# BARCODE PRINTERS EMPOWER INDUSTRY

## INDUSTRIAL BARCODE PRINTERS IMPROVE OPERATIONS

> *White Paper*

**SUPPLYCHAIN SERVICES**

**DELIVERING RELIABLE DATA COLLECTION**

In every industry, in every region of the world, companies are grappling with the evolving online, global economy. The speed of business is increasing at a staggering rate, as customer demand changes and grows. Those companies that traffic in physical goods are facing new pressures on their operations, and their bottom line.

In this paper, we examine the intricate and interrelated challenges that companies with warehouses and distribution centers are confronting. We describe the powerful tools that are improving operational visibility and enabling improvements in all aspects of business. Finally, we analyze the critical role of industrial barcode label printers to meet and exceed demand, build business, and help companies operate better.

## The Challenges of Today

Across industries, maintaining a warehouse today poses a number of complexities and challenges.

*Accuracy*

As e-commerce has become the norm, manufacturers and distributors must ship out more products, more frequently. Production facilities must collaborate with widespread partners and supply chains around the world to get what they need, when they need it, in order to meet customer demand. As a result companies are under increasing pressure to

know exactly what materials and assets are on hand at all times.

*Costs*

Prices continue to rise for raw materials. Keeping these materials, which may not all be needed, necessitates reducing physical space in the warehouse. It requires maintaining an adequate but minimal labor force for moving and shipping materials. It mandates reducing electricity, heating and cooling, and other energy considerations. All of which can spike company costs, at the expense of profit.

*Productivity*

Companies need the ability to respond to customers, at the speed of demand. This requires the utmost in productivity throughout the warehouse, along with the entire supply chain. Picking, shipping, receiving, and replenishing must quickly deliver the right products in the right quantities at the right time. There is little room for error, or for inefficiencies.

## The Tools for the Future

The challenges companies face today with warehousing and distribution processes are ultimately interrelated. Less accuracy can increase costs and reduce productivity on the floor. The key to addressing these challenges? Data. Real-time data that can be translated easily to insight and action is critical to helping companies operate better. Data can help

companies achieve greater accuracy, reduce space, labor and material costs, and empower workers to work faster and better, improving productivity.

To get this data, companies are turning towards powerful technology, including barcode labeling and Radio Frequency Identification (RFID). Both enable a dynamic, real-time view of supply, machinery and other assets – where things are, with whom, in what condition, and at

what time. The technology also provides a picture of relationships between assets, as well as the processes and people involved.

Barcode and RFID technology provides visibility. With greater visibility, companies are empowered to move from capacity to capability, taking on those challenges of today. Companies have better business intelligence to make better business decisions, ultimately boosting quality and customer satisfaction.

---

**Looking Forward: From Capacity to Capability**

Companies that focus on capability and flexibility in their production, rather than capacity, are effectively tackling today's warehousing and distribution challenges across industries. Utilizing technology for extreme visibility into operations can help accomplish this shift, and transform business.

| From Capacity | | To Capability |
|---|---|---|
| Mass production based on forecasts | → | Make-to-order production, based on actual demand, quality, and defined customer needs |
| "Operators" on production floor | → | "Knowledge workers" who know the technology and can make decisions to enhance productivity |
| Maintaining materials on hand | → | Bringing in only what's needed |
| Using historical data to guide analysis | → | Using real-time data, providing visibility into operations |
| Systems and devices in siloes | → | Integration of technology and data to provide actionable insight |

---

*Improving accuracy*

Barcode labeling enables companies to quickly and easily understand and locate their inventory, down to the individual item. This provides significant power to deliver quickly and accurately to customers, and even ensure compliance to industry regulations.

*Reducing cost*

With details on what is moving in and out of the warehouse, companies can see what materials are really needed and when. They can identify opportunities to reduce some of those space, labor and energy costs, and pinpoint areas of waste to eliminate. Companies can make better decisions that have big impact on the business.

*Increasing productivity*

Clear visibility into inventory can also illustrate how it's moving through the warehouse. And this can provide insight into the work on the floor. Are there areas of inefficiency? Opportunities to optimize processes? Answering these questions with good data can help companies turn inventory faster, reducing spend, and even providing better security and safety throughout the workplace.

*Enhancing Quality*

With increased accuracy and better processes, the end product is better. Customers are more satisfied with shipments that are complete, error-free, and on time. Companies can build strong customer loyalty, and earn new business.

---

**A Closer Look at Barcodes and RFID**

Automatic Identification and Data Capture (AIDC) tools include a number of technologies designed for better business visibility. These include barcode and RFID technologies.

Barcodes can contain internal information including product line numbers, date of completion, materials used, serial numbers and quality control information. All in one label. It's no surprise then that they are used to great effect in warehouse industrial functions to help improve data management and accessibility. Integrated barcoding systems can achieve 99 percent data accuracy, in less time than manual processes, reducing the potential for and impact of human error. Barcodes also help standardize production floor processes, and provide information in a consistent way for the company and regulators.

Radio Frequency Identification (RFID) technology brings barcodes to another level. With RFID tags, which carry a transponder or "smart label," readers capture digital data using radio waves. No line of sight is needed between object and reader, so entire pallet loads can be identified and recorded faster than scanning individual barcodes. Embedded RFID tags can produce media savings of six figures annually, and provide high ROI by reducing data entry and processing time.

