

► BY BILL KENNEDY, CONTRIBUTING EDITOR

A fully flexible engine-head-machining line at the U.S. facility of an Asian automaker.

*Cross Hüller Ex-Cell-O Lamb*



# Transplant Transactions

**With the Big Three automakers facing hard times, transplants offer U.S. suppliers opportunities, challenges and a new way of doing business.**

At a Chicago Federal Reserve Bank conference on the auto industry this past spring, Michael H. Moskow, president and CEO of the bank, said that the challenges in the U.S. auto sector are “profound and fundamental, affecting the viability of the manufacturers and parts suppliers.”

He noted that U.S. market share held by General Motors Corp., Ford Motor Co. and The Chrysler Group has declined from 72 percent to 56 percent since 1995, including a 7 percent drop in the last 5 years. That decline has hurt

suppliers with long-term ties to the Big Three. Moskow pointed out that the growth of foreign-based manufacturers (the so-called transplants) presents a business opportunity for suppliers. While the Big Three have not sited any new U.S. plants since 1990, transplant manufacturers have built or announced eight large facilities. However, Moskow said the transition to becoming a supplier for a transplant may be a formidable challenge: “New customer relationships take a long time to build.”

That’s old news to Rich Ahaus, chairman of Ahaus Tool and Engineering Inc., Richmond, Ind., a designer and builder of custom workholding fixtures and special applications machinery.

“The Big Three have made it very difficult [for their suppliers] to make money,” he said. The bankruptcy of Tier 1 suppliers Delphi Corp., Dana Corp. and Tower Automotive, as well as financial problems at others like Visteon Corp., has affected many smaller suppliers. “It’s like a row of cards when one falls,” said Ahaus. As a result, “we target the transplant side to work with, as opposed to targeting the Big Three.”

But, as Moskow pointed out, the transition can be difficult. Said Ahaus: “It is hard to get in. We know that, as new projects come up, there is still a lot of tooling that comes from Japan. One of our transplant customers had four new programs last year; three of them were tooled in Japan, and one in the U.S. The good news is that we were able to get that job. [There is] no question that U.S. suppliers are breaking in—we see that American companies are doing more of the Japanese and Korean work.”

Ahaus noted that Honda just announced construction of a \$500 million assembly plant in Indiana, about 60 miles from the Ahaus Tool facility. “We look at that as good news,” he said.

### Tough Sledding

West Ohio Tool Co., Russells Point, Ohio, designs and manufactures custom cutting tools. President Kerry Bu-



**In production at a Japanese transplant facility, the step reamer (left) reamed 1,200 to 1,500 holes before regrinding, and the tool could be reground 3 or 4 times. The tool generated a stringy “rat’s nest” of cut material that often required stopping the transfer line for removal, interfered with robot loading of the part being reamed and posed a safety hazard to operators. West Ohio Tool designed the replacement tool (right) with cutting geometry that eliminated the rat’s nest problem, reams a consistent 15,000 holes between regrinds and can be reground 30 to 40 times.**



chenroth said getting work with the transplants often is “just plain tough. Some of them we have not been able to do business with. You have to be able to find who is taking care of the tooling on the inside.” Buchenroth said the fact that he previously worked 10 years at a Honda facility has helped his company’s efforts, but noted that it can take years to penetrate the purchasing department at a transplant.

The tooling evaluation and purchasing process varies from company to company. According to Buchenroth, in some cases, engineers make the decision on the initial project and buy the tooling, while in others purchasing people act as intermediaries after the engineers have created job specifications. “There is no good advice to tell you how to ‘get in’ to the transplants,” he said. “Perseverance, I guess!”

At Superior Inc., Xenia, Ohio, 80 percent of the company’s sales of special solid-carbide and carbide- and PCD-tipped rotary cutting tools are to automotive customers, according to Al Choiniere, president. He agreed that initiating work with a transplant manufacturer can be difficult.

“The Japanese are more inclined to work with other Japanese companies,” Choiniere said, “but one way that some of the transplant companies have been looking to cut costs is to localize some of their tooling needs.”

