Maximizing Warehouse Efficiency:

Best Practices for Equipment Management in Distribution Centers

Executive Summary

Today's fast-paced market is unforgiving. Supply chains are tightly interconnected, with little room to accommodate error. Warehouse and distribution center staff need to execute their tasks flawlessly the first time, every time. That can be difficult with many legacy administrative processes.

In the world of just-in-time inventory management, the efficiency of your warehouse operations can make or break your company's success. This comprehensive guide to warehouse and distribution center operations is your roadmap to optimizing your operations, from inventory management and order picking to technology integration and workforce productivity.

So, no matter whether you're a seasoned logistics professional or new to the shipping and distribution sector, this guide is designed to equip you with the knowledge and strategies needed to streamline your operations, reduce costs, get every order complete and out the door on time, and ultimately deliver exceptional service to your customers.

The Core Components of an Efficient Warehouse and Distribution Center Operations

You must follow a few core operating principles no matter what sector your shipping and distribution team works in. Those include:

- Securing your facility, employees, inventory, and business assets

- Maintaining visibility on the operations, personnel, inventory, and equipment

- Maintaining high operating efficiency

- And aligning your operations with your company's strategic goals—typically through following a continuous improvement plan.

Securing your facility, employees, inventory, and business assets

Lax security practices can lead to material losses, create unnecessary workloads that interfere with revenue-generating activities, and significantly harm employee morale. If any of those issues are left unchecked, let alone all three, the downstream economic impact on your distribution center and wider business will be severe.

First and foremost among your physical security measures are access controls. Implement measures such as keycard systems, biometric scanners, or PIN codes to limit entry to authorized personnel only. Regularly update access permissions to ensure that only employees with a legitimate need to be in specific areas are granted access.

A robust surveillance system of cameras and networked alarms can be a powerful deterrent against theft and unauthorized activities within your warehouse. Strategically position cameras to cover entrances and exits, critical internal spaces, or holding areas for sensitive equipment or inventory items. Modern surveillance systems often include motion sensors and real-time alerts, allowing you to respond promptly to suspicious activities.

Smart management systems can significantly enhance both security and efficiency. These systems help you track and control the use of vital handheld business equipment, such as scanners and mobile devices—the equipment that warehouse operations depend on. Smart lockers offer features like real-time location tracking, automated usage logs, and device reservation and maintenance monitoring.

Technology is helpful, but security must be a people-powered business practice. Encourage a culture of safety consciousness among your workforce. Conduct regular safety training sessions for all employees to be well-versed in handling equipment, safely navigating their working environment and environmental hazards and in your emergency procedures.

Maintaining visibility on the operations, personnel, inventory, and equipment

New business insights require new data. That means having new tools and practices. And a smart management system is the cornerstone of maintaining visibility over your warehouse's equipment inventory. Choose a system that provides real-time visibility into the quantity and location of products. This means you can track items as they move through your facility, from receiving to shipping. This real-time visibility empowers you to make informed decisions about inventory levels, order fulfillment, and resource allocation in near-real-time.

Barcode and radiofrequency identification (RFID) tagging have revolutionized inventory tracking. Barcodes are cost-effective and easily integrated into your existing systems, while RFID provides advanced automation and tracking capabilities. Passive RFID tags are small enough to be embedded in inventory labels or inside vital warehouse equipment you want to track. Using either of these technologies can ensure accurate inventory counts, reduce the risk of stockouts or overstocking, and enhance order accuracy.

Regular inventory cycle counting is a proactive approach to verify inventory accuracy. Rather than relying solely on periodic, time-consuming physical inventories, cycle counting involves regularly counting a subset of your inventory. This ongoing process helps identify discrepancies and inaccuracies promptly, allowing for swift corrective action. It's a valuable tool for maintaining an accurate and up-to-date inventory.

Utilizing these methods creates many touchpoints to collect new, meaningful intelligence on your operations. Analyze data related to inventory turnover, order fulfillment times, employee productivity, and equipment utilization. By examining these metrics, you can identify opportunities for optimization, streamline processes, and make data-driven decisions that enhance overall efficiency.

