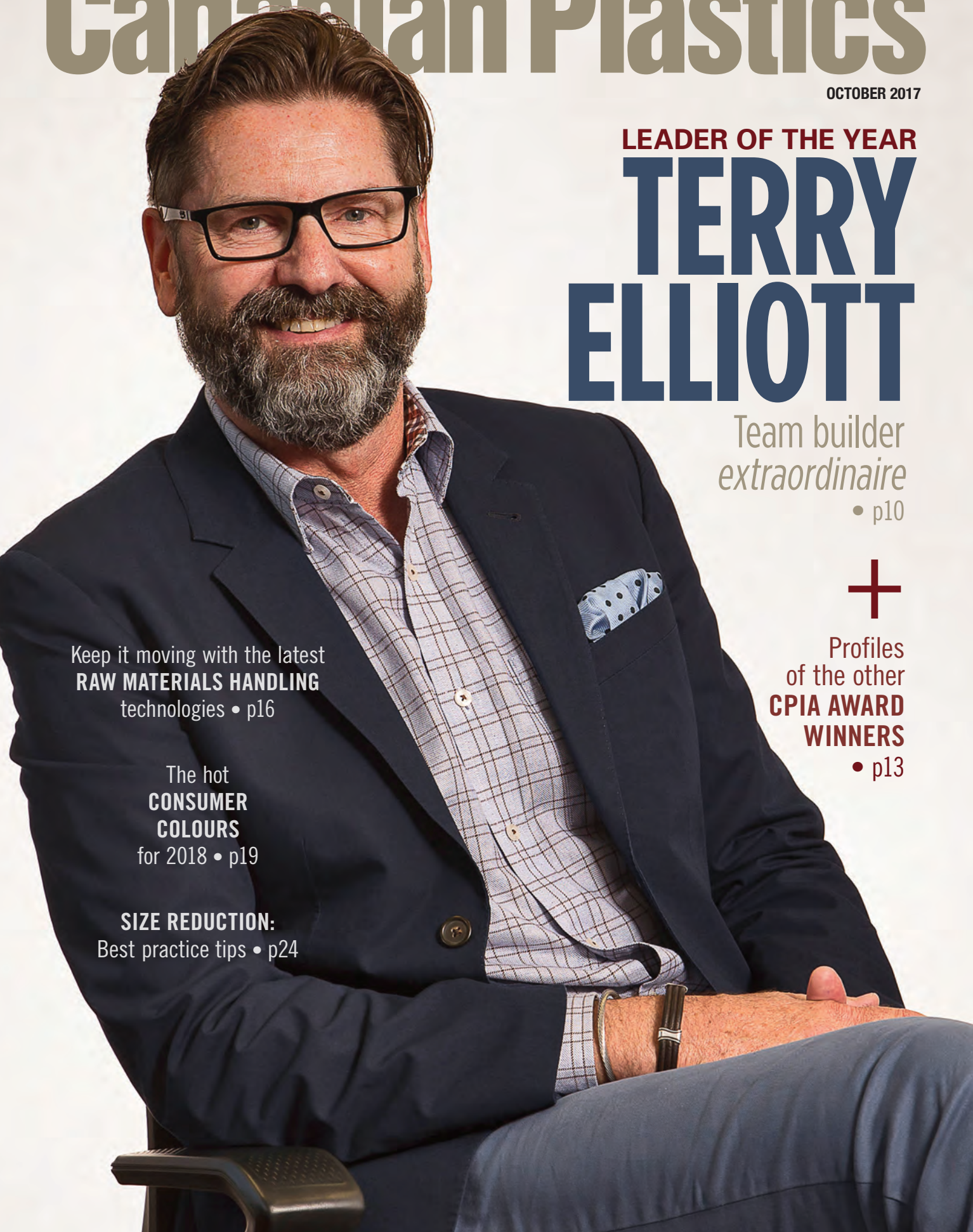
www.canplastics.com

Canadian Plastics

OCTOBER 2017



LEADER OF THE YEAR

TERRY ELLIOTT

Team builder *extraordinaire* • p10

+

Profiles of the other **CPIA AWARD WINNERS** • p13

Keep it moving with the latest **RAW MATERIALS HANDLING** technologies • p16

The hot **CONSUMER COLOURS** for 2018 • p19

SIZE REDUCTION: Best practice tips • p24

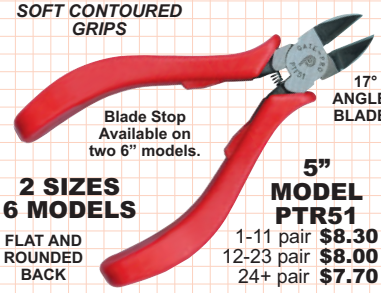
WE'RE NOT FOOLING!

28 MODELS!

OUR RED GRIP PREMIUM GATE CUTTERS ARE SUPERIOR QUALITY AT THE LOWEST PRICES!

5" & 6" GATE-PRO PREMIUM GATE CUTTERS

SOFT CONTOURED GRIPS



17° ANGLED BLADES

Blade Stop Available on two 6" models.

2 SIZES 6 MODELS

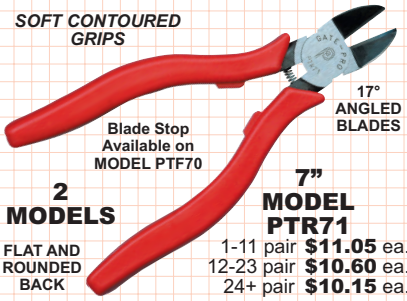
FLAT AND ROUNDED BACK

5" MODEL PTR51

1-11 pair **$8.30** ea.
12-23 pair **$8.00** ea.
24+ pair **$7.70** ea.

7" GATE-PRO PREMIUM GATE CUTTERS

SOFT CONTOURED GRIPS



17° ANGLED BLADES

Blade Stop Available on MODEL PTF70

2 MODELS

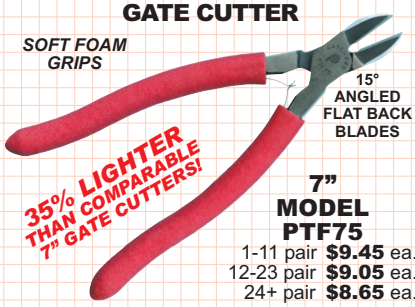
FLAT AND ROUNDED BACK

7" MODEL PTR71

1-11 pair **$11.05** ea.
12-23 pair **$10.60** ea.
24+ pair **$10.15** ea.

THE HEAVY DUTY LIGHTWEIGHT 7" GATE-PRO PREMIUM GATE CUTTER

SOFT FOAM GRIPS



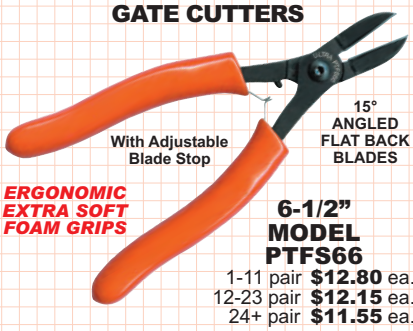
15° ANGLED FLAT BACK BLADES

35% LIGHTER THAN COMPARABLE 7" GATE CUTTERS!

7" MODEL PTF75

1-11 pair **$9.45** ea.
12-23 pair **$9.05** ea.
24+ pair **$8.65** ea.

6-1/2" & 8" ULTRA-PREMIUM GATE CUTTERS



With Adjustable Blade Stop

15° ANGLED FLAT BACK BLADES

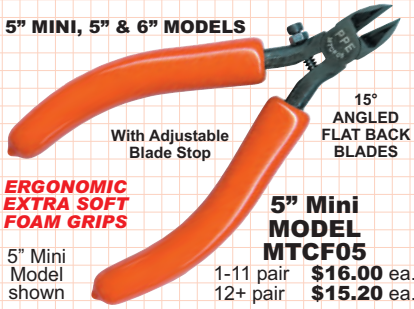
ERGONOMIC EXTRA SOFT FOAM GRIPS

6-1/2" MODEL PTFS66

1-11 pair **$12.80** ea.
12-23 pair **$12.15** ea.
24+ pair **$11.55** ea.

5" & 6" SUPER PREMIUM CARBIDE GATE CUTTERS

5" MINI, 5" & 6" MODELS



With Adjustable Blade Stop

15° ANGLED FLAT BACK BLADES

ERGONOMIC EXTRA SOFT FOAM GRIPS

5" Mini Model shown

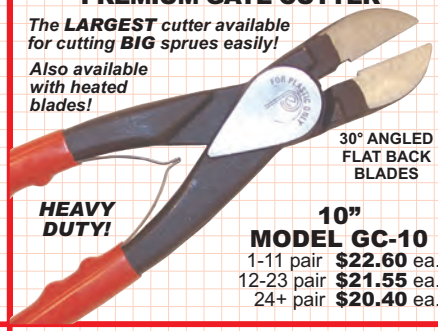
5" Mini MODEL MTCF05

1-11 pair **$16.00** ea.
12+ pair **$15.20** ea.

10" JUMBO GATE-PRO PREMIUM GATE CUTTER

*The **LARGEST** cutter available for cutting **BIG** sprues easily!*

Also available with heated blades!



30° ANGLED FLAT BACK BLADES

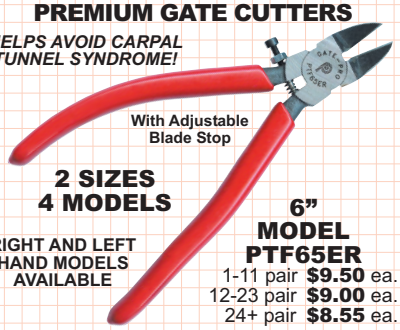
HEAVY DUTY!

10" MODEL GC-10

1-11 pair **$22.60** ea.
12-23 pair **$21.55** ea.
24+ pair **$20.40** ea.

6" & 7" GATE-PRO ERGONOMIC PREMIUM GATE CUTTERS

HELPS AVOID CARPAL TUNNEL SYNDROME!



With Adjustable Blade Stop

2 SIZES 4 MODELS

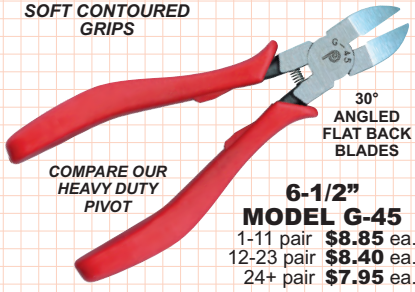
RIGHT AND LEFT HAND MODELS AVAILABLE

6" MODEL PTF65ER

1-11 pair **$9.50** ea.
12-23 pair **$9.00** ea.
24+ pair **$8.55** ea.

6-1/2" 30° GATE-PRO PREMIUM GATE CUTTER

SOFT CONTOURED GRIPS



30° ANGLED FLAT BACK BLADES

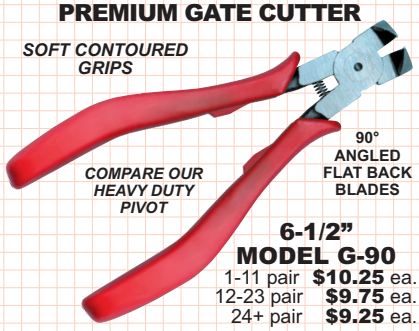
COMPARE OUR HEAVY DUTY PIVOT

6-1/2" MODEL G-45

1-11 pair **$8.85** ea.
12-23 pair **$8.40** ea.
24+ pair **$7.95** ea.

6-1/2" 90° GATE-PRO PREMIUM GATE CUTTER

SOFT CONTOURED GRIPS



90° ANGLED FLAT BACK BLADES

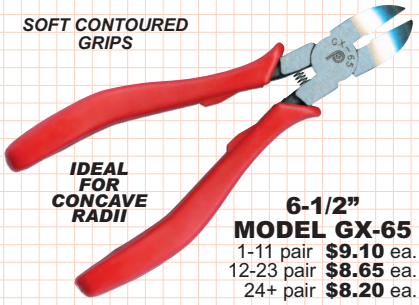
COMPARE OUR HEAVY DUTY PIVOT

6-1/2" MODEL G-90

1-11 pair **$10.25** ea.
12-23 pair **$9.75** ea.
24+ pair **$9.25** ea.

