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PLANT

ADVANCING CANADIAN MANUFACTURING

Volume 74, No. 04 May/June 2015

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Urban road WARRIOR

Vanhawks
manufactures
the connected
bike of the future

HIGHLIGHTS

Cap and trade: a price for emissions
Medicinal weed in the workplace
Exporting to China: An update
CASL and your online marketing
Too much useless maintenance data
Festo celebrates 40 and 4.0

NEW TECHNOLOGY SECTION

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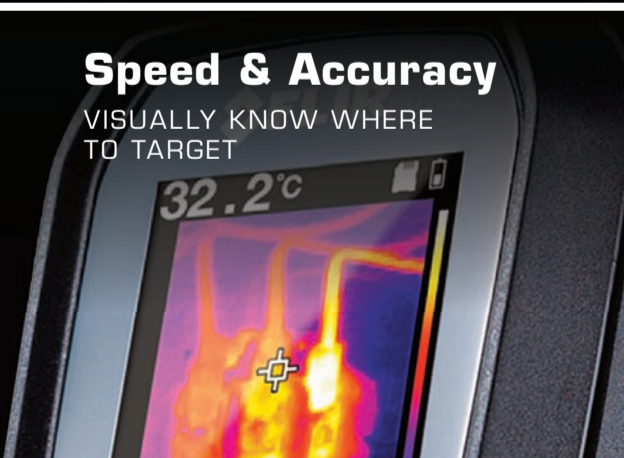
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The World's **Sixth Sense**™



Leadership fuels ambition

What's the difference between a Canadian and American business owner? One was offered the following: Give each of them \$1 million, and the American will aim to turn it into \$10 million, while the Canadian will buy a cottage and retire. Ouch!

And there's Ken Tencer, CEO of Spyder Works Inc., a branding and thought guru in Mississauga, Ont. who was asked about how his US and Canadian audiences differ. His answer: "Americans want to be Bill Gates, Canadians want to be careful."

Too careful, perhaps? When senior executives of the mostly small and medium-sized businesses were asked about how they viewed this year's prospects in the PLANT Manufacturers' Outlook survey (sponsored by Grant Thornton LLP), 60% were "cautiously" optimistic, despite the loonie's decline, analysts' anticipation of a resurging US economy and the plentiful opportunities that beckon beyond North America.

The survey responses did show incrementally greater interest in venturing beyond North American markets, but most of the respondents' revenue comes from Canada and the US. What about new markets over the next three years? Their sights are mostly trained on ... North America.

So what's with the apparent lack of ambition? There's a leadership deficit, and it needs to be turned around, said Robert Hattin, past chair of Canadian Manufacturers & Exporters (CME) and the president of ProVantage Automation, an integrator and service provider based in Ancaster, Ont.

He offered some straight talk as a guest speaker at a recent Grant Thornton "leadership" event for manufacturers. He noted, for example a typical small-medium, family-run, German manufacturer that is enjoying 18% growth over last year despite an unfriendly world climate. It invested almost \$4.1 million in automation equipment last year and \$5.4 million in plant expansion this year, adding jobs and capacity for the future.

By contrast, typical SMEs from the Outlook survey, if they are investing, are doing so conservatively in the thousands of dollars, most funding projects out of their own treasuries, and there is a very limited appetite for expansion.

Yet the time is ripe to think bigger and act. Canada has an educated workforce, tax rates and interest rates are low, countries such as India and China are quickly expanding their middle classes, Canada now has a trade deal with Europe, the US has tapped out its manufacturing capacity as pent up consumer demand comes into play, energy inputs are lower, and technology (hello Industry 4.0) is expanding capabilities and improving productivity.

But the opportunities aren't here, he said. "You have to go there."

Manufacturing has grown 5% annually since 2009. CME has set a goal for manufacturers: double production by 2025. That's 6.5% a year.

Some up and comers are already making their mark. Take Aeryon Labs Inc., a Waterloo, Ont. company run by a young leadership that develops and manufactures drone technology (PLANT, March 2015 cover story). It anticipates 80% of its business will come from outside North America this year and next.

What drives that kind of ambition? Hattin stressed the need to create a culture of leadership, which is about knowing where the company is going, articulating the vision and sharing it with the people who will make it happen. Collaborate. Inspire and build confidence. Recruit great people. Allow them to develop. Build a workplace where everyone is engaged, and they look forward to what the day will bring. Bring along the next leaders, and let them put some skin in the game.

Owners need to see their companies differently, he said post event. It's not about cutting costs but building value. "Any monkey can cut costs and make the balance sheet look good, but it's not sustainable. Growth is the only way out, because stagnation is dying."

Joe Terrett, Editor

Comments? E-mail jterrett@plant.ca.



COVER IMAGE: STEPHEN UHRANEY

Features

» INNOVATION

10 TRANSPORTATION Vanhawks' Valour connected bicycle is set to reshape the urban commute.

» OPERATIONS

14 THINK LEAN Emulate McDonald's to maximize operational consistency.

CCOHS SAFETY TIPS Lifting techniques that minimize back injuries on the shop floor.

15 INSIDE MAINTENANCE Identify the data that matters to make better maintenance decisions.

TECH TIP Perfecting motor stripping.

STRATEGY How to achieve "excellent" maintenance practices.

» MANAGEMENT

16 HEALTH Add managing medical marijuana to your health strategy.

17 EXPORTING China offers many rewards for Canadian exporters, but there are still risks to consider.

FORECAST US industrial constraints will drive Canadian exports.

18 ONLINE MARKETING Clearing up CASL confusion.

» SUSTAINABILITY

19 GHG EMISSIONS Ontario's cap and trade legislation will require manufacturers to invest in energy saving technology.

CLEAN ENERGY Cascades spends big to maximize production at its Cabano biorefinery.

CIEN

» TECHNOLOGY

21 AUTOMATION Festo celebrates 40 years in Canada and looks to the next industrial age.

SUPPLY LINES Supplier news.

22 PRODUCT FOCUS Industrial lubricants.

24 PRODUCTS AND EQUIPMENT What's new in industrial products and machinery.

29 PLANTWARE Hardware and software for managing plant operations.

Departments

4 Industry View

5 Careers

8 Labour Relations

9 PLANT Pulse

28 Events

30 Postscript

PLANT

ADVANCING CANADIAN MANUFACTURING

Vol. 74, No. 04, May/June 2015

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Subscription Price:

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We acknowledge the financial support of the Government of Canada through the Canada Periodical Fund of the Department of Canadian Heritage.



Printed in Canada

ISSN: 1929-6606 (Print), 1929-6614 (Online)

» Bulletins

Construction and infrastructure giant **Aecon Group Inc.** sold its wholly-owned subsidiary **Innovative Steam Technologies** to **Fulcrum Capital Partners** for \$35 million. IST, based in Cambridge, Ont., manufactures Once Through Steam Generators for the power generation and enhanced oil recovery industries.

Koss Aerospace rolled out **Memex Automation's** MERLIN software plant-wide after an initial implementation on select machines at its Mississauga, Ont. plant. The software enables machine communication across the shop floor to speed up production processes and increase machine utilization by up to 50%. Koss, based in Mississauga, Ont., manufactures aircraft components and assemblies.

Ovivo Inc., a manufacturer of water and wastewater treatment systems based in Barrie, Ont., is providing containerized modular fresh water makers for an offshore oil and gas production platform in the North Pacific Ocean. The \$9 million deal includes a custom production plant with a reverse osmosis membrane process for delivery in 2016.

The **Toronto Transit Commission** (TTC) selected US rail infrastructure engineering firm **Bechtel**, which has a Toronto office, to deliver the Spadina subway extension by December 2017. Bechtel will earn up to \$80 million for its work, which includes program management services. The 8.6 kilometre extension includes six stations and moves the subway line across Toronto's city boundary to York region.

RtTech Software was recognized by the Canadian Venture Capital & Private Equity Association (CVCA) as the BDC Innovation Award winner for 2015. Based in Moncton, RtTech's Cloud and traditional on-premise software products enable industrial facilities to connect machines to the enterprise and the internet to eliminate downtime and improve productivity.

Lynden International Logistics Co. opened a second facility in Milton, Ont. The provider of third party logistics (3PL) services for the healthcare manufacturing industry said the 65,000 square-foot facility will improve its Canadian network, which includes locations in Toronto, Calgary and Vancouver.

Industrial safety blitz is on!

Ontario inspectors to focus on new and young workers

TORONTO — Ontario's summer safety blitz is on and Ministry of Labour (MOL) inspectors will be focusing on new and young workers to ensure they are informed, trained and ready to work safely in industrial environments, including plants.

Between 2009 and 2013, MOL reports 30 workers aged 15 to 24 died in work-related incidents and more than 30,000 sustained lost time injuries. Many of these young workers were employed as labourers in processing, manufacturing and utilities operations.

Many of the safety issues are attributed to employers failing to: inform, instruct and ensure supervision of workers; prepare a written occupational health and safety policy; provide proper safety measures; comply with the statutory requirements for workplace Joint Health and Safety Committees or health and safety representatives; and failure to ensure JHSC meetings and work-



Ensure new and young workers are properly informed, instructed and supervised.

PHOTO: THINKSTOCK

place inspections take place.

When the inspectors come calling as part of the Safe at Work program, they'll be checking that new and young workers (14 to 24): are properly informed, instructed and supervised on the job; meet age requirements; and follow required safety measures and procedures.

Your plant will be more likely to get a visit if there has been a high a incidence of lost-time

injuries; it has been identified as a high-priority workplace (in manufacturing: automotive; food, beverage and tobacco; sawmills and logging); the workplace is known to have highly hazardous processes and equipment; complaints have been received and there's a history of non-compliance; where new and young workers are often employed on a regular or seasonal basis; and/or not previously visited by the ministry.

Magna scores with drivetrain

Auto parts giants beats out 72 innovation award nominees

SAILAUF, Germany — Two Magna International technologies have been recognized by the Automotive INNOVATIONS Awards 2015, which are presented by the The Centre of Automotive Management (CAM) and PwC.

Magna's all-wheel drive FLEX4 disconnect system automatically shifts between true two- and four-wheel drive and reduces fuel consumption by up to 10% compared to other AWD systems.

The auto parts giant's MILA Blue natural gas-powered concept car, an A-segment lightweight vehicle that produces less than 49g CO₂/km, has also been recognized.

Three hundred supplier innovations were evaluated, 72 of them in the Drivetrain Technology category, which included technologies such as conventional motors, alternative drivetrains, transmissions and exhaust systems.

Magna, based in Aurora, Ont., has 316 manu-



CAM-director Stefan Bratzel; Magna CTO, Swamy Kotagiri; Barbara Hahlweg, news anchor for "ZDF Heute"; and Felix Kuhnert, head of automotive at PwC Germany and Europe. PHOTO: MAGNA

facturing operations and 87 product development, engineering and sales centres in 29 countries.

PLANT Off-Site photo feature RETURNS!

Travel with PLANT Magazine to an exotic locale and win \$75

PLANT is reviving its popular Off-Site photo feature.

When you go on a business trip or vacation, be sure to take a copy of **PLANT** with you. If you have a photo taken while reading your favourite manufacturing publication in a remote, interesting or exotic location and we use it, you'll get \$75.

PLANT has travelled all over the world, visiting such exotic locales as China's Great Wall, and Rome's Coliseum, it has been underwater and was taken on safari. Get snapping and become a **PLANT** celebrity!

Send photos with name, title, company, address and phone number to Off-Site, **PLANT**, jterrett@plant.ca. Digital photos should be at least 5x7 inches and 300 dpi.



Climbing new heights to take a break with **PLANT** Magazine.

Canam supplying steel for Champlain bridge

SAINT-GEORGES, Que. —

Canam-Bridges, a division of Canam Group Inc. has signed an agreement with SNC-Lavalin Major Projects Inc., Dragados Canada Inc. and Flatiron Constructors Canada Ltd. to supply and fabricate the steel superstructure for the new Champlain Bridge between Montreal and the South Shore.

The bridge, slated to open in 2018, will span 3.4 kilometres of the St. Lawrence River from the île des Soeurs to Brossard, immediately downstream from the existing Champlain Bridge.

It will have two three-lane corridors for regular traffic and a two-lane public transport corridor will accommodate a light rail transit system. And there's a multi-use path for pedestrians and cyclists.

Canam Group operates 22 plants throughout North America, four of which specialize in bridge component fabrication.

H2O wins \$3.6M in new contracts

QUEBEC CITY — H2O Innovation Inc., a water treatment system developer based in Quebec City, has been awarded \$3.6 million in new contracts.

An ultrafiltration system will be supplied to a power plant located in New Jersey to treat secondary effluent. It will produce 1,420 cubic metres per day (m³/day) of process water for cooling towers and boiler applications. The system integrates H2O's FiberFlex technology, which accommodates interchangeable membrane modules.

The reverse osmosis system is going to a refinery in New Mexico. It will produce 500 gallons per minute of process water, installed on the concentrate stream to capture usable water that would otherwise end up in the waste stream.

H2O Innovation's Bio-Brane technology will be integrated into a municipal wastewater treatment system in Saskatchewan.

The company will also install a nanofiltration water treatment project for the municipality of Sainte-Marthe-sur-le-Lac, Que. that will produce 6,200 m³/day of potable water.

A pair of identical pilot units will also be made to test ceramic membranes designed by Nanostone Water Inc.

Everett transit opts for New Flyer

\$15 million deal covers 29 more Xcelsior buses



XD40 buses will be used to add 67,000 hours of new service this year. PHOTO: NEW FLYER

WINNIPEG — Community Transit based in Everett, Wash. has exercised an option with New Flyer of America Inc. for the purchase of 29 heavy-duty 40-foot and 60-foot Xcelsior clean diesel buses in a deal worth US\$15 million.

The buses add to an existing contract and will consist of 19 XD40 and 10 XD60 Xcelsior buses.

The transit agency serves up to 10 million people a year in the Everett area. It plans to add 67,000 hours of bus service over the next six years, 27,000 of which will begin in June.

New Flyer is a heavy-duty transit bus manufacturer that employs more than 3,000 people at plants in Winnipeg and Minneapolis.

IESO extends IEI incentive

Electricity cost reductions available until 2025

TORONTO — New contracts offered under the Independent Electricity System Operator's (IESO) Industrial Electricity Incentive (IEI) Program will encourage companies across Ontario to reduce electricity costs and better manage electricity use.

In return for building new or expanding existing production facilities, IEI Stream 3 participants will receive a reduction in associated electricity costs until the end of 2024.

KGHM International Ltd. (KGHM) in Sudbury, Ont., a global copper and silver mining company, has applied Stream 3 for electricity that will be used by its new Victoria Mine, an underground copper and nickel mine located in Whitefish, Ont.

Catalyst resurrects coated papers

Will be produced at two US and one BC plant

RICHMOND, BC — Catalyst Paper has re-launched its line up of coated papers, and will become the sole manufacturer of the Orion, Vision, Escanaba, Dependoweb, Capri and Consoweb brands.

The paper will be produced at three Catalyst plants in Port Alberni, BC; Rumford, Me.; and Biron, Wis. mills starting in June.

Catalyst, based in Richmond, BC, manufactures printing papers such as coated freesheet, coated and uncoated groundwood, newsprint, directory, as well as market pulp. It has five mills across North America with an annual capacity of 2.1 million tonnes and more than 5,500 employees.



Catalyst's Port Alberni production plant.

PHOTO: CATALYST PAPER

Open Data Exchange gets \$3M for ODX

...and Starlim gets a \$4 million FedDev loan for new equipment

WATERLOO, Ont. — Communitech Corp., a Waterloo, Ont. company that supports tech companies, is getting up to \$3 million from FedDev Ontario to establish the Open Data Exchange (ODX).

The ODX will support the development of industry standards for open data, which is machine-readable and freely shared, used and built without restrictions; build a national marketplace for commercialization; and support a pan-Canadian open data innovation community that will incubate 15



Common space at the Communitech Hub.

PHOTO: COMMUNITECH

new data-driven companies.

The project aims to create 370 direct and indirect jobs, and leverage \$3-million from project

partners with an additional \$50 million in venture capital and other financing.

