Matrix Manager

Overview

The Matrix Manager is an add-on module that enables **Key*stroke*** to track variations of inventory items such as sizes, colors, styles, or other criteria. The Matrix method is commonly used to manage inventory such as clothing and shoes. The **Key*stroke*** Matrix Manager is also a terrific solution for other types of inventory, such as nuts and bolts, or any items which are available in different sizes or colors.

NOTE: *The Matrix Manager module is available only for the Windows version of* ***Keystroke POS****. The DOS version of* ***Keystroke*** *can be used to enter Matrix items on sales and other transactions, but does not have the ability to set up Matrix parameters, or to print Matrix reports and labels.*

Why and When Should a Store Use The Matrix Manager?

Consider the following situation:

A store sells items (such as clothing) that come in a variety of sizes, colors and styles. If each size/color/style combination were set up as a separate Inventory record, the Inventory database (which is limited to 65,000 items) might fill up quickly, and the Clerks would be faced with a very long list of bewilderingly similar items to choose from when ringing up a sale. Purchasing these items might also become unnecessarily complicated, requiring you to enter a separate line item when ordering each variety of an Inventory item, even if all of the varieties share the same Product Code, Description and other basic information.

The Matrix Manager allows you to enter a single record (i.e., Stock Number) in the Inventory database, representing all of the varieties of an item. You then attach a Matrix Table to that item, allowing a single Inventory record to encompass all of the item's sizes, colors, styles, etc.

When selling or purchasing a Matrixed item, you select the appropriate variety from a grid (or a set of lists, depending on how the Matrix Manager is configured). If a sale or purchase includes different varieties of the same item (several sizes and colors of T-shirts, for example), you can quickly enter the quantities on a grid, instead of selecting each item individually from an Inventory list.

The Matrix Manager is ideal for items of clothing or shoes that are made by the same Manufacturer, have the same price and UPC, and vary only in size, color, design, style, etc. Even if there are some variations in price (e.g., a higher price for XXL sizes), or if each variety has a different UPC, a Matrix may still be useful.

The Matrix Manager isn't just for clothes and shoes – you can also use it to keep track of flavors, screw thread sizes, thicknesses, wire gauges, vintages, or other variations within a single basic product. A Matrix, for example, can be used for bolts, screws, nails or similar items, which may differ in length, diameter, head size and head style. However, when considering using a Matrix table, it is important to determine when it makes good sense, and how diverse to make a single Matrix Table.

The following questions can help to determine whether a Matrix Table is appropriate for a particular set of Inventory items.

1. Can each of the items in a set be identified by a single product Description?

   Yes – Probably a good candidate for a Matrix Table.
   No – Probably not a good candidate for a Matrix Table.

2. Do all (or most) of the items in a set share the same cost, price and vendor?

   Yes – Probably a good candidate for a Matrix Table. Even if the cost or price of some items varies (such as for smaller or larger sizes), a single Matrix Table can probably still be used.
   No – Probably not a good candidate for a Matrix Table. Consider grouping the items into several sets. For example; instead of using a single core Inventory record for all screws, set up a different item for brass screws, stainless steel screws, etc. It may also make sense to break that down even further by head style (i.e., countersink versus, round head, etc.).

3. How many varieties of each item will the store be selling?
   If there are just a few, it may be easier to enter them as individual Inventory records rather than using a Matrix.

Theoretically, a store's entire Inventory could go on one Matrix Table. Doing so, however, would negate the advantages of the Matrix Manager -- sheer volume and the complexity of the resulting Matrix Table would make it more difficult to use than separate Inventory records. In other words, putting crescent wrenches, bowling shoes and Pop-Tarts all on the same Matrix Table is definitely not recommended!

Using the Matrix Manager

To use the Matrix Manager, choose Custom from the Main menu, then choose the Matrix Manager option. The first time that you run the Matrix Manager module, the program performs some automatic, behind-the-scenes preparations – it automatically initializes the Matrix data files, and adds the Matrix Table field to the Inventory database record. It also creates several default Matrix Tables to get you started.

NOTE: **Key*stroke*** *installations that use custom database screens require a few extra steps.* **Key*stroke*** *doesn't just add the Matrix Table field to the database screens – it actually replaces the old screen layouts with new ones, by copying the files SCR1A99M.SCR and SCR1E99M.SCR to SCRN1A99.DAT (add new record) and SCRN1E99.DAT (edit record), respectively. If the system uses the standard* **Key*stroke*** *database screens, this won't present a problem. If the system includes custom screens named SCRN1A99.DAT and SCRN1E99.DAT, save copies of those screens to a different location (or with different names) before using the Matrix Manager for the first time. If the database screens require a higher security level (i.e., lower security number) than 99 (e.g., SCRN1A05.DAT, SCRN1E05.DAT),* **Key*stroke*** *will use those screens by default, and will not display the Matrix-enabled screens. In either case, to continue to use customized (or higher-security) screens, have them modified by a* **Key*stroke*** *dealer to include the Matrix Table field.*

Matrix Tables

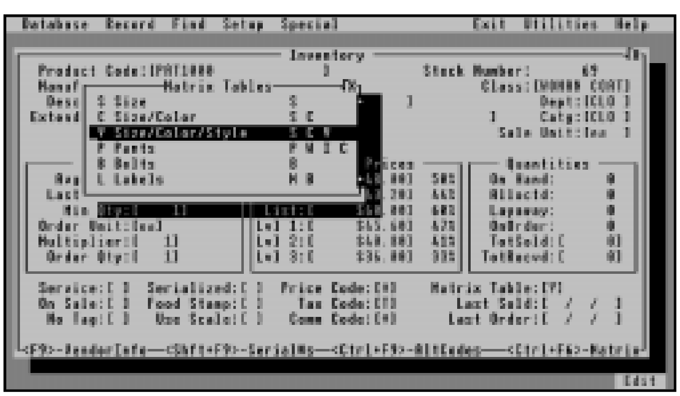
A Matrix is basically a Table (or a set of Tables) listing all the possible variations or characteristics (e.g., sizes, colors, styles, etc.) available for an item. When you sell an item that has a Matrix Table, you specify the individual Matrix item by selecting the desired characteristics from that Table.

