

4-WD Articulated 1/4-Scale Tractor

"I got the idea from reading FARM SHOW and seeing other mini tractors that people had built," says Todd Rufenacht, Wauseon, Ohio, about his 1/4-scale, 4-WD, articulated International Harvester 4366 tractor.

Rufenacht says the tractor was built from parts from several different garden tractors including Bolens, Cub Cadet, Murray, Montgomery Ward, Case Ingersoll, Deere, Massey Ferguson, Wheelhorse, White, and Simplicity. It has working lights and dual wheels.

"My dad bought a 1976 IH 4366 tractor a few years ago and I always liked the look of it," says Rufenacht. "I also built a matching model of a 4-ft. wide Glencoe 'electric-lift' chisel plow to go with the tractor."

The mini IH is powered by an 11 hp Briggs & Stratton engine and has two identical Peerless 3-speed transmissions. The engine belt-drives the forward transaxle, which has a double pulley mounted on it. A belt runs to another double pulley at the articulation joint, where a third belt runs back to the rear

transaxle. One clutching drive on the first belt engages all three belts.

The tractor has two gear shift levers, one on front and one on back. The steering is done by a shortened steering box out of an old Chevy car.

He used 3/16-in. thick steel to build the frame and articulation joint. The seat and steering wheel are off a garden tractor. The exhaust stack was made from a 2 1/4-in. dia. stainless steel milk line. The dual wheels measure 8 1/2 by 14. Each set of wheels is connected by a steel ring, with a couple pieces of threaded rod used to hold the wheels together.

"I did all the sheet metal work myself and had custom decals made. The grille is made from wood but is painted silver so it looks like brushed aluminum," says Rufenacht.

The chisel plow has its own electric lift, which is operated by an electric cylinder that's wired to the tractor's dash. A switch on the tractor is used to raise and lower the



"I built this 1/4-scale, 4-WD, articulated tractor to look just like my dad's 1976 IH 4366 model," says Todd Rufenacht.

chisel plow from the tractor seat. To make the shanks he shortened up some old row crop cultivator shanks, and he cut down some disc openers off an IH planter, removing 4 in. from the perimeter to make them 8 in. in diameter. "I've taken both units to antique tractor

shows where I get a lot of compliments on them," says Rufenacht. "I also took first place in metal working at our local county fair."

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Corn Head Adjusts From 18 To 36 In.

A new corn header made in Brazil comes with some unique features - at an economical price.

What makes the header unique is that row width can be adjusted in 2-in. increments from 18 to 36 in. wide. To adjust row spacing you bolt on a different plastic insert inside each snout and slide gathering chain modules back and forth on a common driveshaft and mounting frame.

The Bocuda header is made by Vence Tudo Co. in Brazil, and distributed by Superb Horticulture, Plymouth, Ind. The low profile header is painted red, yellow and black and is available in both 20 and 30-in. row spacings. The 20-in. models come in 9, 12, and 16-row models while the 30-in. model comes in 6 and 8-row models.

All headers come with a coupling kit that allows you to fit the header to any brand of combine. Poly shields and an aluminum gearbox keep the weight down.

"It's a lightweight, no frills, low profile corn header that sells for 20 to 40 percent less than North American brands," says Sam

Erwin of Superb Horticulture. "The low profile plastic snouts work great in down corn."

"Changing the header's row widths is a big job and isn't something you'll probably do overnight, but at least you're not married to a particular row width once you buy the header. The Bocuda header has manually-operated stripper plates, not hydraulically adjusted ones, so it works best for anyone with a uniform stand of corn."

Erwin says Bocuda will give manufacturers of combine headers some competition. "For years, North American tractor manufacturers have had competition from foreign-made models, many of which sell for far less money. However, combine manufacturers such as Deere, Case IH and Agco have totally dominated the combine market. The Bocuda corn header offers a lower price with no sacrifice in quality. For example, Deere's 6-row header sells for \$35,000 compared to \$29,000 for ours."

He says Vence Tudo manufactures equipment sized to Brazilian farms. "The biggest corn header they make is a 16-row, 20-in.



Row width on new corn header is adjusted by changing the inserts on snouts (in yellow) and sliding gathering chain units back and forth.

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Home-Built Disk, Scraper Built For \$200 Apiece

Matt Richter couldn't justify the cost of a new tandem axle mini disk for his operation. So the Adair, Iowa, farmer built his own for only about \$200. He also built a mini scraper for about the same price.

Both implements are equipped with electric actuators and are sized to be pulled by an ATV or garden tractor. Both are wired to the vehicle's battery.

The disk measures 40 in. wide and rides on a pair of 12-in. high wheels off a riding mower. It's painted Deere green and yellow.

He started with an old 10-ft. wide International Harvester disk that he found laying in the weeds. He disassembled the gangs, cut one gang off, and cut the axle shaft down to the width that he needed. The gangs and hitch are adjustable for different cutting depths. The gangs are adjusted by loosening a bolt and sliding the gangs over. The hitch is adjusted up or down by operating a turnbuckle, and side to side by pulling a pin and sliding the hitch.

An electric actuator, salvaged from the chopper on a Deere rotary combine, is used to raise and lower the gangs. He used a length of 3/4-in. dia. pipe for the ram. The actuator

rod was very thin and broke off. He beefed it up by replacing the actuator's original plastic molded nut with a coarse threaded metal nut, then welded the pipe to the actuator shaft.

"I use it to till gardens, to fill in small ditches, and to level out cow paths. It does a good job," says Richter. "I use my Honda 500 cc, 4-WD ATV to pull it. The ATV has all it can do to pull it." He built the 45-in. wide box scraper mostly from scrap material that he already had. The wear bar is off the snow blade he had been using with his ATV. The actuator that's used to lift the blade was ordered from Northern Tool and Equipment.

"I use it to scrape our driveway and to do general dirt scraping work. It works nice," says Richter. "I use my Deere GT 235 18 hp tractor to pull it. It works better behind a medium-sized garden tractor like this than it would behind an ATV because the tractor has a tighter turning radius. The switches that operate the actuator came from our local auto parts store."

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Matt Richter built a mini scraper and a tandem disk for about \$200 each. Both implements are equipped with electric actuators and are sized to be pulled by an ATV or garden tractor.