Choiniere said Superior’s international presence—with subsidiaries in Japan, Malaysia and Mexico supplementing its Ohio factory—has aided its

effort to land transplant business. He noted that Superior employs Japanese engineers and that some of the industrial distributors that market Superior tools are transplants themselves and have many Japanese employees. This helps facilitate communication with Japanese managers at auto manufacturing transplants.

### The following companies contributed to this report:

**Ahaus Tool and Engineering Inc.**  
(765) 962-3571  
www.ahaustool.com

**Cougar Cutting Tools Inc.**  
(586) 469-1310  
www.cougarct.com

**Honda of America Manufacturing Inc.**  
(937) 644-0455  
www.hondasupplyteam.com

**Superior Inc.**  
(937) 374-0034  
www.superiorinc.com

**Toyota Motor Engineering & Manufacturing North America**  
(859) 746-4000  
www.toyotasupplier.com

**West Ohio Tool Co.**  
(937) 842-6688  
www.westohiotool.com

### Challenges for Integrators

Even large integrators find it slow going when seeking business with foreign-based auto part makers. Said Tom Connelly, general manager for commodity management supplier Ewie Co. Inc., Ann Arbor, Mich.: “It’s tough for us as well. At our largest transplant customer, our biggest product lines are Sumitomo for CBN- and PCD-type products and 3M for coated products. The manufacturers have products that they use in Japan, and when they put in a transplant [operation] they will have a little general line distributor set up to provide access to all the lines from Japan.”

Regarding the transplants’ apparent buy-from-whom-you-know attitude, Connelly said, “That’s the way it is, no matter what business you are in. It’s not what it once was, but it hasn’t gone away.”

### Job Security?

Since the early-’90s reign of “Inaki” Lopez as GM’s vice president of worldwide purchasing, the domestic automakers have been regarded by many as ruthless in the cost pressures they

put on their suppliers. The partnership philosophies espoused by W. Edwards Deming in the 1980s have generally been replaced with a take-it-or-leave-it atmosphere governed mostly by fear of losing a supply contract to a lower-priced competitor.

Dealing with transplant manufacturers, on the other hand, seems to be more Deming than Lopez in character. Stephanie Arvin, Toyota Motor Corp. U.S.A. external affairs spokesperson, acknowledged that becoming a supplier to the automaker can be rigorous, but when the process is successfully completed, “it’s a partnership, a working relationship,” she said. “Toyota sets goals and then works with its suppliers to achieve them, in effect saying, ‘This is what we want, and we are going to help you get there,’” Arvin said.

For example, she said if a supplier is experiencing high scrap rates, Toyota will send technical personnel to the supplier’s facility to help define the problem and solve it. “We believe that in helping them reduce costs and improve quality and reliability, both sides are going to win,” Arvin said.

According to West Ohio Tool’s Bu-

chenroth, the transplants he has dealt with have business models based on cooperative problem solving. “Once you get in, build trust and prove yourself as a qualified supplier, they really have no reason to look around. They are not after simply a cheaper-cheaper-cheaper tool.”

However, there are no guaranteed contracts. “If you start screwing up, they will work with you for a while,” said Buchenroth. “If you continue to screw up, they will start getting quotes on the job.”

Superion’s Choiniere agreed that there is a greater sense of security when working with a transplant, but suppliers that land transplant business should prepare to deal with constructive criticism. He noted that transplants use the continuous-improvement process and critically examine their own operations for improvement opportunities. They use that same technique in working with their suppliers. He said it is rare for a first-time supplier to be immediately accepted by a transplant.

“It takes some qualification,” said Choiniere. “The way that the Japanese might criticize or give constructive

### The cost of productivity

**T**ool suppliers complain vehemently about constant pressure from domestic automakers to pay less for the tools they buy. Tom Connelly of commodity management supplier Ewie Co. Inc., Ann Arbor, Mich., pointed out the folly of focusing on the price of a tool, rather than its performance.

“Historically, [the purchasing department’s] objective is to spend less per unit,” he said. “Their job is to take a \$10 insert and buy it for \$9.50 next year.” However, he added, “that mindset is now changing at our major customers.”

Noting that the perishable tooling cost represents 3 to 5 percent of the total cost of making a part, Connelly said the focus should be on the best place to get more significant cost savings. Because higher-performance tools decrease other costs via improved productivity, reduced cycle times, less tool change time and labor savings, they can reduce other costs by 20 percent, providing a net impact of 14 or 15 percent, according to Connelly.