6-1/2" CONVEX GATE-PRO PREMIUM GATE CUTTER

SOFT CONTOURED GRIPS



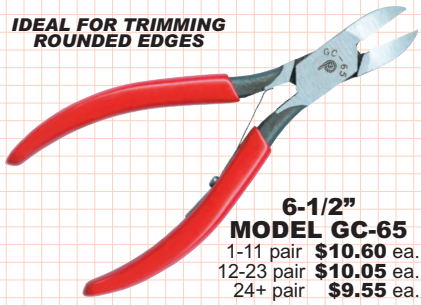
IDEAL FOR CONCAVE RADII

6-1/2" MODEL GX-65

1-11 pair **$9.10** ea.
12-23 pair **$8.65** ea.
24+ pair **$8.20** ea.

6-1/2" CONCAVE GATE-PRO PREMIUM GATE CUTTER

IDEAL FOR TRIMMING ROUNDED EDGES



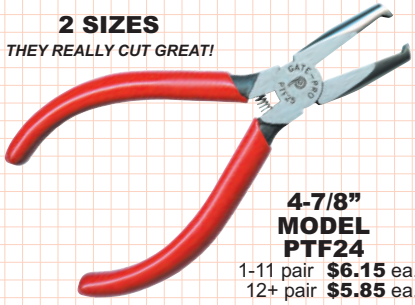
6-1/2" MODEL GC-65

1-11 pair **$10.60** ea.
12-23 pair **$10.05** ea.
24+ pair **$9.55** ea.

END NIPPER GATE-PRO PREMIUM GATE CUTTERS

2 SIZES

THEY REALLY CUT GREAT!



4-7/8" MODEL PTF24

1-11 pair **$6.15** ea.
12+ pair **$5.85** ea.

LOWEST PRICES!

PLASTIC PROCESS EQUIPMENT, INC. www.ppe.com • sales@ppe.com

PPE WEST 6385 Montessouri Street, Las Vegas, Nevada 89113
702-433-6385 • 800-258-8877 • Fax: 702-433-6388

PPE SOUTH 11218 Challenger Avenue, Odessa, Florida 33556
727-834-8888 • 800-282-6783 • Fax: 727-834-8873

8303 CORPORATE PARK DRIVE, MACEDONIA (Cleveland), OHIO 44056, USA
216-367-7000 • Toll Free: 800-321-0562 • Fax: 216-367-7022 • Order Fax: 800-223-8305

Toll Free: USA, Canada & Mexico **800-362-0706**

Canadian Plastics

OCTOBER 2017
VOLUME 76 • NUMBER 5

Toronto-based blow molder and injection molder Scepter is in the news now because its president, Terry Elliott, is the CPIA's Leader of the Year. Go back 50 years, however, and Scepter was in the news for becoming the first plastics company to win the Ontario government's "A for Achievement" award. According to Stanley Randall, Ontario's Minister of Economics and Development, who presented the award — and as reported in the August 1967 issue of *Canadian Plastics* — Scepter was selected for "its outstanding contribution to the economy through increased plant capacity, employment, export sales, and R&D work."

Number of the month:

6%*

* Increase in shipments of primary plastics equipment in North America for reporting companies in Q2 2017 over Q2 2016.
(See pg. 8)

Cover photo and pg. 3 photo of Terry Elliott: Sandra Strangemore

in every issue

contents

cover story

features

Visit us at www.canplastics.com

Minimum wage hike will cause maximum harm

As a glass-half-full optimist, I'd love to write more upbeat editorials. Problem is, the troubles that afflict Canada's industrial sector keep multiplying, especially in Ontario. The latest is Ontario's plan to hike the minimum wage to $15 an hour by 2019 — a whopping 32 per cent increase over the next 18 months. If the hike goes through — and the full 32 per cent will only occur if Premier Kathleen Wynne remains in power — I predict we'll see a textbook example of the law of unintended consequences. And they won't be pretty.

First, the policy will make it harder for Ontario's young and less-skilled minimum wage earners to find work. Why? Because — as Ben Eisen, director of the Fraser Institute's Ontario Prosperity Initiative, pointed out in a recent policy paper — it runs the risk of increasing the wage floor beyond what the Ontario market can reasonably bear. "As the minimum wage increases relative to the median wage (the midpoint in the hourly wage where half of workers earn above this point and half below), it affects more and more workers and the negative economic effects grow more severe," Eisen wrote. The first unintended consequence, then, will be to deprive these young workers of a stepping stone into work skills and marketability by pricing them out of the labour market.

The second unintended consequence will be to threaten the jobs that some minimum wage workers already have. Since a government policy that mandates an increased minimum wage does not also increase employers' ability to pay — least of all in Ontario, where the manufacturing sector is already struggling with carbon taxes and rising energy costs — businesses in trouble will have to compensate by making do with fewer employees. After all, if a person's labour can't produce more than $15 an hour of value for the employer, that person becomes a net operating loss. So instead of "protecting vulnerable workers," as the Wynne government intends, the number of vulnerable workers could actually *increase* as employers are forced to downsize. Which is why the province's economic watchdog, the Financial Accountability Office, estimates that more than 50,000 people could lose their jobs due to the minimum wage increase.

A $15 minimum wage will also make Ontario less competitive relative to key U.S. states against whom it vies for investment. "Pennsylvania, Indiana, Illinois, New York, Ohio, and Michigan all have state-wide minimum wages that are either close to or well below 50 per cent of their median wage levels," Eisen wrote. "But with a $15 minimum wage, Ontario is set to skyrocket to 64 per cent of the province's median wage, far above the norms in those states."

As a result, expect American businesses to write off Ontario as a place to set up shop, taking advantage of the now lower wage costs in their home states instead. Back in Ontario, meanwhile, small and mid-sized businesses may be forced to close their doors if they can't be profitable under the new regulations, since other workers earning at or over the $15 minimum will now require salary increases to stay above their lower income coworkers. If you're keeping score, these are unintended consequences three and four.

The only possible good news? When these unintended consequences occur — and they will — it may have one final, ironic unintended consequence: a backlash against the government led by the same young and minimum wage workers whose votes they were trying to buy in the first place.

Mark Stephen, editor
mstephen@canplastics.com

Canadian Plastics magazine reports on and interprets developments in plastics markets and technologies worldwide for plastics processors, moldmakers and end-users based in Canada.

www.canplastics.com

EDITOR
Mark Stephen
416-510-5110 Fax: 416-510-5134
mstephen@canplastics.com

NATIONAL ACCOUNT MANAGER
Catherine Connolly
289-921-6520 cconnolly@annexweb.com

ACCOUNT MANAGER
Joel Verbrugge
226-931-1334 jverbrugge@annexweb.com

ART DIRECTOR
Andrea M. Smith

ACCOUNT COORDINATOR
Tracey Hanson
416-510-6762 thanson@annexbusinessmedia.com

CIRCULATION MANAGER
Anita Madden
416-442-5600 ext.3596 Fax: 416-510-6875
amadden@annexbusinessmedia.com

VICE PRESIDENT/EXECUTIVE PUBLISHER
Tim Dimopolous
416-510-5100
tdimopoulos@annexweb.com

COO
Ted Markle
tmarkle@annexweb.com

PRESIDENT & CEO
Mike Fredericks

ANNEX BUSINESS MEDIA
80 Valleybrook Drive, Toronto ON, M3B 2S9
416-442-5600, Fax: 416-510-5134

PRINTED IN CANADA
ISSN 008-4778 (Print)
ISSN 1923-3671 (Online)
Publication Mail Agreement #40065710

CIRCULATION
email: rhtava@annexbizmedia.com
Tel: 416.442.5600, ext 3555
Fax: 416.510.5170
Mail: 80 Valleybrook Drive, Toronto, ON M3B 2S9

2017 SUBSCRIPTION RATES

6 issues Canadian Plastics, plus Dec. 2018 Buyer's Guide:
CANADA: 1 Year $73.50 plus applicable taxes;
2 Years $117.95+ taxes; single copy $10.00+ taxes.
USA: US$128.95/year **FOREIGN:** US$147.00/year
Buyers' Guide only:
CANADA: $103.00 plus applicable taxes and $5.00 shipping

Occasionally, Canadian Plastics will mail information on behalf of industry related groups whose products and services we believe may be of interest to you. If you prefer not to receive this information, please contact our circulation department in any of the four ways listed above.

Annex Privacy Office privacy@annexbizmedia.com • Tel: 800-668-2374

MEMBER: Magazine Canada, Canadian Plastics Industry Association

We acknowledge the (financial) support of the Government of Canada

Bulletproof cyber security for plastics processors

From an IT perspective, cyber security might just be the new War on Terror. And in the Industry 4.0 era, with the networking of injection molding machines, robots, and peripheral equipment proceeding at lightning speed, there's a real risk of plant security being compromised by some of the bad actors out there — like the unknown hackers who brought us the worldwide WannaCry ransomware attack in May, for example.

Collaborating with a leading cyber security company, Austria-based processing equipment maker Wittmann Group has developed a security concept for networked Wittmann 4.0 workcells that's designed to cut a cyberattack off at the knees.

Unlike conventional firewalls, the Wittmann 4.0 firewall is tailored to the specific purpose of each device and function of the workcell, making it especially restrictive. With the exception of the OPC protocol, which is used for communication with an MES or ERP system via OPC UA, all communication ports are closed by default and can only be opened from within the workcell, and only by the operator performing specific, intentional steps.

Wittmann's injection molding machines with B8 controllers, for example, can create an external connection via TeamViewer to make remote servicing functionality available, if desired. Having established a session, remote servicing allows a Wittmann office direct access to the authorized injection molding machine for the purpose of analysis. Manual authorization can also be issued for the company's QuickLook app, allowing an Android or iOS mobile device within the company's network to view the machine status of Wittmann injection molding machines with B6 and B8 controls and Wittmann robots with R8.3 or R9 controls.

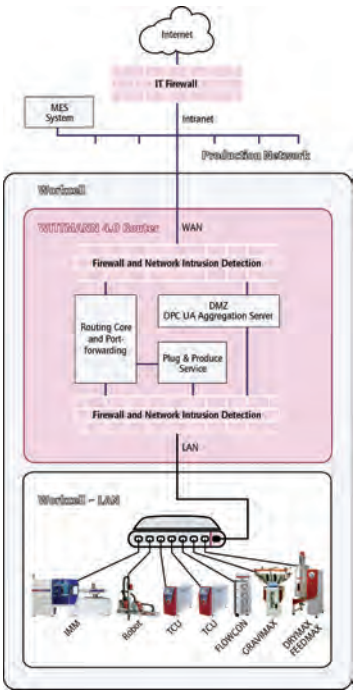


Photo Credit: Wittmann Battenfeld

The Wittmann 4.0 system architecture also protects production systems against DoS (Denial of Service) attacks, which typically attempt to bombard the remote station with so many requests that it shuts down. If a DoS attack occurs on the Wittmann 4.0 architecture, only the router, and therefore only the communications with the MES/ERP system, could be compromised; the processing machines and other equipment within the affected Wittmann 4.0 workcell will not be interfered with.

"The WannaCry ransomware, which caused some well-known companies to suffer unplanned production shutdowns, really woke up plastics processors to the issue of security for cyber-physical systems and facilities," said Johannes Rella, head of Wittmann Group's software development department. "The cyber security company we commissioned conducted numerous simulated attacks using a variety of different threat scenarios; Wittmann 4.0 was robust in all of them and enabled production to continue uninterrupted within the entire workcell."

Score it as a win for the good guys in the war on cyber terror. **CPL**

Kal Polymers is growing strong after 25 years

Not all parties are created equal. A New Year's Eve celebration will always be more enjoyable, for example, than a going-away party before someone starts a 10-year prison term. By any standard, however, Kal Polymers' 25th anniversary bash was a big hit. Held in Mississauga, Ont. on a Saturday night in late-August, more than 450 guests showed up to dance to a live band, eat, drink, network, and listen to speeches by company employees, customers, and local political dignitaries. And it wasn't until 2:00 am on Sunday that the last partygoers left for home.

For the Mississauga-based, family-owned company, the milestone event was a well-earned opportunity to celebrate a classic success story. The firm was founded in 1992 as Kal Trading by husband-and-wife team Gobi and Kelly Saha as a buyer and seller of post-industrial plastic scrap. "My background was in the packaging sector, which is where I first realized how much plastic material was being wasted by heading for landfill," said company president Gobi Saha. "I wanted to give this material a second life by finding suitable applications. Our emphasis was on automotive at first, which generates large quantities of waste."

