Achieve new levels of quality and product traceability with Direct Part Marking

DPM

Lifetime traceability

Regulatory compliance

Flexibility

New cost effective solution

DPM: A universal data capture and error proofing tool

Direct Part Marking (DPM) has existed for many years. However, until recently, implementing and leveraging the methodology was considered an expensive proposition and often yielded less than acceptable read rates and therefore limited usage. Today, Motorola offers an innovative approach to DPM, creating new efficiencies that can be implemented quickly and more cost effectively. This new approach provides more flexible and reliable scanning rates and facilitates more pervasive use of DPM across your enterprise.

Whether your organization is part of the US Department of Defense (DoD) supply chain, the automotive supply chain, or medical device supply chain, Direct Part Marking is a technology whose time has come to be applied as a universal data collection and error-proofing tool. Advances in imaging and data capture have enabled the DoD and other manufacturers to implement DPM with the ability to track, monitor and manage parts that range in value from pennies to millions of dollars with minimal investment or process change.

DPM Case Study: Ford Motor Company

In the past, Direct Part Marking has been deployed on a limited basis by industries — such as automotive, airline and medical device manufacturers — where there is a strong need for end to end traceability. Today, Motorola's innovations deliver DPM readers that are more cost effective, efficient and higher quality enabling rapid adoption and deployment across multiple industries.

In one such example, the Ford Motor Company began its implementation of a DPM program almost three years ago. Part of an overall improvement initiative, the intent was to provide higher quality products and avoid recalls as well as look for opportunities to facilitate flexibility in the manufacturing process.

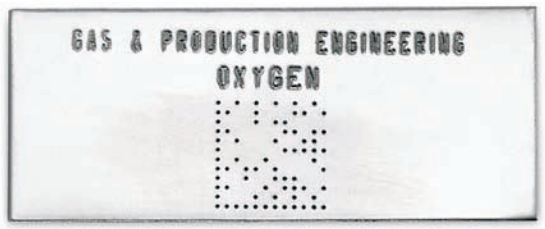
Ford uses the same assembly lines to produce multiple products, and since many of the parts are virtually indistinguishable, DPM is a perfect way to enhance error-proofing in this process.

When they began with an initial beta test of 15 units, Ford was experiencing some difficulty with traditional DPM devices providing unacceptable read performance. It was problematic to support numerous scanners at each location, and fixed location scanners were limiting the application's uses.

Eventually, Ford replaced the traditional DPM readers with mobile computers from Motorola with DPM technology and found the multi-application reader — and ultimately the performance they needed. They use the devices for verifying the contents of each shipment of parts, as well as for locating components on the production floor. If there is any question of quality, the parts can easily be found and quarantined.

Ford has been so pleased with the results that they expanded the program to deploy an average of 15 units per facility across more than five plants and plan to use Motorola DPM readers with every new launch.

ARC Advisory Group: ARC Brief: "Direct Part Marking at Ford Motor Company" June 2006.

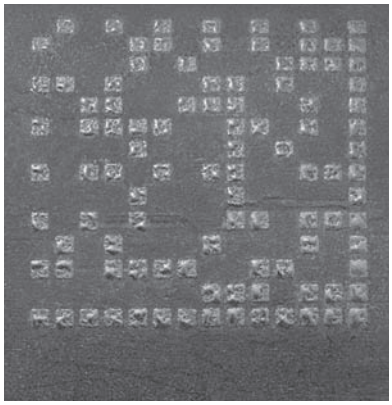


Direct part marking meets your permanent traceability needs

Tracking individual components can be a costly proposition and a challenge for many manufacturers. Standard product labeling techniques don't measure up over time when subjected to harsh environments throughout the production process and over the lifetime of the product. DPM provides a permanent marking solution: a method that allows manufacturers to identify an item with a mark that remains readable throughout the life of the product.

Parts are marked as they enter into production or, in some cases, prior to delivery by a supplier. The most common marking method is dot peening, however laser etching, molding and stamping or casting methods are also used frequently. Each marking method has its own unique advantages depending upon variables such as the material type for marking, reading methodology, average product lifetime and economic or implementation costs.

Historically, a product mark would be read or verified at limited points along the production line. The cost to deploy additional checkpoints with a traditional high-end vision system was prohibitive and these systems were not always capable of reading the varying types of marks. As costs associated with maintaining quality and traceability rise, many manufacturers are looking for innovative solutions, especially as regulatory pressures mount from government entities such as the U.S. Department of Defense (DoD), which will require suppliers to



complete Universal Identification (UID) marking of all legacy items by 2010. Many manufacturers around the world have been adopting DPM technologies as well, and other governments are likely to soon follow suit with their own UID regulations.

