

# **Paulstra Ensures Batch Integrity and Improves Productivity Using Low-Melting Labeling Solution from Paragon Data Systems**

## ***Automotive Anti-Vibration Supplier Eliminates Rubber Mixing Waste Problems Caused by “Mystery Bags”***

### ***Summary***

*Paulstra, a leading manufacturer of products that provide shock noise, vibration control and vibration management for automotive applications, recently improved its manufacturing processes with the use of a low-melting labeling solution for its rubber batch inclusion bags. This revolutionary system, from Paragon Data Systems, an Ohio-based Corporation specializing in the automatic data collection (ADC) industry, has greatly increased plant productivity and eliminated waste problems caused by “Mystery Bags.”*

### ***Introduction: Today’s Automotive Market is increasingly competitive***



Perhaps even more than the rest of today’s global manufacturers, automotive component suppliers are challenged with increasing pressure to provide high quality products at the lowest possible price point. Faced with hyper-competition from overseas, these suppliers must be able to guarantee products that their customers can trust—even the smallest defect can significantly increase warranty costs and degrade brand image, causing the supplier to lose business with the automotive manufacturer forever.

In order to make a profit while still ensuring the highest quality product, automotive component engineers are constantly seeking new solutions that will increase production output while decreasing overhead costs. Paulstra, a global manufacturer of rubber molded anti-vibration products for the automotive industry, is an example of one company that has succeeded in both areas.

### ***Background: Efficient Rubber Processing is Crucial to the Mix***

Paulstra is part of the global extended enterprise of HUTCHINSON Worldwide®, a world leader in elastomer-based manufacturing and part of the Total Group.

Each of Paulstra’s two Michigan-based manufacturing plants is quality-certified and incorporates lean manufacturing techniques with in-process verification systems. The plants contain dedicated stations for metal preparation, adhesive coating, phosphate, injection transfer and compression molding and robotic assembly. The rubber mixing facility is located in Grand Rapids, Michigan.

Because the plant is producing thousands of rubber products each day requiring hundreds of rubber mixing batches, Paulstra’s rubber mixing process is one of the most crucial stages on the manufacturing lines. In total, nearly one hundred separate chemicals are used, in powder and pellet form, including curatives and additives such as antioxidants.

## ***Challenge: Improve Efficiency of Batch Inclusion Bag Labels***

Although Paulstra has a reputation for exceeding its competitors' efficiency with manufacturing processes, the company wanted to increase its productivity even further, to maintain its reputation as a leader in the industry.

One of the areas the company wanted to improve its efficiency was in its rubber mixing process. Specifically, rubber batch inclusion bag labeling was giving the company a bit of a challenge. The company wanted to reduce waste and increase batch integrity.

“Any engineer that has ever put a wrong bag of chemicals into a mixer can tell you about the importance of proper labeling,” said Sebastien Lebon, Mixing Process Engineer at Paulstra. “The need to label each batch inclusion bag is just as, if not more important than ensuring that each batch contains the right ingredients.”

For several years, the Paulstra plants have been pre-weighing the ingredients in Lomel® low-melt batch inclusion bags from J. Drasner & Co., Inc., of Beachwood, Ohio. After weighing, the bags are sealed to prevent spillage and loss. Several hundred bags are consumed each day.

“The Lomel bags represented a big improvement over the old method of scooping from a bucket,” said Lebon. “The bagging method has been effective in reducing loss due to spillage and eliminating the need to clean out weighing containers. However, we struggled to find a good method for labeling the bags. The Lomel labels completed our automation of this area.”

Initially, the bags were manually labeled using marker pens. “Pens did not work because the ink would often smear and handwriting was not always legible,” according to Lebon.

“The handwriting also did not look professional. We also tried printed tags, using a thermal printer, but the tags could not be adhered to the bag because any paper material would contaminate the product. We tried various methods for temporarily attaching the tags, but we could not prevent the tags from becoming separated from the bags. These methods were not 100 percent reliable and unmarked bags resulted in material loss and disposal costs.”

“Moreover, we did not have sufficient confidence that the right bags were added to the mix,” Lebon emphasized. “Once the bags dispersed, there was no way to go back and verify that the right bags were used. Operators sometimes wondered if they made a mistake, and the current system in place proved to be tedious when trying to establish traceability.”



### ***Solution: Low-Melting Labels from Paragon***

Lebon asked J. Drasner, the manufacturers of the Lomel bag if they had a solution. They recommended a labeling system developed by Paragon Data Systems. Paragon provided Paulstra with its Lomel Batch Labeling System, which uses labels made from the same 160 EVA film as the J. Drasner Lomel batch-inclusion bag, which allows both the label and the bag to completely disperse.

The Paragon system prints labels on demand with all the relevant information in both human readable and bar code form. The systems features the Zebra 105SL, a robust industrial printer especially designed to produce crisp and clear text and graphics on Lomel labels. Paragon was integral in providing ideas and helping Paulstra overcome technical difficulties they experienced when developing a system to automatically record the weight of the bags, and to ensure that the label contains accurate information.

At the mixing station, the same system that tells the operator which compounds and what quantities are specified for the particular mix also verifies the ingredients and provides a record. An Intermec Saber 1552C scanner is used to collect the bar code data and perform ingredient validation. A PC network is in place with PC stations located at each workstation. In addition, Paragon supported Paulstra in the development of the software that integrates the entire system.

“We worked with Paragon to design a label that met our needs,” Lebon explains. “We assumed that we would need a larger label, but the Paragon team was able to create an effective custom solution that included all the information we needed on a 2” x 4” label.”

### ***Results: Confidence in Product Consistency and Quality***

The Paragon labeling system has been in operation for over a year. After Paragon performed some initial adjustments during the installation process, the printer has performed flawlessly.

Plant productivity has improved now that the inventory of pre-measured batch inclusion bags is tracked automatically, ensuring that the correct bags are available prior to initiating the mixing operation.

The Paragon labeling system has also completely eliminated all the waste problems caused by “mystery bags” with missing or illegible identification.

Most important, Paulstra now has a process that guarantees the integrity of each batch, with a record of the ingredients of each batch. Lebon proudly asserts, “We supply automobile manufacturers who demand quality, consistency, and lot and batch traceability. Our new automated label system gives us, and our customers, confidence that the components we produce are always manufactured exactly according to specification.”

“Paragon’s dispersible labeling solution has allowed Paulstra to stand firm in our commitment to increased productivity, consideration for the environment, reduced waste and an intent focus on building high quality anti-vibration systems,” says Sebastien Lebon, Mixing Process Engineer at Paulstra.