



Tracking and Optimizing Inventory Control: Two Purchasing Tactics for Packaging OEMs

Learn how asset tagging and tracking systems, and vendor managed inventory programs, can smooth out supply chains for food and beverage packaging OEMs.



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Two Purchasing Tactics for Packaging OEMs



Packaging OEMs in the food and beverage sector are experts when it comes to engineering and building machines that offer dependable, efficient performance, at the right price.

Part of that expertise includes managing inventory for your machines and spare parts business most cost effectively.

As a \$13 billion manufacturer of some 700,000 part numbers distributed and used around the globe, we know that inventory management is a constant and ongoing concern for OEMs. We also know that you're constantly challenged to squeeze more out of the supply chain pipeline in an effort to reduce costs and increase profitability. We understand the struggle and look for ways to help our manufacturing customers manage their inventories more cost effectively.

For this reason, we've prepared this report outlining two key services OEMs can use to control and manage production inventories in ways that reduce costs. First is asset tracking, or documenting and tracking critical components used in your builds. Second is balancing your supply, in terms of getting just enough of the right parts to the right places at the right times.

Inventory management and control strategies like these are critical for cost control and on-time performance. Few OEMs savor 2 a.m. phone calls from end users on the other side of the country, informing them a part needs to be replaced, however they're not exactly sure how to identify it. Another common OEM concern is handling warehousing and supply of spare parts optimally.

Some OEMs may be concerned about carrying too much inventory sitting on the shelf, tying up cash that could be used in other ways. Another objective is never running out of critical parts, which would hold up production. Finally, some OEMs may be able to improve profitability by outsourcing certain inventory-related tasks and putting warehouse space and employees to better use.

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This report covers these two methods of inventory management, which are designed to alleviate common concerns for OEM customers: Asset tracking and documentation of components and part numbers allows OEMs as well as their customers greater component fidelity on machines built and acquired. Meanwhile, vendor-managed inventory (VMI) systems can streamline the ways OEMs look at their inventories, and help save time, effort, and money in the process.

Asset Tagging and Management Systems

Asset tagging and management systems, at their most basic level, are designed to help make identification, preventative maintenance, and replacement of individual parts an easier task for OEMs and their customers.

In Parker Hannifin's case, the company has developed a system called PTS, or the Parker Tracking System, capable of providing distributors, OEMs, and their customers all the information they might want to know about the parts or components within their machines. The idea is to provide end users greater clarity on these components when it comes to construction, compliance, maintenance, troubleshooting, and replacement.

PTS, in use for more than a decade and available through many Parker divisions, now supports the management of close to 25 million assets, in 62 countries and some 1,400 locations. OEMs can apply PTS solutions to drive increased value to their customers while recognizing benefits in areas such as production efficiency, quality, safety and data analytics.

This multi-layered, digital information, which can be critical to doing business, unfortunately is still lacking for some organizations, says William Sayavich, Technology Manager for Parker Hannifin's Global Services Division.

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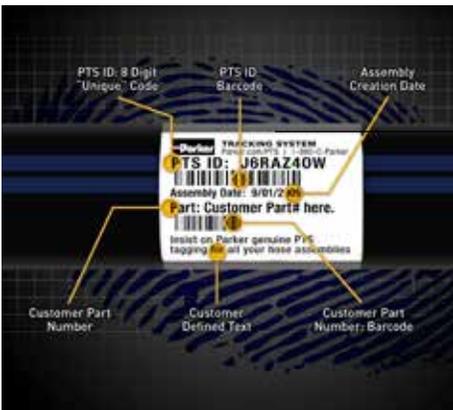
“It’s our experience that a lot of the machines that get sold and shipped to customers still come with traditional parts manuals or books. Rarely are people receiving this critical data digitally for these machines.” — William Sayavich, Technology Manager, Parker Hannifin Global Services Division

“It’s our experience that a lot of machines that get sold and shipped to customers still come with traditional parts manuals or books. Rarely are people receiving this critical data digitally for these machines,” Sayavich observes. “The problem is, this data is static and largely unable to be actioned. This may seem like a monumental task, however having component specifications digitized and available in a system like PTS makes it much more likely to be properly serviced and replaced before a failure.”

