

Driven

NADA MANAGEMENT SERIES

SP21



A DEALER GUIDE TO

Parts Inventory Management



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ASSOCIATION

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	1
INVENTORY PERFORMANCE METRICS	2
Days' Supply	2
Level of Service	3
Obsolescence	4
Non-Stock as a Percentage of Investment	5
Non-Stock as a Percentage of Sales	5
Emergency Purchases	6
Lost Sales Posting	6
ASSET MANAGEMENT	7
Bin Checks	7
Physical Inventories.....	7
Monthly Inventory Reconciliations	7
SUMMARY	8
APPENDIX: Parts Inventories Monthly Reconciliation Form	9

Parts Inventory Management

EXECUTIVE SUMMARY

Since the parts department affects every other dealership department, it is imperative to manage parts inventories, measure their performance, and improve systems for managing parts inventory assets. By actively managing your parts assets, you can greatly improve your inventory performance and increase your return on investment.

This guide discusses seven key indicators of inventory performance: days' supply, level of service, obsolescence, non-stock investment, non-stock sales, emergency purchases, and lost sales. The asset management section focuses on the three control functions necessary for responsible stewardship of the parts inventory: consistent bin checks (commonly referenced as "perpetual inventories"), annual physical inventories, and monthly book-to-system inventory reconciliations. A monthly inventory reconciliation form is provided at the end of the guide for your dealership to use to do a book-to-system reconciliation and calculate any variances.

INTRODUCTION

In today's dealership, all aspects of operations are continually evolving, and the parts department is no exception. Market dynamics and product variability force department managers to face and resolve significant challenges, including:

- Vehicle maintenance and repair intervals and requirements
- Increased competition from aftermarket, grey-market and non-OE parts suppliers
- E-commerce and its impact on primary market areas
- Increased technology and replacement parts costs

- Impact of parts inventory on shop productivity

The supply side has also changed. Now, dealers and managers must consider:

- Parts proliferation from expanded model offerings
- Dealership storage capabilities and constraints
- Decentralization and third-party suppliers
- Night-drop, receiving, and logistics requirements
- Expanded order and return capabilities

Add to these the issues of transportation, automation, and manufacturer-driven lean supply systems initiatives, and the process of *sourcing* parts is as complex as selling them.

What is the common thread linking all of these changes, variables, and issues? Parts inventories. That's because the parts department affects every other dealership department: new, pre-owned, F&I, service, collision, and even detailing. By using the information in this guide, and actively managing your parts assets, you can greatly improve your inventory performance and increase your return on investment.

This guide is intended to provide you, the dealer and the parts manager, the tools to help you analyze and effectively manage your parts inventory.

INVENTORY PERFORMANCE METRICS

Historically, inventory performance in this industry has been measured in turns, a key metric that gave dealers and parts managers the ability to track their return on investment. In recent years, though, most manufacturers have significantly reduced their order lead times. That fact begs a question about the measurement of turns: Does an annualized metric provide an accurate representation of inventory performance?

Much has changed in the past dozen or so years. Lean parts inventories are no longer trending. Many manufacturers now allow dealers to fill the demand for parts from their warehouses rather than from the dealership's parts department. One thing hasn't changed: if you don't have product in stock when the customer asks for it, you will either forfeit the sales opportunity or create a significantly higher cost of sale in satisfying that customer's demand.

Inventory should be viewed in terms of the return on investment that it brings to the dealership. An inventory that performs well should not cost the dealership, but generate profit for it. This investment should perform in a way that allows for growth in three primary areas: sales, profitability, and service level. Service level is crucial to the dealership's efforts to improve overall customer retention and ultimately increase market penetration of vehicle sales.

There are many metrics showing inventory performance. Today's DMS yields a tremendous amount of data about the parts and accessory inventory and its potential for supporting the business model. In this section, we will look at the mathematics for calculating and measuring inventory performance. We'll also discuss how each of these metrics interacts with the others.

