EasyStock

Profitable Inventory Management

A Guide for HVAC Businesses of All Sizes

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Introduction to HVAC Inventory Management

Inventory management aims to ensure contractors have the right stock level: having the necessary items available when needed while avoiding a bunch of extra items that aren't. Inventory management for HVAC businesses is no different. By effectively managing HVAC parts inventory, contractors ensure they have what is needed and when, without being burdened by a ton of extra parts.

Overview of Efficient Inventory Management

Efficient inventory management requires a detailed understanding of what parts are on hand, which are likely to be the most popular and how long it takes to replenish them when an order is placed. Contractors should manage inventory in such a way that reduces or eliminates out-of-stock situations, particularly on the most popular stock-keeping units (SKUs), while not overspending on inventory that's not needed.

Effective inventory management requires a system for tracking every item that enters stock and every item that is sold or used. It's also important to thoroughly grasp what parts are most popular and when; some part usage is seasonal. (For example, more air conditioner parts will be used in the summer than in winter.) Contractors should develop an accurate forecast for parts usage, have a good relationship with parts suppliers (to ensure quick restocking) and have an ordering system that minimizes out-of-stock times.

Impact of Inventory on Cash Flow, Customer Satisfaction and Operational Efficiency

Effective inventory management can improve cash flow by preventing excessive funds tied up in slow-moving stock.

By stocking the most frequently used parts, revenue is elevated and inventory-related costs are reduced. This approach ensures the essential items needed are always on hand.

Customer satisfaction is another aspect that improves with proper inventory management. Few people appreciate waiting, particularly when a significant appliance, such as an HVAC system, is non-operational. Being able to replace a faulty part during a service call immediately ensures customer satisfaction by enabling prompt service and reducing delays in repairs.

Finally, effective inventory management improves overall operational efficiency. By having the most common parts in stock and on the trucks, the need for staff to return to the warehouse to pick up a part or place prolonged orders is minimized. Completing tasks in a single service call boosts operational efficiency and positively impacts the bottom line.

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Common Challenges in HVAC Inventory Management

Managing the inventory of HVAC parts and supplies can be a daunting task to take on. With many SKUs for various brands and models, the complexity increases with the number of items to monitor.

Specific Challenges Faced By HVAC Companies (Large and Small)

Each business will face a few common issues. Let's explore some of them here:

- The need for quick access to parts to provide timely service to customers
- The risk of stockouts or overstocking, leading to delays and inefficiencies
- Wasted time searching for parts and supplies in a large inventory
- Lack of inventory transparency can lead to over-ordering or under-ordering
- Limited space in trucks, making it challenging to carry excess inventory
- Difficulty in tracking inventory spread across multiple trucks
- Inefficient reordering process due to manual efforts and lack of automation
- Increasing competition in the HVAC industry, requiring improved operational efficiency

One of the most common and frustrating issues is the inability to locate stock or equipment when it's needed most. A lack of clarity on inventory levels can rapidly escalate into larger issues for the team and can exacerbate problems like over- and under-ordering, especially on key SKUs. Without an accurate inventory snapshot, it's easy to over-order parts there are already adequate amounts of.

Conversely, not realizing that stock levels are dwindling can lead to under-ordering. This can be equally problematic because it can limit the ability to assist customers quickly. Repairs for needed parts may be held up, which can aggravate customers and harm client relationships.

Real-World Examples of Poor Inventory Management

To better understand how inventory management works, here's a scenario to consider:

There are only a few units of a specific furnace component on the warehouse shelf. Thinking that's not enough with winter coming, an order is placed for a half-dozen more, unaware there are at least two units in each truck. Due to this oversight, there are now more units than needed, and they will remain unused throughout the heating season.

In another instance, imagine a particular air conditioner part that's in high demand. A quick check in the warehouse reveals there are a half dozen units in stock, giving the impression of enough supply. However, it's overlooked that this part is depleted on all trucks. This oversight could result in exhausting the warehouse stock within weeks. A new order will then have to be placed, and waiting could result in unhappy customers.

A lack of clarity on inventory levels can rapidly escalate into larger issues for the team.

Benefits of Effective Inventory Management

Effective inventory management helps to overcome all those challenges. It also provides numerous benefits to companies and customers.