Maintaining high operating efficiency

Making operations more efficient is frequently a balancing act or trial-and-error process of changing different elements of your operations and seeing what works and what doesn't. All recommendations in this section are interdependent, and changes to one will impact the other. Start with what appears to be the greatest impact change you can make, and spread out your optimization efforts from there.

In a distribution center, efficiency starts with a well-defined and standardized order fulfillment process. You can minimize errors and improve order accuracy by establishing clear procedures for order processing, picking, packing, and shipping. Standardized procedures ensure that every team member understands their role in the process, the tools they need to do their job, and how to handle problems when they arise. Sticking to these standard procedures will reduce confusion and streamline operations.

The layout of your warehouse plays a significant role in operational efficiency. Strategically place high-demand items closer to the work areas where they are needed most to reduce excessive warehouse travel.

Embrace technology to automate various aspects of your warehouse operations. Consider implementing a smart locker system to streamline equipment management, maintenance, and lifecycle tracking. They automate the check-in and check-out of equipment, like handhelds, tablets, and wrist-mounted picking tools, ensuring their availability and readiness at the start of each shift. Many smart locker systems can also provide quality control checklists at signout or return. So, before the start of each shift, have a checklist to verify equipment functionality.

4

Aligning your operations with your company's strategic goals

It is essential to prioritize continual improvement to stay competitive and ensure long-term success in warehouse management. Often, that will take the form of following a methodology such as Lean management.

If you've applied new technology to your warehouse operations, you have new data. Leverage data analytics to identify bottlenecks and areas of improvement. Modern warehouse management systems and data-driven tools allow you to collect and analyze vast amounts of data related to warehouse operations. Key performance indicators (KPIs) such as order fulfillment rates, order accuracy, inventory turnover, and picking efficiency provide valuable insights into your warehouse's performance.

Analytics tools can pinpoint bottlenecks in your warehouse processes. Bottlenecks are areas where work slows down or becomes congested, leading to delays. By identifying these bottlenecks, you can develop targeted solutions to alleviate them and improve overall workflow. Implement continuous monitoring of KPIs to track trends and changes over time. Regularly review this data to identify anomalies or areas where performance deviates from established benchmarks.

Lean manufacturing principles are designed to eliminate waste, reduce lead times, and enhance overall productivity. Identify and eliminate waste in your warehouse processes, such as overproduction, excess inventory, and unnecessary worker or mechanical action—for example, excessive travel or handling.

As we can see, many of these processes require automation, data, or networking capabilities. The latest generation of smart management technology lies at the heart of all these actions.

How Does Warehouse Equipment Management Work?

Many organizations get by with manual spreadsheet tracking. Legacy processes like that work. They collect basic information but cannot provide the same level of automation, control, and data collection possible with newer smart systems. They also require a great deal of labor, and with skilled human labor in shorter supply than ever before across North America, finding ways to turn your employees towards revenue-generating activities is more important than ever before.

Why are electronic devices important for warehouses and distribution centers?

Handheld electronics, such as handheld scanners and printers, play a pivotal role in modern warehouses and distribution centers, from picking and packing operations to managing returns and facilitating communication through large, sprawling facilities, leading warehouse operations today live or die based on the functionality and availability of their mobile technology.

Effective material handling

Electronic devices are indispensable tools for optimizing material handling processes within warehouses and distribution centers.

Inventory management

Handheld scanners allow workers to scan barcodes efficiently, track stock levels, and monitor real-time product movements. This precision minimizes errors and ensures that inventory counts remain accurate.

Order fulfillment

Electronic devices facilitate the picking and packing of customer orders. Warehouse staff can scan products, confirm order accuracy, and generate packing labels easily, reducing order errors and enhancing overall efficiency.

Receiving

Workers with handheld scanners can swiftly scan incoming products and update inventory records when new inventory arrives at the distribution center. This process is faster and more accurate than manual data entry.

