



# ENGINES

## A business primer on the engine selection and maintenance processes

**S**electing the right engine for your equipment is critical in getting a long lifespan out of equipment and the most efficient use possible. Of course, so is proper maintenance. Regular upkeep and repairs go a long way in ensuring your engines continue to run.

For most landscape contractors, reliability is the number one factor in the engine selection process. *Lawn & Landscape* research revealed that 89 percent of survey respondents felt reliability was the most important factor in selecting an engine (over fuel efficiency, ease of repair, and power output).

"Reliability is really important to me," says Adam Xistris, owner, A.D.X. Landscaping, Fairfield, Conn. "I want to be able to start up the equipment and have it go all day, and preferably all season, without any issues."

In fact, Xistris says he actually cares

more about reliability than longevity. He has a turnover rate of about five years for pieces of equipment that get used regularly. "Of course I want it to still be running well so I can sell it at a good price, but I care more about the engine's reliability during those five years than about its long-term abilities," he says. "I want to make sure that it's going to work well and not give me any problems in the five or six years I'm using it."

Reliability is so important that many even say it trumps cost. That's pretty significant in this economy. Today's contractors are looking for the most value for their dollar and that doesn't always mean going with the cheapest option. "Cost is important but it's certainly not a deciding factor," says Justin Carver, grounds maintenance manager, Maxwell Landscape Service, Inc., in Chesapeake, Va. "Unless it's

double the cost or something outrageous, we're willing to pay the extra money if it equates to better reliability and longevity. Nowadays people care more than ever about their equipment lasting longer. A little bit of upfront cash is worth it if I can get another two or three years out of the engine."

In many cases, sources say the extra cost is worth it. "There's often a good reason why something costs more money," adds Xistris. "Just like we tell our clients who are willing to pay a little extra money for our services, cheaper isn't always better."

"Cost is the last thing on my list," agrees Patrick Donovan, owner of Classic Landscaping in Edison, N.J. "I want to know that when I get on the machine and turn the key that it will start and run. Whatever I have to pay, I'll pay to get that. Reliability is so important in this industry."

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— **Justin Carver**

**Class and engine ratings.** The class of engine does weigh into the selection decision, though it's not a deciding factor.

“I typically purchase a piece of lawn equipment by the brand name and for a specific purpose,” says Raymond De Clue, owner, The Lawn Ranger Ltd. Co. in Arkansas. “Oftentimes the class of engine is not one of the deciding considerations but I do want to purchase a product that will offer me the greatest contribution to reducing carbon emissions and still deliver the power necessary to perform the task optimally and efficiently.”

Sufficient horsepower is also very important, says Kevin Phelps, landscape production manager for Potomac Garden Center in Urbana, Md. “We'll run a larger engine if it's an option as it's all about performance on the job,” he says.

Therefore, rating systems are important for landscape contractors to understand.

Recently Kawasaki Motors Engine and Power Products Division began rating its engines in accordance with SAE J2723, giving landscapers a more accurate horsepower rating and alleviating end user confusion over horsepower labeling and “usable” power.

“We have taken a step back to look at how we were rating engines in comparison to the rest of the industry and we realized that the way we were rating our engines didn't really reflect the way technology had advanced,” says Greg Knott, applications engineering and government relations manager. “The biggest change has been the application of new, stricter emissions

regulations. That encouraged us to start looking at new rating options and ultimately make the move to critical power ratings.”

Kawasaki powered lawn care and other maintenance equipment will produce at least 98 percent of their rated values, not the 15 percent potential variable permitted under SAE J1940. “For example,” explains Knott, “a 10-HP engine would have to only be 85 percent of what you rate the engine to meaning 8.5 horsepower would be acceptable under SAE J1940. While we followed that direction through the early 2000s and it seemed pretty appropriate, once we started applying strict emissions regulations and developed 20-25 new models of our engine, it no longer reflected what we're doing. Under the new ratings, we are committing that our engines are at least 98 percent of what we're rating to. That 10-HP engine would have to deliver at least 9.8 horsepower to adhere to SAE J2723.”

Knott says that Kawasaki recognizes that this change will pose some challenges as OEMs and end users get more comfortable with the new system. “We recognize that this is very different from what people are used to

**“The end users, being the dealers and the contractors, can all rest assured that we've been incredibly thorough.”**  
— **Greg Knott**

but we have found that OEMs certainly appreciate the direction we've chosen to move in,” says Knott. “The intention has been well received. Now we have the challenge of educating everyone.”

The most important thing to remember, Knott says, is that although the rating has changed, the company's engines have not.

