

Skid Steer Fitted With Sickle Mower

Ron Schneider needed a mower, but he didn't have a tractor. Instead, he adapted an old sickle mower to use on his skid steer. A neighbor found the New Idea mower on a scrap heap. With the help of an orbital motor and a bit of fabrication, Schneider now has a mower he says works great.

"A local farmer who used to harvest hay from my 8 1/2-acre field stopped cutting it," recalls Schneider. "I decided I might as well do it myself."

Schneider stripped the wheels, hitch and pto drive off the old pull-type mower. Without the wheels, he needed to build a frame to get out in front of the mower. He started with a quick-tach plate for the skid steer loader arms. He welded a second (30-in. long by 16-in. high) steel plate at a right angle to the quick-tach plate and opposite the end where the sicklebar was to go. A third 16 by 16-in. steel plate was then welded at a right angle to the second to form a 3-sided box.

Schneider reinforced the first two plates with an angle iron cross brace, top corner to top corner. The third and shorter plate formed a forward mount for the mower. It was reinforced with a cross brace at its top and at its bottom by a piece of flat steel welded to both plates. A pipe was pinned to its outside upper corner and to the old mower frame by the pitman.

The corner plate reinforces the corner, but also serves as a base for mounting the orbital motor with two step down gears for the pitman arm drive. Schneider built a steel cage out of angle iron and flat steel to protect the motor and drive.

"My neighbor Bill, calibrated the motor and the two gears to produce the 540 rpm's needed to drive the pitman arm," says Schneider.

The frame allows the sicklebar to float. When not mowing, Schneider lifts the sicklebar up and locks it in place the old fashioned way – by hand.

While Schneider's sickle mower works fine for most of his needs, he recently bought a used 3-pt. hitch, rotary mower as a back up. Rigging it up for the skid steer was much easier. He mounted an orbital motor on the



Ron Schneider adapted an old New Idea sickle mower to use on his skid loader.

back edge of the mower to drive the pto shaft.

The lower lift arms attach to a quick-tach plate on the skid steer. A chain between the top link connector on the mower and the quick-tach plate serves as a top link arm. He also mounted two caster wheels on the rear of the mower with the tail wheel out in front.

"The rear wheels keep the mower from scalping the ground," says Schneider. "With the loader arms in float mode, I just push the mower around."

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Mini Backhoe Mounts On Skid Steer

"I drew up my own plans for a small skid steer excavator and used a Lincoln 140 welder to build it for about \$500," says Algoma, Wis., handyman Lee Piechocki. "It took almost 10 lbs. of wire to get it all welded together, but I saved more than \$2,000 by making it myself rather than buying one from a dealer."

Before tackling his own project, Piechocki had looked at two different excavator arms for the front of his Bobcat. He decided they were both too heavy for his machine and too expensive. At 400 lbs., his home made attachment weighs less than commercial models, but it's still built strong enough to do exactly what he needs. Piechocki uses the handy hydraulic bucket for landscaping, digging tile trenches and cleaning up brush around his 50-acre farm.

Using his background in mechanical drafting, Piechocki drew up plans for the mini-excavator on his computer with Autocad software. That allowed him to accurately lay out all the dimensions and make sure the distances between the cylinder arm, the bucket mounting brackets and the mounting brackets for the quicktach were correct. The excavator arm is made from a 6-ft. long piece of 3 by 6-in. rectangular tubing. He had a friend cut one end of the 3/16-in. thick piece on a diagonal with his plasma cutter, then he welded it into a taper. He welded pin brackets onto the arm to mount the hydraulic cylinder

and 16-in. wide bucket.

"Making the bucket was a challenge," says Piechocki, "because the curved radius was tough to figure out and tough to form." First, he made a plywood pattern using an 8-in. radius with a 12-in. extension on the cutting edge. Then he bent the 1/8-in. thick bucket metal around the frame using a chain and a high-lift jack. His friend cut the bucket sides with the plasma to match the radius and Piechocki welded them in place. The cutting edge of the bucket has a 3/8-in. plate for extra stability. The bucket mounts to the lift arm and the cylinder with 1 1/4-in. pins that he made on his South Bend junior lathe.