Following such a total cost methodology, he said: “At the end of the day, I don’t care if the insert that I’m currently paying 10 bucks for ends up next week being a \$20 insert. When I look at the total life-cycle time of that tool, whether it’s an insert, a drill or a reamer, I want to get the tool life, productivity and efficiency improvements [without] sacrific-

ing quality. When I crunch the numbers, my total cost per unit produced is going to be down.”

Connelly also described a Team Value Management program in place at Ford Motor Co. that requires tool vendors seeking to supply a particular job to submit highly detailed case history information on applications identical or very similar to the one they wish to tool. As the commodity management supplier, Ewie Co. has the lead role in gathering and presenting the information used to generate performance projections for the operation under study, as well as determining a confidence factor for the projections.

The key is to gather as much data as possible to substantiate tool performance projections based on cycle time, tool life or other factors, said Connelly. The program methodology drills down to a potential cost per unit basis. The idea is that, with more data available to substantiate a proposal, engineers can make a more informed tool application decision. With diligent front-end research, the success rate averages 85 to 90 percent. The result, he said, is that Ford Motor Co.’s industrial materials TVM team has exceeded its cost savings objective for the past 2 years and is on track to surpass it again.

—B. Kennedy

## Unintentional transplant

Larry Cooper is purchasing manager for Cougar Cutting Tools Inc., Clinton Township, Mich., which makes carbide rotary cutting tools to customer specifications. Products include endmills, reamers and stepdrills, with some as complex as 2¼"-dia., 8-flute, coolant-through tools. Cougar's manufacturing expertise is hard to match, but apparently not hard to copy offshore.

Said Cooper, "I'm just setting up a couple of orders here that I know are going directly to Japan." He said Cougar typically will get an order from a Michigan company building equipment for a Japanese customer. "We'll get an order for the run-in tools, like six pieces, for test. If the tools work, we will tweak them and make a 24- to 36-piece order. The Japanese company packages them up with the machines and ships them all to China. In most cases, we never see the work again."

Cooper explained that reverse-engineering technology enables the end user to "probe a tool and replicate it, and once everything gets programmed in, produce the tools on multi-axis CNC grinders."

Regarding the special tools market, he said: "It's real competitive. I can't buy the carbide for some of the prices these people are putting on tools; it baffles me how they can make any money. A couple of our local competitors have already shut their doors."

Regarding the automotive industry, Cooper said: "The way it is going in this part of the country, it's not great. It's a



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**Typical of the carbide rotary cutting tools that Cougar Tools makes to customer blueprint specifications are coolant-fed step reamers for cutting aluminum (bottom) and drill-counterbore tools for cast iron applications.**

tough business. More or less, you're only as good as the last tool you made. If it doesn't work, you're not going to hear from them again."

By supplying aerospace companies, small engine makers and other companies, he said, ISO-certified Cougar is able to hold its own and has not had to lay off workers. With a diverse customer base, he said, "One company will fall away and we won't see that much work from them for a while, and somebody new will come in, or somebody will perk up. It cycles around."

—B. Kennedy

criticism, some American companies might become offended, thinking they are being too picky or too harsh. They want to be able to see if you can increase tool life, increase performance and tighten up the tolerances. That may improve their parts or processes, lowering cost."

Recent examples of tooling-based improvements Superior has introduced at transplant facilities include the development of tools that require less energy to operate or can be run in dry or near-dry machining applications.

The business and logistics aspects of the supplier/transplant relationship are as important as tool performance, according to Tim Meyers, senior manager, North American purchasing technical group, Honda of America Manufacturing Inc. He said the automaker seeks to facilitate relationships between the North American



**A Toyota associate prepares an engine for installation in a vehicle at the Toyota Motor Manufacturing facility in Georgetown, Ky., which produced 128,103 V-6 engines and 316,129 four-cylinder engines in 2005.**

Toyota

toolmakers and Honda's part suppliers that actually buy the tools, an effort that includes helping suppliers improve both tool technology and business processes.