“We have worked closely with OEMs

throughout the product development phase,” Knott says. “We do testing on the machine to make sure the engine is appropriate to fit the application. The end users, being the dealers and the contractors, can all rest assured that we've been incredibly thorough. In the end, the only change is the way the engine performance is rated. The performance itself has not changed. We will continue to work closely with OEMs as we always have, in order to make sure our engines are a match for their applications and that they'll get the durability they need.”

OEM Mike Caprio, senior equipment manager, Lawn Doctor, in Marlboro, N.J., says that the new rating system has not had any major effect and he appreciates the effort for greater accuracy. “Until people get more used to it, the new system might be a little confusing but I used to be in the automotive industry and this is very similar,” he says. “It's just a different rating system but it has no bearing on the actual performance of the engine, which has remained the same. So that's not really playing any big factor into a purchase decision. When it comes down to it, it's still the same engine they're just reporting the guidelines differently.”

Caprio says that from an OEM perspective, his brand's reputation is important to keep in mind. “Because it's going to be on our equipment, it has to have a good reputation,” he says, adding that Lawn Doctor manufactures all of its own equipment for franchisees. “We don't want to build something in which our franchisees are going to have an issue with down the road. Reputation is built on reliability, a proven track record, and warranty – so we look for all of those things.”

**The dealer.** Many landscape contractors say the dealer weighs heavily into their buying decision. Even if they do most repairs in-house, they still want to buy from a dealer that can help

them troubleshoot problems or get the right parts. Donovan says that he'll pay extra for the dealer that he's built a relationship with. "I want to deal with the guy who will drop everything to work on something for me because we've built a relationship," he says. "To me that's worth the extra \$200 or \$300 that it might cost me. While I do most of the maintenance or small repair work myself, if I have a total breakdown it goes to my dealer."

Jimmy Garner, president of Garner Landscaping & Lawn Care in Roanoke Rapids, N.C., agrees that a good dealer is worth the extra cost and plays heavily into deciding what engine to buy. "Dealing with reputable people is really important in this field," Garner says. "Don't go by the cheapest price - go by the service you'd get from the dealer. I could buy a mower for \$7,000 from the dealer in town or I can drive several thousand miles to save \$200. But when I have a breakdown my dealer in town isn't going to want to fix it because I didn't buy it from him. You have to weigh who is going to give you the best and the fastest service. The less downtime you have, the more money you can make."

Carver says that even though he has a mechanic that does the repairs, the dealer still plays a key role in his engine purchases. "The dealer has a lot to do with what engine brand we buy," he says. "We have a good dealer that we trust. He has parts on hand and is knowledgeable about the equipment. Those things are probably as important as the engine you buy. We choose our engines and equipment from what the dealer sells so we trust his opinion based on what brands he carries."

**Maintenance and Repairs.** A large majority of today's landscape contractors are also doing their own repairs these days. In fact, 87.3 percent of respondents to the most recent *Lawn & Landscape* survey said they handle repairs on their own. But

when it comes to large jobs, those that can't handle them in-house are taking them to their local dealer. The dealer relationship is highly valued and many sources are building long-term rapport. Still, most continue to tackle as much of the maintenance work as they can in-house.

"Seldom will I involve my dealership's repair or maintenance shop with regard to repairs or maintenance unless it is a complex problem that I cannot handle because I am lacking the proper tools or expertise," says De Clue. "Otherwise I perform all of my own maintenance and repairs that I can handle at a fraction of the cost the dealer will charge us."

One of the things about shopping for engines with the best reliability means that they don't break down a lot, adds Donovan. "The machine I'm sitting on now has about 1,500 hours on it and has never broken down," he says. "Some of today's engines are incredibly reliable. And we also keep up with regular service to keep things running. When we do service or maintenance work we do it ourselves. We're really focused on efficiency so in between jobs we actually pull the machine into a closed trailer and service it while en route to our next location. We don't have time for any downtime."

Charles Cunningham, owner, Cun-

## What's your best advice for other contractors when it comes to engines?

"Don't just go for price. You have to look at how the machine is built and do your homework. Everyone likes to save money but if you can't even get three years out of the engine because you didn't invest in something a little better, than did you really save anything?"

**Adam Xistris, owner, A.D.X. Landscaping LLC, Fairfield, Conn.**

"Go for the stronger engine. If you buy a rototiller and it comes with two engines, like a 25-HP or a 27-HP, I'd always go for the 27. You're going to do the same type of work either way but with a little extra power, it puts less stress on the machine and it's going to last longer. That makes it worth the investment."