At its most basic level, PTS often comes in the form of a small bar-coded label applied to products and assemblies, and it contains the information needed to reorder that component. Customers receive a unique identification number for each individual part, along with other information such as when and where the part was manufactured, the detailed components in the construction, where the product is physically located, and contact information for the dealer, distributor, or manufacturer.

The biggest value of PTS for both OEMs and end customers is its use on assemblies or kits containing multiple specific parts selected to make up that component for a certain application.

The labels are valuable because they identify the manufacture date and supplier of each component and give the end user a simple, reliable, and accurate way to reorder the exact same part when it’s necessary. This means that even when the OEM turns a build over to an end user, that customer still has full knowledge of the tracked parts within that machine, should they need to be replaced or serviced.



The Power of Digital Records. Beyond the simple tag or label, however, OEMs also have the option to acquire more detailed information about the components they’re using and supplying, in the form of the digital records that are part of PTS. These digital records contain more detailed information about each product than could possibly be included on a label, such as material certifications, parts used within the assembly, lot traceability, test reports, maintenance schedules, schematics, and more.

OEMs who choose to receive these digital records as part of PTS also have the option to augment and add information to these records, such as the end customer acquiring that component and its ongoing maintenance requirements. This ability to track components from supplier to OEM to end customer is a significant differentiation for PTS and a distinct advantage for the OEM and end customers, Sayavich points out.

“From a quality and product performance perspective, not only can we uniquely maintain those products, by way of scheduled events, inspections and services, but should there be any failure at any point, we can track that failure against a number of other variables and similar customers to drive continuous improvement,” Sayavich explains.

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Quality control at the OEM level is a key benefit of PTS. Without this information from PTS, the OEM may not be privy to key insights about component life-cycle data, such as whether numerous product problems were attributable to one particular customer, or from multiple customers using the same product.



As another benefit, Sayavich points out, PTS answers OEMs' need for documentation on their machines at a moment's notice. End users also can benefit from these PTS insights. Sayavich explains that while machine downtime is not uncommon for end users, few of them truly have the information they need when it comes to understanding the makeup and history of individual components within their machines. Which means that when problems arise, end users may attempt to do one or more things that would make their OEMs cringe: like guessing at solutions, calling in other suppliers, breaking down machines, and transporting questionable parts to distributors in hopes of finding a quick fix or replacement.

The ideal situation, Sayavich adds, is having access to the granular information about these components, which can be updated and augmented for ongoing maintenance and replacement. All of this is what systems like PTS are intended to provide.

A Better Customer Experience. The ongoing traceability of an OEM's builds is another major benefit of PTS. With PTS, labeled products such as hose assemblies can be uniquely assigned to specific machines owned by specific end users. This means that OEMs can create matched, serialized sets of parts for machines they build. Machines may leave the factory alike, however they take on individual lives once they are put into service, and PTS information can show those differences by end user and by machine.

Much of the ongoing value of PTS is to the customer, who will find it easier to reorder genuine replacement parts without having to hunt for part numbers. Because the tag offers a bar code, the OEM can simply scan the tag to understand exactly what needs to be replaced.

Meanwhile, the OEM benefits from the replacement parts business he or she is able to secure and not lose to a generic competitor or the open market. In this way, PTS labels facilitate continuity of operations, because the labels encourage and simplify the process of exact replacement. End users who use this information and reorder authentic replacements also can be sure of receiving assemblies engineered specifically for that application, so the machine performs exactly as it was intended to perform. This in turn drives spare parts business back to the OEM, which can be an important source of high margin income.

Offering spare parts and other valuable product documentation via PTS also helps to create a better service experience for end customers, Sayavich points out, a benefit that should not be underestimated during these times when end users have multiple procurement choices.

“So many of us make our future purchasing decisions on how an OEM or a manufacturer deals with us in a time of crisis, such as when something breaks,” he says. “If you can create a truly outstanding experience for them, there’s a good chance you will retain that customer.”

Vendor-Managed Inventory Programs

Managing product inventory for machines to be produced is another area of concern. With all the components and parts that must be kept on hand for your manufacturing operations, and separately for your spare parts business, getting this balancing act under control can take a good amount of time and expertise.

When it comes to building your own equipment, VMI can help you maintain just-in-time inventory levels, to keep your inventory costs under control. And when it comes to spare parts inventories, which can be critical for helping end users who need to replace parts, VMI can ensure you always have the levels of parts needed to avoid being backordered to a customer.