Communitech, with its project partners Desire2Learn, OpenText Corp. and the University of Waterloo, will be matching FedDev Ontario's \$3-million contribution.

The ODX will be temporarily located at OpenText Corp. in the David Johnston Research and Technology Park before moving to a permanent home in uptown Waterloo.

Starlim North America Corp. in London, Ont. will use a \$4 million loan from FedDev Ontario to purchase advanced manufacturing equipment.

The manufacturer of silicone components for the automotive, life sciences and industrial sectors said the funding will help it get new business in the food packaging, energy and electrical sectors.

The \$15 million project aims to create up to 20 full-time jobs by 2018 and add more within two years of completion.

Waterloo brews win big

Brick Brewing gets gold and silver for quality

KITCHENER, Ont. — The folks at Brick Brewing Co. Ltd. are clanking tankards in celebration following the Monde Selection global quality awards in Belgium.

The Kitchener, Ont., publicly owned Canadian brewer of craft beers submitted seven of its Waterloo Brewing brand.

Waterloo IPA, Amber, Oatmeal Porter, Vanilla Porter and Grapefruit Radler all took gold, while Waterloo Dark and Pilsner took silver.

Monde Selection, International Institute for Quality Selections, tests and analyses consumer goods from all over the world.

Brick is now authorized to display the organization's quality label that demonstrates its beers were tested and approved by a professional, independent jury.

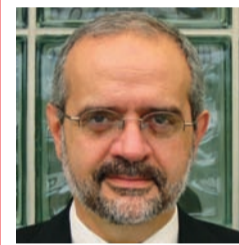
Brick Brewing, the first craft brewer in Canada to be GSFI certified (one of the highest standards for food safety) is opening a new \$9 million brew-house in the summer with full production starting in October.



Waterloo IPA wins a Gold Monde Selection quality award.

PHOTO: BRICK BREWING

Careers



Tom Kavassalis



Daniel Gheorghiu



Rob Karimi

Tom Kavassalis, vice-president of strategy and alliances at the Xerox Innovation Group, was named chairman of the Industrial Research Institute (IRI) board in Seattle, Wash. An IRI member company since 1959, he joined the document technology company in 1987 as a member of the research staff. He worked in the field of polymer physics after serving as a research scientist at the Ontario Hydro Research Division and as a visiting scientist at the Instituut Lorentz in the Netherlands.

Emco Wheaton has appointed **Daniel Gheorghiu** supervisor of engineering services in Canada. The manufacturer of fuel and loading systems with a plant in Oakville, Ont. said he will lead the Canadian engineering team in the design and development of products and systems. Gheorghiu played a key role in the design and co-ordination of the vertical helix ancillary machine, which uses an un-opposed cantilever design nearly 165-feet tall to manufacture umbilical cables for subsea drilling.

Basler, a manufacturer of industrial cameras based in Ahrensburg, Germany, has added a Canadian rep to its America's sales team. **Rob Karimi** has been appointed regional sales manager. Karimi, who previously worked for Dell, Avnet and Cisco, will be based in Richmond Hill, Ont.

Husky Energy, an integrated energy company based in Calgary, has appointed **Jonathan McKenzie** CFO. He previously served as chief commercial officer of Irving Oil Ltd., based in Saint John, NB, which he joined in 2011. Prior to that he held senior executive roles at Calgary-based Suncor Energy and also worked with Crestar Energy.

David Coleal has been appointed president of Bombardier Business Aircraft, succeeding **Eric Martel**, who is leaving the company after 13 years. Coleal was president and COO of Cirrus Design Corp. Procurement expert **Jean-Paul Pellissier** has joined Montreal-based Bombardier as a special adviser to conduct an extensive review of its supply chain. And **Peter Likoray** was appointed senior vice-president of sales for business aircraft. Most recently, he held the position of vice-president, business aircraft sales for North America.

Mike Turner, president and CEO of Melitron Corp., a manufacturer of custom metal enclosures and electro-mechanical assemblies based in Guelph, Ont., has completed QuantumShift, an exclusive invitation-only leadership development program for 40 of Canada's most promising entrepreneurs. Founded by KPMG Enterprise and the Richard Ivey School of Business at The University of Western Ontario, QuantumShift helps entrepreneurs take their skills and talents to the next level.

A good time to invest in machinery

Budget 2015 extends the popular ACCA incentive

BY MATT POWELL, ASSOCIATE EDITOR

In a federal budget full of big promises for the manufacturing sector, there's one that has generated the most chatter.

The Harper government tabled its 2015 budget over a month late as it came to terms with energy, its economic star, going supernova.

Budget 2014 placed plenty of focus on manufacturing, but the 2015 edition adds a subchapter headlined by a 10-year extension of the popular Accelerated Capital Cost Allowance (ACCA).

According to government data, more

than 28,000 manufacturers have taken advantage of the tax incentive since 2007 when it was introduced to encourage investments in manufacturing machinery and equipment. It has since been extended several times, but was due to expire at the end of this year.

Jayson Myers, president and CEO of Canadian Manufacturers & Exporters (CME), said in a statement the measure will encourage manufacturers to invest in growth by making investments in advanced production technologies.

"The ACCA's 10-year timeframe will encourage new investments by provid-



Boost productivity by taking advantage of the ACCA.

PHOTO: THINKSTOCK

ing greater certainty for companies that require several years to plan and put in place new equipment," he said.

The current ACCA provides a 50% "straight line" depreciation rate, which

allows a manufacturer to claim 50% of the depreciation of capital equipment each year, and recoup 100% of the equipment's depreciated value after about three years.

However, Budget 2015 has made a significant change to the incentive.

The new program changes the calculation to a "declining balance" method, which allows a company to claim 50% of the full value of the piece of machinery in the first year, but only 50% of the remaining depreciation value in year two and beyond.

Reduce taxable income

Manufacturers can depreciate, for tax purposes, the value of newly purchased equipment at the accelerated rate of 50% per year to reduce their taxable income in the first few years of owning the asset.

The "half-year" rule allows half the ACCA deduction otherwise available in the taxation year in which an asset is first available for use. Machinery and equipment acquired after 2015 and before 2026 for use in Canada will qualify for the incentive.

Eligible assets acquired after 2025 will qualify for the 30% declining-balance rate.

Jim Menzies, partner and national manufacturing leader at accounting and advisory firm Grant Thornton LLP, said the change in calculations will allow manufacturers to claim about 87% of the equipment's value over three years.

CME estimates the return reaches 95% by year five.

Menzies noted the change is substantial, but shouldn't deter manufacturers from using the incentive.

"There aren't many assets you can write off as quickly."

CME expects the new ACCA to save manufacturers \$1.1 billion over the next four years.

"The tax allowance is extremely competitive in international terms, so it will also help Canada compete for new business investments that will benefit goods and services suppliers alike," said Myers.

The federal government has provided a full run down of the changes to the ACCA at www.budget.gc.ca/2015/docs/plan/ch3-1-eng.html.

For a complete budget round up, visit PLANT's Manufacturing Network partner CanadianManufacturing.com at www.canadianmanufacturing.com/manufacturing/budget-2015-plenty-to-chew-on-for-canadas-industrial-sectors-147307/.

Comments? E-mail mpowell@plant.ca.

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Video demo on web site ▶ www.exair.com/18/462.htm



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- 55 and 110 gallon models
- No moving parts - maintenance free
- Removes industrial contaminants
- Mold and allergen removal
- Reduces exposure to airborne irritants
- Eliminate exhaust debris

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Unifor denounces EDC's Volkswagen loan

Claims it undermines Canada's ability to attract auto investment

Canada's largest private sector union is not too happy about a \$526 million loan by Export Development Canada (EDC) to German automaker Volkswagen that it said will support the expansion of assembly operations in Mexico.

"It is absolutely incredible that a Canadian government agency is helping the migration of the continental auto industry to Mexico, without any guarantee of Canadian benefit whatsoever," said Jerry Dias, Unifor's national president.

EDC says the loan will help Canadian parts makers win new business with Volkswagen. However, Unifor contends there are no requirements that the automaker buy anything from Canadian firms, suggesting the crown corporation is only committed to participating in a "matchmaking" process.

Dias says even if Canadian-based firms did win a contract from Volkswagen, the work would most likely be sourced from parts plants in Mexico (rather than being made in Canada).

"If the Canadian government is really interested in supporting the auto parts sector, it should focus on winning new investments and creating new jobs here."

Last year, Canada sold a mere \$484 million worth of auto parts to Mexico – down 30% since 2001, despite the rapid expansion of Mexican auto production during that time. The EDC loan represents more value than the whole Canadian parts sector sells to Mexico in a year.

Auto parts imports from Mexico totalled \$4.4 billion in 2014 and more than \$6 billion in finished vehicles. Canada's automotive trade deficit with Mexico last year exceeded \$10 billion.



Jerry Dias at the Ford assembly plant in Oakville, Ont. in 2013, on hand for the announcement of a \$700 million investment. PHOTO: JOE TERRETT

Unifor estimates that deficit corresponds to the elimination of more than 15,000 auto jobs – or 40% of the 38,000 auto jobs lost since the Harper government was elected.

"It is painfully ironic that we recently lost out on a lucrative engine investment in Windsor by Ford, largely because of inadequate government support. Yet we can somehow find \$526 million to help a foreign firm invest in Mexico."

Dias argues EDC could play a crucial role in attracting and supporting automotive investments in Canada, noting its role during the 2009 restructuring of General Motors and Chrysler.

"Actions like this suggest that EDC has truly lost its way."

EDC has noted the decision to finance the massive loan is critical to building relationships for Canadian tooling and automotive suppliers.

Access for SMEs

"The value here is that qualified Canadian SMEs get a real chance to be considered by a major industry player, where they might not have an opportunity to gain that kind of access on their own," said Carl Burlock, senior vice-president, financing and investment at EDC.

The crown corporation said it targets companies like Volkswagen with procurement needs that match up with Canadian expertise. The Volkswagen deal comes on the heels of similar support to BMW for investments in South Carolina and Mexico.

"With the Southern US and Mexico increasingly becoming prime production locations for global automakers, EDC has a role to play in making sure that Canadian companies have the opportunity and financial wherewithal to compete for that business," added Burlock.

EDC will manage offers from qualified Canadian suppliers through the Enterprise Canada Network (ECN), a joint venture between EDC and Canadian Manufacturers & Exporters (CME). The website (www.enterprisecanadanetwork.ca) matches profiles of Canadian companies with buyers.

More than 30,000 opportunity profiles are posted through the European Commission's Enterprise Europe Network, to which the ECN links.

Unifor, meanwhile, has called on Industry Minister James Moore to launch a review of EDC's actions in promoting auto investment in Mexico, and prohibit future loans to support auto investments in other countries, including an EDC initiative to help Canadian parts makers open new plants there.

"This decision is just the latest evidence of Prime Minister Harper's failure to provide the strategic leadership required to rebuild and maintain Canada's auto sector," said Dias.

— PLANT STAFF

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NPRs' IMPACT

CIBC calls them a "major force"

Non-permanent residents (NPRs) are dramatically influencing Canada's demographic and economic landscape, says a report from CIBC World Markets.

The number of non-permanent residents in Canada has climbed by more than 450,000 over the past decade to a record 770,000 and 95% of them are under 45. Most significant, says Benjamin Tal, CIBC's deputy chief economist, is the number between 25 and 44 doubling since 2006, accounting for all of the age group's growth.

"If not for the rapid growth of non-permanent residents, the number of that economically important age group in the Canadian population would have fallen," says Tal. He observes they should be viewed as an important demographic force capable of influencing and potentially altering economic variables such as housing activity and consumer spending.

Their most significant impact is in Ontario, which would have experienced a decline of 120,000 in the 25-to-44 age group, and BC where NPRs account for all the growth.

The impact on Alberta is relatively muted, he says, despite the skills shortage being one of the catalysts behind changes to the temporary workers program.

But Tal believes the numbers may actually understate the real tally. "Based on preliminary CIC data, it is reasonable to expect an overall 2014 annual increase in NPRs of no less than 8%."

He notes that recent changes to the temporary foreign workers program will likely result in only a modest reduction in the stock of valid visa holders.

Rebounding into Q2: TD

Manufacturing sales volumes rose 2.9% in March, rebounding from a February decline, although the gain was not broadly based. Slightly less than half of the industry segments reported an increase in sales, says TD Economics in an economic update.

Transportation led with aerospace taking off with a 42.3% gain after a 29.4% drop in January. Motor vehicles were up 12.8%, and food industry sales rose 3%. But fabricated metals declined 3.6%, continuing a downtrend since mid-2014.

TD economist Leslie Preston explains overall economic growth is still expected to be sluggish.

March's results won't add too much to the Bank of Canada's thinking on interest rates. She notes manufacturing is forecast to pick up steam in the second half of the year on stronger demand from the US, making a recent rise in global bond yields and the Canadian dollar of greater interest to the Bank.

"That combination tightens financial conditions in Canada, and the Bank will be watching closely to ensure it does not inhibit the expected export-led rebound in economic growth in the second half of the year," Preston concludes.

SMALL BIZ OPTIMISM WANING: BMO

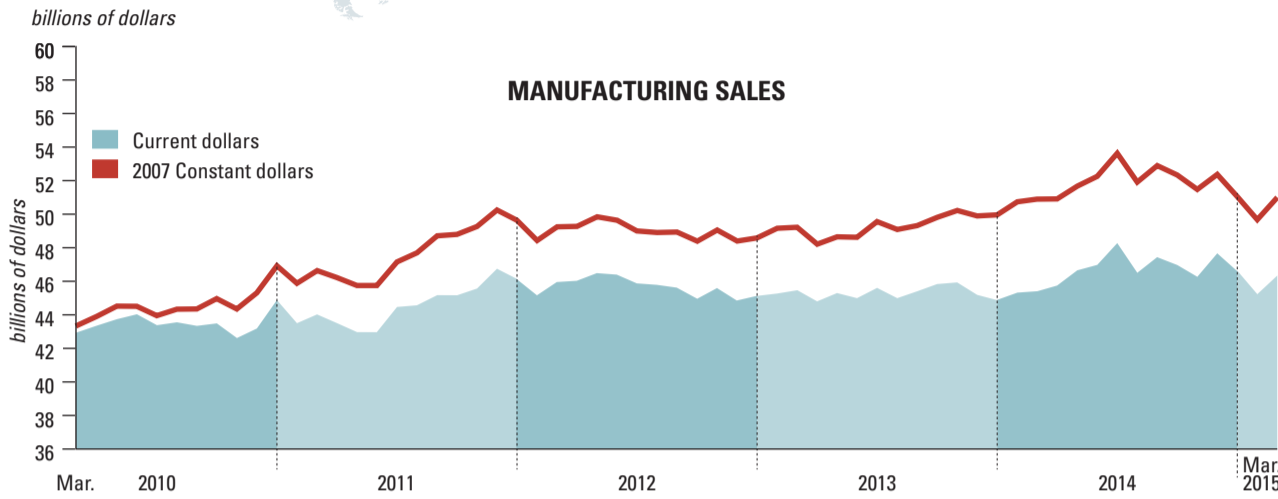
Almost half of small businesses (48% of 502 surveyed) expect growth this year, but overall their confidence in the economy and business prospects has fallen to 59/100, nine points from the fall of 2014, according to the BMO Small Business Confidence Report.

The survey also found that:

- 51% believe 2015 will be a better year than 2014.
- 56% expect to see an increase in profits.
- 29% expect the Canadian economy to improve.
- 48% expect their businesses to grow.
- 29% plan to invest more this year.

PLANT PULSE

ECONOMIC DEVELOPMENTS AND TRENDS



SALES ARE UP 2.9%

Manufacturing appears to be on the upswing. Sales for March were \$51 billion, rising 2.9% from April, the second increase in six months. There were gains in the production of aerospace products and parts coupled with gains in the motor vehicle industry. Partially offsetting the advance was a decline in sales of fabricated metal products.