Tables consist of Categories and Elements, which allow you to distinctly identify each Matrix item. A Category is a *type of feature*, such as size or color. Elements are the *specific features* within a Category (e.g., large, small, red, blue, etc.). For example, if the Inventory item is a T-shirt that comes in different sizes and colors, its Matrix Table would consist of Categories for Size and Color. If the table left out one of those Categories, it wouldn't be possible to accurately identify an individual T-shirt. If the table included an unnecessary Category, like Style, it would make the process of identifying an item more complicated than it needs to be, and would increase the risk of an inaccurate selection. (If the T-shirts did come in different Styles (e.g., v-neck, crew neck, etc.), it would be possible to simply include another Category.)

A Table can have from 1 to 4 Categories (e.g., size, color, style, texture). Each Category can have up to 50 Elements (e.g., 50 sizes, 50 colors, etc.). In other words, a Matrix Table with 4 Categories and 50 Elements in each Category has the potential to represent over six million different variations of a single item – that's 50^4 or 6,250,000 items, all under one Stock Number! That's a lot of items to keep track of, and without the Matrix Table method, it would be nearly impossible.

It is possible to define different Matrix Tables for different types of inventory. For example, there could be one Table for T-shirts and another Table for dress shirts, since T-shirts typically require only two Categories: colors and a limited number of sizes (e.g., XS, S, M, L, XL, XXL), while, the Table for dress shirts would include Categories for color, neck size, and sleeve length; and the Elements within each Category might differ. A store may need dozens of Matrix Tables for different types of inventory. At the same time, however, a single Table may work for similar types of items (e.g., different brands of the same type of T-shirt, where each brand should be represented by a different Stock Number/Inventory record).

Tables, Categories, and Elements are each identified by a single-character Code (much like Price and Tax Tables). A Matrix Table may use the same Code in several different Categories, but not within the same Category. The same Code character may also be used to identify a Table, a Category, and an Element, so be careful when assigning them to avoid confusion. To attach a Matrix Table to a particular Inventory item, enter that Table's Code in the Matrix Table field on the Inventory item's Database record.



The Matrix Table field (in the lower right-hand corner) is used to attach a Matrix Table to an Inventory item.

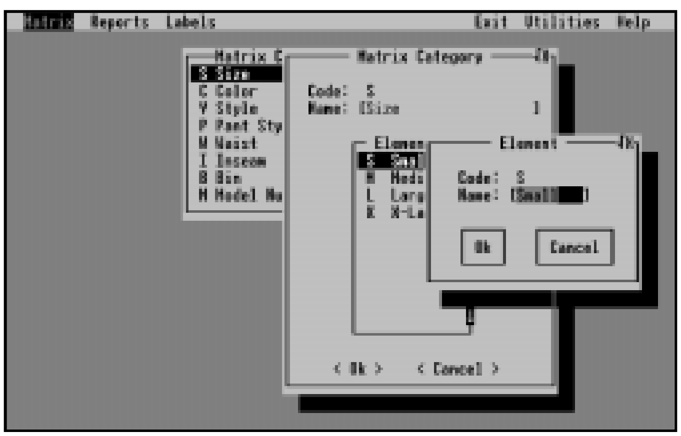
Inventory Database record

Setting Up Matrix Tables

Before attaching a Matrix Table to an Inventory item and entering data, make sure that the Table has all of its Categories and Elements in place (the program will not let you save a Table without at least one Category).

Start by creating (or modifying) the Categories that the Table will use. First, determine the number of dimensions that the Matrix Table should have. Each dimension should represent a type of feature (such as size or color) that uniquely identifies items on the Table. The Table should have a Category for each of those dimensions.
In the Matrix Manager, select Categories from the Matrix menu. In the Matrix Categories list box, press INS (or F2, or right-click) to create a new Category, F3 (or ENTER, or double-click) to modify an existing Category, or DEL to delete the selected Category. If you choose to create or modify a Category, the program will display the Matrix Category setup dialog box. Each Category represents a specific type of feature (e.g., color, size, etc.), and consists of the name of the Category, a single-character identification Code and a list of individual Elements (i.e., specific colors, sizes, etc.), within that Category. A single Category can be used by more than one Table (e.g., color could be used for both shirts and pants).

Enter a single-digit code to identify the Category (or accept the default); it can be a standard alphanumeric character (i.e., one that appears on a standard keyboard) or a non-keyboard character. Press INS to display a list of ASCII characters (including non-keyboard characters). If the code character is already in use, the system will display a warning and automatically substitute the next available character. Enter a suitable name for the Category in the Name field.



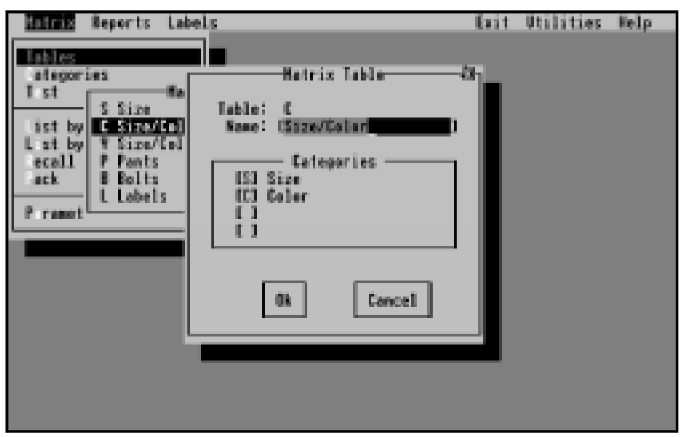
The Matrix Category setup dialog box

Key to the Elements list, and press INS to create a new Element, F3 to modify an existing Element, or DEL to delete the selected Element. If you choose to create or modify an Element, the program will display the Matrix Element setup dialog box. An Element simply identifies a specific feature within a Category (e.g., a particular color), and consists of the name of that feature (White, Red, Orange, etc.), along with a code. Enter the code and name and select OK. Use INS to select a Code character from the ASCII list. Complete the Elements list, adding all of the Elements that the Table should include. It will be possible to add new Elements later if necessary.

