



# The no-nonsense guide to barcoding

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## Introduction

Barcodes are used to speed up processes, improve accuracy and eliminate entry errors. Used in the right way, they can streamline and improve your business, saving you time and money.

There are two key elements to successfully implementing a barcoding system:

- 1) A full understanding of how and why you want to use them
- 2) The right software so that processing the barcodes is done logically and smoothly

With this guide you will see how barcodes can be used and look at some practical considerations when implementing them.

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## The benefits of using barcodes in your business

### Speed

It takes 5-10 seconds for a user to read and type in 10 characters then click a button to save the data. A barcode reader can do this in less than a second and software can automatically save and process the data. However, there may be times when you are using a keyboard and switching between it and a scanner could actually be slower than not using barcodes.

### Automation

There may be instances where using barcodes can actually automate a process. For example, modern desktop scanners can now read barcodes, create an electronic version and automatically save it to an associated record in a database. This could be used for scanning signed delivery notes to keep a record of proof of receipt, for example.

### Accuracy

Using barcodes is far more accurate than manual input. A user is likely to make an error once in every 300 characters, while the frequency of barcode errors is one in tens of thousands.

### Convenience

Barcodes are a way of identifying and accessing information (i.e. price or quantity) relating to individual items. This information can be amended on a central database, eliminating the need to change information directly on each item or its packaging.

### Tracking

Individual items, whole shipments or even people can be given a unique identification number and then tracked through a process or manufacturing chain.

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## How do barcodes work?

Essentially, a barcode is a way of presenting information that can be read by a machine. The vast majority of barcodes in use today are the 'one-dimensional' type consisting of a row of black lines of different thicknesses with gaps between them. They are effectively a typeface that represent characters, usually numbers, that you can sometimes see printed below the barcode. Rather than contain actual information on an item, they are usually just a code, such as a product reference, that identifies the item and then links it to a computer record stored in a database. This allows you to change the information relating to the product (such as description and price) without changing the barcode itself.





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## How barcodes can be used in your business

Here are the main ways that barcodes can be used to make your business more efficient:

### Point-of-Sale for Retail and Trade Counters

The most familiar use of barcodes is at Point-of-Sale.

The customer brings an item to the till, it is scanned, the product details and price are retrieved from a database, an invoice or receipt is printed, payment made and stock levels adjusted accordingly.

If the product and your customer are both present, scanning a barcode is undoubtedly the quickest way to allocate stock and process the transaction. However, sometimes items may be too large to be carried to the till, not easily physically barcoded or they need to be ordered. This can be solved by having a list of barcodes available to scan at the Point-of-Sale.

If you buy generic products from different suppliers, your stock system may also need to handle more than one barcode per stock item and recognise all of them.

### Ordering Goods

Your accounting or stock control system should allow you to order stock based on your physical stock, current orders and minimum order quantities. Therefore, provided you have effective stock control, using barcodes for purchasing may have limited value.

### Goods In

Booking goods in can be time consuming, often involving you checking the delivery while a driver is waiting. This is one area where barcoding can help significantly by making it faster, reducing the risk of errors, quickly identifying any shortfalls or over-deliveries and booking the items in to stock.

The size and quantity of the items being delivered, how they are packaged and the distance from the booking in PC will determine what type of scanner you need. If your items and deliveries are small and close to the computer, a simple cordless scanner will be fine. Multiples can be booked in by scanning each item or by scanning the item and entering the total quantity into your software. If your deliveries are some distance from the computer, a scanner with a built-in keypad allows you to scan a barcode and then enter the quantity directly on the scanner, so you don't have to return to the computer to enter the quantity.

Some products may be delivered in an outer carton with its own barcode so you need to be able to scan this but book the individual items into stock, so the outer 'parent' barcode needs to be linked to the inner 'child' barcode, with the corresponding conversion quantity.

