QUIT MAKING THE LABOR CRUNCH WORSE! PART 2 PAGE 42

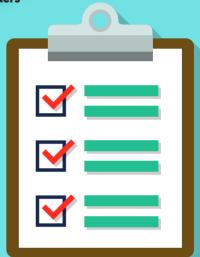
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GREEN INDUSTRY

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The Management Resource for Landscape Contractors and Equipment Dealers

- ☐ How contractors should evaluate
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PRODUCT COVERAGE

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ark it down, because I'm willing to go on the record right here and now. Sometime within the next 50 years, gasoline-powered handheld equipment will have become extinct.

Some folks think it will happen much sooner than that. But a 50-year window is all I can commit to in my prognostication, because I've seen how resistant to change much of this industry is, particularly when it seems difficult to economi-

> cally justify a change. Short of a government regulation or perhaps a shell-shocking jump in gas prices, I think the migration to battery among professionals will continue to happen slowly.

Look at the automobile industry. I remember nearly nine years ago when gas popped to \$4 a gallon for the first time. Electric automobiles became all the rage; they were the future. Nine years later, electric cars have about 1% of the U.S. auto market, according to January data reported by EVObsession. com. That said, EVObsession also reports that January sales were up 59% compared to a year ago. Additionally, Forbes reports that 2016 sales were up 37% over 2015. So product adoption is definitely growing.

I wish I could put a number on battery product adoption in the landscaping industry. Manufacturers remain pretty guarded with proprietary data like that, which I understand. Kris Kiser of the OPEI was kind enough to go on the record in saying that electric now outsells gas in the string trimmer, hedgetrimmer and leaf blower product categories (story page 22). But that includes corded. That also includes homeowners. So the best we can do, for now, is to simply look at

the products manufacturers are introducing and the number of landscape contractors using them—both of which are growing.

I believe contractor use would grow much faster if contractors were given some kind of financial incentive, similar to what has been done with propane mowers. There is no disputing the success contractors who've switched to propane mowers have had. There is also no disputing the influence rebates have had in enticing contractors to make the switch, helping to defray the price premium and additional upfront cost.

When switching to battery-powered equipment, contractors also pay a higher upfront cost due to the need for at least one battery and a reliable charger. Since they won't have to buy gas, oil and filters, etc., they'll make that money back over time. But realizing the positive ROI requires patience, maybe over the course of a season or two. Some contractors can find the necessary patience, but many cannot.

Do you have the patience? If you've been able to get to the end of this column, that's a good start. The next step is to check out our extensive battery coverage in this issue. And while you're at it, don't skip over our feature story on what's new in engines. There has been a lot of innovation there, too, as manufacturers also seek to help contractors save time and reduce costs.

Yes, battery is growing—but engines aren't going anywhere anytime soon. It's best to continue learning as much as you can about both, including how each impacts your vision statement, market position, productivity and bottom line. >

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Volume 29, Number 4

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Reprints — For reprints and licensing please contact Erica Finger at 920-542-1230 efinger@acbusinessmedia.com

Green Industry Pros (USPS 003-763 and ISSN 2168-121X (print), ISSN 2168-1228 (online) is published 7 times a year: January/February, March, April, May/June, July/ August, September/October, November/December by AC Business Media, Inc. Periodicals postage paid at Fort Atkinson, WI 53538 and additional mailing offices. POSTMASTER: Send address changes to Green Industry Pros, PO Box 3605, Northbrook, IL 60065-3605. Canada Post PM40612608. Return undeliverable Canadian addresses to: Green Industry Pros, PO Box 25542, London, ON N6C 6B2.

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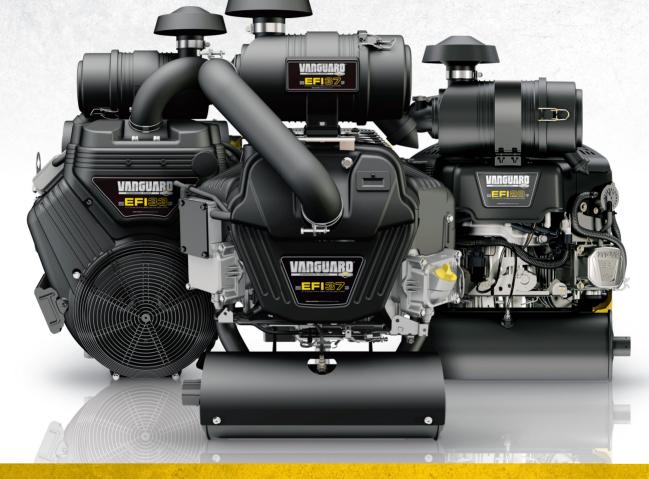
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Kubota Enters Alliance with Precision Guidance Technology Company

Tractor Corporation has announced an agreement to enter into an alliance with Smart Path Systems for its precision guidance technology products that will be available at select dealerships nationwide for Kubota M, L and B-Series tractors, Kubota F-Series mowers and Kubota utility vehicles.

"Kubota is the first to bring this level of technology to the market segment. Applying Smart Path's precision guidance

technology to Kubota equipment furthers our commitment to continuous improvement," said Todd Stucke, Kubota senior vice president, marketing, product support and strategic projects. "We give our customers the tools they need to get their work done more efficiently and effectively, and this alliance will give our customers access to advanced technology that will further enhance their user experience and make them more

> productive and more profitable."

guidance Precision technology enables the use of autonomous steering of Kubota equipment for mowing, sweeping, spraying or snowplowing with greater precision by utilizing dual GPS antennas for sub-inch accuracy, an easy-to-use android tablet

interface, and live satellite map feeds that are accessed through a web system. Government, commercial and farming organizations can assign, track and manage their operators and equipment fleets from one easy-to-use website.

Operators have the option of taking predetermined paths created in the web portal management system, or record their own path, allowing an operator to replay the exact same route at any time in the future. This record-and-replay approach is ideal for plowing snow and sweeping walking trails, spraying along fence rows or cracks, repeated mowing by less-experienced operators, and striping a fairway with precise consistency. According to Smart Path, users of the technology have experienced a 20% increase in time savings or productivity gain.

Smart Path Systems are available for sale and installation at select Kubota dealerships this spring.

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BOB-CAT ACOUIRES EASTMAN MOWERS

Schiller Grounds Care has acquired all of the assets related to the Eastman Industries 21-inch commercial mower family.

Schiller's Bob-Cat brand currently offers commercial walk-behind mowers with 32to 61-inch deck sizes. With the Eastman addition, Bob-Cat rounds out its walkbehind lineup.

"We've been looking to get back into the 21-inch walk-behind market for a while now, and the acquisition of this product was a perfect fit," said Matt Donohue, brand director for Schiller Grounds Care. "We know that this addition to the Bob-Cat family will help us continue to comprehensively serve our commercial customers, giving them the top-quality equipment they need to get the job done."

This 21-inch commercial mower lineup will boast pro-quality features, including a cast aluminum deck and optional threespeed transmission.

Bob-Cat will begin production on these mowers this year at its Johnson Creek, WI, facility.

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TORO REPORTS RECORD FIRST-QUARTER RESULTS

Toro's record-setting first quarter (Nov-Jan) saw a total sales increase of 6.1%. Professional segment sales specifically were up 9.7% from last year.

New product introductions such as the Toro-branded Titan HD and Exmarkbranded Radius zero-turn riding mowers generated positive momentum for the quarter. Similarly, the Boss snow and ice management business also saw the benefits of new products paired with favorable snowfall across much of the Midwest.

Richard M. Olson, Toro's president and chief executive officer, says Toro is also pleased by the success of its Aqua-Traxx tape products with flow control in its micro-irrigation business. Additionally, excitement continues to grow for Toro's GTX utility vehicle line.

Residential segment net sales for the first quarter were down 2.7% from last year. Retail demand for Toro's line of snowthrowers was positive in North America. Sales of walk mowers were favorable in southern climates. As expected, the results were impacted by a shift in demand

for zero-turn mowers experienced in the comparable period last year. This prior shift was not repeated in the current quarter due to improved product availability and more normalized shipment timing.

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- > Palm Beach Looks to Ban Gas Blowers greenindustrypros.com/12310097



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How To Build a More SELF-SUFFICIENT TEAM

3 keys to developing teams that solve problems and think for themselves.

lot of managers come to me with complaints about their team members not being able to figure out solutions for themselves. They feel like they're always being pestered with questions. So I ask them, "Who trained the employees not to think? Who is giving them the answers?" That person is probably the one looking back in the mirror at you.

1. Internal Meetings

Meetings should be about 30 to 60 minutes long to maintain focus and productivity.

The most important internal meetings are weekly or bi-weekly, one-onone meetings with direct reports. These meetings can eliminate the discomfort of sharing in front of a group and build a rapport to gain insight into an employee's

specific operational unit, such as maintenance, project, administration and new sales. The goal is to limit the audience to make the discussions relevant to those who are attending. So you need to dial in the messages and topics covered. You shouldn't have meetings just to have

Quarterly and annual meetings are an opportunity to engage with your entire team, and should be held just after the quarter has closed or prior to year's end. Take a look at where you are and where you are going. Provide an evaluation of success, such as reviewing how sales performance compared to plan, and offer recognition. Finally, outline upcoming plans.



2. Managing with Data

Managing with data rather than managing with emotion is important to the success of your business. You shouldn't be making decisions based on a feeling alone.

There are many tools for managing data. A customer relationship management system (CRM) can be used for sales management, operations management, customer engagement and even for pricing. You should understand what your system provides and what you are monitoring. If your problem is understanding costs, then don't buy one that just measures sales.

But to effectively evaluate your business and its performance, you should be looking at all components of sales, including leads, calls and agreements. You need to pay attention specifically

Establishing new habits will take time, and you have to be willing to accept that people are going to make mistakes as they begin to take the initiative. But you can build a stronger team that can lead to a more successful business. I advise managers to focus on three areas.

reality. This plan-and-review meeting should mostly be a listening exercise for the leader, although it is also an opportunity to ask questions and lay out action plans for overcoming challenges. Be sure to highlight successes, too.

Department meetings are for a



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to why proposals were lost. Price isn't the answer.

Also, so much data can make you crazy if you try to respond to every instance. The key is to use these tools to represent trends, or averages, and manage to the trends that you see.

3. Coaching

The most complicated part of managing your team is coaching. Coaching, which is focusing on the performance of an individual on a one-to-one basis, is more of an art than a science.