Cost Savings, Improved Customer Service and Reduced Waste

Successful HVAC management requires visibility into a warehouse and trucks' inventory levels. With the ability to quickly order items that are running low or out of stock, contractors can benefit from significant cost savings. Without a clear understanding of inventory, there is a risk of running low on essential items, leading to stockouts. These types of situations not only inconvenience customers but also cost money in return service calls. On the other hand, over-ordering can tie up funds that might be more useful elsewhere.

Customer satisfaction also takes a significant hit when a part is missing that they urgently need. No customer wants to wait days, weeks or months for HVAC repairs because of an oversight in stock management. They expect prompt service, which hinges on the availability of essential parts. Expedite repairs by better managing inventory and increasing customer satisfaction.

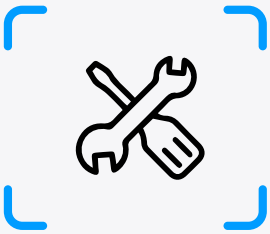
Another notable benefit of effective inventory management is the ability to reduce waste. Inadvertently over-ordering a particular SKU can result in it being useless over time. This not only occupies valuable storage space but also incurs unnecessary costs. Then, when these items are eventually discarded, it represents a waste of resources. Streamlining inventory practices leads to reduced waste across the board.

Industry Statistics

The HVAC market is growing steadily, emphasizing the need for efficient inventory management. This growth will result in more HVAC systems sold, especially as replacement units. Plus, even more HVAC systems will require regular maintenance and repair.

According to Grandview Research, the U.S. market for HVAC systems was worth $17.15 billion in 2022, and based on additional research, the Heating & Air-Conditioning Contractors industry in Canada was worth $15.7 billion in 2022. The U.S. market is expected to experience a compound annual growth rate (CAGR) of 6.5% through 2030, and the Canadian market is expected to experience a CAGR of 3.83% through 2028. Experts predict that system replacement is a large factor in this growth, with two to three million HVAC systems replaced in the U.S. every year.

Not all older HVAC systems get replaced. As systems age, there is an increased demand for repair and maintenance services. Because of this, Mordor Intelligence predicts that the total size of the HVAC services market is expected to grow from $62.3 billion in 2023 to $95.6 billion in 2028.



HVAC services market is expected to grow from $62.3 billion in 2023 to $95.6 billion in 2028.

Inventory Classification and Categorization

The key to successful inventory management is classifying and categorizing inventory items.

Importance of Categorizing Inventory Items

Categorizing inventory items helps to better understand stock items and their performance. Inventory categorization helps improve:

- **Organization and efficiency.** When SKUs are systematically organized, it's easier to quickly locate specific items, which speeds up pick-up and pack times.
- **Inventory control.** Categorizing items helps to keep better track of each type of product in stock, which minimizes overstocks and stockouts.
- **Forecasting and planning.** More accurately forecast demand by stocking and tracking SKUs by category.
- **Pricing and valuation.** Looking at inventory by category helps to set pricing strategies and more accurately determine the value of inventory.
- **Identify slow-moving items.** Categorization helps to better analyze the turnover rate for different categories — and avoid over-ordering low-turnover items.
- **Optimize storage space.** Storing like-items together helps to get the most out of the available storage space.
- **Reporting and analysis.** Categorizing inventory helps to generate more meaningful reports and analyses.

Overall, categorizing inventory items provides a structured approach to managing inventory, ultimately leading to improved organization, control, forecasting, pricing and space optimization.

Best Practices for Classification

When classifying inventory items, follow some or all of these best practices:

- Prioritize items based on importance (ABC):
  - A-level inventory are high-value, high-priority items
  - B-level inventory are medium-value, medium-priority items
  - C-level inventory are low-value, low-priority items
- Classify items based on demand variability and predictability:
  - X-level items are highly unpredictable, with intermittent demand
  - Y-level items have moderate variability with semi-regular demand
  - Z-level items have steady, predictable demand
- Conduct a criticality analysis and consider seasonality to prioritize items for their peak demand seasons.
- Categorize items based on their storage requirements, handling needs, size and weight.
- Classify items by supplier.
- Prioritize items based on their profit margins and dollar profits.
- Organize items by reorder frequency and lead times.

By following these best practices, better control over inventory and more efficient warehouse storage management can be achieved.

Categorizing inventory items helps to better understand stock items and their performance.

Inventory Tracking Technologies

How can contractors effectively and efficiently track all the SKUs in the inventory? As with most things these days, there's an app for that.