The company quickly expanded from the couple's garage into a rented warehouse and — in 2002 — settled into its current location: a 135,000-square-foot plant and warehouse formerly owned by Rubbermaid Newell Co. Along the way it also grew from 5 employees to its present workforce of 80; and most importantly, also expanded its initial mandate. "We gradually grew from being a resin distributor into a compounder with the capability to process pellets from auto parts scrap, packaging films, sheets, trims, fluff, fines and powder, purge with paint, print, barrier, lamination, and co-extruded and coated parts," Saha said. "We buy post-industrial plastic scrap through long-term scrap management programs and spot buys and turn it into compounded pellets, and handle a wide range of materials, including PP, TPO, PE, PC, PC/ABS, and ABS. Our most commonly compounded material is PP, which we produce in natural, white, grey, and black, whereas most competitors offer it only in black. We are also providing custom compounds based on specific applications, and achieved our ISO 9001 certification last year."

Gobi Saha (left) and Kal Polymers purchasing manager Yatin Dalvi on the shop floor.

NEW NAME, NEW DIRECTION

This dramatic shift in focus led to the renaming of the firm as Kal Polymers two years ago. At approximately the same time, the company installed a multimillion-dollar system of processing equipment that removes paint and cross-linking agents from painted auto parts — discarded automobile bumpers in particular — and turns it into near virgin-quality regrind suitable for almost any plastics application. "Paint removal is traditionally done through liquid separation, which is messy and involves adding something that's touching your product, which then has to be removed," Saha said. "Our seven-part machinery line is a dry process that relies on friction to strip off the paint. A dry process doesn't add anything — it just subtracts the paint — and brings the mechanical properties much closer to the original state. Our system — which can process any polymer, as well as barrier materials and cross-linked foam materials — removes not only all of the paint, but also metalizing and volatiles. Customers have the potential to use as much as 100 per cent of the recovered material."

An even newer machinery line de-metalizes BOPP film and auto parts. "We compound this material and supply it to a company that makes totes for Home Depot," Saha said. "This line is now sold out, and another compounding line will be added before the end of the year, giving us an additional capacity of 20 million lbs. This will also give us an opportunity for new product development; new projects in the pipeline are PP/PET substrates, HIPS/PET sheet, and several others."

Kal Polymers also took a big step towards a leaner compounding process recently by installing a new Epicor ERP system for business management and manufacturing. "Our previous ERP system was a home-grown combination of different programs," Saha said. "The Epicore program will allow us to really streamline our operations."

As it hits the quarter-century mark, Kal Polymers clearly believes its best days lie ahead. "We are still involved in trading, but our future is in compounding, which is what we're becoming known for," Saha said. "Our goal is to take in scrap from all over North America and resupply it to North America. Our mandate is to find a second life for all plastic waste."

If it keeps growing at this rate, Kal Polymers' 30th anniversary party should be epic. **CPL**

Familiar faces behind new machinery maker US Extruders

There's a new extruder manufacturer in town, formed by several former employees of extrusion equipment maker American Kuhne Inc.

US Extruders Inc., headquartered in Westerly, R.I., is a new startup founded by industry veterans Bill Kramer and Dan Schilke. Kramer, one of the leading extruder and barrier screw designers in the industry, formed Ashaway, R.I.-based American Kuhne in 1997 with the late Ed Steward in partnership with Kuhne GmbH. Schilke, meanwhile, is American Kuhne's former managing director.

American Kuhne was acquired by Graham Engineering Corp. in 2012, and an impetus for creating US Extruders, Kramer said, was that he and some other American Kuhne personnel were less than thrilled when, in 2015, Graham moved the business to York, Pa., an uncommutable 530 kms away from Ashaway. "A group of us who decided not to relocate also decided that, since we know how to design and build extruders, forming a new company was viable," Kramer said. "Before we did so, however, we had to be sure there was a need and a market for a new extruder maker." The answer was yes. "We believe there is an opportunity for a new supplier that truly pays attention to the needs of the customers, as opposed to answering to a corporate agenda," he said.

Top: Bill Kramer (left) and Dan Schilke.
Bottom: A 2.5 inch extruder model.
Photos courtesy of US Extruders Inc.

In addition to Kramer and Schilke, the employee-owned US Extruders boasts a number of other extrusion professionals, including screw designer and process engineer Kevin Slusarz, extrusion engineer Jeff Lawton, salesman Doug Johnson, purchasing and inventory specialist Mike Perr, and communications professional Eric Adair.

CUSTOMER SERVICE IS KING

According to Kramer — who serves as the company's president — US Extruders wants to develop a new generation of highly engineered, custom single-screw extrusion systems. Which is the easy part, he added. "Extruders are straightforward machines; we have new design features that we think make sense, but we realize we can't base a business on feature design," he said. "The real difference between machinery suppliers boils down to customer service. When a molding company buys an extruder, it's usually part of a bigger upgrade it's going through, which means it has scheduling commitments and relies on the extruder supplier to deliver the machine on time and on price. Our goal isn't just to sell machines; we'll also be making lasting relationships with our customers and solving their extrusion needs with integrity, quality, and American-made machinery."

The company has crafted what Kramer describes as a "plain language guarantee" that delivers to the customer a promise to "build the machine you want, on time, with the performance you expect, and backed by our full support." The US Extruder total guarantee includes a five-year warranty on the machine supported by comprehensive service, free startup and training, and lifetime process support, Kramer said.

US Extruders is hitting the ground running with an extensive customer support structure, extruder repair and restoration services, and a manufacturing and laboratory facility. "The laboratory facility will be equipped for screw design demonstrations, running lab trials, and complete extruder wet tests," Kramer said. "We will employ a straightforward order process from the initial specifications/needs analysis meeting through the design engineering and manufacturing to the final delivery and process support."

All screws are designed in-house to work best with the machine and specific process, which includes blow molding, blown and cast film, compounding, extrusion coating, medical, pipe and profile, reclaim, sheet, tubing, and wire and cable. Extruders will be available with barrel diameters ranging from 1 inch to 8 inches.

US Extruders doesn't yet have Canadian sales representation. "Canada is an important extrusion market, with a lot of film and pipe and tubing makers," Kramer said. "Finding a rep is on our to-do list, but for the time being we will service the Canadian market directly."

US Extruders has already secured booth space at the NPE trade show Orlando, Fla, in May 2018, where it will exhibit on the first floor of the south hall at booth S32133. So if you're planning to attend, drop by and see the familiar faces behind the newest extruder maker. **CPL**

Plastics machinery shipments were up in Q2 2017

North American shipments of plastics machinery registered a year-over-year (y/y) gain in Q2 of 2017, reversing a trend of three consecutive quarterly declines, a new report said.

According to statistics compiled and reported by the Plastics Industry Association's Committee on Equipment Statistics (CES), the preliminary estimate for shipments of primary plastics equipment (injection molding, extrusion, and blow molding equipment) for reporting companies totalled US$335 million in the second quarter. This was 6 per cent higher than the total of US$316 million in Q2 of 2016, and it was 10 per cent stronger than the revised US$305 million from Q1 of 2017. This y/y gain in Q2 followed a revised 8.9 per cent y/y decrease in the quarterly total from Q1.

"The shipments data for plastics equipment posted a solid gain in the second quarter, but it remains to be seen whether an upward trend can be sustained in the second half of the year," said Bill Wood, of Mountaintop Economics & Research Inc. Wood is the plastics market economist who analyzes and reports on the plastics machinery market for the CES. "I believe a more likely scenario is that the data in the second half of this year will come in flat-to-down. The underlying economic fundamentals in the U.S. should continue to grind gradually higher, and global demand is also expected to improve moderately this year. If Congress passes corporate tax reform in 2017, then I still believe that an uptrend in the machinery data could re-emerge in 2018."

The shipments value of injection molding machinery increased 9 per cent in Q2 when compared with last year, the shipments value of single-screw extruders declined by 16 per cent, the shipments value of twin-screw extruders (which includes both co-rotating and counter-rotating machines) jumped 56 per cent, and the shipments value of blow molding machines slipped down by 2 per cent in Q2.

The eight-year upward trend in the auxiliary equipment data appeared to level off in the second quarter, the report said, but the level of activity remained strong. This comparison is based on estimated data at this time. Actual comparisons in this year's quarterly auxiliary data to last year's quarterly totals are unavailable due to a change in the number of reporting companies, CES said.

"The mixed results from the various segments in the CES machinery data in the second quarter were weaker than the solid gains posted in two other data series that track the overall U.S. industrial machinery sector," the report said. "According to data compiled by the Census Bureau, the total value for new orders of U.S. industrial machinery jumped 14 per cent in Q2 of 2017 when compared with the same period last year."

The Plastics Industry Association, formerly SPI, is headquartered in Washington, D.C., and represents nearly one million workers in the U.S. plastics industry. **CPL**

Canadian plastics history book is officially out there

Canadian Plastic Pioneers 1950-2000, a newly-published history of 50 years of the plastics sector in Canada, was officially launched on Sept. 11 at Magna Golf Club in Aurora, Ont. Members of the Canadian Plastics Pioneers (CPP) organization, which commissioned the volume, and other industry members turned out to meet author Kara Kuryllowicz and receive autographed copies of the book. The book was also launched in Quebec by the Quebec chapter of the CPP at a book signing on Sept. 28 at the Forest and Stream Club in Dorval. **CPL**

Kara Kuryllowicz (right) autographs books for Canadian Plastics Industry Association president and CEO Carol Hochu and Chantler Packages CEO Roy Ferguson on Sept. 11.

Quebec flexible packager Gelpac sold

Quebec-based flexible packaging supplier Gelpac Inc. has been purchased by two new co-owners: investment firm Namakor Holdings, which is headquartered in Montreal, and institutional investor Caisse de depot et placement du Quebec.

The terms of the deal have not been disclosed.

Namakor has appointed Alain Robillard, a manager described in a press release as having "extensive experience in the manufacturing sector," as Gelpac's new president and general manager.

Established in 1956 and headquartered in the Quebec town of Marieville, Gelpac makes flexible packaging for a range of industries, including the food, agriculture, construction, retail, and pharmaceutical sectors. The company employs 200 people in its three plants and manufactures and distributes polyethylene-based packaging solutions. **CPL**

PEOPLE


Russell Broome


Thierry Fabozzi


Frank LaRocque


Brad Lovelace


John McAlvin


Daniel Meyer


Nicholas Paradiso


Jason Long


Matthias Sieverding


Barry Voorhees

– The Washington, D.C.-based **Plastics Industry Association** has named **Russell Broome** as senior director of business development.
– Holland, Ohio-based packaging design company **Plastic Technologies Inc.** has named **Thierry Fabozzi** as its new president.
– Northbrook, Ill.-based thermoplastic resin supplier **M. Holland Co.** has named **Frank LaRocque** as its film and flexible packaging market manager.
– York, Pa.-based extrusion blow molding machinery maker **Graham Engineering Corp.** has appointed **Brad Lovelace** as process engineer.
– Collierville, Tenn.-based resin supplier **AOC** has appointed **John McAlvin** as its vice president, technology.
– Germany-based polymer supplier **Covestro** has named **Daniel Meyer** as head of its polyurethanes segment.
– Injection molding, robotics, and auxiliary equipment maker **Wittmann Battenfeld Inc.**, based in Torrington, Conn., has named **Nicholas Paradiso** as division manager, material handling and auxiliaries; and **Jason Long** as national sales manager, robots and automation.
– Germany-based machinery maker **KraussMaffei Group** has named **Matthias Sieverding** as the manager of its extrusion segment.
– Newton, Kan.-based **Bunting Magnetics Co.** has named **Barry Voorhees** as its product manager for metal detection.

A TEAM LEADER TAKES CENTRE STAGE

Terry Elliott has spent over 30 years in Canada's plastics industry, rising from the chemistry lab to sales and management positions to his current job as president of Scepter, while doing enough volunteer work along the way to fill a second career. In both areas, he's used his team management techniques and transformational leadership skills to improve organizational health — and the bottom line. But for all his strategizing, he still didn't see the Leader of the Year award coming.

