Introduction to Bar Code Technology

For any business in this fast changing world, the importance of collecting and processing information on a timely basis is essential. This document gives an overview of bar code technology and how to use it.

We live in an information age characterized by rapid change. Today's world moves faster than earlier eras, and the pace continues to speed up. Continuous developments with computer technology in manufacturing, distribution, communications, transportation, healthcare and other sectors have played, and continue to play, a large part in accelerating change.

For any business in this fast changing world, the importance of collecting and processing information on a timely basis is essential. Managers must act quickly to be effective to initiate changes in manufacturing or distribution, or to otherwise respond to new customer requirements. Doing so requires reliable information in real time or as close to it as possible.

As computers have proliferated and data processing has become more powerful, the data collection function on which processing depends has not kept pace. Acquiring the fastest, most effective computer hardware and software available makes little sense if the system cannot acquire data accurately and expeditiously. A data collection gap, the difference between data processing and data collection, has been the result. Narrowing this data collection gap promises to improve the quality of information that serves as the basis for management decisions affecting production, productivity, and profitability.

Automation of the data collection function offers the only practical way to bring the pace of data collection more closely in line with data processing. Many manual methods, such as keyboard entry, are considered too slow, costly and error-prone to satisfy modern criteria. That is why automated data collection technology has expanded rapidly worldwide.

The automated data collection process has three phases:

PRINT

Automatic identification is the essential first step, accomplished by attaching a bar code label to a part, document, package, personal identification badge or some other item to be tracked.

CAPTURE

The data collection phase occurs when a part moves in or out of inventory, a work piece comes in or out of a given stage in the manufacturing process, and/or an employee checks in or out of work. These actions are instantly and accurately captured by scanning the bar code label. Scanners can read information far faster than humans can write or type, and they are far more accurate. Compared to the average human-transcription error rate of one per 300 characters, the automated error rate is in the range of one per 3 million.

CONNECT

Compiling and computer system input occurs when scanned data is compiled into a central point and manipulated into a form appropriate to the data stream of a host computer. The upshot is accurate data automatically captured as each event occurs, thus permitting management decisions based on solid, current information.

Automated data collection is seen as the key to improving control and providing management with more timely, more accurate, and therefore more valuable information. Increased productivity and reduced costs are the key benefits of automated data collection. The return on investment for automated data collection is typically one year, and often substantially less.