

# TAKING EXTRUSION TO THE NEXT LEVEL

Extrusion Innovations



A compendium of  
extrusion  
features from

**PMM** Plastics  
Machinery  
& Manufacturing

# EXTRUSION LEVELS UP



Extrusion Innovations

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Cover photos: The main screw photo is courtesy iStock/Getty/genkur. The US Extruders' Med-Ex Reflow extruder photo on the left is courtesy of PMM. The extrusion machine photo on the right is courtesy iStock/Getty/Phuchit.



# Introduction

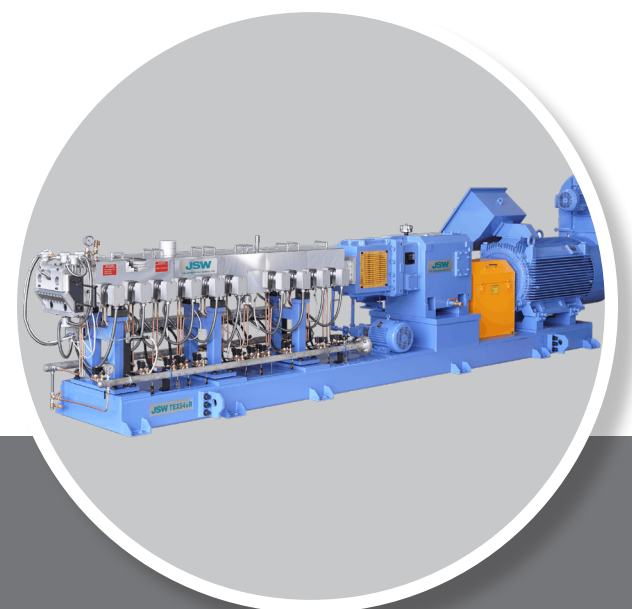
This has been an exciting year for extrusion equipment introductions because manufacturers brought out plenty of new products around NPE2024. You can always count on the latest technology to generate a buzz.

Many new machines are fully embracing Industry 4.0, and artificial intelligence (AI) is showing up in the latest control systems. The new control systems and process monitoring features collect and analyze more operational data than ever before.

Whether you are interested in the latest sensor technology, machines with more power and torque, more automated processes or extruders tailored for specialty applications such as medical clean rooms, there is information in this eBook for you.

These stories and product innovations are written by senior staff reporters Karen Hanna and Bruce Geiselman and associate editor David Tillett. I hope you find them useful.

Ron Shinn, editor  
*Plastics Machinery & Manufacturing*



# EXTRUSION LEVELS UP

## Extrusion Innovations



PMM

At NPE2024, Colines demonstrated its Mastermind artificial intelligence virtual production assistant on an ALLRollEX cast extrusion line.

# A SMARTER WAY

## AI, PROCESS MONITORING IMPROVE QUALITY FOR EXTRUDERS

By Bruce Geiselman

A shortage of skilled workers is helping fuel demand among plastics processors for equipment that includes artificial intelligence (AI), process monitoring and other digital technologies.

AI and process monitoring also can help improve product quality and reduce costs due to less waste. In some

cases, AI can automatically detect emerging problems and adjust processing parameters without worker intervention.

### COLINES AI ASSISTANT MAKES MANAGING LINES EASIER

During NPE2024, Colines demonstrated its latest AI product by equipping an AllRollEx cast extrusion line for



At NPE2024, Reifenhäuser's subsidiary, RE: GmbH, showed off its digital platform for monitoring and managing data from all systems on a shop floor.

stretch film with the company's Mastermind AI virtual production assistant.

The company ran demonstrations producing seven-layer pre-stretch film.

Mastermind automates many of the most time-consuming tasks, which simplifies operation, reduces set-up and start-up times, ensures production quality, and allows less-experienced operators to easily manage film extrusion lines, according to the company.

"It's able to help operators run the machine," said Gabriele Peccetti, Colines marketing and communications director and sales area manager. "Just push one button, and the line in 20 seconds can go to the target with very low tolerance of the thickness and without touching the die. ... It recognizes the variation of necking of the film without touching anything."

Mastermind ties directly into the HMI control panel of a Colines extrusion line and automates die adjustments, resulting in a "completely touchless flat die" with no more need for manual adjustment of the die bolts, according to the company. An automatic sizing feature changes the reel size without halting the extrusion line. In addition, interfacing Mastermind with MES Live Control, another Colines product, allows for advanced data analysis and production monitoring, according to the company.

Mastermind currently works with cast film lines, but the company plans to develop the technology for blown film production as well, Peccetti said.

AI technology is becoming increasingly important to film extruders as many companies struggle to hire skilled operators.

"What we are trying to do at Colines is optimize the machine as much as we can," Peccetti said. "We want to help our customers not only speed up the setup of the line, but also avoid any mistakes during the production, night and day, and try to eliminate problems when you change operators." Mastermind improves worker safety since it reduces the need for operators to physically work on the extrusion line, according to the company.

### REIFENHÄUSER OFFERS BRAND-AGNOSTIC DIGITAL PLATFORM

At NPE, Reifenhäuser, a manufacturer of extrusion lines and components, highlighted its digital platform that allows plastics processors to collect, manage and analyze data from their primary processing equipment and peripheral devices, regardless of their machines' manufacturer, age or type.

RE: GmbH, a wholly owned subsidiary of Reifenhäuser, demonstrated its digital platform for monitoring and managing data from Reifenhäuser and third-party systems.

“We want to focus on digitalizing your whole shop floor instead of just Reifenhäuser assets,” said Lisa Hallmann, a RE: senior customer success manager. “Our overall goal is to connect the data from all your lines, no matter which vendor, to one central system and make data available for you to make better business decisions, reduce scrap, increase efficiency, gain transparency and reduce costs in the long term.”

Reifenhäuser’s digital solution for companies in the extrusion and packaging industry consists of two components: c.Hub, a middleware (software) system that connects all assets, peripheral devices and primary processing equipment regardless of vendor, age or type; and ExtrusionOS, software that allows for the display of collected data on user-friendly dashboards and for monitoring, storing and analyzing the data.

“We get all the data coming from your assets, and we make it available in the application,” Hallmann said. “In this application, we just provide you with real-time data and an



Hallmann

archive of your data that you can use and work with, and trends. We also provide you with customized analytics on certain topics like energy, carbon footprint, and we give you a good overview of your general line. It helps you to understand better what is happening on your line.”

A processor can grant access to employees to view the collected data from anywhere, gaining new insights into production and its challenges.

Monitoring allows operators to react quickly to changing process parameters to maintain product quality and prevent production of scrap or waste parts or materials.

“We will send you notifications to understand and react on time instead of once it’s already too late,” Hallmann said.

The company’s digital platform can help minimize unplanned equipment downtime and the associated costs, Hallmann said.

Downtime Manager, a feature of ExtrusionOS, allows production managers and machine operators to capture and analyze downtime in the production environment. With the help of Downtime Manager, they gain insights that enable them to improve error analysis and reduce downtime, ultimately leading to increased overall equipment effectiveness.

By eliminating the need for operators to write down data on paper, data accuracy is significantly increased, according to the company. Operators and production managers assign categories to downtime instances in ExtrusionOS. They can do this categorization on the spot, for example via a tablet, to ensure real-time documentation.

