

04 CASE STUDY

Water Heater Manufacturer



Improving process and reducing risk through automation.

One of the ways to complete tasks that require hard, physical work on a manufacturing line is with human labor. However, this approach can result in injury to the workers, lost productivity on the line, and increased costs for the business. Taking a step back to assess the line and determine which areas can be better served with robots and which with human labor can make an immense positive difference to your operation. In the case study below, Wes-Tech saved the customer money, reduced risk, and improved the overall process for a positive bottom-line impact.



Challenge

A commercial water heater manufacturer partnered with Wes-Tech to find a better way to load and unload large metal tanks from a conveyor. The tanks were offloaded from the welding line, and needed to be loaded onto hangars that were in constant motion on the wash line. They were using manual labor to complete all of these loads and offloads, which had resulted in injury to some of their employees, both from repeated lifting of the tanks that ranged from 90 to 120 lbs, and from heatstroke in the hot weather. Besides the risk of

injury, having a person manually load these large tanks onto and off of hangars was not an efficient way to process the material.

One of the reasons they had solved it with manual labor initially was that that tanks posed a technical challenge. There were 28 different sizes of tanks which needed to move through the line without changeover of the loading equipment, so a one-size-fits-all robot would not have fit the workflow. **Fortunately, Wes-Tech was up for the challenge.**



Solution

After assessing the operation, Wes-Tech was able to meet each of the client's needs. We began with a heavy lifting robot, removing the risk of human injury from loading and unloading the tanks. The system was equipped with sensors to understand the diameter and length of each tank so that it could adjust pick position, and could lift tanks in any sequence without requiring changeover. In addition, the robot was equipped with a motion tracker so it could follow the conveyor and load tanks correctly onto the hangers.

The initial loading module worked so well, and operational improvement saved so much money, that Wes-Tech was asked back after a year to build an unloading module. That one could pick the tanks off of the moving hangars and lay them into a cradle to shift them up onto a conveyor to the next part of the line. This was another place where humans were sustaining injuries from lifting and moving these large pieces, and which could be completed **more safely through automation.**

RESULTS / RETURN ON INVESTMENT

One of the main benefits of automation is that an operation can determine the best places for human intervention and utilize human capital only in those places. The success of this project allowed our client to gain massive ROI by reducing risk and improving operations. Some of the results of this engagement included:



Operational risks were reduced and downtime decreased by having robots do the heavy lifting



The equipment paid for itself in a single month by reducing injuries and workers' comp claims



Employee satisfaction increased because they no longer felt subjected to potential health hazards



The equipment was so reliable that the client reported it was some of the best-running equipment in the building, and years later it is still running smoothly

With decades of expertise solving complex manufacturing challenges, we will leverage more than 4,200 custom-engineered automation solutions to design the perfect one just for you. Experience the Wes-Tech difference.

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