The Matrix Element setup dialog box

Change the order of the Elements in the Category setup dialog box by cutting (SHIFT DEL) and pasting (SHIFT INS) into the desired location. Changing the order of the Elements within a Category will not change an item's Matrix Code, but changing the order of the Categories within a Table will (see *The Order of the Categories*).

When the Categories are complete, they can be incorporated into a Table. Select Tables from the Matrix menu, and press INS to create a new Table, F3 to modify an existing Table, or DEL to delete the selected Table. If you choose to create or modify a Matrix Table, the program will display the Matrix Table setup dialog box. Each Table consists of a list of the Categories required to uniquely identify all of the varieties of a given type of Inventory item. It is possible to use a Matrix Table with several different Inventory items, as long as the Categories in the Table apply to all those items. (A Size/Color Table, for instance, could uniquely identify each variety of a T-shirt that varied only in size and color. The same table might also work for polo shirts, jogging shorts or any other items that could be uniquely identified using the same size and color Categories.)



The Matrix Table setup dialog box

Enter a single-character code (or accept the default) and a name for the Table. Use INS to select a Code character from the ASCII list. In the Categories box, press INS to select a Category. Each Table can have up to four Categories, depending on the number of dimensions in the Matrix Table.

The Order of the Categories

When setting up a Table, you can place the Categories in any order. Color-Style-Size, Size-Style-Color, and Style-Color-Size, for example, are all equivalent. Do not, however, change the order once the Table is in use, or data already entered will be lost.

Here's how it works:

The program identifies Matrix items by their Matrix Codes. The Code "69.SWV", for example, identifies the Inventory item (in this case, Stock Number 69) and the Elements that identify the individual Matrix item (S for Small, W for White, V for V-Neck). When the program looks at the Code, it expects the Elements to be in the same order as the Categories in the Table -- in this case, Size, Color, Style. Since they do correspond (Size = Small, Color = White, Style = V-Neck), the program can identify the item correctly.

Suppose, however, you changed the order of the Categories in the Matrix Table, from Size, Color, Style (the current order) to Color, Style, Size. When the program looks at the Code 69.SWV, it will now attempt to match S with an Element from the Color Category, W with the Style Category and V with the Size Category. If it fails to find a match for any one of these Elements, it will display the message, "Matrix Code Not Found." If all of the Elements do have a match, it will give an inaccurate identification (i.e., Color = Sage, Style = Western, Size = Very Big instead of Small, White, V-Neck).

Changing the order of the Categories in a Matrix Table will also affect **Key*stroke***'s records of transactions made before the change. If you bring up an earlier Invoice, Order or Layaway (using the Edit/Print function on the Sales or Purchase Manager's Transaction menu), the program will use the altered Matrix Table to identify any affected Matrix items. This means that (following the example above) if you bring up an earlier Invoice for the sale of a Small, White, V-Neck T-Shirt, that item will now be listed as Sage, Western and Very Big. If the Matrix Code on the old invoice doesn't match any of the items on the re-ordered Table, the Invoice will simply list the main Inventory item, without any Matrix identification.

If you change the Categories back to their original order, the program will identify Matrix items correctly once again. If, however any affected items were sold during the time that the Categories were not in order, the Invoices for those transactions will now be wrong. From that point on, one set of transactions or another will be inaccurate.

The moral of this is: Don't Change the Order of Categories in A Matrix Table. It's not worth it.

Attaching a Matrix to an Inventory Item

Once you have created the Matrix Table, it's time to put it to use. First, tell **Key*stroke*** which Inventory item(s) will use the Table. To do this, "attach" the Table to the item by entering the appropriate Code in the Inventory record's Matrix Table field.

To attach a Matrix Table to an Inventory item, go to the item's Inventory record, either by bringing it up in the Database Manager (Database Manager – Inventory – Edit), or by pressing [F12] (Query Function), selecting the item from the list box, and pressing [F3].

The Matrix Table field is in the lower right corner of the Inventory record (above the Last Sold and Last Order dates). Enter the Code, or press [INS] to bring up the list of Matrix Tables. (In the Windows version of **Key*stroke***, right-clicking in the Matrix Table field will also bring up the list of Matrix Tables.) Select the appropriate Table from the list and press [ENTER]; the Matrix Table is now attached to the Inventory item.

The Matrix Item Record

To access an Inventory item's Matrix item record, press ALT M from the main Inventory record (or from an Inventory list box in the Windows version), then press ENTER (or double-click) on a selection in a Matrix Grid or list box. The Matrix item record is similar to an Inventory database record, and in fact, includes many of the same fields. Like the Inventory database record, the Matrix record has a main screen and a secondary screen, wnich contains some additional information, including the Matrix item's Vendor data. To switch between the main screen and the secondary screen, press F9. At the top of both screens of the Matrix item record is information regarding the Matrix Table, Categories, and Elements that define the Matrix item. The Vendor Info button ALT V is at the bottom of both screens.

Most of the fields on the Matrix item record are filled with a special "null" character. (The default character is ≡ (ASCII 240); a different "null" character can be specified in the Configuration Manager Parameters.) These are fields that will, if left unchanged, contain data from the item's main Inventory record. This is information which the Matrix items will usually all have in common (e.g., Price/Cost, Minimum and Order Quantities, Price and Commission Codes, Product Code, Description, etc.). The current value (taken from the main Inventory record) of each of these fields appears to the right of the field.