“As far as I know from my customers, it used to be a very manual process where the operator was writing down when the line was down and then linking a reason to it,” Hallmann said. “Obviously, a lot of mistakes can happen during this process because you have different priorities when the line is down than writing down when it was down.”



Collin Lab & Pilot Solutions showed its new FI film inspection system at NPE2024.

Downtime Manager also can generate comprehensive reports that analyze various aspects of downtime. These include, for example, the number and duration of downtime incidents and the frequency of downtime by category and other available metrics.

The software also can work with a customer’s existing ERP and MEP software.


### **COLLIN FILM INSPECTION SYSTEM DETECTS FLAWS**

Collin Lab & Pilot Solutions GmbH, based in Germany, demonstrated at NPE a new film inspection system with a practical post-processing tool.

The Collin FI film inspection system is designed for continuous film defect inspection. The inspection system can be used on a flat or blown film line. An LED light source and line camera are installed before the take-off rolls, meaning defects can be detected and evaluated before the film is dispersed. The inspection system, which includes Collin software, can detect optical defects including contaminants such as black spots or pigment agglomerates in pigmented films. Numerous adjustments are possible for the error parameters, and an online display of the results of running tests are available.

The FI inspection system uses a graphics card instead of a frame grabber card. The result is the ability to analyze, record and store video as well as still frames.

“We are faster in processing and using less in resources of the computer in the background,” said Gernot Schaffler, head of process engineering at Collin. “We can process and analyze the data much quicker than before.”

The FI inspection system stores inspection video for possible future analysis with a different post-processing algorithm, which was not possible with an older system, Schaffler said. 

*Bruce Geiselman, senior staff reporter*  
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US Extruders' Med-Ex Reflow is designed for medical tubing.

## Rx FOR MED TECH

### US EXTRUDERS, GRAHAM ENGINEERING INTRODUCE NEW MEDICAL EXTRUDERS AT NPE

By Bruce Geiselman

US Extruders and Graham Engineering introduced new extruders at NPE2024 designed for demanding clean-room environments and tailored to meet the stringent demands of medical applications.

US Extruders' new single-screw extruder for medical tubing is designed for manufacturers requiring precise quality control, according to the company.

The Med-Ex Reflow extruder will meet the needs of contract manufacturers in the med tech ecosystem that are producing tubing for medical device OEMs. The tubing typically is used to deliver modern therapies and drugs to patients, for neurovascular aspiration catheters (to remove blood clots in the brain), and similar critical operations. Several different materials are used to produce the tub-

ing depending on the product specifications. The Med-Ex Reflow is designed to be efficient in a low-volume, high-mix ecosystem.

"This machine allows those contract manufacturers that are doing a lot of changeovers the ability to run all of those materials with one screw design," said Steve Maxson, US Extruders' innovation & business development manager. "It allows them the flexibility to move that machine from one line to another, and it gives them a lot of flexibility."

The Med-Ex Reflow extruder features a new screw design that can process Pebax (a thermoplastic polymer), nylon 12 and PU equally well, Maxson said.

It can be a challenge to design a single screw that can handle that variety of materials, he said.

"It's a specific design that was tested on all three of those materials that gives us optimal pressure stability, within plus

or minus 2 or 3 PSI, which translates to high dimensional stability in the tubing,” he said.

The Reflow has a screw diameter of 1 inch. It also features a new streamlined design that includes a lower control panel that allows for better visibility in a cleanroom.

“It doesn’t have a big, tall panel on it,” Maxson said. “One of the problems in cleanrooms is when people bring customers on a tour and they’re looking through a window into a cleanroom, they can’t see the cleanroom because tall control panels block the view.”

The Reflow extruder includes the latest ProControl controller, which features a more user-friendly interface, Maxson said.

“It has a digital touchscreen interface that allows us to control and monitor all the parameters on the extrusion system,” he said. “We can trend some of the critical parameters, see trend charts and store recipes. If an operator nails down the process for a particular tube size — temperatures, pressures, speeds, vacuum levels — all those key parameters can be stored, and the next time they run it, they just download that recipe, and they’re up and running.”

The newest version of the ProControl features a graphics interface similar to what people have become accustomed to on smartphones.

“The ProControl graphics have been updated to more mimic tablet and iPhone graphics — it’s user-friendly,” said John Brunelle, president of ProSystems Integration, which developed the controller for US Extruders. “We have web client availability if you want to remote into the machine on a phone or home PC. All manuals are now located on the machine, prints, bill of materials. It’s one place to get all information needed for the machine, whether it’s maintenance, data logging or recipes.”

US Extruders also unveiled its new Med-Ex Quench, the first water tank developed by US Extruders. The Quench can be used with the Med-Ex Reflow extruder, or any extruder producing tubing.

There is a need for precision when producing certain medical tubing, such as that used inside the body to deliver stents or a heart valve or to aspirate blood clots in the neurovascular system. The processes for producing this tubing must be precise and repeatable.

“This tank is designed for that precision,” Maxson said. “It is made out of all stainless steel. There is no vibration. We can track the temperature. We can track the amount of water input into the tank. It’s developed for precision medical tubing. There’s a void in the industry for tiny, small tanks for these applications. That’s what we developed it for ... Everything is very intricate. We can dial things in to the very minute tolerance level. We can monitor the temperatures and the water flow. It’s very accurate and very repeatable. We’re also monitoring the dosage of the UV that we put in to kill bacteria.”

US Extruders displayed a prototype of the water tank at an earlier show, but the final version was unveiled at NPE.

“We brought it to the MD&M West show in February, and the purpose was to get feedback on the design,” Maxson said. “Overwhelmingly, we received positive feedback, but there was some constructive feedback. We implemented those changes, and we’re proud to release this tank now.”

## COMPACT MODULAR MD DESIGNED FOR CLEAN ROOMS

Graham Engineering Co. at NPE 2024 showcased its new American Kuhne-brand stainless steel Compact Modular MD extruder, designed for medical and pharmaceutical applications where stainless steel wipe-down surfaces are required.

The stainless steel version of the Compact Modular MD extruder is easier to clean and designed for clean-room environments. It is offered in addition to the traditional Compact Modular MD, which has a special urethane-based medical paint that is chip-resistant and does not yellow over time.

The stainless steel Compact Modular MD extruder is available with screw diameters from 0.5 inch to 1.75 inches.

Both the stainless and traditional versions of the Compact Modular MD extruder include an optional enhancement that allows for easier adjustment of the extruder, vertically and horizontally, for alignment to downstream equipment.

“You can raise and lower the extruder from a single point,”

said Justin Kilgore, VP of engineering. “It’s a wheel that turns that allows you to raise and lower it. They also have side-to-side adjustment of the extruder itself to better align the discharge end with the tank.”

The new extruder is equipped with Graham Engineering’s XC300 Navigator control system.

“There are some additional features that we’ve added to the Navigator platform to facilitate integration to the downstream equipment by pulling additional data,” Kilgore said. “You have a single source, single connection point to be able to pull data, performance data or production data, for the entirety of the line.”

For example, the latest version of the XC300 Navigator control system can pull data from puller/cutters, cooling tanks and coilers, he said.