By Mark Stephen, editor

Success is all about prioritizing. Trump might get more done, for example, if he focused more on policy and less on Twitter feuds. In the business world, meanwhile, muddled priorities can be even more damaging; as business management author Patrick Lencioni put it, "If everything is important, then nothing is."

Terry Elliott couldn't agree more. Throughout a 30-year career in Canada's plastics sector that includes positions with Polysar Energy & Chemical Corp., Nova Chemicals Corp., and Ampacet Canada — as well as countless hours given over to volunteering with industry associations — Elliott has consistently prioritized team building and problem solving. And Elliott — a fan of Lencioni's work — isn't about to change now, in his newest role as president of Toronto blow molder and injection molder Scepter as that company charts a new course under new ownership.

Lencioni also stresses that teamwork is the ultimate competitive advantage. Which is another way of saying there's no "I" in team. But for once, Elliott is going to have to depart from the program: As the Canadian Plastics Industry Association's Leader of the Year for 2017, the spotlight is now on him alone.

GOOD CHEMISTRY

Canada's plastics sector has been around for long enough that many of today's most prominent and successful people are second-generation members: the sons and daughters of industry pioneers and company founders from the 1950s and 1960s. Elliott isn't one of them: His father owned a convenience store in Woodstock, Ont. But he picked up some early and valuable business experience nonetheless. "As a teenager, I worked at the store in my spare time, so I became familiar with how to run a small business: scheduling the staff, making bank deposits, and so on," he said. This early entrepreneurial bent remained firmly in the background as Elliott graduated with a degree in chemistry from the University of Western Ontario in 1987, but became noticeable in his first job out of school. "I started with Polysar in Cam-

bridge, Ont., working in the laboratory in the polystyrene division," Elliott said. "Eventually, though, I became a technical sales representative and a troubleshooter at injection molding plants, which is where I first began meeting business leaders, product segment managers, and salespeople. It opened a doorway into some of the behind-the-scenes aspects of the business." Elliott's extracurricular work with plastics industry associations began here as well, as he signed on with CPIA's Environment and Plastics Industry Council — or EPIC for short — around 1990, and joined the executive committee of the Plastic Film Manufacturers Association of Canada (PFMAC) in 2001.

During this same period, Polysar was acquired by Calgary-based Nova, and Elliott joined the Nova staff in Ontario. "I was a senior account manager with Nova's polyethylene division and moved up through the ranks until I had the largest market segment sales territory in Canada, mainly selling speciality films and specialized extrusion coatings; and by 1996 I was a market segment specialist for films and coatings," he said. "This gave me more exposure to entrepreneurs and business leaders, and I realized that I really loved business and the strategy of sales. Nova had a team-centric approach and I responded to it. I became a student of leadership during my mid-20s, and took courses at Ivey Business School at the University of Western Ontario and executive management programs at York University's Schulich School of Business."

In 1998 Elliott accepted a position as director of sales and marketing with colourant and additive maker Ampacet Canada — a division of Ampacet Corp. of Tarrytown, N.Y. — and was promoted to general manager nine years later and given his first full P&L responsibility. "Ampacet was a $700 million company when I joined, so it was large enough to be a good corporate environment but not so large that it was driven quarter-to-quarter by shareholder value," he said. "We doubled the business during the first five years I was there, and when I became general manager I was also given a seat on the North American leadership team." It was at this point that Elliott's business philosophy — nurtured by personal experiences, university courses, and books by Lencioni and others — really started to pay off. "I wanted to change Ampacet's culture and replicate the team-centric approach of Nova, so I brought in consultants to lead us through a transformational leadership training program that focused on identifying and resolving conflicts." What was the lesson that Elliott wanted driven home? "For a business to succeed, it has to be both smart *and* healthy," he said. "Being smart involves having good products, a good financial base, knowing the market well — all the traditional keys to success. But smart companies still fail, usually due to softer things like lack of clarity, or employees being pulled in different directions and then losing their focus and their motivation. Being smart and healthy is the model I pursued at Ampacet, by ensuring that our team spent considerable time together in meetings and working sessions, working through issues and solving problems together as a group."

Eliminating team dysfunction wasn't Elliott's only achievement at Ampacet, however. "I oversaw the approval of a multimillion-dollar, 42,500-square-foot expansion to our production facility in Kitchener, Ont., which also added many new jobs and increased the plant's production capacity," he said.

80/20 RULES

At which point Elliott came to a fork in the road. "Once the expansion was in place and we had reached the point where the leadership team functioned very well and could run the business on its own, my options were to do more of the same at Ampacet on a larger scale, or find something new," Elliott said. "I've always believed that, while you can never truly master the role you're in, you can reach the point where you lose your edge. I was afraid that might happen to me, so I was inclined to move on."

As if on cue, Scepter came calling. Founded in 1949 by Evald Torokvei, Scepter had made a name for itself in the 1950s by blow molding jerry gas cans before expanding into extruded PVC pipe and fittings, as well as heavy calibre ammunition casings for the Canadian military. In the 1990s Scepter merged its pipe division with Canron's to form IPEX, and over the next decade IPEX would become one of the world's largest pipe and fitting manufacturers. By 2014 Scepter was the largest manufacturer of portable fuel containers in North America and a leader in portable OEM fuel containers for the marine industry, with locations in Toronto and Miami, Oklahoma. In June of that year Scepter was acquired by Akron, Ohio-based Myers Industries Inc., a manufacturer of plastic and rubber products — and Myers was looking to make some big changes.

"When Myers contacted me in 2016, it was beginning to implement the so-called 80/20 rule at Scepter," Elliott said. For the uninitiated, the 80/20 rule — also known as the Pareto principle — was originally popularized by Illinois Tool Works, and states that 20 per cent of a business' customers are responsible for 80 per cent of its revenues; the goal, then, is to focus on what is most important — the 20 per cent of the items which account for 80 per cent of the value — and to spend less time and resources on the less important. "I'm a big believer in the 80/20 rule, so when Myers offered me a position at Scepter and the chance to help implement it, I was immediately interested," Elliott said. "I enjoy defining a goal and getting a group of people to achieve it, which is what Myers wanted me to do at Scepter."

Elliott started with Scepter in May 2016, and in the year-and-a-half since has helped the company take some real strides forward. "In accordance with 80/20, we've simplified product lines by reducing the number of products offered by combining the features of similar products and gradually eliminating low-value products while also keeping the things that Scepter was always very good at, such as customer intimacy," Elliott said. "It takes years to change a company's

Photo Credit: Sandra Strangemore

culture, but we've covered a lot of ground already. The end goal is to establish repeatable processes, to understand what works and what doesn't, and to uphold the legacy of the Torkokvei family while unlocking Scepter's fullest potential."

Unlocking the full potential of any manufacturing company in Ontario isn't easy these days, unfortunately, and part of Elliott's job is to steer Scepter through difficult economic waters. "I'm gravely concerned about rising power costs in our province, and I'm always looking to upgrade the energy efficiency of our equipment, but there's only so much you can do," he said. "Federally and provincially, our politicians need to get back to sound business principles: defend the core and grow the specialties. The core of Ontario's economy has always been manufacturing, so let's nurture that, rather than add more layers of bureaucracy and regulations. If the government borrowed a page from the 80/20 rule and strove for simplicity instead of complexity, Ontario would be much more competitive."

VOLUNTEERING FOR DUTY

Elliott's involvement in plastics industry associations predates the days of rising industrial energy costs, and was motivated initially by the simple desire to give a little back. "I've always believed in giving back to the industry that gives me a living," he said. "I started out working on the anti-litter and degradable sub-committees of CPIA's EPIC group, and then towards the end of my time at Ampacet, when the leadership team was able to run more of the business, I increased my involvement." Elliott became chair of the PFMAC in 2012 — which includes a seat on the CPIA board of directors — and served as chairman of CPIA's board of directors from 2015 to 2017, earning praise from his colleagues along the way. "During his tenure as CPIA chairman, Terry provided extraordinary guidance as it faced the difficult times that all industry associations are currently facing," said fellow board member Sean Dennis. "Even during a major change in his employment, he never lost focus on the many needs of CPIA."

Winning a CPIA award isn't entirely uncharted territory for Elliott: In 2013 he was selected for a Canplast Award, presented to individuals who contribute their time, energy, and expertise to improving the competitive and environmental performance of Canada's plastics industry. Receiving a Leader of the Year award puts him in a whole new echelon, however. "Being recognized by your peers is always a tremendous honour," Elliott said. "But I've learned so much from so many outstanding people over the years — both mentors and coworkers — that this award is really a tribute to them." CPL

LIFETIME ACHIEVEMENT AWARDS

TIM BEAN spent almost 40 years in the chemical division of Imperial Oil Ltd., mostly in the polyethylene commercial sales organization, where he rose to the position of senior account executive. Aside from making valuable contributions to Imperial, he has also been a long-time participant with CPIA in several capacities, including serving as chair of the sustainability committee, as a member of the board of directors, on the executive committee of the board, and on the finance committee. Bean recently retired.

DENIS CLOUTIER began his career in the mid-1970s with DuPont Canada in Montreal, and in 1990 joined material supplier Petromont as director of sales and marketing for its polyolefin division. Since 1997 Cloutier has worked for Laval, Que.-based Poly Expert Inc., the largest non-integrated polyethylene film manufacturer in Canada, most recently as vice president, sales, marketing and supply. His involvement in plastics advocacy spans virtually the same length of time. "An avid defender and promoter of association work, Denis was a member of CPIA's board of directors for several years, serving as chairman of the board from 2005 to 2007; on the board of the National Dairy Council; served as president of CDFISA; and as chairman of Poly Expert's board of directors," CPIA said.

ROY FERGUSON, the CEO of Mississauga, Ont.-based Chantler Packages, started his career in the packaging business in 1970 with Consolidated Bathurst Packaging. In 1976 he took over the family business, Chantler and Chantler Inc., and turned it into a fully integrated manufacturer of flexible packaging. In July 2017 he launched a joint venture with Pakistan-based Packages Ltd. Over the years, Ferguson has designed 32 different product extensions, some of which were patented. "Roy is widely recognized as having made important contributions to the Canada's flexible packaging industry, and has been a longtime supporter of the CPIA and several other packaging associations," CPIA said.

JOHN PELLICCIONE, currently the vice president of operations with Vaughan, Ont.-based Gracious Living Corp., has worked in injection molding for over 50 years. Born in Italy, he came to Ontario as a child, and has worked for Ray Plastics, Progressive Molding, Royal Injection, and Gracious Living, moving up from operator to lead hand to supervisor along the way, before attaining positions in production and operations. "John is a technical go-to person and understands complex material compositions and processing," CPIA said. "His vast contribution to the plastics industry is highlighted by his success as a mentor, his enthusiasm for materials, and his dedication to customers."

DWARKA PAUL PERSAUD immigrated to Canada as a student in the late 1960s, and co-founded Cambridge, Ont.-based vinyl recycler Norwich Plastics in 1986 with Bill Gosse and other partners. For over 30 years, Norwich Plastics has been an industry leader in plastic reprocessing, offering closed-loop recycling solutions, cradle-to-grave initiatives, and custom formulated reprocessed feedstock. The firm has production facilities in Cambridge and in the U.S. state of Tennessee. Persuad helped to pioneer the city of Toronto's first bottle recycling program through a second party. In 2017 he and his family assumed 100 per cent ownership of Norwich Plastic's Canadian operations and 50 per cent of its U.S. holdings.

PLASTICS INNOVATOR AWARD

ROBERT CLARE & ALEXEI KAZAKOV

Clare (top photo) is an applications development specialist with Calgary-based Nova Chemicals Corp., and Kazakov works in Nova's new business development and marketing division. Both men were key personnel in developing Nova's versatile all-polyethylene stand-up pouch, an innovation in recyclable packaging. Introduced in 2016, the pouch is compatible with #2 HDPE recycling streams, while retaining the performance, processability, and cost-competitiveness of existing mixed-material structures. The pouch is designed to offer superior moisture barrier performance, the ability to be co-extruded or PE-PE laminated for surface or reverse printing, and compatibility with reclosable zippers and other open/close fitments.

