

Compression Tester Assists Troubleshooting Process



On another page I listed off the things I like to look at when considering [buying a used cutoff saw](#). One other tool that's great to have, both to evaluate used saws and to troubleshoot your own saws is a compression tester. The compression gauge you see pictured here is distributed by Electrolux, which owns both Partner and Husqvarna. It's a Trisco model G-320HD flex drive compression tester, and the Electrolux part number is 531031686.

The way you use it is pretty simple and straightforward. Remove the spark plug from the saw and screw in the threaded end of the compression tester hose in it's place. If the cutoff saw you're testing has a compression relief valve to give easier starts, you'll need to use it (it won't affect the test that much). Pull the starter cord 4-6 times, just like you would if you were trying to start the saw (or pull until the reading on the tester stops increasing).

If your saw has compression like it should, the tester should be reading somewhere between 90psi and 115psi, depending on saw brand and model. If the saw has poor compression, it should be pretty obvious. For the cutoff saw I just put a new cylinder and

piston into, I could tell it had poor compression before I ever hooked up the tester - pulling the starter cord was way too easy, and there was no "pop" sound like you usually hear when the piston is riding up and down in the cylinder. Hooking up the tester confirmed my concern; the saw was at about 50 psi compression. Not enough for any worthwhile combustion (there were some other problems that kept that saw from running, too. You can read about them in the tutorial).

Poor compression can be a symptom of several things that all have to do with how well the piston and cylinder seal gases in during combustion. Some of the things that can be going wrong with your cut off saw, causing poor compression:

Worn or broken piston rings. Excessive burning or scoring of the piston and/or cylinder. A cracked cylinder.

Unfortunately, most often poor compression in a cut off saw is the result of burning or scoring of the piston and cylinder, and they'll both have to be replaced before the saw will run like it used to. The scoring could have been caused by running a fuel/oil mixture that was too lean on oil, causing the engine to overheat. It also could have been caused by infrequent maintenance/replacement of air filters, allowing dirty air to pass into the combustion chamber. A poor seal between the air filter and it's housing could also be the cause.

While it's somewhat unlikely, fuel contaminated with dirt or dust during refueling could also be the cause. This is a bit more unlikely because of the fuel filter in place in all saws - most times the saw will just fail to run properly because the filter is clogged. But the filter may also let small dust and dirt particles through, which get burned in the cylinder and start the scoring process.

Because of the direction of flow of combusted gases in a cutoff saw, you'll most often find scoring on the piston and cylinder on the exhaust port side of the engine, both on the piston and the cylinder. Occasionally, if the scoring is mainly on the cylinder and is very minor, the cylinder can be cleaned with an abrasive drill bit designed for this purpose. However, most often it's going to be more cost-effective to just replace cylinder, piston and rings. Then you can be



sure the heart of your saw is new, healthy and strong.