



Wenger Corporation



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Company Background

Wenger Corporation is a custom manufacturing company that produces an assortment of equipment for music and theater education, performing arts, sporting, and storage and transport to customers all over the world. Located in Owatonna, MN, Wenger Corporation's facilities include a 432,000 square foot manufacturing floor, distribution center and administrative offices. The company was founded locally seventy years ago and has given community members a place of employment since. To this day, Wenger Corp. continues to have deep pride in its roots.



"Working for MnTAP this summer has given me a great chance to learn in a personal and professional sense. The community at Wenger Corporation welcomed me and helped me succeed in any way possible. I am thankful for the connections, friendships and industry growth I will retain forever." ~ PG-P

Project Background

In a typical year, Wenger Corporation produces approximately 1,200 tons of solid wood scraps from production. The company was able to reuse this wood scrap by sending it to an animal bedding producer up until mid-2018, when the recycler decided the wood provided by Wenger no longer met their requirements. At the loss of the recycling option, Wenger was forced to landfill all of their wood waste and began looking for other options.

The second part of the project focused on finding energy conservation opportunities throughout the main facility, which consumes 402,000 therms of natural gas and 6.5 million kWh of electricity per year.

Incentives To Change

Prior to the loss of their recycling option with the animal bedding producer, Wenger only paid transportation fees for disposal of their wood waste. In contrast, landfilling this wood waste was costing Wenger over \$100,000 per year, which prompted the company to reach out to MnTAP. Generation and disposal of wood waste and consumption of energy had clear potential for improvement from both environmental and economical perspectives. With this in mind, the company sought to reinforce its sustainability values while also improving its bottom line.



"During his very first week on site, Patrick hit the ground running and was already diving deeply into potential energy savings. His perspectives and tools went into areas that we had not previously considered and/or had the time to investigate. One of our intern's most impressive and helpful characteristics was that he took immediate ownership of the project. He continually leveraged the necessary resources, which kept the burden off our regular staff and allowed them to focus on implementation."

*~ Thad Rosenberg
Environmental, Health and Safety Manager
Wenger Corporation*

Solutions

Recycle Wood Block Spacers with Current Recycler

Wood block spacers, which protect boards from scratches in transit, come to the facility with each order of raw wood that Wenger receives. Because these spacers are primarily particle board, Wenger's current pallet recycler would be able to take them for recycling at no additional charge. This option would save \$1,700 per year in lower disposal costs.

Recycle Wood Waste with New Vendor

After researching possible vendors to take Wenger's scrap wood, a recycling company was contacted and an arrangement was made for the vendor to haul off 100% of the wood waste at the facility. To minimize transportation costs, it was recommended to use a larger semi-trailer dumpster rather than the two 40 yard dumpsters currently in use, saving hauling costs and again lowering impact on the environment with less transportation. Working with a new vendor would save \$45,000 annually. This change would also benefit the environment by diverting 2,400,000 lbs of wood waste from landfill.

Lower Compressed Air System Pressure

To operate a significant number of pneumatic tools and equipment at the facility, Wenger uses an extensive compressed air system which is maintained at a constant pressure of 110-115 psi. Reducing the current pressure setting while remaining above the minimum pressure needed is a simple, no-cost option that could save an estimated \$3,700 in energy costs annually.

Reuse Heat from Air Compressors

Use of existing duct work in combination with new ducting upgrades would allow Wenger to vent heat generated from the three in-use air compressors into one of the main work regions of the manufacturing facility. The additional heat coming from the compressors can reduce gas consumption in winter and save \$12,000 per year.

Upgrade Office and Exterior Lighting to LED

Current fluorescent lights throughout the office space and exterior property can be replaced with more efficient, brighter and longer lasting LED bulbs to save a total of \$15,000 per year in energy costs.

Minimize Air Blow Guns Used for Cleaning

Currently, air blow guns are used in a variety of different ways in almost all work regions on the manufacturing floor. Replacing the air guns with alternative methods and tools could save up to \$5,200 per year in energy costs.

Change Pneumatic Hand Tools to Electric Equivalents

Wenger has a variety of pneumatic hand tools for employees to use at their disposal. Substituting these with their electric equivalent hand tools, when available, could save an estimated \$12,000 per year in energy costs.

Recommendation	Annual Reduction	Annual Savings	Status
Recycle Wooden Block Spacers	37 tons wood	\$1,700	Planned
Recycle Wood Waste With New Vendor	1,200 tons wood	\$45,000	Planned
Lower Compressed Air System Pressure	62,000 kWh	\$3,700	Recommended
Reuse Leftover Heat from Air Compressors	20,200 therms	\$12,000	Recommended
Upgrade Office and Exterior Lighting to LED	72,600 kWh	\$15,000	Recommended
Minimize Blow Air Gun for Cleaning	87,000 kWh	\$5,200	Recommended
Change Existing Pneumatic Hand Tools to Electric Equivalent	207,000 kWh	\$12,000	Recommended

MnTAP Advisor: Daniel Chang, Associate Engineer