For a select few, it's an innate ability. For most of us, we have to learn how to do it through practice and observing others practicing it. In a good coaching relationship, true mutual understanding is sought between both parties, mutual agreements on goals are set, performance is encouraged, and feedback is provided.

As part of good business practices, you should define the roles in your organization. Then you have to determine if people are in roles that suit them. A behavioral assessment tool can help you determine who is wired to do a certain job from a personality standpoint.

For example, someone who likes routine would not make a good project person, which requires creativity. However, they would make an excellent candidate for maintenance work, which is structured and repetitive.

Here is what you should keep in mind in your role as a coach:

- Credibility
- Communication
- Confidence
- Cooperation
- Commitment
- Consistency
- Caring

But the foundation for good coaching is trustworthiness. To lead others effectively, managers must be able to do their jobs well and show strong character. Businessman and author Stephen Covey uses the metaphor of an emotional bank

HARD DECISIONS

Sometimes there is no saving a problem employee. For the sake of the rest of your team—and your company—you have to let the bad seed go. Here are some tips as found on the SBA's website.

- **1. Employment policy.** Every state (except Montana) gives employers the option of adopting an "at-will" employment policy, meaning that an employer may terminate any employee at any time, for any reason, or for no reason at all. Make sure your employment policy isn't worded differently.
- 2. When it's illegal. Here are some things you can't fire someone for:
- Discrimination based on age, race, gender, religion or disability
- Whistleblowing
- Exercising legal rights such as taking family medical leave or time off to vote.
- 3. Document performance issues. Despite the "at-will" policy, you should document instances of poor performance and tardiness, and maintain good records of employee performance reviews and any previous disciplinary interventions.
- 4. Understand employee rights. There are some common benefits that employees may be entitled depending on the size of your company and state you are operating in. Contact your State Labor Office for specific advice.
- · Continuation of Health Insurance Coverage (COBRA)
- Unemployment Insurance
- · Vested Retirement Plans
- 5. The final paycheck. Employers are not required by federal law to immediately give former employees their final paycheck. Some states, however, may require immediate payment, and are specific about what should be included in the final paycheck, such as accrued or unused vacation days. Again, contact your State Labor Office for information.

account, with interactions between people being deposits that build and repair relationships, and withdrawals that lessen trust.

Coaching requires you to see things from another person's perspective. Rather than imposing your understanding and beliefs on them, you have to use their understanding and beliefs to encourage them to take a particular action. Consistency is key. You are looking for incremental change over a period of time. It takes a person doing something 21 times for it to become a habit. We have the tendency to want to see change in a short time period.

Focusing on meetings, data and coaching as a manager will help you mold your team into a group that can

ask themselves the questions and determine solutions that will propel your business forward. >

David Gallagher has more than 25 years of Green Industry experience. As Director of Success, he coaches the coaches at LandOpt, which provides a proven business model to a select group of landscape contractors nationwide. For more

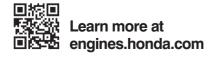
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Built like no other.

Jeff Anconetani,

Stand-on Mower **Country**

Rental Country's four locations across South Jersey have helped arm landscape contractors with everything they need to make quick work of both mowing and hardscaping projects.

> Rental Country continues to operate four stores: its newest in Sicklerville (top), along with the original store in Vineland and its coastline locations in Cape May Court House and Egg Harbor Township.

or the past 15 years, landscape contractors and other outdoor power equipment users have come to rely on Rental Country's four locations across southern New Jersey. And it's not just for tool and equipment rentals either. In fact, Rental Country has helped make southern New Jersey "stand-on

Rental Country's

vice president of

mower country."

operations

Rental Country was one of the first area dealers to begin carrying standon mowers when it took on the Wright brand in 2004. "We had tried a couple of other zero-turn riding mower brands in the past, but nothing could seem to catch on," says Jeff Anconetani, Rental Country's vice president of operations. "But we had been a big Stihl dealer for a

long time, so we had a lot of

landscape contractors who were regularly coming to us for Stihl equipment, parts and service. We couldn't figure out why we couldn't get going with lawnmowers. Then we decided to try the Wright stand-on mowers and they really took off."

The southern New Jersey market is ideal for stand-on mowing, Anconetani points out. There are a lot of tight properties that contractors need to get in and out of quickly, yet they need something faster and more productive than a walk-behind.

"What we saw in those early years was

that a landscaper would start off with a smaller 36-inch stand-on, giving him a big step up from a standard 21-inch push mower," Anconetani recalls. "But the 36-inch size was still small enough that he could get through backyard gates and efficiently handle smaller landscaped properties. In time, though, that landscaper would come back to us for another machine, this time a larger 52-inch model to handle the other types of properties he also had to mow."

Nowadays, Anconetani says, up-andcoming landscapers don't even want to talk about walk-behind mowers, which Wright also offers. "All they want is a stand-on," Anconetani says. "For a growing contractor who finds his portfolio reaching the 30-yard mark, he realizes he'll need to either hire another





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SPOTLIGHT DEALER

employee or find a more efficient way to mow his properties. To him, the answer is a stand-on."

Anconetani says it's quite fascinating to look around his market area. "There are stand-on mowers everywhere," he says. "Sometimes you see two or three on a single trailer. It definitely has become the mowing method of choice for landscapers around here."

That said, the stand-on mower has yet to catch on with other end-user groups. "Homeowners with smaller yards still want the typical 21-inch walk-behind mower," Anconetani says. "For those homeowners with larger yards, they're going to just buy a sit-down rider. I did sell a stand-on to a farmer once, but really we're talking about landscape contractors who benefit from standon mowing."

That's just fine with Anconetani and crew. After all, they first took on the Wright brand 12 years ago in an effort to provide more to their landscape contractor customers. Speaking of which, in addition to Wright and Stihl, Rental Country also sells Honda, Scag, Billy Goat, Little Wonder and Briggs & Stratton.

Way more than just mowers

Outside of lawn and garden, Rental Country is also a dealer for Wacker, MBW, Dixie Diamond and Jenny. Tool/ equipment rentals continue to represent roughly 60% of total dealership sales across the four locations. A lot of those rentals are going to landscape contractors.

"Equipment sales and rentals go hand in hand very nicely," Anconetani says. "Landscapers often come in to rent skid steers, excavators, compactors or aerators. Then they'll see our mower displays and start looking around. Sometimes our loyal mower customers will come back to us when they need to rent something to complete a landscaping project. We do a lot of rental business with paver contractors."

Of course, Anconetani is quick to point out that nothing would happen—neither sales nor rentals—without great employees. Fortunately for him, many of Rental Country's employees have been with the dealership for 20-plus years. Most have been there for at least 10. "We all know our product lines very well," Anconetani says. "People know that they can come in here and get their questions answered. That makes a huge difference with customers."

Another thing that makes a huge difference, from the dealer's perspective, is having a solid distributor you can count on. "For our Wright mowers, our distributor is KPM Exceptional based right here in New Jersey," Anconetani says. "They provide outstanding support, not to mention insights into the market to help us stay on top of trends. If we ever have an issue, they help to quickly resolve it. That's very important

"Sometimes vou see two or three on a single trailer. It definitely has become the mowing method of choice for landscapers around here."

for dealers today." Another thing that's important to many dealers is a strong family. Like so many of today's successful power equipment

dealerships, Rental Country is a family business. The dealership was founded in 1981 by Jeff's mother and stepfather, Gary and Betty Galloway. Jeff is also joined in the business by his stepbrother, Ryan Galloway, who is also involved in sales while also wearing many other hats from time to time.

Rental Country's first location was in Vineland, located roughly 35 miles west of Atlantic City. A second location opened four years later far to the south near the coastline in Cape May Court House. Five years after that, they moved north up the coastline and opened a third store in Egg Harbor Township, followed by a fourth location in Sicklerville in 2001, its northernmost location. All four stores continue to operate today, giving Rental Country strong coverage across South Jersey. >



Rental Country sees 60% of its revenue come from tool and equipment rentals. But the dealership also sells quite a bit of lawn and garden equipment to a loyal customer base of landscape contractors.



Cookin' with (out) Gas

Ontario contractor is all battery, all the time - and both his customers and bottom line are thanking him for it.



emian Trudeau was earning a living as a member of a school board when an idea for a new business started to fester. "I was around children and younger parents a lot," Trudeau says. "I remember driving around seeing people doing their lawn work, smelling the exhaust fumes and hearing the noise coming from the equipment. I knew there was both electric and battery-powered equipment that was available, and was just curious why more professional contractors weren't using it. It seemed like a really good opportunity."

The idea for a gas-less lawn business continued to gnaw at Trudeau for a couple of years. "My wife kept talking me out of it because I had a good job with a good pension and benefits,"

he says. Eventually, though, Trudeau secured his wife's blessing and decided to go for it.

Trudeau is the owner of Kick Gas Lawn Care in Mississauga, Ontario, Canada. This will be his fourth year in business. The first year presented quite a learning curve. Lithium ion battery technology was nowhere near where it is today. Trudeau, through a lot of trial and error, had to figure out which equipment was best up to the task. He also had to develop systems for keeping batteries adequately charged. It has all been a work in progress. This year, though, Trudeau feels like his company is on the verge of becoming a well-oiled machine-minus the oil, of course, because battery-powered equipment doesn't require it.

Runtime = uptime

Kick Gas Lawn Care is using Husqvarna battery-powered equipment almost exclusively, from hedgetrimmers and string trimmers to chainsaws, pole saws and leaf blowers. "Right now I'm also using a 58-volt push mower from Echo," Trudeau says, while adding that he has learned to not get too jazzed up about volts, which many manufacturers like to tout as a measure of battery performance.

"One company, Greenworks, likes to promote its 80-volt battery," Trudeau shares. "But 80 volts is kind of overkill. What really matters is the amp-hours, which speaks to runtime. Right now I'm primarily using 4.2-amp-hour batteries from Husqvarna, which gives me solid runtime."

Voltage still matters to a degree, Trudeau adds. Husqvarna's battery, for example, is rated at 36 volts, which Trudeau says is more than adequate.

One of the benefits of battery power is the fact that operators can use the same battery on several pieces of equipment. Trudeau has learned a lot about this, too, during his three years in business.

"I like to keep all of my batteries as close to fully charged as possible," Trudeau explains. "So I'll use a battery on a couple of properties, and then switch it out with one that just came off the charger fully charged. I never completely kill a battery. I want fully charged batteries in use while the others are charging back to 100%." That said, Trudeau does point out that this is really a matter of personal preference, as lithium ion batteries do not have a memory effect.



which is the equivalent of six or seven regular batteries, which provides all-day performance with no headaches on large properties.

