



NATIONAL ASSOCIATION OF  
ELECTRICAL DISTRIBUTORS

# Inventory Carrying Cost Calculator

*“For Special Pricing Authorizations”*

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The National Association of Electrical Distributors (NAED) asked Dr. Al Bates, Profit Planning Group, to develop an Excel® template to aid distributors in identifying the additional carrying costs associated with Special Pricing Authorizations. The intent is to allow distributors to work together with their suppliers in measuring additional costs on a case-by-case basis.

This *Inventory Carrying Cost Calculator* is designed to facilitate a dialogue among distributors and manufacturers for the purposes of making the SPA process more efficient and reducing costs for all parties involved. This document is not intended to express any views regarding individual manufacturers’ decisions to provide SPAs, including whether, when, to whom or in what amount SPAs are provided.

### **The Challenge of SPAs**

In the highly competitive electrical distribution industry, many suppliers offer Special Pricing Authorizations (SPAs). Under the SPA process, distributors sell the product for a lower price and then receive a rebate from the supplier to help defray the price reduction. From an operational perspective, the transactions are straightforward. However, from a financing perspective, they are not.

With SPAs, items are purchased and put into inventory at normal prices. Bank financing is frequently used to fund the inventory, based upon the normal purchase price. In addition, insurance for the inventory is based upon the landed costs, property taxes are charged against the inventory, and other financing costs may also arise. In every case, the basis for the charge is the purchase price. The result is that distributors may have higher financing charges on the inventory than they would have had if the product had been purchased initially at the SPA reduced price.

Between the time of purchase and the time of receiving the rebate, distributors incur measurable costs. The purpose of the Excel® template is to assist distributors and their suppliers in measuring the additional financing costs incurred with SPAs.

## The Focus on Incremental Costs

The template focuses exclusively on those costs that change because of the SPA. This means that a number of normal costs that might be considered in evaluating the profitability of a vendor's product line or the profitability of a specific SKU will be excluded from these calculations.

*Three of the exclusions are important and need to be well understood:*

### **Non-Financial Carrying Costs**

In calculating the inventory carrying costs, factors are often included for obsolescence, handling, and related measurable costs. However, the SPA does not change the physical quantity of inventory handled, only its value. As a result, the non-financial components of the inventory carrying cost calculation are excluded from the template.

### **Processing Costs**

Administering SPAs leads to some significant outlays for tracking the SPAs, processing them, and dealing with errors associated with the process. While these additional costs may be significant in specific situations, they are almost impossible to track on a supplier-by-supplier basis in most accounting systems. Consequently, they have been excluded from the analysis.

### **Cash Discounts**

Suppliers often pay cash discounts on the original purchase price. The result is an "extra discount" on the difference between the normal price and the SPA reduced price. In some instances the rebate is paid directly to the distributor, meaning that the "extra" cash discount lowers the distributor's costs. In other situations, however, the rebate is treated as a reduction in the amount of the next statement. This means that the rebate lowers the dollar value of cash discounts paid, resulting in no cost savings to the distributor. In the latter instance, cash discounts will not be considered.

## Instructions for the Input Template

The template is dynamic in character. All figures will vary by different suppliers. The figures that are included originally are merely meant to be illustrative. Where industry averages appear in the NAED Performance Analysis Report (PAR), those figures are used. In most cases, no averages are available.

The template specifically assumes that much of the information required to evaluate SPAs is not readily available within the accounting system and that estimations will be required. With estimations, virtually every distributor should be able to evaluate SPAs. The intent is to provide a mechanism by which firms can develop serviceable approximations.

Firms with more precision in their accounting systems will be provided with options to augment the estimation processes with their own actual data. Every firm should use the level of estimation with which they are comfortable.

There are twelve items that can be entered into the input template. Only the items shown in yellow boxes in the input template can be changed. Everything else will be calculated automatically. To review results, simply press the print icon on the toolbar.

All percentage numbers should be entered in decimal format. That is 12.5% should be entered as 12.5, not .125.

It should be noted that for each item with a red flag in the upper right-hand corner, there are comments on the template. By moving the cursor across the appropriate cell, the comments will be highlighted. The comments are shorthand reminders of what is to be entered. Since every distributor and manufacturer is free to use (or not to use) SPAs in whatever way it deems appropriate, distributors may change the twelve items in the model based upon their individual business practices.