Designed to reduce acquisition-related headaches and costs over the long run, VMIs help OEMs order only what they need, when they need it. When it comes to purchasing components needed for builds, VMI can help you streamline the process of specifying your inventory needs. It can also help reduce procurement costs and paperwork.

The Rise of VMI. A company with hundreds of thousands of individual part numbers available for sale, Parker Hannifin has a few ideas on how VMIs should work, based on many of the principles of “lean inventory

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management.” That philosophy was popularized by Jim Womack, Daniel Jones, and Daniel Roos in their book, *The Machine That Changed the World*, and it has risen in popularity among manufacturers at the expense of traditional buyer-managed inventory (BMI) techniques.

At Parker, anything with a part number can be managed through the VMI supply chain solution. In the food and beverage packaging sector, Parker’s VMI programs are often facilitated at the distributor level and customized for each client. Besides potentially reducing acquisition costs for OEMs, VMI also has the potential to decrease usage errors and product shortfalls. Ultimately it means the supplier or distributor is managing or smoothing out the supply chain for both the buyer and the seller.

The idea of VMI is not necessarily a new one, but it has become more advanced over the years. Parker began offering a form of VMI in the mid-1990s, and the program has grown exponentially over time, says Trevor Bruning, VMI Project Manager for Parker Hannifin. Now many full-line Parker distributors have the ability, the tools, and the training to offer this service as well.

From Bins to Bar Codes. OEMs may already be familiar with more traditional inventory management systems in which distributors supply bins and racks to ensure the OEM has proper quantities of standard parts for their builds. Parker Hannifin’s current Bins program, for example, uses bins and cabinets for placements at OEM and MRO accounts. Sizes and styles range from scoop boxes to open bins and rolling pneumatic cabinets for storage flexibility. The bins are intended to provide increased visibility of Parker products and centralize all the parts, such as fittings, needed in each location. When paired with Parker’s Bin Labeling Program, distributors can offer customers the benefits of simple part identification and easy restocking.

Going beyond this service is Parker’s vendor-managed inventory program, offered through some full-line distributors and in a few cases, direct to OEMs. Under the program, full-line distributors that have been trained in

the program have access to Parker's proprietary inventory management software, along with the tools and techniques to measure inventory levels and tie the findings into back-end procurement or consignment models.

The value-added service is designed with the flexibility to offer just about any form of parts organization, be it a bin, rack, or cabinet, located near the point of use, i.e. the actual production line, as opposed to a central warehouse which may stock numerous production lines or plant locations.

Shift of Labor. Every VMI arrangement is unique, however the restocking of inventory for each OEM is typically handled onsite by distributors or Parker representatives. In addition to stocking parts, the distributor's representative may also scan bins and stocking areas on each visit to fully document inventory levels. In some cases suppliers may be able to monitor inventories remotely, thanks to the use of digital weighing systems and Bluetooth or wifi-enabled technology that communicates with the supplier's server or order entry platforms.

The data is used to understand inventory turnover, in an effort to optimize stocking quantities on an ongoing basis. In addition, it can be used to help maintain separate inventory levels for machine building verses spare parts supply needs, since the costs of those parts may be tied to different cost structures and revenue streams.

For production parts, the vendor's goal is to bring product in the door and directly to where it's used, when it's used, eliminating touch points along the way. The idea is that the closer to the point of use the product can be stored and managed, the leaner the inventory. A side benefit is helping to prevent operational units from pulling the wrong or too much inventory off of shelves.

Under traditional buyer-managed inventory (BMI) procedures, OEMs procure parts via LTL (less-than-truckload-quantity) carrier, move them to central storage, and then move those parts to the various points of use weekly or more often. In contrast, under VMI systems, many of these costs are reduced. Central warehouse space can be decreased or perhaps even freed up entirely because vendors or distributors handle the ordering, distribution, and placement of inventoried items close to the points of use on the production lines.

Dynamic Inventory Levels. VMI systems may also differ from bin sales programs, in that inventoried quantities can be adjusted regularly. Conversely, in bin programs, stocking levels for specific items may not get altered regularly.

Under Parker's lean manufacturing-focused VMI systems, explains Bruning, "we are regularly massaging and changing inventory levels."

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Besides potentially reducing acquisition costs for OEMs, VMI also has the potential to decrease usage errors and product shortfalls. Ultimately it means the supplier or distributor is managing or smoothing out the supply chain for both the buyer and the seller.