Barcoding, RFID and Inventory Management Software

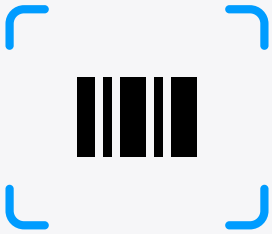
In less advanced times, each inventory item had to be counted by hand and written down on paper. Fortunately for all of us, those manual methods have been replaced by new technologies.

One of the most effective ways to track individual inventory units is by assigning each unit a unique barcode to scan with a barcode scanning device. Attaching a radio frequency identifier (RFID) to each unit to accurately scan inventory via radio waves from a greater distance than line-of-sight barcode scanners is also helpful. This eliminates the need for manual counting and associated errors, ensuring precise, item-specific inventory tracking through barcode and RFID technologies.

The gathered inventory information can then be seamlessly integrated into inventory management software, like CE's EasyStock. This software tracks the inventory items that are stocked using QR codes, records those sold and determines when a reorder is needed. It takes the guesswork and uncertainties out of inventory management. EasyStock is accessible through the CE HVAC Pro+ mobile app, eliminating the need for additional hardware, unlike systems that rely on RFID technology.

Streamlining Operations With Technology

Technology, such as RFID tags and inventory management software, transforms manual tasks into automated processes. By eliminating manual counting and spreadsheet-based reordering, efficiency is enhanced, errors are minimized and costs are reduced. In the realm of inventory management, the adoption of this technology isn't just beneficial – it's transformative.



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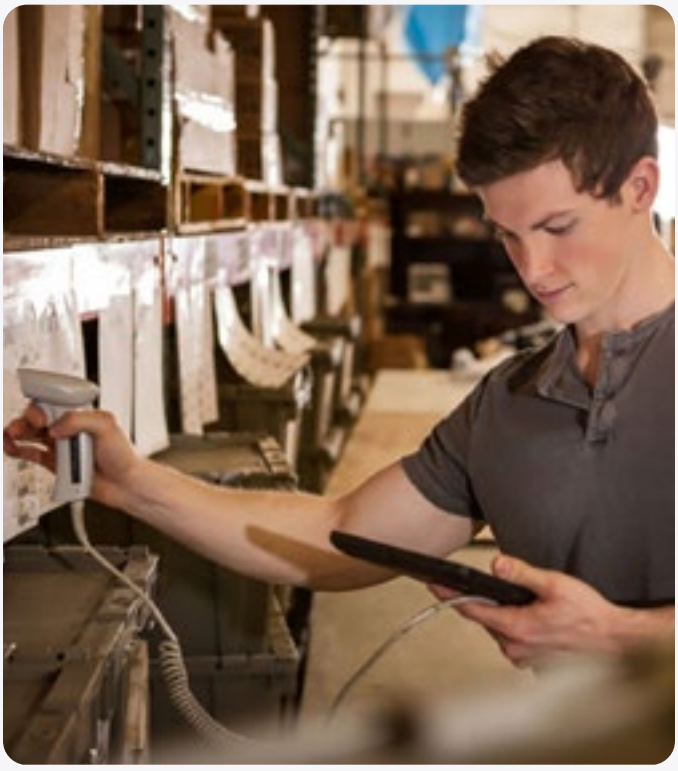


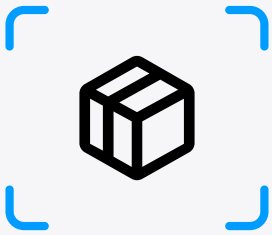
Inventory Replenishment Strategies

When should individual SKUs be restocked? It all depends on which replenishment strategy is adopted.

JIT Inventory, EOQ, Reorder Points

There are several popular inventory replenishment strategies, each appropriate for different types of businesses and inventory. The two most popular strategies include:

- **Just in time (JIT),** where contractors try to minimize stock by placing orders at the very last minute before running out. This requires knowing precisely when inventory reaches a specified level and working with suppliers who can quickly ship directly to facilities. JIT also helps to reduce inventory carrying costs by reducing minimum/maximum stock levels to increase inventory turns.
- **Economic order quantity (EOQ),** where an optimal order quantity is determined for an item based on minimizing relevant inventory costs — unit pricing, holding costs and the like. Larger quantities may be ordered to lower costs.



The simplest way to know when to replenish stock is by establishing reorder points for each SKU.

Both of these strategies can benefit from implementing **reorder points**. The simplest way to know when to replenish stock is by establishing reorder points for each SKU. These thresholds can be based on replenishment speed (as with JIT inventory management) or reorder cost (as with EOQ inventory management). When inventory falls to a predesignated point, automatically place an order for a predetermined quantity.