Inventory replenishment

Real-time data from electronic devices aids in determining when inventory needs replenishing. It ensures that stock levels are optimized and minimizes instances of stockouts or overstocking.
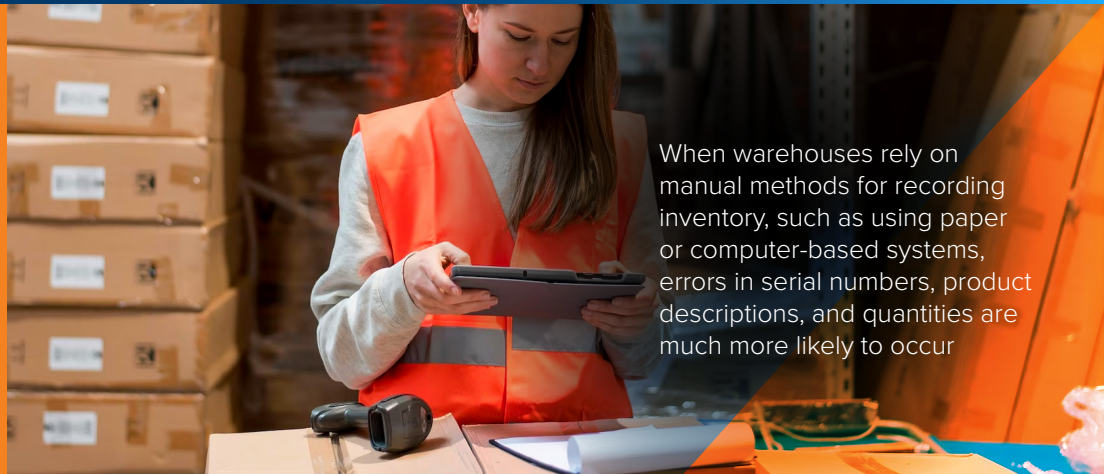
Quality control

Electronic devices assist in quality control processes by providing instant access to product information and inspection checklists. This helps identify and address quality issues promptly.

Accurate inventorying and labeling

When warehouses rely on manual methods for recording inventory, such as using paper or computer-based systems, errors in serial numbers, product descriptions, and quantities are much more likely to occur

Inventory errors

Inventory mislabeling and imbalances can lead to delayed order fulfillment, angry customers, and increased operational costs.

Cost of inaccurate records

Inaccurate inventory records can also lead to overstocking or stockouts. Overstocking ties up capital in excess inventory, while stock outs can result in lost sales and damage customer relationships.

Barcode scanning

Electronic devices with barcode scanning capabilities ensure precise data entry during inventory processes. No manual transcription errors are possible. Complete tag data moves from inventory to scanner to database every time.

The productivity impact of employee equipment and toolkit management

Effective equipment and toolkit management are critical for maintaining productivity when employees rely on specific tools and devices to carry out their tasks. That statement describes distribution center staff and their handheld devices to a T.

Many such workplaces still employ manual equipment management practices, which typically means storing equipment in cages or standard lockers and managing the distribution and return of equipment manually. While this may seem straightforward, it often results in significant productivity losses.

Time wastage

One of the most glaring issues with manual equipment management is the time employees spend queuing to retrieve, replace, or return equipment at the beginning and end of each shift. For instance, if each of the 100 employees spends just 5 minutes in line at the beginning and end of each shift, it adds up to approximately 1,000 minutes per day, which is 17 paid work hours of wasted time.

Unplanned downtime

That calculation doesn't account for the additional time spent when equipment breaks down or requires battery replacement during a shift. Employees might have to queue again to replace malfunctioning equipment, leading to further unplanned downtime.

Hidden or stolen devices

Sometimes, employees hide their favorite known working scanners in obscure warehouse locations. With many devices hidden and out of circulation, other employees spend valuable time searching for the necessary tools to do their jobs.

Theft

Inadequate equipment control can also make workplaces susceptible to theft. Employees or external bad actors may exploit the lack of oversight to steal valuable equipment, further disrupting operations.