Most of the time, these fields can be left as is; however, there may be times when it will be necessary to change some of this data. For instance, if you scan items using the Manufacturer's UPC (Product Code), and if each size and/or color has a different UPC, it would be necessary to change the Product Code information in the Matrix item records. Changes to the information in any of these fields will apply only to the Matrix item, and not to the main Inventory item.

Each Matrix item will use the values from its main Inventory item (displayed to the right of each field)), unless otherwise specified.

Only fill out those fields such as QOH that are unique to the Matrix item and leave all the other fields blank.

Matrix item record

Only Elements that are actually being used are stored in the Matrix database, which keeps the database files from becoming unnecessarily large. So if there aren't any X-Large, Green T-shirts in stock, leave that Matrix item blank, rather than filling it in with QOH = 0, or other unnecessary information. If a field gets filled out by mistake, highlight it and press DEL ENTER to return the field to its "null" status again.

Most of the Quantity fields are initially set to zero (**0**), with the main Inventory item's Quantities listed to the right of each field. You will usually enter the Quantity On Hand (QOH) for an item (and, if necessary, some of the other Quantities) when first filling out a Matrix item's record. Once everything is set up, the Sales Manager and Purchase Manager will automatically update the item's Quantities, including QOH.

Do a count of each variety of the Inventory item that is currently in stock, and enter those figures into the QOH field on the appropriate Matrix item records. (If the Inventory item isn't currently in stock, enter the Matrix quantities when they come in, using the Purchase Manager.) The total Quantity for all of the Matrix items attached to an Inventory item should equal the main Inventory item's Quantity. For example, if the main Inventory item has a QOH of 500, when you attach a Matrix to it and enter a QOH for each Matrix item in stock, those Quantities should add up to 500.

The On Sale and No Tag fields are similar to the "null" fields, but they require somewhat different treatment. These fields are blank because they cannot hold the "null" character, but they do get their initial settings from the main Inventory record. If an Inventory item is marked On Sale, its Matrix items will automatically also be On Sale, and can not, in fact, be *not* On Sale. However, a Matrix item can be put On Sale without also placing the main Inventory item On Sale.

Vendor information for Matrix items is tracked separately from the Vendor information attached to the main Inventory record. The second Matrix database screen displays the Vendor information; you can edit that information by pressing [ALT][V] from the Matrix item record. Note that only 3 Vendors can be associated with each individual Matrix item, as opposed to 4 Vendors for the main Inventory record.

NOTE: *If each of the different sizes, colors, etc. of an Inventory item has its own UPC, and if the store uses a Barcode Scanner, it may be necessary to assign the appropriate Product Code to each item in the Matrix. The Matrix database, however, is limited to 65,000 Product Codes, so we recommend not giving Matrix items separate Product Codes unless absolutely necessary.*

Matrix Codes

A Matrix item's Code uniquely identifies an item, and is based on the main Inventory item to which the Matrix Table is attached, along with the item's Matrix elements.

A typical Matrix Code looks like this:

`69.SWV`

The first part, "**`69`**", is the Identifier (i.e., Stock #, Product Code, etc.) for the Inventory item – in this case, Stock # 69. This data is followed by the Separator (a period in this example, although it could be any character, as set in the Matrix Parameters). The last three characters, "**`SWV`**", identify the actual Elements of the Size/Color/Style Table that characterize the Matrix item in question (i.e., **S**mall, **W**hite, **V**-Neck). These letters are always listed in the same order as the corresponding Categories in the Matrix Table .

NOTE: *ORDER IS IMPORTANT! If you change the order of the Categories, it will change the Matrix ID, and the Matrix item will be "lost" (i.e., 1.SW is NOT the same as 1.WS). For this reason, it is very important to carefully plan how the Matrix items will be set up.*

The Matrix Code can be used to enter items on Sales or Purchase transactions. When you enter a Matrix Code, the program looks up the main Inventory Record using the Identifier. It then uses the Element codes to look up the Matrix item in the Table.

NOTE: *When a Matrix item is sold or purchased, its Matrix Code is stored in the item's Class field in the Transaction record, and its Code Name (e.g., Small White) is stored in the Extended Description field. Be sure that these fields do not contain any other important information, as it will be overwritten. To print the item's Code Name, use a form that includes the Line Item's Extended Description field.*

Entering Matrix Items on Transactions

There are three ways to enter a matrix item on a transaction. *Either*:

1. Enter the Inventory item (e.g., by entering a Stock Number, Product Code, etc., then selecting from a matrix grid or list), *or*
2. Enter the Matrix Code for the individual Matrix item, *or*
3. Enter or scan the Matrix item's unique Product Code (if it has one).

By Inventory Item

Enter the Inventory item on the transaction just as if it were any other Inventory item. The system will prompt you to select from a grid or list, depending on the Matrix Parameters settings. (See the Display Mode, Sales Entry Mode and Purchase Entry Mode Parameters.)

By Matrix Code

Clerks can also enter the item's Matrix Code directly, in the line item Description column. See *Matrix Codes*, above.

By Unique Product Code

If each Matrix item is assigned its own Product Code, the items can be scanned in, just like any other Inventory item. **Key*stroke*** can print price tags with either Matrix Codes and/or Matrix item Product Codes. If individual Matrix items are assigned separate Product Codes, keep in mind that there is a limit of 65,000 Product Codes.

Single Item Entry vs Multi-item Grid Entry

You can enter quantities directly on the Matrix grid in Sales and / or Purchase transactions. You might do this, for instance, if you are ordering or selling different quantities of several varieties of a Matrix item on a single transaction.

To enable Multiple Item Entry, select Parameters from the Matrix menu. In the Matrix parameters dialog box, select the appropriate Multiple Entry Mode (Sales or Purchase), and press ENTER. Select Multiple item from the list.