**Justin Carver, grounds maintenance manager, Maxwell Landscape Service, Inc., Chesapeake, Va.**

"I've lost engines because of dirty air so now I'm fanatical over cleanliness of air intake. I always use a good quality filter that the manufacturer recommends. That's not an area to cut corners and save a few bucks. I buy the best filter I can and have a sock called Outerwear that I use over it. I also have an inner filter inside. I can run my machines almost an entire year on one air filter because the air is so clean before it even gets into that air filter. At the end of the year, I'm not changing it three or more times and that's worth the extra upfront investment. In a five-year period, I may have gone through 25 air filters and now it's down to five. Plus I'm not polluting the environment with a lot of excess waste."

**Patrick Donovan, owner, Classic Landscaping, Edison, N.J.**

ningham Enterprise in New Castle, Pa., says that he handles any repair that's within his capabilities – otherwise he'll take it to his dealer. Because he handles the repairs himself there is no official repair tech position. "Since I'm the owner, it's done in my free time, on my off-days," says Cunningham.

For many, like Cunningham, the repair work is yet another hat worn by the owner. "I do some of the work myself and if I feel I cannot perform the job myself – such as an engine replacement – I will bring the equipment to a local business that is really good with prices and getting the machine back to me in a day or two," says Kenneth Kopfman, owner, KMK Lawns in McHenry, Ill. "I do not have anyone on the payroll that does repairs."

Xistris says he wouldn't hesitate to go to a dealer when it's a big repair job. He says that since time is money, he'd rather not tie himself up doing large repair jobs. "I do what I can myself, but if it's a major engine repair or a motor that has to be rebuilt I go to the dealer," he says. "I could probably handle those jobs myself but I don't really have the time to devote to them. It's easier for me to go to work and keep the revenue coming, and then pay for the repair. Fortunately most of it just comes down to maintenance which is relatively easy and not very time consuming so I just do it myself."

For mid-sized or larger companies that can afford it, having a mechanic on the payroll has also proven beneficial. It doesn't have to be a full-time position. At Maxwell Landscape, repairs are handled in-house by a part-time mechanic. Carver says the biggest benefit to this, over taking equipment to a dealer, is that you're always the highest priority. "If we have minor stuff, such as a cable that breaks or replacing the carburetor, that can be fixed in 20 minutes versus sitting on the dealer's shelf for two or three days," adds Carver. "It saves me money in lost production along with

the cost of the repair so it definitely works out as an advantage."

"I do not keep a full-time mechanic on board," shares Len Russo, owner, Russo Earth Care in Haverhill, Mass. "I have a certified technician renting one of my properties. If it's beyond my scope, he handles it for me. I pay him hourly and find that this scenario works out best for my operation."

Regardless of whether a mechanic or repair technician is part-time or full-time, figuring out the ideal work schedule is always a challenge. After all, it only makes sense for the me-

**"Some of today's engines are incredibly reliable. And we also keep up with regular service to keep things running."**

**– Patrick Donovan**

chanic to be available at a time when the equipment is available, but it's never predictable when something might break down. At Maxwell, the company's part-time mechanic typically works evenings and Saturday. "He's working when the equipment is here," Carver says. "Early morning mechanics can be great to get the equipment out the door but then the equipment is gone for the day. It's worked well for us to have a mechanic that works later afternoons and evenings so he can take care of any repairs before the next business day."

Garner agrees that the mechanic's schedule can be a challenge. That's why his small engine mechanic has flexible hours. "Most days he comes in later in the day but if we need parts, FedEx only delivers those at certain times so he'll adjust his schedule to be here when the parts are," Garner says.

While the position is full-time, Garner says his mechanic's job role is multi-functional so that he's not solely working on the equipment. "All

of my employees have to do anything and everything," says Garner. "Just because he's the mechanic doesn't mean he only works on the equipment. He'll maintain the grass around the shop, do the clean-up and service the trucks. A small company simply can't afford to hire a mechanic who strictly works on the equipment so it was a requirement that we find one who was multi-functional. That's not always easy to do. Sometimes a mechanic will say they don't want to do anything else but that's not the right person for us."

Phelps also says that the mechanic they've hired is full-time and salaried. "He takes care of the equipment and runs production for the landscape end of our business," says Phelps. "He won't be able to balance that workload forever and eventually will focus 100 percent on the equipment."

Of course, Carver points out, if your equipment and its engines are well maintained, they won't have as much need for repairs in the first place.

"Preventative maintenance is really important," he emphasizes. "Equipment must be properly cared for. If the crew used a rototiller and rototilled through a bed with thick roots, then they shouldn't toss the equipment back in the building without removing all of those roots or getting the dirt off. That can cause problems with bearings overheating. Even just changing the oil regularly greatly increases the life of your equipment. Keep it out of weather, wash it off, and regularly service it and you'll add years to its lifespan." **L&L**