"I knew right off the bat that I was going to need a system for bringing power on the go," Trudeau tells. "So I'd designed a special trailer with solar panels. At first I simply had two panels on the top of the enclosed trailer. Then I got to thinking about how I could make a bigger impression on people who saw my trailer around town. So I've added two more panels to the front."

The 6x10 trailer now has four 250-watt solar panels, along with a 10,000-watt sine inverter connected to deep-cycle batteries. "Then I just run my battery chargers off of a power inverter," Trudeau explains. "So basically, the sun is charging the deep-cycle batteries which then charge the batteries used to power my equipment."

Spend money to make money

A fancy rig like this does cost money, as do the batteries and chargers you need to power your equipment. Trudeau says his upfront investments showed a fairly quick ROI, though.

"I don't have to buy gas and gas cans, oil or filters," he says. "Another thing I've noticed is when I stop at Tim Horton's for coffee in the morning. It's right next to a gas station. I see one landscape company after another pulling in to fill up gas can after gas can. They're filling up cans for 20 minutes or longer sometimes. That's a lot of money when you're paying employees to do that. That's something I don't have to worry about, which is great because my company is growing."

Trudeau employed five part-time

employees last season. This year he hopes to add a couple more. "We've been realizing about 30% growth in customers and profits every year," he adds.

Trudeau is also hoping that some of those customers will show interest in a new service he's going to begin testing this year: robotic mowing. He's looking to finance a couple of Husqvarna Automowers and offer customers two options: 24/7 mowing, or shared use with a series of other homes. "With the second option, I would just establish a route for the Automower, and then stay on top of moving it from one property to the next."

Regardless of which option is chosen, Automower customers must share one commonality: Their property must have some kind of passage from the front yard to the back-or they must be willing to make some modifications.

"I'm just going to offer this service and see who seems receptive," Trudeau says. "There are certain consumers who really love technology and will probably be more interested. But when you get down to it, everybody needs their lawn mowed-whether there's a person operating the mower or not. These Automowers are not cheap. Still, I think I'll be able to offer the service at a very competitive price. It will be a premium service, but the customer is getting service every day as opposed to just once a week." >



Droids, Drones & the Future of Landscaping

Husqvarna gathers industry leaders to discuss the growing influence of sustainability and technology in the landscaping industry.

magine a day when your equipment requires no gasoline, and sometimes not even an operator. Imagine a drone delivering trimmer line or a forgotten tool to a jobsite. Imagine a significant increase in sustainable urban green spaces. Imagine a day when landscaping is viewed differently with a much higher degree of respect.

Equipment manufacturer Husqvarna held an event in Miami on February 23 to take a look into the future of landscaping. The basis for discussion was Husqvarna's Silent City initiative, which originated in Europe but takes a global look at the future of urban parks and sustainable green spaces.

Michelle Sordi, Husqvarna's director of marketing, walked through several revealing statistics from Husqvarna's "Future of Urban Parks Report" as well as its "Green Spaces Survey" below.

Is lawn and garden equipment technology on pace to meet this growing, in some cases shifting, demand? "I'd say it is very close," Sordi shares.

Leading landscaper outlines shift to battery

Jeff Sebert of Sebert Landscaping was invited by Husqvarna to discuss his firm's transition to batterypowered handheld equipment. Sebert Landscaping is a 350-plus-employee firm serving Chicagoland and southern Wisconsin with seven branches.

"I've always had a strong passion for the environment," Sebert shares. That's why he has made sure his company's headquarters in Bartlett, IL, is a LEEDcertified facility. It's why his company has transitioned 60% of its mower fleet to propane. And it's why 20 of his 72 crews will be operating out of solarequipped trailers this season.

Sebert's has actually been running solar-equipped trailers for the past six years. Ralph Meyer, fleet manager, says they have learned a lot and now have things dialed in pretty tightly. "We've been able to determine our real needs and scale some things back," Meyer says. "For instance, we've cut back from five solar panels to two. Overall we've been able to reduce the cost of outfitting a trailer from around \$8,000 to just under \$5,000. Over the typical 12-year life of a trailer, our initial estimates show a positive ROI of at least a couple thousand dollars."

The solar panels are helping to keep batteries charged—batteries used to power a growing arsenal of handheld equipment. Steve Pearce, general manager, says convincing some of the crews to operate battery equipment was a challenge at first because they were so entrenched in the "macho gasoline culture". "It's different today," Pearce points out. "Now many of our crews are disappointed when they are told they will be operating gasoline equipment."

Although less than a third of Sebert's crews are operating battery equipment, that number is growing. In fact, five additional trailers are being outfitted for solar this season, bringing the number of crews from 15 up to 20. That number should continue to grow. "When you think about things like emissions and emissions regulations, it just makes sense to start moving away from that type of equipment," Sebert says.

Of course, it also has to make financial

56% of U.S. consumers visit a park once a week

71% think parks will occupy a larger share of cities in 2030

78% want to see eco-friendly outdoor power equipment being used

65% would prefer to choose a landscaper who used it

72% would be willing to pay more

would be willing to pay more for a landscaper who operated quieter



A look at the battery charging station inside a model solar-equipped trailer (with solar panels on top of trailer).



Ralph Egües, executive director of the National Hispanic Landscape Alliance (NHLA), tries his hand with a batterypowered hedgetrimmer.

sense. For Sebert's, the numbers add up. It takes time—several years—but they add up. Some smaller contractors might wonder if the numbers would add up for them.

It's important to understand that the transition to battery is scalable. Take Sebert's, for instance. A given trailer shows a couple thousand-dollar positive ROI over the life of the trailer. That is one trailer. It just so happens that Sebert Landscaping has 72. But if you only have one trailer, the same ROI calculation would apply. Thus, battery could prove to be financially viable for a smaller operator, too-perhaps even more so because the upfront investment in batteries, chargers and solar panels is considerably less.

Ralph Egües, executive director of the National Hispanic Landscape Alliance (NHLA), was one of the event's industry panelists. He believes that for more landscapers to embrace battery technology, it really comes down to education. Dealers can play a huge role in that, since most small to mid-size landscape companies are getting the majority of their information from the dealers they buy from.

Dealers must play a very important role in the adoption of battery power for another reason: When battery comes in, the aftermarket sale of oil, filters, spark plugs and service labor goes out. That's money out of the dealer's pocket. That said, dealers would have the opportunity to generate sales dollars upfront via batteries and chargers. Perhaps dealers could even play a role in the outfitting of trailers with solar panels and other required accessories. Additionally, some dealers might be more than happy to wave bye-bye to the headaches and hassles associated with ethanol-inflicted two-cycle engine repair.

Robots and equipment that talks

Another topic discussed at the Miami event was Husqvarna's robotic Automower. Giovanni Crespi, Husqvarna's director of product management, says there are already close to 1 million satisfied consumers globally who have purchased an Automower. This has set the groundwork for a push into commercial applications. "We are ready to approach the commercial market now," Crespi says.

Sebert Landscaping has a robotic Husqvarna Automower cutting the front lawn of its Bartlett, IL, headquarters. It has certainly captured a lot of peoples' attention and generated some buzz. Sebert thinks the robotic mowing concept has a real opportunity to

penetrate the residential market particularly where smaller lots are concerned.

There are also applications in commercial, Sebert adds, such as green



roof maintenance. Husqvarna research also identifies hard-to-access, high-traffic applications such as roundabouts.

Finally, Husqvarna also discussed its Cloud-based Fleet Services program, which enables contractors to affix small devices to their equipment to monitor idle time, service needs and overall performance. Husqvarna Fleet Services then provides contractors with critical insights into machine health, crew habits and productivity, and more. Subscription pricing details are still being worked out, but an announcement should take place later this year. >



Impressive voltage may make marketers feel all tingly, but that's just one factor end-users should consider when shopping for battery-powered lawn equipment.

here is no mistaking the convenience of battery-powered lawn equipment. Convenience is a big reason why shipments of "electricpowered outdoor power equipment" grew by 10% last year, according to Outdoor Power Equipment Institute (OPEI) market statistics.

OPEI's data also shows that for blowers, hedgetrimmers and string trimmers, shipments of electric-powered products now exceed gas-powered. While that does include both corded and battery-powered product, it is clear that battery power is growing in popularity. Just look around the industry and see how much battery-powered product is out there.

There are a number of things driving growth in the battery category. "For some, battery power represents an opportunity for a more environmentally friendly tool," says Ross Hawley, senior marketing manager at The Toro Company. "For some, there is just a genuine interest in technology. For most, we believe, people are migrating to battery-powered tools because it maintains tool portability but eliminates the hassles associated with engines (fuel, ethanol, oil, air filters, spark plugs, etc.). Electric units also simplify starting and start the first time, every time."

Those benefits resonate not only with everyday consumers, but also professional users. Still, many pros view this

product category skeptically, as they do most new technologies and overall approaches to doing business. They have questions, and don't want to find out that the answers don't suit them in the middle of the season.

"Battery-powered outdoor power equipment that could be considered for professional use is a more recent development," Hawley adds. "Much of the battery cell development is actually being driven by demand for electric vehicles both in the U.S. and abroad. We expect commercial users to embrace battery power as it develops to the right combination of performance, durability, weight and runtime to meet professionals' needs."

> continued next page

Some manufacturers have already grown comfortable in promoting certain battery-powered models as being "on par" with their gas-powered equivalents—and definitely up to the commercial task. That comfort level is reinforced by key performance specs such as mph on a leaf blower or strokes per minute on a hedgetrimmer.

Where it can get confusing for an enduser has to do with the battery itself. What kind of power does the battery help produce? What's the typical run time? What's the typical recharge time? Those are key bits of information that get to the nitty gritty of running a maintenance business: productivity and potential downtime.

The number don't lie at least not always

When it comes to batteries, voltage seems to be the sexy spec. But it is only one part of a more critical equation. The watt-hours spec determines actual power output over a given amount of time.

Wayne Hart, communications manager for Makita U.S.A., explains: "Consider voltage as the size of a car's gas tank. Amp-hours, Ah, is the amount of gas in that tank. Watt-hours, Wh, is the distance you can drive your car over the course of an hour, or how fast you can cover that distance."

If a manufacturer does not disclose its watt-hour spec, you can calculate it yourself by taking voltage x amp-hours (V x Ah). But we're still not done. One must also consider how the manufacturer is promoting voltage.