“We’ve also added some additional integration for upstream,” Kilgore said. “We have a communication interface that pulls data and can actually push batch recipes upstream to things like blenders, and we have developed an interface to temperature control units from Mokon or Advantage [or any major brand that offers an optional communication interface] ... We have expanded the number of downstream/upstream suppliers that we can seamlessly integrate with.”

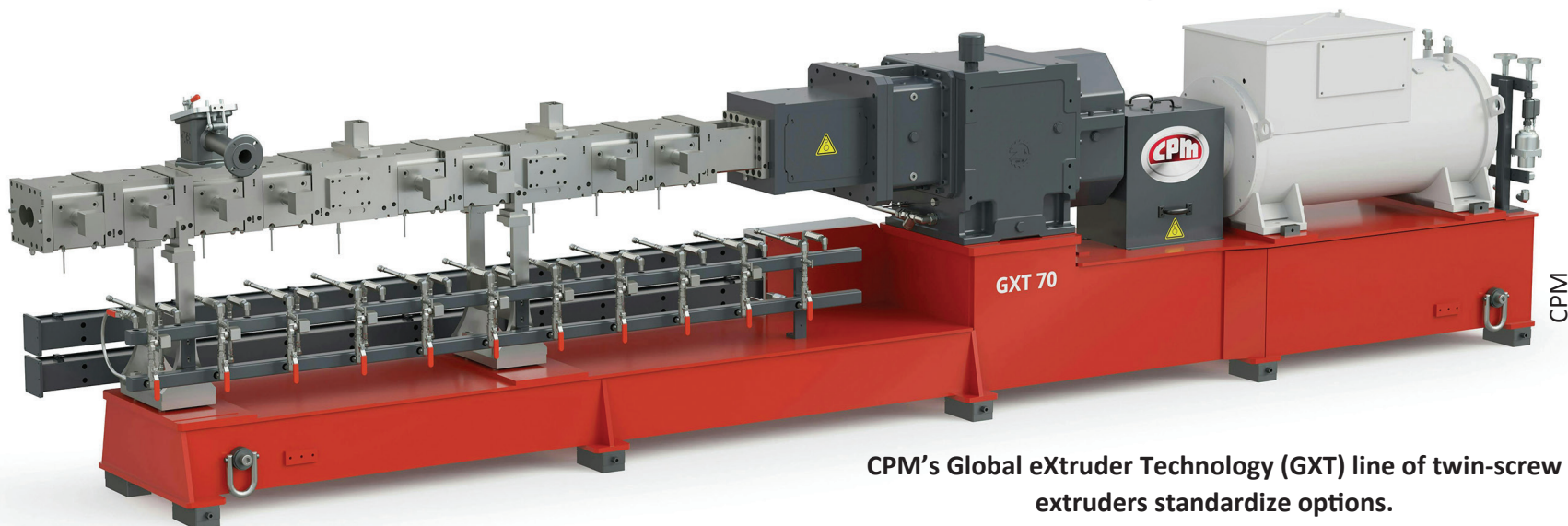


**Graham Engineering’s American Kuhne-brand Compact Modular MD extruder is equipped with the XC300 Navigator control system.**

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# A NEW PLATFORM



CPM's Global eXtruder Technology (GXT) line of twin-screw extruders standardize options.

## CPM DEBUTS GLOBAL TWIN-SCREW EXTRUDER LINE

By Bruce Geiselman

CPM's new Global eXtruder Technology (GXT) line of twin-screw extruders will reduce delivery times for new machines and replacement parts, compared with the company's existing series of CXE twin-screw extruders.

With its GXT line, CPM is introducing a standardized platform that will ensure uniformity in extruder design and technology regardless of a customer's location in the world or where an extruder is manufactured. They are appropriate for nearly all compounding applications, according to the company.

"The GXT is a global extruder technology initiative," said Karl-Heinz Tietz, director of extrusion systems at CPM. "It's a machine that we can build anywhere in the world. We can build it here in the U.S. and in Europe and China, and it will have the same standards, have the same look, have the same design specifications. It is estimated to be around 15 to 30 percent less expensive than what we offer on our CXE models."

The GXT platform consists of pre-designed or pre-engineered machines that allow customers to choose from among a few options that can be added, he said. However, a pre-engineered design means machines can be built ahead of sale and delivered quickly.

"We're planning on stocking parts for it and having shorter lead times," Tietz said. "Customers can get the machines faster."

The aim also is to have global support, which means that even if customers buy a machine manufactured in another


part of the world, CPM technicians closest to the customers can service it easily because they will know details about the extruders regardless of which factory produced them.

"If we run out of technicians in China, we can send somebody from the U.S. to go out or from Europe, and it's the same machine," Tietz said. "Big global customers that have plants all over the world will have the same machine in all their plants. The control systems look the same. Operators can use it the same. The integration can work the same. You don't have to retrain operators. You don't have to have different safety specifications. It's all on one platform."

By contrast, the CXE extruders are highly customizable, but that benefit makes them more expensive.

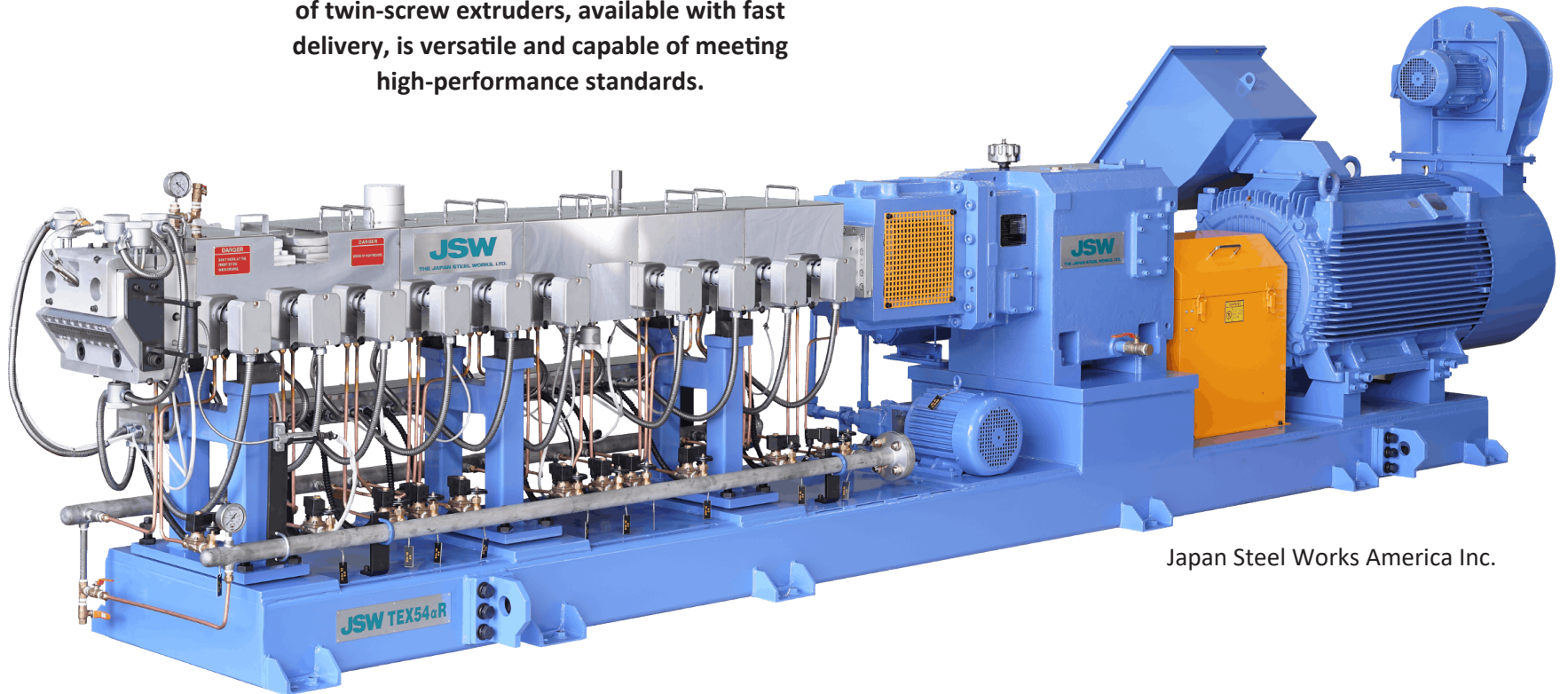
"A GXT is going to give you the same performance and the same look, but it's going to be more cost-competitive," Tietz said.