### The twelve items to be entered are as follows:

- **Supplier Name** – The name of the vendor for which a unique cost analysis is being conducted.
- **Annual Stock Purchases** – Since SPAs are generally used for stock items, this is the amount of annualized stock purchases from the supplier during the year. This should be total purchases whether or not they are subject to an SPA.
- **Percent of Purchases Subject to Special Pricing Authorizations** – This is the percentage of the total purchases for the year that would have an SPA associated with them. It is assumed that this figure will be estimated.
- **Variation One** – Some distributors may be able to track the purchases subject to the SPA with precision in their accounting systems. If so, they should enter that amount as the Annual Stock Purchases and enter 100.0 in Percent of Purchases subject to SPAs.
- **Percentage Price Reduction** – This is the amount of the price reduction in percentage terms. Since every SKU will probably have a different percentage, this involves a major estimation process. The intent is to measure the total amount of the price reduction as a percent of purchases on those items.
- **Cash Discount** (*if applicable*) – If the supplier provides a cash discount on the entire value of the purchases before the SPA, that discount must be entered to ensure carrying costs are calculated properly. However, this is true only if the rebate is paid by check. If the rebate is deducted from the next statement, then the rebate reduces the cash discount that will be received on that statement. In that case, the cash discount figure should be entered as zero.
- **Inventory Turnover on the Line** – This is the estimated turnover on the supplier's entire line, considering stocked items only. Direct shipments are not included in the turnover calculation. This figure is used to calculate the number of days SPA items stay in inventory.
- **Variation Two** – Items that are subject to an SPA often produce a higher turnover than does the entire product line. If the turnover on the SPA items is known, that figure should be used.
- **Typical Payment Days to the Supplier** – This represents the normal number of payment days associated with the supplier, considering any unusual factors that influence payment terms. Once again, this is for stocked items only.
- **Additional Days Until the SPA Rebate is Received** – Suppliers vary widely in the manner by which they process the SPA rebate. If the supplier subtracts the SPA from payments due, this number should be entered as zero. If the supplier processes a separate check, this should be the waiting period for that check from the time the claim is filed until payment is received.
- **Interest Rate on Borrowed Funds** – Financing inventory involves an interest expense. This is the annualized interest rate paid by the firm on short-term borrowing. If the firm does not borrow, an interest rate should be imputed; typically the prime rate plus one-half percent.
- **Insurance Rate on Inventory** – This is the annualized rate paid to insure inventory from damage.
- **Property Tax Rate on Inventory** (*if any*)—Many states levy a property tax as a percent of the inventory value. This reflects that percentage amount.
- **Other Investment-Related Expenses** – There may be other financing expenses associated with inventory in some instances. In most instances this figure will be zero.

**INPUT TEMPLATE\***

The print option for the input template will highlight results for the specific supplier being evaluated. The printout of results should be self-explanatory if the data entry process is understood and will differ from the input template you see on your screen. Each distributor will interpret the results individually, using this tool only for purposes of its dealings with its own suppliers.

**INPUT TEMPLATE FOR CALCULATING CARRYING COST OF SPECIAL PRICING AUTHORIZATIONS**

**AMERICAN SUPPLY** (sample company)

Supplier Name	American Supply	
Annual Stock Purchases	\$ 1,000,000	
Percent of Purchases Subject to Special Pricing Authorizations	40.0	%
Percentage Price Reduction	20.0	%
Cash Discount (if applicable)	2.0	%
Inventory Turnover on the Line	3.6	Times
Typical Payment Days to the Supplier	35	Days
Additional Days Until the SPA Rebate is Received	20	Days
Interest Rate on Borrowed Funds	6.0	%
Insurance Rate on Inventory	1.0	%
Property Tax Rate on Inventory (if any)	1.0	%
Other Investment Related Expenses	0.5	%

**TO REVIEW THE CARRYING COST RESULTS, PRESS THE PRINT ICON**

\*This is how the Input Template will appear on your computer screen.

## RESULTS\*

## CARRYING COST RESULTS FOR SPECIAL PRICING AUTHORIZATIONS

## AMERICAN SUPPLY (sample company)

1. Annual Purchases		\$1,000,000
2. Percent of Purchase Subject to Rebate		40.0 %
3. Rebatable Purchases	(1 x 2)	400,000
4. Size of Price Reduction		20 %
5. Associated Cash Discount (zero if deducted from statement)		<u>2.0</u>
6. Net reduction After Cash Discount		18 %
7. Rebates Being Carried	(3 x 6)	\$72,000
8. Days Inventory Carried (365 / Inventory Turn)		101 Days
9. Days of Normal Supplier Credit		35 Days
10. Days for Payment of Rebate		<u>20</u> Days
11. Days Rebate Being Carried	(8 - 9 + 10)	86 Days

## FINANCIAL CARRYING COST ON REBATES – %

12. Interest		6.0 %
13. Insurance		1.0
14. Property Taxes		1.0
15. All Other		<u>0.5</u>
16. Total Carrying Cost – %	(12 + 13 + 14 + 15)	8.5 %
17. Percentage Cost to Carry the Rebate	(16 / 365 Days x 11)	\$ 2.0 %
18. Cost to Carry the Rebate	(7 x 17)	\$1,448

\*This is a representation of how your results will print out.