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TECHNOLOGY

It's all in the wristband

High-tech straps have become the key to amusement parks

PHOTOGRAPHER: LAWRENCE K. HO Los Angeles Times

COLORFUL AND USEFUL: Precision Dynamics Vice President Robin Barber displays some new products. He believes the future of the wristbands is in healthcare, where the microchips can hold patient data to reduce errors.

By Hugo Martin

In a nondescript manufacturing plant on a quiet San Fernando cul-de-sac, a khaki-green machine the size of a buffet table sucks in bright pink ribbon and spits out one of the hottest features in theme parks.

Here, Precision Dynamics Corp., a company that began making plastic hospital wristbands out of a Burbank garage more than 50 years ago, has become the nation's top producer of a new microchip-enhanced wristband for amusement parks, concerts, resorts and gyms.

The wristbands use the same technology as electronic tollbooths, security key cards and the newest U.S. passports. But at Precision Dynamics, this sophisticated electronic know-how has found its niche at theme parks, where the high-tech wristbands act as high-security admission passes, cashless debit cards, hotel room keys and a form of identification to reunite lost children with parents.

In the last year alone, Precision Dynamics' wristbands came on line at Great Wolf Resorts' newest water park in Concord, N.C.; at the Schlitterbahn Water Park in Galveston, Texas; and at Water World, one of the nation's largest water parks, near Denver, Colo. In total, more than 50 theme parks across the country strap the wristbands on visitors.

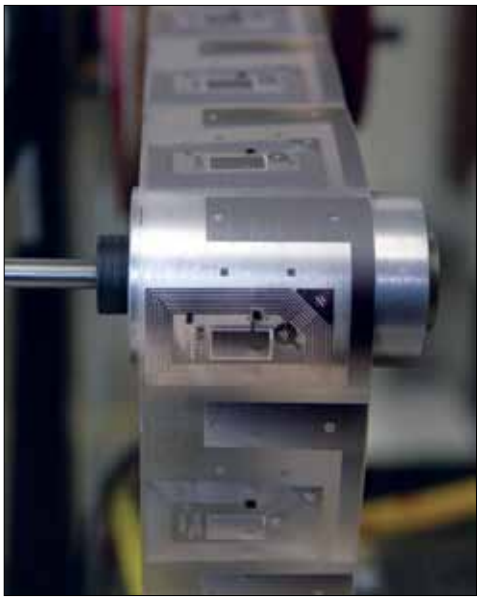
Company leaders envision a future when they can expand the technology for use in border security and hospital identification, among other purposes.

"All sorts of things can be done with this technology," said Walter Mosher Jr., a founder of the privately held company and a member of the board of directors.

Precision Dynamics began in 1956 when a friend who worked in hospital supplies suggested that Mosher, a UCLA engineering student, design a better wristband to identify patients at hospitals. At the time, hospitals made wristbands from plastic tubes, using separate tools to cut and fasten the bands on patients. For infants, hospital workers strung together lettered beads that spelled the babies' names.

At the machine shop at Burbank High School, Mosher and two partners devised a one-piece plastic wristband that required no tools to fasten. The business that began with only $2,000 in start-up money has since expanded to 680 employees, a handful of trademark patents and offices in Belgium, Japan, Italy, Mexico and Brazil.

In 2006, Mosher sued Precision Dynamics in a dispute over the election of board members. But the dispute was settled out of court last year with a deal that keeps



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PRODUCTION: Precision Dynamics started 50 years ago with hospital wristbands. Above, the manufacturing plant.

INSIDE: Each microchip is programmed with a unique 16-character code and is activated by a reading device.

Mosher as a shareholder and a member of the board.

The idea of using radio frequency identification, or RFID, technology in wristbands came to Mosher about 10 years ago when he learned that microchips were being implanted in dogs and cats to identify them in shelters and veterinary clinics. A short time later, company Vice President Robin Barber moved ahead with the idea after meeting with managers from Great Wolf Resorts, who wanted to let guests buy food and drinks at the water parks without carrying a wallet or cash.

The result was a patented wristband containing a tiny antenna and a microchip only slightly bigger than a postage stamp.

Each microchip is programmed with a unique 16-character code. A separate device known as a reader emits a low-power radio wave that activates the chip to collect the information and upload it into a computer. The reader must come within a few inches of the wristband to connect to the chip. Thus the wristband acts as a key to access a computerized debit account or unlock an electronic hotel room or a clothes locker.

The microchip wristbands now account for about $3 million in annual sales for Precision Dynamics, representing only a fraction of the company's more than $100 million in annual sales, according to company executives. The bulk of the company's business comes from the sales of wristbands that employ simpler bar-code technology to identify hospital patients, among other uses, and plain plastic wristbands with colors that tell security officers at theme parks and concerts who has paid for admission.

At theme parks, parents can use a kiosk to upload amounts that their children can spend, using the wristbands to buy food or play video games at the park. The microchips are coded so that the wristbands can be used only on a specific day. Once a hotel guest or theme park visitor departs, the wristbands becomes obsolete.

Because cashless spending is more convenient, industry reports suggest that visitors who use the wristbands spend as much as 25% more at resorts and parks.

"Our guests appreciate the convenience of it all," said Jennifer Beranek, a spokeswoman for Great Wolf Resorts. Precision Dynamics wristbands are used at seven of its 12 water parks nationwide.

But price remains a barrier for the technology. Simple wristbands that use bar-code technology, for example, sell for as little as 14 cents each; the RFID wristbands sell for about $1 each. An RFID reader sells for about $450, roughly twice the cost of a bar-code reader.

Perhaps the biggest hurdles facing the widespread use of the microchip wristbands are the added costs and the persistent fear that personal information could fall into the wrong hands.

Katherine Albrecht, a personal privacy advocate and a leading critic of RFID technology, has called the microchips used in such wristbands "spy chips" because she fears they will be used to track people's movements. But Precision Dynamics notes that the wristbands cannot be read unless they come within inches of a reader.

Mark Roberti, editor of the RFID Journal, an online and print periodical on the technology, said such fears are unfounded because the wristbands typically hold no personal information. Once the world's business leaders realize the wristbands are safe and effective, he believes, the technology will be widely used.

"Businesspeople have a bit of a herd mentality," he said. "This technology is very convenient, and it will continue to take off."

Paul Chang, IBM Corp.'s business strategy leader for emerging technology, agreed, saying RFID technology is already in wide use in Europe and Asia. But he said the U.S. is still playing catch-up. He noted that tickets issued at the Beijing Olympics were embedded with an RFID chip to stifle counterfeiters.

"Other parts of the world have already adopted this technology," he said.

Barber, Precision Dynamics' vice president, believes the future of the wristbands is in healthcare. The microchips can be programmed to hold a patient's blood type, medical history, drug allergy information and other data to reduce mistakes and confusion.

Unfortunately, too many hospitals today employ a variety of computer systems, many of which cannot communicate with one another, he said.

That, however, is not a problem at theme parks, he said. "The systems at theme parks are much simpler."

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