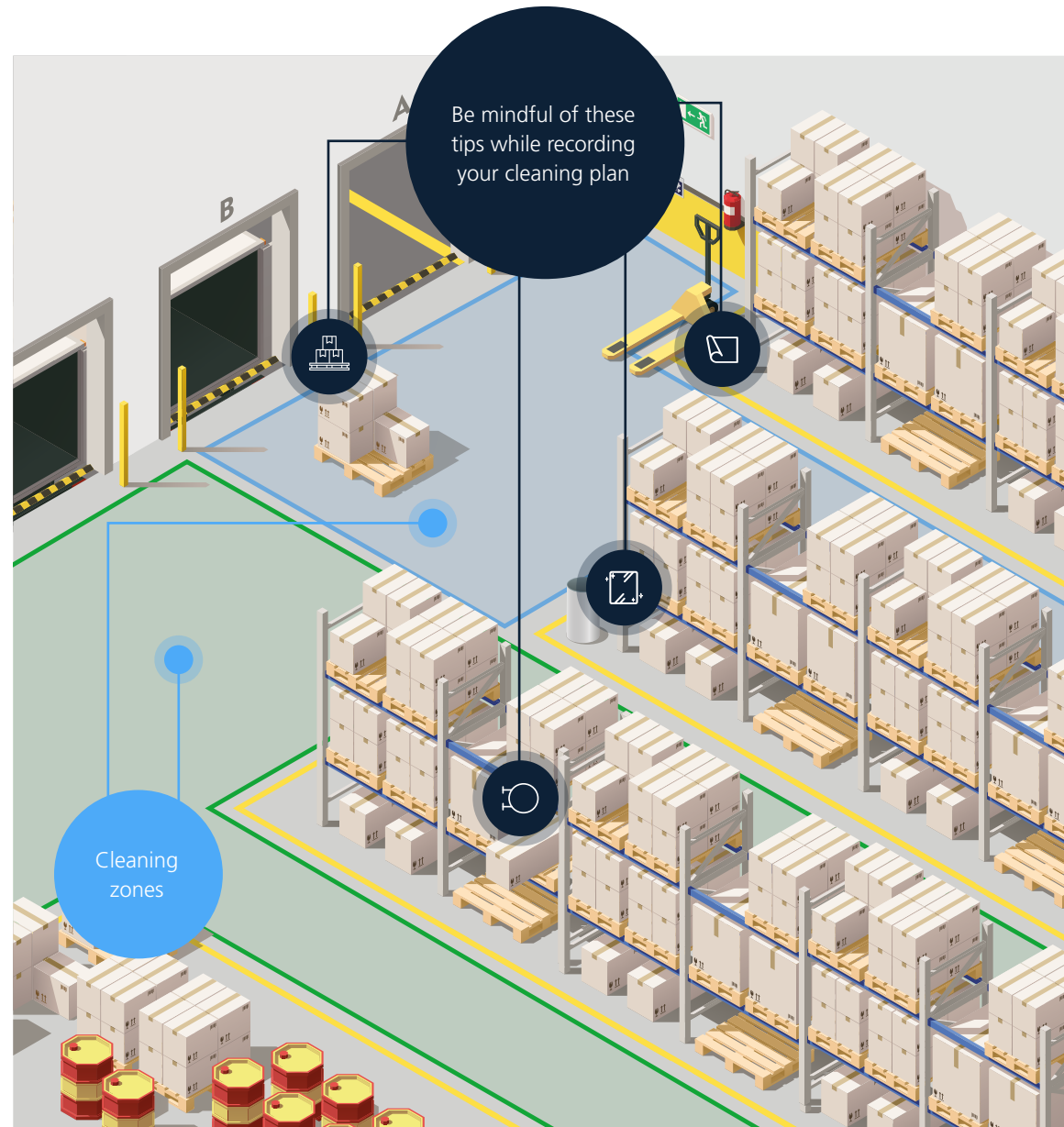
Overhanging objects from racks.



