

# Right Combine Choice Crucial When “Tractorizing” Combine

By Jim Ruen, Contributing Editor

When Herb Hallman decided to turn a combine into a utility tractor, he knew that the most important part of the project was selecting the right combine. Having read FARM SHOW for years, Hallman had a good idea of what works and what doesn't. Being in the salvage business with more than 100 different makes and models of combines on hand, he had plenty to choose from.

“Nothing comes close to the adaptability of IHC 815 and 915 combines,” says Hallman. “The engine, radiator, hydraulic pump, and hydrostatic pump are all mounted on a skid that comes off as a complete unit. They even have an over-the-center-thresher drive clutch that we used to power a pto.”

Hallman appreciates that everything on the machine is either electric or hydraulic. With no pulleys, belts or shafts to line up, the engine skid can be mounted wherever needed. He also wanted to avoid working with a gas engine or a standard transmission with hard shifting, weak clutches and limited speed ranges per gear.

“We started with an 815 diesel with hydrostatic drive,” says Hallman. “Most builders strip the threshing components off the combine and start building on the existing frame.”

Hallman thought the combine frame was too weak, so he decided to start from scratch.

“We stripped off every part we thought we might need and got rid of the old frame,” says Hallman. “We blocked up the front axle and built our own frame out of new 8-in. channel iron. When the frame was finished, we plopped our power plant skid with engine and attachments in place. We rolled the rear

axle under the frame and welded it in place.”

Hallman positioned the engine as far back on the frame as possible to act as counterbalance against front-mounted implements. He mounted a bumper to protect the rotary screen at the rear, but also to act as a weight bar if suitcase weights were needed.

Wheels were swapped left to right to reduce the outside measurement to 9 ft. to match the 9-ft. width of the snowblower Hallman planned to mount. Wheelbase front to back ended up at about 10 ft.

Hallman mounted the cab in front of the engine, shortened up wires and hoses and hooked everything up. A roll bar was added at the back to compensate for the flimsy cab. The roll bar also serves as a mount for auxiliary lighting. The original hydraulic reservoir was mounted to the frame on the right hand side.

“When we fired it up, everything worked beautifully, except it steered backward,” recalls Hallman. “We had crossed the steering hoses...a minor detail!”

As he planned to use it as a tool carrier, Hallman built a 3-pt. hitch from scratch using the old header lift cylinders. He salvaged a pto off an 1155 Massey Ferguson tractor.

“The pto on the 1155 is compact, turns at engine speed, has no clutch, turns the right way and has both 540 and 1000 rpm speeds,” says Hallman. “We built a box around it to contain the oil and mounted it to the frame. A machinist friend helped adapt an old truck driveshaft to drive the pto from the thresher drive clutch. A small hydraulic cylinder mounted to the clutch arm is activated with the old unload auger swing valve in the cab.”



“Nothing comes close to the adaptability of IH 815 and 915 combines,” says Herb Hallman, who converted an 815 model into this utility tractor. He uses the tractor's front-mounted 3-pt. and pto to operate a snowblower.

Hallman adapted a hood from an old IHC 4100 tractor. While it fit nicely over the radiator end of the engine, the other end needed to be trimmed. Exhaust and air intake holes had to be filled in with new holes cut to match the engine. A turbo precleaner was salvaged from a Massey 1135, and an IHC 966 tractor (same engine as used in the combine) muffler was purchased new.

Hallman calls the tractor a “Hydratractor-100” for its 100 hp. A friend with a vinyl cutter made decals for it, and Hallman painted it blue.

Originally he planned to use the front-

mounted 3-pt. and pto with a lot of different tools. However, aside from occasional use to power an auger, it has become a dedicated snowblower.

“No snowbank can stop it with the hydrostatic drive,” he says. “We get a lot of satisfaction using a machine we built ourselves, especially when it works so well and does everything it was designed to do.”

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## Tractor Built From Case Combine

When Kevin Ford needed a snowblower tractor that could blow snow into trucks, he started thinking about building it himself. When he saw the tractor his friend Herb Hallman built out of a combine, he knew it would work.

“Big cities have them, but our town couldn't afford a commercial rig,” says Ford, who is a city maintenance worker for his small town. “Using a front-end loader is slow and dangerous around car traffic.”

Ford decided to go with a Case IH 915 combine for its heavier final drives, heavier transmission and turbocharged engine. He figured the 135 hp. would be needed for the 11-ft. snowblower he planned to use.

After stripping down the combine, Ford began repositioning the components he needed on an old truck frame cut down to 14 ft. He reinforced the cross members and rebuilt all the clutches with new bearings.

Ford narrowed the combine drive axle by a foot before mounting it, along with the steering axle, engine and transmission, to the frame. He also mounted the original cab, fuel tank and hydraulics.

In preparation for mounting the snowblower, Ford welded a 1-in. thick plate to the front end of the frame just ahead of the drive axle. To adapt the combine motor to drive the snowblower, he used a pto case off a Case 2670 tractor. After drilling a hole through the plate for the driveshaft, Ford mounted the pto case to the blower side of the steel plate.

He fabricated a 3-pt. hitch on back of the steel plate using tabs with 1-in. holes welded to the plate on either side of the pto case. For lift, he mounted the combine header lift cylinders to the outside of the truck frame, which push on the lower arms of a rocker shaft mounted to the top of the steel plate. As the shaft turns, it provides lift for the 3-pt.

arms mounted to the tabs.

In order to use the separator clutch on the combine to engage and disengage the pto, Ford took the drive pulley from the separator drive to a machine shop.

“They salvaged the splines and mated them to the U-joint on the end of the 2670 driveshaft,” says Ford. “This meant I could use the separator clutch lever in the cab to engage the snowblower with direct engine power.”

When Ford ran into problems with insufficient hydraulic pressure for the hydrostatic transmission, a mechanic suggested separating hydraulics from hydrostatics. He now uses the hydrostatic system with its own pump and reservoir for drive. A second pump and reservoir service other hydraulic needs such as the discharge chute, 3-pt. lift, steering, etc. He also installed electric-over-hydraulic switches on all the valves for easier control while driving.

Ford found a used 1100 Schulte snowblower. He put all new sprockets and bearings on and relined the impeller. At 110 in., it clears a path well past the 9-ft. tractor wheel width.

“I can load about 12 yards of heavy, wet snow in about a minute and 12 seconds,” says Ford. “The blower beats the air out of the snow, too, so every load is about 50 percent heavier. It is faster than a front-end loader. It is a poor man's fix for a small town that couldn't afford a new rig.”

Ford estimates he paid \$2,800 for the combine, but the town has since reimbursed him for all his costs. “When I told my boss what I wanted to do, he thought I was crazy,” recalls Ford. “When I showed him my friend's tractor, he understood and said that if it worked, the town would reimburse me. It's now in its sixth season and has been trouble free. I put on 100 to 150 hrs. every season.”



Kevin Ford converted a Case IH 915 combine into a tractor that he uses to blow snow into trucks.



After stripping down the combine, Ford repositioned the components he needed on an old truck frame cut down to 14 ft.

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