PERRY RIZZO, president and CEO of Vaughan, Ont.-based auto parts maker Axiom Group Inc., is being honoured for his role in developing Smart Attend, a universally adaptable and customizable advanced monitoring system that can be used with injection molding, extrusion, and blow molding machines. Installed on top of the processing unit, Smart Attend integrates directly into the PLC and is capable of recording up to eight different inputs. Through the cloud network, Smart Attend units provide instant access to all equipment manufacturing data. From real-time monitoring to analytics dating back to the moment the unit was installed, Smart Attend collects, tracks, and organizes all relevant data into a user-friendly smartphone app. The system can be integrated into both new and older processing equipment.

PLASTICS SUSTAINABILITY AWARD

ALLEN LANGDON is the managing director of Vancouver-based Recycle B.C., a non-profit organization responsible for residential packaging and printed paper recycling throughout British Columbia. Langdon has led the creation of a province-wide recycling program that efficiently manages residential recycling in B.C., and which services over 98 per cent of the province through curbside, multi-family, or depot collection, ensuring that over 185,000 tonnes of plastics packaging and printed paper are collected from households and depots to be recycled.

DOW CHEMICAL CO. was recognized for its Retain polymer modifiers, a portfolio of compatibilizers that allow converters to recycle barrier film trim back into film production without sacrificing optical or physical properties. Retain technology helps to divert packaging waste from landfill or incineration, increases post-consumer recycling yields, and aids in the creation of a circular economy for plastics packaging by enabling polyethylene-based barrier packaging to be recycled more effectively. Packaging made with this technology can be recycled in a polyethylene recycling stream, addressing current recycling challenges and complications in multilayer flexible barrier packaging due to differences in material properties.

GREENMANTRA TECHNOLOGIES

Brantford, Ont.-based GreenMantra was recognized for its unique technology that continuously converts waste plastics — particularly those with low recycling rates such as polyolefin film and grocery bags — into high-value specialty polymers and products such as its Ceranovus synthetic waxes, which are designed for applications that require specific technical properties. "GreenMantra is the first manufacturer in the world to produce specialty polymers from a recycled plastic feedstock, all the while diverting waste plastics from landfill and helping to create a circular economy for plastics," CPIA said.

CANPLAST AWARD

GERRY MALDOFF

The president of Mississauga, Ont.-based plastic shopping bag and can liner maker Hymopack Ltd., Maldoff is being recognized for his involvement in several areas, including CPIA's PFMAC group and its position on degradables, along with heading the fight against plastic bag bans across Canada by chairing the Toronto and Montreal Plastic Bag Ban Task Forces. "Gerry is committed to promoting the positive aspects of plastics and pushing back against product deselection," CPIA said. Maldoff was also CPIA's Leader of the Year for 2014.

PLASTICS INDUSTRY YOUNG LEADER AWARD

JOCELYN DOUCET

Doucet is the CEO of Montreal-based Pyrowave, a fast-growing startup that offers a completely new approach to waste conversion. Pyrowave's patented technology uses microwaves to perform fast de-polymerization of mixed plastics with small-scale modular units capable of treating up to 1,200 tons per year on-site. The equipment converts mixed plastics with or without food contamination into predominantly oil containing valuable waxes and monomers. The products are sold to chemical companies that re-use the monomers and waxes for FDA-compliant applications. Doucet has a chemical engineering degree and Ph. D. from Ecole Polytechnique Montreal, where he is also adjunct professor.

AMALIA GIL

A process engineer at GreenMantra Technologies, Gil was part of the core team that led the design, construction, and testing of the firm's demonstration facility, which scaled GreenMantra's proprietary plastic to wax technology four times from its pilot scale. Later, she co-led a team of engineers and contractors in the commissioning of the world's first waste-to-wax commercial-scale plant. "Amalia is the lead inventor on the patent pending technology that improved manufacturing from a batch to a continuous process," CPIA said. Gil also works with Ontario public school students as part of the province's "Engineering in Residence" program to teach them about science and engineering. **CPL**

The 2017 CPIA award winners, including Leader of the Year Terry Elliott, come together to show off their hardware during the award ceremony on Sept. 19 in Vaughan, Ont.

Keep it MOVING

If you're not conveying resin to your presses quickly and efficiently, you're practically begging to go out of business. These latest raw material handling technologies can help deliver the goods.

By Mark Stephen, editor

A rolling stone gathers no moss, they say. But when it comes to benefitting from the right kind of movement, resin trumps a stone any day. The quality of plastic pellets or granules is essential to the success of plastics manufacturing companies and compounders alike. High dust content in resin and other problems associated with conveying lead to downtime, product flaws, and higher customer rejects. Which means a processor needs the best resin conveying system possible to transport the material to the molding machines in good shape. Here's a look at some of the latest technologies that can get your resin from here to there in mint condition.

Photo Credit: Conair Group

The Conair Group's FLX-128 Plus conveying control can be set up to operate the R-Pro system, as well as some of Conair's newer conveying products, including its line-proofing systems.

CONTROL FREAKS

The Conair Group recently introduced the FLX-128 Plus conveying control, which can be set up to operate the R-Pro system as well as some of Conair's newer conveying products, including its line-proofing systems. The new FLX-128 Plus system is scalable and has the same features as the previous web-enabled FLX-128 unit, but now connects to additional material handling equipment from Conair. The FLX system incorporates an industrial Ethernet cable wire or Ethernet fibre optic wire to connect to the Internet for remote monitoring and control. FLX controls can simultaneously operate material handling systems of differing configurations, sizes, and operating speeds through a single touchscreen control that can be used to monitor and make changes on up to 128 receivers, 40 vacuum pumps, and 256 source valves. As mentioned, FLX-128 Plus can link to R-Pro, Conair's new dense phase resin conveying system, developed to prevent equipment damage and other problems associated with high-speed, dilute phase conveying. The user can adjust R-Pro's pump speed and valve speed to control the amount of material being transferred. A new energy-saving feature optimizes pump operation, and R-Pro can now also store loader recipes in addition to providing variable speed control of the pumps.

Dri-Air Industries Inc. has upgraded its hopper bank with an integrated central air conveying system designed for operators of small injection molding machines or extruders. The new design includes an enhanced touchscreen controller with additional controls that allows processors to dry multiple resins at different temperatures for fast changeovers or for a central drying area. "Each hopper has its own booster heater for temperature control," said Dri-Air president Charlie Sears. "Quick-change manifolds allow operators to switch from one hopper to another, or to connect multiple machines to one drying hopper." The upgraded system can be monitored by a host computer through the Ethernet or by the Dri-Link mobile app for IOS and Android. Systems are available for up to 10 machines, Sears said, and the hopper banks are available with hopper capacities from 5 to 600 lbs and with 2 to 12 hoppers.

Novatec Inc. has upgraded its FlexXpand FX2 centralized conveying control technology to manage the company's central drying systems and other auxiliary equipment. The system, revamped as a plantwide control system with the update, incorporates Novatec's NovaNet equipment networking system, which allows FlexXpand FX2 to connect with up to 4 central dryers and up to 48 central drying hoppers. The new control can manage 32 Novatec weigh scale blenders, as well as 160 receivers, 20 vacuum pumps, and 36 other individual pieces of Novatec equipment, said Jim Zinski, Novatec's vice president of product technology. Novatec offers FlexXpand FX2 in 2 base models, controlling up to 5 vacuum pumps and either 16 or 32 receivers. It is offered with a standard, 7-inch touchscreen HMI or optional 12-inch HMI panel. Other networkable products include NovaWheel dry/convey units, as well as downstream extrusion equipment like the company's cutters, pullers, and up-cut travelling saws. Every FlexXpand control can be accessed via web

browser by any networked computer, or via VCN app by a networked smartphone or tablet. Actual FlexXpand screens are displayed remotely, and changes can be made easily with a simple click.

Material handling equipment supplier Schenck Process LLC has recently added new features to its Discount loss-in-weight feeder control platform designed to customize, simplify, and enhance the user experience. Some of the key additions include a favorite's folder, customizable calibration sequences, detailed event message text, and the use of HTML5 for online equipment monitoring. Utilizing the Schenck Process EasyServe service tool, a favorite's folder can be created giving operators quick access to all the different parameters that are critical and unique to their individual process. Parameters that are rarely used can be hidden, eliminating the need to search through multiple parameters that are not relevant for the user's particular process, the company said, and a customizable calibration sequence easily leads operators through the required calibrations. Sequence check marks indicating that a calibration has been completed, progress bars, and detailed status and event messages are just a few of the enhanced operational features available with the Discount Tersus controller. A change from Java to HTML5 for webpage HMI provides a much wider range of access and compatibility through various web browsers and smartphones, including Apple products.

Earlier this year Wittmann Battenfeld Inc. unveiled its new M7.3 IPC, a pneumatic conveying control system designed to manage material from the silo to the dryer in large-scale operations. Configured to connect with up to 32 dryers with 240 drying hoppers using a Canbus networking connection, the centralized system can control one or multiple central vacuum pumps, and offers users expandability with plug-and-play hardware. A number of configurable options are available for dealing with difficult-to-convey materials: molders can choose to purge the line more frequently, or shake material off of valves by breaking the vacuum. "Software features include programs for materials-based visualization of the conveying system, graphical display of the vacuum loader, and the ability to adjust the conveying sequence or the loading time," said Nicholas Paradiso, Wittmann's division manager, material handling and auxiliaries. "The network conveying control system also has a vacuum pump display that allows the user to select automatic switchover between either the main pump or the backup pump." The unit also features a graphical display of the central drying system that allows for complete control of drying temperatures, dewpoint readout, and configurable drying parameters, he added.

SHAKING THE DUST OFF

When it comes to raw materials handling, dust is a Godzilla-sized enemy. Dust is commonly generated during the pneumatic conveying of raw material by abrasion against the walls of the conduits — such as when harder resins like PET or LDPE hit elbows at excessive speeds — as well as collisions among the pellets. But you don't have to take it lying down. Flexicon Corp.'s IBC bulk discharger is used to empty mobile bins into a surge hopper and convey the contents to downstream processing equipment. Suitable for a wide range of applications and materials such as resin pellets and plastic flake, the discharger uses an electric hoist and trolley to lift mobile bins weighing up to 3,200 lbs. Each mobile bin is fitted with eyebolts for connecting to the lifting cradle. The system comes with either an integral flexible screw conveyor, a tubular cable conveyor, or a pneumatic conveying system. A port on the lid of the surge hopper is vented to a Bag-Vac dust collector that puts the sealed system under negative pressure, preventing displaced air and dust from entering the plant atmosphere. The surge hopper is available with an integral flexible screw conveyor, tubular cable conveyor, or pneumatic conveying system also produced by the company.

In order to control dust, Pelletron Corp. recently launched its updated C-20 DeDuster, with new features that include a stainless-steel agitator, a variable speed stepper motor, an

upgraded cyclone for dust separation, and a window for viewing product flow. Said to be compatible with every injection molding machine and small extruders, the 12-inch-high device — the smallest in the Pelletron line — requires just 10.5 inches of installation height between the hopper loader and the inlet hopper of an injection molding machine. The new C-20 can process up to 100 lbs per hour of dry, granular material, the company said.

Universal Dynamics, meanwhile, is now offering a PowerFilter option on its DustMaster devices, which are used to collect dust and protect pumps in vacuum conveying systems. Depending on its configuration, the PowerFilter can include either four or six polyester felt bags on cages. While under vacuum, they collect dust; once the conveying cycle is complete, a jet of compressed air releases the dust into a collection area. Also, when pumps are inactive, the DustMaster initiates a pulse of air for cleaning. Compared to using canisters, the PowerFilters are significantly less time-consuming and costly to change, Universal Dynamics said, and require no conveying downtime and have no seals that wear. Typical return on investment is less than six months, the company added.

