



## Copper and Brass...continued.....

ers' processes can have to reduce "a large portion of the material value" in the application. The move of the electronics industry from parallel to serial interfaces has reduced the count of copper connector pins from 40 to 6—an 85-percent reduction—just by reduced connector pin count per connection. Ever-smaller designs for such connections further reduce the mass of copper metals required.

### On the drawing board.

The copper industry is concerned about the loss of residential copper tubing to oil-based polyethylene tubing. More than 1 million tons of copper tubing are used annually for residential water service. Among the ideas discussed are reduction of the tubing diameter from 1/2" to 3/8" diameter while maintaining the needed gallons-per-minute of flow; inter-groove finishing of the tubing ID, which helps increase flow, reduce turbulence and helps reduce tubing mass per foot; and reduction of wall thickness to ameliorate the continued high cost of metal.

Barriers to changing wire gauge in a home's electrical service include building codes and electrical standards that are already in place.

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However, the use of low-voltage control circuits and relays, as well as blue tooth and other wireless strategies, are also being discussed as a means to help minimize the amount and expense of copper in essential applications.

### Lessons learned for the precision machined products industry.

The high copper prices that we are experiencing don't appear to be going away anytime soon. That's because of high global demand, tight supply and copper's unique thermal, electrical and mechanical properties. While copper's unique

the same functionality and performance, while reducing the size or mass of the copper components.

Less mass means smaller overall dimensions, greater precision for machined features and, perhaps, complete substitutions or consolidations of part type (as in the transition from serial to parallel connectors).

Smart shops will be working with both their suppliers and customers to communicate how their precision machining capabilities can help deliver fully functional parts of reduced dimension and mass. That's one solution to the present and future of high copper demand, tight supplies worldwide and

## Technical Member Profile FISCHER Special Tooling Corp.

When the Howard H. Fischer Company was founded in 1957, carbide tooling was still relatively unknown. The Mentor, Ohio-based tool and die shop focused on the unique tooling material and soon made its mark as a specialist in custom carbide tooling.

Through the years, the company honed its reputation as a leader in precision tooling by expanding into tool steels and exotic materials. "Our strength has

always been in high-performance, high-precision, customized tools," says company president Kevin Johnson.

"We give managers of precision machining firms peace of mind by providing them with thoroughly engineered, finely crafted, special tooling in a timely fashion."

Five years ago, the company changed its name to FISCHER Special Tooling Corporation to better reflect its product

offering. "A lot of times, we would get requests for generic, commodity-type items, which is not what we do," says Mr. Johnson. "We work with our customers to develop tools for specific applications, and we offer a high level of service, especially from an engineering standpoint."

Precision machining manufacturers have come to know the ISO 9001:2000-registered company for its form-cutting

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## FISCHER Special Tooling...continued.....

tools. Fischer's Swiss CNC form grinders enable the company to provide a better cutting edge and a better finish. "We're more of a jeweler," explains Mr. Johnson. "Higher end, higher performance and higher precision. We're all about saving our customers money by helping them improve their processes, not by putting something cheaper into their machines."

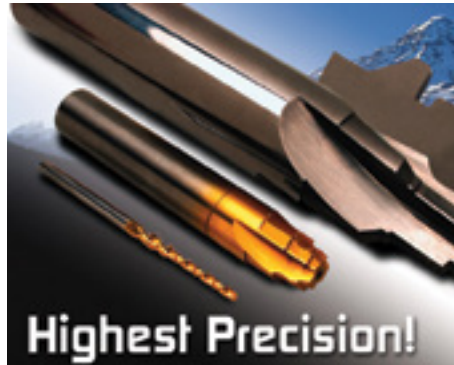
According to Mr. Johnson, when FISCHER Special Tooling joined PMPA 10 years ago, it was thought that the biggest benefit would be to gain access to member companies that could use the company's services. "That has happened," he says. "But it has been more indirect, from members getting to know us as people and not so much from us having a product to sell.

"Equally important is learning the technical nature of the relationship between member companies," he continues. "When you learn about the whole system, it makes you stronger as a vendor and as a technical member.

"One thing PMPA has helped us do is gain the trust and respect of other members," Mr. Johnson says. "Member companies see me, my name and our company's name month after month, year after year, so they know us and feel comfortable with us."

Mr. Johnson feels that by talking to fellow members at conferences or on the phone, there's more of a person-to-person relationship. "I don't feel reluctant about saying that we could probably help them with their problems. PMPA members can speak a little more openly with me, and they don't feel like we're trying to do a hard sell."

FISCHER personnel are active on the Listserve, with asking questions and answering them. "I present information for discussion if I think it is something that someone can use," Mr. Johnson



states. "Since we don't have a commodity product, I focus on improving the process with some of the success stories we've had. We have good value-specific applications on how customers were able to improve their processes by using our tools.

"PMPA is a class organization," Mr. Johnson summarizes. "We get as much value out of the 'running the business' end of things as we do from the technical aspect. From management updates and over the phone, we've been able to get help that's not available anywhere else. I've gone to other organizations that specialize in small businesses and they don't do what PMPA does. PMPA seems more appropriate for what we're doing."

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