This section will concentrate on seven key inventory performance metrics:

- Days' supply
- Level of service
- Obsolescence
- Non-stock investment
- Non-stock sales
- Emergency purchases
- Lost sales

Days' Supply

The first and primary metric is days' supply. Measuring days' supply allows for the ongoing growth of the dealership's parts business without creating constraints on that growth by limiting total investment dollars. Two major issues typically force the need to constrain inventory: 1) excessively high cost of net working capital (borrowing rates) to support the slower-moving sources, and 2) high levels of obsolescence in the parts inventory.

We recommend that you calculate days' supply based on 30-, 90-, and 360-day averages for sales, gross profit, and cost of sales, compared against the total inventory investment. By doing so you take into account a range of issues—e.g., seasonal demand; service campaigns; ancillary products such as tires, oil and fluids, and secondary supply lines—that will help you calculate the precise levels of inventory for each of these product types. You should also calculate the individual inventories and demand for each of these product lines. Measuring each of these inventories individually allows you to determine the proper inventory structure for your type and volume of business. At the same time, you will help to ensure an accurate and speedy month-end reconciliation. To calculate your days' supply, refer to your dealership's financial statement and fill in the blanks in Steps 1 and 2 below.

Step 1	Example Data	Your Data
Total Parts & Accessory (P&A) Inventory Sales	\$276,000	\$ _____
P&A Gross Profit from Sales	– \$83,000	\$ _____
P&A Cost of Sales	= \$193,000	\$ _____
Step 2		
Current Inventory Total	\$215,500	\$ _____
P&A Cost of Sales (from Step 1)	÷ \$193,000	\$ _____
x 30.47 (average days in accounting month)	= 34 Days	_____

The result of the calculation (34 days in the example) is your days' supply of inventory. To calculate turns, divide 360 days (an accounting year) by days' supply. The result is the gross turn rate, which, for the example above, equals 10.6 gross turns (360 ÷ 34).

To find the optimal turn rate for your dealership, we recommend that you compare your inventory return on investment to your cost of net working capital.

One key point: The days' supply calculation above is based on your total dollar days of supply. Dealers who wish to maintain a stable inventory investment while broadening part number coverage and service levels may accomplish this by reducing the overall unit days of supply for faster-moving part numbers. You can also accomplish this by adjusting the source parameters in the parts inventory portion of the DMS.

Level of Service

You may know "level of service" by one of its many other names. Fill rate, service level, off-the-shelf fill and same-day fill are just a few terms for this crucial performance metric. Level of service, when accurately measured, provides an all-important signal as to whether the inventory investment is unnecessarily high or low. (Excessively lean inventories lead to compromises in operational efficiency and profitability, for example.)

Most of today's DMS systems provide for some measurement of level of service, whether from the shelf or calculated as same-day fill. Line fill, the current measurement, only provides an indication of level of

service in terms of the total part numbers stocked or ordered, versus the impact of inventory levels on the end user customer. That's why line fill is meaningless to a collision center that needs all of the parts on a repair in order to meet cycle-time requirements. Line fill is also meaningless to a service technician whose productivity is suspended while he waits for a part to complete a repair order. Unfortunately, no DMS systems as of this writing provide the ability to measure *transactional* fill rate. Measuring level of service by transactions provides real-time information on the impact of the parts department's operations, stocking practices, and processes. Level of service can be indicated by performance of service operational attributes such as technician efficiency and shop productivity, or by the number of additional rental car days that the dealer has to fund due to the collision center's inability to meet cycle-time deadlines.

The two ways to measure transactional fill rate are manual, for the most part:

1. Maintain a tracking sheet at the technician counter. Make a notation on the sheet each time that a repair order is not filled from on-hand shelf stock.
2. Establish a "non-part" number (for example, "OFill-RateS") in the computer system. Then, post a lost sale for the non-part number whenever a repair order is not filled from on-hand shelf stock.