Statistics Canada

18.1 BILLION



The amount in cubic metres of crude oil and equivalent products Canada produced in February, up 9.5% from the previous year. Crude bitumen production increased 22.7% to 6 million cubic metres. Synthetic crude production was up 11% to 5 million cubic metres. Production of heavy crude was down 4.1%. Light and medium crude dropped 2.7%.

Statistics Canada



65%

Percentage of 4,000 CIOs from 50 countries who report digital disruption [to established business models] as a very significant change, driving them to create new business models and bring new products and services to market faster.

Harvey Nash/KPMG 2015 CIO Survey

85,181

The number of manufacturing establishments across Canada. Almost 91% are in four provinces: Ontario (40.1%), Quebec (26.1%), BC (14.1%) and Alberta (10.3%).



Statistics Canada

222,000 NOW HIRING

Job vacancies reported by Canadian businesses in February, up 28,000 compared with February 2014. For every job vacancy, there were 5.9 unemployed people, down from 7.1 one year earlier. The national job vacancy rate was 1.5% in February, up from 1.3% posted 12 months earlier.

Statistics Canada



More than half of small business owners in Canada under the age of 45 say they eat, sleep and breathe their businesses, according to an American Express Canada survey. But they're taking a new approach to work-life balance, embracing "lifestyle entrepreneurship" by creating businesses that fit within their personal lives. Sixty-four per cent say technology makes it nearly impossible to disconnect from work, and almost half (41%) check their e-mail or phone more than 20 times a day.

» Transportation

VALOUR: Road warrior of the FUTURE

A CONNECTED BIKE THAT MAKES NAVIGATING CITY'S STREETS SAFER

Toronto manufacturer and tech developer Vanhawks is reshaping the urban commute and turning the cycling industry on its head.

BY MATT POWELL, ASSOCIATE EDITOR

The bicycle of the future is here, and it's probably not what you'd expect. There aren't any rocket boosters, Wiley Coyote ejector seats or other over-the-top features. In fact, most of what makes the Vanhawks Valour so special isn't visible at all.

The Toronto-based manufacturer and tech developer intends to make urban cycling safer by propelling it into the connected world of the 21st century.

The bicycle as we know it hasn't changed much. Innovation has been limited to new materials, such as lighter carbon fibre frames, and more advanced components such as hydraulic brakes and slicker gearshifts.

Yet transportation technology is undergoing a transformation. Cars roll off production lines with as much (if not more) computing power than some off-the-shelf laptops.

There's Bluetooth compatibility to keep drivers off their smartphones, wireless internet access, and on-board GPS navigation. BMW has developed adaptive headlights that cast their beams in the direction of an upcoming curve for better visibility on winding roads. Heck, even Apple and Google have developed internet-enabled interfaces connected to a car's built-in display.

What if a bike had the same abilities? It is 2015 after all. You're connected, why shouldn't your bike?

This is exactly what a small outfit based in Toronto has accomplished. The 15-man Vanhawks team, rife with up-and-coming talent from Canada's top engineering and technology programs

is making a dash to the finish line. After a successful Kickstarter campaign that raised \$820,000 and a Series A capital grab of \$1.6 million, it will introduce its Valour connected urban bicycle to the world in July.

"Buying a car isn't cool anymore, but people still need to get from point A to point B," says Ali Zahid, the 21 year-old co-founder and COO of Vanhawks, who started the company in 2014 alongside brother Sohaib and friend Adil Aftab with the intention of reshaping the urban commute.

The bike is incredibly sleek and equipped with a dazzling array of on-board sensors that connect to a rider's smartphone through an intelligent proprietary interface that makes urban cycling easier to navigate and safer.

Connected automotive technologies have become big business as automakers attune offerings to the demands of a particularly picky new generation of young buyers. Funny thing is, young people aren't big on cars. Twenty per cent of those 21 to 27 don't have a driver's licence, according to Abacus Data, a market research firm based in Ottawa. And disinterest in cars is more severe among 18 to 20 year olds, at 47%.

Blame it on economic conditions, iffy job prospects or a desire to live the urban dream, having a car is no longer a "must have."

Instead, the popularity of bicycles is growing, especially in cities where they're simply the easiest way to get around, and this emerging bike culture also coincides with a move toward sustainable living.

According to Statistics Canada's 2013 Retail Commodity Survey (the most recent available data), first quarter independent bike retailer sales pulled in \$78 million, up from \$69 million in 2011. Second quarter sales were up to \$305 million from \$283 million.

Bicycles are affordable, nimble and environmentally friendly – all factors that



this new generation of consumers covet. Add a dash of smartphone compatibility, and minds will be blown.

"The bike industry sat in the old age for too long," says Zahib. "In the past, you couldn't find a car with a computer and now you can't find a car without one. We're doing that with bikes."

Named for the courage needed to fight traffic, the Vanhawks Valour connects to iOS, Android and Pebble smartwatch platforms via Bluetooth to provide riders with real-time statistics including route, distance, speed and ride time. LED indicators in the handlebars are connected to GPS to give riders turn-by-turn directions.

The bike is also fitted with ultrasonic, sensor-driven blind spot detectors that

alert the rider to objects (including cars) in the blind spot through haptic feedback (vibrations) in the handlebar grips – perfect for Vanhawks' target market of those a little wary about navigating busy downtown streets.

Waze for bikes

A gyroscope, accelerometer and magnetometer pick up unusually bumpy roads pockmarked by potholes to create a Google Maps-like overlay to alert other riders. It also measures the steepness of a difficult hill and the map includes information on designated bike lanes and traffic flow.

"Think of us as the Waze for bikes," says Zahid, referring to the popular



(Most of) Team Vanhawks (L-R): Nick Gray, Kee Wan, Christina Chan, Stephen Cripps, Mark Remennik, Haider Maan, Niv Yahel (CTO), Drew Archibald, Daanish Maan, Sohaib Zahid (CEO), Ali Zahid (COO).



Co-founder and COO Ali Zahid pulls data from the Vanhawks mobile application.

PHOTOS: STEPHEN UHRANEY

community-based traffic and navigation smartphone app that let's drivers share real-time traffic and road information.

A dynamo hub on the front wheel charges the integrated electronics, and needs just an hour-long ride to fully charge.

All of this data is collated in the Vanhawks mobile application from each bike to let riders know which routes are safest through a mesh-network. The data will only become richer as more riders connect to the network and it will also enable anti-theft tracking measures.

"All the data is going to help us make biking much faster and safer," says Zahib, who immigrated to Canada with his family from Pakistan when he was six. He left Queen's University during

the third year of a biomedical computing degree to focus on Vanhawks.

The Valour's technology load isn't confined to the hidden electronics. Those are housed in an all-carbon fibre frame, produced from a proprietary process developed by co-founder Aftab.

Zahid met Aftab two summers ago after being introduced by his brother, Sohaib, who at the time was working on his PhD in biomechanics and ergonomics at Lakehead University in Thunder Bay.

He has a manufacturing background producing lightweight, durable carbon fibre hockey sticks at his family's Pakistan-based company. He had introduced the business to carbon fibre, and contributed to the Valour's proprietary

construction. The frame is made of a single piece of moulded carbon fibre with internal walls that reinforce critical load-bearing points and is based on the human body's strongest bone, the femur. It's unlike most bikes, which are hollow tubes glued or welded together.

The design was a finalist for the Best New award at the massive BIKEEXPO in Germany last year.

Fully assembled, the bike weighs just 7.25 kilograms and its disc brake and carbon fibre belt drive are weatherproof, making it well suited for the mobility and toughness required while travelling on rugged, busy city streets.

Manufacturing is done in Taiwan and China, where Vanhawks has developed relationships with a number of industry suppliers who are also working with major cycling names such as Norco and Cervelo.

fibre frame down. That decision will depend on the sales model the company eventually adopts.

Just-in-time assembly

"It's unlikely that we'd move all of our manufacturing here, but as things evolve and we adopt a more direct sales model, there's a good chance we'd look at just-in-time assembly facilities in North America and Europe to reduce delivery times and add customized options."

Eric Monteiro, a product of McMaster University's engineering faculty and Vanhawks' head of hardware engineering, is in charge of designing the Wi-Fi enabled telemetry system for Valour. He says the decision to manufacture abroad was mainly a supply chain issue.

"It made little sense at the time to build the frame here, ship it to China to be out-

"...we need to leverage [connected] auto technologies to optimize our own...The connected car is important – we don't want to fight it."

In fact, the Valour was so impressive to industrial designer Mark Remennik, he left bike-giant Cervelo to become Vanhawks' first chief of design.

"Originally the plan was to assemble the bikes in Canada, but everything we needed to keep costs in check was sourced out of China and Taiwan," says Devin McDonald, Vanhawks' director of operations. "The breadth of knowledge we need and getting our hands on an end-to-end solution was much easier to find at an affordable rate there. Cervelo and Norco are making bikes that cost multiples of ours and the quality they get out of their manufacturing operations is absolutely world class."

However, he hasn't written off the idea of doing some manufacturing here.

McDonald spends a lot of time working with electronics and bike suppliers to find common ground between the two vastly different industries and is currently working with a Chinese manufacturer to bring the cost of the Valour's carbon

fitted with the electronics, and then have it send back to us for final assembly."

The connected car will also be important to the Valour's future capabilities, he says. Vanhawks wants to develop partnerships with automakers to refine technologies that will keep drivers and cyclists safer while they're out and about.

"Obviously, our goal is to make more people want to ride bikes, but we need to leverage those [connected] auto technologies to further optimize our own," he says.

"The connected car is important – we don't want to fight it."

Naturally, the unconventional bike company took a like-minded approach to bringing the Valour to life.

It turned to crowdfunding powerhouse Kickstarter to gauge consumer interest, this at the insistence of RealVentures, a Montreal-based internet technology hub that works to connect Canadian entrepreneurs with venture capital partners. It

Continued on page 12



The Valour's blind-spot detectors alert riders when a car is a little too close for comfort.



LED lights in the handlebars provide riders with hands-free, turn-by-turn GPS navigation.

PHOTO: VANHAWKS

Crowdfunding darling

Continued from page 11

provided \$50,000 to finalize the Valour's design.

The Kickstarter campaign went viral when it launched last May, reaching its \$100,000 goal in 30 hours. It has since become the most funded campaign in Canada, raising \$820,000 in a month – a crowdfunding phenom.

Zahib says the campaign not only helped the company get their hands on the money they needed to start assembly, it also acted as a distribution channel to a community that's excited about bringing the bike to life.

"The backers are essentially our investors, and we feel privileged to have gone through that experience – crowdfunding is most definitely here to stay," he says.

He has his opinions about venture capital in Canada, though – a long-standing struggle for entrepreneurs that's remained in idle while funds south of the border (Silicon Valley for instance) have skyrocketed into the tens of billions.

"VC is a touchy subject," he admits. "Almost every venture capital fund in Canada is funded by the government – it's all handled by one LP through the Business Development bank. And if that LP fails, everyone within it fails. That's just ridiculous to me."

The Canadian environment is historically more risk averse compared to Silicon Valley, where an estimated \$11.9 billion of the US's \$14.8 billion in VC activity was doled out in 2014, according to PwC data. In Canada, a tenth of that (\$1.9 billion) was spread out across the entire country last year, more than 55% of which was central to Ontario (\$932 million), according to the Canadian Venture Capital Association.

"In the Valley, people are raising \$3 billion funds. One firm outpays all of Canada. If I had graduated from university, I would have gone right to the Valley. Why would I have stayed in Canada?"

But Zahib did stay in Canada, and will use the \$1.6 million in seed funding Vanhawks secured in an investment round led by Real Ventures with YCombinator, Relentless Pursuit Partners and angel investors to accelerate the Valour's production schedule while adding five positions at its downtown Toronto office. This also drives the company to its next milestone.

"We want to be the software layer that will power the rest of the biking world – the Android for bikes," says Zahib who intends to get the Vanhawks technology platform into the hands of major bike OEMs. In fact, they're talking with a



One of the Valour's key features is its mobility. It weighs just 7.25 kilograms.

number of OEMs about how to do that, but the details are under wraps for now.

"There's a ton of functionality we can improve. The Valour is the hub onto which we can add spokes of functionality, and we're excited to see what those next spokes will be," says McDonald, who notes Vanhawks has already sold 1,000 units, including those promised to its 802 Kickstarter backers. And he expects sales to top 5,000 units by 2016 once Vanhawks starts shipping in July.

While making bikes will always be the core of Vanhawks' business, Zahib has bigger aspirations for the promising young company.

"I want to be able to tell people that our technology is in three out of every five bikes around the world."

Vanhawks' Valour is the bike of the future – and a sign of more promising developments to come.

Comments? E-mail mpowell@plant.ca.

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A McDonald's restaurant in Las Vegas. PHOTO: MCDONALD'S

» Think Lean

Achieve McBusiness success

EMULATE MCDONALD'S PROCESSES

Pick a process, define, document, test and tweak it, then create a methodology to achieve McDonald's-like consistency.

BY RICHARD KUNST

Most lean practitioners will tout the power and benefits of the Toyota Production System (TPS) ... but is it the best? It's founded on "Respect for People" which evokes Toyota's belief in the lifetime employment of its team members. However, in the real world more migrant contract or temp labour is being used.

Wayne Vanwyck, founder and CEO of The Achievement Centre International in London, Ont., who trains and coaches business owners, wrote an article for *Profit Magazine* recently recommending companies emulate McDonald's. Let's look at the restaurant chain from a lean perspective applying Vanwyck's insights.

Start by looking at your organization as if it were a McDonald's franchise and focusing on processes rather than the menu. Vanwyck referenced *The E-Myth Revisited* by Michael Gerber, who asserts process differentiates successful companies from the also-rans. Gerber writes that franchises succeed because they have a clearly defined system or process for everything – including hiring staff, invoicing, greeting customers, selling, performance reviews and coaching. Business owners should do the same.

McDonald's is successful because it's predictable and consistent, anywhere in the world, Vanwyck notes. The facilities are always clean, the employees always wear uniforms, the menu is the same (aside from local variations), the food tastes the same and employees engage customers in exactly the same way.

Enhancing TPS

Vanwyck says building documented processes will increase sales; reduce costs and expenses; help you hire the right employees and retain the best ones; partner with the right suppliers and distributors; and keep your customers coming back. It will also make your business easier to manage, easier to sell when the time comes, and it will be worth far more to a buyer.

He recommends focusing on the single, most important part of the business that could benefit immediately from a systematic process. Let's not forget methodologies used by Toyota have significant merit in other businesses but can be enhanced with some McDonald's flavour. Every McDonald's employee is instructed shortly after hiring that "if you have time to lean you have time to clean," a mantra they recite when they have moved on to manufacturing and implementing 5S within their plants.

Attaining consistency requires heavy investment in process development to make it easy and repeatable. You may think such standardization within McDonald's stifles innovation. Not so. Innovation thrives even at the

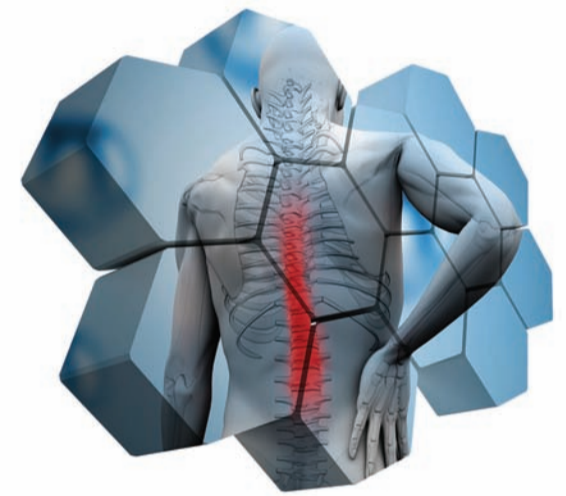
franchise level but it's vetted at the corporate level. If the innovation measures up, it's quickly deployed as a new best practice.

So pick a process, concludes Vanwyck, then define, refine and repeat. Being "franchisable" even though it's not what you intend to do, will help make your business successful.

