

# Burn Bucket Fits On Front-End Loaders

The lowly burn barrel recently got a huge upgrade with the Burn Bucket that mounts in place of a front-end loader bucket.

Built after a request from a customer, the design went through four revisions, says Mike Whitethorn, an engineer who worked on the project.



**Burn Bucket mounts in place of a front-end loader bucket and is designed with a clam shell dump.**

It's designed with a clam shell dump to make the box easy to fill and then empty after burning. Preventing it from warping was the biggest challenge, and software was used to analyze heat distortion.

"Every bend is placed strategically to control the warp," Whitethorn says, and the A36 steel boxes remain straight so the top and walls open and close as designed.

With plenty of openings for air flow, fires burn so hot and efficiently that it incinerates combustible materials and can even melt aluminum cans and glass bottles. With internal dimensions of 48 by 24 by 32 in., it can burn a lot of material at a time. When the fire is out and the box cooled off, the quick-tach fittings make it easy to pick it up



**Quick tach fittings make it easy to pick up box and dump the ashes.**

to dump the ashes.

"A lot of our customers are farmers or people with acreages. Most rural Americans burn trash, some want them for burning tree limbs. Also, construction companies use the Burn Bucket to burn leftover scraps at job sites," Whitethorn says.

The Burn Bucket sells for \$945 assembled and ready to pick up at the Madison, S.Dak., business. Or they can be boxed and shipped for customers to assemble themselves.

The Burn Bucket is estimated to last around 10 years, depending on factors ranging from geological location to materials that are burned. Replacement panels can be purchased.

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**Henderson used a clamp, pulley and nylon cord to control the throttle on his Honda ATV with his left hand. A small piece of pvc that fits over his thumb.**

## ATV Throttle Controlled With Left Hand Thumb

After mounting a 25 gal. 12-volt sprayer on the back of his Honda ATV, Ken Henderson, Woodland, Calif., wanted to operate the spray wand using his right hand and couldn't operate the throttle and the spray wand at the same time.

"It didn't make sense to me to keep stopping to go from the throttle to the sprayer, so I looked for an aftermarket kit to move the throttle on my Honda," says Henderson.

"I found kits for other ATV's online, but none for mine. I contacted my local dealer and they said that others have asked, but no kit was available."

Henderson decided to move the throttle on his own. He used an insulated clamp with a small curtain shade pulley and nylon cord fitted to a small piece of pvc that would fit his thumb. He attached the cord to the throttle,

then through the pulley which is mounted to the handle near the throttle and drilled a small 1/8-in. hole in the small piece of pvc pipe that fits over his thumb.

"It's not jerky and works better than I thought it would for controlling the throttle. I have used it 4 to 5 times now for spraying and it works great. It took me less than 15 min. to make at no cost using spare parts I had laying around," says Henderson.

"Getting the clamp in the right position was the hardest part. It works so well that I made a small kit of parts and took it to my local dealer and told them to give it to the first veteran that needed it."

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**A battery and solar panel are integrated into the reusable ear tag to power the GPS transmitter. It sends out location signals to area antennas every 2 hours.**

## GPS Ear Tags Keep Track Of Cattle

An Australian company has a solution for every cattleman who ever wondered where their cattle were and if they had water. GPS tags on the cattle let ranchers like Greg Adams track every single animal and check water levels in every tank.

"I was coming up 8 to 10 head short every year, and at \$1,200 to \$1,400 per head each, you're out \$10,000 a year," says Adams. "I started looking for a solution, and I came across an article on Moovement. Their system was expensive, but by using the tags on multiple animals over a period of a few years, the price was down to about \$10 per head. On a thousand head, that was equal to one year's theft loss."

While he doesn't yet know if the technology will stop theft, what he has found is a huge savings in time and labor.

Adams normally runs between 1,000 and 1,500 stocker calves a year on grass pastures in the summer and wheat fields in the winter.

"I run 18 to 20 different pastures in the summer and 8 to 10 wheat fields in the winter," says Adams. "I try to cover half the pastures every day and run 150 to 200 miles to do it. If there is a problem, Murphy's law says you find it near the end of the day.

Drive home to get the needed tools and back to fix it, adding hours to the day."

That all changed this past winter when Adams outfitted his cattle with Moovement ear tags and several of his water tanks with monitors. "Now I get up in the morning and check my computer," says Adams. "I can see where every animal is within 25 yards and see that the tanks are full."

The knowledge lets him plan the day, taking care of known problems. If the software indicates some calves are not where they should be, Adams can locate them and arrange to get them back. If a tank is low or a pump hasn't run, he can head out with the tools needed to fix it. Ranching in an area with 2 months of 90+ degree weather, having adequate water is vital.

"I never expected the impact this technology would have," says Adams. "I think it can increase the number of cattle a person can handle by 50 percent. It helps me take better care of the animals I have and gives me the knowledge to make informed decisions quicker and easier."

Pieter Vogel is hearing similar stories from livestock producers around the world. The co-CEO of Moovement has seen the

company go from a concept to being active in 16 countries around the world and in use on thousands of head of cattle.

"We started in Australia, making tags, developing software and working with cattlemen to experience the problems they faced," says Vogel.

A battery and solar panel are integrated into the reusable ear tag to power the GPS transmitter to send out location signals to area antennas every 2 hrs. Antennas placed around the range send the information to the internet for access by an app on the owner's phone, tablet or computer.

Moovement customers can set up their own LoRaWAN (long range wide area network) as Adams did or install a homestead antenna that covers an area with a radius of 4 to 5 miles. LoRaWAN antennas can also be installed off-grid in the field, or a local area antenna can be moved with the cattle. Actual coverage depends on terrain and tree cover.

Water monitoring can be done with an ultrasonic sensor on tanks and troughs or with a pressure sensor that monitors dams and creeks.

Designing the ear tags themselves was a big challenge. Weight had to be under 30 grams for animal health, yet the body had to be a rigid plastic to protect the hardware with a small, but flexible neck that wouldn't break. The material also had to be UV and bacteria resistant.

The Moovement team is working on new applications of the data produced, developing algorithms that can alert cattlemen to potential problems.

"If a user creates a geofence around the pasture or paddock, the GPS data can be used to derive a 'jumping fence' alert when an animal moves into a different area," says Vogel. "We can also use the movement data to analyze grazing patterns and more."



**The antennas, equipped with or connected to routers, send the information on to the Cloud for access by an app on owner's digital device, whether phone, tablet or computer.**

Bull performance is already available for a separate fee. It tracks the distance the bull walks, interaction with the herd and lets you compare bulls.

Eventually, Vogel suggests, the tags may detect heat, provide a "not moving" alert or a coughing alert. While it may not yet be the theft solution Adams was searching for, if animals travel outside the antenna's coverage area, a theft alert could be sent to owners.

Moovement systems are a combination of one-time and annual fees. A cattle tracking package includes 150 GPS ear tags, a LoRaWAN, water monitoring, the mobile app and a Farm View Portal, where herd information is recorded and geofence lines can be drawn. For cattlemen with 150 cows and 3 bulls on 1,000 flat and open acres and 4 water tanks, a system would be priced at a one-time cost of around \$10,675 (U.S.) and an annual fee of \$1,140. Bull performance would increase costs and fees slightly. Ear tags, which have a 5-year life expectancy, are \$39 each with a \$6 annual fee.

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