When you sell / purchase Matrix items, you will be able to enter quantities directly on the Matrix grid. Press F10 to exit the grid; the selections, with the quantities that you entered, will appear on the Sales or Purchase transaction.

When should you enable Multiple Item entry?

In	**Enable**	**When**
Sales	Yes	Customers often buy multiple varieties of the same Matrix item.
Sales	No	(Default) Customers buy only a few Matrix varieties at a time.
Purchase	Yes	(Default) You order several Matrix varieties at once.
Purchase	No	You order the main item only, then fill in Matrix Quantities.

Case Breakdowns for Matrix Items

Sales transactions support case breakdwons for Matrix items. If you sell a Matrix item and its inventory item has a parent, the program will (if the sale triggers a case breakdown) breakdown a case from the parent item, and from its corresponding Matrix item. If the parent item does not have the same Matrix table as the item sold, then only the parent's main inventory item will have a case removed. The parent's Matrix items will not be affected.

For example, you sell a Blue, Medium, V-neck T-Shirt. It is a Matrix item for which the main Inventory item is Assorted Cotton T-Shirt, which in turn has a Parent item, Bulk T-Shirt Case, with 25 shirts to the case. The sale brings the Matrix and/or Inventory item's QOH below its Min Qty, triggering a case breakdown. The program removes a case of Blue, Medium, V-neck T-Shirts from the Bulk T-Shirt Case item's QOH and adds 25 shirts to the QOH for both the Assorted Cotton T-Shirt inventory item and its Blue, Medium, V-neck Matrix item. If the Bulk T-Shirt Case item uses the same Matrix Table, as the Assorted Cotton T-Shirt item, the program will also remove a case from its Blue, Medium, V-neck item. If it doesn't use the same Matrix table, it will leave the Matrix items alone.

Ordering Matrix Items by Main Inventory Item

In some cases it may be easier to simply enter the main Inventory item on the Purchase Order, then break it down into Matrix items when they come in. This might happen, for instance when you use an order form supplied by the Vendor, or if you order the main Inventory item, and the Vendor ships it with an assortment of colors, designs, etc.
To order a Matrix item as a single Inventory item, first go to the Inventory database record for the main Inventory item and set the Order Multiplier (listed under Purchase Info) to a negative number. When you (or the Auto Order function) enter(s) the item on a Purchase Order, Keystroke will just place the main Inventory item on the order without displaying the Matrix Table grid. When receiving the order, enter the total number of items received in the Recvd column next to the main Inventory item. The program will then display the Matrix Table, allowing you to receive individual Matrix Items (with a multiplier of 1). The main Inventory item will remain on the order, with the Matrix items added below it. The program will adjust the Inventory item's quantity received to reflect the total quantity received on the Matrix grid.

NOTE: The Purchase Entry Mode (as set in Matrix Manager – Parameters) must be set to Multiple Mode for this work correctly.

Tracking Average Cost for Matrix Items

By default, the Avg Cost field in each Matrix item's database record is set to Null, so that it shares the Average Cost of the main Inventory item. We recommend that you do not change this setting, since it is the easiest way to accurately track the Average Cost of all of the Matrix items that belong to an Inventory item.

If you do change the Average Cost for a Matrix item, the program will automatically change all Matrix items associated with the same Inventory item to be set individually, with an initial Average Cost equal to the main Inventory item's Average Cost. Their Average Costs will then change if you change them manually or receive them on a Purchase Order. They will no longer change based on the Inventory item's Average Cost. If you delete the Average Cost for one Matrix item, the program will reset them all to Null.

Matrix Manager Menus

The Matrix Manager menu bar includes the Common options (see the Introduction in the main **Key*stroke*** User Guide), along with the menus and functions listed below.

Matrix Menu

- **Tables** – set up Matrix Tables
- **Categories** – set up Matrix Categories and Elements
- **Test** – test how the selected Table functions
- **List by Matrix Code** – select an Inventory item and list Matrix items by Matrix Code
- **List by Product Code** – list Matrix items by unique Product Code
- **Recall** – restore a deleted Matrix item
- **Pack** – rebuild data and index files
- **Parameters** – configure optional settings for the Matrix Manager

Report Menu

- **Database** – listing of Inventory database information (Price, Quantity, Critical Lists, etc.) for Matrix items
- **Sales Analysis** – summary of sales activity by item and/or Department/Category for Matrix items
- **Sales History** – detailed listing of sales activity per Matrix item
- **Purchase Analysis** – summary of purchase activity by item and/or Department/ Category for Matrix items
- **Purchase History** – detailed listing of purchase activity per Matrix item

Labels Menu

- **By Item** – print labels for individual or groups of items
- **By Purchases** – print labels by purchases

Matrix Menu

The Matrix menu contains functions for setting up and maintaining Matrix Tables and designating default settings.

Tables Function

The Tables function brings up a list of the current Matrix Tables. To create a new Table, press INS in the Matrix Tables dialog box. To modify a table, highlight it and press F3, ENTER; DEL will delete the selected Table.

A Table is really a list of Categories which identify all of the varieties of a given type of Inventory item (e.g., size/color/style breakdowns, etc.). In the Matrix Table setup dialog box, enter a single-character code (or accept the default) and a name for the Table. In the Categories box, press INS to select a Category. Each Table can have up to four Categories, depending on the number of dimensions that the Matrix Table requires.

Categories Function

The Categories function brings up a list of the current Matrix Categories. Press INS in the Matrix Categories dialog box to create a new Category. Press F3, to modify a Category; DEL will delete the selected Category.

NOTE: Be Careful! Don't delete a Table or a Category that is in use, and don't change the order of the Categories if the Table is already in use!

Each Category represents a specific type of feature (e.g., size or color), and consists of a name, a single-character Code and a list of individual features, or Elements, within that Category. A single Category can be used by more than one Table. In the Matrix Category setup dialog box, enter a single-digit code to identify the Category (or accept the default), and a suitable name for the Category in the Name field.