For instance, Snapper's new XD 82V Max battery is just that: 82V. However, the company adds a footnote saying that 82 is the maximum initial battery voltage (measured without workload). Thus, unless you want to use the battery as a paperweight, that 82 mark is pretty much irrelevant. The nominal (working) voltage is 72. That's what matters. In this case, Wh on a 2 Ah battery swings from 164 down to 144 (82V x 2 Ah vs. 72V x 2 Ah).

NOTE: Several other manufacturers also tend to promote "max" voltage. Be

on the lookout for that when comparing product—and be sure to hone in on the really important spec, which is Wh.

"An 18-volt battery is actually 20 volts when it comes off the charger," Makita's Hart goes onto explain. "But as soon as the user hits the trigger on the tool, the battery is operating at the nominal voltage of 18. It's interesting because the industry has more or less agreed on using the nominal voltage of 18."

That's one reason why you see so many 18V and 36V batteries out there. When you see random voltage ratings like 20 or 58, for instance, ask the dealer or manufacturer why they opted for that voltage. Regardless, ask if the voltage rating is maximum or nominal.

"For any battery, what's important

is how much power it can discharge and for how long," reminds Kevin Guerville, global product line manager for outdoor power equipment for Oregon. "This is called 'work' and is measured in watt-hours (Wh). All batteries have the Wh shown on the case. It's important to look at how a given manufacturer gets there—because the watt-hour rating of a battery is simply the nominal voltage (V) multiplied by the amp-hour rating (Ah). A lower-voltage battery with a higher Ah rating could actually produce more Wh than a higher-voltage battery with a lower Ah. Wh is the only measure of how much work you can do with a battery-tool combination."

"When you look at the watt-hours on some of these really high-voltage batteries, it's really not much higher than many other smaller-voltage batteries that are out there," adds Brian Manke, Stihl's product manager for battery. "There is also one big problem Ah x V = Wh, the vital spec that tells you how much power the battery can discharge and for how long. Pictured below is Husqvarna's BLi20 battery.

with a high-voltage platform: There's no getting around the number of cells needed to get to that voltage—and that adds weight.

"The problem arises in a lowamperage application," Manke continues. "Take hedgetrimming, for

instance. Look at some-

thing from Stihl's consumer line, the HSA 56, which comes with a fairly small 50 Wh battery. But it will run for 40 minutes straight on a charge, which is really good. This battery weighs just 1.8 pounds, which is what you want for something like a hedgetrimmer. Weight is key." In other words, think about the tools you'll be using and in what applications.

Just like a gas-powered engine, you want a battery that is right-sized for what you're needing to do, helping you to maximize the power-to-weight ratio.

Think 'total operating cost'

Just like with any piece of equipment, it's important to understand total operating costs. With battery-powered equipment, voltage, amp-hours and watt-hours help paint a picture of equipment performance and the effect on your productivity.

Another good thing to think about is charge time, especially relative to runtime. Runtime will vary by tool and working conditions, but your dealer or the manufacturer should be able to give you a general idea of what to expect. "The real key here is that once your overall working time is at least an hour, that's more than enough time to charge a second battery," Manke explains. That eliminates downtime, which is always a key for contractors.

You'll also want to investigate things

PRODUCT TRENDS

like power drop-off, memory effect and typical battery lifespan, along with the number of times a battery can be charged before it starts to fail.

As Stihl's Manke points out, "It's

important to look at the whole package: the battery in conjunction with the motor and the tool being used, along with the ergonomics and overall engineering. It's not simply a matter of how

big the battery itself is."

That's for sure. It's a matter of how well the tool is going to perform and how much it can help add to your bottom line." >

BATTERY COMPARISON CHART							
Company	Battery	Nominal Voltage	Amp-hours	Watt-hours	Battery Weight	Recharge Time	
Snapper	XD 82V Max	72V	4 Ah	288 Wh	5.75 lbs	60 minutes	
Greenworks	Pro 80V	72V	4 Ah	288 Wh	6 lbs	60 minutes	
DeWalt	40V Max	36V	7.5 Ah	270 Wh	4.2 lbs	60 - 170 minutes	
Greenworks	Pro 60V	54V	5 Ah	270 Wh	4.3 lbs	150 minutes	
Stihl	AP 300	36V	6.3 Ah	227 Wh	3.8 lbs	35 - 250 minutes	
Oregon	40V Max	36V	6 Ah	216 Wh	2.84 lbs	90 - 360 minutes	
Makita	18V X2 LXT	36V	6 Ah	216 Wh	3 lbs	55 minutes	
Cub Cadet - CORE	40V	36V	6 Ah	216 Wh	4 lbs	60 minutes	
DeWalt	40V Max	36V	6 Ah	216 Wh	4.1 lbs	45 - 130 minutes	
Greenworks	Pro 60V	54V	4 Ah	216 Wh	4.2 lbs	120 minutes	
Shindaiwa	56V	46V	4 Ah	185 Wh	3.96 lbs	88 - 150 minutes	
Echo	58V	46V	4 Ah	185 Wh	4.05 lbs	60 minutes	
Makita	18V X2 LXT	36V	5 Ah	180 Wh	3 lbs	45 minutes	
Toro	40V Max T180	36V	5 Ah	180 Wh	3.4 lbs	120 minutes	
Milwaukee Tool	M18	18V	9 Ah	162 Wh	2.4 lbs	90 - 180 minutes	
DeWalt	60V Max	54V	3 Ah	162 Wh	2.8 lbs	75 minutes	
Husqvarna	BLi150	36V	4.2 Ah	151 Wh	2.87 lbs	54 minutes	
Oregon	40V Max	36V	4 Ah	144 Wh	2.74 lbs	60 - 240 minutes	
Greenworks	G-Max 40V	36V	4 Ah	144 Wh	2.8 lbs	120 minutes	
DeWalt	40V Max	36V	4 Ah	144 Wh	3.2 lbs	30 - 90 minutes	
Greenworks	Pro 80V	72V	2 Ah	144 Wh	3.2 lbs	30 minutes	
Snapper	XD 82V Max	72V	2 Ah	144 Wh	3.28 lbs	30 minutes	
Greenworks	Pro 60V	54V	2.5 Ah	135 Wh	2.8 lbs	75 minutes	
Cub Cadet - CORE	20V	18.5V	6.5 Ah	120 Wh	3 lbs	60 minutes	
Makita	18V LXT	18V	6 Ah	108 Wh	1.5 lbs	55 minutes	
Greenworks	Pro 60V	54V	2 Ah	108 Wh	2.7 lbs	60 minutes	
Stihl	AK 20	36V	2.8 Ah	101 Wh	2.7 lbs	45 - 150 minutes	
Shindaiwa	56V	46V	2 Ah	92 Wh	1.98 lbs	42 - 72 minutes	
Echo	58V	46V	2 Ah	92 Wh	2.7 lbs	30 minutes	
DeWalt	20V Max	18V	5 Ah	90 Wh	1.2 lbs	50 - 75 minutes	
Makita	18V LXT	18V	5 Ah	90 Wh	1.5 lbs	45 minutes	
Toro	40V Max T90	36V	2.5 Ah	90 Wh	2.15 lbs	60 minutes	
Greenworks	24V	22V	4 Ah	88 Wh	2.5 lbs	90 minutes	
Oregon	40V Max	36V	2.4 Ah	86 Wh	2.74 lbs	30 - 120 minutes	
Husqvarna	BLi80	36V	2.1 Ah	80 Wh	1.76 lbs	43 minutes	
Stihl	AP 100	36V	2.1 Ah	76 Wh	1.8 lbs	35 - 90 minutes	
Greenworks	G-Max 40V	36V	2 Ah	72 Wh	1.8 lbs	60 minutes	
Stihl	AK 10	36V	1.4 Ah	50 Wh	1.8 lbs	30 - 80 minutes	
Greenworks	24V	22V	2 Ah	44 Wh	1.5 lbs	45 minutes	
Stihl	Al Series	18V	2 - 2.5 Ah	36 - 45 Wh	Battery is integrated	210 - 300 minutes	
			BACKPACK		, see year of the see		
Stihl	AR 3000	36V	31.8 Ah	1,145 Wh	17.9 lbs	160 - 300 minutes	
Husqvarna	BLi940X	36V	26.1 Ah	940 Wh	14.3 lbs	235 minutes	
Stihl	AR 900	36V	24.75 Ah	891 Wh	15.7 lbs	130 - 250 minutes	
Mean Green	LEM3620	36V	20 Ah	720 Wh	12.8 lbs	120 minutes	
Husqvarna	BLi520X	36V	14.4 Ah	520 Wh	12.5 lbs	123 minutes	

 $NOTES: \ Sorted \ by \ Wh \ | \ Recharge \ time \ varies \ by \ charger \ | \ Runtime \ varies \ by \ tool \ and \ workload, \ and \ thus \ is \ omitted \ from \ chart$



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BATTERY PRODUCTS

Makita XRU04Z String Trimmer

Makita's XRU04Z lithium-ion string trimmer is designed to allow faster cutting speeds. Plus, an LED charge indicator shows operators how much battery power they have left.



Other key features include:

- Brushless motor is electronically controlled to optimize battery energy use for up to 50% longer runtime per charge
- Adjustable speed dial (0-3,500 to 0-6,000)
- Lightweight at 8.6 pounds and designed to be compact
- Easy-loading, bump-and-feed trimmer head
- Reverse-rotation system allows operator to quickly clear trimmer head of entangled grass and weeds
- Overheat warning system turns on indicator light and is engineered to automatically stop motor

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Stihl AK 10 and AK 20 Lithium-Ion **Batteries**

Stihl savs its AK 10 and AK 20 Lithium-Ion batter-

ies offer the high performance of

Stihl in a convenient battery package. With optimal power-to-weight ratios in mind, the AK 10 is ideal for applications where reduced weight is desired, while the AK 20 is designed for applications where more power is needed.

Stihl says its batteries offer minimal loss of charge during storage and a long service life, as more than 80% of battery capacity remains after 500 charges. Other key features include:

- Indicator lights show the level of charge
- No gradual drop in power
- 80-minute charge time for AK 10
- 150-minute charge time for AK 20
- 50 watt-hours on the AK 10, 100 watt-hours on the AK 20
- Both are 36-volt
- Charger shuts off automatically after the battery has been fully charged

greenindustrypros.com/12305129



Shindaiwa offers three lithium-ion 56-volt cordless products designed for professional users. The powerful brushless motors use common lithium batteries that come in either 2 Ah or 4Ah. Shindaiwa says that when using its rapid charger, the 2 Ah battery fully charges in a little over 40 minutes while the 4 Ah fully charges in just under 90.