GXT extruders are available with screw diameters ranging from 32mm to 133mm, torque densities of 13 Newton-meters per cubic centimeter (Nm/cm<sup>3</sup>) and L/D ratios of between 40 and 48, with screw speed options of 600, 900 and 1,200 rpm at maximum power output.

Customers needing a higher torque density, of up to 18 Nm/cm<sup>3</sup>, or with custom metallurgies on the shafts would be directed to the customizable CXE line of extruders. 

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JSW says its new TEX-αR (TEX- Alpha R) series of twin-screw extruders, available with fast delivery, is versatile and capable of meeting high-performance standards.



Japan Steel Works America Inc.

# GETTING UP TO SPEED

## CHANGING MARKET DEMANDS PROMPT JSW TO RELEASE NEW EXTRUDER LINE

By Bruce Geiselman

Japan Steel Works America (JSW) Inc. has launched a new extruder line designed to meet a growing demand by plastics processors for extruders that can be delivered quickly and at a more reasonable price, according to the company.

The TEX-αR (TEX- Alpha R) series of twin-screw extruders was one of the highlights of AMI Plastics World Expos North America in November in Cleveland.

“The main feature is a very short delivery time,” said JSW engineering manager Kentaro Komoda. “After four or five months, you can get a new extruder in your hands. Regarding specifications, JSW is good at the very high-end extruders — high torque, high specifications, and high durability, but our new customers’ trend is more for intermediate level. That’s why we introduced the global standard model in this market.”




**Kentaro Komoda, JSW engineering manager: “The main feature [of new extruder line] is a very short delivery time.”**

To facilitate fast delivery, JSW has standardized components and optimized its supply chain. The TEX-αR series is available in five sizes with screw diameters of 47 mm (TEX44αR), 58 mm (TEX54αR), 69 mm (TEX65αR), 82.5 mm (TEX77αR) and 96.5 mm (TEX90αR). All models come with wear-resistant barrels and screws and a Siemens PLC or equivalent, according to the company’s website.

The TEX-αR can be widely used for a variety of applications, including producing masterbatch or polymer

alloys; polyolefin, GF (glass-filled), filler, engineering plastics or general compounding; recycling; and coloring.

JSW has standardized barrel and screw configurations for each application, and it can provide customers with an appropriate extrusion system to achieve appropriate throughput and excellent kneading performances, according to the company. 

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Conair, Davis-Standard and Zumbach produced photoluminescent tubing at this demonstration cell at MD&M/Plastec West.

# ILLUMINATING COLLABORATION

## CONAIR, DAVIS-STANDARD, ZUMBACH TEAM UP ON EXTRUSION LINE

By Bruce Geiselman

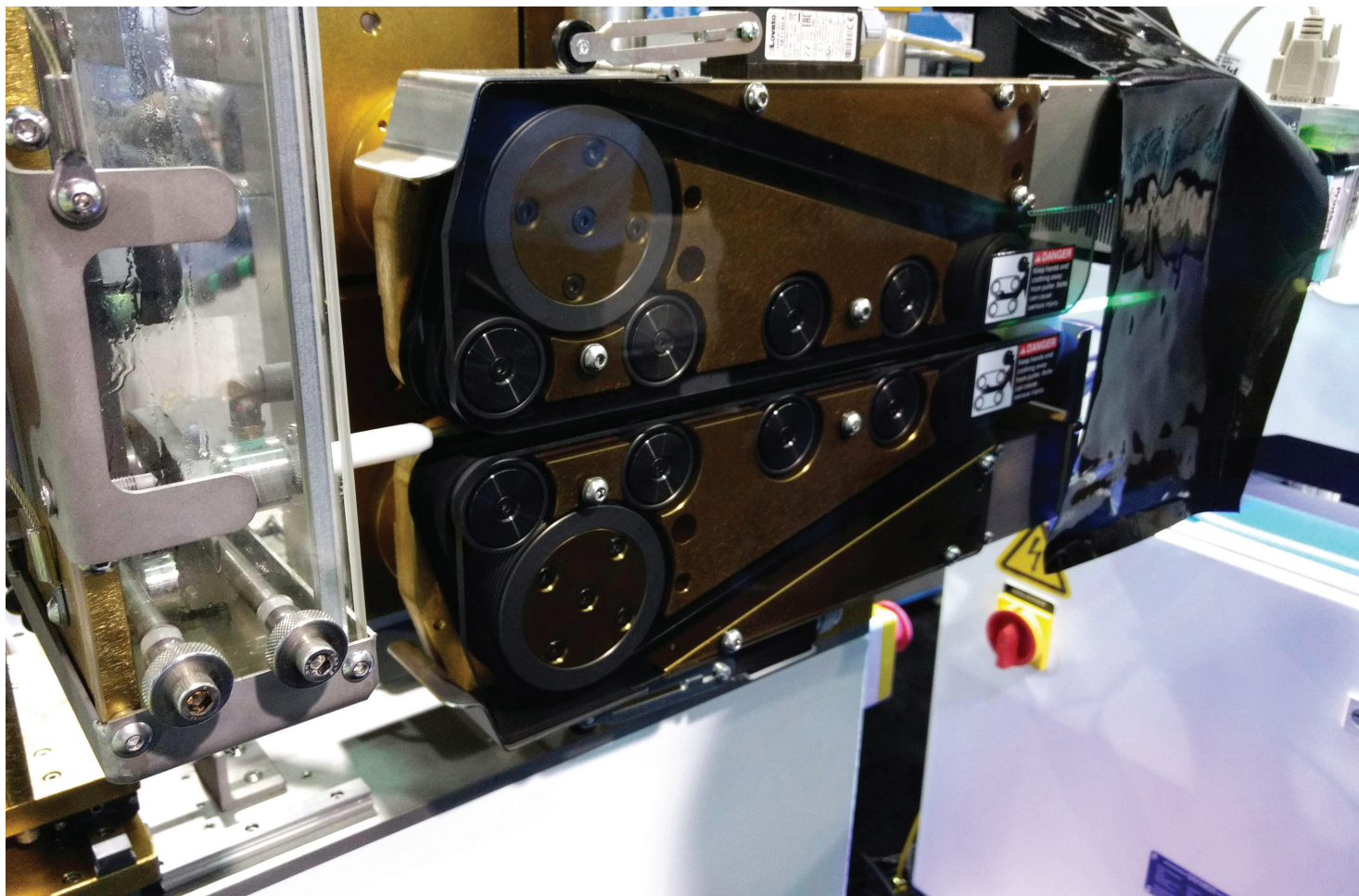
Photoluminescent tubing put collaboration in the spotlight, as Conair, Davis-Standard and Zumbach Electronics teamed up to exhibit their collective capabilities at MD&M/Plastec West.