Key to the Elements list, and press INS to create a new Element. Press F3 on a highlighted Element to modify it; DEL will delete the selected Element. An Element simply identifies a specific feature (e.g., color), and consists of a name (White, Red, Orange, etc.), along with a single-character code. Enter the code and name and select **[OK]** several times until the Matrix Tables list box is visible.

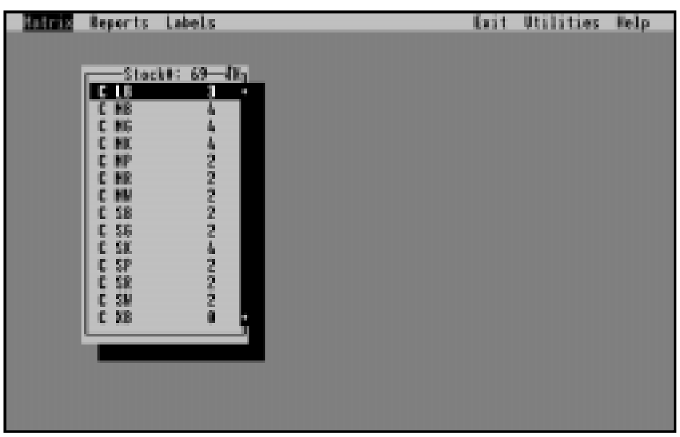
NOTE: Be Careful! You can change the order of the Elements, but don't remove any that are in use!

Test Function

After the Matrix Tables, Categories and Elements are set up, use the Test function to confirm that they work in the intended manner. Select the Test function from the Matrix menu, then select the Matrix Table to be tested. The Test function displays the Matrix grid, using the Inventory record for Stock #1 (or the first item that it finds, if Stock # 1 is missing), but it does not allow you to enter any data, and it has no effect on the actual Matrix and Inventory information for Stock #1.

List by Matrix Code Function

To see a list of the Inventory items, select List by Matrix Code. To display the Matrix Code list for that item, highlight the desired Inventory item and press ENTER. Pressing F3 on a highlighted Matrix item will bring up the Matrix record.



List by Matrix Code function

Matrix items can be deleted by highlighting an item on this list and pressing DEL. If nobody has Packed since marking items to be deleted, they can be recalled by using the Recall function (described below).

List by Product Code Function

The List by Product Code function displays a list of Matrix items for which the Product Code is different (has been manually added or changed) from the main Inventory item.

Recall Function

Recall restores a deleted Matrix record to the database. Records can only be restored if they have not been permanently erased by the Pack function.
When you select Recall, the program displays a list of all Matrix items that were deleted from the database using the List by Matrix Code function.

Pack Function

Use Pack to rebuild Matrix data files and permanently remove deleted records. When you select Pack from the Matrix menu in the Matrix Manager, the program will display a reminder to make a backup copy of the data files before proceeding. If you ignore this warning message, you run the risk of losing important data. The program next displays the name of the file about to be packed. When the Pack function is complete, the program will return to the Matrix menu. The Matrix Manager Pack function works like the Pack function in the Configuration Manager; for more information, refer to the Configuration Manager section of the main **Key*stroke*** User Guide.

Warning: *The Pack function completely rebuilds data files. You **MUST BACK UP** all data files (from the Configuration Manager) before Packing. If any problems arise (i.e., an error message) while running this function, **DO NOT PACK AGAIN!** Call **SBS** immediately for assistance.*

Parameters Function

The Parameters specify default settings and control how the Matrix Manager operates.

The Matrix Parameters determine how the Matrix items will function.

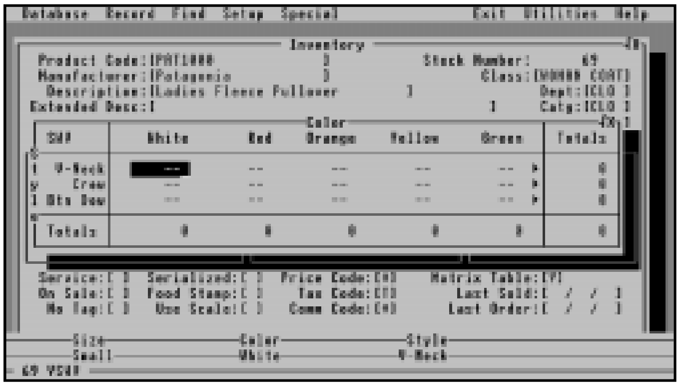
Matrix Manager Parameters function

<Display Mode> – Sets the default format for displaying Matrix Tables (Grid, Side by Side List, or Cascading List) in the Sales, Purchase, Database and Matrix Managers. Press SHIFT F9 to switch display mode. Pressing SHIFT F9 to change the current display mode will not affect the default.

Grid Display
The Grid is a two-dimensional table, with the rows representing one Category and the columns representing another. If a Matrix has 3 or 4 dimensions, **Key*stroke*** prompts you to select Elements from one (or two) of the categories, then displays the Grid, which shows the Elements in the remaining two Categories.
Press F9 to rotate the order in which the Categories are displayed.

There are two ways to enter Quantities using a Grid: Single Item mode and Multiple Item mode. Single Item entry is available throughout the program; Multiple Item entry is available only in the Sales and Purchase Managers. See Sales Entry Mode and Purchase Entry Mode, below.

The three lines below the Grid display information about the currently-selected Matrix item: Categories (on the first line), Elements (second line) and Matrix Code, plus On Hand, On Order, Minimum and Order Quantities (bottom line).