Selecting the Right Strategy for Different HVAC Items

Contractors are not limited to a single replenishment strategy. Different strategies can be employed for different types of items.

For example, the EOQ method may be used for replenishing high-value items, where a small percentage difference in cost can amount to a large dollar value. In contrast, the JIT method might make more sense for those fast-moving items that can be replenished quickly from trusted suppliers. Set specific reorder points and order quantities for each type of SKU.

Vendor Relationships and Supplier Management

The vendors HVAC contractors work with will influence the inventory management process and replenishment strategies. It's important to establish strong relationships with reliable suppliers to ensure stock doesn't run low on popular items.

Building Strong Relationships With HVAC Parts Suppliers

A reliable HVAC parts supplier is one that will deliver goods when promised and ideally has the needed items readily available for quick replenishment. The foundation of a good supplier relationship is built on mutual trust and open communication. A supplier should be confident in a contractor's commitment to regular business, while contractors should trust their ability to consistently and efficiently fulfill orders.

The key to a successful supplier relationship is rooted in communication. Informing suppliers about what's needed ensures they're always prepared. Wholesale distributors manage inventory, too. Suppliers can better predict needs by communicating business requirements and discussing potential sales forecasts, ensuring they can provide support when needed most.

Advantages of Supplier Involvement in Inventory Management

A fully featured HVAC parts supplier, such as CE, may extend support to assist a company in its inventory management. Many suppliers have their own inventory management applications that can be used to track inventory and place orders. Some suppliers go even further by managing the client's inventory themselves. In this relationship, inventory information can be sent (scanned into their system) to the supplier, and they'll determine when and how much needs to be reordered. Some suppliers may even send staff to the client's location to record inventory levels.

Letting a supplier assist in inventory management comes with several advantages. Not only does it minimize the time and effort spent managing inventory, but it can result in significant cost savings. By committing to consistent purchasing patterns, contractors can harness economies of scale and potentially negotiate better pricing due to volume purchases.

A dedicated commitment to a single vendor can foster collaboration with product planners. This partnership can lead to refined demand forecasting, minimizing the risk of stockouts and ensuring HVAC businesses always have the necessary parts on hand.

The key to a successful supplier relationship is rooted in communication.

Inventory Forecasting and Demand Planning

Counting inventory is one thing. Knowing how much inventory is needed in the future is a different and perhaps more significant challenge.

Accurate Demand Forecasting With Data and Insights

Accurate demand forecasting using data and insights is crucial for informed replenishment strategies. With demand forecasting, a variety of data is used to project how much is needed for a given SKU over a predetermined future period. Make sure to gather accurate data about:

- Past sales, by month and season
- Equipment failure or maintenance rates
- HVAC units sold that utilize that particular part
- Economic conditions that might influence demand
- Meteorological conditions that might impact unit performance or failure

Reducing Overstock and Stockout Situations

Putting all this data together can help develop an informed forecast of demand, which can determine a replenishment strategy for that particular item or category of items. If demand is forecasted to be high for a given category, keep more in stock. If demand is projected to be low, decrease stocking and replenishment levels accordingly.

Accurate demand forecasting using data and insights is crucial for informed replenishment strategies.

Warehouse Organization and Layout

How does inventory management impact the organization and layout of warehouses? A lot, it turns out. Warehouse layout should optimize space based on packaging size, demand, supplier and usage. Additionally, safety considerations for handling equipment and hazardous materials should be prioritized.

Optimizing Warehouse Space for HVAC Inventory

There are many approaches to warehouse organization, especially with HVAC parts. Given the large variation in packing type and size and the differences in turnover rates, there are several choices when determining the ideal warehouse layout.

To optimize warehouse space for inventory, consider the following:

- **Packaging size and type.** Inventory similar shaped and sized items to optimize space. Put bigger, harder-to-handle items together near the back of the warehouse and smaller, easier-to-handle items near the front.
- **Inventory demand and turnover.** Items that are in high demand should be easy to locate and pick. Avoid running all over the warehouse for items used most frequently; put them near the front.
- **Supplier.** Some companies like to organize their inventory by supplier. This helps get a better visual handle on how much needs to be ordered from each supplier. A true inventory management solution eliminates the need for supplier-based warehouse organization. That's where CE's EasyStock can assist in handling all your product needs.
- **Usage.** Another approach is to organize warehouses by use case. Put all air conditioning parts in one area and all furnace parts in another. That way, workers will easily know where to go for specific types of parts in the warehouse.
- **Business department.** Organizing by business department (installation vs. service vs. maintenance) is another great way to sort parts and equipment, especially if businesses track revenue and expenses by department .