So whether or not that rolling stone ever gathered any moss, these technologies can help ensure that your raw materials don't. **CPL**

RESOURCE LIST

Conair Group (Cranberry Township, Pa.); www.conairgroup.com; 724-584-5500
Dier International Plastics Inc. (Unionville, Ont.); www.dierinternational.com; 416-219-0509
Industries Laferriere (Mascouche, Que.); www.industrieslaferriere.ca; 450-477-8880
Turner Group Inc. (Seattle, Wash.); www.turnergroup.net; 206-769-3707

Dri-Air Industries Inc./Maguire Products Canada Inc. (Vaughan, Ont.); www.maguirecanada.com; 905-879-1100

Flexicon Corp. (Bethlehem, Pa.); www.flexicon.com; 888-353-9426
Rate Technology Systems Ltd. (Mississauga, Ont.); www.ratetechnology.com; 905-607-3240

Novatec Inc./Maguire Products Canada Inc. (Vaughan, Ont.);
Barway Plastic Equipment Inc. (Vaudreuil-Dorian, Que.); www.barway.ca; 450-455-1396

Pelletron Corp. (Lancaster, Pa.); www.pelletron.com; 717-293-4008

Schenck Process LLC (Kansas City, Mo.); www.schenckprocess.com; 816-891-9300

Universal Dynamics/Piovan Canada (Mississauga, Ont.); www.piovan.com; 905-629-8822

Wittmann Canada Inc. (Richmond Hill, Ont.); www.wittmann-group.com; 905-887-5355

Drops of INNOVATION

Unless consumer product makers want their goods to fizzle faster than the Washington Capitals in the Stanley Cup playoffs, they have to manufacture things that the marketplace actually wants. Developing products in the right colours is a good way to start. Here's what some colourant makers say are the hot trends for 2018-19.

The right colour can be crucial. A blonde Elvis impersonator just won't cut it, for example, and neither will products manufactured in colours that don't resonate with consumers.

Simply put, colour is one of the biggest factors influencing consumer preferences, which is why choosing the right shades is so important for developing innovative products and brand strategies. By working with experts to identify the palettes and effects trending with consumers right now, material suppliers can get their newest colourants to the product makers in time for them to deliver the goods before those palettes become yesterday's news.

Here are some of the latest hues and themes that colourant makers are betting on.

By Mark Stephen, editor

AMERICHEM INC.

Americhem's six 2018-19 colour trends revolve around a common musical theme: The sounds of the past and present.

MOTOWN

Deep tones of blue, with a green that's almost brown, are brightened with orange and rusty tones to provide a palette that's both edgy and mysterious.

TECHNO

"Bold shades of hi-tech blues and futuristic greens are highlighted by neon yellow, and brought back to earth by a subtle, golden beige called 'Laser,'" said Sydney Gardner, Americhem's lead colour trends specialist. "Funky and daring, this palette speaks to our inner geek."

FESTIVAL

Characterized by blazing shades of orange and red, and shadowy purples and violets, this vibrant palette is inspired by summer music festivals from Monterey and Woodstock onwards.

BOSSA NOVA

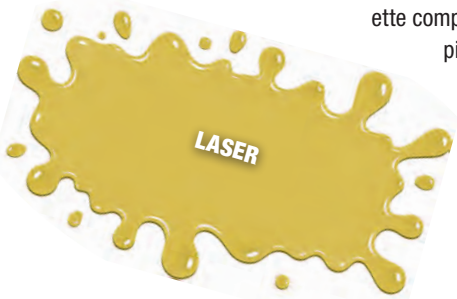
"A fusion of samba and jazz, bossa nova is the predominant Brazilian music genre, and usually triggers a calm, tranquil mood," Gardner said. "These colours — consisting of refined greens like 'Cha-cha-cha,' and fluid, soft beiges — do the same."

LULLABY

"Reach-out-and-touch-me pastels are paired with cozy greys in this understated and comforting palette that invokes peacefulness and content," Gardner said.

CONCERTO

"This trend blends colours in the same way that classical music blends instruments," Gardner said. "It's a sophisticated palette comprised of soft pinks, subdued greys like 'Sonata,' and extravagant greens."



AMPACET CORP.

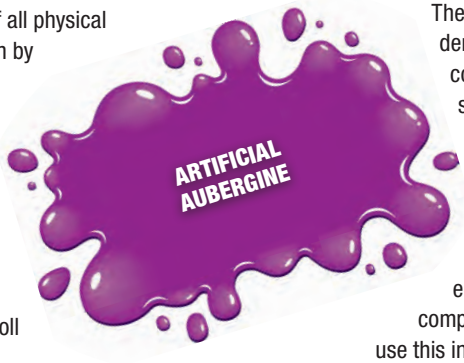
"All of our new colours for 2018-19 are derived from the major changes we see in all categories around the world," said Linda Carroll, Ampacet's director of global insight and innovation. "The new normal is that many groups embrace change while an increasing number are resisting change, and the colour palettes reflect an equal division in that some of the colours are lively, mystical, and disruptive, while others are soothing and grounded."

Carroll identified four trends driving the company's packaging and consumer goods colours heading into the 2018-19 design years.

INDUSTRY 4.0

"Our global economy is experiencing a fourth industrial revolution, characterized by end-to-end digitalization of all physical assets and processes," Carroll said. "All of this is driven by exponential technological advancements that will influence every facet of our lives. Challenging traditional financial systems, we see the advances of instruments like cryptocurrency — such as Zcash or monero — move from an unknown entity into mainstream recognition and acceptance."

The colours in this category represent both lightness and intensity. "A fiery red value is found in 'Renegade Red' that represents catalytic activity," Carroll said. "On the other end of the spectrum is 'Pink-Ployed', a new colour of strength and dominance versus passivity." "Digi-Green" is a paler version of yellow-green, and is not as "assaultive" as previous greens, Carroll continued. "This is countered by 'Local Loden', a deep, mysterious green," she said.



SOCIAL RENAISSANCE

"Major changes are recreating societal norms, resulting in both political and cultural divides," Carroll said. "On one side are people looking for limitless access to information, while on the other are large numbers of consumers who yearn for more traditional standards of life."

The colours here include palettes that invoke confidence, sociability, and vibrancy. "'Me-Time Melon' is a pastel blush that reflects both passivity and sociability, while 'Divided Dandelion' evokes the energy contained in yellow that signals a hunger for knowledge," Carroll said. "Other colours in this theme include 'Future Fuchsia,' a disruptive pink; and 'Sapphire Sanctuary,' a blue that captures the vibrancy of movement on both ends of the spectrum."

WHAT A "MESH"

"Technology continues on its path of exponential development, creating a frictionless environment for consumers who want to get rid of complexity," Carroll said. "At the same time, the world is becoming more complex, as with the emergence of artificial intelligence and associated concerns about whether humans can maintain dominance in the digital world or will be forced to share power with the database. If we don't keep ahead of artificial intelligence, the worry is, we could end up as slaves to our technology."

"The colours in this theme include mystical purples and spontaneous oranges, refined and grounded by cloudy silvers," Carroll said. "'Artificial Aubergine' is an introspective purple that reflects artificial intelligence and the mystery of what's next," she said. "'Cognitive Coquelicot' is a yellow-red with orange undertones that signals independence and extroversion; 'Savvy Shimmer' is a purple-silver; and 'Connected Cloud' is a green with silver undertones that signals connectivity across different platforms."

OS OF ME

The marketplace of the future will become democratized and shaped by elevated consumer standards, and a seamless series of brand experiences replacing the traditional definitions of brand identity," Carroll said. "People will become more like brands, and brands more like people. Activities here send a clear signal of the emergence of 'brand within a brand,' as companies providing data-collecting devices use this information to anticipate their customers' needs, enabling them to provide a uniquely specified consumer product."

The colours in this theme strongly correlate to an intellectual state of mind. "'Rebooted Blue' is an intense red-blue signaling the passionate approach to insight and its many permutations," Carroll said. "'Seamless Gold' is a yellow-red masked within strong golden tonal values reflecting multi-dimensionality; 'Shifted Cyan' is a straight-up blue that correlates to the prowess of the individual coupled with artificial intelligence; and 'Coded Claret' is a merlot-burgundy that invokes the desire for brand loyalty."

CLARIANT MASTERBATCHES

Now in its 12th year, Clariant's annual ColourForward directions are the result of the collaborative effort of plastics colour specialists throughout the world. They've identified four key trend themes for 2018.

NEWMORROW

This trend theme reflects a yin and yang mood among consumers, Clariant said. "On the one hand, they believe the 'system' is rotten," said Arturo Andreoni, Clariant's marketing and application development director. "On the other hand, they believe that change is still possible from grassroots efforts of individuals and small groups." To reflect this, the Newmorrow colour palette includes a brownish green called "Primordial Soup." "It prompts references to sewage and death, but it also reminds us of the rich biological goop that spawned life as we know it," Andreoni said.

LONGITUDE/LATITUDE/ALTITUDE

Dissatisfaction with conventional ways of living also stands behind the Longitude/Latitude/Altitude trend theme. "It acknowledges that a growing number of 'new nomads' are choosing to have no fixed address," Andreoni said. "These people cherish the flexibility of a lifestyle on the move that immerses them in different ethnicities and interests." Which is why these colours have a bohemian tinge. "They range from a purplish fucsia called 'Nomadness,' a warm orange-yellow called 'Kaleido Tribe,' and a grey-blue called 'Cirrus Aviaticus' after the contrails of jet planes against a cloudless sky," he said.

THROUGH THE MIRROR

Many consumers are experiencing unpleasant feelings of emptiness related to their mainstream lifestyles, Andreoni said, and this colour theme attempts to capture the feeling of being adrift, while at the same time knowing that a spiritual reawakening is possible. "A pearl-orange colour in the Through the Mirror palette is inspired by the Sanskrit phrase 'trataka', which means to gaze steadily at a fixed spot in order to focus the mind inward, blanking out visual perception and withdrawing from the external world."

NERDYLICIOUS

"While the other colour trends relate to gloom, this palette is about validating a group of people long stereotyped as a bunch of quirky, overly intellectual misfits: the nerds," Andreoni said. "These colours are soft and subdued like most of the other trend groups, but also the brightest and most optimistic in the 2018 palette. For instance, 'Lightning Boot' is a transparent orange-yellow reminiscent of LED lights, while 'Alberting Out!' is a slightly dirty optical white that pays tribute to the ultimate nerd, Albert Einstein." **CPL**

GOING THE EXTRA MILES FOR AOKI

Jose Penaloza will rack up at least 20 trans-Pacific flights this year in a bid to increase Japanese injection stretch-blow molding machine maker Aoki Technical Laboratory's presence in Canada. That's a lot of hang time, but it's starting to pay off.

By Mark Stephen, editor

Jose Penaloza with a cabinet of Aoki sample products.

Septuagenarian singer/songwriter Bob Dylan has basically been touring non-stop since 1965, but even he might envy Jose Penaloza's recent collection of frequent flyer miles.

Penaloza, the head of Mississauga, Ont.-based sales firm Penzola Solutions, which represents Japanese injection stretch-blow molding machine maker Aoki Technical Laboratory Inc. in Canada, has flown to Aoki's headquarters and manufacturing plant in Ueda, Japan a whopping eight times between March and October 2017, and has at least two more trips scheduled by the end of the year.

It's all part of Aoki and Penaloza's plan to expand Aoki's Canadian profile, and part of a larger push by Aoki to increase its global footprint through a year-long series of open houses in Ueda. "Aoki has been having at least one open house per month since March," Penaloza said. "The open houses are usually regional: one for the Middle East, one for Asia, one for North America, and so on. The goal is to show customers and potential customers that, because of Aoki's latest technological developments, they could be molding the same containers faster than before, with minimal expenditure of time and energy."

A mechanical engineer by training, Penaloza cut his teeth in equipment sales by representing Aoki in his native Colombia in the 1990s. Immigrating to Canada in 2001, he worked as a sales representative for Ontario-based blown film equipment maker Brampton Engineering for almost a decade before founding Penzola Solutions and reestablishing his connection with Aoki. "Selling Aoki blow molding machines is very different from selling injection molding or extrusion units, and even different from selling competing blow molders," he said. "With Aoki I'm selling a complete solution, and most of the time I'm working around the customer's final product, not the Aoki machine itself. A typical conversation with a client begins with the final product and its many parameters and factors, and then moves outward to finding the right machine to make it. Once we've determined what that mold and machine solution is, Aoki assembles and tests it in Japan, and then ships it to the customer as a turnkey system."

It's this part-centric approach that helped necessitate Penaloza's many trips to Japan this year. "As part of designing the right solution, we want customers to be present at mold trials, so I accompany them if their schedules allow them to travel," he said. "If not, I go on the customer's behalf with the part dimensions and specifications they

Flags representing the different nationalities of visitors at an open house fly at Aoki's headquarters in Ueda.

Customers attending a seminar at Aoki's HQ.

require and update them on the mold trials through real-time videos and by shipping samples to them overnight."