High performance, cost-effective DPM solutions from Motorola

Continuing Motorola's tradition of innovation in technology, product design and functionality, Motorola's engineers have developed and delivered a unique DPM solution for manufacturers. This features enhanced scanning performance capabilities that deliver the flexibility to read multiple DPM formats and built in multi-tasking functionality at a new level of cost efficiency.

Using Motorola's DPM readers, every assembly or production station can support reading DPM — enabling manufacturers complete traceability throughout their operations as well as an opportunity for quality management to step in and quickly solve any problems. Motorola's DPM solution can read Direct Part Marks on multiple substrates — metal, plastic or glass; high or low contrast; at various angles and depth of field — practically eliminating traditional contact scanning, special lighting and positioning requirements.

Integrating technology delivers performance and flexibility

Motorola's alternative to the traditional stand-alone vision system involves the integration of DPM capabilities into our existing scanning and mobile computing products — delivering quality performance, a wide range of sizes and the device durability for which Motorola is known.

Each DPM-enabled device performs as a complete DPM reader as well as maintains its traditional barcode or RFID scanning and mobile data capture technology — resulting in a mobile DPM reader that delivers flexibility and performance.

Motorola's DPM solutions allow manufacturers to leverage investments — from reading DPM along the production line to supporting other quality or line-side applications — all at an affordable investment level.

Manufacturers can:

- Increase worker productivity.
- Streamline data collection processes – removing manual processes.
- Improve data accuracy.
- Improve product quality.
- Achieve cost-effective compliance with traceability regulations.

Motorola's DPM readers are available in multiple form factors, such as a mobile computer, a handheld scanner or a fixed mount device. Much less complex than traditional vision systems, these products enable rapid deployment in your facility with minimal user training requirements.

Motorola offers manufacturers the ability to read multiple DPM formats as well as traditional UPC bar codes, RFID tags and more — all in a single cost efficient device.

Regardless of whether you need to read direct part marks on your assembly line, throughout the warehouse or out in the field, you can count on Motorola's diverse family of next-generation DPM-enabled mobile devices to deliver a new level of performance, affordability and total cost of ownership.

An affordable DPM solution that delivers multi-functionality

Motorola's DPM readers truly maximize efficiency by serving multiple functions around your operation — from the production process to performing quality or even warehouse functions. You have confidence in knowing that the correct part is in place, ensuring accuracy and helping to error-proof your entire production line.

Wireless mobile computers and scanners provide the mobility your workers need. The DPM readers of yesterday provide limited reading flexibility while demanding special lighting, specific positioning and limited depth of field requirements to achieve acceptable read performance. Motorola's DPM solution is based upon the knowledge gained over 25 years in developing and implementing data capture technology, resulting in a mobile DPM reader that delivers flexibility and performance.

Marks can be read at a variety of angles, rather than the traditional "straight-on" read, providing greater depth of field.

Motorola's DPM readers can "auto-discriminate" between 1D and 2D barcodes, RFID tags and DPM, saving you time and resources by avoiding recoding or programming of your reader. No changes to settings are required — there is a smooth transition as you move from one read requirement to the next. Motorola's DPM readers are designed with the latest technology, able to read marks at various contrast levels without contact.

By incorporating the technology into existing products, Motorola creates a more affordable solution than traditional DPM vision systems. Your total cost of ownership is lowered because there is no need to purchase multiple products for the warehouse or service organization.

Motorola — For quality DPM solutions

Motorola has more than 30 years of experience developing and manufacturing durable, rugged scanners and mobile computers. Headquartered in the United States, Motorola has global reach with operations all around the world.

Our unique, innovative portfolio of products — based on over 900 patents — have made us an industry leader and earned us a well-deserved reputation for innovation and the highest quality standards.

And Motorola's service program protects your investment and supports your operations. A variety of standard features offer everything from item repairs to replacement. Customized service center contracts are also available, giving you the opportunity to pick and choose the support options most beneficial to your operation.

For more information about our solutions, please visit us on the web at www.symbol.com/DPM. For inquiries in North America, please call 1-866-416-8593 or access our global contact directory at www.symbol.com/contact

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