Cycle Times

IMTS 2002

A Quarterly Exchange Of Insights & Ideas
From The Leader In Precision Transfer Machine Technology

FALL 2002

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Hydromat® Inc.
precision transfer machines

IMTS Reflects Economy, Hints at Possible Upturn

While overall attendance may have been down at this year's IMTS, the quality of the attendee - based on the serious nature of many face-to-face discussions - seemed to be up

The opening hours of the 75th IMTS, held in Chicago's McCormick Place from 9/4 to 9/11, were marked by a near-palpable sense of anticipation. Exhibitors and attendees alike were looking for much the same thing: some good signs that the economy, indeed, might be beginning to shift toward the positive.

For exhibitors, the hope was for attendees who would do more than just "kick the tires." For attendees, the hope was that manufacturers exhibiting would make a strong showing, displaying technology advancements that would demonstrate their commitment to advancing the manufacturing base and in doing so, advancing productivity and overall economic prosperity.

As the hours and days progressed both groups seemed to find grounds for optimism. Exhibitors found that visitors to their booths had come to do more than just take a look. Many came ready with questions and prints seeking specific solutions to specific problems. And attendees were reassured that many exhibitors had done much more than "stand still" since the last IMTS. New products and technology could be seen in all corners.

Manufacturing marketplace

In point of fact, technology was in abundance - quite literally tons of it. AMT - The Association for Manufacturing Technology - estimates the show contained 26,500 tons of exhibits and machinery. IMTS 2002 occupied all three buildings and all five levels of McCormick Place with 1,350 exhibits that spread over almost 1.3 million sq ft of space. Visitors from all over the globe (343 international delegations from 50 nations and individual visitors from 84 nations) were able to navigate 11-plus miles of aisles and visit exhibits in nine different pavilions.

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Top: Shaun Ray demonstrates the wide variety of parts made on Hydromat machines.

Above: A-8127, home of Hydromat, IEMCA and Turmatic Systems

Left: The Chess Pieces made on the AT machine proved to be quite popular

IMTS Reflects Economy, Hints at Possible Upturn *(continued from page 1)*

Hydromat displayed an HW25-12, an HS-12 Indexing Chuck machine, a Pro 20 and the all-new AT (Advanced Technology) machine. All Hydromat machines were under power and making parts. They drew considerable attention, as the units represented in this year's line-up displayed technological advances with many practical applications.

IEMCA was very well represented at the show. In the Hydromat booth, there was a Micro BOSS, a Mini BOSS 332, a PRA-52, a BOSS 547, a Genius 120, a SIR 32, a Master 880 MP, a VIP 80 and a VacXtract. In other booths throughout the show, IEMCA had 12 more bar feeders on display.

Turmatic Systems' TriFlex U was of considerable interest as it represents an increasingly important trend integrating multiple processes and operations into a single machine footprint, thereby reducing the number of machines and setups required to make a part or component and increasing part quality.

Numbers deceiving

While attendance was reported to be around 80,000-plus, down from 100,000 in 2000 and 120,000 in 1998, most observers felt this reflects the broader picture of the overall economy. Many companies almost certainly reduced the number of their "buying team" members - those who scout such shows for the latest technology solutions to their unique metalworking challenges. And it's true that some exhibitors opted for smaller exhibit space and some stayed away entirely.

But lower figures don't necessarily spell a less-than-successful show. On the contrary, Hydromat Vice President of Sales Jim Otten sums up IMTS 2002 this way: "Although the overall attendance figures were down, at the Hydromat booth we saw a greater opportunity to more effectively engage and interact with high quality prospects. This provided a better and more productive communication environment for the exhibitor as well as the show attendee."

Indeed, when all is said and done, the impact of a show resides in the quality of leads that are generated - plus, the level and quality of technology on display. On these counts, IMTS 2002 gave both attendee and exhibitor reason to believe things may be turning around.

Top: Ron Karaisz explains the fast cycle time, while Tony Berry puts the Pro20 through its paces.

Above Left and Center: The AT machine drew much attention for its versatility as well as the parts it made.

Above: The mezzanine proved to be a popular spot to relax, or have a quick meeting.

Left: Attendance was down slightly compared to previous IMTS shows, yet customers kept staff busy with inquires about the latest technology.

Behind the AT:

A Look at What Drives Development

Outside of government and academic laboratories, the advancement of technology for technology's sake is a luxury most manufacturers don't have, nor would necessarily want. In fact, examples of introducing technology with no clear practical application have in the past become painfully visible in their failure to address a real need (early hexapods introduced with considerable fanfare several IMTS' ago serve as acute reminders).

