

IMT SHOW 2006 REPORT

September 6-13, 2006 - Chicago, Illinois, USA

Introduction:

In September 2006, the association was represented at the IMT Show in Chicago by the CTMA's new President Horst Schmidt and Executive Director Les Payne. For the first time, the FABTECH Show was separated from the IMT Show and is scheduled to be held later in the year. As a result, the IMT Show was considerably smaller and only used four floor areas of the McCormick Center. Consolidation among machine builders also added to the reduction of exhibitors. The only new machine tool builders that we saw were from the Pacific Rim. Of note were Hyundai and Daewoo who are both better known for their cars. They both presented a full range of machines. Hyundai informed us that it has a short-term target to be the 5th largest machine tool builder in the world. Despite the reduction in floor space, the IMT Show remains the largest machine tool show in North America.

On the machinery side, the main focus of the show was increasing the number of functions on any given machine base. These included: a water jet cutting machine with a wire EDM; machines that combine lathe and milling machines; boring mill and gun drill combinations; water jet and flame cutting; water jet and plasma arc cutting; and wire EDM combined with EDM drilling. Machine improvements are being made by extending the range of any given machine by providing greater travel, heavier table loads, larger work envelopes, wider range of spindle speeds, more tool change capacity, and of course more add-on options.

Milling Machines:

There was very little being shown in the way of linear motor drives with the majority of high feed rate machines based on ball screws. Spindle speed continues to move up in all categories with high speed spindle commonly available to 42,000 rpm. Mid-range machines generally are available with a 15,000 rpm option and most standard machines were offered at 10,000 rpm. Most of the larger and better-known vendors were offering 5-axis configuration. Tool changers have become standard with increased speeds of tool change (chip-to-chip) becoming the new objective.

Machine Controls:

Machine controls have moved to being PC based and, in the process, have become far more user friendly. This has created additional capabilities and flexibility in the controls making features such as tool life management and multi-tasking available on more controls. Data starvation and through-put is no longer an issue and most machine controls exceed the capabilities of the machines available.

EDM:

There have been major advances in both wire and sinker EDM equipment. The major advance is in the cutting speed which has more than doubled in the last five years. Wire is exceeding 30 square inches an hour. Sinker, with high speed heads, are now

able to cut fine detailed ribs in less than half the time that they used to. Advances have also been made in the electrolyte chemistry with the life of deionized water being extended to three times and EDM fluids offering extended life and enhanced cutting efficiencies.

Cutting Tools:

This area has seen some of the greatest advances in the machine tool industry over the last few years. The shrink fit tool holder has virtually become the industry standard. Carbide technology has advanced with smaller and more consistent grain size resulting in harder and more durable substrates. There have also been major strides in the development and application of coatings with multi-laminate coatings now being available. Coatings are becoming more specialized and tailored to specific machining operations and/or materials being machined which results in major productivity improvements and extended cutter life. These coatings combined with specialized carbide substrates have further advanced cutter technology.

Cutter geometry has also made major advances in both cutting rates and surface finishes. This, along with maximizing the number of edges on inserts, has more than offset the increased cost of these new technologies.

ISTMA-Americas Meeting:

During the show, we took the opportunity to hold an ISTMA-Americas committee meeting. Two guest associations, the Tooling & Manufacturing Association (TMA) and the Precision Metalforming Association (PMA) joined representatives from the CTMA and the National Tooling & Machining Association (NTMA). The CTMA's 2006 Buyer's Guide was distributed to all of the participants in the meeting and additional copies were distributed to visitors and exhibitors through out the show from exhibiting Canadian companies.

Conclusions/Recommendations:

Generally speaking, technological advances in cutting tools are claiming anywhere from four to ten times the cutting efficiencies of past technologies and, all things considered, they are actually offering a cost savings. If companies are not continually updating their cutter technology to keep pace with current available technology they are likely to be falling behind in productivity and loosing money in the process.

The machine tool building industry and other sectors of the tooling industry in the United States are very busy and seemed positive about the future. Here in Canada we can only assume that this will help improve the Canadian tooling sector soon.

Submitted by:

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