While neither approach will provide a perfectly accurate calculation, the second method provides some level of automation for tracking transactional

fill. Once you have the total number of lost-sales postings for this non-part number for the month, the calculation is simple:

Total # of Lost Sales for “OFill-RateS” divided by the total number of Repair Orders.

This will yield your transactional fill rate percentage. While you may choose to set a target for the transactional fill rate, it is more important that you improve that fill rate while simultaneously maintaining the days’ supply in the desired target range.

Note that the “S” in the non-part number is the abbreviation for Service Transactional Fill Rate, a number that is (or should be) a concern of virtually every dealer. You may also choose to track retail, wholesale, internal, and collision transactional fill by establishing a separate non-part number with a final suffix indicator for each category of parts sales, posting the lost sales, and comparing the transactional fill rate against the total number of ROs or counter tickets in that particular category.

Analysis of dealership operations indicates that a transactional fill rate of 85-90 percent minimizes operational downtime without resulting increases in either days’ supply or obsolescence.

Obsolescence

The definitions and guidelines for obsolescence vary greatly among manufacturers, dealer groups, and individual dealers. However you define obsolescence, it is clear that obsolete parts create a significant drain on dealership profitability and return on investment.

Obsolescence is created by a number of factors. Technically, obsolescence occurs when sales of a

part gradually decline, due to changes in market conditions and in the demand for that part. Typically, however, obsolescence is generated by a number of factors within both fixed and variable operations.

The most common causes of obsolescence include:

- Uninstalled special order parts and accessories
- Significantly high numbers of parts returned by wholesale accounts
- Parts ordered either by error or as a result of improper diagnostics on vehicles in service

You can reduce obsolescence and improve inventory and financial performance by following these key practices:

- Develop, implement, and maintain a special order system that focuses on installing the product.
- Establish policies that balance the needs of the wholesale account with the dealer’s profitability.
- Provide continuing education on parts catalog systems and technician diagnostic skills.

Other factors can lead to excessive levels of obsolescence. These include changes in dealership policies on accessorizing vehicles in the new and pre-owned departments, overzealous ordering practices on manufacturer service campaigns and recalls, speculative purchasing, orders of retail or boutique items in large quantities in an effort to gain purchase discounts, and incorrect parameters within the DMS that lead to excessive emergency purchases.

To avoid excessive levels of obsolescence, you should measure the cost of capital necessary to maintain obsolete parts that fall into the “suspended working capital” category. This is easily calculated:

Step 1		Example Data	Your Data
Total Dollar Value of Obsolescence		\$35,000	\$ _____
Cost of working capital (borrowing costs)	x	6.5%	_____ %
Annual cost of suspended working capital	=	\$2,275	\$ _____

The example formula above yields a financial expenditure of about \$190 per month to maintain non-performing parts. While this annual cost represents a negative return on investment to the dealership, that negative ROI should be balanced against the probability that the part may actually sell and generate a profit for the dealership. Statistically, most products have a less than five percent chance of selling if they have not sold in the last 12 months. That probability increases as obsolescence is “re-defined” to something less than 12 months. This re-definition may lead to the part being reordered, which in turn may result in a long list of negative consequences: repair delays, additional handling, emergency purchases, loaner car expenses, lost productivity, reductions in customer satisfaction and retention, and, ultimately, overall profitability.

There is no optimum guideline for obsolescence. One goal is to maintain the obsolescence levels in such a way that the manufacturer return program accruals maintain a net zero balance of obsolescence dollars. Maintaining a net zero balance of obsolescence dollars means a dealership has a high potential to fulfill demand against the opportunity cost of suspended working capital.

Non-Stock as a Percentage of Investment

Non-stock parts as a percentage of investment is provided on your DMS parts management reporting system. This metric provides a general comparison of the total dollar volume, part number count, and part number piece counts.