This is clearly not the case of the Hydromat Advanced Technology (AT) machine. What drove the development of the AT was a clear call from a manufacturing sector for a very specific technology solution. The call in this case came from the manufacturers of ultra-precise watch casings for high-end timepieces.

Technology thumbnail

The AT is a CNC-controlled, servo-driven pallet machine that transforms a raw casting, forging or other blank into a completely finished complex part. The AT's remarkable capability stems from what Martin Weber, Vice President, Manufacturing, describes as a range of tooling possibilities including horizontal and/or vertical tool spindle units, multi-tool turrets for multi-tasking and/or an automatic tool changing system with redundant or common tools to reduce down time associated with worn tool replacement.

The AT employs an innovative design that delivers precision machining at the micron level. Weber explains, "The AT's table, unlike conventional rotary machines, serves only as a transport device. It lifts and transports each modular pallet to the next pallet fixture. It lowers the modular pallet to the fixture pallet where it is located and clamped. Accuracy and repeatability are achieved via the pallet chuck system."

An Erowa Power Chuck in the pallet chuck system is accurate to 2 microns or less and has a self-locking ball lock that generates clamping power of 9000 N. The AT is configured with an automatic load/unload station and nine workstations, each of which can be a three- to five-axis CNC machining cell. The work spindle motors are 3.7 kW, and the pallet and workholding spindle drive is 1.5 kW and delivers a maximum of 5,000 rpm. The work envelope is 100 mm in diameter.

> The clear interest in the Hydromat AT machine at IMTS reflects more than just curiosity in new technology. It reflects real applications potential - the driving factor behind the AT's development

Chris Klepacki explains the advantages of the AT to a group of interested attendees at IMTS 2002.

The applications

The reason that watch manufacturers needed the AT solution is that they face ultra-precise tolerance and repeatability requirements that demand their parts remain firmly clamped throughout the entire machining process, regardless of the number of actual operations, and right up and through post-process CMM quality and process control verification. When machining to micron tolerances, the potential for error introduced by clamping and unclamping a part simply cannot be entertained.

And non-watch applications? The list is long and continues to grow, especially in automotive and specifically in engine components: fuel injectors, piston bodies for small bore internal combustion engines (leaf blowers, lawn mowers, chain saws, etc.) and safety-critical ABS components and air bag system parts.

Trends in automotive and other industries toward smaller, more precise components, higher quality and tighter process control will certainly continue to lengthen the AT's application candidate list.

Which just demonstrates that responding to the call for a solution, and developing a technology to meet the specific need, can lead to a far broader range of real-world applications. Which is how the AT came about.

What really matters

Bruno Schmitter, president and CEO of Hydromat Inc., St. Louis

We've reached a point where the idea that "manufacturing does matter" is in danger of becoming cliché. Consequently, identifying the importance of manufacturing is no longer the issue. Instead, it's the unprecedented and, in many cases, criminally intentional erosion of our manufacturing base. Yes, intentional.

We need to take a hard look at what's happening and confront some extremely disturbing facts: First, manufacturing, the primary engine of our economic growth, stability, and standard of living, is being starved and may ultimately fail. Second, factories and plants are closing at an alarming rate, hemorrhaging workers and their families into the ranks of the unemployed - a situation that tears at the very bonds holding these families together. Third, small towns and communities - the delicate infrastructure of the country are disappearing. Closed plants are torn down and replaced by Wal-Marts, Sam's Clubs and Target department stores.

To adequately grasp the situation, we need to focus beyond the macro- economics of unemployment figures, capacity utilization, inventory levels, and currency values. But the truth is, we may not like what we see. In reality, ethical business sense and strategic thinking have been replaced by financial expediency. Investing in R&D, capital equipment, and new technology is now regarded largely as non-value added and as such, it's considered superfluous and a distraction.

It's my impression that what matters to a number of manufacturing companies is getting by with the least effort at the lowest possible cost. They believe you don't have to make things, if you can buy them, and you shouldn't buy except from the lowest bidder. And if it's cheaper to make or buy overseas, then by all means go there, seize the moment, and make the quick buck. As far as they are concerned, companies shouldn't worry about long supply lines, a lack of service or support, or poor quality. Sure, there will be recalls, warrantee issues and defects, but that's how it is. Engineers, designers, and technicians who add value to a product or process now take a back seat to corporate executives who think first of their bonuses, which are tied to quarterly results, and to purchasing managers who outsource on Internet auctions to the lowest bidder.

If I had to bet on what manufacturing will be leading in the future, I'd put my money on small-to-medium sized businesses, perhaps family-owned, run by entrepreneurial managements that are totally committed to employees, the quality and value of products and services, and, above all, to fair and ethical business practices. For manufactures like these, the U.S. will be fertile ground potent with opportunity.