Richard Kunst is president and CEO of Cambridge, Ont.-based Kunst Solutions Corp., which publishes the "Lean Thoughts" e-newsletter and helps companies become more agile, develop evolutionary management and implement lean solutions. Visit www.kunstsolutions.com. E-mail rkunst@kunstartofsolutions.com.

Comments? E-mail jterrett@plant.ca.

» CCOHS Safety Tips



Each year, several thousand workers are permanently disabled by back problems. PHOTO: THINKSTOCK

Oh, my back!

How to lift loads to avoid injury

Every worker who performs lifting tasks is at some risk of musculoskeletal injury. About 75% of Canadian workers suffer pain due to a back injury at some time, accounting for about one-third of all lost work claims and 40% of all compensation costs. Injuries will be reduced when employees apply these safe lifting techniques:

- Wear lightweight, flexible clothing that won't easily tear, avoiding exposed buttons, zippers or loose flaps that could catch in the load; safety boots with toe caps and slip-resistant soles; and protective gloves.
- Ensure the path is clear of obstacles, debris and slip hazards such as grease, oil, water and litter.
- Warm up muscles with gentle stretches.
- Test the load for shifting contents and weight. Use hoists, lift trucks, dollies or wheelbarrows for heavy loads.
- Stand close to the load in the direction it will be moving, with feet wide apart to maintain balance. Use both hands, balancing the load evenly between both arms.
- Lift with a comfortably straight, tightening abdominal muscles and bending legs so they do the work.
- Lift smoothly, avoid jerking and keep the load close to the body, between shoulder and knee height.
- Avoid twisting and side bending. Step or pivot, turning the whole body.
- Plan where to set the load down, ideally on a raised platform that won't require any bending. Avoid placing loads directly on the floor.
- Rest and alternate between heavy and lighter loads.

This article was provided by the Canadian Centre for Occupational Health and Safety (CCOHS). The not-for-profit federal corporation provides information, training, education and management systems to promote the health and safety of Canadian workers. Visit www.ccohs.ca.

LEAN ALERT



A recent study by *Industry Week* shows more than 90% of the respondent businesses did not achieve their objectives and 70% received no sustainable results. There are many reasons cited for lean failures, but most have something to do senior leaders, their understanding of people and culture transformation, and their level of engagement. The situation is often worsened by a preoccupation with short-term cost reductions, and a focus on lean tools alone (as projects) to generate short-term results. Without leadership commitment, understanding and engagement with work teams, we will not achieve the significant improvements that lean should deliver.

Source: Association of Manufacturing Excellence (AME), Canada. Visit <http://ame.org>.

» Inside Maintenance

All that data you collect isn't information if it's not the right kind or it's not analyzed properly.

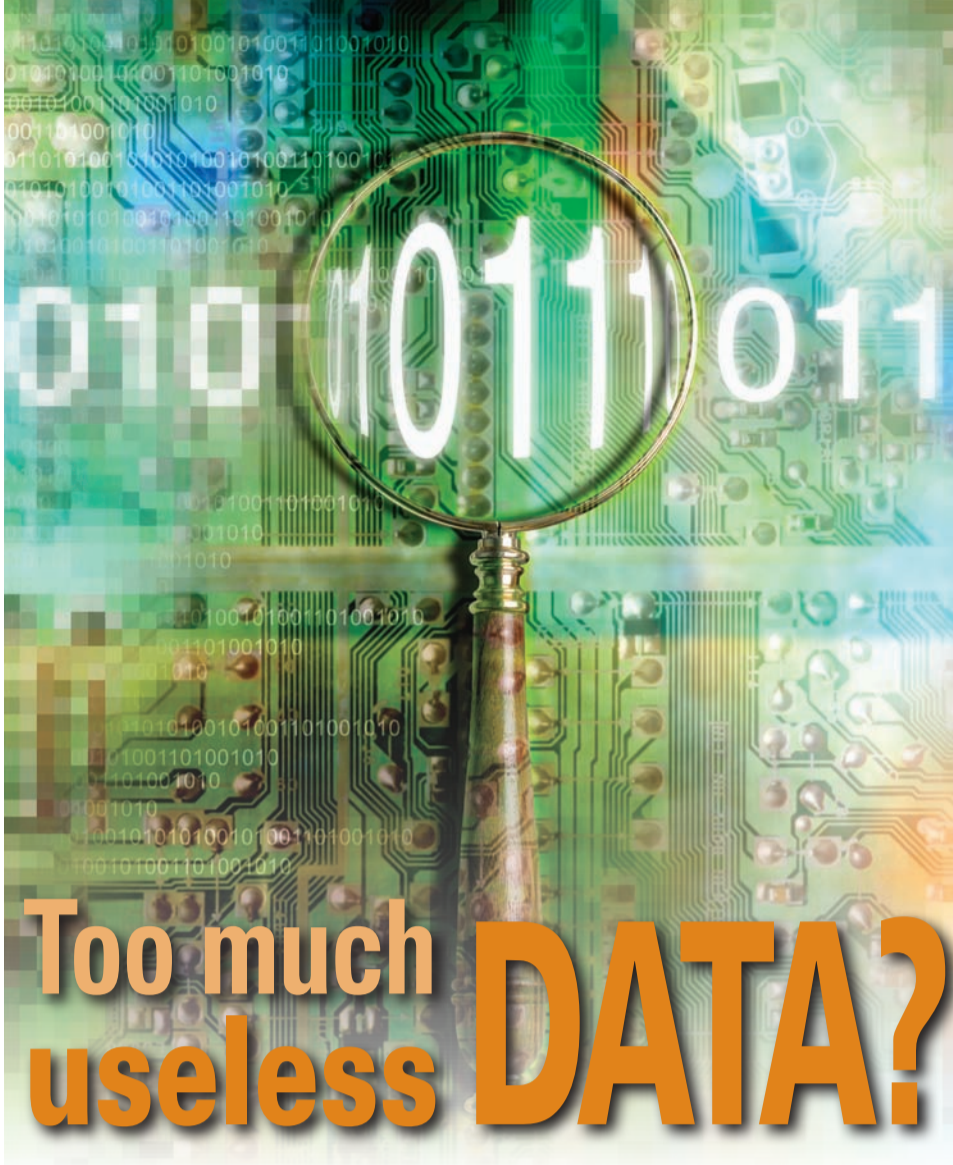
BY STEVE GAHBAUER

Your data is useless unless it drives decisions, says Michel Theriault, the founder of Success Fuel for Managers in Guelph, Ont., a resource for managers. We are data-rich but information-poor, adds Professor Dr. A.K.S. Jardine, who recently stepped down from his position as director and principal investigator of C-MORE, the Centre for Maintenance Optimization and Reliability Engineering at the University of Toronto.

Years ago, information overload was not a problem; the lack of it was. Not so today. Advanced sensor technology enables us to collect a plethora of data on machine conditions, but if that data isn't interpreted correctly and doesn't lead to informed decision-making about maintenance, repair and/or replacement, it becomes a burden rather than a blessing.

Theriault, also principal of Strategic Advisor, a facilities and property management consultancy, came up with six things to make better maintenance decisions, which he posted on his website and published in a recent Facility Management Newsletter. Here are his suggestions:

- **Collect only useful data.** Take a step back and ask the fundamental question: can this data be turned into information or knowledge to help make decisions that will improve services and reduce costs?
- **Use tools that help to analyze the information and the data collected.** Export the data from your system, if necessary, and load it into Excel. Use the pivot table tool to analyze data and convert it into information. You can also use other software or enterprise systems designed for data analysis.
- **Get accurate data.** Consider how you'll use it and how much of a difference accurate data will make in your decision-making. Manage data so you



SIX TIPS FOR BETTER MAINTENANCE DECISIONS

aren't overwhelmed with detail that simply doesn't matter in the end. For instance, if you are tracking costs as part of a process to make management decisions, does your tracking method have to tie into the financial system and match to the penny? Does it have to be a live link with your own system, or can you download the needed information from the financial system daily or weekly?

- **Convert data to information.** Analyze or manipulate information by combining it with other data, trending over time, assessing or analyzing the outliers, and applying your own experience and knowledge to transform it into something actionable.
- **Assess what matters to your decision.** If there is any question about the accuracy or completeness of your data, or you're using historical information to do projections, do a variance analysis. If it was 25% higher, would you make the same decision? What is the likelihood the

result would be in that range? How big a risk will it be? What parts of the information are important to the decisions you want to make? How will they impact the success or failure of your initiative? How much weight do they have compared to other factors?

- **Use language managers understand.** Solidify your business case. You stand a much better chance of getting it approved with solid information that tells the story and supports your argument. Include some methodology and provide a level of confidence about the collected information. Consider questions that may be raised, particularly if the information points to changes others may not like, and answer them up-front. This may include the reliability of the information, whether it's a trend or an anomaly, and what impact an increase or decrease might have on the decision.

Avoid the pitfalls of data collection, discard unhelpful data, turn useful data

The data you collect should drive decisions.

PHOTO: THINKSTOCK

into information, and use this information to improve maintenance decisions.

Visit Success Fuel for Managers at www.successfuelformanagers.com.

Steve Gahbauer is an engineer, a Toronto-based business writer and a regular contributing editor to PLANT. E-mail gahbauer@rogers.com.

Comments? E-mail jterrett@plant.ca.

» Tech Tip

Taking the heat Motor stripping temperatures by degrees

Some within the repair industry who use of incinerators (burn-out ovens) to remove windings are advocating higher stripping temperatures for new insulation systems and tight windings (full slots). But they carefully avoid the mechanical impact this has on the stator frame.

Shims change as the stator frame twists from the heat, resulting in air gaps and strain on the bearings, as well as bearing-shaft misalignment.



Low-temperature stripping spares the stator core.

PHOTO: THINKSTOCK

The stator core's thermal resistance is improved in newer electric motors, yet the latest motor repair trade association study calls for keeping temperatures at 650 degrees F (320 degrees C) unless a certain type of stator core is guaranteed, in which case the temperature can be increased to 750 degrees F (399 degrees C). The latest marketing data for repair shop incinerators identifies a stripping temperature of 800 degrees F (427 degrees C), which turns the winding materials to ash and removes the copper from the stator.

Published information by the US Department of Energy and the trade association state this process only successfully strips a stator two to three times before the core or the entire motor needs to be replaced.

Alternative motor repair practices, such as low temperature stripping, don't damage the stator core. Stripping times are faster and independent studies by the US Navy (Navy Repair Manual) and the Canadian Electrical Association support the processes. Low temperature stripping also allows forensic analysis of the insulation system.

Source: *Motor Diagnostics and Motor Health News, Success by Design*, with permission.

» Strategy

How to be excellent!

Ten tips to get you there

Setting high standards for excellence in maintenance is easy, but accomplishing it is more challenging.

Andrew Thorne, vice-president of mining and operational excellence at Cameco Corp., a uranium company based in Saskatoon, defines operational excellence as "identifying the right things to do and doing the right things right all the time."



Operational excellence is about doing it right all the time.

PHOTO: THINKSTOCK

- He provided 10 tips to help you do so in a keynote presented at the 2014 MainTrain maintenance conference in Niagara Falls, Ont.
- Find a good reason for change.

- Speak the [financial] language of executive management.
- Get strong support from all levels of the organization.
- Define the "what's in it for me?"
- Focus on employee behaviours.
- Follow the money and seek out quick wins.
- Use every opportunity to communicate.
- Use your employees to solve the issues.
- What gets measured gets done.
- Safety needs to be the number one priority.

Andrew Thorne leads Cameco's operations at the Cigar Lake mine, Rabbit Lake mine, its US mining ventures, and the company's overseas efforts to reach world-class standards in operational excellence.

» Health

Medicinal weed is moving into the mainstream and manufacturers must have a strategy in place to manage the inevitable issues.

BY PLANT STAFF



PHOTO: THINKSTOCK

Who would have thought the time would come when manufacturers would have to find ways to accommodate weed (aka marijuana) in the workplace? You better believe it.

Now that marijuana is considered legit for “medicinal” purposes and is prescribed by doctors to treat a variety of maladies from anxiety disorders to acute, chronic pain, it’s something employers will have to deal with.

Your new DRUG plan

WHAT YOU NEED TO KNOW ABOUT MEDICAL MARIJUANA

Set aside the image of a slacker listening to Dark Side of the Moon while digging into a bag of Cheetos to satisfy post-toking munchies.

“We have this imagery in our heads of a stoner, but medical marijuana can be beneficial to some patients,” said Dr. Barry Kurtzer, medical director and chief medical review officer of DriverCheck Inc., a provider of workplace medical testing and assessments based in Ayr, Ont.

Kurtzer, heading up a session on medical marijuana at the recent Partners in Prevention safety conference held in Toronto, stressed medical marijuana is now like any other prescription med.

Since the “Marijuana for Medical Purposes Regulations (2013/2014)” were implemented a year ago, patients no longer have to go to Health Canada for their medicine. But they aren’t allowed to grow their own either. It can only come through licensed producers (LPs), of which there are currently 17 who grow and sell. Eight others just grow. Prescriptions come from doctors or nurse practitioners.

Health Canada estimates there will be 450,000 authorized patients by 2024 (currently there are 40,000) and there are as many as 1,000 LPs under review.

Patients can only possess 30 times the daily dose of the dried plant material up to a maximum of 150 grams (the equivalent of 10 joints).

The therapeutic ingredients – tetrahydrocannabinol or THC, and cannabidiol or CBD (this one lacks the high) – are activated by heat, either by lighting up or using a vapourizer (which heats but doesn’t ignite).

An employment and labour bulletin from McMillan LLP, a Toronto law firm, observes that employers have a duty to accommodate employees’ disabilities to the point of undue hardship. A court would look at the cost, whether there is outside funding to subsidize the cost, and the health and safety issues that may be involved. If second hand smoke is the issue, an employer would have demonstrate the user couldn’t be isolated or a vapourizer would be a problem. So far, no employer has been able to make the undue hardship case.

“In Canada, automatic job termination without case-by-case review could result

in human rights complaints or other legal consequences,” Kurtzer warned.

He recommended employers put a marijuana policy in place and offer employee education as well as supervisor training; ensure the user is okay for safety sensitive work; conduct periodic drug tests; monitor outcomes of physician follow-ups; and find other work for those not fit for safety sensitive activities.

Establishing policy

When developing policy, get legal advice, consider these issues: develop a statement of purpose; self declaration of use; change of strength and side effects reporting requirements; monitoring for safety sensitive workers; adherence to human rights and privacy laws; accommodation for those not fit for safety sensitive work; means of identifying authenticity of marijuana use; and the state of the problem being treated.

Evaluations should be conducted by experienced occupational medicine physicians who are provided with detailed job descriptions and a physical demands analysis, plus identification of all safety related functions. Do a detailed review of the health condition being treated and evaluate its impact on health and safety. Review all medications being used, evaluate the risk of addictive behaviour, review potential alternate treatments, conduct a full medical exam and validate the need for medical marijuana.

Review work and non-work safety issues, detail them and provide recommendations, and determine fitness for safety sensitive work. Generate a detailed report covering key issues and fitness for work recommendations. Advice for both employer and patient should be made regarding follow-up care and assessments. And make sure the appropriate authorizations are signed for the release of information to stakeholders.

A final note: medical marijuana as a reimbursable prescription will impact company drug benefits. Employers decide what to put on their plans, but be prepared for blowback if medicinal marijuana is excluded.

Comments? E-mail jterrett@plant.ca.

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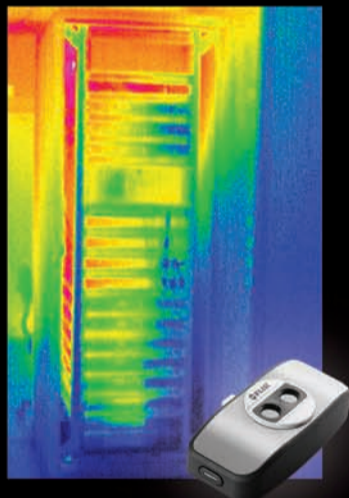
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» Exporting

It's Canada's second most important export market but there are still many business challenges.

