

Editor and Publisher

Scott Geyer (scott@farmshow.com)

Editor Emeritus

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Contributing Editors

Jim Ruen (edgecom@acegroup.cc)Lorn Manthey (redoakridge@mac.com)Lydia Noyes (lprunner58@gmail.com)Bruce Derksen (dbksen39@live.ca)Circulation (circulation@farmshow.com)

Maddie Kammerer, Jenn Wetschka

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Will poses with his great-nieces, Callie, Laney, Catlynn and Lauren, on his JohnZilla pulling tractor.

5020 Repowered With 600-HP Tugboat Engine

"I was like a kid looking at the last puppy nobody chose when I saw a beat-up old Deere 5020 at an auction," says Dave Will. "I knew if I didn't buy it and give it new life, it was headed for the salvage yard."

Will says he bought the rusty old beast because he had previous experience swapping a 12V71 Detroit Diesel into a different 5020. He says it was so much fun he just had to

try it again.

"I figured the second time around would be easier because I'd learned by trial and error on that first one."

It turns out that wasn't exactly the case.

Rather than swapping out a different 5020 engine that would've fit without modifications, Will decided to go big.

"I came across a junked-out 16V71 Detroit

"The conversion uses an ATV radiator, a Mini Cooper fan, a Denso alternator, and an auxiliary water circulation pump from a VW Jetta to enhance coolant circulation," says Schaefer.



Cub Cadet Repowered With A 4-Cylinder Cub

Bob Schaefer achieved a childhood dream when he restored an original belt-drive Cub Cadet. As a young farm boy in Iowa, he had built his own version of a Cub Cadet, modeled after one belonging to a neighbor.

"My brother and I used to hang around with his two sons and fight over who got to drive it," recalls Schaefer. "I was enthralled with it."

Schaefer removed the wheels from an old walk-behind garden tractor, used a Wisconsin engine from the farm's grain elevator, and assembled them with a Model T transmission.

"I even used sheet metal and other parts to make it look like a Cub Cadet," says Schaefer. "I made a blade for the front end and a lawn mower unit to cut our grass. I always wanted to find a real one like the neighbor had."



Schaefer's Cub Cadet before he repowered it.

It wasn't until he retired from his career in California as an engineer at Raytheon that he found one. However, it was underpowered, so he removed the 7-hp Kohler engine and replaced it with a 23-hp Predator engine from Harbor Freight.

"It works fine, and I use it all the time around the yard," says Schaefer. "Then, when I was visiting my hometown in Iowa, I saw a Cub Lo Boy tractor in a parade. I was looking at the engine, and I started thinking about repowering a Cub Cadet with it."

Schaefer started measuring and considering how to reconfigure the fan to fit the available space. Once he returned to California, he found a second "original" Cub Cadet and a 1947 4-cyl. Cub engine. He also gathered a variety of other parts to fit into the tight spaces.

"The conversion uses an ATV radiator, a Mini Cooper fan, a Denso alternator, and an auxiliary water circulation pump from a VW Jetta to enhance coolant circulation," says Schaefer.

Schaefer kept the Cub Cadet clutch, creeper unit, and rear PTO drive. Along with the Cub engine and transmission, he also kept the flywheel and starter from the Cub tractor.

"The Cub head was only 15 1/2 in. long, but that didn't leave much room for a fan and radiator core," says Schaefer. "Then I found a 1-in. thick radiator core from a Kawasaki off-

diesel from an old tugboat and knew that would make the 5020 a real monster pulling tractor," Will says.

He rebuilt the 1,136-cu. in. engine and then contemplated the major changes needed to fit it into the tractor body.

"The 600-hp engine was much larger than the OEM on the 5020, so I had to extend the frame 3 ft. to start with," Will says.

He hired a local machine shop to work its magic on the frame. That business also built an adapter plate and clutch plate to mate with the tractor's drive system. Next, he visited a local salvage yard and bought a fuel tank and hood from a junked Deere 4640.

"Neither of those fit," Will says, "but where there's a 'Will' there's a way. I made a few cuts, spliced the original hood with the salvage one, and it turned out decent."

Will says the 16-cyl. monster really roars with its chrome straight pipes. Adding chrome air intake systems on both sides of the engine and custom dual wheels is another measure of exotic design that always impresses viewers.

"I've taken it to area pulling events, and it causes quite a stir when I fire it up and take it down the track. Everybody cheers for me," says Will. I call it the 'JohnZilla,' which has a nice sound to it, just like that big engine."

At a recent show, he outpulled the second-place finisher in his event by more than 18 ft.

Contact: FARM SHOW Followup, David Will, 10920 Diamond Island Rd., Wadesville, Ind. 47638 (ph 812-204-4587).

road vehicle. The Mini Cooper fan was also only an inch thick, so I was able to convert the air-cooled Cub Cadet to water-cooled."

He added the auxiliary water pump to supplement the 4-cyl. Cub's thermal siphon circulation.

"It would overheat when using it under significant load," says Schaefer. "I stumbled on the Jetta auxiliary pump, and it fit between the lower output to the radiator and the lower input to the engine. With it, the tractor runs as cool as a cucumber."

A couple of small adjustments created more space. Schaefer moved the steering column back 3/4 in. and the front cab support forward by 1 in. He removed the flywheel from the engine and moved it slightly back. This was enough to sandwich a belt pulley between the flywheel and the block.

He soon swapped out the pulley on the flywheel for a sprocket and attached a sprocket to the clutch pulley for a chain drive.

"I needed the chain drive to handle the torque on the 15-hp engine," says Schaefer. "Between that and replacing the spur gears with a sprocket/chain drive on the reduction housing, I was able to get the rpms down. I can get the full torque of the engine into the chain drive, with the same ground speed as with the Cub Cadet engine. It runs great."

For more information on the Predator and the 4-cyl. Cub repowers, visit Cub Connection, volumes 18 and 24. Schaefer provided extensive details, including images and drawings, of the modifications made.

Contact: FARM SHOW Followup, Robert Schaefer, 17931 Bluegate Ln., Huntington Beach, Calif. 92647 (ph 714-458-7041; rdschaefer46@gmail.com).



Under the hood view of the Cub engine.