

Case study

ThyssenKrupp Budd

Knowing Right
from Left



At a glance

Industry: Manufacturing

Application: Error-Free Parts
Marking and Shipping

Smart Printer system keeps automotive parts maker in perfect alignment

Companies pay a price one way or another for imperfection. Sometimes that price is exacted in measurable ways, as with a sharp drop in sales; other times it's more subtle, perhaps an almost imperceptible diminishing of a once-solid reputation.

Suppose, however, that a single error might cost your company a lot of money per minute for as long as it takes to fix the problem. Makes you a little anxious, doesn't it? This is the scenario that faces automotive parts manufacturer ThyssenKrupp Budd every day.

Eliminating the possibility of errors in packing and shipping isn't just desirable for ThyssenKrupp Budd. It's crucial.

ThyssenKrupp Budd operates 30 facilities in North America. With headquarters in Troy, Michigan, the company belongs to ThyssenKrupp Automotive AG of Germany, one of the largest automotive suppliers in the world. ThyssenKrupp Budd designs and makes parts for more than 100 vehicle models on the road

today. It employs some 11,000 people, whose efforts bring the company annual revenues of more than \$2.5 billion.

Automaker studies have identified errors in parts shipping as one of the main causes of assembly line stoppages. As a result, automakers have begun warning suppliers that hard consequences would follow labeling mistakes that forced line shutdowns.

So while ThyssenKrupp Budd's shipping accuracy was just fine, it had a pretty strong incentive to keep it that way. That's where Intermec and ToolWorx Information Products, an Intermec partner, came in.

Parts are molded in separate areas within the ThyssenKrupp Budd plant in North Baltimore, Ohio. Two different parts that look similar might be made 50 feet apart, so the likelihood of mixing them up is small. But some of those parts are then toted to the paint line with other parts for a coat of color and a baked finish. Now the potential for mistakes greatly increases.

Ed Weber, vice president of sales and marketing at ToolWorx, saw the solution as simple and smart. "If you can get the correct bar-code label on that first part to begin with, everything you do with the part from then on can be scanned and tracked correctly," he said. "Error-proofing and traceability all starts with marking that part." Simple.

Here's where the smart aspect comes in. ToolWorx loads its software onto an Intermec EasyCoder® PF4ci bar-code printer to create what it calls the ToolWorx Programmable Logic Controller (TWPLC) printer. This "smart" printer comes with its own industrial interface board and an internal computer programmable in a language called Fingerprint. Gone is the separate personal computer that typically drives a printer.

In manufacturing, a programmable logic controller is a small computer within a part-making machine that controls the machine's operation. The TWPLC printer plugs directly into that part-making machine. As each part is stamped or injection-molded, its part-making machine sends a digital signal to a TWPLC printer, which is programmed to know the part number that corresponds to each signal. The printer then creates a bar-code label that matches the part.

"There's no PC. No keyboard. No need to hook up to the network for any programming. No guesswork. Everything is done for you by the printer," Weber said. Its portability means workers can unplug



the printer and move it to wherever it is needed. The only requirement is a nearby 110-volt outlet and connection to the PLC.

As a part comes off the line, a worker attaches its freshly printed label. Each label is created singly, from the command of the machine that made the part. With each part bearing the correct bar-code label, newly minted pieces can travel throughout the plant, mixing with parts that may look identical. Their labels will reveal their differences.

One place that parts frequent is the paint line. There, a batch of hoods, for instance, might get a coat of paint and bake in an oven to set the finish. The Intermec heat-resistant labels remain in their inconspicuous place on the parts, withstanding the 325-degree temperature of the process.

In the finishing department, parts are packed into boxes for delivery. The bar-code label on each part is first scanned with an Intermec 1552® cordless laser scanner. Workers can walk freely about the department, scanning parts up to 50 feet away from the scanner's Intermec

9745C® base station. Both the scanners and base stations use Intermec's PicoLink™ wireless area personal network, which operates on an unlicensed 2.4GHz radio frequency. One base station accommodates up to nine scanners.

Each scan sends bar-code label information wirelessly to ThyssenKrupp Budd's SAP R/3 system. Once a set number of the same parts are packed, a label software package provided by ToolWorx called Loftware interfaces with the SAP R/3 system and tells an Intermec EasyCoder® 3400e or 3600 label printer to create a shipping label. Previously, shipping labels were printed in batches and it was up to the workers to ensure the appropriate label found its way to the correct container.

"We're verifying the part number, but we're also verifying the number of pieces," said Scott Stemen, quality manager at ThyssenKrupp Budd. "If someone scans something wrong, the system sends a visual alarm that shows up on the computer monitor."

Stemen cites customer satisfaction as the greatest benefit of the Intermec and ToolWorx smart-printing system. Having the system in place can be the deciding factor for automakers choosing between two vendors quoting the same bids on future business. Client preference is clear.

"When customers see that you're taking these steps to protect them from potential defects, their eyes light up," Stemen said. "They know that you understand what their issues are."

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