In a demonstration in Conair's booth, equipment from the three companies produced tapered medical tubing made from a photoluminescent blend of thermoplastic elastomer. Attendees could join the tube segments into souvenir loops they were invited to take with them.

Davis-Standard provided the extrusion equipment; Conair, the auxiliary equipment; and Zumbach Electronics, the online gauging systems.

The photoluminescent segments were reminiscent of glow sticks popular as party novelties and sold at fairs and festivals. However, similar extrusion lines have serious applications.

"We're making what we call a bump or taper tube," said Kevin Dipollino, senior product manager of Davis-Standard's Pipe, Profile and Tubing Systems. "It's used in the medical field. Typically, the smaller end is in the body, and the larger end is for insertion into an instrument."



**Conair, Davis-Standard and Zumbach produced photoluminescent tubing at a demonstration cell, which included a Conair Medline 1-12 Puller/Cutter.**

Tapered tubing can be used for applications involving site-specific chemotherapy and with medical pumps. The photoluminescent quality was added as curiosity to attract visitors to the tradeshow booth.

Conair, Davis-Standard and Zumbach have worked together for about 30 years, company representatives said.

Conair provided a written description of various pieces of equipment used in the process and their functions. The company's description follows.

The tube extrusion process began upstream where virgin Teknor Medalist TPE was delivered through a Conair AL-2 Access Loader, while photoluminescent masterbatch arrived through a TLM Tube Loader. Both loaders were mounted atop a TrueBlend TB45 blender, which created the material mix. The blender rested on a new TBBS blender stand that featured bolted construction that is lower-cost, lighter-weight and easier to move than all-welded models.


A second TLM Tube Loader, mounted on the extruder hopper, drew the blended material from the hopper to the feed throat of a Davis-Standard 1-inch HPE (high-performance) medical extruder. A 10-inch HMI touch-screen control on a downstream Conair Medline 1-12 Puller/Cutter unit regulated the speed of the extrudate.

"Bump tube" software in the Medline puller control managed rapid changes in tube taper and sizing, and a Zumbach SPV-1 digital airbox produced air-pressure changes. The equipment together produced tubing that tapered from a maximum of 0.22-inch outer diameter to a minimum outer

diameter of 0.175 inch over a length of about 12 inches. After exiting the extruder, melt passed through an extrusion die and was skinned by a non-contact tube calibrator at the entrance to a Conair MedVac 238 single-pass vacuum sizing/cooling tank.

A 10-inch Medvac touch-screen control regulated the vacuum tank. A Conair Thermolator temperature control unit and a 2-ton Conair EP1A-02 portable air-cooled chiller managed the vacuum tank temperature. A Zumbach ultrasonic tube gauge near the entrance of the tank measured wall thickness of the hot tube, displaying real-time tube dimensions on an HMI and communicating the dimensions back to the extrusion control.

A Zumbach ODAC gauge checked the final cold outer diameter of the tapered tubing after it emerged from the cooling tank. The tubing then entered the Conair Medline 1-12 puller/cutter unit that can run at speeds from 2.5 feet to 250 feet per minute. A servo-controlled rotating-blade cutter produced the 12-inch tubing segments.

Cut tube segments moved onto a 6-foot-long Conair MTAC automated take-away conveyor for sorting of good segments from out-of-spec segments. A compressed-air sortation system blew the good segments off the side of the conveyor into a collection tray, while out-of-spec segments flowed off the end of the conveyor into a scrap bin. 

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## KraussMaffei updates ZE 28 BluePower extruder

**ZE 28 BLUEPOWER** KraussMaffei's well-established BluePower line of twin-screw extruders is known for its energy efficiency. Responding to the requirements of its customers, KraussMaffei has updated the design of its ZE 28 BP extruder, which can be used for small-volume production or laboratory lines. It has a free volume outer-diameter-to-inner diameter (OD/ID) ratio of 1.65, an L:D ratio ranging from 32:1 to 64:1, and can add up to three side feeders.

**WHAT'S NEW?** The updated ZE 28 BluePower, which debuted at Fakuma. New features include an improved head design that offers better protection of electrical parts and simplifies cleaning, as well as a separated control cabinet that improves protection of the electrical equipment. The standard version also adds two more optional positions for the operator panel, allowing the machine to be operated from the left or right side.

**BENEFITS** A more attractive price and shorter delivery times. The machine is equipped with KraussMaffei's pioneer processControl HMI software, which can provide step-by-step instructions for procedures such as starting the produc-



tion line or shutting it down. In addition, common upstream and downstream systems can be integrated into the new control system.

*KraussMaffei Corp.,  
Florence, Ky., 859-283-0200,  
[www.kraussmaffei.com](http://www.kraussmaffei.com)*

## Coperion extruder has more power, torque

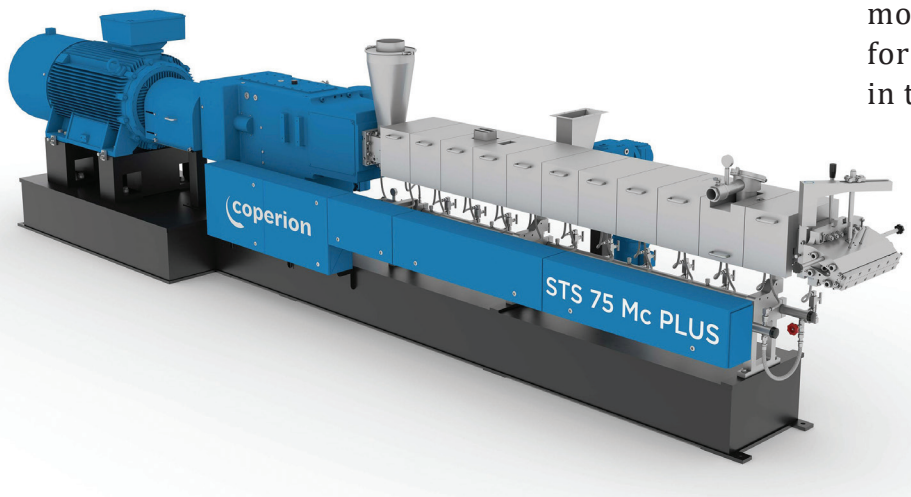
**STS 75 MC PLUS** This twin-screw extruder builds upon the company's STS extruder line. It can be used for a number of applications, including recycling; filling and reinforcing of engineering plastics; alloying and filling of polyolefins and thermoplastic elastomers; coloring of polyolefins and engineering plastics; production of masterbatches mixed with additives such as pigments, flame retardants and fillers; and compounding of materials for the production

of cables, such as PVC, halogen-free flame retardants and high-density crosslinked PE. The extruder's process section has heating cartridges that efficiently generate heat exactly where it is needed.