BY MARK DRAKE

“Why did you rob a bank?” goes the old joke. “Because that's where the money is, Your Honour.” A bit like China: that's where the market is. However, according to one US analysis it's a country of “enormous business potential” but also enormous risk. Already the second largest economy in the world and heading for number one, *The Economist* describes it as complicated and opaque, with a great number of low-cost local competitors, not to mention well-heeled multinationals.

So why bother? Here are some reasons.

Apart from sheer size, (1.3 billion people and a growing middle class), it has strong economic growth which, even after some decline, is still around 7.5%. China is Canada's second most important export market with sales of more than \$20 billion, and bilateral trade increased by nearly 60% between 2007-12. The Canada-China Business Council website (www.ccbc.com) notes the extent of Canada's corporate involvement, with around 200 organizations interested directly or indirectly in that market. One of them is Ontario manufacturer Hibar, which has been active in China since the late 1980s.

Two other trends are encouraging: Prime Minister Stephen Harper visited recently with a large business delegation, helping to warm the frosty political Canada-China relationship. Now currency hubs are being set up in Toronto and Vancouver for settling transactions in renminbi, which will avoid transactions having to pass through US dollars.

China has been a member of the World Trade Organisation (WTO) since 2001, and in spite of more than 155,000 featherbedded state-owned enterprises (with advantageous financing, less requirement for profit), it's working to improve the way business operates in terms of transparency and the elimination of corruption. This is one of President Xi's main current objectives, but he has some way to go.



Ready for CHINA?

BALANCE THE RISK AND REWARD

There are several free trade zones such as in Shenzhen, (just over the Hong Kong border) and Shanghai. An investment protection agreement has been negotiated with Canada, but has yet to be ratified by the two countries. Massive infrastructure possibilities are coming up as the government tries to shift some activities from the coast into the less developed inland regions.

Opportunities for Canadians

Pollution is a major problem and that means there's demand for technologies that will help. Many regional markets have their own specific priorities – a chance for locally focused entry-level approaches. Export Development Canada (EDC) sees opportunities for Canadian companies in the areas mentioned, and in electrical machinery, petroleum products, base metals and industrial supplies. China also plays an important role in global supply chains.

However, there are challenges!

The World Bank gives China a fair rating (90/189 – not very high but better than before) for ease of doing business as a whole. But when it comes to specifics, China is way down. Permits score 179 out of 189, power attachment 124

and protecting minority investors 132. Transparency International also rates it at only 100 out of 174 in their 2014 corruption perception index, with a score of 36/100 (compare Denmark at 92 and Canada at 81). It seems that the concept of “conflict of interest” is not well understood in China, while embezzlement, kickbacks and institutional cronyism are widespread in the private and public sectors. However, Hibar president and CEO Iain McColl, who visits China seven to 10 times a year, says things are getting better, and that it's possible to refuse such requests (although some business may be lost). His company makes no such payments.

Other major challenges include decoding corporate structures (who exactly are the decision makers and the real power brokers?) and ensuring the best possible “connections” (guanxi). These are important in all developing markets, but especially so in China. Some officials still expect “favours” in return for permits granted, although gifts and lavish dinners are less common than before.

New technologies are very welcome but intellectual property protection is particularly weak (although improv-

demonstrations for each move, then a couple of half-hearted ones before stopping. Sometimes the instructions were incomplete.

The class reflected the instructor's lack of enthusiasm. Participants were barely trying.

Other leaders were in and out of the pool demonstrating moves throughout the session. They recognized extra effort and corrected aquafitters who were making technical mistakes, and their enthusiasm was infectious.

How are you as a leader?

Do you get out into the plant and ask questions, show enthusiasm and interest in how the team is doing, compliment or thank people for doing a good job, and show more energy than your team members?

If you want outstanding performance, demonstrate the level of energy you're expecting from them.

Hugh Alley is president of First Line Training Inc. in Burnaby, BC, which focuses on increasing productivity by improving the skills of front line managers and supervisors. E-mail halley@firstlinetraining.ca or hone (604) 866-1502. Visit <http://firstlinetraining.ca>.

» Training



Lead with ENERGY

Team members take their cue from you

BY HUGH ALLEY

People take their cues from leaders, so leaders must project energy! This was brought home to me recently at my local pool. The aquafit instructor (let's call him Lazy Larry) was demonstrating each move and although technically correct, he was sitting much of the time and was never in the pool. He would provide a couple of semi-vigorous

There are several free trade zones such as Shanghai.

PHOTO: THINKSTOCK

ing), and the rules for the fair settling of contract disputes are opaque at best. *The Economist* says the cost of doing business can also be increased by “an unpredictable approval process in the face of restrictions and a massive multi-authority bureaucracy.”

Do not “go it alone.” Use all the help available, including: EDC (www.edc.ca), Foreign Affairs and International Trade (www.international.gc.ca), the Trade Commissioner Service (TCS), the Asia Pacific Foundation www.asiapacific.ca) and the Canada-China Business Council. General information about essentials such as taxes and setting up a business is well covered by the international banks such as HSBC (www.hsbc.com). Take special care when checking the legal and financial background of potential partners, acquisitions, senior managers, vendors and major suppliers. Pre-screening of all employees is also recommended.

And learn Mandarin, or be sure to have senior staff members fluent in it. Also visit regularly to build up contacts and trust.

The market has indeed both enormous risks and enormous business opportunities, but entry is probably less challenging these days than robbing a bank.

Mark Drake is former president of Electrovert Ltd. and the Canadian Exporters' Association. E-mail corseley@videotron.ca.

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» Forecast

US is short on industrial capacity

EDC says this will fuel Canadian export growth

A global export forecast from Export Development Canada (EDC) predicts surging demand constraining industrial capacity in the US will be a key driver of global economic growth over the next two years.

“Producers are cash-rich, and are looking for new places to invest their surplus capital,” said Peter Hall, EDC's chief economist.

A higher US dollar is also increasing the attractiveness of foreign investments and imports, creating a huge opportunity for Canadian companies.

EDC's growth forecast for the US economy is 3.6% this year and 3.3% in 2016.

The value of Canadian exports to the US is expected to decline by 1% this year mostly because of declining energy prices. However, EDC said other sectors will see strong growth with industrial machinery exports topping the list at 17%.

EDC's team forecasts Canada's exports will grow 1% this year, and 7% in 2016. GDP will be 2.4% both years. Global export growth will be 3.5% this year, and an additional 3.9% in 2016.

» Online Marketing

Because of time restrictions, you need an effective tracking mechanism in place to ensure consent and change dates are enforced.

BY MARTIN MILLICAN

Since the Canadian Anti-Spam Legislation (CASL) law went into effect last July, there has been a lot of press about the challenges it created. If you still find CASL confusing, you're not alone. Some of the top lawyers and business leaders in the country are still wrestling with compliance issues.

These two important first steps followed by some practical tips will help you deal with compliance:

1. Mark any contact records as "implied consent" where a "business relationship" existed between the contact and the company prior to July 1, 2014.
2. Add a mechanism to capture express consent from anyone added to your e-mail database after July 1.

CASL allows a new contact to have an implied consent designation for six months after making an "inquiry" or two years after conducting a "transaction" with your firm. This means someone added to your database on July 1, 2014 based on an inquiry would have kept his or her implied consent status until Jan. 1, 2015 and someone conducting an actual business transaction would retain an implied consent status until Aug. 1, 2016.

Because of time restrictions you need an effective mechanism in place to ensure all CASL consent status and change dates are automatically tracked and enforced.

Once you're actively capturing express consents, turn your attention to existing implied consent records. If you gathered



PHOTO: THINKSTOCK

Still CONFUSED about CASL?

A PRACTICAL STRATEGY FOR ACHIEVING COMPLIANCE

the bulk of your "implied consent" contact records before July 1, 2014, you have a three-year transition period to upgrade these records to express consent, which expires on July 1, 2017. After this date, you can no longer send messages to these 'grandfathered' contacts unless they've been upgraded to express consent.

What's in it for me

How do you upgrade your existing contacts without losing most of your list by meeting the requirements of the new law?

Give contacts more direct control over what they receive from your company. Provide multiple options for the types of commercial electronic messages

your company sends out. For instance, instead of a single e-mail newsletter that goes to everyone in your database on a monthly basis, think about how your communications can be broken down into different streams or subscriptions. Some of your recipients may be happy to get a weekly, or even daily e-mail newsletter. Others will only want to be notified periodically of important changes or special offers.

By putting the basis of control into your contact's hands, you change your CASL express consent request from a plea to comply with the law to a valuable offer along the lines of: "In an effort to provide you with better control of the

types of messages we send you, we've introduced additional subscription options to help you select the messages that are most appropriate for you."

As recipients go through the preference management process, they're asked to update their consent status, giving you the opportunity to solve two problems at once: meeting your legal compliance requirements under CASL and improving service to your customers.

Communicate this to your contacts by sending out a special message notifying them of the change. Your e-mail system may also enable a banner making the same offer that appears automatically in all messages for those where express consent does not exist. Or do a combination of the two by first announcing the change in a dedicated message and following up with the banner in subsequent e-mails. The banner should be about improved subscription management, not about CASL compliance.

Make an individual's consent status and history directly accessible to the end user by setting up a subscription management page. This eliminates delving into data records to prove consent has been granted.

While it remains to be seen to what extent the CRTC will be enforcing the rules around CASL, most Canadian companies are wisely taking the necessary steps to comply with the law. Establishing a sustainable permission management system will put best practices in marketing and customer service in place that will last for years, while avoiding any possibility of being subject to fines and censure under the law.

Martin Millican is president of Envoke.com, a Toronto-based service provider and developer of permission-based automated marketing solutions. E-mail martin@evoked.com.

Comments? E-mail jterrett@plant.ca.

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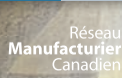
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CAP and TRADE

ONTARIO'S CARBON CRUSADE

PHOTO: THINKSTOCK

Manufacturers must consider technology and capital investments to effectively manage new greenhouse gas emissions requirements.

BY MATT POWELL, ASSOCIATE EDITOR

Ontario has put a price on carbon, and whether they like it or not, some manufacturers will need to focus on enhancing their energy efficiency efforts to avoid added costs.

Premier Kathleen Wynne's Liberal government has made Canada's most-populous province the fourth – alongside Alberta, BC and Quebec – to implement a carbon pricing model.

Although the specifics of Ontario's cap and trade carbon endeavour won't be known until the fall, experts say it will likely mimic programs in California and Quebec.

Early estimates suggest cap and trade will add between \$1 billion and \$2 billion to Ontario's coffers annually, which the Wynne government says will be reinvested into programs to develop more efficient appliances and housing, building more public transit and infrastructure, and the recently announced Ontario Pension Plan.

There are two possible outcomes for manufacturers: don't do anything about energy efficiency and pay the price, or avoid penalties by investing in new technologies that reduce the operation's share of greenhouse gas (GHG) emissions.

Doug Dittburner, area manager for power services at Campbell's Soup in Toronto and vice-chair of the Canadian Industry Program for Energy Conservation (CIPEC) Food and Beverage Task Force, believes cap and trade is the right thing to do.

"[Cap and trade] must make manufacturers reduce energy use, and there's a ton of resources available to make that happen. If you sit around and do nothing, you're going to pay the price."

Here's what manufacturers need to know.

In a nut shell

Cap and trade is a market-driven mechanism that places a hard ceiling on emissions allowed in each sector of the economy. It typically rewards innovative companies that invest in technologies to reduce GHG emissions principally from the burning of fossil fuels such as coal or oil – known contributors to climate change.

Companies that produce emissions below their allocations are given credits or allowances for the difference, which can be sold to companies that exceed their limits. The cap reduces over time, so those who don't meet emissions targets will eventually pay more.

A joint system already operating in California and Quebec sets a cap on emissions and hands out some permits to industry while auctioning off others. Proceeds are plowed into green programs,

such as investments in public transit and infrastructure.

The intention is to create a market large enough to trade carbon credits on the stock market. In California, credits are actually auctioned off to heavy emitters.

In Ontario, large industrial emitters typically include steel, concrete and car manufacturers, oil and chemical facilities, pulp and paper mills, waste disposal facilities and brewing operations.

Pricing typically reflects the monetary value of emissions and governments are implementing these programs to recoup some of the costs of climate change. The Wynne government pegs those costs at around \$5 billion.

The Western Climate Initiative began in 2007 when the US states of Arizona, California, New Mexico, Oregon, and Washington agreed to collectively develop a regional target for reducing greenhouse gas emissions, and to design and implement a market-based program to achieve it.

Ontario, along with BC, Manitoba and Quebec, joined in 2007 and 2008 and collaborated on the design for the WCI Regional Program released in July 2010 with the intention of reducing regional GHG emissions by 15% below 2005 levels by 2020.

Economic analysis suggests the WCI plan will save \$100 billion by 2020.

For manufacturers

Canadian Manufacturers & Exporters (CME) says to sustain manufacturing's competitiveness the program must be accompanied by incentives that encourage investment in productivity-enhancing technologies, machinery and equipment that reduce emissions.

Continued on page 20

» Clean energy

Cascades invests in Cabano biorefinery

Extraction project will recover hemicellulose by-products

Cascades Inc. will invest \$26 million to purchase new technology at its Norampac – Cabano facility to enhance the extraction from wood chips of hemicellulose, a cellulosic sugar with high value-added potential.

This project, a major advance in biorefinery development in Canada, is backed by a \$10 million investment from Natural Resources Canada's Investments in Forest Industry Transformation (IFIT) program and an additional \$4.4 million from the Québec Ministère des Forêts, de la Faune et des Parcs.

The Cabano plant in Témiscouata-sur-le-Lac, Que. will replace its current process – the production of sodium carbonate-based chemical pulp – with a new, more environmentally friendly and economical one developed in conjunction with a US partner.



Cascades employs 11,000 workers at 90 facilities in Canada, the US and Europe. PHOTO: CASCADES

This new process replaces the use of chemical products, which would otherwise have to be purchased, shipped and disposed of.

The company said the project will also reduce the Cabano plant's energy consumption.

Hemicellulose, a natural polymer found in plant cell walls, has applications in power generation, biofuels such as ethanol, and the production of natural sugar-based products.

Cascades, based in Kingsley Falls, Que., is a manufacturer of paper and packaging made from recycled fibres.



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Competing for business

Continued from page 19

“We need to ensure that doing business in Ontario and Quebec is more attractive than in competing jurisdictions or companies will relocate elsewhere,” says Jayson Myers, CME’s president and CEO.

“Otherwise it will turn out to be another tax on industry that will slow the investments that have already allowed Ontario and Quebec manufacturers to make significant strides in reducing emissions.”

Nancy Coulas, CME’s director of energy and environment policy, says she expects Ontario’s program to directly impact companies that emit over 25,000 tonnes of CO2. If it follows Quebec’s

model, transportation and comfort heating fuel costs will likely increase.

“We need to ensure that doing business in Ontario and Quebec is more attractive than in competing jurisdictions or companies will relocate elsewhere...”

She recommends manufacturers invest in new machinery and equipment, and to take advantage of the recently extended federal Accelerated Capital Cost Allowance.

“This will not only help with emissions reductions, but also enhance their

productivity,” she says. “If that happens, manufacturers could benefit.”

Dittburner says there are also a number of government-run energy-efficiency programs available to manufacturers, for

both larger and small-and-medium-sized businesses.

CIPEC, an industry and federal government partnership that focuses on improving Canada’s industrial energy efficiency while reducing GHGs, now includes more than 1,400 companies and trade associa-

tions. It provides cost-shared assistance services for ISO 50001 implementation pilots, energy management projects, process integration studies and computational fluid dynamics studies.

Ontario’s Independent Electricity System Operator’s (IESO’s) saveONenergy program is also worth a look, he adds.

Its business programs provide manufacturers and industrial users with retrofits, audit funding, process and systems analysis and small business lighting incentives.

Qualifying companies receive up to 50% of the costs to upgrade old or inefficient equipment, up to 50% for energy audits, \$50,000 for engineering studies and up to 70% of capital costs for energy efficiency upgrades.