T3000 String Trimmer (pictured)

- Solid shaft drive
- 1.4:1 gear ratio for increased torque
- 12- or 14-inch cutting swath, Speed Feed 400 cutting head

EB6000 Handheld Blower

- 367 cfm and 133 mph
- Roughly 57 dBA at 50 feet

DH2000 Hedgetrimmer

- Extruded aluminum support bar is lighter than steel but still rigid
- Tip guard for extended blade life
- 24-inch double-sided, double-reciprocating blades

greenindustrypros.com/12133259

Mean Green's Solar-Assisted Mower

The S.A.M. (Solar-Assisted Mower) provides an optional solar electric canopy that can be added to the commercial electric Mean

Green CXR-52"/60" zero-turn riding mowers.

According to the company, an electric mower with the solar canopy offers several advantages to a modern-day lawnmowing contractor:

- Increased productivity operators are shielded from the sun
- Improved environmental

image – solar panel (on sunny days) collects the sun's energy and converts it to additional power for the patent-pending Mean Green Green Lithium LEM battery packs that propel the CXR mower, reducing emissions and capturing the curiosity of clients and onlookers

• Saves money – you may qualify for the 30% Federal Solar Tax Credit from the value of the solar equipment and Green Lithium LEM batteries

Stihl HSA 56 Hedgetrimmer

Stihl's Lightning Battery Systems product offering now includes the HSA 56 high-speed battery hedgetrimmer. Stihl says users can trim the length of three football fields (up to 1,000 feet) on a single charge. Key features include:



- Weighs just 8.1 pounds including batterv
- · Cutting speed of 2,800 strokes per minute
- Comes standard with the Stihl AK 10 battery (36-volt, 1.4 amp hour) and Stihl AL 101 battery
- No battery memory limitation, no gradual drop in power runs at full speed until battery is depleted
- Lights indicate battery status/level of charge
- Long service life more than 80% of battery capacity remains after 500 charges, Stihl assures

MSRP is \$199.95 without battery and charger, \$249.95 with AK 10 battery and AL 101 charger.

greenindustrypros.com/12293000



Husqvarna 436LiB Battery Blower

Husqvarna says its 436LiB battery-powered handheld blower is lightweight, low-maintenance and easy to use, making it ideal for the timeconscious professional seeking high performance that's similar to a gas-powered unit. A simple tap on the control panel gets the blower started, and cruise control maintains constant speeds. A power boost setting allows for the removal of stubborn debris, leaves and dirt.

Other key features include:

- 388 cfm
- 105 mph
- Weighs 5.29 pounds (excluding battery)
- 14-minute runtime (free run)
- 26-minute runtime (free run) while utilizing savE mode
- · Brushless motor
- · Slim, narrow design and soft grip enhance user comfort



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BATTERY PRODUCTS



Snapper's XD 82V Max Lithium-ion Battery Lineup

All tools feature a maintenance-free brushless motor, along with a Briggs & Stratton Battery and Rapid Charging Station. The battery is offered in either 2 Ah or 4 Ah, helping to produce 144 Wh or 288 Wh.

21" Walk-Behind Mower

- Rugged steel mowing deck features 3-in-1 design (discharge, mulch, bag)
- Up to 45-minute runtime with 2Ah battery
- Load-sensing technology allows for power to be adjusted to meet mowing conditions
- Compact vertical storage capability
- Single-lever, seven-position height-of-cut adjustment
- Heavy-duty, 1-inch-diameter padded handlebars

String Trimmer

- 16-inch cutting diameter
- Up to 25-minute runtime with 2Ah battery
- Durable 1-inch aluminum shaft with cast metal connector
- Ergonomic handle allows comfortable operation with either hand; padded shoulder strap provides added support
- Multi-speed control

Leaf Blower

- Up to 550 cfm, 130 mph blowing speed (at nozzle outlet)
- \bullet Up to 40-minute runtime with 2Ah battery

- Infinite speed control
- Metal tube bump/scrape-protecting ring on end of nozzle
- Comfortable, ergonomic handle and touch points

Hedgetrimmer

- 26-inch, dual-action, high-quality steel blades with up to 3/4-inch-diameter cutting capacity
- Up to 90-minute runtime with 2Ah battery
- 180° rotating and locking handle
- Blade-reverse removes jams effortlessly
- Cast metal tip for bump protection

Chainsaw

- 18-inch Oregon bar and chain with an auto oiler
- Up to 160+ cuts with full battery charge
- Chain brake
- Onboard tension adjustment tool
- Base-mounted metal gripping teeth for maximum cutting leverage
- Not compatible with 4Ah battery



Toro PowerPlex 40V Max Line

Toro says its PowerPlex family of handheld 40V Max lithium-ion products is ideal for homeowners who value compact and easy-to-use products that rival the power and performance of gas-powered models. The product family includes a brushless DC blower, a brushless DC chainsaw, a 24-inch hedgetrimmer, a 13-inch string trimmer/edger, and a 14-inch brushless DC string trimmer.

The entire PowerPlex product line was designed to be highly productive and simple to use, Toro points out. For instance, the blower can move up to 480 cubic feet per minute. The 24-inch hedgetrimmer boasts a 90° rotating handle for simple operation. The 14-inch chainsaw is ideal for storm cleanup or property maintenance, and a fully functional chain brake comes standard on the unit. Furthermore, both PowerPlex string trimmers feature variable-speed trigger control to handle various applications and offer a targeted runtime of around 40 minutes on a single charge.

The line also includes a quick charger with a tabletop or wall mount option and comes standard with the complete tools. The T90 (included) is a 40-Volt Max, 2.5 amp-hour and 90 watt-hour, lithium ion battery, and the T180 (optional upgrade) is a 40-Volt Max, 5.0 Amp-Hour and 180 watt-hour battery. Both batteries include an on-board power meter, and the T180 battery features an integrated LED flashlight, USB charging port for charging tablets, cell phones and other small devices, and a folding handle for simple transport. Batteries are interchangeable between products, allowing operators to easily switch from one task to another.

"When initially developing the product line, we focused on providing an impressive runtime without sacrificing performance," said Shawn Carothers, Toro marketing manager. "We know these factors are crucially important to our customers, and believe we have delivered in an unprecedented way to tackle a variety of yard tasks with the PowerPlex line."

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Husqvarna 320iB Battery Blower for Homeowners

Suitable for both left- and right-handed use, Husqvarna says its 320iB battery blower features excellent ergonomics, impressive performance and class-leading low weight.

This blower is compatible with the complete range of Husqvarna batteries and chargers. Plus, battery swapping is quick and easy.

Intuitive cruise control helps users set and maintain the correct air volume for the job at hand without pressing the power trigger, leading to extended runtime and reducing unwanted object blow-away. Husqvarna says this blower can generate 412 cfm and 103 mph.

The brushless motor provides a high torque to weight ratio for increased efficiency, increased reliability, reduced noise and longer product life.

All models in the Battery 100 Series have a compact, slimmed-down design for enhanced ergonomics. This makes them lightweight and well-balanced.



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ENGINE INNOVATIONS Put Consumers at Ease

How leading engine manufacturers are helping end-users get more done in less time — and at less cost.

s pointed out in our story on battery-powered equipment on page 22, shipment statistics from the Outdoor Power Equipment Institute (OPEI) show that electric-powered string trimmers, hedgetrimmers and blowers now outpace gaspowered. That said, when it comes to things like chainsaws, lawnmowers and other larger equipment, gasoline engines are still leading the pack.

Gasoline engines have evolved quite a bit themselves. Leading manufacturers continue to develop new innovations to help contractors and even weekend warriors reduce fuel and oil usage, along with the overall time spent on engine maintenance and service.

Make way for a new engine player

Yamaha made big news this past fall when it introduced its first lawn and garden engine series. That news was followed up by the announcement that Yamaha would be acquiring Subaru Industrial Power Products, a deal which is expected to be closed by October of this year. As part of the acquisition, technology relating to Subaru's EH65, EH72 and EH65V V-Twin Overhead Valve multi-purpose engines—used in large generators and lawnmowers—will be transferred to Yamaha.

"The lawn and garden market is a growing market, and is definitely a place Yamaha wants to be," says Derek Schoeberle, business planning manager for Yamaha's Outdoor Power Equipment Group.

More details on the Subaru acquisition should be available later this year as the deal evolves. In the meantime, Yamaha has been focused on launching its new three-model MXV-EFI Vertical V-Twin engine series into the market. This year you'll find the engines on select zero-turn mower models from Gravely and Bad Boy. Going forward, Yamaha is looking for its engines to be expanded into other manufacturers' lineups.

"This year our primary focus was definitely zero-turn mowers," says DJ Murdock, Yamaha's application



and sales engineer. "But the MXV-EFI is just the first step in establishing a complete V-Twin lineup for lawn and garden."

While developing its MXV-EFI engines, Yamaha worked particularly closely with Gravely to gather insights into the needs of professional mower operators. Along with easier service access, Yamaha engineers focused on things like vibration and noise.

"We looked at the engine block size itself," Murdock adds. "Our MXV-EFI Series represents that kind of mid-range block size of 800 to 850cc because that seems to be the primary engine of choice for professional landscapers—and Yamaha wants to establish itself as a premium choice for that customer. This size engine, with EFI, gave us our best opportunity to enter into the lawn and garden market."

It's not so much the electronic fuel injection system that makes Yamaha's MXV-EFI Series unique. "We use a proven Delphi EFI system," Murdock points out. "For us, it's the engine design itself. We have a ground-up engine design specifically for the zero-turn market. We've designed our engines to fully utilize the potential that is offered by EFI. For example, we have a 75° V-bank that is much narrower, allowing easier access for maintenance. We also have a three-valve cylinder with hemispherical head shape."

Although new to the lawn and garden industry, Yamaha is off and running where product distribution is concerned. Yamaha has six U.S. distributors providing products, parts and support to an expansive network of servicing dealers. Bad Boy dealers will be working with those distributors. Additionally, Yamaha is working directly with Ariens/Gravely dealers.



Yamaha's new MX825V-EFI is part of a three-model lineup representing the company's first offering for lawn and

"That approach is somewhat new for the lawn and garden industry," Murdock points out. "We want to be the engine company that is easiest to do business with for these OEMs." (Note: Gravely sells directly to dealers and bypasses the distributor layer.)