Safety Considerations for Handling Equipment and Materials

When organizing warehouses, always keep the safety of workers in mind. In addition to keeping clear aisles, ensuring proper lighting, and utilizing informative signage and labels, remember to also keep the unique requirements of each item. This is typically less of a problem for smaller parts than larger ones, such as compressors. Don't stack large, heavy items too high — and if a forklift is required, make sure workers are properly trained in its use. If items containing hazardous materials are stocked, isolate them from other parts and clearly mark them as such. It's also a good idea to conduct regular safety training and safety audits to ensure employees and inventory are protected as much as possible.

When organizing warehouses, always keep the safety of workers in mind.

Inventory Control Policies

An inventory control policy is a set of guidelines and procedures used to manage and control inventory. It will typically specify reorder points, order quantities, replenishment methods, safety stock, service level (how well customer demand is met), inventory classification, supplier management, regularly scheduled cycle counts, annual full physical inventory (at a minimum) and other considerations.

Importance of Inventory Control Policies and Procedures

An inventory control policy aims to strike the proper balance between meeting customer demand, minimizing costs and optimizing the use of the warehouse and other resources. Detailed policies should codify all the inventory management procedures and ensure consistency and clarity across the organization. It's important to formally detail all these policies and procedures so that all staff — from upper management to repair techs and warehouse workers — know how best to fulfill their part of the inventory management process. The inventory control policy should be detailed enough to address all contingencies and clear enough to avoid confusion.

Examples of Key Policies

A detailed inventory control policy might include the following:

- Target inventory levels for key SKUs or categories of SKUs
- Predetermined reorder points and quantities for key SKUs or categories of SKUs
- Amount of safety stock to keep on hand for key items
- Target fulfillment rates for key items
- List of preferred suppliers and contacts at those firms

A policy might, for example, specify to always keep 10 units of a particular compressor in stock. When the inventory level drops to three, it triggers a reorder of seven units to bring the stock back up to 10. Also ensure there are never fewer than two units at any given time, considering this as the safety stock. In terms of sourcing, it might also specify to use supplier A as the primary source and default to supplier B if the first supplier cannot fulfill orders as needed.

The inventory control policy should be detailed enough to address all contingencies and clear enough to avoid confusion.

EasyStock Inventory Management Solutions

To help HVAC professionals better manage their inventory levels, CE offers EasyStock, a no-cost inventory management solution that streamlines inventory tracking and replenishment. CE will even work with contractors to optimize warehouse space and provide an easy-to-use scanning system to track and build replenishment orders based on the usage from customers' warehouses and/or trucks.

Overview of EasyStock HVAC Inventory Management

EasyStock is easy to learn and use on an everyday basis. CE will work with customers to evaluate warehouses and/or truck inventory space, then help create and load the desired inventory information into the EasyStock system. Every item has its own unique QR code label, which is scanned to build inventory replenishment orders based on minimum and maximum stocking levels. As new items are scanned into the system or out as they're sold, EasyStock will automatically add items to a customized inventory list according to the target inventory levels that are set. In addition, items can be scanned as they are removed from a warehouse and/or used from trucks. This allows for the building of automated replenishment orders that then release items that have reached minimum stock level or below.

EasyStock can be used as a freestanding service or a vendor-managed inventory (VMI) solution. With VMI, customers can rely on a dedicated VMI Specialist to scan and place orders, deliver products and restock shelves. CE's EasyStock VMI Service also provides monthly or quarterly business reviews that can help improve product forecasting to prevent overspending and costly stockouts. It can also assist with keeping the program maintained with the appropriate products, users and permissions.

Features, Benefits and Implementation Tips

EasyStock makes inventory management easy and offers the following advantages to businesses:

- **Hassle-free organization.** Create dedicated stock lists for the service and installation vans. This ensures customers always have the right gear in the right vehicles.
- **Optimized cargo space.** Stock more of the right items in less space in both the warehouse and fleet.
- **Discover hidden stock.** Contractors will be surprised at what is in stock once they're organized with EasyStock. There won't be a need to order more of something just because it couldn't be found.
- **Unlock cash potential.** By achieving the ideal stocking levels, overspending is reduced, allowing for better buying decisions and keeping more hard-earned money from "falling off the back of the truck."
- **Safeguard billable hours.** Repair techs can easily access items from warehouse stock or place orders directly through the CE HVAC Pro+ app. EasyStock makes reordering a breeze and ensures techs always have what they need. That means less time picking up parts and more time on the job.