The system typically reports this metric in separate areas, as:

- Part number data, and/or
- Investment dollars data

As this metric reflects the percentage of inventory investment that is not stocked, a number of factors can affect this number, including:

- Large volume wholesale operations
- Dealership on-site collision centers
- Volume e-commerce operations

Most of the factors that lead to high obsolescence levels—uninstalled special order parts and accessories, large numbers of parts returned by wholesale accounts, and parts ordered either by error or as a result of improper diagnostics on vehicles in service—also are issues with higher percentages of non-stock as a percentage of investment.

Guidelines once again vary among dealership operations. It's not unusual to have this metric show up as a very high percentage of part numbers and/or pieces, as many systems will “test” a part for demand and calculate it as a percentage of N/S investment. Generally, though, you should avoid a high level of dollar investment in non-stock, as higher numbers in this metric typically result in higher levels of special orders and emergency purchases. Industry recommendations range from 50 to 75 percent in N/S part numbers and/or pieces, and a corresponding 10 to 15 percent in dollars.

Non-stock parts as a percentage of investment is a relatively new metric as of this writing. Thus, there is little data leading to an actual guideline for it.

Non-Stock as a Percentage of Sales

Non-stock parts as a percentage of sales is also a relatively new metric, with little in the way of supporting data or guidelines.

One way to calculate non-stock as a percentage of sales is to compare the percentage of non-stock dollar investment (see the above section) to the percentage of non-stock dollar sales. The relationship between these two metrics is an indication of the volume of special orders and emergency purchases that are being processed in an effort to fulfill demand. Generally, these two metrics, when measured in dollars, should fall within approximately 10 percent of each other.

Factors contributing to high-percentage differentials between these two metrics include:

- Incorrect DMS source setups and/or parameters
- Excessive stock order editing
- Maintaining an excessively low days' supply

- Inconsistent or no lost sales postings
- Prematurely returning parts on factory obsolescence returns

Comparing non-stock as a percentage of investment to non-stock as a percentage of sales can also be used as a validating technique when analyzing level of service and days' supply calculations. That's because significant differences in non-stock will typically coincide with lowered levels of service and overall low levels of days' supply.

Emergency Purchases

Emergency purchases are necessary in every dealership's effort to provide high levels of customer service. Excessive levels of emergency purchases, however, can create dramatic reductions in the net profitability of the parts department and the dealership overall.

Most parts departments enjoy relationships with other dealers in their market area that allow them to purchase needed parts for a relatively low markup over cost. Unfortunately, the markup factor represents a very small percentage of the overall cost associated with an emergency purchase. Managers should be aware of other costs associated with purchasing parts from another dealership, including:

- Administrative costs of issuing and reconciling purchase orders
- The time associated with contacting another dealer and placing the order
- Costs related to delivery or picking up a part, including driver, vehicle, and fuel
- Lost shop and parts staff productivity

In fact, between markup and the costs listed above, the overall acquisition cost associated with an emergency purchase multiplies exponentially — often to several hundred percent above the cost of sourcing a part through the normal supply chain.

Industry guidelines suggest that emergency purchases should be maintained at a level between two and three percent of total purchases, as measured by the DMS reporting. It's a good idea to review the General Ledger Schedule regularly for dealer-to-

dealer purchases to validate system reporting and monitor purchasing practices.

Lost Sales Posting

The consistent posting of lost sales has long been one of the greatest challenges faced by parts managers. A number of factors play into the problem, ranging from forgetfulness to excessive workloads in the parts department to a lack of clarity about the definition of a lost sale. The words "lost sale" are problematic; the term should really be "unfulfilled demand" when the problem was not having the part in stock, as opposed to the sale being lost (i.e., not closed). Other problems are created when a customer or staff member requests that the part be ordered after the posting of a lost sale.

This after-the-fact ordering is a bad idea, because it can create instances of duplicate demand. Further complicating matters are dealership practices whereby a vehicle is held in the shop until a special order part arrives, to avoid the posting of a lost sale. There is no reason to hold the car when a special ordered part is involved. When the part comes in, it will be posted to that repair order (or another one) and the demand will be fulfilled.

