

Stay Sharp and Keep Running

Simple saw and blade maintenance can extend a machine's life, while keeping cuts straight and true.

By Brett Martin

If you think cutting stone or block is harder than it should be, you just might be right. Your saw or blade may not be performing correctly, prompting you to force the blade through the material and leaving you with imperfect cuts. The solution may be a simple saw tune-up or blade change, in conjunction with basic maintenance, proper care and safe storage of these workhorse tools.

Anytime a crew member has to apply excessive force to get the blade to cut, or notices uneven wear of the blade, then there's a problem. It could be a machinery breakdown, or it may be that the operator is using the wrong tool for the job.

Rene Blais, national sales manager for N-E-D Corporation in Worcester, Mass., said his company was getting up to 20 percent of its saw blades back from contractors who claimed that they weren't performing properly. After giving contractors and their field crews charts detailing correct blade usage and maintenance procedures, the return rate has plummeted to nearly zero.

Relearning the Basics Masonry saws and blades have almost become victims of their own success. Since their performance has significantly improved and maintenance requirements have decreased over the last five years, contractors and employees are less inclined to follow basic maintenance protocols.

Diamond blades have proven themselves so reliable over the years that masons take them for granted and don't inspect them, thinking they're always going to perform without fail, said Brian Delahaut, vice president and general manager for MK Diamond Products Inc. in Torrance, Calif., which sells more than one million diamond blades annually.

"Diamond blades, if used correctly, will perform like they're supposed to and provide a safe — extremely safe — tool," Delahaut said. "If used improperly and you don't inspect them, eventually there's going to be something that gives."

He advises masons to inspect their blades for fatigue cracks since a damaged section of blade can actually break loose, creating a hazard for the operator.

"A lot of the safety issue for blades is when they get fatigue cracks. That's when they can become dangerous," Delahaut said. "When you put the tool away, you look at it [the blade]. When you're ready to use it, look at it again. Cracks are very easy to see."

Being familiar with the saw and type of blade is also crucial, said N-E-D's Blais. "The most important thing is to know what type of equipment they have. Knowing the horsepower is very important," he said. "Also, what type of machine you have is important. A blade designed for dry cutting can usually be used for dry or wet cuts, but a blade designed for wet cutting can only be used for wet cutting."

Each type of masonry material requires a specific blade, run at a specified operating speed. Deviating from the manufacturer's specifications can wear out the blade prematurely and cause imperfect cuts.

"If a saw is not tuned up and it's bogged down, you don't get your true RPMs," Blais said. "If a blade runs too fast, it will glaze."

Basic maintenance procedures such as using the proper blade for the material hardness, ensuring the shaft bearings aren't worn, and keeping the saw head aligned allow for better equipment operation and increased safety, Delahaut said. "These are things the industry has forgotten."

Maintaining Saws Saws are important tools on every masonry job site, so it's imperative that masons keep the machines running in peak condition for maximum efficiency and output. The good news is that new technologies have made maintenance easier

and less frequent, said Mike Joynt, president of Mississippi Valley Stihl in Peoria, Ill., the Stihl distributor for northern Illinois and Iowa.

New machines run up to five times longer without maintenance than machines made just five years ago, he said. For example, it was almost a requirement that the air filter be cleaned with every tank of gas and, if it wasn't, the saw would run leaner and at a lower RPM. Today's machines can run through several tanks of gas before needing the air filter cleaned.

"One of the largest improvements is the maintenance — it has actually gone down," Joynt said. "With masonry, the machine creates a lot of dust when grinding and it gets sucked into the air filter. The old machines needed more cleaning."

Still, a few quick, easy-to-do maintenance procedures can enhance the machine's performance.

"When you're running the machine, blow the dust off to keep it running cooler. If people would do that, it will help extend the life of the machine," Joynt said.

Daily saw maintenance should include checking the blade guard water tubes and fluid levels, checking the water pump, and cleaning the inner and outer collars, said Bob Coats, executive vice president for sales and marketing for DITEQ, in Lee's Summit, Mo. Weekly maintenance involves checking the belts and checking the blade shaft assembly.

