



Using the Barcode/Scanner System

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Using the Barcode/Scanner System

The installed barcode/scanner system is an inventory management system that is used to update inventory counts when either shipping or receiving. Included in this system are methods to print barcodes, scan parts in and out, and update a database of inventory. The basic functions are relatively simple but do require a basic knowledge of Excel to perform.

Printing Barcodes

Database Sheets

Within the main inventory database are four separate sheets. Sheet 1, called “Database”, is the main location of the inventory count. Sheets 2 and 3, called “Receiving” and “Shipping” respectively, are worksheets for use of the macros or reference for new parts with no known bin location or items that fall below their order points. These sheets will be covered in detail in later sections. Sheet 4, called “Barcodes”, is the sheet where we create barcodes for products, and is where we will focus in this section.

Sheets in the Inventory database

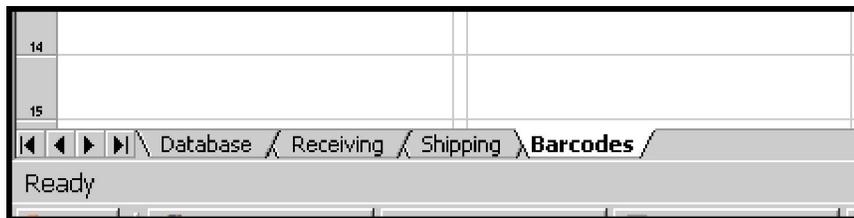


Figure 1

The Barcodes Sheet

On opening the Barcodes sheet, you will probably see that there are already barcodes from previous printing runs. We will modify these, rather than create new ones, in order to simplify the process. The positions of the barcodes are already set up to print on standard 6-label per sheet paper, so modifying the margins is generally unnecessary.

The Barcodes sheet

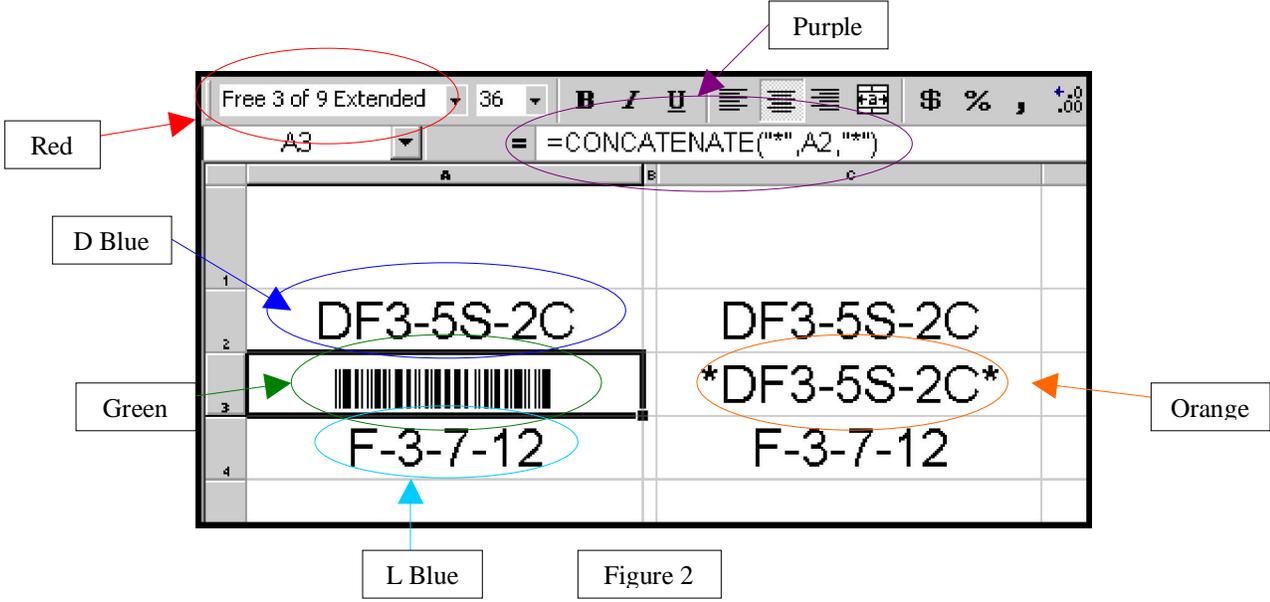


Figure 2

In this diagram, the parts of the barcode sheet are labeled for convenience. The font has been changed in the barcode on the right for demonstration purposes.

