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I examined the engine on N95550, Cessna 152 on January 4, 2018 in Ft. Pierce, FL.

The engine looked to be intact and clean during the visual exam. One propeller blade tip was bent backwards about 5 inches. The top spark plugs were removed for examination, they looked clean and showed normal wear. I then used a lighted boroscope and looked in each cylinder. All cylinders looked like normal wear, all exhaust valves and intake valves looked normal for their age. I rotated the propeller and observed suction and compression in each cylinder.

I crawled under the engine to verify that the throttle linkage and mixture linkage was not damaged and moved smoothly, I had someone push the throttle full forward and pull it back full aft. It moved smooth without binding. I then had them push the mixture full forward, I noticed that the cable moved however the mixture arm did not move. I had them pull it back and forth a couple times and noted that every other time they tried to move it, it would slightly catch the arm and move it to full forward. I then took a 7/16 wrench and tightened the fiber locking nut on the cable by 1.5 turns, I noticed this was too tight and the mixture arm would not move. I then loosened the nut by ½ turn and it moved normally.

The nose wheel was fractured off during the accident and damaged the air box on the carburetor and broke off the drain plug in the back of the carburetor.

This is the only damage I noted to the engine, I strapped the airplane down to a trailer, hooked up an external fuel tank to the inlet of the carburetor, I noticed fuel leaking out of the fractured off drain plug so I used a temporary plug to seal the leak before running the engine. The engine started after three full revolutions of the propeller. After a few seconds, I pushed the power forward briefly until I saw an increase in RPM and then shut the engine down. It ran very smooth.

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