Reflective objects (e.g. shiny trash cans, shiny metal surfaces), drops (e.g. elevated platforms), glass panels (e.g. frameless glass).



New stack of boxes or pallets at the top of an aisle.





3

How to play back your cleaning plans

- Remove all obstacles (boxes, equipment, pallets, fallen objects, etc.) from the cleaning path.
- Adjust any stock protruding from the racks.
- Drive the Liberty to the starting point and press the start button.

Tips for playing back your cleaning plans



Before playing back your cleaning plans, make sure you have defined your cleaning schedule so you operators know what manual activities to perform while the autonomous machine is working.



Clearing the cleaning path before you start the machine will help you maximize the productivity and performance of your autonomous solution.



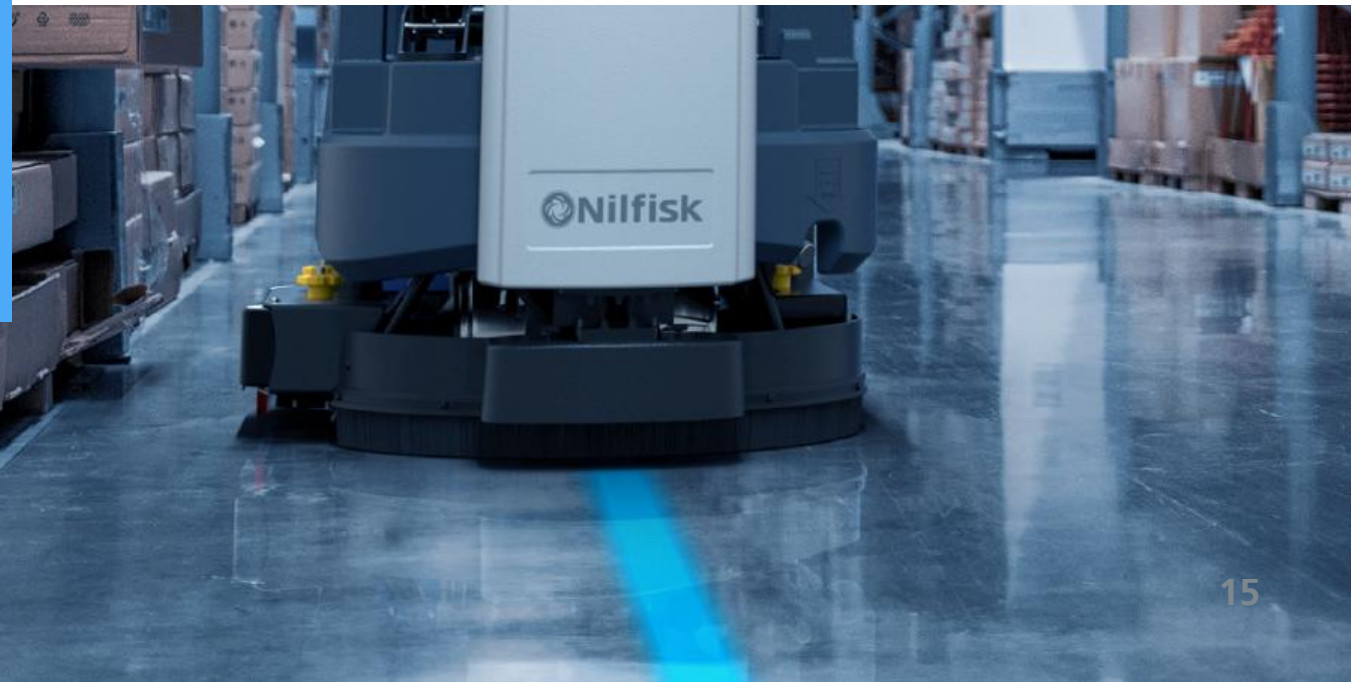
If your cleaning area has changed significantly (e.g., because of a new layout or temporary stock), create a new cleaning plan for that section of the store.

What to do in case of a problem

Consult the support material and online training covered during the installation phase (digital guides, service posters and online trainings).

Any more issues?

Contact your Nilfisk service representative.



Make your business smarter

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