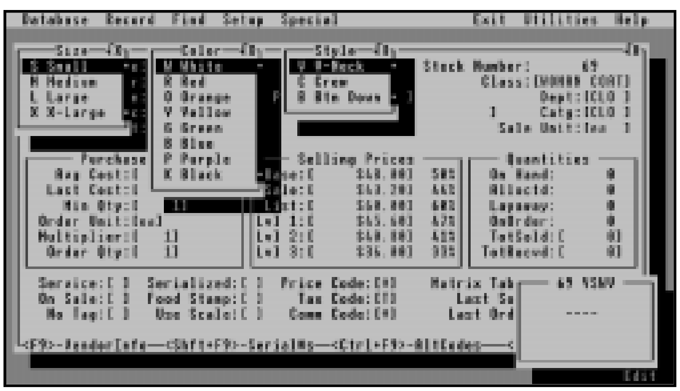


Arrows in the grid indicate this Matrix item has more information than can be displayed on the screen (use the arrow keys to scroll up/down/left/right).

A Matrix displayed in Grid format

Side By Side List Display

The Side By Side List displays all Categories at the same time, in separate lists. Use the [←] and [→] keys to move between the lists, and the [↑] and [↓] keys to select Elements. Press [ENTER] to select an Element and go to the list to the right. Press [ENTER] in the last list to select an item and add it to the transaction (Sales and Purchase Managers), or to display its Matrix record (Database and Matrix Managers).



Pressing [SHIFT][F9] will switch between the different formats.

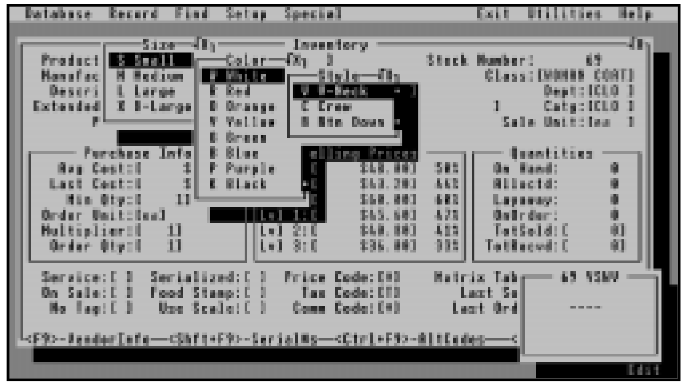
A Matrix displayed in Side By Side List format

Cascading List Display

The Cascading List is like the Side By Side List, except that it originally lists the Elements of the first Category only. Highlight an Element and press [ENTER]; the program will display the next Category in a list to the right of (and slightly below) the first list. Press [ENTER] in the last list to add an item to the current transaction or to bring up the Matrix record, in the same manner as the Side by Side list.

Both the Side by Side and Cascading Lists display the item's Matrix Code and On Hand, OnOrder, Minimum and Order Quantities in a box in the lower right corner.

The Matrix Code for this item is displayed in the box in the lower right-hand corner.



A Matrix displayed in Cascading List format

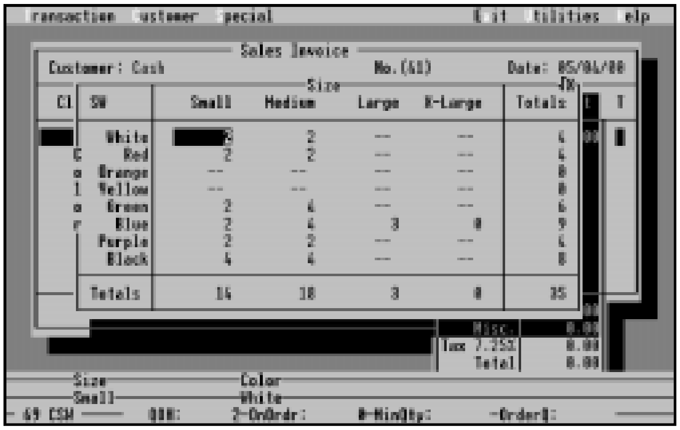
Code Separator – The Matrix Code consists of the item's Identifier (Stock #, Product Code, etc.) from the main Inventory Record, followed by its actual Matrix Code (the characters identifying its Element(s)). To assign a character to separate the Identifier from the Matrix Code, enter it in the Code Separator field. If you assign a period (.) to be the Separator, for instance, the Code for Stock # 69, Small, White, V-Neck would be 69.SWV. If you leave the Code Separator field blank, the program will display the Code without a separator: 69SWV.

NOTE: The Matrix Code Separator must be a character not already being used in any of the Inventory items' Identifier fields (Product Code, Class, etc.). For example, if the Product Code already includes periods, don't use a period as the Matrix Code Separator. (e.g., if a Product Code "1.5INCH BOLT" already exists and the Separator is a period, Keystroke will try to find a Product Code "1" and a Matrix item "5INCH".

<Sales Entry Mode> – Determines how many Matrix items the Clerk can enter at a time when making a sale. Single Item allows you to only select one Matrix item at a time in the Sales Manager. If the Quantity of the item is greater than 1, you will need to enter the new Quantity on the Line Item. Multiple Item allows you to enter quantities for multiple Matrix items. This setting applies to the Grid Display Mode only.

Single Item Entry Mode

To enter Single Item Quantities on a Sales or Purchase transaction, select an item from the Grid and press ENTER or F10. The item will appear on the transaction with a Quantity of one (**1**); the Quantity can be changed by moving the cursor to the Qty column. On a Database record or in the Matrix Manager, press ENTER or INS to select an item from the Grid and display the item's Matrix record.

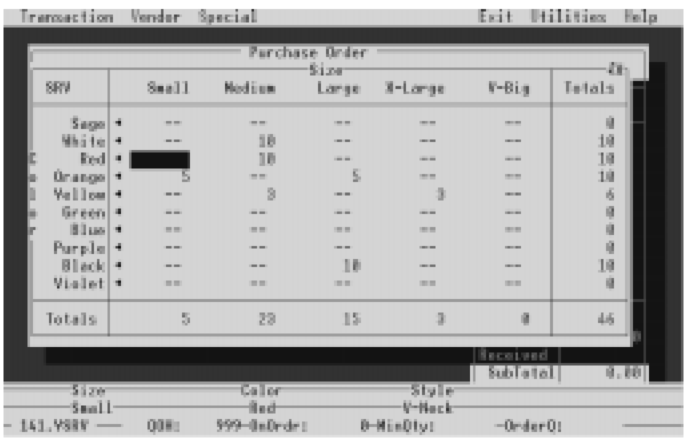


In Single Entry Mode, available Quantities are shown for each Matrix Item.