To avoid situations like these, it's important to ensure that the parts staff records the lost sale in the DMS. Though no specific quantitative guides have been developed across all manufacturers, a general guide of two to three postings daily per "selling" parts staff member is a long-standing industry reference. This number can be validated through DMS management reports.

Lost sales postings can be a major component of a dealership's overall inventory demand structure. Failure to clearly define and consistently post lost sales results in deferred phase-in timelines, which in turn lead to more special orders, emergency purchases and their associated costs, as well as reductions in level of service, customer retention, and profitability.

ASSET MANAGEMENT

Asset management focuses on the control functions necessary for responsible stewardship of the parts inventory. Capable asset management yields an optimal combination of high levels of service and high levels of return on investment, as well as a coordinated effort to stock and sell product that generates profit. (Note that asset management is different from controlling inventory, which has to do with protecting against loss or theft.)

This section concentrates on three critical functions:

- Consistent bin checks (commonly referenced as “perpetual inventories”)
- Annual physical inventories
- Monthly book-to-system inventory reconciliations

Bin Checks

Accuracy of inventory counts is of critical importance. By conducting consistent, daily or weekly bin checks, the parts operation systematically improves the accuracy of the system inventory, and ensures an overall quality-control system that minimizes stock-outs and loss.

Conducting bin checks is a relatively easy task, provided a system is developed in which all parts staff are responsible for counting a small number of parts each day. This system should assign rotating responsibilities for different areas of the department to each person, with count sheets returned to the parts or inventory manager. Once an adjustment need has been investigated and verified, the system inventory should be modified, with the cost amount and explanation provided to accounting, which adjusts the book inventory. Tax regulations allow some companies to conduct ongoing daily inventory count and adjustment activities in lieu of annual physical inventories. As always, check with your tax accountant or attorney about inventory taxation issues.

Physical Inventories

Physical inventories are another major component of inventory management. We recommend that a full

physical parts department inventory be conducted annually, at the end of your dealership’s fiscal year.

Completing a physical inventory requires a significant amount of preliminary and primary work. Follow these steps:

- Thoroughly cleaning and organizing the parts department
- Ensuring that all locations are clearly tagged on the bins and/or product
- Core disposal and returns
- Denoting all “do not count” product
- Closing all counter tickets and repair orders, and reconciling any work-in-process
- Running count sheets in location order
- The actual counting of the parts and accessories, including write-ins
- Recounting
- Adjusting the inventory and updating the system
- Immediately reconciling the book inventory to the system final balance

This final step should always occur immediately after completion of the physical inventory. Once a single sales, return, or receiving process takes place, the inventory balance changes. Delaying the reconciliation of the physical inventory only leads to more variance that becomes progressively more difficult to isolate as each day passes.

The above list shows just the major steps necessary to complete this critical task. Fortunately, a number of outstanding individuals and companies conduct physical inventories for dealerships.

NOTE: It is strongly recommended that a physical inventory be conducted immediately prior to the hiring of a new parts or inventory manager.

Monthly Inventory Reconciliations

Maintaining the accuracy and security of the parts and accessories inventory, along with the inventory of fluids, tires, and shop supplies, requires

constant attention to detail. As discussed earlier, this process involves the physical monitoring of the product through counting and adjustments. The parts manager and controller have a responsibility to the dealership to maintain proper accounting for these various inventories.

One of the most fundamental aspects of managing inventory lies in the completion of a monthly inventory reconciliation. This requires vigilant monitoring of not only the physical product, but the paper and work-flow that occurs within the dealership as a whole.

Countless dealers and the parts department, specifically, have suffered significant financial loss, and many managers have faced dismissal as a result of book-to-system variances that were discovered at the end of a physical inventory. Many of these losses (both monetary and personal) could have been avoided with the completion of a monthly reconciliation. Losses discovered during monthly reconciliations can normally be marginalized.

