

## Overview

### Region

West Virginia

### Industry

West Virginia Department of Highways

### Customer Profile

The West Virginia Department of Highways is responsible for the maintenance and repair of 37,370 miles of public roads, 34,610 miles of state highways, and 6,343 bridges in West Virginia.

### Business Situation

The Department of Highways in West Virginia needed a durable tilt attachment that could withstand the use and abuse of digging in rocky soil. They also wanted a tool that would reduce their reliance on manual labor to perform a variety of tasks such as cleaning ditches, laying and repairing pipe, and removing asphalt.

### Solution

When West Virginia Department of Highways added PowerTilt to their backhoes, they improved their productivity between 30 to 75 percent depending on the task performed. They've used their PowerTilt every day for over six years in rocky conditions and still haven't had any maintenance or repair issues. In fact, the PowerTilt has been moved to a newer backhoe – it outlasted their previous machine.

## PowerTilt® Application Success Story

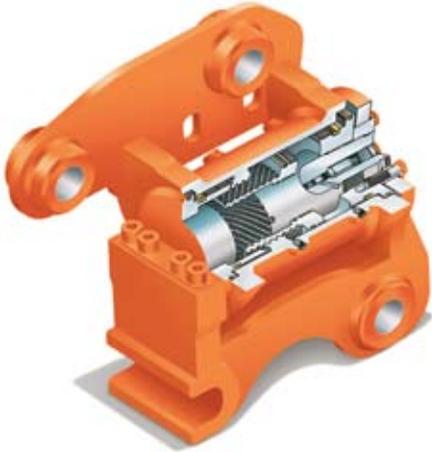
### West Virginia Department of Highways Improved Their Productivity by 30 to 75 Percent Depending on the Task at Hand.

“We not only improved our productivity on every task performed, we also found that PowerTilt stands up to hard pounding in rocky conditions without needing constant repair and maintenance. In six years we haven't had a single breakdown or had anything go wrong with our PowerTilt.”

— Wyatt Reed, Equipment Operator, West Virginia Department of Highways

The West Virginia Department of Highways has the responsibility to maintain and repair thousands of miles of public roads and state highways to support the environment and communities that call West Virginia their home. The Department of Highways in West Virginia needed a durable tilt attachment that could withstand the use and abuse of digging in rocky soil. They also wanted a tool that would reduce their reliance on manual labor to perform a variety of tasks such as cleaning ditches, laying and repairing pipe, and removing





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— Wyatt Reed, backhoe operator  
West Virginia Department of Highways

asphalt. When they added PowerTilt to their backhoes, they found a tilt attachment that outlasted their previous backhoe without needing any repairs and it improved their productivity between 30 to 75 percent depending on the task performed.

### **PowerTilt Cut 75 Percent of Time When Used to Install Pipes**

Before PowerTilt, installing pipe in landscaped areas in West Virginia required a lot of time-intensive manual labor and finish work to clean up the job site. Since the machine couldn't always be leveled to obtain the level bottom in the ditch that these installations required, West Virginia Department of Highways used PowerTilt to dig the



trench to the appropriate depth and width for pipe installation. With PowerTilt, they could tilt the bucket to level and make the bed for the open top drain or the drop inlet level. “With PowerTilt you can save so much time and effort by simply positioning your bucket instead of

repositioning the entire machine,” said Wyatt Reed, backhoe operator for West Virginia Department of Highways. Since backfill couldn't be allowed into either the open top drains or the drop inlets they previously had to dump backfill on the side of the ditch and shovel it in by hand. Now with PowerTilt, they simply position the bucket 45 degrees and drop the fill rock out of the corner of the bucket.

Also before PowerTilt, backfilling was a backbreaking manual task accomplished with shovels and a lot of hard work. Now installing the pipe and backfilling the trench is a breeze. They can tilt the bucket to 90 degrees and use the edge of the bucket just like a rake. Then they can pull the entire excess dirt off the grass or concrete. West Virginia Department of Highways often makes minor adjustments to the angle of the bucket to follow the contours of the land.

PowerTilt not only saved West Virginia Department of Highways tons

“When we need to repair a pipe there’s no better tool than PowerTilt. A job that may have taken hours before, now takes less then 35 percent of the time with the PowerTilt.”

— Wyatt Reed, Backhoe Operator  
West Virginia Department of Highways

of time in the pipe installation, it also saved them tremendous time on the project clean up as well. “The PowerTilt cut our project time for installing pipes by 75 percent. Previously, the clean up in landscaped areas required around six or seven men and with the PowerTilt we can now do a much better looking job, in a lot less time, with around three men (including the operator),” stated Wyatt Reed, backhoe operator for West Virginia Department of Highways.