### Goods Out

Using barcodes for Goods Out allows you to quickly confirm the items that are going to be delivered on an order based on what has actually been selected. This allows you to make sure the right items are sent to your customers and to quickly identify any errors or shortfalls in the order, which would otherwise need to be corrected after the delivery has been made.

A picking list is often produced as part of the sales order process and a barcode scanner can be used to scan the products as they are selected. They are then automatically marked for delivery against the sales order. However, since the products may be dispersed over a wide area in your warehouse, you will need a scanner that is linked to your PC via a WiFi network, or use a data capture scanner to store the picked items and then download them to your order processing software when you have finished.

Alternatively, once items have been picked and are being prepared for delivery, they may be taken to a single location where they can be scanned, so only a simple cordless scanner will be required.

### Internal Stock Transfer

Stock transfer between locations is not a sale so has to be handled separately to any sales or purchase processes. This is particularly relevant when stock is being transferred to work vans for example.

Your stock software will need to be able to handle multiple locations and both the stock itself and each individual location will need its own barcode. Physically moving a product from one place (or 'bin') to another in a single location is not a stock transfer and all you need do is amend the stock record in the database accordingly.

### Product Processing

As part of your business, you may send your products out to external contractors or different locations where a process (such as painting) or further assembly is carried out. This is similar to a Stock Transfer; however you also need to track where your stock is and what is happening to it (as opposed to just moving it from A to B).

You may also be booking components out but then booking an assembled or finished product back in. Each will require its own barcode and the components and finished product may need to be linked so you know where the components have been used. Again, this is not part of the sales or purchase process, this needs to be handled differently, for example as an 'internal works order'.

### Stock Taking

Stock Taking is an area where practical issues need consideration and you'll need to decide whether there is a genuine benefit to using barcoding during stock takes. A simple manual stock take may be most efficient.

The main issue when using barcodes for stock taking is location. Assuming your products are stored over a relatively large area, using barcodes to do a stock take will require the use of wireless scanners with sufficient range, or a data capture device that allows you to do the stock take and then download the data on completion. If you do not have barcodes for all products you will have to process those manually, or you may consider barcoding the bin or shelf where the item is stored and scanning that.

### Barcoding Documents

Documents such as contracts, client records or orders can be tracked in the same way as products, but again it is important that your business software handles the barcodes effectively.

Barcoding can allow you to electronically process documents such as customer orders, contracts or signed delivery notes, by printing or sticking the barcode onto the document and then scanning it as normal.

Modern desktop scanners (as opposed to handheld barcode scanners) use software that is able to recognise barcodes in scanned documents and create electronic versions which can be automatically saved against a corresponding record in a database. This allows you to electronically archive documents such as signed orders and delivery notes, reduce your paperwork, and save a great deal of time filing and retrieving important records.

### Other uses for barcodes in your business

The main focus of this guide is using barcodes in sales and stock management. However, a barcode can be used to identify and assign information to any item so there are many other ways they can be used where the same advantages of speed and accuracy apply. These include asset tracking, ID cards, customer loyalty cards and, as already mentioned, their use for tracking documents. By assigning barcodes to specific jobs and then using staff ID cards, you can easily keep track of the time being spent on a job for example, and even automatically generate timesheets and invoices. Another example is barcodes on luggage labels at airports, which allow your luggage to [hopefully] be automatically scanned and diverted to the correct 'plane'.

If you think you have a process in your business that may benefit from using barcodes, get in touch and we will be happy to talk it through with you.

## Choosing a barcode scanner

The most important consideration when choosing a scanner is how far away from your computer you are when you use it. A simple wired scanner is ideal for Point-of-Sale use where it can just sit in a cradle and scan products. A cordless scanner might be easier to pick up and scan items further away from the computer or if you just don't want a cable getting in the way. However, if the scanner is

to be used a significant distance from the PC, such as for booking stock in or out, then a more advanced scanner may be required that has Bluetooth or wireless functionality. You may also need to capture data remotely out of range of the computer and then download the data as a batch file into your accounting software at a later stage.