The blue section shows the location of the human-readable part number that will be printed on the top of the tag. This is one of only two locations in each tag that generally need to be edited. Be sure to use the same capitalization as is found in your inventory list, or you may run into problems later on.

The green section is where the actual barcode is produced. Notice how it is highlighted within Excel, and how it displays as a formula (purple section) and with a unique font (red section). This area should not be edited, or the barcode reader will not properly read the part number. This string is comprised of the exact part number flanked by asterisks (*) and transformed into code 39 via font.

The orange section is an example of the green section with the font changed to make it human readable. This is merely for the purposes of example and should not be printed this way.

The purple section shows the formula that is used to create the scanner-readable barcode. It merely places asterisks on either side of the string found in the cell above it. This formula is in place for all six barcodes to lessen errors that may be introduced by having to enter the part number twice.

The red section displays the font used to make the code scanner-readable. The middle areas of the tag are set to this font by default and should not be changed.

The light blue section shows the bin location for each part number. This location must be manually entered into your inventory list, as it is not included in the scanner-readable barcode.

Creating New Tags

In order to create a barcode tag, the first step is to gather your part numbers and bin locations. Once you have these, delete the part numbers currently in the cells in the barcodes sheet. After deleting the old numbers, type one part number into each of the now-empty cells (dark blue section above). When you click away from the part number, the cell immediately below (green section above) should fill with a barcode. If it does not, ensure you have typed the part number into the correct cell. Once your barcode has been created, replace the information in the bin location cell (light blue section above) with the new bin location of the part. Repeat these steps for the rest of the tags to be printed, up to six per sheet.

Too Long Barcodes

In the case of excessively long part numbers, the barcode may become too long to fit in the cell properly. In this case, it is preferable to adjust the size of the barcode's font rather than the size of the cell itself. Be aware, however, that it is possible to adjust the font so small that the scanner will no longer be able to properly read the bar codes. If the font needs to be this small in order to fit in the cell, you may have to make minor adjustments to the cell length. Be sure to test that the entire code will fit onto the tag when it is printed, and always reverse any changes to font or cell size before saving. In extreme cases, it may simply be necessary to shorten the part number.

Scanning Tags with the reader

A Word of Caution

It is extremely important to remember that you can only perform one inventory function at a time. You can either add parts to your storeroom or remove them, but you must finish adding or removing parts, transfer the data, and update your Excel file before you change to the other operation. You can work with as many parts as you want before transferring the data as long as they are all the same operation. For example, if you wish to add one motor and remove two belts, you must completely finish the inventory updating for adding the motor before you can remove the belts, or vice versa. Do not scan parts between transferring the scanned data and updating your inventory spreadsheet.

Preparations for Scanning

Once we've created the tags, placed them on the boxes, and filled the boxes with parts, it's time to use the barcode scanner to start managing inventory. Before the new parts go to the stockroom, they should be scanned in order to update the inventory database. After the inventory is updated with the proper macro, covered later, the new bin locations can be entered. Note that the scanner neither reads nor records bin locations, so you will need to make note of these on your own.

Getting a Good Scan

To achieve a good scan, the tags should be flat and free of obstructions, including paint, dirt, and other substances that would obscure part or all of the barcode. Small boxes may need the tag to be placed on the side, rather than the front, in order for the entire barcode to be flat. The scanner can't read codes at too great an angle, so try to keep the scanner as close to parallel to the code as feasible. The basic process is the same for scanning items in and out, with the differences coming in the inventory manipulation, covered in the next section.

Scanning Procedure

On pressing the circular orange button (see Figure 3 below), you'll notice a red beam is produced. This beam is created with a laser, making it very bright if you were to look into it. Point this beam at the barcode, making sure the entire code is contained within it. The scanner will beep when the code has been accepted. Once the scanner has beeped, indicating the code has been accepted, you will need to enter the quantity of items on the keypad. Press one of the return arrows beside the large orange button (see Figure 3 below) to confirm this number.

Transferring Scan Data

After scanning is complete, the data needs to be transferred to the computer. There is a key labeled "Fn" toward the bottom of the scanner; this key activates the function mode and allows other keys to act as shortcuts for actions. Pressing "Fn" and then pressing "2" will initiate a data transfer to the computer. Your computer must be on and have the Bluetooth key inserted and activated. The scanner does not need to have line-of-sight to the computer to transfer data. Once initiated, the scanner will take a few seconds to find the computer, and then a couple more to actually transfer the data. When transfer is complete, your scanner should beep and erase any data still in its memory in order to prepare for another scanning job.