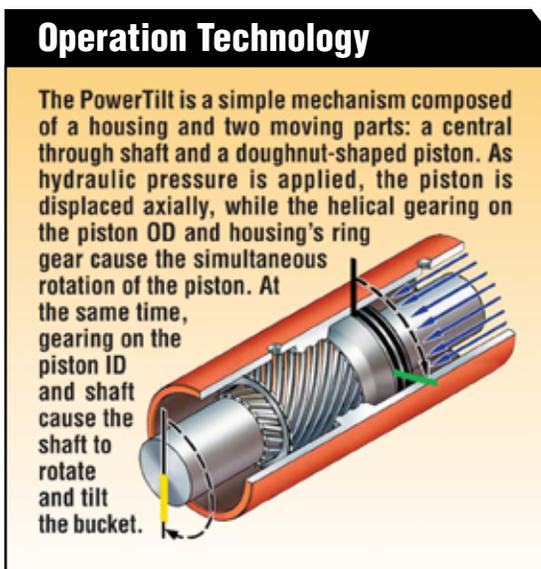
### **An Average of 35 Percent of Time Saved When Repairing Pipe**

West Virginia Department of Highways spends a fair amount of time using PowerTilt for pipe repair projects. They start by digging around both sides of the pipe. Then they tilt the bucket and use a tooth to loosen the soil around the sides of pipe. If the pipe just needs to be straightened out, then they can tilt the bucket and use a tooth to hook the lip at the end of the pipe and then lift to straighten the pipe. When the pipe needs the end cut off, they use the PowerTilt to tilt the bucket 90 degrees and actually dig under the pipe so they can get all the way around it with a cut off saw. Before the PowerTilt they always had to dig under the pipe by hand and with the PowerTilt they now save on manual labor time. “When we need to repair a pipe there’s no better tool than PowerTilt. A job that may have taken hours before, now takes less then 35 percent of the time with the PowerTilt,” stated Wyatt Reed.

### **Increased Productivity by 50 Percent When Cleaning Ditches**

With PowerTilt, West Virginia Department of Highways was able to easily dig the “V” shaped ditches that were required. The 180 degrees

of side-to-side swing rotation offered by PowerTilt allows them to get down into the ditch with just the right angle for a perfect finish. Without the PowerTilt the previous ditches ended up with a “U” profile. PowerTilt also allows the ditching work to be accomplished from the road, diminishing the impact on roadside vegetation. The Department of Highways in West Virginia found the smooth rotation of the PowerTilt to be really helpful for small angle adjustments which comes in handy when carving a gentle slope from the roadside to the ditch for optimum runoff and erosion control. As a result, PowerTilt increased the West Virginia Department of Highway’s ditching productivity by 50 percent.



## For More Information

For more information about Helac Corporation's construction equipment attachments, call 800.797.8458. To access information using the World Wide Web, go to: [www.helac.com](http://www.helac.com).

## Cutting Asphalt with PowerTilt Saved 30 Percent in Time

Another unexpected benefit of PowerTilt was the ability to use it to break up old asphalt for road prep work and repaving projects. PowerTilt allowed them to remove the asphalt on old backroads without bringing in a dedicated machine or breaking the asphalt with jackhammers or other intensive manual labor methods. The Department of Highways in West Virginia used the PowerTilt to angle the bucket and then used a tooth to score, or gouge, the asphalt. This process weakens the asphalt so now all they have to do is straighten the bucket back out, break the asphalt and then pick it up. The end result was an estimated average of 30 percent saved in time for cutting old asphalt.

## Durability to a New Level

West Virginia soil is so full of rocks and boulders that the digging and hard pounding in this type of environment takes a toll on the backhoe and the backhoe operator. "PowerTilt was used and abused yet it stood up to the abuse better than the backhoe or the operators. We've used our PowerTilt over six years and with the exception of daily greasing by the operators haven't had to send it in to our service department for any repairs," said Wyatt Reed. "If PowerTilt ever wears out I will do everything in my power to make sure the department buys me another one."

## Inside Helac's Rotary Actuator Technology

PowerTilt uses Helac Corporation's innovative sliding-spline operating technology to convert linear piston motion into powerful shaft rotation. Each actuator is composed of a housing and two moving parts – the central shaft and piston. As hydraulic pressure is applied, the piston is displaced axially, while the helical gearing on the piston OD and housing's ring gear cause the simultaneous rotation of the piston. PowerTilt's end caps, seals and bearings all work in tandem to keep debris and other contaminants out of the inner workings of the actuator, prolonging product life and reducing required maintenance. PowerTilt is available for equipment up to 75,000 lbs in eight sizes with standard rotation of up to 180 degrees. Each model is designed for a specific class of machinery and individually customized to fit the carrier.



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