Key challenges managing warehouse equipment

No matter how smooth your manual equipment management practices are, problems inevitably slip through the cracks. Some of the most common include poorly managed equipment maintenance programs and frequently uncharged equipment.

Many such workplaces still employ manual equipment management practices, which typically means storing equipment in cages or standard lockers and managing the distribution and return of equipment manually. While this may seem straightforward, it often results in significant productivity losses.

Equipment maintenance management

Warehouse and distribution center equipment is constantly used, and wear and tear are inevitable. When they are out of circulation, it disrupts workflows and can lead to significant downtime. Employees relying on these tools are forced to pause their tasks, leading to delays in order fulfillment, inventory management, and other critical processes.

Uncharged equipment

Barcode scanners, handhelds, and other mobile devices are all battery-powered. Allowing equipment to sit uncharged can lead to delays and reduce productivity. Employees may need to leave your warehouse floor to find replacement batteries or charging stations. And if they fail mid-task, important inventory data might be lost.

Automation as a solution

Many warehouses are turning to automated management solutions to address these challenges effectively. Automating equipment management can significantly reduce downtime and improve overall productivity.

Predictive maintenance

Automated systems can monitor the condition of stored equipment in real time. They can predict when maintenance is required, allowing timely servicing and reducing unexpected breakdowns. Smart lockers can also prompt users to input maintenance concerns when they return devices for an added layer of insights.

Battery management

Smart management lockers can also help manage battery levels efficiently. Cradles and charging cords built right into lockers make it easy to ready any idle device. And the same checklist feature can remind workers to plug in a device when they return one.
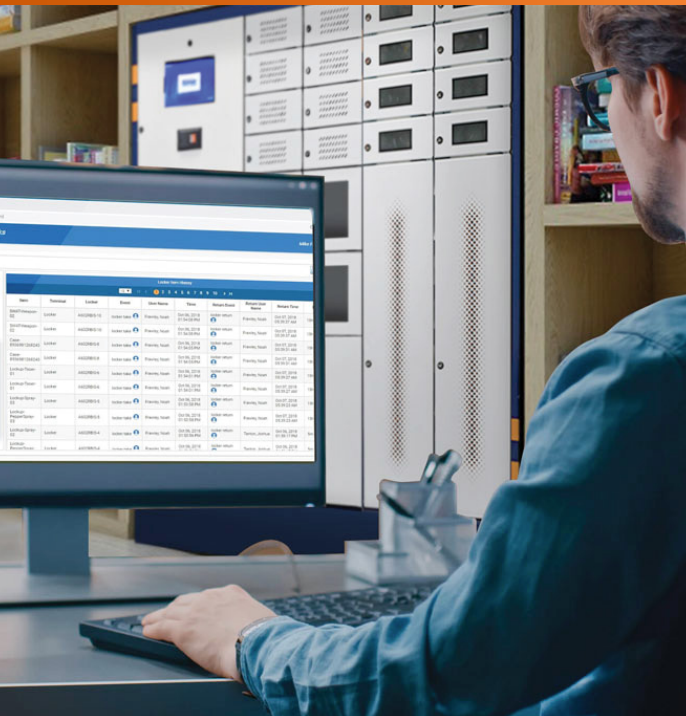
Kit management

Warehouse worker equipment is increasingly bundled into kits, including handheld scanners, walkie-talkies, and wrist printers. Employees need their full kit to do their job. But what do you do when an employee shows up and a piece is missing? Where did it go? Who lost it? Smart lockers help keep kits complete with automated tracking and transaction monitoring, so you'll always know who had which devices last.