So what about those large, slow-moving companies, often tainted by corruption and driven solely by merger and acquisition? They have lost sight of the basics of manufacturing better products, adding value, and investing in new technology to remain competitive. These companies will be bought and sold another time or two and slowly fade away. This is a future they have crafted for themselves. A future they shamelessly stole from their workers. And the American manufacturing worker deserves far better than this.

Editor's Note

American Machinist Magazine asked Bruno Schmitter to contribute to the Viewpoint Column for their 2002 IMTS Preview issue. His piece on the state of the industry has garnered much attention. The staff of Cycle Times hope that you will find it insightful, and welcome your comments.

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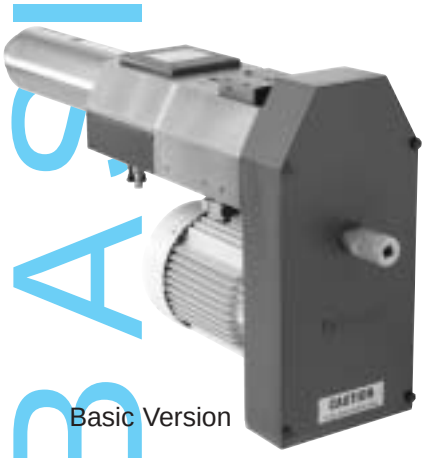
Toolspindle Unit Standardization

BASIC



Basic Version

NC Version

Modular Concept

This new generation of Toolspindle Units has been designed on a modular platform. This accommodates the easy upgrade from a Basic Unit to an NC Unit and offers features such as a Servo Control Valve and a Feedback scale. This new generation of Toolspindle Units can be used on existing Hydromat Machines, with the proper adaption kit.

Toolspindle Unit Models

VE 26/80 and NC 26/80
VE 36/100 and NC 36/100
VE 46/120 and NC 46/120

Performance

	VE 26/80 NC 26/80	VE 36/100 NC 36/100	VE 46/120 NC 46/120
Stroke in mm	80mm	100mm	120mm
Feed force	1200 lbs	1700 lbs	2200 lbs
Drive spindle Ø	30mm	40mm	50mm
Spindle nose type	HSK-32	HSK-40	HSK-50
RPM Max.	7200 / 13000*	7200	7200

*(with HS - High Speed Unit option)

Features

New Quick Change Tool System
- HSK Spindle Nose

Flange Quill (optional)
- Rigid fixure for milling and cross-drilling heads
- Extended tool life for maximum cutting force

Quill Unit With Separation Of Feed Piston And Quill
- Increased rigidity of quill and quill housing
- Extended tool life of cutting tools due to increased accuracy

Stroke Setting Infinite Adjustable (without spacers)
- Reduction of setup time
- Economic manufacturing of smaller batch sizes

Centralized Lube Systems

Integrated Wiring
- Protected and shielded inside the unit

Modular Concept For Future Upgrades Of Optional Components

Optional Components
- Coolant fed
- Integrated Gear Drive
- Proximity Switches
- CNC control
- Positive pressure for water soluble applications

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precision transfer machines

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Holiday

Monday & Tuesday, Dec. 23rd & 24th - Holiday Staffing
Wednesday, Dec. 25th - Christmas Holiday
Thursday & Friday, Dec. 26th & 27th - Holiday Staffing

Monday & Tuesday, Dec. 30th & 31st - Holiday Staffing
Wednesday, Jan. 1st - New Year Holiday
Thursday & Friday, Jan. 2nd & 3rd - Holiday Staffing

During the Christmas and New Year Holiday Season, Hydromat will follow a Holiday Staffing Schedule. The Sales Department, Customer Service, Technical Services, and Shipping & Receiving will offer service during normal business hours. All other departments will provide minimal staffing to accommodate any emergency situations.

Our main telephone line, 314.432.4644, will play a recorded message and will instruct the caller about how to contact a department or individual.

Direct department numbers can be reached by dialing 314.432.0070, then enter the appropriate extension number.

- HSLdirect, Hydromat's e-commerce site and our 24/7 Tech Support paging service will be available without interruption.
- Hydromat will resume normal business staffing on Monday, January 6th, 2003

Press Notes

Have You Seen Us in...

Production Machining
May / June 2002
"A Diet of High Volume, Long Runs"
Curtis Screw Co. Profile

Production Machining
July / August 2002
"Rotary Transfer For Machining Center Parts"
IMTS Preview of AT Machine

American Machinist
August 2002
"Modular and Open Machining System"
IMTS Preview of AT Machine *and*
Viewpoint by Bruno Schmitter

American Machinist's
Leaders in Manufacturing Innovation
Fall 2002
Hydromat Corporate Profile

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