Troubleshooting

If you have trouble getting the scanner to properly read, experiment with distances and angles until the scanner recognizes the code. If you still can't get the scanner to read, the barcode may not have printed properly; if other codes will read, reprint the problem tag after verifying the information.

If the transfer fails, the data will not be erased, and you may try again. If the scanner can't connect to the computer, a restart of the computer will usually fix this.



Figure 3

The **dark blue** section shows the area where the laser is located. Point this at the barcode to be read.

The **red** section shows the screen where the read part number and the quantity, after it is entered, shows up.

The **green** section shows the button that activates the scanner laser when pressed. The laser will stay on for approximately three seconds after the button is pressed.

The **orange** section shows the return key, used in entering quantities after the barcodes have been scanned. The key on the right hand side of the scan button is functionally equivalent.

The **purple** section is the base station and charger for the scanner unit. The “Fn” key is not shown because it is located low enough on the unit to be obscured when placed in its charger.

The barcode scanner has a range of approximately 300 meters in ideal conditions; in a real environment, the range will be substantially less but still more than sufficient for inventory use.

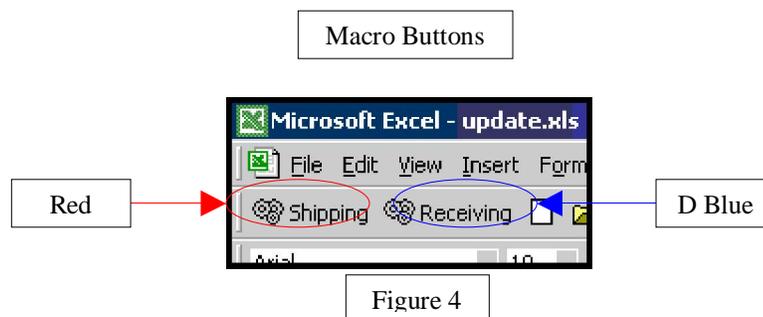
Maintaining Inventory

Backing Up

After the parts have been scanned and the data transferred to the computer, we can now begin updating the inventory spreadsheet. It's a good idea to always make a backup copy before running either of the macros in the spreadsheet, as changes made with a macro can't be reversed. The best way to make a backup is to save your spreadsheet to a separate location. To do this, open the spreadsheet from the shortcut on the desktop. Click on the "File" menu (see Figure 4 below), then click "Save As..." on the dropdown menu. Once the dialogue opens asking you where you want to save the file, navigate to a location you can remember and name the file with an indication of the date. Click "Save" to close this dialogue. Once you make the backup, close and then re-open the Excel spreadsheet from the shortcut located on the desktop.

Receiving

If you were receiving or adding parts to your storeroom, click the "Receiving" button, located at the top left of the screen (dark blue in Figure 4 below). When this button is clicked, the macro takes over by importing and manipulating the data that was transferred from the scanner. It will automatically increment any parts already set up and alert you to parts that do not have a bin location. When it is through, a print preview of the changed data will pop up, giving you the option to print it. This is helpful if you have several parts that do not have bin locations. If you want to come back later to print this list, simply open the sheet labeled "Receiving" along the bottom (see Figure 1 on page 1).



Shipping

If you were shipping or removing parts from the storeroom, click the "Shipping" button, also located at the top left of the screen (red in Figure 4 above). When this button is clicked, the macro takes over by importing and manipulating the data that was transferred from the scanner. It will automatically decrement any parts already set up and alert to parts that have either not been set up or have fallen below their user-specified order points. If no order point is specified, the macro will assume an order point of zero. When it is through, a print preview of the changed data will pop up, giving you the option to print it. This is helpful if you have several parts that were not previously set up of that have fallen below the specified order points. If you want to come back later to print this list, simply open the sheet labeled "Shipping" along the bottom (see Figure 1 on page 1).

Other Important Points

Make sure you have the information you need to modify your storeroom, as the Shipping and Receiving sheets are cleared each time their respective macro is run. Also, after your changes have been made, be sure to save your spreadsheet by either clicking the “File” menu then “Save”, or clicking the icon shaped like a floppy disk in the top left of the screen.

If you wish to update your spreadsheet manually, you may do so as long as you do not change the order or number of columns. The first row of data will be ignored, as the macros assume that row is filled with labels for columns.

Keep in mind that part numbers must match exactly in order to be considered the same. This includes punctuation and capitalization.

Be sure you are running the spreadsheet opened by clicking the shortcut from the desktop, as the macros depend on certain file locations to run properly.