How to Streamline Warehouse Equipment Management for Maximum Operational Efficiency
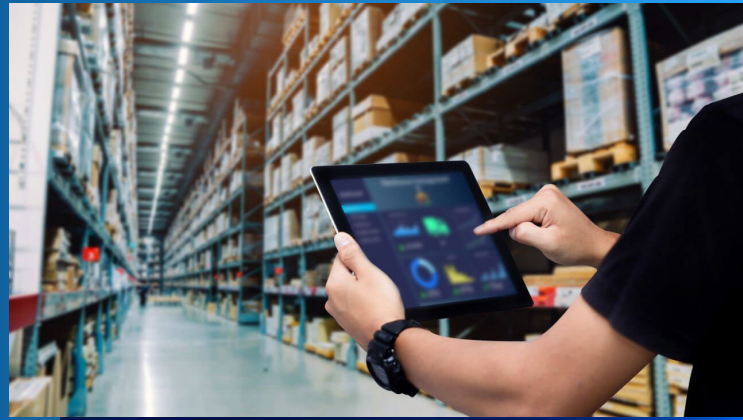
Consider implementing an automated equipment management system to minimize downtime and ensure employees can access necessary equipment without delays. This system should allow for quick and efficient equipment check-out and check-in.

Embrace technology

Leverage technology to streamline warehouse operations and improve overall efficiency. Implement a smart asset management system to automate various warehouse processes.

Quality control

Utilize data analytics tools found in the latest smart lockers to identify opportunities for optimization and improvement within your warehouse operations. Analyzing equipment usage patterns, maintenance data, and employee workflows can help fine-tune processes and maximize efficiency.

RFID or barcode scanning

Utilize data analytics tools found in the latest smart lockers to identify opportunities for optimization and improvement within your warehouse operations. Analyzing equipment usage patterns, maintenance data, and employee workflows can help fine-tune processes and maximize efficiency.

Scheduled maintenance management

Utilize data analytics tools found in the latest smart lockers to identify opportunities for optimization and improvement within your warehouse operations. Analyzing equipment usage patterns, maintenance data, and employee workflows can help fine-tune processes and maximize efficiency.

Equipment condition tracking

Automated fault tracking through wired and wireless connections can help technicians identify dead or failing devices before they are even checked out for use. The smart management system can lock them down so only authorized technicians can remove them for servicing.

User management integration

Consider integrating your equipment management system with other organizational tools like ServiceNow for seamless workflow support and Active Directory for user authentication and access control. Advanced smart lockers can provide both integration types.

Real-time monitoring

Implement an automated system that provides real-time notifications when a device is missing, late for return, broken, malfunctioning, or requires immediate maintenance. This proactive monitoring ensures that any and all equipment issues are addressed promptly.

By implementing these strategies and embracing technology, you can streamline warehouse equipment management, minimize disruptions, and achieve maximum operational efficiency in your warehouse or distribution center.

Take the Next Step to Enhance Your Warehouse Equipment Management

Efficient warehouse operations require a combination of visibility, security, streamlined processes, continuous improvement, and effective equipment management. By investing in automation technology and employee training, warehouses can significantly increase productivity, reduce costs, and improve customer satisfaction. Warehouses must recognize the implications of manual equipment management and embrace automation and streamlined processes to stay competitive in the ever-evolving logistics landscape.

Discover the Power of Smart Asset Management for Manufacturing and Warehouses

See how tracking systems work, how they're used in industry today and some best practices for adapting them to your organization's workflows.

Real Time Networks

AssetTracer is a premier brand of Real Time Networks. Over 4,000 of our key and asset management solutions are in use worldwide.

With operations in US and Canada, Real Time Networks (RTN) is a leading provider of custom safety and security solutions – for keys, assets, and people. For over 30 years, RTN has built a reputation for delivering custom security solutions backed by industry-leading customer service and support.

From your initial consultation to custom installation, training, and 24/7 phone support, RTN keeps you and your technology running safe, secure, and efficient with sales and service available across US and Canada.

1-800-331-2882

info@realtimenetworks.com
www.realtimenetworks.com

Technical Specifications

Power

- 120V Power Consumption
- 5° to 50°C (40° to 120°F) operational temperature range
- Optional Backup Battery

Authentication

- PIN code
- Proximity card (compatible with most major access card systems)
- Biometric (fingerprint or facial)
- Card & PIN

Digital

- SSL encryption in transit
- Enterprise-grade SQL Database backend
- Reader interface: RJ45 or WiFi

Lockers

- 18 gauge steel
- Optional shatter-proof clear polycarbonate doors