

### 2D Barcodes- What are they good for?

An ordinary linear barcode, with vertical bars and stripes, can hold about 16 ascii characters. A 2D barcode, with its data encoded in many different size rectangles, can hold between 1000 and 2000 ascii characters. Most barcode printers can now print 2D barcodes but 2D barcode scanners are more expensive. 2D barcodes have to be scanned in a raster format (like a television) to cover their whole area. The cheapest 2D scanners are really linear scanners that you move up and down over the 2D barcode by hand to perform the vertical scanning motion. There is a knack to doing this as you have to start the scan in the middle of the barcode, then move up to the top and then down to the bottom. Genuine 2D scanners have a laser with a 2 axis scanning movement or use an area CCD scanner (as opposed to a linear array). These are more expensive but are easier to use with their point and shoot action.



2D barcodes are rapidly coming to be used to solve the receiving problem. Receiving clerks typically spend 40% or more of their time trying to match up materials received with shipping documents and open purchase orders. Also they frequently make mistakes, such as recording items as having been received when they have not, which can cause production problems. The solution to this problem is to have your vendors put 2D barcodes on each container or pallet. The 2D barcode will contain the PO number, the Vendor Number, the Item Number, and the quantity.

The receiving clerk scans the 2D barcode on each container and the shipment is automatically reconciled against a list of open purchase orders by a computer. This eliminates all the manual paper shuffling and the resultant mistakes. It can also automatically send a receipt notification to the accounting system for payment and a discrepancy report to purchasing by Email for immediate action. 2D barcodes are not typically used within a plant for tracking. Instead a linear "license plate" tag is used to track each container. The unique license plate tag on each container references an entry in a database that contains data such as the part number, container location, and the quantity of material in the container. Linear barcodes are used in this application, rather than 2 D barcodes, as the 1D scanners are much cheaper and easier to use and the data about the container is available anywhere on the plant's LAN or WAN. Also we do not have to change the barcode label when we change the quantity in the container. We simply record this in the database.

The latest idea is to have your vendors put both a unique linear barcode (for internal tracking) as well as a 2D barcode on each container they ship to you. The 2D barcode contains the usual PO and part number information but also contains the linear barcode. This is so that the linear barcode can be captured during the receiving process without an additional scan but then the linear barcode can be used for internal tracking of each container.