On the increasingly rare occasions when he's back home in Ontario, Penaloza keeps in close contact with Aoki's American headquarters in Chicago. "Service and parts for Canada come from the Chicago office, and I also take customers there for training," he said.

OWNING THE THREE-STATION MACHINE

Aoki was founded in 1975 by famed Japanese plastics inventor and entrepreneur Katashi Aoki, who had also founded injection molding machine maker Nissei in 1947. Beginning in 1984, the company's stretch-blow machines and molds have been unique in incorporating Direct Heatcon, a proprietary molding technology designed to eliminate the need for reheating by enabling preforms to be injection molded and heat conditioned at the same time. "With Direct Heatcon technology, raw material is molded into finished containers in just three stations," Penaloza said. "By using residual heat from the process of injection molding preforms from raw material, Direct Heatcon eliminates preform reheating costs, reduces preform cooling time, and enables chillers to be downsized. This can drastically reduce unit molding costs and enable higher volume production." Transportation costs can also be reduced, he said, since Direct Heatcon eliminates the need for preform transportation that frequently constitutes a part of the reheating method; and molding containers directly from raw material on a single machine using the minimum number of molding steps reduces the risk of breakdowns and defects. "Additionally, Aoki has made great strides in the past five years, cutting cycle times almost in half by removing the preform from the mold faster than before," he said. "The newest machines are also blowing the bottles at a lower pressure, which means even more energy savings."

Penaloza (right) on the Aoki manufacturing floor with a customer.

While both Penaloza and the Aoki staff believe they have the innovative solutions that can break open the Canadian blow molding market, some challenges remain — one of which is actually a good one to have, and is probably common to many Aoki sales reps. "As a sales representative for Aoki, it can be difficult to keep up," Penaloza said. "The company's full name is still Aoki Technical Laboratory, because the owners have always considered it to be a laboratory that constantly develops new injection stretch-blow molding technologies. Which means that the other sales reps and I are always surprised when we visit Japan and learn about something new. My bottle samples become obsolete very quickly."

A second challenge is uniquely and inherently Canadian. "The market for blow molding machines in Canada is obviously smaller than in the U.S. and many other countries, and demands more searching for new customers, and more cultivation when I find them," he said. "Aoki's presence in Canada was limited for a long time, but with my efforts and Aoki's help, we are increasing the company's visibility and I'm making connections with more and more potential customers. This year has been very intense, and I'm torn about whether or not I want it to get less intense next year."

It's a conundrum Bob Dylan can probably relate to. **CPL**

Best Practices, BEST RESULTS

Whether you're a plastics processor generating both startup waste and off-spec parts or a recycler dealing with scrap 24/7, how you handle regrind is a very big deal. Here's how to get the most from your granulation and shredding equipment.

By Mark Stephen, editor

Comparing shredders and granulators is a bit like comparing sumo wrestlers and ballet dancers. Shredders deliver brute force by efficiently cutting large volumes of heavy plastic scrap into smaller, more manageable pieces with a minimum of operator involvement, and offer comparatively large outputs; granulators, meanwhile, offer more finesse, handling less demanding grinding tasks and, when necessary, turning shredded scrap into valuable, process-ready regrind. And not only do they operate differently, the size of the scrap they produce at the end of the process also differs. "Shredders produce scrap generally ranging from one inch and up, while granulators produce small and fine pieces such as flakes and granules," said Mike Cyr, president of Rotogran International Inc.

But no matter which size reduction technology you use — or if you combine them into a two-stage system — the key is to use shredders and granulators to maximum effect. Which means understanding a few basics and following a few best practice procedures.

SHREDDING IT

There are a multitude of shredders available, but they generally fall into two categories: slow or high-speed machines. High-speed models cut or fractionate faster due to the higher rpm of their rotors or shafts, and this generally leads to higher heat generated by more friction, as well as higher dust generation. They are often the right machines when heavy items need to be broken apart or when particle sizes need to be small. Slower speed machines rely on high-torque shear cutting and generally run cooler, produce fewer fines, and are quieter. Furthermore, shredders can be provided in single-shaft designs that cut down against one or more stationary bed knives, or dual-shaft models that employ two counter-rotating shafts that cut against each other to shred scrap. Multi-shaft shredders deliver a defined particle size and reasonable throughput based on the screen opening size.

Photo Credit: Rotogran International Inc.

Rotogran can add a removable pathway deflector into the cutting chamber to deflect pre-shredded material back directly into the cutting circle.

A big benefit to a shredder is that it isn't exactly high maintenance — more like "dump-it-and-forget-it." "Shredders usually require only the very simplest feeding systems, and actually work best when heavy, dense scrap is simply dumped into the feed hopper," said Greg Parent, the Canadian sales representative for Vecoplan LLC. "A hydraulic ram travels laterally along the floor of the shredder and pushes material into the cutting rotor." By keeping the hopper full, Parent continued, the weight of the material creates a downward force which works in conjunction with the ram

pushing horizontally to maximize the efficiency of the shredder. "The ram is pushing based on the amp load of the rotor, so there is no worry about overfeeding the cutting rotor as it will slow down, stop, or reverse to allow the rotor to work through the material. This is what makes single-shaft shredders so versatile: It doesn't matter how heavy the purging or parts are, the ram is controlling the feed rather than gravity, which cannot be controlled," Parent said.

There are a few areas in which shredders really shine. Lower speed, higher torque applications — plastics recycling in particular — are one. "Plastics recyclers need size reduction equipment that is big and strong, period, because in order to be profitable they have to maintain maximum 24/7 capacity," said Mike Cyr. "Shredders are ideal for slowly tearing post-consumer material apart, minimizing problems such as embedding metal in plastic during the shredding process." For plastics recycling lines where large items are to be shredded versus a stream of only smaller items, a larger primary breakdown unit may be required. "A second pass can be then made with a secondary shredder or granulator to further reduce particle size and separate the recyclable materials," Cyr said. "Sizing screens should be utilized to produce a uniformly sized product."

For plastics processors looking to put the scrap back into their own production lines, meanwhile, a shredder can handle thick, heavy material that would put a real strain on a granulator. Take purgings, which can be several inches thick and weigh up to 40 lbs. "Putting a large purging in a granulator can potentially damage the machine," Cyr said. A way around this problem is to cut the purging into smaller pieces first, using a band saw or a similar tool. But that's extra work. Tossing purgings in a shredder, however? No problem. "All of the purgings in a bin can be dumped at once into the open hopper of a shredder and the machine will reduce them into scrap very efficiently," Cyr said.

The downsides? Shredders don't normally work efficiently — and sometimes won't work at all — at extremely low throughputs. Also, lightweight objects such as loose bottles can bounce around in a shredder, causing the cutting efficiency to fall dramatically.

GREATER GRANULATE

The opposite of the high-torque, low-speed shredders, granulators are low-torque and high-speed, and can be classified into two general groups. "Beside-the-machine models grind relatively small volumes of sprues, runners, and off-spec parts for immediate recycling back into the process," said Greg Parent. "Central granulators are usually bigger and more powerful, and are used to handle large volumes of scrap, sometimes from multiple processing lines or molding cells." Of these, there are two main types of granulators on the market: the first accepts whole scrap while the second is designed to be secondary and handle pre-shredded material. These machines run at 125 to 250 rpm, depending on design. To be efficient, they rely on momentum and use solid, heavy rotors. Multiple blades affixed to the rotor shaft shear against stationary blades or anvils attached to the granulator frame, and a sizing screen allows the material to recirculate until small enough to pass. How small? "Granulators are suitable when the desired output size is one inch or less," said Jim Hoffman, vice president of sales and marketing with Rapid Granulator Inc. "They are also recommended for hot material due to tighter tolerances, and for immediate reintroduction into a process."

Unfortunately, some processors fall into a huge trap right out of the gate by using the wrong size granulator for their application. "They think a granulator is just a granulator, and that horsepower and throat size are all they need to know to size an effective granulation process, when in fact nothing could be further from the truth," Hoffman said. Indeed, there are at least seven critical pieces of information needed to size the granulator appropriately, the experts say. "First, the application process — is it blow molding, injection molding, extrusion, or recycling?" Hoffman said. "Next, the material, since each material can react very differently in a granulator; the method of feeding; the part description; the part dimensions; the capacity, in either lbs or kg per hour; and the screen size, which is used to determine final particle size for process."

These are all areas in which it pays to observe best practices. Take feeding, for example. When it comes to volume, there really is no minimum throughput rate for a granulator. "The only real limitation is the size and configuration of the feed opening and cutting chamber, and the need to avoid overfeeding and jamming the rotor," said Glen Billinger, president of Plastics Machinery Inc., which represents Zerma size reduction equipment in Canada. But it's amazing, the experts say, how many processors overfeed their granulators. "Too many processors simply dump an entire bin of material into a granulator, which will back it up, reducing productivity and also dulling the knives at a faster than normal rate," Jim Hoffman said. "It's almost always better to automatically meter-feed a granulator, either with a robot, a conveyor, or by some other special feeding mechanism."

On the flipside is the problem of underfeeding, which is often caused by good intentions gone too far. "Underfeeding usually happens when a granulator is fed manually by an operator who is being very careful not to overfeed and jam the grinder," Greg Parent said. "Regular, steady feeding of the granulator is the best operating practice, which is why you often see shredders and granulators paired together. The granulator can communicate with the shredder in order to optimize the feed rate; in addition, shredding the plastics prior to the granulator typically increases its throughput by about 50 per cent."

When combining shredding and granulating, new technologies are being introduced that can improve granulator throughput, and if you're not paying attention you can miss them. For example, Rotogran now has the ability to add a removable pathway deflector into the cutting chamber itself. "It deflects pre-shredded material back directly into the cut-

ting circle, which greatly improves the throughput, and is available as an optional upgrade," Mike Cyr said.

Perhaps the most common problem associated with granulators is poor quality granulate with excessive fines and high dust content in the material. "The two major reasons for dust and fines during granulation are dull and/or improperly gapped knives," Jim Hoffmann said. "The sharper the knives, the more efficiently the granulator will cut the scrap, especially with soft, energy-absorbing materials such as TPR or PP/PE film. Sharper knives produce a cleaner cut without pulling and tearing, higher throughputs, less dust and fines, less noise, and greater energy efficiency."

Speaking of sharper knives, following the manufacturer's specifications regarding preventative maintenance is another key component of efficient granulating. But it isn't always done. "The maintenance of granulators, and their critical cutting components, is one of the most neglected areas of service in a typical processing plant," said Glen Billinger. "Historically, the necessary maintenance wasn't done frequently enough because granulator designs weren't very user-friendly, with poor or inadequate instruction manuals adding to the problem. This is still a drawback with older granulator models."

Most modern granulators offer quick and safe access to the heart of the unit for easy cleaning and knife maintenance, making the units as easy to inspect as possible, but processors still need to have a defined preventive maintenance program. Part of which involves not beating the hell out of it in the first place. "Many processors seemingly try to destroy their granulator not long after receiving it, in the name of 'testing the limits' of what the capacity of the granulator really is," Jim Hoffman said. "This happens with no other piece of equipment on the production floor that I can think of. It's definitely not a best practice."

So whether you want the size reduction equivalent of a sumo wrestler or a ballet dancer, understanding a few basic facts and following a few best practices can help you successfully reclaim your scrap — and maybe make the difference between profit and loss. **CPL**

RESOURCE LIST

Plastics Machinery Inc. (Newmarket, Ont.); www.pmiplastics.com; 905-895-5054

Rapid Granulator Inc. (Cranberry Township, Pa.); www.rapidgranulator.com; 724-584-5220

Dier International Plastics Inc. (Unionville, Ont.); www.dierinternational.com; 416-219-0509

DCube (Montreal); www.dcube.ca; 514-272-0500

Rotogran International Inc. (Toronto); www.rotogran.com; 905-738-0101

Vecoplan LLC (Archdale, N.C.); www.vecoplanllc.com; 336-447-3573

Greg Parent; 416-678-0154

AUXILIARY EQUIPMENT

Large, energy-efficient dryer

The new **1500 FM** desiccant dryer from **Dri-Air Industries Inc.** is based on the company's successful 750 FM design, while using larger towers and blowers for use with central drying systems and extruders that have outputs of up to 1,500 lbs per hour.