**WHAT'S NEW?** The extruder, introduced in April, which compared with earlier extruders in the STS lines, features an increase in specific torque, from 11.3 Newton metres per cubic centimeters (Nm/cm<sup>3</sup>) to 13.6 Nm/cm<sup>3</sup>. It has a more powerful motor and a gearbox designed specifically for high torque. The machine achieves a higher fill level in the process section, which improves mixing behavior and compound quality, and reduces shear stress and melt temperature.

**BENEFITS** Up to 20 percent more throughput than other STS extruders, with extremely gentle handling that results in better product quality.

*Coperion Corp.,  
Sewell, N.J., 856-256-3175,  
[www.coperion.com](http://www.coperion.com)*



# Redesigned Leistritz extruder rated for higher temps

**ZSE-12** This Leistritz twin-screw extruder is designed for continuous processing of pharmaceutical products, such as transdermals, implants and polymer-encased pharmaceuticals, in low throughputs and small batches. It features modular stainless steel barrels and screws on splined shafts, and its process section can be configured for liquid injection and multi-stage devolatilization.

**WHAT'S NEW?** New design elements, including a patented micro-plunger feeder, with the ability to perform at higher temperatures. Originally, the extruder, rated for a maximum temperature of 482 degrees Fahrenheit, had a clamshell barrel design and no plunger feeder. Now, it features a modular barrel design and can handle a top temperature of 752 degrees Fahrenheit.

**BENEFITS** Continuous processing of batches as small as 50 grams up to 2.2 pounds an hour. To facilitate starve-feeding, the feed screw elements are designed to convey materials at a higher rate than is being delivered by the micro-plunger. The micro-plunger meters small amounts of material in virtually any form with near-full utilization of the batch.



*Leistritz Extrusion, Branchburg, N.J., 908-685-2333,  
[www.extruders.leistritz.com/en/start](http://www.extruders.leistritz.com/en/start)*

# Control system integrates entire production line

**SG-75** This Milacron extruder was one of the highlights for the company at NPE. The SG—or single-grooved—series of extruders is designed to provide a consistent homogeneous

melt for producing PE and PP pipes. Other components in the static NPE display will include a new Milacron-designed PH 250 die head, a vacuum calibration tank from Sandern, an Inoex Warp Gauge, and a puller and cutter from Sica.



**WHAT'S NEW?** An upgraded tablet pendant control, based on Milacron's Mosaic+ controller system, which the company is introducing at NPE. The as-yet unnamed control also will be available for Milacron's twin-screw extruders. Customers will be able to order extruders with the new control, which will be available later this year.

**BENEFITS** Full production line integration, including upstream and downstream equipment, via the new control. Users of the control will have access to web-based programming and configurability of screens, with other features to be introduced in the future. The display at NPE showcased Milacron's expansion into new offerings, including offering integrated solutions for full production lines.

*Milacron LLC,  
Batavia, Ohio, 513-536-2000, [www.milacron.com](http://www.milacron.com)*

# Conair launches ProfileMaster equipment line

**PROFILEMASTER** Conair's line of downstream profile extrusion equipment for small to large profiles includes calibration and cooling tables, a wide selection of haul-offs and cutting units, as well as tilting tables. ProfileMaster calibration tables are available in four lengths from 15 to 38 feet and in single- or dual-line configurations to accommodate a range of profile sizes and cooling requirements. Tables offer sturdy steel construction, with stainless steel used on the mounting plate, all wetted surfaces and on both ends. They feature multiple 7.5-hp vacuum pumps. Haul-off (puller) and cutting unit options

include single- or dual-line configurations and combination haul-off/cutter units. Pneumatically operated profile-tilting tables synchronize with extruder and haul-off line speed to receive and automatically tip finished profile extrusion segments into stacks for easy removal, packaging, shipment or storage. A range of tilting table sizes accommodates profiles up to 20 feet in length.

**WHAT'S NEW?** The ProfileMaster product line, which was introduced at NPE. Three years after the introduction of its PipeMaster line of downstream equipment, ProfileMaster represents Conair's first complete downstream profile extrusion product line.

**BENEFITS** Competitive, quality equipment sophisticated enough to deliver precision and productivity. Conair can also provide not only the equipment, but extrusion process development, service and technical support.



*Conair Group,  
Cranberry Township, Pa., 724-584-5500,  
[www.conairgroup.com](http://www.conairgroup.com)*

# Pixargus system inspects tubes, hoses, cables

**ALLROUNDIA DUALVISION (DV)** Featuring LED lighting and optical sensors that can capture 4 million pixels, this four-camera Pixargus surface-inspection system measures the diameter, ovality and contours of tubes, hoses and cables. The in-line, easy-to-set-up system can inspect matte, glossy and even black, translucent or semi-transparent surfaces. It is currently available for round products with diameters of up to around 1.5

inches, but Pixargus plans to soon expand its offerings to cover diameters of up to around 2.5 inches and 4.3 inches.

**WHAT'S NEW?** An upgraded version, thanks to additional hardware and software options developed last year. The company now offers as options the ability to connect with peripheral devices, as well as a large monitor — instead of the standard 10-inch screen — for better evaluation of defects. New lighting ensures that the field of vision and the measuring field are always perfectly lit.

**BENEFITS** Real-time gapless 360-degree diameter measurement, resulting in inspections covering 100 percent of profile surfaces. According to Pixargus, recent upgrades have optimized flaw detection. Users now can repeatedly view short video replays of defects to better analyze them, and with the optional monitor, view renderings of defects with millimeter precision. With the Industry 4.0-compatible AllRoundDia DV, users can detect defects as small as 0.5mm, including fissures, inclusions, flecks, bubbles, cracks, holes, or missing sheathing.



*Pixargus Inc., Cincinnati, 513-860-0460,  
[www.pixargus.com](http://www.pixargus.com)*