Following are a dozen issues that could show up as inventory variances during book-to-system reconciliations:

1. Work-in-process
2. Freight charges being posted to parts' cost
3. Non-parts being placed in the inventory
4. Cost appreciation/depreciation
5. Cost modifications
6. DMS price updates
7. Shipments in transit
8. Cores and core inventory system
9. Pre-paid special orders
10. Other inventories being posted to primary
11. Expenses erroneously being posted to inventory
12. Outstanding claims, returns, and credits

The above can be used as a prioritized list of places to look when a book-to-system variance or post-physical inventory variance occurs. Most of these variance points, as well as many others, can be reduced or eliminated by completing a monthly inventory reconciliation.

Conducting the reconciliation is best accomplished by coordinating the month-end close date between accounting and the parts department, then requesting that the parts and accounting managers do the reconciliation independently of each other. If both managers complete the reconciliation correctly, the numbers in each part of the reconciliation should post as equivalent dollar amounts—except that the number in one of the manager's reconciliations is indicated as a credit balance, while the other manager shows the same number as a debit. Any discrepancies in dollar amounts provide a first point of investigation, and would highlight any differences resulting from paper-flow and control. You can use the above list of inventory variances to investigate any discrepancies.

The Appendix contains a monthly inventory reconciliation form you can use. Each dealership, group, and manufacturer has its own particular operational attributes that should be included as amendments to this form.

SUMMARY

This guide is designed to help dealerships measure the performance of parts inventories and improve their systems for managing their parts inventory assets.

While comparative information is valuable, inventory performance should ultimately be measured, monitored, and managed from the perspective of your individual dealership. All dealerships, of course, are different; parts inventory performance and management will vary depending on markets, economics, and operational practices within every individual dealership.

Managing a high-performance dealership parts inventory that drives sales, profitability, and customer retention is a complex system of processes and responsibilities that has yet to be automated. Only sound management practices, combined with oversight and knowledge of proven techniques, can realize the committed dealer's greatest potential return on investment.

Appendix: Parts Inventories Monthly Reconciliation Form

Dealership Name: _____

Month/Year: _____

PARTS DEPARTMENT CALCULATIONS

1.	Parts Department Dollar Total		\$ _____
	From R&R 2213 or ADP MGR Reports or DMS All Sources		
2.	Tires Dollar Total	+	\$ _____
	From DMS Report Generator Tire Inventory Total Report (Do not add if tires are separated into source and G/L account)		
3.	Work in Process	+	\$ _____
	(Must be from SERVICE W.I.P. report for closed/reopened ROs)		
4.	Core Valuation (returned, credit not yet posted)	+	\$ _____
5.	Cores on Shelf, new (add if not in system totals)	+	\$ _____
6.	Cores waiting to be returned, used (subtract if in totals)	-	\$ _____
	(Modify 4, 5, & 6 as appropriate if using DMS core-management system)		
7.	Outstanding claims & credits	+	\$ _____
	Factory returns, freight claims with parts out of DMS		
8.	Prepaid special orders; receipt remains pending	+	\$ _____
9.	Parts received with invoices not yet posted	-	\$ _____
10.	Shipments in transit; invoices already posted	+	\$ _____
11.	P&A Appreciation/Depreciation (from DMS Report)	+/-	\$ _____
	Add if depreciated, subtract if appreciated until G/L adjusted		
12.	Other (describe in detail)	+/-	\$ _____

Reconciled System Total \$ _____

ACCOUNTING DEPARTMENT CALCULATIONS

13.	Parts Inventory Book Dollar Value (from G/L)	\$ _____
14.	Tires Dollar Value (from G/L)	\$ _____
	Maintain separation if in place (memo)	
	Reconciled Book Total	\$ _____
	Book to System Variance Dollars	\$ _____
	Reconciled Variance Percentage	_____ %

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