Not (really) a tax

Cap and trade isn’t a carbon tax, such as those already in place in Alberta and BC, where a price is set for carbon and the amount of emissions depends on whether or not emitters find cheaper alternatives. It regulates the amount of emissions – the cost is determined by the market where credits are bought and sold.

“A [carbon] tax provides us with the price of emissions, but we don’t know what the impact on emissions will be as a result of the price,” says Keith Brooks, director of the clean economy program at Toronto’s Environmental Defence Alliance.

“There’s a great deal of certainty about what’s going to happen to emissions levels, but you don’t always know what’s going to happen with price in a well designed cap and trade system.”

BC’s carbon tax, introduced in 2008, returns proceeds to industry via tax breaks or other incentives. It’s estimated the tax has reduced fossil fuel use by 17%.

Alberta targets its heaviest emitters, which are taxed-based on how much they emit annually. It invests proceeds into innovation programs.

Brooks says with cap and trade any revenue collected by the government is used to drive emissions reductions.

What could change

Naturally Ontario’s Progressive Conservatives have cried foul, likening the legislation to a “tax on everything,” which will hurt consumers with price increases on everything from gas to groceries.

So, we could eventually pay a little more for cars or a can of beer.

In Quebec, it’s estimated oil prices went up between \$0.02 to \$0.035 cents per litre; and as much as \$0.10 per gallon in California.

Brooks says a lot will depend on how the system is actually set up.

Quebec protected its aluminum producers by giving them free pollution credits, because they face international competition and have little control over prices.

Ontario manufacturers will have a better idea how cap and trade will affect their businesses in the fall. In the meantime, they should be thinking more seriously about energy management strategies.

Comments? E-mail mpowell@plant.ca.

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C I E N

CANADIAN INDUSTRIAL EQUIPMENT NEWS

» Automation



The dragonfly, or BionicOpter, demonstrates functional integration. PHOTO: FESTO

FESTO celebrates 40 and 4.0

SMART TECH AND THE NEXT INDUSTRIAL AGE

The industrial control and automation innovator marks 40 years in Canada and what the next industrial revolution will bring.

BY PLANT STAFF

The numbers “4” and “0” figure prominently in Festo Canada’s world this year. The German automation technology company is celebrating 40 years in Canada and helping manufacturers adapt to Industry 4.0, the fourth industrial revolution that will be driven by smart technologies.

Festo Canada, with operations in Mississauga, Ont., St. Laurent, Que. and Quebec City, made the case during a March 4 anniversary press conference at the Ontario Science Centre in Toronto.

INDUSTRY 4.0

The industrial revolution has evolved through the following stages:

- Mechanization of production using water and steam power.
- Mass production using electric power.
- The use of electronics and IT to further automate production.
- Digitization of the manufacturing.

“Over the past 40 years, Festo has become a substantial part of the Canadian industrial landscape,” said Thomas Lichtenberger, president and CEO of Festo Canada. And management board chairman Eberhard Veit stressed the importance of Canada as a “stable and reliable” partner in a turbulent world, and as part of NAFTA, the world’s biggest market where manufacturing is experiencing a renaissance.

Viet emphasized production of the future will involve a high level of networking and decentralization; autonomous, self-controlling and knowledge-based production systems; and the fusion of modern information technologies and classic production processes.

Festo is already rolling with Industry 4.0 and the networking of components for the continuous exchange of data, evaluating of sensor signals and independent decision-making and control. It’s CPX automation platform covers IT services such as web servers, integrated PLC for high-speed local control, safety modules, motion control, high-speed

counting, proportional regulator control, pressure and temperature sensing, and pneumatic valve control. CPX also provides diagnostic capabilities that help to reduce downtime.

Meanwhile, researchers are looking to the future with learning-from-nature automation technology.

Demonstrations of their innovative adaptations ran from March 1-7 during Engineering Week at the Ontario Science Centre and featured a flying jellyfish, gull, dragonfly and penguin from its Bionic Learning Network, all engineered by Festo teams working with partners, universities and institutes, and inventors.

The idea is to transfer biological principles that have evolved over millions of years to industrial automation that will solve technology issues for future production processes, and of course, tie in with Industry 4.0.

Andrea Ziomek, who handles Festo’s corporate communications for the Americas, provided an example during her presentation at the press conference. “Engineers identify a technological problem like energy free handling,” she said. “Together with biologists, they research

Continued on page 22

» Supply Lines



(L-R) From Indica, Darren Meyer (senior director of marketing), Phil Cowan (director of marketing). From Walter, Chester Collier (senior vice-president), Claude Vandemeulebroocke (general manager), Dave Ross (president).

WALTER IS A SUPPLY CHAMP

Indica Marketing Group has named Walter Surface Technologies Supplier of the Year.

The industrial, construction and safety supply group’s award is based on votes from more than 100 of its 180 distributor members.

Criteria covers: sales support and training; customer service, including warranty, returns and fill-rates; marketing programs, promotions, product merchandising support; and the overall quality and performance of their products in the marketplace.

This is Walter’s fourth win.

HANWHA ADDS LWRT

Growing demand for lightweight composites in North America and Europe has prompted Hanwha Azdel Inc. to increase capacity for Azdel SuperLite, its lightweight reinforced thermoplastic (LWRT) composite product, at its Lynchburg, Va. production facility.

The company, based in Forest, Va., is adding space plus a new production line that will be running during the second quarter.

Hanwha Azdel, a manufacturer of high-performance thermoplastic composites, is an affiliate of Hanwha Advanced Materials Corp., part of the Korean Hanwha Group.

It has sales and marketing offices in Canada.

CANADIAN DISTRIBUTION DEAL

PR electronics is teaming up with WIKA Instruments Ltd. to offer high quality signal conditioning products across Canada.

WIKA, a manufacturer of electronic and mechanical pressure and temperature instrumentation based in Oakville, Ont., has exclusive Canadian distributorship of the Demark-based PR electronics line.

The agreement strengthens WIKA’s portfolio while its six sales offices and six service centres across Canada provide faster, more local support for PR electronics’ products.

Bionic learning

Continued from page 21

for biological role models like the Gecko.”

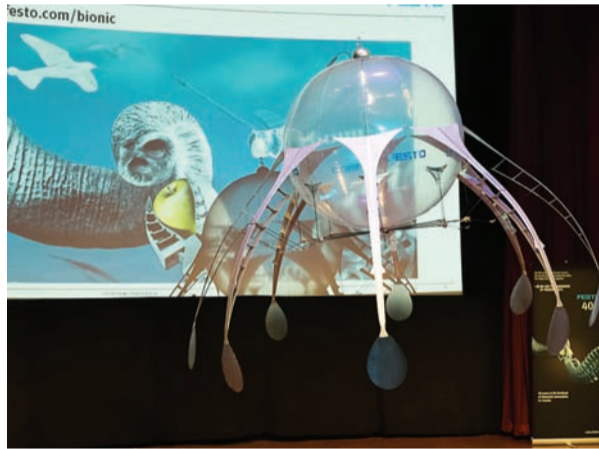
(FYI, the Gecko’s toes have special adaptations that allow them to adhere to most surfaces, including vertical glass, without liquid or surface tension.)

Her presentation highlighted how Festo’s bionic learning team has adapted nature’s ability to use energy efficiently, its use of lightweight design and functional integration, and how it incorporates communication and learning.

Take the SmartBird, a herring gull-like flight model that also made an appearance two years ago at the Canadian Manufacturing and Technology Show.

It deciphers the flight of birds, starting, flying and landing autonomously. But Ziomek noted in her presentation that it also demonstrates that reducing mass directly decreases energy consumption; hence, lightweight design in automation applications reduces materials and energy consumption.

The AirJelly, a remote radio-controlled jellyfish with a central electric drive unit and intelligent adaptive mechanism, demonstrated new opportunities in propulsion systems as it floated across the Ontario Science Centre stage applying peristaltic forward motion.



Festo’s AirJelly floats across the Ontario Science Centre stage during a demonstration of its propulsion systems. PHOTO: FESTO

The dragonfly, or BionicOpter, demonstrated functional integration. In nature, it combines the flight characteristics of an airplane, helicopter and glider thanks to its ability to move each wing separately. These capabilities point to new approaches in automation such as more functions integrated into the smallest of spaces, smarter, more flexible components and a high level of complexity controlled by intuitive controller interfaces.

The giant floating AirPenguin, a helium-filled balloon equipped with navigation and communications technology, explores its airspace either freely or according to fixed rules. That’s quite a change for marine birds that do their “flying” in the water, but for the purposes of innovation, the Festo bird’s sea of airspace is monitored by invisible, ultrasound transmitting stations. A microcontroller gives the bird free will to explore the space. Add a few AirPenguins and Xbee radio modules (based on ZigBee), and the large amounts of data are shared between them. They recognize each other based on their distances to the transmission stations, and fly in sync or as a group without colliding. That translates into decentralized, autonomous, self-controlling and self-organizing systems that will organize when to do which process.

All of this 4.0 business doesn’t mean people will be out of work in the plants of tomorrow. Ziomek said people will have to monitor the apps and human-machine interfaces, intervening when necessary.

And presumably people will be needed to create what comes next, whatever Industry 5.0 may be.

Comments? E-mail jterrett@plant.ca.

Industrial lubricants



For high- and low-temperature applications.

LONGER LIFE LUBE FOR GEARS, BEARINGS

Mobil SHC 600 lubricants distributed by Imperial Oil are recommended for use in high or low temperature gear and bearing applications.

These longer-life lubes operate up to six times longer than mineral oils. This cuts the maintenance costs of component replacement, system cleaning and lubricant changes thanks to a unique synthetic base oil technology and a proprietary additive system.

In circulating and gearbox applications, a low traction and high-viscosity index combine to reduce power consumption up to 3.6%.

Specific viscosity grades are available for a range of applications, including filled for life gearboxes, especially high ratio/low-efficiency worm gears; remotely located gearboxes, where oil change-out is difficult; low temperature applications; mixer roll bearings and roll neck bearings where high temperatures are encountered; plastic calendars; severe centrifuge applications; and railroad A/C traction drives.

Use Mobil SHC 626, 627, 629 and 630 for oil flooded rotary screw compressors; and 629, 630, 632, 634, 636, and 639 are approved by Siemens AG for use in Flender gearboxes.

Imperial Oil an integrated energy company based in Calgary.

www.mobilindustrial.com

OIL PURIFICATION SYSTEMS FOR RENT

Need oil purification equipment fast? Consider renting. Oil Filtration Systems LLC, a manufacturer of purification systems based in Boerne, Tex., has expanded its rental fleet to more than 100 systems that can be mobilized “immediately.”

The company’s systems extend the life of rotating equipment by removing all water, particulate and other contaminants from industrial oils, fuels and fluids.

There are also systems for purifying industrial fuels and dielectric insulating oils in transformers.

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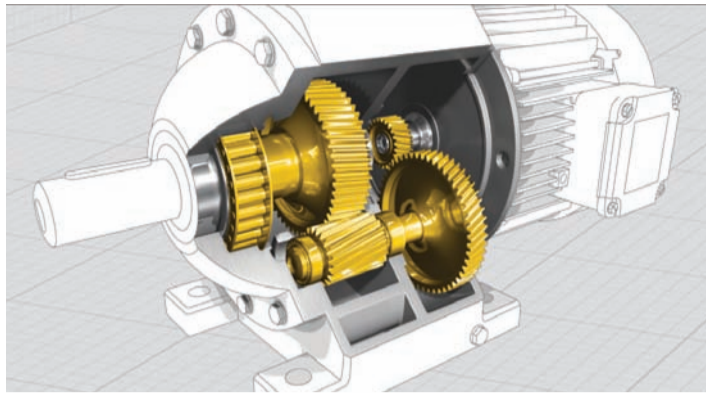
Petro-Canada's HYDREX AW hydraulic fluids for high performance systems in plants extend equipment life while reducing maintenance costs.

The base oil is 99.9% pure, and blended with Petro-Canada's specialty additives, AW fluids retain their fresh oil properties longer, providing protection from oxidation breakdown and wear.

Longer oil life extends drain intervals for reduced change-out costs with less reservoir exposure to external contaminants, and AWs resist degradation in high temperatures, reducing the need for additive top ups. Varnish build-up that can interfere with servo and directional valve operation is decreased and the build-up of harmful sludge is minimized.

AW fluids are recommended for heavy-duty hydraulic systems and they're used in systems equipped with fine filters down to 3 microns without loss of additives or plugging of the filter. But they also lubricate anti-friction bearings and gears used in circulation, splash, bath and ring-oiled systems.

Petro-Canada is a Suncor Energy business that makes lubrication products in Mississauga, Ont. <http://lubricants.petro-canada.ca>



Protect industrial gears.

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Shell's Omala S4 GX synthetic oil provides long life and protects industrial gears under high loads.

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It's available in viscosity grades from ISO 68 to 1,000.

Shell Canada Ltd., based in Calgary, is part of the Royal Dutch Shell plc group of energy companies.

www.shell.ca

ENCODERS

ENCODERS PROVIDE PRECISE MOTION CONTROL

Pittman Motors' PITTMAN E30C and E30D optical incremental encoders meet volume demands of OEMs in precision-motion control applications.

The encoders, which operate within -20 to 85 degrees C, are small in diameter and have a low-profile to deliver high resolutions and multichannel 5-V outputs. Two- and-three channel versions are available in 64 configurations with resolutions of 200, 250, 256, 400 or 500 cpr.

They're 30 x 8 mm, weigh 5.6 g and are equipped with alternate mounting arrangements. Connections are made through a locking radial or optional axial connector.

Operating frequency is 40 kHz (200 to 500 cpr). The units output two-channel TTL compatible quadrature signals, with an optional third channel index output.



Multichannel 5 V outputs.

Pittman, which is part of AMETEK's precision motion control division, is a manufacturer of rotary motion products based in Harleysville, Pa.

www.Pittman-Motors.com

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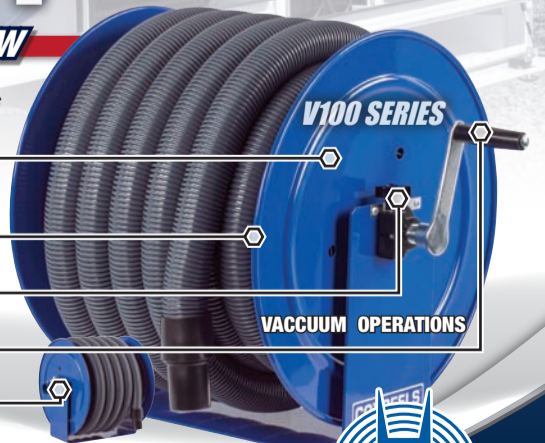
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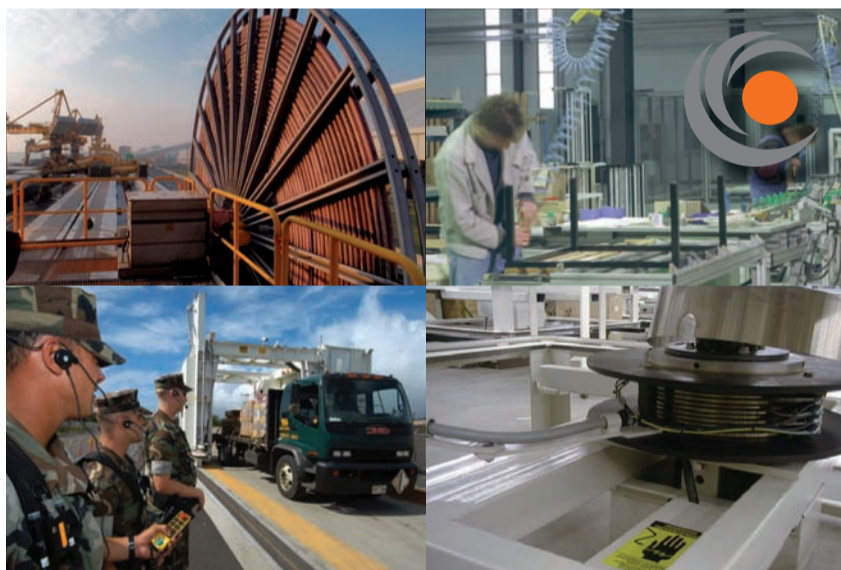
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B&R Automation's swing arm systems are fully enclosed panels and available in a range of variants with IP65 protection.