---

**The Printers that Empower Industry**

Barcode and RFID labels can be used to great effect throughout warehouse and distribution centers:

- The receiving dock scans shipping labels to record incoming goods, and provide tracking detail for the next steps
- The warehouse operator transfers raw materials from the receiving dock to an inventory location, scanning both the package and the new storage location to complete the operation
- Picking operations workers scan labels to retrieve raw materials or parts from inventory as triggered by work orders from the factory floor

To prepare these barcode and RFID labels, at the specific time and quantities needed, companies turn to label printers. These printers are available as small mobile

devices, or stationary tabletop industrial printers.

Industrial barcode label printers are the gold standard for effective use of barcode and RFID technology to improve accuracy, reduce costs, and increase productivity in warehousing operations. They are designed for high demand, high power, and the ultimate in speed and adaptability. These can often be complemented by mobile label printers for on-demand printing, especially during picking operations.

of a shift. Companies won't lose valuable time fulfilling orders due to printers unable to keep up.

*Power*

The best industrial printers are by nature high duty-cycle technology, meaning they are capable of printing thousands of labels per day. They can operate continuously during peak print cycles, or even nonstop for 24-hour cycles. In comparison, mobile printers are limited to a fraction of that output.



Industrial printers can be a powerful tool. Options are many, but companies looking to integrate these printers into their warehousing and distribution centers to realize the business benefits of RFID and barcode technology should look at key attributes to narrow the field.

*Durability*

The best industrial printers are designed for high use in any environment. Their construction prevents dust and other elements of harsh industrial environments from interfering with operations, and they eliminate ventilation fans that can draw further debris into the printer. Ultimately they are reliable in their ruggedness, ensuring they won't go down in the middle

*Speed*

Industrial printers are up to 40 percent faster than mobile printers, enabling lean and rapid manufacturing production. The best industrial printers go further, and are designed for faster label and ribbon loading, assisted by LED lighting, so manufacturing lines and warehouse operations experience less downtime in any environment. Warehouse personnel can spend time picking, receiving, shipping, and cross docking, instead of waiting for labels to be printed.

*Adaptability*

The best industrial printers combine durability, speed and power, and then go a

step further. They feature an open architecture, which allows for printers to advance with the speed of technology and be customized for your business. In addition, the best industrial printers are able to connect with the cloud for printing and device management. Companies can monitor, manage and maintain printers from any location, and integrate seamlessly with existing technology. These printers can also provide a range of media capability and delivery options. Companies can print labels for almost any application, including shipping and receiving, order and price sheets, packing lists, and compliance labels. Finally, the best models have built-in connections to educational resources and on-demand product support.

**Industry Uses for Barcode and RFID Label Printing**

Label printers play an important role in any business with a distribution center.

| Industry | Use |
|---|---|
| **Manufacturing** | • Work-in-process<br>• Product ID/serial numbers<br>• Packaging labels<br>• Receiving/put-away labeling |
| **Transportation & Logistics** | • Order picking/packing<br>• Shipping/ receiving<br>• Cross-docking<br>• Compliance labeling |
| **Healthcare** | • Laboratory labels<br>• Blood-bank labels<br>• Asset tracking<br>• Pharmacy labeling<br>• Supplies warehouse & distribution centers |
| **Retail** | • Distribution centers<br>• Back-of-store operations |
| **Other** | • High-resolution electronics labels<br>• Small container labels |

**Your Industrial Printer Resources**

Companies with warehouses and distribution centers are better poised to face the challenges of today when using tools for the future. Industry barcode and RIFD label printers are a critical ways to boost accuracy, reduce costs and increase productivity, helping you deliver better quality and enhance satisfaction. They help you operate better.

To determine the best industrial printer for your operations, rely on expert resources to help create customized solution for your needs.

**Questions to Determine the Best Barcode Printer Solution**

When working with an expert resource like Supply Chain Services, you will work together to determine the best solution for you.

- o What are the intended uses of the barcode labels?
- o What is the design of your barcode labels?
- o What is the content of your barcode labels?
- o Where will the printers be located?
- o In what kind of environment will the printers operate (temperature fluctuation, vibration, high humidity, exposure to chemicals, etc.)?
- o What are the anticipated duty cycles for the printers?
- o Are there any minimum speed requirements?
- o What are the dimensions of the labels to be used?
- o How frequently do label specifications change?
- o What kind of environments will the labels be exposed to (temperature fluctuation, abrasion, high humidity, exposure to chemicals, etc.)?
- o Will the printers be connected to a network or to stand-alone terminals?
- o What is the budget for the project?

Supply Chain Services helps companies become more effective and accurate, improving business processes and achieving operational excellence. Specialization in providing best-in-class data collection hardware solutions and managed mobile services means delivering out-of-the-box automation and improvements for the operational processes of manufacturing, distribution or warehousing companies. As experts in the automated identification and data collection (AIDC) industry, Supply Chain Services is a single source for evaluating, designing, integrating, implementing, managing, and supporting data collection technology with services that generate very high and very fast return-on-investment for organizations.

A valued Supply Chain Services partner and a global leader respected for innovation and reliability, Zebra offers technologies that illuminate organizations' operational events involving their assets, people and transactions, allowing them to see opportunities to create new value. Zebra's extensive portfolio of marking and printing technologies, including barcode, RFID, GPS and sensors, turns the physical into the digital to give operational events a virtual voice. This enables organizations to know in real-time the location, condition, timing and accuracy of the events occurring throughout their value chain. Once the events are seen, organizations can create new value from what is already there.

Ready to learn more about how industrial barcode and RFID label printers can help you operate better? Visit supplychainservices.com today to get started.

Supply Chain Services
7800 Third Street North
Suite 920
Oakdale, MN 55128

(866) 205-4310

info@supplychainservices.com

www.supplychainservices.com