## Features to consider when choosing a barcode scanner:

**Function** What it will be used for?

**Reliability** The general quality of the unit.

**Durability** The environment it will be used in, its 'drop spec' and whether it is 'ruggedised'.

**Connectivity** USB or serial, corded or cordless, wireless, Bluetooth etc.

**Features** Ability to handle batch files, built-in software, integrated keyboard etc.

**Price** What you need versus the cost, and how important additional features are to you.

**Support** With more expensive scanners, a service contract is highly recommended as repairs can be expensive and take several weeks.

There is a huge range of scanners to choose from but here are the ones we have tested and recommend:



**Corded USB scanner:**  
Motorola LS2208t  
around £100 + VAT.



**Cordless USB scanner:**  
Motorola/Symbol LI4278  
around £300 + VAT.



**Wireless scanner with keypad:**  
Motorola/Symbol MT2090 Barcode Scanner  
around £600 + VAT.



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## Generating and Printing Barcodes

### Creating your barcodes

Whether you need to create your own barcodes depends on how your business works. If you buy and re-sell products already barcoded, it is unlikely you will need to create your own barcodes. If, however, you manufacture and package products or process them in some way, you may need to assign your own barcodes to products.

If you only sell your products to end users, you can simply create barcodes and print them. An example of this is the barcode Code 39 (also called Code 3 of 9 or Type 39), which is free to use. It is available as a True Type Font so you can simply enter a code, apply the font and print the barcode. This method can also be used if you want to create barcodes for tracking orders, documents or processes within your business.

However, if your products are going to enter a supply chain, you must ensure that each of your product lines carries a globally unique identifying code to prevent potential duplication.

Fortunately, there are easy ways to do this. You will need to use certain types of barcode, which are called GTINs (Global Trade Item Numbers) examples of which are UPCs (Unique Product Codes) or EANs (European Article Numbers), with EAN-13 being the most common type. The blocks of numbers available to be used are issued by an organisation called GSI which ensures every barcode is unique.

### Printing Your Barcodes

Barcodes can be printed onto labels using specific printers either as individual labels or large batches. You will need barcode software to create them, which will come with a barcode printer or your accounting package. Barcodes can also be printed directly onto documents such as orders, contracts, delivery notes and sheets of labels using normal laser printers. Printing barcodes onto plastic credit-card style cards requires a printer specifically for this purpose.

You will need to consider how you are going to attach barcode labels to your products. Are the products boxed? Are the boxes large enough to take the label? If not, could they be bagged and a label attached to the bag? Where are the products stored? If they are kept outside and exposed to the elements, will the barcode stay legible and attached? It may be simpler to keep a product 'catalogue' with barcodes for items where their size and location make attaching and scanning a barcode difficult.

Whatever the situation, there is a solution; it's just a matter of establishing what is the most practical and cost effective for your business.

Here is a barcode printer that we recommend:

Zebra GC420T USB Thermal Transfer Desktop Printer – around £250 + VAT  
Labels and printer ribbons - around £80 + VAT



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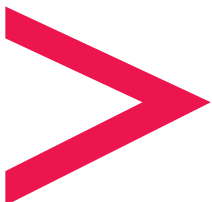
## Conclusion

This introduction to barcoding has briefly dealt with some of the benefits and issues involved in barcoding. We have aimed to give you an overview of how barcodes can help you and things to be considered before deciding to incorporate them into your business

Barcodes can offer significant benefits, saving time, improving efficiency, reducing interaction with a computer (via keyboard, mouse or touchscreen) and eliminating errors associated with data entry.

Barcoding is a powerful tool but how you use it and how well it works for you will depend on your business, your products and what you want to achieve. If correctly implemented and with the right software, barcoding can dramatically improve efficiency and help you to do business better.

**If you would like to discuss any of the points we have covered or other ways barcoding can help your business, please give us a call and we will be happy to help you.**



Do business. **Better.**

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