Multi-touch widescreen panels range from 18.5 to 24 in. with either HD Ready or Full HD resolution displays more information. If space is limited yet large displays are still necessary, a 21.5 in. model in portrait format.

Optional side handles make the devices easy to manoeuvre and operate at the machine. Two system variants with analogue resistive touch screens are also available in 4:3 format.

The panels are connected using standard cables that run through the swing arm shaft are equipped with buttons, selector switches, key switches and an integrated E-stop button.

B&R is a manufacturer of automation technologies based in Atlanta.

www.br-automation.com

repetition accuracy in applications such as pressing, screwing, riveting, ultrasonic welding, adhesive bonding.

Each transmitter emits a path-proportional output signal with sensing ranges of 50, 80, 100, 125, 160 mm to match Festo cylinders' most commonly used strokes. This produces accurate feedback across the entire stroke length, including discharge, without projecting beyond the end of the cylinder.

The 4-20 mA analogue output connects directly to analogue inputs and an IO-Link operating mode provides an additional interface. A "teach" button programs the switching output while the IO-Link mode is programmed using a simple graphical user interface.

Programming options include: cylinder switch function; window comparator; or hysteresis comparator.

Festo Inc. is a global manufacturer of automation technology with Canadian headquarters in Mississauga, Ont.

www.festo.ca

METALWORKING



TiALN coating.

THREAD MILLS BOOST PRODUCTIVITY

Walter Tools' Prototyp Supreme TC610 and TC611 solid carbide thread mills power up thread quality and milling productivity while boosting tool life.

Both models, with 2xD, offer a new geometry that reduces vibration, produce superior surface finishes removes chips and prevents fractures.

The thread mills in grades WB10RD and WJ30RC boost wear resistance and provide tool life improvements of 40% over other similar thread mills in lab tests.

A titanium aluminium nitride coating with a finishing layer of zirconium nitride has a lower affinity for steel to lower temperatures in the cutting zone.

Walter Tools is a manufacturer of metalworking tools based in Waukesha, Wis.

www.walter-tools.com



Mounts on a DSBC cylinder.

BRIDGE THE GAP WITH SDAT-MHS

Festo Canada's SDAT-MHS position sensors bridge the gap between simple cylinder switches and positional transducers or mechanical potentiometers.

These programmable, analogue feedback sensors pair with any Festo T-slot pneumatic drive. They're easy to install and program to provide consistent, reliable positioning data that assures high

AIR COMPRESSORS

HAIDA N200 BOOSTS ENERGY SAVINGS

DV Systems' Haida N200 variable speed, direct drive rotary screw air compressor delivers energy savings of up to 25% by aligning energy-use air-demand and adjusting motor speed to optimize performance.

The 200 hp heavy-duty compressors operate at 100% duty cycle for continuous-use applications. They deliver 926 scfm at 100 psi, 901 scfm at 125 psi and 848 scfm at 145 psi.

The VSD starts the motor with a gradual speed increase to eliminate in-rush current spikes. 1:1 direct drive enhances efficiency.

An integrated dual-function air after-cooler, and oil cooler with double cooling fans, produce discharge air temperatures as low as 15 degrees above ambient to reduce air dryer energy consumption.

The units are manufactured with solid steel base frames and floors, and heavy gauge, acoustically insulated steel cabinets.

DV Systems is an air compressor manufacturer based in Barrie, Ont.

www.dvcompressors.com



848 scfm of compressed air at 145 psi.

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SWITCHES



IP69K-rated.

SWITCHES ARE IMPOSSIBLE TO OVERRIDE

AutomationDirect's non-contact IDEM MGL locking safety switches are impossible to override. They combine magnetic locking and radio-frequency identification (RFID) technology for non-contact operation with anti-tamper protection.

Heavy-duty or medium-duty holding force versions protected by plastic, die cast metal or stainless steel IP69K-rated housings come in master coded or uniquely coded actuation configurations.

Two normally closed overload-protected safety outputs and one normally open auxiliary output are available for

door-open indication. Two LEDs visible on either side of the cable exit point indicate possible switch states and a flexible actuator has high misalignment tolerance.

Remanent magnetization provides a light latch after unlocking.

The switches connect to popular safety relays, achieving up to PLe and Cat.4 for ISO3849-1 ratings. They come in 8-wire cable or M12 quick-disconnect options and connect up to 20 switches and E-stops in series.

AutomationDirect is a supplier of automation products based in Cumming, Ga. www.automationdirect.com

MAGNETIC CALIBRATION SETS RUNNING SPEED

4B Components Ltd.'s loop-powered speed switch for PLC, DCS or stand-alone controllers detects belt slip, underspeed, stop motion, low speed or zero speed in bucket conveying, mixing, grinding and rotating applications.

The switch, which has a 4 to 20 mA analogue output, is fitted with an inductive sensing device in the nose of the Milli-Speed enclosure that detects unwanted



4 to 20 mA output signal.

ferrous metals.

During installation, the switch is set to the machine's normal running speed by magnetic calibration. The output signal is automatically scaled for zero to full speed with over speed detection.

It's housed in an IP67-rated polycarbonate body that's corrosion and abrasion resistant, dust-tight and waterproof. The switch is also approved for hazardous dust environments.

4B is a manufacturer of material handling and electronic components for bucket elevators and conveyors based in Morton, Ill.

www.go4b.com

TEST AND MEASUREMENT

PICOAMMETERS ELIMINATE UNCERTAINTIES

Saelig Co. Inc.'s AMETRIX 10x picoammeters with built-in voltage bias are USB-connected and low-current measurement devices for DC currents from 20 pA to 1 mA. Use them for low electrical currents in optoelectronics, ion and electron beam monitoring and materials resistance testing.

The picoammeters, which include a 0 to ±10 V low-voltage bias supply, combine fast and accurate measurements with ranges, resolution and accuracy. Response times are fast for applications that don't need a bias source.



Auto-zero function.

They operate between 2 nA to 20 mA full scale with 1 fA and 6½ digit resolution. An auto-zero function keeps the input burden voltage as close to zero as possible to compensate for time and temperature-induced drifts. All models float up to ±300 V from earth ground, for accurate high-side-current measurements.

Solid-state range switching eliminates uncertainties with electromechanical relays associated with older designs.

The compact (10 x 8.5 x 1.7 in.), lightweight (0.95 lb.) units are equipped with a USB 2.0 interface and a software package for control, display, data logging and statistical analysis functions. Powerful APIs for data acquisition and control are also supplied, with support for user-written software in Visual Studio, LabVIEW, or other languages using the IVI-compliant driver.

Voltages are monitored by the mea-

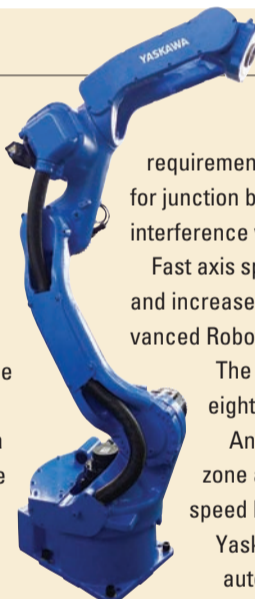
ROBOTS

MH24 ROBOT IS FLOOR- OR WALL-MOUNTABLE

Yaskawa Motoman's MH24 six-axis IP67/IP54-rated robot makes easy work of dispensing, material handling, machine tending and packaging applications thanks to a new curved upper arm that extends its horizontal reach to 1,730 mm.

Through-arm cable routing boosts cable life and reduces snagging or interference. A 50-mm through-hole in the upper arm provides ample space to minimize wear and maximize cable life.

The ANSI/RIA R15.06-2012, ISO and CSA-certified robot has a 24-kg payload with a large work envelope that has ample space for tool storage or maintenance. Higher moment of inertia ratings over previous "payload class" models enables it to carry larger and heavier payloads. There are brakes on all axes and the robot is floor- or wall-mountable.



24-kg payload.

A small interference radius decreases floor space requirements and a mounting surface on the back of the upper arm for junction boxes or pneumatics provides a lower profile and avoids interference within the cell.

Fast axis speeds, acceleration and deceleration reduce cycle times and increase production output thanks to Sigma-5 motors and Advanced Robot Motion (ARM).

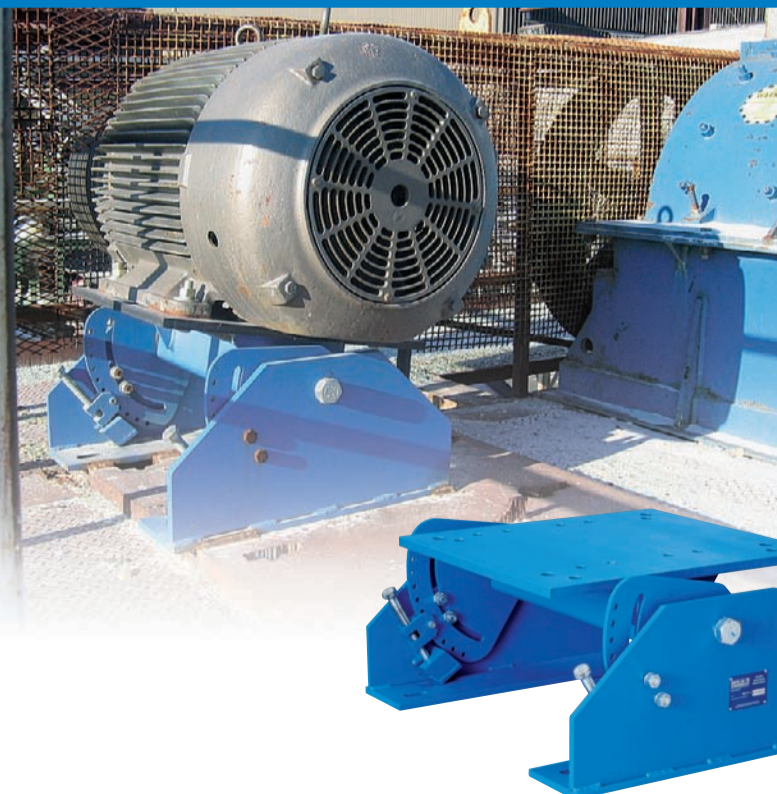
The DX200 controller handles multiple tasks and controls up to eight robots (72 axes).

An enhanced Functional Safety Unit provides control-reliable zone and tool position monitoring, standstill monitoring and speed limiting.

Yaskawa Motoman is a manufacturer of industrial robotics and automation technologies based in Miamisburg, Ohio.

www.motoman.com

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surement system to verify accuracy. This bias supply is for silicon photodiodes and avalanche photodiodes, characterizing the low current regions of semiconductors, and high-megohm resistance measurements.

A digital I/O interface is configured to drive selected pins based on measurement levels for triggering alarms or binning components. Users control eight TTL I/O lines via scripted commands or user interface buttons. A SyncBus synchronizes multiple instruments and associated communications to reduce operating system latencies. Arming and triggering options are compatible with mainstream products, such as switching systems, DMMs and component handlers controlled by user-written software.

Saelig is a manufacturer of test and measurement products based in Fairport, NY.

www.saelig.com

MAKES MEASUREMENT TRANSMISSION COST-EFFECTIVE

Mahr Federal has added a selectable resolution option from 0.00002 to 0.0005 in. to its MarCator 1086 and 1087 digital indicators for wireless data collection packages.

An integrated wireless version is fitted with 3/8-in. stems and a range of backs to make mounting into existing gauges easily.

An i-stick USB receiver and MarCom software records data from workpieces with varying tolerances.

Mahr is a manufacturer of test and measurement equipment based in Providence, RI.

www.mahr.com



Resolutions from 0.00002 to 0.0005 in.



Stem lengths from 2 1/2 to 24 in.

IN-FIELD TEMPERATURE READINGS REDUCE DOWNTIME

Tel-Tru Manufacturing Co.'s Digi-Tel electronic thermometers are rated to FDA Rule 21 CFR 113.40 for food processing and process industry environments.

They come in a number of configurations and are outfitted with a field-replaceable battery to reduce downtime. There are also models with stems and fittings for easy replacement.

The all-stainless steel models are built into 5-in. diameter cases with an easy-to-read digital display and work across a temperature range of -60 to 400 degrees C. There's also a version with a 4.5-in. diameter polypropylene wall-mounted housing and remote sensor.

Stem lengths range from 2 1/2 to 24 in., with a number of threaded and sanitary fittings.

A PC-based calibration software tool quickly tests accuracy in the field and adjusts the number of significant digits on the display.

Tel-Tru is a thermometer manufacturer based in Rochester, NY.

www.teltru.com

TOOLS

HOT-AIR HAND TOOL GETS A BETTER GRIP

Controlled by a rotary knob to improve weight distribution, STANMECH's Leister TRIAC ST hot hand tool for plastic welding gives users a better grip and is more comfortable to use than previous models.

A new motor and turbine improve performance and durability, while easy-to-clean air filters prolong tool life. Nozzles are interchangeable between Leister's

DRIVES

MOUNT TRANSPOWER VFDS ANYWHERE

Kaman Industrial Technologies Corp.'s Trans-Power V-Drive variable frequency drives are NEMA 4X/IP66-rated to withstand daily wash-downs and protect against dirt, dust and liquid.

The drives save space with an integrated power disconnect for decentralized mounting.

The V-Drives' default settings come with 14 quick-start parameters to suit most applications. Input of up to 50 parameters manually or via the optional Trans-Power V-STIK (a Bluetooth-compatible device that copies parameters between drives) enhances control and customization.

Kaman Industrial is a distributor of industrial products based in Bloomfield, Conn.

www.transpower.com



NEMA 4X/IP66-rated.



Interchangeable nozzles.

TRIAC ST and TRIAC S hand tools.

STANMECH Technologies Inc. is a distributor of electrical hand tools based in Burlington, Ont.

www.stanmech.com

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www.contitech.ca **ContiTech**

MOTORS

NEW OPTIONS FOR RDM

Danfoss Power Solutions has added options to its compact Reverse Displacement Motor (RDM), which achieves power savings of up to 10%. They include 38 cc, 45 cc, speed sensor and 24 V valve.

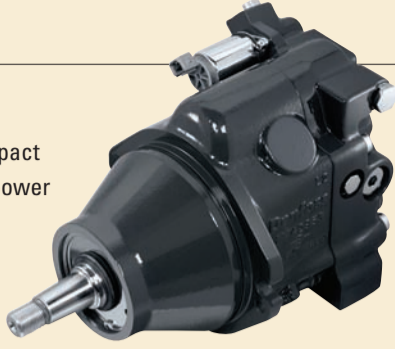
With the increased displacements, you can use the RDM system on larger machines.

The speed sensor option provides more precise system efficiency control and the 24 V valve accommodates additional machine electric architectures.

The motor's 12 or 24 V integrated proportional shifting valve provides smooth, on-the-go reversing using system pressure. External valves and the pressure supply required in typical reversing solutions have been eliminated.

Danfoss, based in Ames, Iowa, manufactures engineered hydraulic and electronic components.

www.danfoss.com



Increased displacement.

WELDING

TIG POWER SOURCE ENHANCES ARC STABILITY

Lincoln Electric's Aspect 375 AC/DC inverter-based TIG welding power source handles critical welds that must meet rigorous testing requirements.

The constant-current stick and TIG machine delivers an output range of 2 to 375 A (single-phase range is de-rated to 2 to 250 A). It's rated at 330 A (40% duty cycle) and 300 A (60% duty cycle).

It delivers precise welding stability arc at all amperage levels.

AC auto-balance technology adjusts cleaning and penetration levels to simplify operation.

Intellistart technology controls the arc's intensity for soft starting on thin



Output range of 2 to 375 A.

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Lincoln Electric is a manufacturer of welding products based in Cleveland.

www.lincolnelectric.com

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Sept. 28-Oct. 1, Mississauga, Ont.