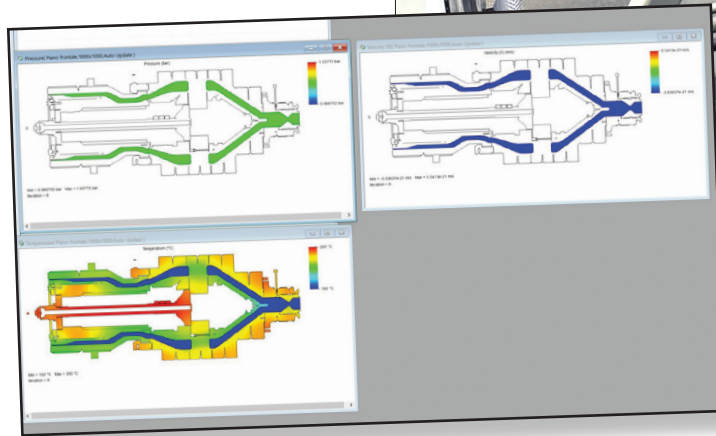
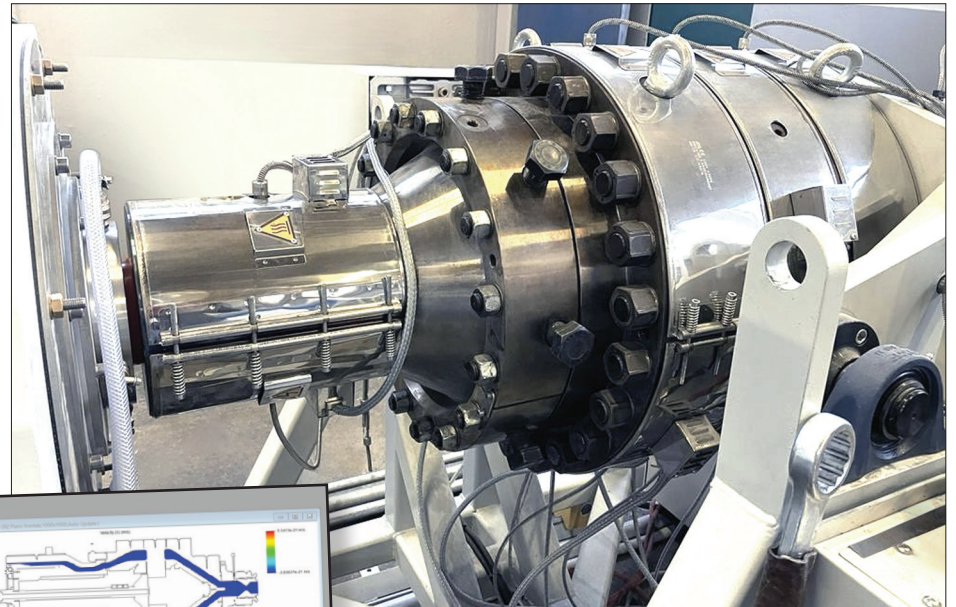


# Bausano pipe head is tailor-made for PVC

**PVC PIPE HEAD** This multi-diameter head for producing PVC pipe, made by Bausano, Torino, Italy, is made of C45 carbon steel, and is both compact and modular, with chrome plating on surfaces that contact the flowing material. The company designed the pipe head to minimize dwell times and damage to the PVC, which can degrade at temperatures as low as 356 degrees Fahrenheit — which is close to its melting temperature. Mercer Process Equipment and IMS Tri Mechanical represent Bausano in the North America.

**WHAT'S NEW?** The pipe head, which Bausano displayed at NPE on an MD 92/30 Nextmover extruder.

**BENEFITS** Production flexibility, parameter control and reduced set-up times. The pipe head helps processors deliver a high-variety/low production product mix without compromising quality of the final product. It works for pipes ranging from 125mm to 400mm in diameter, alleviating the need for the complex fitting of components, recalibration and adjustments on the line — eliminating up to 83 hours per year of work not directly aimed at production. The



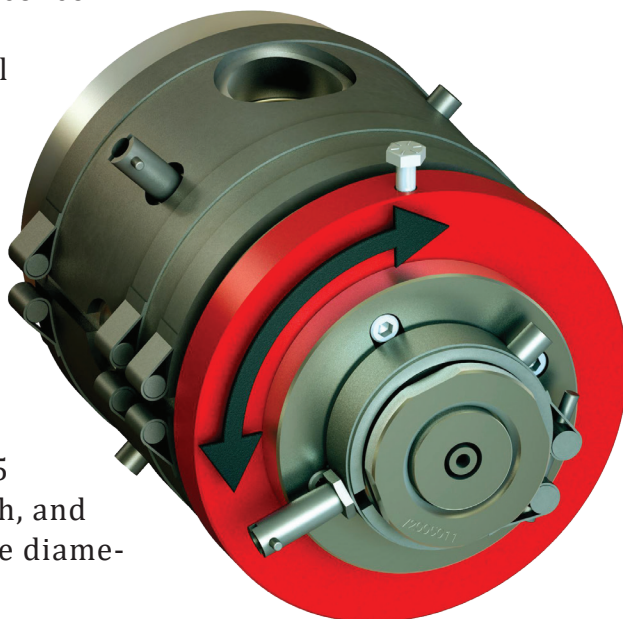
**Bausano has a new pipe head designed for processing PVC.**

head's modular design also facilitates cleaning and maintenance during assembly and disassembly.

*IMS Tri Mechanical LLC,  
Oswego, Ill., 630-636-7411, [www.imspt.com](http://www.imspt.com)*

# Guill crosshead ideal for thin-walled jacketing, tubing

**SINGLE-POINT CROSSHEAD** Guill Tool & Engineering's new single-point concentricity extrusion crosshead is ideal for the extrusion of thin-walled jacketing and tubing that requires precise inner and outer diameters. It is optimized for use with extruders measuring 0.5 inch and 0.75 inch, and a maximum inside diameter of 0.25 inch.



**WHAT'S NEW?** The single-point crosshead, which includes a patented cam-lock deflector.

**BENEFITS** Simple, precise concentricity adjustments. One adjustment bolt controls 360 degrees of adjustment, and the micro-fine screws provide adjustment of 0.008 inch or finer per revolution. The crosshead's cam-lock deflector allows for quick changeovers, with a residence time of 1 minute at a material flow rate of 0.5 pound per hour. The Guill single-point crosshead also offers great flexibility to its users, accepting both vacuum and micro-air accessories. Fluoropolymer designs are available upon request.

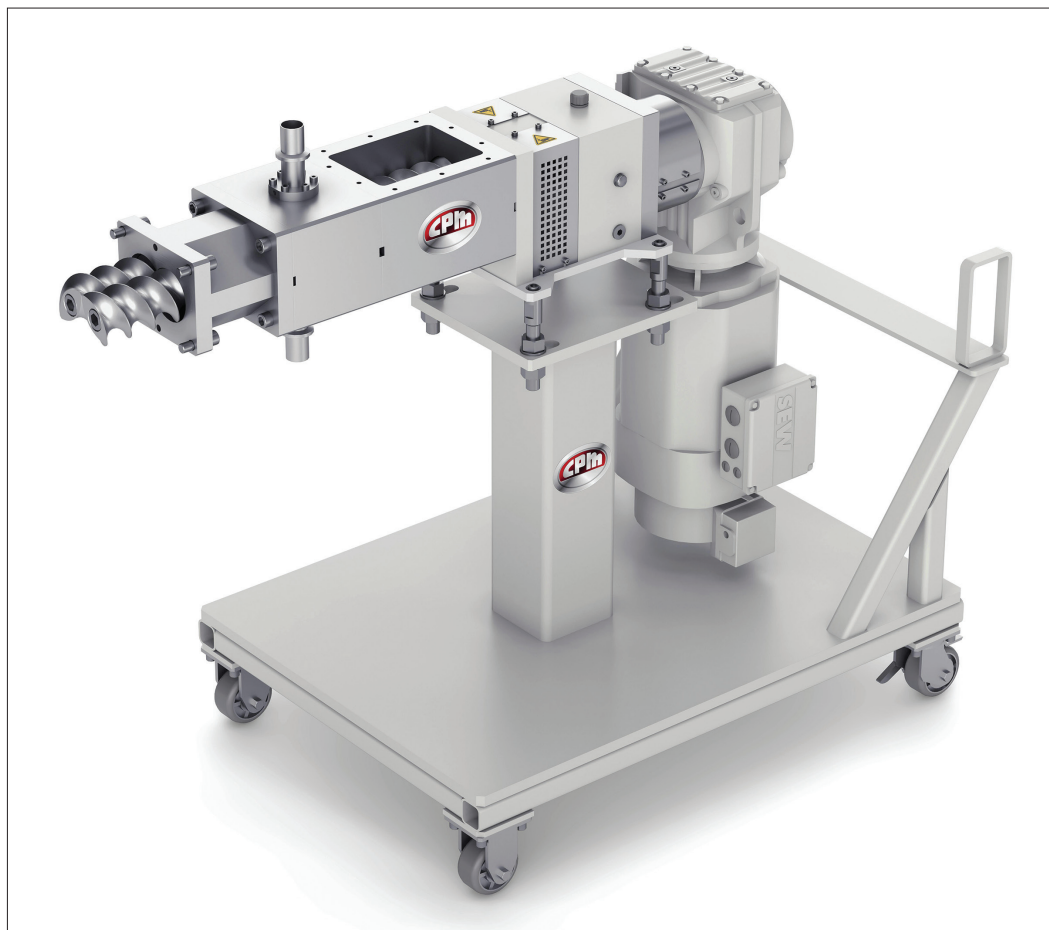
*Guill Tool & Engineering,  
West Warwick, R.I., 401-828-7600,  
[www.guill.com](http://www.guill.com)*