Selecting a Matrixed item from a grid.

Multiple Item Entry Mode

With Multiple Item Entry mode (used only for transactions), you use the mouse or the arrow keys to go to an item, then enter the Quantity. Quantities can be entered for more than one Matrix item at a time (e.g., 2 Small White and 1 Small Green). Once all items have been entered, press F10 to return to the transaction. Each of the items will be listed as a separate line item, with the appropriate Quantities.



Entering multiple Matrixed items on a transaction

<Purchase Entry Mode> – Select Single or Multiple Item Mode for Purchase Orders. This setting applies to the Grid Display Mode only.

Report Menu

Use the Report menu functions to print Inventory Database information, as well as totals based on Sales and Purchase transactions. Report settings are customizable; you may choose which Inventory and Matrix items will be in the Report, by grouping items, creating Filters and setting Ranges. You can also customize the Report forms, using the new **Key*stroke*** Report Engine. To select a Report Form, press F3 once in the Report Setup dialog box. To bring up the Report Editor, press F3 in the Report Form list, or press CTRL F3 in the Report Setup dialog box.

When the Matrix Manager is first installed, selecting a Report option from the main Reports menu will open the appropriate dialog box. You can save customized Report settings by pressing SHIFT F10 or CTRL ENTER. **Key*stroke*** will then display a pop-up menu with two lists of Report settings when you make a selection from the Reports menu,. One list displays the *shared settings*, which are available to all installations of **Key*stroke*** on a network. The *local settings*, which are only available at the current register, are listed above the shared settings. Select Add New Settings to create and save a new (local or shared) setting. To save a local setting, enter the number of the current register in the Register field. To save a shared setting, enter 0 in the Register field.

See The ***Key*stroke** Report Engine *to find out more about customizable Report forms and settings.*

Database Reports

Print a customizable report of the current status of Matrix Inventory items. Along with the Filters and Range settings, you can choose a variety of options: include / not include non-Matrix items, report on In Stock, On Sale or ReOrder items only, exclude Service items, add Allocated and / or Layaway to the Quantity on Hand, leave the QOH blank (to print a list for taking a physical Inventory), or use the Last Cost instead of the Average Cost.

Sales and Purchase Analysis Reports

To print a Sales or Purchase Analysis Report, select Analysis from the Sales or Purchases section of the Reports menu. You can choose the type of transaction and the way in which transactions are grouped, select Filters for transactions and Matrix items, and select both Ranges and Filters for transaction groups and Inventory items. Report options include: the Method of calculating profits / costs, include / not include non-Matrix items, report on sold / purchased items only, use adjusted cost (Purchase only) and subtract discounts (Sales only).

Sales and Purchase History Reports

To print a Sales or Purchase History Report, select History from the appropriate section of the Reports menu. You can select the type of transaction, Filters for transactions and Matrix items, and both Ranges and Filters for Inventory items. Report options include: use adjusted Costs, and include line item and / or transaction Comments.

Labels Menu

Use the functions on the Labels menu to print price tags for Matrix items, either By Item (for tagging individual Inventory items, or groups of items), or By Purchases (for tagging items when receiving a shipment from a Vendor). You can create customized price tag forms and settings, which the program will save (and add to the By Item or By Purchase menu) for later use.

Key*stroke* displays the Settings pop-up menu when you select an option from the Labels menu. It lists both shared and local settings, and allows you to save custom settings.

See The ***Key*stroke** Report Engine *to find out more about customizable Label forms and settings.*

Price Tags by Item

Print price tags using optional Filter settings (and Range, for Inventory items) to select Inventory and Matrix items, choose items individually, or print tags for all items.

In addition to selection by Range and Filter, you can select the Price, the Price Table and Price Date, set the number of labels to print, choose to print only those items which have had a price change since labels were last printed, update the last printed price on the item's record, include or exclude non-Matrix items, and print box tags. You can combine settings to print virtually any combination of price tags.

Price Tags by Purchases

Print price tags by Purchase Invoice, Purchase Order or Reserved Order, using optional Filter settings. This makes it easy to print a full set of price tags for an incoming order. You can select the Price, the Price Table and Price Date, set the number of labels to print, choose to print only those items which have had a price change since labels were last printed, update the last printed price on the item's record, include or exclude non-Matrix items, and print box tags.

Special Considerations:

Data Files

The following files are used by the Matrix Manager module:

KSMT*.DAT – Matrix Inventory Items

MTX*.DAT – Matrix Tables

SCR1A99M.SCR, SCR1E99M.SCR – Inventory database screens with Matrix Code field (copied to SCRN1A99.DAT and SCRN1E99.DAT the first time Matrix is run)

If the **Key*stroke*** installation has never used Matrixing before and is getting errors related to the Matrix Manager, delete these files and reinitialize them by restarting the program.

Serial Numbers

The Matrix Manager does not support Serial Numbers at this time. It is possible to sell a Matrix item which has Serial Numbers, but the Serial Number box will list all of the Serial Numbers for all of the items on that Matrix Table, not just for the Matrix item being sold.

Scripting

Scripts may only be attached to the main Inventory item; the same Script will run for all Matrix items attached to that Inventory item. Individual Matrix items may not possess their own separate Scripts.

See the current README.TXT file (in the **Key*stroke*** directory) for the latest information regarding the Matrix Manager and all other **Key*stroke*** modules.