

# Heartland: Tree Takedowns with Increased Safety, Efficiency, and Productivity

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Let's take a moment to consider some of the main priorities of all tree care and utility companies. Most would agree that safety is top priority. Efficiency and productivity are other aspects of the job considered when accepting jobs for the week, as well as the return on investment of equipment and personnel resources directly affecting a company. All of these priorities factor into the overall success of a company. With these elements in mind, Altec engineered Heartland, a unit designed to allow operators to cut limbs safely without ever having to leave the ground or touch a piece of the tree.

## What is Heartland?

Heartland, or the Altec EC175-5S-FG, has a gross vehicle weight rating (GVWR) of 33,000 pounds. It is a Freightliner chassis with a log body, an Effer articulated-and-telescoping boom crane, and a 360-degree, continuous-rotation grapple saw. The maximum hook height is 60 feet, while the maximum horizontal reach is 49 feet. The unit is operated completely by a radio remote control.

"This unit is unique in that it is the first completely engineered piece of equipment dedicated to tree and limb removal," said Andy Price, Altec Tree Care Market Manager. "We believe we are marketing a product that is a safer method to take down a tree, or limbs overhanging structures."

## How it Works

The operator starts by setting up the Heartland unit near the tree being taken down. By remote control, the grapple saw cuts and holds a branch or limb and then puts it directly onto the chipper feed table. When only the trunk is remaining, the grapple saw can grab it and cut diameters within its capacity into sections and lay them in the truck's log body.

Not only does the remote control allow the operator to stand away from a potentially hazardous jobsite, it also allows for the limbs and trunk to be put directly into the log body. This minimizes the number of wood piles that are laid on the ground, which reduces turf damage and crew cleanup time.

Dan Voss, Certified Arborist and owner of Voss Treemendous Tree Service, was heavily involved in the design of Heartland. Already a long-time customer of Altec's, Voss created a prototype in 2015 featuring similar

components now seen on Altec's Heartland unit. After two years of R&D alongside Altec, the Heartland product was born and Voss is proud to say he's taken down more than 5,000 trees in three years, most of them from the comfort of his lawn chair.

## Design Features

The grapple saw was designed specifically for use at the end of a knuckleboom crane and has special safety and mechanical features for superior performance. The grapple has a 33-inch jaw opening with a 14-inch cutting depth and a maximum lift capacity of 3,300 pounds. On one side of the truck, a hydraulic grapple saw carrier not only stores the grapple saw behind the cab, but also positions the grapple on the ground, allowing it to be connected to the crane by one operator without leaving the ground. Opposite the carrier, between the body and cab, is a holder for turf mats, which can be used to prevent damage when operating on soft turf.

One design feature in particular that Altec's new product development team carefully engineered is the arm running from the tip of the crane to the grapple.

"We all knew there would be times we'd want to remove a limb at a crotch, but could not get to it the way we wanted," Price said. "We modified this piece to a point where we can do it virtually any way we want. We dictate how it comes down, not the tree. With that arm and connections, we also have multiple pivot points, and these pivot points articulate as the cut weight shifts from the tree to the machine, which helps protect the crane."

Heartland also features a quick hydraulic disconnect system at the end of the knuckleboom, which allows a single operator to connect and disconnect all four hydraulic lines at once.

## Safety

The safety aspect of the unit is clear by the nature of its design.

"We're able to remove a great portion of the trees while eliminating the risk of putting a person in the tree," said Eric Bray, Vice President and Co-Owner of All Reliable Services, Inc. (ARS). ARS is a full-service utility pole line clearing company located in Jacksonville, Florida.

"We're really trying to work towards being safer and working smarter, not harder," said Lance Wallace, owner of Wallace Tree and Landscape. Wallace has been a tree climber for 25 years with the last 15 years focusing on safety training. With his tenure in the industry, Lance said one of the biggest challenges for tree climbers is

the length of their career. “No longer do arborists have to think about climbing so many years before their bodies are fatigued, and they must find something else to do. This machine gives you the opportunity to still be at the front lines of being an arborist and doing tree care. And above all, it’s a much safer way to perform the work.”

## Increased Efficiency and Productivity

Bray said the increased efficiency has been one of the greatest impacts at ARS: “With this unit, I’ve cut my costs of removing a tree by two-thirds. This is passed through to my customers in the form of significant savings.”

“Heartland is so easy and efficient to set up that by the time the crane is up in the air and working, we’d still be putting on our climbing gear, setting rope, and securing the jobsite with cones, a task that would typically take an hour or more,” said Wallace.

In general, the owners of the Altec Heartland unit report that they have doubled the amount of work for a day—and with reduced manpower.

Following Hurricane Irma’s impact on Florida, Bray took his Heartland unit to assist with storm recovery. “At the dispatch yard, the tree departments and line maintenance construction departments of the hosting utility were fighting for that unit. Not only did we cut down trees, we used the unit to cut the wooden line poles. With that machine, we did the work of a four man crew in a quarter of the time.”

## Looking Forward

For the electric utility industry, equipment like Heartland is still relatively new as most utilities don’t perform their own tree care work. However, utilities are learning more about remote controlled tree removal devices from the tree care companies they contract with for utility line clearance. Several utilities have arranged demos with their contractors to see what Heartland can do. Again, it’s a machine that can cut time and costs for the tree contractor, which passes through to the utility in savings.

The non-insulating unit can be used near energized lines provided OSHA minimum approach distances are maintained. The ability to operate remotely reduces exposure to step and touch potential hazard because operators no longer need to remain near the unit during operation.

Altec believes the market for this equipment will grow as the crane mounted grapple saws are developed and modified.

"This machine is going to change the industry as we know it," said Bray. "When I was working on a crew trimming trees, I used to tell my guys that there's going to be something that hooks to this bucket that's going to do this for us."

Bray compared the Heartland unit to the telephone shoe from 1960s television series *Get Smart* when he said: "We all said 'yeah right' to the idea of a cell phone, but that came." Now the Heartland product has too.

Altec also offers the EC225-6S-FG, which is the second version of Heartland. The EC225-6S-FG consists of a 33,000-gvwr Freightliner chassis, an Effer 225 6S crane, and a 360-degree, continuous-rotation grapple saw. This model provides an additional seven feet of cutting height and has a rear-mounted configuration, allowing operators to set-up 10 to 12 feet closer to the tree.

Source: Altec Inc.