EasyStock can be used as a freestanding service or a vendor-managed inventory (VMI) solution.

Use Cases

How do businesses take full advantage of EasyStock? Different use cases and models are available to suit various business needs.

Customer-Managed Inventory (CMI)

Many customers use EasyStock as part of their inventory management systems. In this customer-managed inventory approach, the customer uses EasyStock:

- For warehouse replenishment ordering.
- To scan and build product orders for their warehoused items.
- To track items going from their warehouse into technician's service/install vehicles.

In this example, the customer's technicians use EasyStock to track items used from their vehicles, either daily or by job. EasyStock then creates replenishment requests that are submitted to the customer's warehouse or dedicated CE branch.

Many customers use EasyStock as part of their inventory management systems.

Truck Stock

This model is ideal for companies that manage most of their inventory within their service trucks. Customers use EasyStock to track technician inventory usage and create replenishment orders for their warehouse or to submit to the CE branch.

Rep-Managed

If you'd rather we do some of the work for you, the rep-managed model is the way to go. Here, the customer sales rep uses EasyStock to place warehouse replenishment orders for your business. Each order can either be auto-approved or approved by you.

Vendor-Managed Inventory

The vendor-managed inventory model is one of ultimate convenience. The VMI Specialist helps to organize contractor warehouses, place regular replenishment orders, pack and deliver orders to the location and restock shelves. Contractors will also get monthly/quarterly business reviews and optional product forecasting services.

Conclusion and Next Steps

Why is inventory management important for HVAC contractors? Because it's the best way to control inventory levels, minimize costs and maximize customer satisfaction.

Key Takeaways and Proactive Inventory Management

What should be done to stay proactive with HVAC inventory management? Remember the following:

- Effective inventory management ensures contractors have the right parts on hand when needed while also avoiding overstock items that aren't in demand.
- Efficient HVAC inventory management is essential for controlling costs and enhancing customer satisfaction.
- Poor inventory management can result in lost time and money by running out of popular items and tying up too much capital in unpopular items.
- Inventory management is made easier when items are correctly classified by type or usage.
- Proactive inventory management practices can help businesses thrive in a competitive HVAC industry.
- Many inventory management systems use technologies such as QR codes and RFID tags to track individual inventory items.
- There are multiple replenishment strategies (JIT, EOQ, etc.) for different types of inventory items.
- Building strong supplier relationships is key to effective inventory management — as is informed demand forecasting.
- Codify all inventory management processes and procedures in a single inventory control policy.
- An inventory management software solution, such as CE's EasyStock, is the best way to manage HVAC inventory.
- EasyStock uses QR codes to track all inventory items and automatically builds necessary replenishment orders released to the supplier, at your convenience.
- Use EasyStock alongside a current inventory management system or with vendor-managed inventory, where a CE VMI Specialist does all the work.

Encouragement for HVAC Companies to Implement Improvements

To reduce inventory carrying costs, reduce stockout situations and improve customer satisfaction, implementing an inventory management system is recommended in our competitive HVAC industry. Contact your CE rep to learn more about EasyStock, or visit www.carrierenterprise.com/easystock-info to schedule your free assessment.

Appendices

1. Grand View Research. “U.S. HVAC Systems Market Analysis.”
2. Mordor Intelligence. “HVAC Market Size, Trends, and Analysis 2023-2028.”
3. Conveyco. “10 Inventory Statistics That Prove You Need Better Visibility.”
4. Mordor Intelligence. “Canada HVAC Equipment Market Analysis.” Mordor Intelligence, 2023.
5. IBISWorld. “Heating & Air-Conditioning Contractors in Canada Market Size in 2023.” IBISWorld, 2023.
6. CE. “CE HVAC PRO+™ Mobile App.”
7. CE. “EasyStock Info.”

About CE

CE is your one-stop location for the best equipment brands, aftermarket parts, supplies, and HVAC expertise in the industry. We are part of the largest HVAC distribution network in North America. With many locations to serve you and more on the way, we are where you need us.

Our team of experts is dedicated to providing innovative solutions and superior products to help grow and propel business forward. Because no matter how complex your problem or how detailed your need, you'll come to know one thing at CE; we go above and think beyond.

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