Ongoing emphasis on EFI

One engine manufacturer that is not new to the lawn and garden space is Kawasaki. Its new engine for 2017, the FX850V-EFI, builds upon the company's more recent push into electronic fuel injection over the past couple of years.

"The new FX850V-EFI is available in 29.5 certified horsepower," says Troy Smith, Kawasaki's supervisor of applications engineering. "It shares some proven fuel-injection components with the FX730V-EFI, most notably the throttle-body ECU. This throttle-body ECU has been specifically designed for use across multiple engine sizes, but is specifically calibrated to each engine model and horsepower specified."

The FX730V-EFI (25.5 hp) was introduced in late 2015. Kawasaki's first EFI engine, the 25.5-hp FS730V-EFI, was

introduced in late 2014. "OEMs have had a positive reaction in testing the EFI engines along with being very excited about the electronic governor control," Smith points out. "The e-governor allows OEMs to better design their machines for zero speed loss, which means the cut quality and blade tip speeds stays at its maximum potential. Also with the e-governor, ground speed

is maintained through heavy cutting conditions." Smith says Kawasaki's EFI system was designed for multiple engine sizes. "So we are working towards

a complete lineup with additional engines coming out in the future. We will have EFIs available as the market calls for them and as landscapers realize their benefits."

Kohler has been answering the call for many years, now offering more than 30 EFI engine models. One of its new engines for 2017, the Aegis EFI, represents the company's first liquid-cooled EFI model.

"The liquid-cooled design integrated into the Aegis EFI translates into less wear and tear, fewer repairs and more power in a smaller frame," says Eric Hudak, Kohler's marketing manager for consumer ride and walk engines. The 30-hp Aegis EFI is ideal for heavy-duty applications including utility vehicles and construction equipment.

EFI is becoming so mainstream that Kohler is even helping to place the technology in the consumer mower market. Kohler's 7500 Series EFI is its first EFI engine for everyday consumers. "Consumers appreciate EFI technology because of the ease of starting," Hudak says. "The choke is eliminated and it starts just like their car. With our 7500 EFI, they can simply turn the key and go mow." **>** continued

Easier servicing, and less of it

On the commercial side, operators are more interested in the fuel savings afforded by EFI because they are mowing all day long for several days straight. But one thing both pros and consumers are interested in is the reduced maintenance associated with EFI engines (i.e. no carburetor).

On the topic of reduced maintenance, Kohler has introduced another new product for 2017. This engine does not have EFI. What Kohler's 7000 Series Pro engine does have is a professional-grade cylindrical air filter for enhanced service intervals. The engine can be found on higher-end consumer-grade mowers, such as Hustler's Raptor SD, which are also often used for light-commercial duty.

"Consumers are spending a good deal of money on zero-turn mowers where



Kohler has a history of displaying cool products at GIE+EXPO. At GIE+EXPO 2016, it was a powerhouse Argo XTV powered by a Kohler Aegis engine.

this engine will be positioned, and they want to know that their investment will last," Hudak says. "This air filter helps protect that investment with increased air filtration capability. We've worked hard to make this feature affordable to consumers."

Honda Engines has also been focusing on air filtration. Its newly designed Cyclone Air Cleaner is now available on select Honda GX Series commercial engine models: the Honda GX160, GX200, GX270 and GX390. This filtration system provides a "cyclonic" action

BENEFITS OF AN EFI ENGINE

- Reduced fuel use
- · Reduced exhaust emissions
- · No choking or priming
- · No carburetor means no carburetor maintenance or replacement costs
- Easier starting in cold temperatures and after periods of prolonged storage
- Onboard diagnostics which provide for easier troubleshooting and reduced downtime
- · Quick throttle response for powerful acceleration
- Optimum power output since the engine adjusts for load, altitude and air temperature

within the air filter cavity to separate the heavier airborne particles so the engine can breathe through the filter better. The user can then open the cyclone canister and shake out the particulates during maintenance cycles.

"Honda GX Cyclone Air Cleaner models can be found on most types of equipment that are subjected to environments where a lot of dust or particulates are in the air," says Michael Rickey,

> senior manager of engines and export sales for Honda Engines. "Some examples would be concrete cutting and polishing equipment. Normal air filter engine models may not operate well in these environments because the particulates tend to coat or 'plug' the standard-type filtration that exists. Many of our industrial OEMs such as Allen Engineering, Multiquip, Wacker, Whiteman and many of the OEMs that our engine distribu-

tors manage use these engine models on equipment that is exposed to highparticulate or high-dust environments."

Last year Briggs & Stratton Commercial Power introduced a fivestep cyclonic debris management system for commercial mowers and other highdebris applications on its Commercial Series V-Twin engine line. This year the company has turned its attention to another important topic: lubrication.

The Vanguard Oil Guard System has been added to the Vanguard 810 and Big Block commercial engine series.

Developed in conjunction with Ferris mowers, a Briggs & Stratton sister brand, Oil Guard is initially being offered on six models of Ferris commercial mowers for the 2017 season. The Vanguard Oil Guard System is expected to be available to other commercial mower manufacturers within the next couple of years.

"For the 2017 cutting season, though, we're focused on a successful user experience for Ferris customers who choose a unit equipped with Oil Guard," says Jim Cross, marketing manager for Briggs & Stratton Commercial Power.

Oil Guard allows landscape contractors to operate a commercial mower for 500 hours between oil changes. Additionally, oil changes are tool-less, faster, and overall more convenient. "With the EZ Drain tube and exclusive cartridge-style oil filter located at the top of the oil reservoir, performing an oil change on a unit featuring the Oil Guard system requires no tools or special skills," Cross explains.

"It's still important to check the oil level on a regular basis," Cross continues. "The potential to run a unit out of oil and cause a catastrophic failure is greatly reduced with Vanguard's Oil Guard system. But you still must maintain recommended oil levels."

As technology and innovations make engines and the equipment they power more efficient and productive, the operator still has to take responsibility for protecting his or her investment. Engine manufacturers are just making that a lot easier to do these days. >

Engines, Replacement Parts & Service Tools

Parts, Tools & Accessories from **Sunbelt Outdoor Products**

Sunbelt Outdoor Products offers a wide variety of replacement parts for all types of outdoor power equipment, as well as tools,

> accessories and more. Serving a



nationwide network of dealers. Sunbelt offers eight product categories that help dealers maintain their customers' engines.

Aftermarket replacement parts are offered in seven of those categories. Parts coverage ranges from spark plugs, filters and carburetion to internal engine repair kits, lubrication and mufflers. This offering gives coverage to all makes and models. Sunbelt Outdoor Products is also a full-line distributor for Briggs & Stratton.

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Honda's Cyclone Air Cleaner on Select GX Series Commercial Engines

Honda Engines' newly designed Cyclone Air Cleaner is available on select Honda GX Series commercial engine models—the Honda GX160, GX200, GX270 and GX390—starting in 2017.

With a more compact design than the legacy air cleaner it CYCLON replaces, the new Cyclone Air Cleaner fits more tightly within the overall shape of the engine. The new, smaller design specifically targets OEM applications where reduced overall engine dimensions are critical. In addition, the new Cyclone Air Cleaner offers the same superior filtration efficiency with a triple-cleaning chamber that is particularly useful in applications where the equipment operates in extremely dusty conditions.

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MXV-EFI Vertical V-Twin Engines from Yamaha

Yamaha has entered the lawn and garden industry this season with its MXV-EFI Vertical V-Twin series of engines designed specifically for zero-turn mowers. Three models are being offered from 29 to 33 certified gross horsepower and 824cc. Yamaha says the ground-up design of these engines results in a smooth, even cut with consistent speeds—even in difficult high-grass conditions.

Other key features include:

- Three-valve hemispherical heads
- Proven closed-loop electronic fuel injection (EFI) from Delphi with variable ignition timing
- Low-friction design results in highly fuel-efficient engines
- Designed for high power and torque, low vibration and noise, and improved serviceability
- Optional stainless steel Yamaha muffler tuned for optimal sound and performance
- Ball bearing-supported PTO
- Protective rotating grass screen protects against debris clogging

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Briggs Introduces Vanguard Oil Guard System

Briggs & Stratton Commercial Power has introduced the Vanguard Oil Guard System to its Vanguard 810 and Big Block commercial engine series. Oil Guard allows landscape contractors to operate a commercial mower for 500 hours between oil changes. Additionally, oil changes are tool-less, faster, and overall more convenient.

The Vanguard Oil Guard System was developed in conjunction with Ferris mowers, a Briggs & Stratton sister brand. To that end, Oil Guard will initially be offered on six models of Ferris commercial mowers for the 2017 season. Oil Guard is expected to be available to other commercial mower manufacturers within the next couple of years.

The Vanguard Oil Guard System continuously exchanges oil between the engine and a large remote oil reservoir located external to the engine. It's a revolutionary design for a commercial mower that protects engine oil from thermal breakdown, which

> extends maintenance intervals of the oil and produces a cooler-running engine. And because operators have direct access to the oil filter and drain tube, changing the oil is quicker, easier and mess-free.

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SHOP PRODUCTS

Kohler Aegis EFI Engine

Kohler Engines continues to expand its line of electronic fuel-injected (EFI) engines with the launch of the newly modified Aegis EFI engine.

The liquid-cooled engine — designed for use in util-

ity vehicles, lawn and garden equipment, heavy-duty construction equipment and other applications — now features Kohler's latest EFI technology for optimal fuel efficiency, improved power and enhanced reliability.

The Aegis EFI's liquidcooling system helps maintain consistent running temperatures while keeping oil cool, limiting engine wear-and-tear. The engine's new EFI technology comes equipped with advanced sensors, which monitor engine running conditions and environmental factors to optimize engine performance.

The Kohler Aegis EFI is a V-Twin, horizontal-shaft, gasoline engine available in a 30-hp model. It joins an extensive line of over 30 EFI models, which has continued to grow since Kohler pioneered the company's first EFI twin-cylinder engine in 1996.

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Rotary's 2017 Parts Catalog

Rotary has released its new 2017 master catalog for servicing dealers and distributors. It includes more than 1,625 pages with photos, illustrations, descriptions, cross referencing and item numbers for over 9,500, parts, tools and accessories.



Among 150 new items for 2017 are a variety of Copperhead mulching blades for popular models including Exmark, Ferris, Honda, Hustler, Kubota, Scag, Simplicity, Snapper and Toro. There is also an assortment of commercial-strength belts, spindle assemblies, tread tires, idler pulleys, air filters, carburetor kits and more.