A new regeneration air flow design for the 1500 FM reduces the previous energy usage level, already among the industry's lowest, by an additional 25 per cent. Dry air is used for regeneration or cool-down of desiccant towers, allowing for -80° F or lower dewpoints. The regeneration valve with positive sealing is positioned so that it can easily be seen for quick troubleshooting without removing any dryer panels.

All external panels are hinged for quick access to internal components. Additionally, the high-pressure fan reduces the ambient noise level to less than 70 dB, and allows the dryer to operate at very low process temperatures to accommodate resins such as PLA.

Dri-Air Industries Inc./Maguire Products Canada Inc. (Vaughan, Ont.); www.maguirecanada.com; 905-879-1100

INJECTION MOLDING

Improved detection of problems and defects

Comet Plastic Equipment has introduced its new **PE-600**, said to be the industry's first mold protection device to use full-colour, high-resolution digital image processing technology to protect complex, expensive injection molds from damage.

Full-color digital processing improves detection by reducing errors caused by outside light, reflections from shiny mold surfaces, shadows on the mold, and residue. With 0.012-second digital processing, even ultra-high-speed molding applications with sub-2-second cycle times can benefit. The result is a system that offers superior levels of accuracy and speed.

More than just an ejection error detection system, the PE-600 also monitors both positions of the slide core, insert loading errors, broken pins, and metal die-casting errors. Automatic compensation for position (mold opening stop position) is an added standard feature.

Comet's PE-600 features a 10.4-inch, high-resolution, SVGA full-colour LCD touchscreen for easy viewing and setting of precision parameters. Weighing just three lbs, the unit can be handheld while entering settings in front of the mold.

The PE-600 can be used with one or two cameras (second camera is optional) that use a standard lens or optional wide angle and zoom lenses. Image resolution is 1,920 by 1,080 pixels.

Comet Plastic Equipment (Riviera Beach, Fla.); www.cometpe.com; 800-328-5088

EXTRUSION

Planetary cutter for precise medical plastic tube finishing

The new **M-TPC** medical traveling planetary cutter from **Conair Group** features a fully programmable, servo-driven cutting head that cuts small-diameter medical plastic tubing so precisely that the need for secondary, off-line tube finishing is virtually eliminated.

The planetary knife spins around the circumference of tubing from 0.080 to 1 inch in outside diameter, cutting it without deformation, particulates, burning, or fracturing.

The M-TPC cutter, the latest in Conair's MedLine line, is capable of splitting the tubing apart cleanly through displacement, without the loss of any material. This cutting method never blocks continuous airflow through the centre of the tube, so tube sizing and ovality are not affected. The programmable, servo-driven cutting head enables complete and precise control of cutter speed (surface speed), rate of cutter penetration (feed speed), and final depth of the cut.

The planetary cutter is mounted on a precision, servo-driven traveling table that can handle tubing automatically at line speeds of up to 100 feet per minute. The cutter's standard servo controls enable it to make distortion-free and particulate-free cuts at rates up to 45 per minute while holding cut-to-length tolerances of ±0.031 inches, even on shorter lengths of tubing. The cutter can be used with the full range of medical plastic tubing, including difficult-to-

cut materials such as styrene, PET, HIPS, and PC.

Conair Group (Cranberry Township, Pa.); www.conairgroup.com; 724-584-5500

Dier International Plastics Inc. (Unionville, Ont.); www.dierinternational.com; 416-219-0509

Industries Laferriere (Mascouche, Que.); www.industrieslaferriere.ca; 450-477-8880

Turner Group Inc. (Seattle, Wash.); www.turnergroup.net; 206-769-3707

BLOW MOLDING

Deflashers for tough bottle applications

Proco Machinery Inc. has launched two new automatic deflashers/trimmers designed for high-impact bottle applications. The **PADM3-1S** automatic and the **Pneutrium-Plus** automatic deflashers are targeted for heavy-wall thickness containers made of PC, E-PET, and other tough resins for extrusion blow and injection blow molding systems.

The Pneutrium-Plus deflasher is designed to remove the flash on various containers up to 10 gallons, and can be configured to deflash multiple containers simultaneously, enabling processors to increase production rates. Guide rods ensure accurate alignment of the punch tool during the deflashing operation. The punch mechanism is mounted on vertical guides to permit the whole mechanism to be adjusted vertically, and an embedded scale provides reference for accurate placement and can produce up to 700 lbs of force to remove large, difficult flashes easily.

The new high-impact deflashers, which feature powerful cylinders, can be integrated with the take-out system or operate as a stand-alone system, and can operate at line speeds of 3.5 seconds per cycle.

Both high-impact deflashers offer simple control systems activated by a touchscreen interface connected to the machine via an umbilical cord, enabling the operator to adjust the console position as needed. The colour touch panel features easy-to-change timer and control settings, enabling the operator to control the unit in either automatic or manual modes.

Proco Machinery Inc. (Mississauga, Ont.); www.procomachinery.com; 905-602-6066

ROBOTS & AUTOMATION

Linear robot is now even faster

With increased dynamics of more than 30 per cent compared to the traditional viper 20, the new **viper 20 speed** linear robot from **Engel** is designed to meet the requirements of the packaging and medical sectors in the area of small and medium-sized machines.

The robot offers a removal time of well under one second and can perform injection molding processes with total cycle times of around four seconds. Typical applications are the production of food containers or sample cups for medical analysis, areas in which top-entry robots tend to offer very high flexibility.

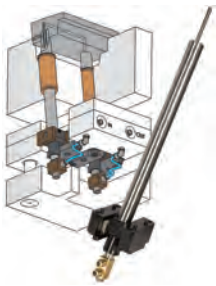
By fully integrating the viper robots into the CC300 control unit of Engel injection molding machines, setting of the linear robots can be performed very simply and quickly and monitored via the machine display along with the overall injection molding process.

Another advantage of a fully integrated control system is that the machine and robot use a shared database, enabling them to precisely coordinate their movements.

Engel Canada (Waterloo, Ont.);
www.engelglobal.com/na; 519-725-8488

MOLD TECHNOLOGY

Undercut release system sets new standards



New from **Progressive Components**, the **ModuLifter** undercut release system is a rod-style, standardized modular lifter assembly designed to simplify the release of undercuts for large molds.

The ModuLifter consists of six different base sizes that accept rods from 0.50 inches to 1.50 inches in diameter. The system is available with or without cooling, and hoses and fittings are offered. The acceleration/deceleration angles are available in 5° and 10°, and off-the-shelf availability eliminates in-house design and manufacturing.

With the ModuLifter, one system can be used for many scenarios, allowing assembly and maintenance personnel better familiarity, consistency, and efficiency with their mold maintenance plans.

Progressive Components (Wauconda, Ill.);
www.procomps.com; 847-487-1000
AceTronic Industrial Controls Inc. (Mississauga, Ont.);
www.acetronic.com; 905-564-7227

MATERIALS

High-performance sealant resins for flexible packaging

Nova Chemicals Corp. has introduced three new high-performance sealant resins for multi-layer film structures.

VPsK914 is a durable, abuse-resistant resin that offers triple the toughness of a typical PE sealant resin and more stiffness than a 20 per cent plastomer blend, making it well-suited for packaging sharp and heavy contents. Additionally, high resin melt strength can enable up to a 20 per cent increase in blown film line speeds compared to a typical Octene LLDPE.

SPsK919, developed for the heavy-duty sack market, offers a good balance of physical properties, sealing, and processability. Like VPsK914, this resin offers a low seal initiation temperature and broad sealing window to provide package integrity. The resin's creep performance is also said to be best-in-class of all PE heavy-duty sack resins on the market.

Finally, **SPs116** is a versatile, all-around performer for applications from liquid, dry, and frozen foods to the special demands of meat, cheese, and poultry. The resin's breadth of properties allows converters to substitute it for a wide range of resins, and to use it in different layers of a co-extruded structure: the sealant layer, the abuse layer, the skin layer, or the tie layer.

Nova Chemicals Corp. (Calgary, Alta.);
www.novachemicals.com; 403-750-3600

advertising index

The basics of preheating in extrusion

By Ajay Beniwal, Extru-Tech Solutions Inc.

Whether it's a smooth bore extruder or a grooved feed, both require band heaters to preheat the huge mass of the barrel and the screw.

There are various types of heating elements being used, for example, ceramic band heaters, aluminum cast heaters, cast heaters with hot oil circulation, and mica heaters. Of all these, the use of ceramic band heaters is quite common. The barrel heaters play an important role of providing the initial heat required to preheat the barrel and screw. Whether the extruder is empty or filled with plastics, the preheating is a must. If the extruder is empty, we need to bring the screw and barrel temperature to a pre-set temperature so the polymer granules can be easily melted.

If the extruder was stopped with the polymer filled and reheated, make sure that all the polymer is softened to avoid overloading and/or possibly breaking the equipment. The soak time is the additional time required to homogenize the polymer temperature filled in the screw flights. Since plastics are bad conductors of heat, we must therefore wait for a certain period of time so that the heat is transferred to the core of the screw. Soak times vary according to the size of the extruder: the larger the diameter, the higher the soak time. Soak time starts when all the heating zones reach the set temperature, and most of the machine suppliers use soak time as an interlock to prevent the cold start. Until the soak time is completed the operator can't start the extruder, but at the same time there is an option to bypass the soak time in case the extruder was stopped for some other reason, such as changing the filter.

There are many articles out there talking about the generation of frictional/shear heat during the screw rotation, but the heat generation is actually not uniform for the entire length of the screw because the screw is divided into many segments — most commonly feed, compression, mixing, and metering sections — and the shear heat generation is different in each section. There are many factors that affect the amount of shear heat generation, such as the type of extruder (smooth or grooved), the width of the flight, the overall clearance between the screw and barrel (screw diameter and inner barrel diameter), the type of mixing section, the length of the mixing section, and the compression ratio. Ideally, there should be an independent heating/cooling zone for each shear zone, but too often this aspect is not considered during extruder design. It's common to divide the total length of the barrel into equal sections of 3, 4, 5, and 6, depending upon the size of the extruder.

You've probably noticed that one of the extruder heating zones is always hot, while another zone is always demanding the heat. This may not be true in every case, but it's quite common to find at least one of these problems. As a rule of thumb, two different shear zones should never overlap, otherwise it will be difficult to control the temperature because of the difference in shear heat generation. The areas with less clearance (between screw flights and barrel) will generate more shear heat than the areas with bigger clearances, such as the feed and metering sections. In most extruders, the mixing section generates the maximum shear heat and must be an independent zone. Unfortunately, these norms are too tight and difficult to follow because of the commercial value involved — the machine manufacturers try to reduce the number of zones because of the cost involved with each additional heating zone.

Also, the proper thermocouple location is very important in maintaining the temperature of that section, especially with barrel heaters where forced cooling is involved. The thermocouple is usually installed so that it is not directly affected by the heaters as well as the cooling blower. Even though the thermocouple comes in contact with the barrel wall somewhere in the middle of wall thickness, or even deeper, and the heating is quite uniform at this depth, the cooling blower can affect the reading if it's blowing directly on the area of the thermocouple. If this happens, it can create a big difference in the overall temperature of the barrel. The processor must ensure that the thermocouple is installed properly and is always in contact with the dead end of the hole and not just reading the air temperature in-between.

Finally, all extruders have heating and cooling in order to control the barrel temperature as per the requirement. Like the heater, the cooling blower is sized according to basic principles of barrel mass, type of raw material, and the shear heat data of the raw material being processed. A blower that is too small, with less cooling capacity, will struggle to maintain the temperature of that zone, whereas an oversized blower will cool it too quickly and/or might overshoot the setpoint. **CPL**

Ajay Beniwal is the chief consultant at Extru-Tech Solutions Inc., a Brampton, Ont.-based blown film and extrusion consultancy. For more information, call 647-687-0859 or visit www.extrutechsolutions.com.

The POWER of **Performance**

NWB-DC+ Portable Dryer

NOVATEC continues to lead the charge in reliable drying technology and industry-first innovations.

- Most sold
- Easiest-to-use smart controls
- Web-enabled access

5 YEAR warranty

NOVATEC products are made in the USA. Supported worldwide.

Sold & Serviced in Canada by
Maguire Products Canada, Inc.
905-879-1100
info@maguirecanada.com
www.maguirecanada.com

NOVATEC™

www.novatec.com