For example, Honda provides training in program management and in the application of lean manufacturing

tools such as value stream mapping. These processes eliminate waste and reduce costs in the toolmaking process. "What we are really looking for is true cost reduction, not just price reduction," said Meyers.

Honda takes a long-term approach to developing suppliers, he said. Shops seeking to supply the company should have a long-term attitude as well—and be open to changing their business models. Honda's requirements are strict, but the company is also supportive, according to Meyers.

"We believe tooling is a value-added component, not just a commodity to produce a part," he said, pointing out that some tooling suppliers participate in part development with Honda R&D. "There is an awful lot of expertise and know-how out there, and we are looking for a way to harness it," adding that Honda wants to make working

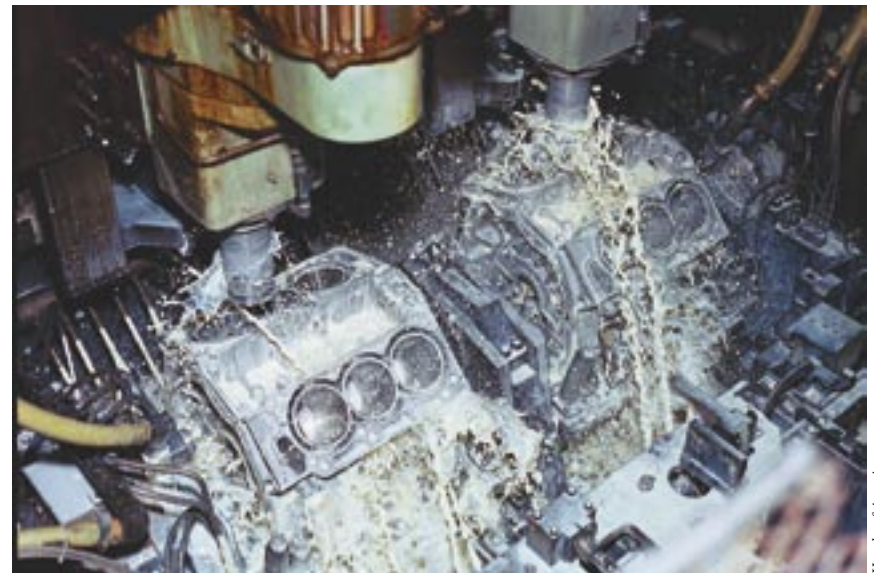
with suppliers "a total value-added enterprise as opposed to the traditional 'three quotes and a cloud of dust.'"

### Performance-Based Partnership

Buchenroth agrees that ongoing engineering assistance is key to maintaining good relationships with transplant customers. "If they ask for help with a problem, we'll redesign the tool or process, working sometimes with their engineering people, sometimes not," he said. "We'll try to combine tools—maybe one tool will replace two or three tools—and we usually work a lot with speeds and feeds. It's a multifaceted approach. When we get the process changed, we calculate the cost per hole." The measure of success,

Of course, every transplant manufacturer is different and they operate under many of the same cost constraints as their domestic rivals. As a result, working with transplants can produce aggravation and frustration as well as partnership.

One tooling supplier, who asked to remain anonymous, said: "We deal with both the transplants and the domestic car builders and I don't see any real difference. They both are guilty of being understaffed in engineering and moving incredibly slow. We tested a tool that tripled tool life in one operation at a transplant but it did not get implemented because they said they did not have an engineer in place for that project."



**Six-cylinder engines being machined at the Honda of America manufacturing facility in Anna, Ohio, which has annual production capacity of 1.5 million for four- and six-cylinder engines.**

Honda of America

he said, is throughput.

Buchenroth said the relationship involves give and take, including a degree of trust. For example, with one customer, design improvements in a stagger-tooth milling cutter reduced the need for re-grinding 85 cutters per week to about 25. The only benefit was the customer saved money; billings for West Ohio Tool actually dropped. But the satisfied customer came back to the company with more problem-solving jobs.

At the Chicago Fed's automotive conference, Moskow noted that "as a nation, the U.S. has a long history of refashioning industries with new capital, new organization and new ideas." It's clear that this nation's automotive part makers are in the process of refashioning themselves to address the opportunity presented by the growth of manufacturers with foreign names, but with plants down the street. △