Stocking levels may be changed or updated quarterly via regular scans of supply bins and racks, combined with a continual focus on the optimal level of inventory needed based on usage rates.



Bruning explains that in a lean manufacturing world, vendors ideally plan for a three-week cycle in which parts needed for production are on the shelf for no more than two weeks and in the process for one. That means if you're using 10 parts per week for your own production, the company should receive no more than 10 parts per week, and stock no more than 20 at any point in time.

Inventory turnover levels also can be impacted by delivery frequency. The vendor can stock shelves weekly, twice per week, or even more frequently for high volume accounts. Bruning explains that optimal levels are tweaked regularly using intelligence from handheld scans of bins and racks, combined with analytics in the software and back-end logic from the OEM. It all results in continual understanding of the OEM's usage of each component or assembly over time.

A common practice, Bruning explains, is to aim to replace production inventory at each rack or bin between 18 and 22 times per year. This means that a part should not be sitting in the bin longer than about two weeks before being put into production, and in some cases even less. Delivery frequencies also may increase under VMI programs. In Parker's case, many OEMs receive inventory more than once per week.

"So we potentially eliminate some of the receiving," Bruning says. Depending on the nature of the customer, VMI also can eliminate some of the procurement paperwork and allow for consolidated invoices, whereas with traditional procurement systems, invoicing may be tied to each part.

The Proof of Performance. Also integral to VMI programs is having the ability to document and show OEMs how costs have decreased with the program. In many cases the savings are numerous, involving expenses across departments pertaining to ordering, warehousing, material handling, and stocking.

Many of the most significant cost savings come by way of handling and warehousing. Consider that a need for 50 parts at 20 different locations could potentially have many touch points required to get parts and

products to the points of use, under a traditional BMI approach. There's freight to deliver them, and then material handling to put the parts where they need to go. All of these are typically assumed by the vendor under VMI, saving the OEM labor as well as the need for storage space.

Programs like this also offer greater flexibility in billing. In some cases distributors and OEMs may be able to negotiate a consignment arrangement, where the OEM isn't invoiced for parts brought to each location until the parts are actually put into production.

The program also can drastically reduce the number of invoices the OEM receives and paperwork that is sent to OEM customers. For further cost savings, software may be integrated to work with an OEM's back-end MRP system to generate purchase orders automatically.

Savings and even increased returns arising from reduced inventory carrying costs is another major benefit of VMI. Bruning says while inventory carrying costs vary across industries, a conservative estimate is around 6% of the amount an OEM spends on inventory. In addition, companies lose as much as 2% to 3% on this investment because the cash cannot be invested another way. VMI helps improve this cost picture on both fronts, Bruning points out. It may allow production inventory levels to be reduced by as much as 30%, which reduces carrying costs and increases an OEM's ability to use these funds for other investments.

Parker Hannifin and its distributors audit the range of VMI-related savings for VMI customers and share the information with clients regularly. Everything from inventory carrying costs to in-plant transportation or material handling costs, purchasing or procurement costs, shipping and receiving costs, and space savings may be included in these audits, he says.

As an example of the possible reductions, Bruning refers to one automotive industry OEM that was able to save around \$150,000 per year annually on its \$1.5 million in product purchases. The 10% savings was attributed to costs formerly sustained through the purchasing department.

On-Time Inventory. As yet another benefit of VMI, when ordering and staffing is turned over to the vendor, Bruning says, on-time delivery typically improves. "It puts us in front of the customer and makes us better at what we already should be doing," he shares.

Vendor-managed inventory (VMI) programs allow the vendor to see what's going on and involve a far greater level of communication, through vendor management and constant monitoring of the trends, as opposed to being informed of changes via purchase orders. This means that any changes in production levels can potentially be documented and seen by the vendor much sooner, which gives the vendor time to increase its own production quantities.

Conclusion

In today's cost-competitive OEM environments, inventory control is a key area to be scrutinized for improved efficiency. PTS and VMI are two key strategies to do this. OEMs who want to simplify the documentation and ongoing intelligence associated with their components should consider the power of asset tagging and tracking systems like PTS. And those who believe their inventory management systems are eligible for streamlining and optimization in line with leaner manufacturing might well benefit from an outsourced approach like bin programs or VMI.

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