"The most expensive part of the whole project was the new 3-in. dia. by 26-in. cylinder with a 1 1/4-in. shaft," Piechocki says. It connects to the hydraulics on my skid steer and gives me a 2-ft. throw for the bucket." He bought new steel from a local company for the bucket and lift arm, but other parts he made from scrap that was in the recycle bin by their shear.

Piechocki mounts the excavator to his 742 Bobcat with a 46-in. wide frame made from 3/16-in. by 2-in. square tubing. Five braces welded to the quicktach bracket and the lift arm provide diagonal support in all directions. "The excavator reaches out 7 ft. and can dig a hole 6 ft. deep," Piechocki says. "My Bobcat has 1,700-lb. lift capacity,

Cub Cadet Belly-Mount Sicklebar Mower

Tim DeLooza clips his roadsides with a hydraulic-controlled, sicklebar mower that's belly-mounted to his 1450 Cub Cadet. Adding a needed hydraulic valve was a challenge. However, mounting the mower under the Cub with full hydraulic lift was an even bigger challenge, according to DeLooza.

"I didn't want to modify or change the mower in case I wanted to convert it back to manual lift," he says. "That meant I needed to use existing holes to mount the lift, and I had to work around parts of the mower itself."

Before DeLooza went to work on mounting the Haban sicklebar mower, he had to install the plumbing for a second hydraulic valve. The 1450 is a 14 hp hydrostatic drive with hydraulic lift factory installed. The dual hydraulics he needed was a factory option and is available as an after market kit.

"The dual hydraulics kit with handles, lines and dual spool valve are hard to come by, often incomplete and often sell for \$200 and up," says DeLooza. "I used parts I had laying around, but they could probably be bought for around \$50."

DeLooza needed to add a second spool valve to the existing valve on the steering column. He pulled the engine for access and moved the valve to the right for clearance, installing the new valve on the side of the dash tower.

"I plumbed the valves in series so the fluid comes from the pump, through the first valve, through the second valve and then back to the reservoir in the rear end," says DeLooza.

He fabricated a handle for the second valve out of thick-walled pipe. At the dash tower, it fit into a bushing, with a lever welded on, to connect to the valve. The handle for the original valve was then inserted through this pipe and reconnected to its valve. This gave him adjacent controls for both valves.

He used brake line tubing for the hydraulic lines, bending them to fit around the hydro pump in a tight radius to the valves. From the valves, he ran them along the sides of the frame to front ports before reinstalling the engine.

Though he had installed Haban mowers on other tractors, DeLooza wanted full range of motion from 90° vertical to 45° below grade.



Figuring out how to mount mower with full hydraulic lift was quite a challenge, says DeLooza.

"I use the mower for ditches so I needed to keep the below grade range of motion," he explains.

He used a lift cylinder from a quiet line or wide frame Cub tractor and determined the length of travel the knife bar needed to go from below grade to fully raised. The lift cylinder gave him about half the range he needed, so he added a lever system to get more travel.

"I attached the knife bar to the lever with a piece of cable so the mower bar could float along the ground," says DeLooza. "The cylinder didn't have the lift capacity to bring the bar to full vertical, so I added a 'helper' spring, attaching it to the lever system."

DeLooza reports using the mower several times this past year with no problem. "What I ended up with is a pretty simple lever system, but the simplest way isn't always what you come up with first," he says.

DeLooza prefers to be contacted via email, and is a regular contributor to Cadet Connection (www.cadetconnection.com) recently gave an in-depth accounting of the entire process in the magazine Vol. 12, No. 2.

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At just 400 lbs., Piechocki's mini backhoe weighs less than commercial models but is still built strong enough to do what he needs.

so it easily handles the 15-in. wide bucket. The only drawback is that the arm doesn't swing side to side, so I have to turn the whole machine to dump the bucket."

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He uses the backhoe for landscaping, digging tile trenches and cleaning up brush around his farm.