

## Self-loading Semi Truck Bale Hauler

Alberta farmer Mike Waldner, of Rocky Ford, needed some big capacity to haul bales. But he suffered "sticker shock" when he saw that what he wanted could run him up around \$70,000, so he designed and built his own self-loading and unloading semi truck bale hauler.

It's equipped with a special two-piece loading arm that allows the operator to load bales one or two high and can carry up to 17 round bales at a time at highway speeds - six bales on each bottom row, with five on top.

The bale hauler is 33 ft. long and 10 ft. wide and has four parallel unloading chains along its length. The operator approaches each bale so that its end fits into the open end of the loader arm. When the bale is cradled within the arm, the operator activates a pair of hydraulic cylinders which swing the bale up and flip it onto the bed. The operator then hydraulically lifts a 2-ft. sq. hinged steel plate mounted on the floor that kicks the bale over to the opposite side. He then lifts a second bale onto the bed alongside the first one. The third bale is lifted on top of the other two by tilting the fork 45

degrees outward while bringing the arm to the vertical position, then tilting the fork inward.

To make room for the next set of bales, a hydraulically-operated pusher plate attached to the unloading chains pushes the bales toward the rear of the trailer. To unload bales, the operator hydraulically tilts the bed until the back end touches the ground, and then moves the chains backward to push bales off as the truck moves ahead.

"It moves bales faster than any rig we've ever seen. It lets us keep up with five round balers," says Waldner. "The arms are powered by a 24 gpm hydraulic pump so they work fast. It takes only about 5 minutes to load the entire truck. The operator can put either two or three bales on at a time before pushing them back 'on the go' while he drives from one bale to the next. An orbit motor drives the truck's apron chain. The pusher plate is returned automatically by a hydraulic-operated winch. When bales are unloaded they stay in a nice neat stack. We spent only about \$12,000 to build it.

"The bale hauler is equipped with four



hydraulic cylinders. Two cylinders operate the loading arm, one tilts the fork in or out, and one kicks the bale over to the opposite side of the deck.

"Our Western Star truck has a 200 hp gas engine and an automatic transmission. We lengthened the wheel base by 3 ft. to make the deck 33 ft. long. We beefed up the truck frame where the bales mount

by adding a reinforcing plate on each side. We've custom-built two other bale carriers, one for a Ford truck and one for a Chevrolet. The customer supplies the truck with an extended frame."

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## Portable Scaffold Adjusts From 5 to 17 Ft.

"It works great for shingling our house or garage, painting the barn, and other jobs," says Wayne Husak, of Neepawa, Manitoba, about the portable scaffold he and his father Peter built.

It consists of a 14-ft. long steel frame mounted on four wheels. A walkway mounts across the top of the frame and is supported by a telescoping leg at each end of the frame. A hand-cranked winch at the bottom of the frame is used to raise or lower the walkway (there are pulleys at the bottom of each leg). A 16-ft. aluminum ladder is fastened upright at one end of the scaffold for access to the walkway.

Four home-built friction jacks - one on each corner of the frame - help level the frame and lock it into position to keep the scaffold stable. "We can set the walkway as high as 17 ft. or as low as 5 ft. off the ground. We insert safety pins on each leg in case the cable breaks," says Wayne.

The scaffold folds down for transport or storage. After Husak removes the walkway, he removes the pins from the legs, folds the legs inward on top of each



other, and lays the platform on top of them.

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## Old Truck Makes Low-Cost Dump Trailer

"I built a 12-ft. long dump trailer out of the rear half of a 1966 Chevrolet 60 series 2-ton truck. The truck's box is raised and lowered by a 5 hp Briggs & Stratton gas motor that drives a hydraulic pump, and it's equipped with a standard wagon hitch so I can pull it behind my tractor or pickup and use it almost anywhere," says Richard Van Hyfte, Annawans, Ill.

Van Hyfte paid \$60 for the truck and spent just \$250 total to convert it to a dump trailer. He cut off the frame behind the cab and tapered it to a "V" in front, then welded the hitch on. He bolted the motor onto a cross member of the truck frame and mounted the pump underneath it. He mounted a 2 1/2-in. pulley on the motor and a 10-in. pulley on the pump.

"I use it a lot to haul dirt with my tractor. It'll lift five tons," says Van Hyfte. "A commercial gooseneck trailer



equipped with electric motor lift would cost several thousand dollars and require a special hookup. The 5-ft. long frame in front of the box leaves plenty of room for turning."

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## Pto-Driven Rotary Seed Cleaner

A new-style pto-driven seed cleaner lets Dale Pocock, Nipawin, Sask., clean small grains and "buff" or polish the seed at the same time.

The home-built cleaner consists of an 8-ft. long, 10-in. dia. pto-driven auger with a 4-ft. section of screen along the bottom. Grain enters the auger/cleaner through a hopper at one end. The first 1 1/2 ft. of auger is equipped with conventional flighting. Pocock removed the flighting from the rest of the auger, replacing it with round 1-in. dia., 3-in. long "beater bars" welded at 90 degree angles to the center shaft and spaced about 2 in. apart. A series of stationary concave teeth extend part way into each side of the auger. The beaters compress seed against the concaves and force dirt and small fines down through the screen. Grain exits from the auger through an adjustable spring-loaded door at the end of the auger and slides down a chute into a hopper where it's removed by another auger. Fines that are too big to go through the auger screen are sucked up by a vacuum fan positioned at the top of the chute and delivered through a flexible hose into a barrel.

"It does a better job than commercial electric-powered cleaners that need 3-phase power and cost thousands of dol-

lars," says Pocock, who works in the seed cleaning business and primarily came up with the idea to remove "awns", or beards, from barley and wheat. "We spent only about \$400 to build it. It can handle about 200 bu. of barley per hour. The combination of the screen and fan remove almost all of the awns and fines. The vacuum fan is powered by an electric motor. It also works great for removing fine hairs from grass seeds. It can even be used with crested wheatgrass to break apart seeds that stick together. I use different sizes of screens depending on the type of seed I'm cleaning.

"The vacuum fan has a nozzle with a flat sliding door on the bottom that extends across the width of the down chute. The sliding door can be opened or closed to control the amount of vacuum.

"The spring-loaded exit door on the outlet end of the auger controls the amount of backpressure inside the auger which controls the amount of conditioning cleaning. Tension on the spring is controlled by adjusting a threaded 1-bolt. The tighter the spring, the longer grain stays inside the auger and the more the beating action."

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