In addition to the print version, the entire catalog is available at rotarycorp.com

and downloadable in a PDF format. The company's redesigned website makes it easy to locate parts with comprehensive listings and an easy "keyword" search. Rotary also offers a 2017 Quick-Cross CD that features the new catalog with an easy index for OEM-to-Rotary and aftermarket-to-Rotary parts.

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Kawasaki FX850V-EFI **Engine**



The all-new Kawasaki EFI system is available on select models of FX Series and FS Series engines, with plans to incorporate it in additional models. The FX850V-EFI joins two other units that currently employ the user-friendly EFI system: FX730V-EFI, and FS730V-EFI.

Other key features of the new FX850V-EFI include:

- Multi-port sequential fuel injection for high-precision fuel delivery maximizing power per stroke and fuel economy
- High-pressure "returnless" fuel system offers consistent fuel delivery and smooth operations in high-temperature situations
- ECU continuously monitors ambient conditions and engine performance, delivering optimum power and efficiency in all situations, regardless of weather conditions

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Kohler 7000 **Series Pro Engine**

Kohler's 7000 Series engine, which was developed based on the company's Command Pro commercial engine design, has just been enhanced with the addition of a new model, the 7000 Series Pro.



The 7000 Series Pro engine offers features previously available only to commercial cutters, including a professional-grade cylindrical air filter. The new air filter, which helps to keep dirt and debris out of the engine while also enhancing service intervals, is more than double the size of the filters used on the other engines in Kohler's 7000 Series.

Additional end-user benefits include a three-year consumer/ one-year commercial warranty, upgradable oil and fuel filters, and Kohler's exclusive Consistent-Cut technology, which helps to maintain engine speed in tough mowing conditions for a cleaner, better-looking turf cut.

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Spark Plug Testing Kit

Australian-based Dechmont Pty Ltd offers its new Spark Plug Testing Kit, which the company says takes as little as two minutes to use.

The unique patented safety design allows the user to safely remove the spark plug from the engine to view actual spark plug fire in a safe environment. The Kit is made from high-grade and durable materials, e.g. poly-carbonate, aluminium, brass, copper wiring and rubber insulation. The Spark Plug Testing Kit has no bulbs, fuses, batteries or electronics to falter and give false readings.

The Spark Plug Testing Kit is comprised of three components:

- 1. Protective Safety Dome with embedded earth washer. Allows for the spark plug to be removed from the engine and confined away from any potential fuel/air mixture which could cause an explosion.
- 2. Decompression Earth Unit. Screws into the cylinder head to give a solid grounding so as to eliminate the potential for electric shock, while at the same time preventing debris from entering the engine which could cause serious damage. Also allows for decompression of the cylinder chamber so the engine can be easily turned over.
- 3. Fully Insulated Extension Lead. Allows the user to remotely and accurately view/diagnose the spark on the spark plug without the potential for electric shock.

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Walbro **Carburetor** and Fuel System Cleaner

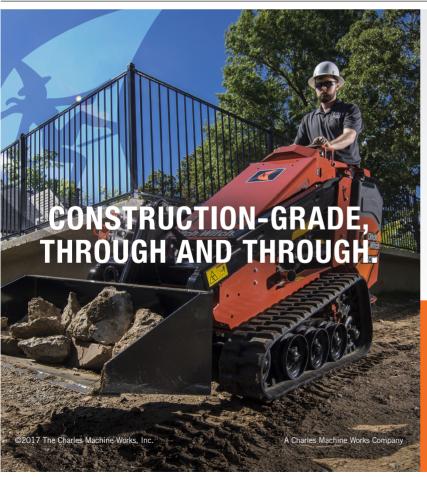
Walbro, a manufacturer of carburetors and fuel systems, has developed a new Carburetor and Fuel System Cleaner for two-stroke and fourstroke engines.

The Cleaner is comprised of a special blend of cleaning agents and

lubricants that safely remove carbon and deposits. The shake-can with unique twoway nozzle makes it easy to activate and spray, while the specially designed lubricants help to prevent corrosion.

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Stand-on Mowers & Debris Blowers

John Deere Stand-on Mowers for 2017

John Deere says its line of 600 E, M and R-Series QuikTrak stand-on mowers are designed to accommodate the needs of its customers. Featuring enhanced stability, a compact design for improved sight-

> lines and maneuverability, and enhanced operator position, the 600 Series mowers deliver the quality, durability and support that operators expect from a John Deere mower, the company assures.

> > One of the most notable features on the John

Deere stand-on mowers is the Mulch on Demand (MOD) technology. Available on the 652R and 652R EFI models, the MOD deck increases operator productivity and versatility. With MOD, the operator has the ability to change

between side discharging and mulching with the

convenient dash-mounted switch. When engaged, the movable gate closes off the discharge chute, activating mulching. This is ideal when the operator is mowing around areas like flowerbeds and sidewalks, limiting the amount cleanup after mowing.

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Little Wonders Debuts New Accessories for Optimax Blowers

Little Wonder is introducing new accessories for its Optimax Blowers. The accessories — a tool holder, parking brake and solid front wheel — add convenience and safety as well as increase durability on challenging terrain.



The Optimax blower range includes eight self-propelled or push models with air speeds from 143 to 179 mph. Other key features of the blowers include:

 Advanced impeller and aerodynamic design results in

38% more air movement than competitive blowers, Little Wonder assures

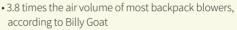
- Scrolled, aerodynamic air inlet maintains constant power and doesn't clog if leaves are drawn in
- Large, square discharge chute rides just 2 inches off of the ground, resulting in better movement of standing water and stubborn debris
- Split-stream air deflector eliminates blow-back and moves debris in one pass
- Discharge air can be directed to the front or side of the unit to efficiently move debris where it's needed
- Tubed pneumatic tires on push models easily tackle curbs, patios and sidewalks while absorbing the bumps of the terrain
- Self-propelled blowers incorporate large, 13-inch pneumatic rear turf tread tires for a wider stance and enhanced traction

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Billy Goat Force II Blowers

Billy Goat says the cleaning power of its Force II Blower line is designed for maintenance contractors, large-property owners, landscapers, schools and street departments. Key features include:

- Patented Aim N Shoot fingertip control
- 17-inch, 16-blade fan
- Ergonomically designed
- No-rust, no-dent composite housing with a 5-year limited warranty
- Self-propelled option intended to reduce fatigue



- Black intake housing is a single-shot, closed-face fan
- Smooth rounded housing is designed to eliminate air voids, reduce noise, increase output
- Engine options include 262cc Honda GX (F902H) or 265cc Subaru EX (F902S, F902SPS)
- Weighs in at 139 pounds (F902H), 130 pounds (F902S), or 143 pounds (F902SPS)
- Velocity just under 200 mph

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Exmark 60-inch Vantage S-Series Propane Stand-on Mower

Exmark offers a 60-inch version of its popular Vantage S-Series Propane stand-on mower. The machine's state-of-the-art Kohler Command Pro PCV740 V-Twin EFI propane powerplant delivers increased fuel economy and performance combined with reduced emissions, making the Vantage S-Series Propane one of the most environmentally friendly commercial stand-on mow-

ers available, Exmark assures. Additionally, the automotive-style, closed-loop electronic fuel injection eliminates carburetor-related issues, with optimized performance in any conditions.

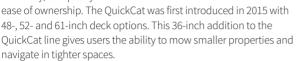
Other features of the mower include:

- UltraCut Series 4 cutting decks feature Exmark's flow-control baffles for increased cut quality, and heavy-duty welded construction with 7-gauge reinforcements for superior strength and durability
- Sealed, no-maintenance spindles and patented spherical bearing idler arm pivots reduce required maintenance
- Kawasaki and Kohler gasoline engine options also available



Bob-Cat QuickCat 36-inch Stand-on

Bob-Cat says its new QuickCat 36-inch stand-on mower has been engineered to provide excellent durability, cut quality and



Other key features include:

- 6-year/2,000-hour Mow with Confidence limited warranty
- 7-mph mowing speed, 9-mph transport speed
- Large, exclusive Zero-T drive tires for a smoother ride and surer traction
- Optimal operator station placement for enhanced stability
- Low placement of the fuel tank for improved balance on uneven ground
- Compact size for nimble maneuvering in tight spaces and loading on trailers
- True floating deck that improves cut quality and maintenance
- Extra ground clearance to safely move on and off curbs

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Husqvarna 580BTS Backpack Blower

The 580BTS is Husqvarna's most powerful commercial backpack blower. Its efficient fan design and X-Torq engine technology provide air speeds up to 206 mph and 907 cfm. This professional-grade performance is complemented by a centrifugal air cleaning system that removes debris before it reaches the air filter, which results in improved engine life. Dampeners between the engine and chassis reduce vibrations, while an ergonomic harness reduces user fatigue.

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Grasshopper Turbine Blowers

Grasshopper Turbine
Blowers produce up
to 150 mph to move
leaves, grass clippings,
aeration plugs and
debris from dry and
wet areas — reducing
high-volume cleanup time. Other key
features include:

• PTO-driven design is significantly quieter than most debris blowers, Grasshopper assures



- Nozzle rotates 360° from the operator station to precisely direct airflow for faster cleanup
- Easily mounts on Grasshopper 700 & 900 Series True ZeroTurn FrontMount mowers for maximum maneuverability

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MAINTENANCE EQUIPMENT

Stihl BR 700 Backpack Blower

The BR 700 backpack blower (64.8cc) is the most powerful blower in the Stihl line, delivering 912 cfm and 165 mph. Stihl says this brawny blower is great for tough tasks like heavy debris cleanup and year-round use with its low-emission, fuel-efficient engine and low cost of operation.



Other key features include:

- Telescopic tube adjustment allows the user to quickly and easily adjust the length for a variety of user heights and cleanup applications
- Control handle adjusts without tools to the operator's most comfortable
- Simplified starting procedure and semi-automatic choke offer smooth.

easy starts with a reduced chance of flooding

- Streamlined, rounded design reduces the chance of getting caught on branches when working in tight quarters
- Standard comfort elements like large straps and a backpack pad, and a soft rubber grip on the throttle for optimal comfort on the job

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The new Ferris SRS-71 Soft Ride Stand-On

has a compact footprint and is

available with either a 36- or 48-inch mower deck, allowing the operator to work in tight spaces. This efficient design also provides the opportunity for full turn-around on trailers and requires minimal storage space, making the SRS-Z1 ideal for transporting to the jobsite.