Keep in mind: When a blade isn't cutting properly, the problem may be the saw, not the blade. "Problems with the saw can translate into problems with the blade," Coats said. "The most important thing when caring for the equipment is to keep it running clean and running true."

Also, when it's not in use, the fuel line on a gas machine should be completely drained of gas, Joynt said. "The main thing to know is that gas is so volatile," Joynt explained. "If storing the machine for two weeks or more, get all the gas out you can. What happens is the gas will 'varnish,' and it loses its velocity. Then it won't burn nearly

as hot or won't burn at all."

Leaving gas in the saw is like leaving a soda pop can open — the liquid goes flat. Stale gas can impact the carburetor and coat the sparkplug, causing it not to spark, Joynt said, adding that masons should also inspect the machine before putting it in storage.

"When you put the machine away, it's a good time to check it out and make sure it's running properly," Joynt said. "That way, when you get that first job in the spring, you're ready to go."

Safe Blade Storage Proper storage of masonry blades can not only extend their life, it can protect employees. Otherwise, the blades can warp, diamonds segments can get knocked off, and the sharp edges can injure workers. Most blade experts agree that removing the blade from the saw when it's not in use is the best practice.

"You have a better chance of damaging the blade and knocking off a diamond if it's left on the machine," Joynt said.

Bruce Coleman, product manager for Multiquip Inc., in Carson, Calif., advises mason contractors to have a dedicated storage rack for blades so they don't incur damage, especially when transporting them to and from job sites.

"The end of a diamond blade has to be protected," Coleman said. "These end pieces can be easily damaged if allowed to float freely in the back of the truck."

However, lubricating the blade isn't necessary, he said. Surface corrosion may occur on blades during storage, but it won't impact performance and will come off when in use.

Ironically, masons often go to great lengths to protect their saws, but then disregard the blades. "Masons will take the saw blade off, take care of the saw and wrap the cord around it, then throw the blade in the back of the truck, when the blade costs as much as the saw," Coleman said. "These blades are a heck of a lot more expensive than the blades you use to cut wood."

He suggested storing the diamond blades vertically, rather than laying them flat, so items don't get stacked on top of them and cause the blades to warp or bend.

Blais agreed, adding, "The most successful blades are the ones that are taken off and stored vertically."

Before reinstalling the blade, masons need to inspect the flange and, if necessary, clean or replace it, Blais said. "A problem I see with masons in the field is when the saw is cutting all day long and they take the blade off, they don't clean the flange," he said. "The flanges must be cleaned."

Dirt or debris on the flange may prevent proper blade clamping, causing the saw to lose its tension and the blade to "twitch," or vibrate on the spindle, Blais said. This can also affect the cut. The blade could give a slight kick at the end of the cut, resulting in a slight chip in the material.

When replacing the blade in the saw, it has to be installed in the correct orientation, said Tom Roe, director of sales for Multiquip. Blades are designed to spin in a particular direction, so the arrows have to be pointed in the rotation of the cut.

"It will impact the performance of the blade if it's in the saw backwards," Roe said. "It's highly recommended they re-orient themselves with the blade direction."

Simple Fixes for Common Problems Occasional problems are bound to occur, even with regular maintenance. In most cases, the fixes are inexpensive and easy to perform. Sometimes, the problem is external, like when a mason has an expensive electric saw, a \$400 diamond blade, then plugs it into a cheap extension cord that doesn't deliver adequate power, N-E-D's Blais said.

Blade glazing, caused by forcing a blade that's too hard through the material, can also be easily remedied, Blais said. Making slow cuts through an abrasive material will re-expose the diamonds.

The common problem of a saw losing tension can be solved by

simply taking the saw out of the cut and letting it continue to run, he said. The saw will tighten itself.

MK Diamond's Delahaut said plunge cutting, which is ramming the blade into the material too fast, can crack the blade. Slowing down the cut eliminates the problem.

Also, worn out bearings can impact the saw's performance and quickly wear out the blade, he said. Keeping an eye on the bearings and replacing them before they wear out keeps the saw running smoothly. All it takes is looking the saw over.

"It's a good idea to give the saw a visual inspection before using it," Delahaut said. "All people need to do is look at the saw. It's all about the tool." **Stay Sharp and Keep Running**

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