The Canadian Manufacturing Technology Show (CMTS) presented by SME features the latest in machine tool, tooling, metal forming and fabricating, automation, 3D printing/additive manufacturing, design engineering and plant management segments from more than 700 suppliers. Visit www.cmts.ca.

Industry Summit

PTDA

Oct. 21-24, Chicago

The Power Transmission Distributors Association hosts this event, which features networking and business solutions. Visit <https://www.ptda.org>.

CESCF 2015

JuneWarren-Nickle's Energy Group

Oct. 27-29, Calgary

The Canadian Energy Supply Chain Forum (CESCF) brings together buyers and sellers along Canada's energy supply chain. Visit www.supplychainforum.ca.

2016 AHR EXPO

International Exposition

Jan. 25- 27, Orlando, Fla.

The international heating, ventilation, air conditioning and refrigeration gathering features more than 2,000 exhibitors, plus education sessions. Visit www.ahrexpo.com.

Advanced Manufacturing Canada

SME

Nov. 18-19, Montréal

The conference focuses on advanced manufacturing technologies, including automation and robotics, additive manufacturing/3D printing, materials and software. Visit www.advancedmfg.ca.

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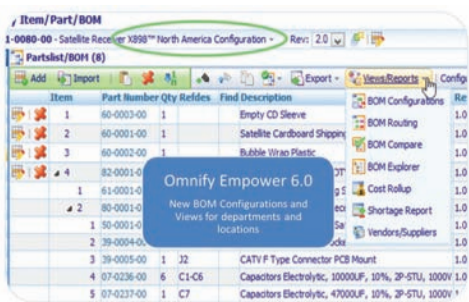


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EMPOWER PLM GETS A FACELIFT

Omnify Software has released Version 6.0 of its Empower web-based product lifecycle management (PLM) software for discrete manufacturers with a new user interface (UI), customer communication portal, product configuration module and workflow engine.

The next-generation UI uses the latest browser technologies and provides enhanced navigation, simplified field editing, and a streamlined look and feel across all product modules.

The UI, menus and form options are customizable for specific job roles, departments and business processes.

The cloud-based communication portal provides direct, in-application product updates and posts pertinent product information such as reports, themes and documents for sharing across the entire user community.

Empower's product configurator module establishes bill of material (BOM) configurations early in the prototype phase. Customers manage different views for different departments and improve vendor selection to determine the best supplier for specific configurations/locations.

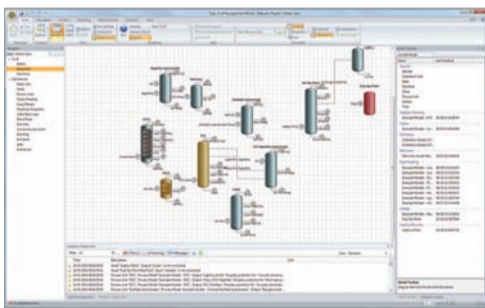
The workflow engine delivers a more intelligent workflow process with dynamic stages and conditional branching.

Training management enhancements include automatic grading for user comprehension tests to notify trainers of student passes and fails.

The software assigns workflows/approval processes for new vendors, vendor items and service objects. Additional custom fields and contacts are also assignable.

Omnify Software is a Tewksbury, Ma.-based provider of PLM software for discrete manufacturers.

www.omnifysoft.com



Supply chain management tool.

IMPROVE REFINERY DECISION-MAKING

By improving collaboration across a refinery, Schneider Electric's SimSci Spiral Suite for the hydrocarbon processing industry helps traders, planners and schedulers make reliable decisions and manage risks.

Users contribute to each other's decision-making without risking the overwriting of data or causing downstream processing issues at the plant. Combined with intuitive visualizations, everyone views, understands and responds to incidents.

Spiral Suite exploits multi-core and cloud environments to generate results in seconds. Users explore the business and operational implications of millions of scenarios and receive real-time feedback on how their changes would impact the rest of the supply chain.

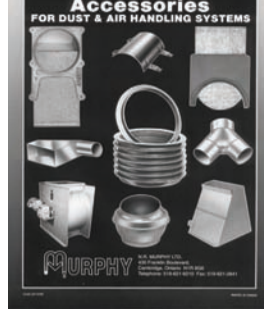
Integral cargo tracking and assay management mean crude oil quality variations can be analyzed within minutes, rather than weeks.

The software also automatically reconciles all available data and performs backcasting to understand how and why there are deviations to the plan.

Schneider Electric, with operations in Toronto, is a global specialist in energy management.

www.schneider-electric.com/us

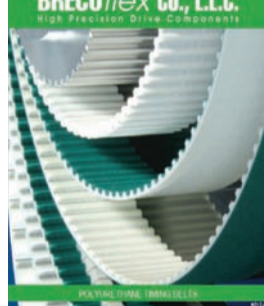
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Index of Advertisers

Advertiser	Page #
Automation Direct.....	OBC
Berg	19
BrecoFlex.....	24
CRC Canada Co.....	22
Canon ATX Show	25
Carr Lane Roemheld Mfg.....	IBC
Conductix	24
Coxreels	23
Creform	18
DV Systems.....	12
EMC	18
Exair.....	7
Flir Systems	IFC
Hammond.....	26
Harting	27
IESO	8
IGUS Inc.....	23
Imperial	13
N.R. Murphy	23
Rittal	16
Rosta.....	26
Rousseau.....	20
SME WMTS	28
SME CMTS.....	30
Scott's Directory	29
Sullair.....	6
Syspro	12
Veyence.....	27
Vi-Cas	27

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Vi-Cas Manufacturing

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Feds out of touch on auto strategy

BY MATT POWELL, ASSOCIATE EDITOR

The federal government needs to change how it assists automotive manufacturing by creating business conditions that will do a better job of attracting investment, much of which is flowing south to lower-cost jurisdictions.

That's where Jaguar Land Rover Ltd. is heading rather than Windsor, Ont., which *The Globe and Mail* reported was under serious consideration. The UK automaker will break ground elsewhere because the federal government's incen-

“A national strategy is necessary...to raise Canada's profile as an automotive manufacturing superstar...”

tives aren't competitive.

The five-year \$100 million Automotive Innovation Fund announced in the 2015 Federal Budget provides taxable loans, while other jurisdictions are forking over hundreds of millions in non-repayable funding.

The no-strings financing attracted Audi and Mazda to make massive investments in Mexico, and Ontario's non-repayable

support likely played a role in attracting both Ford and Honda to commit to their operations last year.

Canada's automotive sector has been challenged since the devastating economic crisis of 2008-09, but has managed to achieve record production and sales figures in the past two years despite rapidly vanishing investment from auto OEMs.

AUTO FACTS

8%: Expected Canadian automotive sector growth in 2015, 3% in 2016. — EDC

\$5 BILLION: The hit to Canadian GDP should GM shutter its Oshawa operation. — Unifor

\$10 BILLION: Canada's global automotive trade deficit in 2014. — APRC

\$3.6 BILLION: The value of Mexico's newest plant investments. — CAR

3.5 MILLION: the number of units added to North American auto assembly capacity from 2011 to 2015. Canada's share was about 3.5%, while Mexico snagged 34%. — CVMA

10th: Canada's global ranking in auto production, behind (among others) China, the US, Germany and Mexico. — CVMA

\$400 MILLION: the amount FCA Automobiles received (more than 70%) for a \$550-million retooling of its Toluca, Mexico plant.

Canadian governments typically provide up to 20% of investments. — FCA Automobiles

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Yet RBC Economics reports investment in 2013 was less than a third of what it was in 2007. In 2014 alone, Mexico won more than US\$7 billion in investment compared to Canada's \$750 million, according to the Centre for Automotive Research.

Securing the future

The Ontario government was key to securing Ford's future in Oakville, Ont., where it will produce the Edge crossover for more than 140 markets. And Honda has invested almost \$600 million at its Alliston, Ont. operations to manufacture its popular Civic sedan, thanks in part to commitments from the province.

But the industry needs a national focus on investment strategy.

The Canadian Automotive Partnership Council (CAPC), headed by Magna International CEO Don Walker, is actively lobbying the federal government to appoint an auto czar to raise Canada's profile as an automotive manufacturing superstar.

Ontario is also in search of an auto adviser that would work to provide critical intelligence about the sector as it tries to convince more automakers to invest in the province.

Economic development minister Brad Duguid told *The Globe and Mail* that person would be in charge of assessing threats to current investment and determining how Ontario could benefit from the shift towards higher-tech and greener vehicles.

If the Harper government needs a rationale for a national strategy, it can refer to the role the automotive industry has played in Canada's economic prosperity, how it's responsible for the largest share of manufacturing GDP, the jobs it supports and the jobs that will be lost if it's allowed to wither.

Comments? E-mail mpowell@plant.com.

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Carr Lane Mfg. Co., www.carrlane.com.

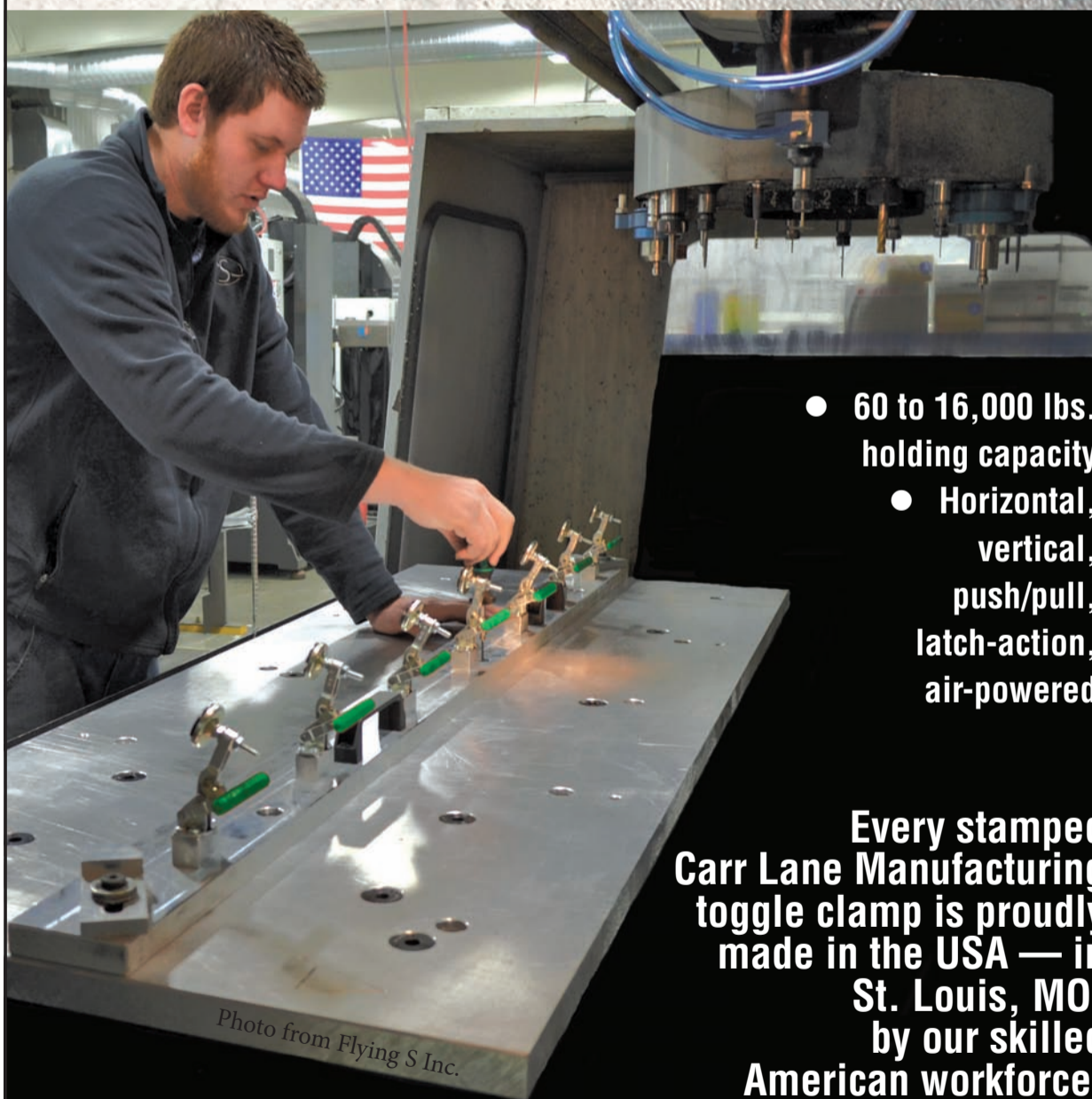


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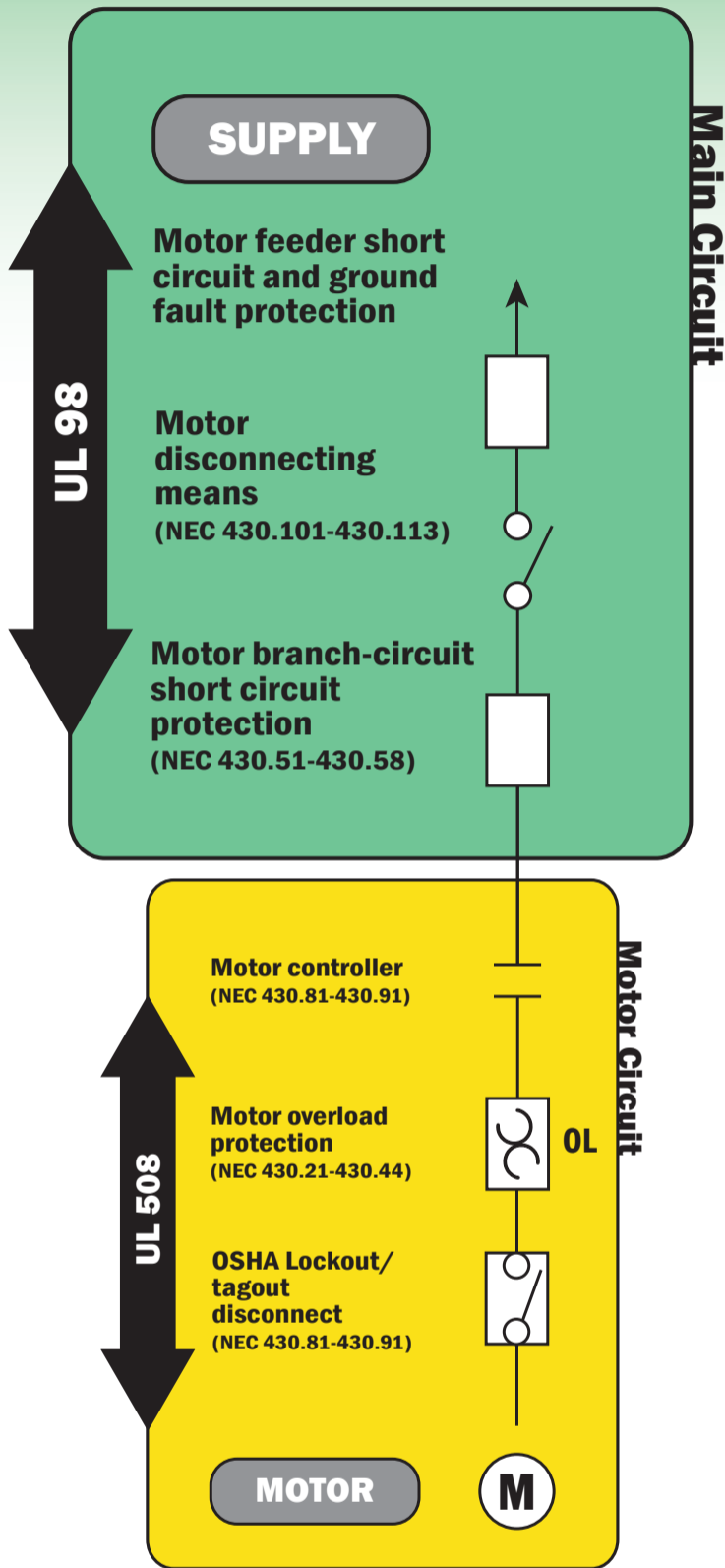
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