# CPM's sidefeeder improves efficiency of feeding

**HIGH OUTPUT SIDFEEDER** The CPM Group's newest side feeder allows processors to boost the amount of low-bulk-density fillers and materials introduced into extruders. The system is available with screw diameters from 25mm to 120mm. The CPM Group's U.S. affiliate is Century Extrusion.

**WHAT'S NEW?** A new feeder design that applies a vacuum on a microporous filter that removes air from the powder before it is fed into the extruder. The filter prevents any blockage of the vacuum unit by powder or particles, and the filter can be manually backflushed with compressed air. To achieve maximum efficiency, the vacuum level is adjusted according to the bulk density of the material.

**BENEFITS** Improved feeding efficiency for low-bulk-density materials including talc, magnesium and silica. If a processor using a traditional feeder can introduce 10 percent to 15 percent low-bulk-density filler in a particular operation, the new High Output Sidefeeder could result in up to a 50 percent loading, said one company official who addressed the new technology at NPE.



*Century Extrusion, Traverse City, Mich., 231-947-6400,  
[www.cpmextrusiongroup.com](http://www.cpmextrusiongroup.com)*

# ID Additives develops foaming agent for extrusion

**MICRO FINE CELL FOAMING AGENTS** The foaming agents in this line from iD Additives are formulated in micro pellets



for fine cellular structure and uniform distribution. They can be used with polyolefins, TPU, thermoplastic elastomers, thermoplastic polyolefins, PS and more, even high-temperature and engineering resins. The endothermic or exothermic foaming agents are pelletized in a carrier compound iD Additives calls iDPel.

**WHAT'S NEW?** An exothermic micro pellet foaming agent tailored for extrusion applications.

**BENEFITS** Better dispersion and consistency in the blend, with less mess than the more commonly used liquid foaming agents. The foaming agent is ideal for pipe, profile, tube and lumber extrusion applications that require a very fine cellular structure.

*iD Additives Inc.,  
La Grange, Ill., 708-588-0081,  
[www.idadditives.com](http://www.idadditives.com)*

# Fimic introduces SPA 190 large screw pump

**SPA** This line of screw pumps is an acronym for Screw Pump Antonio, named for Fimic CEO Antonio Canaia, who more than 20 years ago created the first automatic self-cleaning melt filter when he was a research and development specialist for the company. The SPA screw pumps allow easy transport of the plastic melt from the extruder to the filter without using gears. They are designed to address the challenges that arise during plastics recycling operations, which can damage regular gear pumps. Compatible with any single- or twin-screw extruder, they can stabilize the pressure of the material and maximize the productivity of the filter and extruder.

Vital Statistics	
SPA 190 dimensions	About 4.9 feet by 10.2 feet by 9.2 feet
Weight	About 9,260 pounds
RPM	180 rpm
Outlet pressure	Up to about 200 bar
Total installed power	About 110 kilowatts

**WHAT'S NEW?** The SPA 190, which Fimic calls the biggest screw pump in the market. Fimic introduced the SPA 190 in October 2023 at the Fakuma exhibition in Friedrichshafen, Germany.

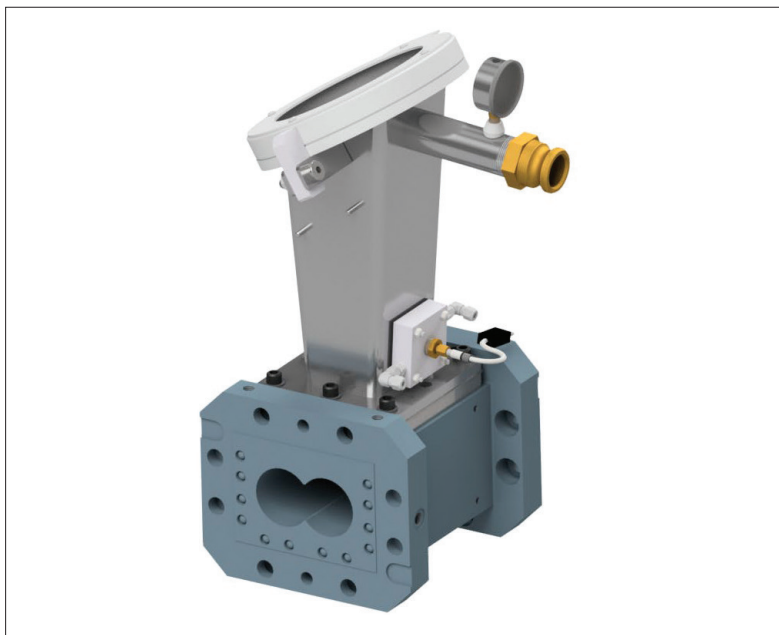
**BENEFITS** Ease of use and maintenance. The SPA screw pumps can be installed either before or after the filter, making them appropriate for applications requiring a double filtration step. In addition to recycling applications, the screw pumps are useful in situations that require increasing melt pressure or the regulation of pressure flow. The SPA screw pumps require neither maintenance, nor a safety filter for pump protection. Compared with regular gear pumps, SPA



screw pumps are less expensive to operate and more robust, according to Fimic.

*Fimic Srl, Carmignano di Brenta, Italy, 864-415-1639,  
[www.fimic.it](http://www.fimic.it)*

# Entek sensor warns of vent flow problems



**VENT FLOW SENSOR** Entek's Vent Flow Sensor technology warns operators of any potential problems with extruder vent flow.

**WHAT'S NEW?** Availability as an option on all Entek twin-screw extruders. Originally, the Vent Flow Sensor was available only on Entek's HT (high torque) extruders.

**BENEFITS** More-immediate warning of processing issues. If the sensor detects a potential problem with vent flow, operators have time to correct it before the issue becomes more serious. This reduces unplanned downtime and helps reduce safety issues including the risk of fire. It also makes vent flow cleaning easier.

*Entek Manufacturing,  
Lebanon, Ore., 541-259-1068, [www.entek.com](http://www.entek.com)*

# EXTRUSION LEVELS UP



## Additional Resources

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