Other key features include:

- Briggs & Stratton Vanguard or Kawasaki engine option
- Dual commercial Hydro-Gear ZT-3400 transaxles
- 23-inch rear drive tires
- Patent pending adjustable operator platform with suspension technology
- Easy-locking, three-position speed control
- Integrated forward and reverse levers feature stabilizer bars
- PTO will automatically disengage when the operator leaves the platform

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Toro Bagging Attachment for GrandStand Mowers



Toro has unveiled a new Powered Bagger attachment for its GrandStand and GrandStand Multi Force stand-on mowers. The company says the compact design of the side-mounted soft twin bagger, along with the vertically mounted blower, allow for excellent maneuverability in tight spaces and maximum visibility during operation.

"Having a machine that can perform year-round, in the case of the Multi Force model, helps drive a

strong return on investment for landscape contractors," said Chris Hannan, Toro senior marketing manager. "The new powered bagger adds to the versatility of our GrandStand lineup, which helps make contractors more productive throughout the seasons."

The Powered Bagger boasts a 10 cu ft. (8 bushel) capacity, which ensures fewer trips for the operator to empty the bags. Additionally, the top cover of the bagger attachment opens easily for simple access to the bags, and the quick-release design allows operators to switch from bagging to side-discharge.

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Poulan Pro Backpack Blowers

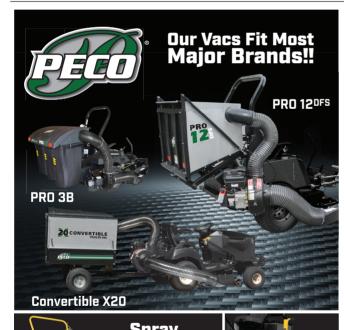
Poulan Pro says its two new backpack blowers, the PB48BT and PP46BT, are ideal for year-round cleanup. Ergonomically designed for comfort and reduced fatigue, the company says these backpack blowers are a good choice for homeowners and small business owners with half-acre yards and larger.

Key features include:

- Powerful two-cycle engines
- Airspeeds up to 220 mph
- Airflow up to 490 cfm
- Soft-grip throttle/handle
- Large, adjustable shoulder straps
- Padded, load-reducing harness for enhanced comfort, minimal strain and reduced fatigue
- Cruise control and variable speed control for simple operation and precise operator control

Poulan Pro is part of the Husqvarna Group family of brands.

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CONSTRUCTION **EQUIPMENT**

The latest in excavation equipment

Kubota KX033-4 Compact Excavator

Kubota says its new KX033-4 compact excavator delivers "Kubota power" and style to the 3-ton class. Designed for efficiency, stability and comfort, the KX033-4 offers a host of new and innovative features:

- Dash-controlled presets for auxiliary circuits allow operator to dial hydraulics up or down for specific attachments
- 24.8-gross-hp Kubota direct-injection Tier 4 Final certified engine
- 8,138-pound bucket breakout force and 3,867 pounds on the arm
- 10'6" digging depth
- Auxiliary hydraulic circuit capable of 15.8-gpm oil flow to power a greater variety of attachments
- Third-line hydraulic return system allows oil to return directly back to tank without flowing through control valves resulting in less back-pressure, less heat and greater efficiency
- Hydraulic angle blade with optional standard float function along with a reversible and replaceable cutting edge
- Two-speed travel switch on the dozer lever

greenindustrypros.com/12304229 or see ad page 4



Avant 420 + Mini Digger

Avant says its 420 loader is perfect for light professional use and homeowners. This articulating, easy to ride loader offers telescopic



boom with joystick control. The 20-hp unit is just over 2,100 pounds, is 86.4 inches from front to back, and has a lifting capacity of 1,200 pounds.

The Mini Digger is an efficient solution for projects where digging depth is 59 inches or less. The digger mounts

directly on the quick-attach plate of the loader and operates through the auxiliary hydraulics control lever.

Extra options include three buckets ranging from 9.8 inches with teeth to 39.4-inch straight edge and a bucket tilt adapter.

greenindustrypros.com/12202912



Caterpillar has added the model 300.9D VPS (Versatile Power System) to its range of mini-hydraulic excavators. The versatile design benefits both the owner/operator and the rental company by allowing the machine—in conjunction with its separate hydraulic power unit—to work either with its diesel engine or from a remote electrical power source, with no loss of performance.

Having an electrical drive system remote from the machine enhances utilization and rental options. The 300.9D VPS can be rented alone for regular applications—or with the hydraulic power unit when the job requires low noise and zero emission.

Other key features of the 300.9D VPS include:

- 2,000-lbf bucket breakout force
- 68-inch digging depth
- 80-inch maximum dump height
- 119-inch reach at ground level

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Hitachi ZX17U-5 and ZX26U-5 **Compact Excavators**

The 15-hp ZX17U-5 and 20-hp ZX26U-5 are powered by

fuel-efficient Yanmar Tier 4 Final engines and designed to keep their tails close to their tracks for work in tight spaces.

Other key features include.

- ZX17U-5 offers a 3.790pound operating weight, 7'2" maximum dig depth and 12'6" maximum dig reach
- ZX26U-5 offers 5,780to 6,110-pound operating weights, an 8'6" maximum dig depth and 15'2" maximum
- Spacious cabs with wider, easier entry and better visibility
- Heavy-duty X-frame provides a solid, stable platform that resists material buildup
- Standard backfill blade



John Deere Updates 75G and 85G Excavators

Capable of working around congested jobsites in efficient fashion, the updated John Deere 75G and 85G excavators boast new customer-inspired features, including hand-controlled proportional auxiliary hydraulics and the ability to be equipped with a hydraulic coupler that allows the machines to use backhoe buckets.

The standard hand-controlled proportional auxiliary hydraulics allow the operator to run attachments at a desired speed. The operator can work very slowly for delicate work, like picking a piece of landscape stone, or faster via full flow to open the thumb and drop debris. Coupled with the standard pattern changer, rubber pads and standard blade, these machines come from the factory ready to work in a variety of applications, John Deere assures.

Other key features include:

- 57-hp Final Tier 4 diesel engine outfitted with a diesel particulate filter (DPF) that cleans automatically without impacting the machines' productivity
- Easy-to-use, enhanced LCD monitors simple turn and tap of the rotary dial allows operators to select work mode, access operating info, check maintenance intervals, source diagnostic codes, adjust cab temperature and tune the radio
- Spacious cab includes a comfortable, fabric-covered adjustable suspension seat with ample legroom
- Wide expanse of front and side glass, narrow front cab posts, large tinted overhead hatch and numerous mirrors provide allaround visibility

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New Holland Unveils Six New Mini-Excavators

New Holland Construction has debuted its full line of mini-excavators complete with six new models ranging from 1.7 to 6.0 metric tons. The six-model lineup includes the E17C, E26C, E33C, E37C, E57C and E60C. Performance features include:

- Extended-life components
- Liquid-cooled industrial, Tier 4 Final-compliant diesel engines
- Rail and inter-locking type track
- Auto shift travel system automatically downshifts when load is sensed to increase torque and upshifts once load is no longer sensed
- Auto idle capability to automatically idle when operator does not give input to the control handles and returns to throttle setting when operator moves stick
- Enhanced ground clearance and dozer blade lift height
- Variable undercarriage (E17C) retracts for entry through tight egresses and then extends for stability
- ESL (Engine Start Limit) System (anti-theft) ensures passcode is required to start engine and time between engine starts can be manually set
- Lower noise levels

The new full-line of mini excavators also focuses on serviceability and convenience. The design boasts easy access to the engine compartment for daily checks, a convenient switch layout, easy-to-read cluster, touch screen monitor (E57C & E60C) and a wide, spacious cab.

The mini excavator cab features enhanced forward visibility, with excavator-style window and removable lower window. Retractable windows on the right side and rear mirrors on both sides improve allaround visibility. In addition to its well-designed visibility, the cab is optimized for a comfortable operating experience and offers features such as an ergonomically designed suspension seat, adjustable arm rests, and a spacious environment to help reduce operator fatigue, and more.

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Quit Making the Labor Crunch Worse!

Part 2 - You have to understand the job before hiring someone to do it.

ur first article in this series challenged you on how your company's reputation in the community affects its ability to recruit. That's because how you are perceived as a business and employer determines what type of person is interested in working for you. If you didn't read it, check it out now at greenindustrypros. com/12304551.

This article confronts another important issue: Do you really know what the job requires? That sounds arrogant, but our experience is that most landscape businesses focus just on the position, not on how it fits in the business.

That means we are constantly hiring a set of hands that may or may not contribute to our overall success. Doing the job doesn't matter if it doesn't drive results that move the business forward. What we are saying is that performing a set of tasks is meaningless unless it has real impact.

How you know the job

Processes. First start with processes. All positions are part of a process to produce something to generate revenue or decrease cost. Make sure the position is linked to a process by mapping the core: sales, production, service and finance. Examples include:

- Process for attracting and closing sales through a work order
- Process for taking a work order and turning it into an installed design/ build project
- Process for servicing a maintenance
- Process for invoicing through making the bank deposit.

The bottom line is that if a position cannot be linked to a process, cut the position because it is costing you money without return.

Performance indicators. Second, are there key performance indicators tied to the job? Does the person understand what standards must be met? Every position has a few measurements that matter, including margin, defects, cash on hand, dissatisfied customers, etc. How can you make a hiring decision without stated standards of performance?

Examples include:

• Crew leaders measured on on-time.

on-budget installation of projects

- Accounting measured on the time it takes between being able to bill a client and when the invoice is sent
- Production employees measured on absences that delay a project.

The bottom line is that you must have a clear picture of the desired performance before determining whom to hire.

Skills required. Thirdly, ask yourself if you have a handle on the knowledge, skill and certification demands of the position? If you were able to answer the key performance indicators question above, the next challenge is turning those factors into job advertisements and then screening applicants.

First you must understand that you are making two decisions: eligibility and suitability. Eligibility is taking the performance indicators and knowledge/ skill/certification requirements to write ad copy that attracts the right people. The key is attracting people who will move you forward, and then reviewing their documentation to sort into two piles: 1) they can do the job, and 2) they can't do the job.

Eligibility is only half of the equation, however. Just because a candidate can work in landscaping doesn't mean they should work for you. Suitability addresses the harder question: Do they fit your company? Determining if a job applicant is qualified is easy, but answering the question of *fit* is much harder. This requires a smart interview process that asks the right questions without playing your hand. That will be the subject of our next article: "Which is harder, figuring out what you want or spotting the BS?" >

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